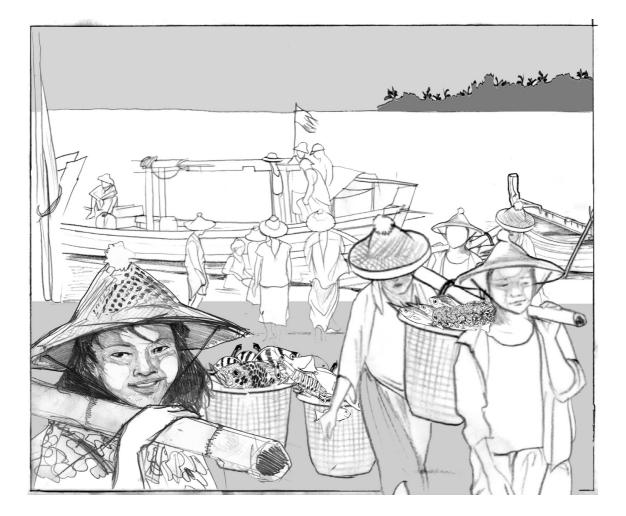
FAO SPECIES IDENTIFICATION GUIDE FOR FISHERY PURPOSES

# FIELD IDENTIFICATION GUIDE TO THE LIVING MARINE RESOURCES OF MYANMAR

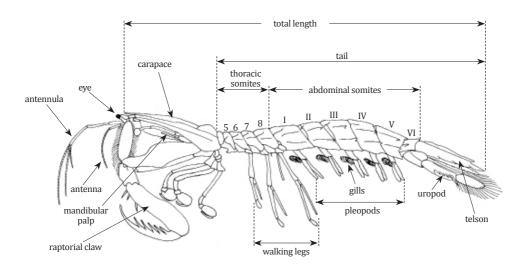


the Food and Agriculture Organization of the United Nations

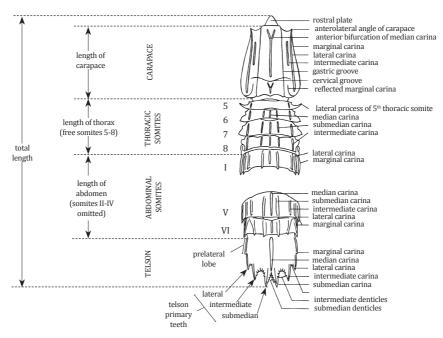
### **STOMATOPODS**

In Myanmar adult stomatopods are caught for local consumption and export. Juveniles are common bycatch in bottom trawl fishery especially along the Rakhine coast where they are dried and pounded for the preparation of animal feed. Eighteen species, belonging to three families are included in the guide.

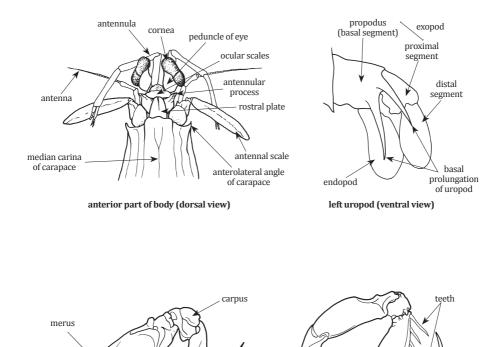
#### **TECHNICAL TERMS AND MEASUREMENTS**



lateral view of a stomatopod (mantis shrimp)



dorsal view (without head and extremities)





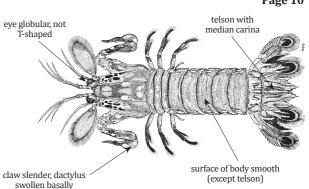


#### **GUIDE TO FAMILIES**

#### **ODONTODACTYLIDAE**

#### **Odontodactylid mantis shrimps**

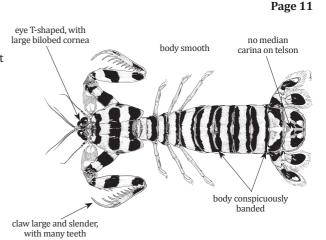
To about 17 cm (TL). Marine. Three species of interest to fisheries are included in the Guide to Species.



#### LYSIOSQUILLIDAE

#### **Banded mantis shrimps**

To about 38 cm (TL). Marine. One species of interest to fisheries is included in the Guide to Species.

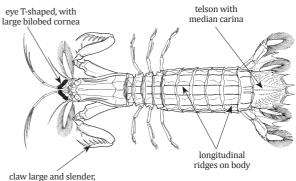


#### **SQUILLIDAE**

#### Squillid mantis shrimps

To more than 33 cm (TL). Marine and estuarine. Fourteen species of potential interest to fisheries are included in the Guide to Species.

#### Page 12



claw large and slender, with many teeth

Page 10

#### **ODONTODACTYLIDAE**

Odontodactylid mantis shrimps

proximal segment of exopod

#### Odontodactylus cultrifer (White, 1851)

FAO names: Pastel odontodactylid mantis shrimp (En)

Local name(s): Kin-pu zun, Pa-kan.

Habitat: Burrows in level sandy-mud bottoms from 7 to 51 m depth.

Fisheries: Bottom trawls.

Distinctive Characters: Ocular scales separated by distinct U-shaped cavity; raptorial claw dactylus with 2-3 small teeth on inner margin; distal segment (b) of uropodal exopod equal to or greater than 1.5 times length of proximal segment (a); telson dorsal surface with distinct high, thin median carina and 2 longitudinal carinae either side of midline.

Colour: Colour primarily in pastels with pink or purple uropods and antennal scales.



median

carina

distal segment of exopod

VI abdominal somite, telson and

right uropod (dorsal view)

FAO names: Japanese odontodactylid mantis shrimp (En)

Local name(s): Kin-pu zun, Pa-kan.

anterior part of body

(dorsal view)

Habitat: Burrows in sandy or shelly bottoms from 30-82 m depth.

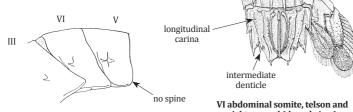
Fisheries: Bottom trawls.

ocular

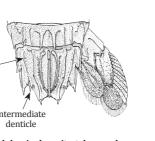
scales

Distinctive Characters: Ocular scales appressed medially; raptorial claw dactylus with 5 or more small teeth on inner margin; 5<sup>th</sup> abdominal somite without spine posterolaterally in adults; telson with longitudinal carina extending anteriorly from inner intermediate denticle.

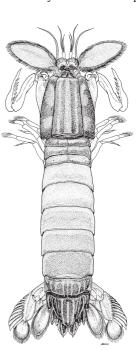
Colour: Overall salmon pink to pale grey-green with pink-purple antennal scales. Uropods pastel yellow; exopod distal segment often purplish.



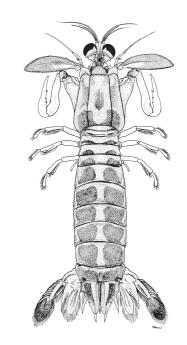
abdominal somites III-V (lateral view)



right uropod (dorsal view)



Size: To about 12.5 cm (TL)



#### Odontodactylus scyllarus (Linnaeus, 1758)

Local name(s): Kin-pu zun, Pa-kan.

**Habitat:** Lives in existing burrows in shallow rough bottom habitats, often on or near coral reefs to a depth of 30 m.

Fisheries: Collected primarily by hand.

VI

abdominal somites

III-V (lateral view)

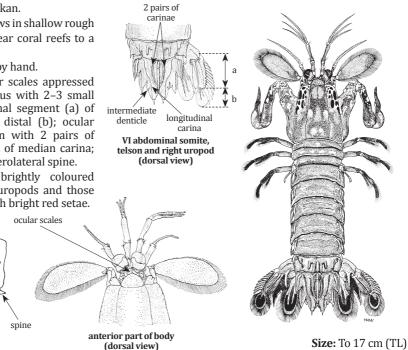
Ш

**Distinctive Characters:** Ocular scales appressed medially; raptorial claw dactylus with 2–3 small teeth on inner margin; proximal segment (a) of uropodal exopod longer than distal (b); ocular scales fused in midline; telson with 2 pairs of carinae converging under apex of median carina; 5<sup>th</sup> abdominal somite with posterolateral spine.

**Colour:** One of the most brightly coloured stomatopods, with deep blue uropods and those and other appendages lined with bright red setae.

V

FAO names: Reef odontodactylid mantis shrimp (En)



#### LYSIOSQUILLIDAE

Banded mantis shrimps

# Lysiosquillina maculata (Fabricius, 1793) Local name(s): Kin-pu zun, Pa-kan. Habitat: Burrows in level bottoms near shore. Fisheries: Bottom trawls. Distinctive Characters: Dactylus of raptorial claw with 10 or 11 teeth (usually less in adult females); distal end of uropodal endopod dark. Colour: Distinctly banded with alternate light and dark bands. male female anterior part ofbody (dorsal view) FAO names: Common banded mantis shrimp (En)

#### **SQUILLIDAE**

#### Squillid mantis shrimps

#### Carinosquilla spinosa Ahyong & Naiyanetr, 2002

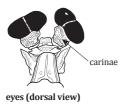
#### Local name(s): Kin-pu zun, Pa-kan.

**Habitat:** Burrows in sandy-mud bottoms from 30 to 40 m depth.

#### Fisheries: Bottom trawl.

**Distinctive Characters:** Lateral process of 5<sup>th</sup> thoracic somite bilobed, with an anteriorlydirected spine and a shorter, laterally-directed lobe; eyestalk with short, irregular carinae; dorsal surface of carapace, thorax and abdomen completely covered with longitudinal carinae; submedian carinae of 6<sup>th</sup> to 8<sup>th</sup> thoracic somites and 1<sup>st</sup> to 4<sup>th</sup> abdominal somites ending in spines; raptorial claw dactylus with 6 teeth.

**Colour:** Overall pale grey-brown with dark brown grooves on body; primary teeth of telson and terminal spines of uropodal protopod and outer spines of uropodal exopod red.



Cloridopsis scorpio (Latreille, 1828)

# lateral process double black

blunt pectinations

thoracic somites 5-8

Size: To 11.1 cm (TL)

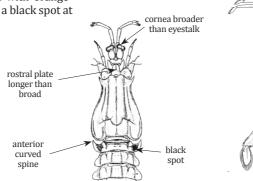
FAO names: Black-spotted mantis shrimp (En)

Local name(s): Kin-pu zun, Pa-kan.

Habitat: Littoral and sublittoral estuarine habitats. Fisheries:

**Distinctive Characters:** Lateral process of 5<sup>th</sup> thoracic somite a broad, anteriorly-curved spine; propodus of raptorial claw lined with pectinations on occlusal margin; telson lacking longitudinal carinae on surface; rostral plate longer than broad; raptorial claw dactylus with 5 teeth.

 ${\rm Colour:}$  Dorsal surface gray-brown with orange-red carinae; 5th thoracic somite with a black spot at base of lateral process.



anterior part of body (dorsal view)

**FAO names:** Spinous mantis shrimp (En)

Size: To 9 cm (TL)

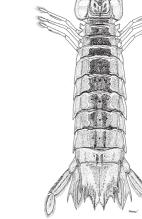
#### Dictyosquilla foveolata (Wood-Mason, 1895)

Local name(s): Kin-pu zun, Pa-kan. Habitat: Muddy bottoms to a depth of 50 m. Fisheries: Bottom trawls.

**Distinctive Characters:** Lateral process of 5<sup>th</sup> thoracic somite bilobed, comprising a laterally and anterolaterally directed spine; dorsal surface of carapace, thorax and abdomen covered with mesh-like reticulated carinae; propodus of raptorial claw lined with pectinations on occlusal margin; lateral process of 6<sup>th</sup> thoracic somite bilobed and broadly rounded; raptorial claw dactylus with 6 teeth; cornea slightly narrower than eyestalk.

Colour: Dorsal side of body and tail greyish brown.

#### **FAO names:** Reticulated mantis shrimp (En)



Size: To 10.5 cm (TL)

FAO names: Smooth squillid mantis shrimp (En)



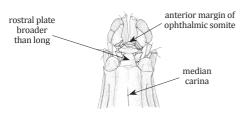
Local name(s): Kin-pu zun, Pa-kan.

**Habitat:** A shallow water species inhabiting burrows on level sandy-mud bottoms to a depth of 50 m.

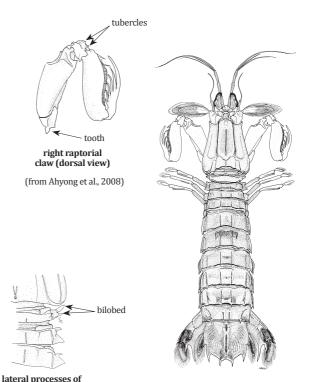
#### Fisheries: Bottow trawls.

**Distinctive Characters:** Lateral process of 5<sup>th</sup> thoracic somite bilobed, with an anteriorly-directed spine and a shorter, laterally-directed lobe; dorsal surface of carapace smooth, shiny, lacking any trace of an anterior bifurcation on the median carina; dorsal surface of telson lacking a line of tubercles on each side of median carina; anterior margin of ophthalmic somite broadly rounded, with median point; raptorial claw dactylus with 6 teeth; meral tooth and tubercles on the carpus of the claw.

**Colour:** Dorsal side of body pale gray-green (abdominal somites mottled to banded in some specimens); uropodal exopods blue.



anterior part of body (dorsal view)



thoracic somites 5-7

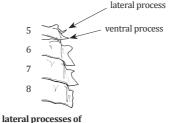
Size: To 15 cm (TL)

#### *Kempella stridulans* (Wood-Mason, 1894)

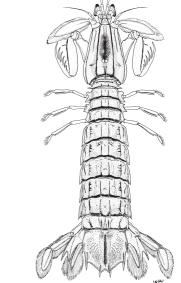
Local name(s): Kin-pu zun, Pa-kan.

Habitat: Soft substrates from 122 to 432 m depth. Fisheries: Bottom trawls.

**Distinctive Characters:** Lateral process of 5<sup>th</sup> thoracic somite with a single, slender laterallydirected spine; lateral processes of 6<sup>th</sup> and 7<sup>th</sup> thoracic somites bilobed; rostral plate without median carina; raptorial claw dactylus with 6 teeth. **Colour:** Dorsal surface light brown with carapace grooves, posterior margins of thoracic and abdominal somites dark brown; somites 2 and 3 same colour as other somites, without large darkbrown patches; telson with pale orange carinae; uropod with orangish protopod and exopod margins.



thoracic somites 5-8



FAO names: Smalleyed squillid mantis shrimp (En)

#### Size: To 13.5 cm (TL)

#### Miyakella nepa (Latreille, 1828)

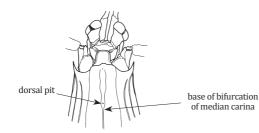
Local name(s): Kin-pu zun, Pa-kan.

**Habitat:** Burrows in sand and mud level bottoms near the shore to less than 25 m depth.

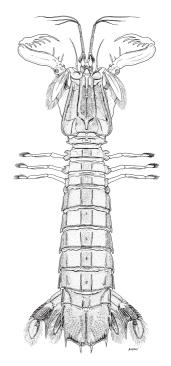
#### Fisheries: Bottom trawls.

**Distinctive Characters:** Lateral process of 5<sup>th</sup> to 7<sup>th</sup> thoracic somites bilobed; dorsal surface of carapace pitted or eroded; median carina of carapace bifurcates posterior to dorsal pit; 4<sup>th</sup> abdominal somite with submedian carinae usually armed posteriorly; raptorial claw dactylus with 6 teeth.

**Colour:** Dorsal surface olive grey-green; carinae and grooves on body dark green; uropodal protopod with pink terminal spines; uropodal exopod with distal segment dark blue-green distally and proximal segment yellowish.



anterior part of body (dorsal view)



#### FAO names: Kemp's plain mantis shrimp (En)

Size: To 16.6 cm (TL)

#### Harpiosquilla annandalei (Kempt, 1911)

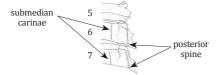
Local name(s): Kin-pu zun, Pa-kan.

Habitat: Silty-sand substrates from 15 to 206 m depth.

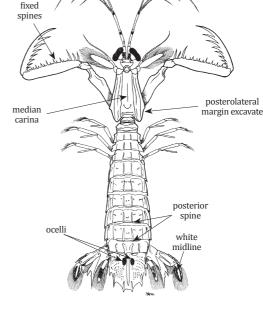
Fisheries: Bottom trawls.

Distinctive Characters: Carapace postlateral margin deeply escavated and propodus of raptorial claw lined with fixed spines (true of all Harpiosquilla); carapace with median carina; thoracic somites 6-8 with distinct submedian carinae; intermediate carinae of thoracic somites with posterior spine: submedian carinae of 5<sup>th</sup> and 6<sup>th</sup> abdominal somites with posterior spine; raptorial claw dactylus with 8 teeth.

Colour: Small black points (chromatophores) scattered over a pale gray dorsal surface; grooves and carinae on body dark brown; distal segment of uropodal exopod black with white midline; telson with a pair of dark ocelli on a pale outline.



lateral processes of thoracic somites 5-7



FAO names: Robber harpiosquillid mantis shrimp (En)

Size: To 13.7 cm (TL)

#### Harpiosquilla harpax (De Haan, 1844)

Local name(s): Kin-pu zun, Pa-kan.

Habitat: Inhabits level sandy-mud bottom, near the shore to depths of about 70 m.

#### Fisheries: Bottom trawls.

Distinctive Characters: Rostral plate triangular with anterior projection; carapace with median carina; thoracic somites 6-8 with intermediate carinae unarmed posteriorly; abdominal somites 1-5 with indistinct submedian carinae; raptorial claw dactylus with 8 teeth.

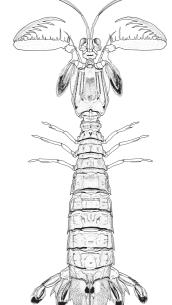
**Colour:** Dorsal surface ligth grey-brown; grooves and carinae on carapace and posterior margin of abdominal somites black brown; telson with a pair of oval dark spots.



telson (dorsal view)







#### FAO names: Annandale's harpiosquillid mantis (En)

no spine on 5<sup>th</sup> somite of thorax nosterior 8 spine absent

lateral processes of

thoracic somites 5-8

anterior projection

#### Harpiosquilla melanoura Manning, 1969

Local name(s): Kin-pu zun, Pa-kan.

Habitat: Inhabits muddy-sand bottoms between depths of 10-80 m.

Fisheries: Bottom trawls.

Distinctive Characters: Carapace without median carina; thoracic and abdominal somites 1-5 without submedian carinae; raptorial claw dactylus with 8 teeth.

Colour: Dorsal surface dull tan brown; posterior margins of thoracic and abdominal somites black brown; telson with yellow primary teeth and a pair of oval red-maroon spots; distal segment of uropodal exopod entirely black.

Harpiosquilla raphidea (Fabricius, 1798)

Habitat: Burrows in sandy mud. often estuarine.

Local name(s): Kin-pu zun, Pa-kan.

plate with slender apical projection.

Fisheries: Bottom trawls.

2-51 m.

long anterior

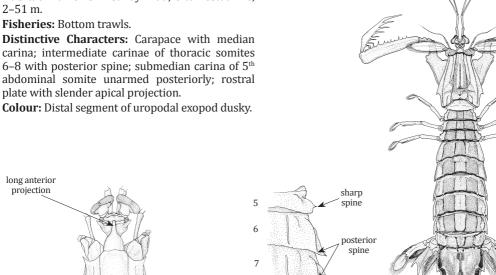
left uropod (dorsal view)

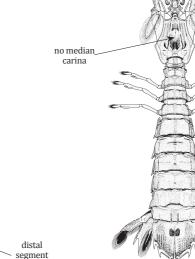
black

Size: To 16.8 cm (TL)

#### FAO names: Giant harpiosquillid mantis shrimp (En)

lateral processes of thoracic somites 5-7





FAO names: Black tailed harpiosquillid mantis shrimp (En)

# projection

anterior part of body (dorsal view)

#### Oratosquillina interrupta (Kemp, 1911)

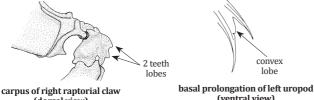
Local name(s): Kin-pu zun, Pa-kan.

Habitat: Inhabits level sandy-mud bottom, near the shore to depths of about 25 m.

Fisheries: Bottom trawls.

Distinctive Characters: Median carina of carapace interrupted at base of bifurcation; rostral plate without median carina; dorsal ridge on carpus of raptorial claw tuberculate; lobe between spines of basal prolongation of uropod convex; 4<sup>th</sup> abdominal somite with submedian carinae unarmed posteriorly; raptorial claw dactylus with 6 teeth; mandibular palp present.

Colour: Dorsal surface pale olive green; posterior margins of thoracic and abdominal somites dark green; telson with red primary teeth and a single dark maroon spot proximally on median carina; uropodal exopod with yellowish distal segment on proximal third.



(ventral view)

(dorsal view)

Oratosquillina nordica Ahyong & Chan, 2008

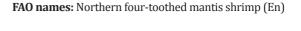
Local name(s): Kin-pu zun, Pa-kan.

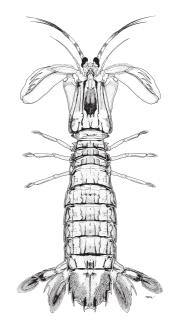
Habitat: Inhabits sandy-mud bottoms, near the shore to depths of about 70 m.

#### Fisheries: Bottom trawls.

Distinctive Characters: Lateral process of 5th thoracic somite bilobed, with posterior lobe of lateral process with blunt apex; median carina of carapace interrupted at base of bifurcation; raptorial claw dactylus with 5 teeth; mandibular palp present; abdominal somites 1-3 with lateral carinae unarmed posteriorly.

**Colour:** Dorsal surface light gray-brown, darker mid-dorsally; posterior margin of body somites red; telson with red primary teeth; uropodal exopod distal segment yellow with small black patch on inner part.





Squillidae - 11

FAO names: Maroon spot mantis shrimp (En)

median

carina

interrupted

Size: To 16 cm (TL)

#### Oratosquillina perpensa (Kemp, 1911)

#### Stomatopods

#### FAO names: Common squillid mantis shrimp (En)

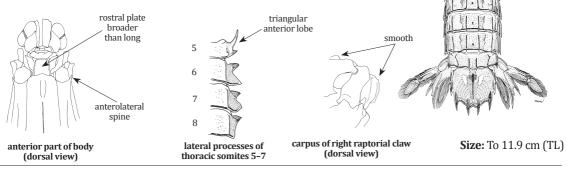
Local name(s): Kin-pu zun, Pa-kan.

**Habitat:** Occurs in sublittoral, sand and mud levelbottom habitats, in depths of 100 m or less.

#### Fisheries: Bottom trawls.

**Distinctive Characters:** Raptorial claw dactylus with 6 teeth; mandibular palp present; rostral plate broader than long; anterolateral spines of carapace extending to or overreaching base of rostral plate; dorsal ridge on carpus of raptorial claw smooth, undivided; lobe between spines of basal prolongation of uropod concave.

**Colour:** Body pale tan; telson with reddish primary teeth and a dark red proximal patch; uropodal exopod distal segment yellowish with black patch on inner half.



concave lobe

basal prolongation

of left uropod

(ventral view)

#### Squilloides leptosquilla (Brooks, 1886)

Local name(s): Kin-pu zun, Pa-kan.

**Habitat:** Inhabits soft bottoms between depths of 170–754 m.

#### Fisheries: Bottom trawls.

**Distinctive Characters:** Raptorial claw dactylus with 4 teeth; mandibular palp absent; carapace with intermediate carinae; abdominal somites 1–6 with submedian carinae; telson submedian teeth with fixed spines.

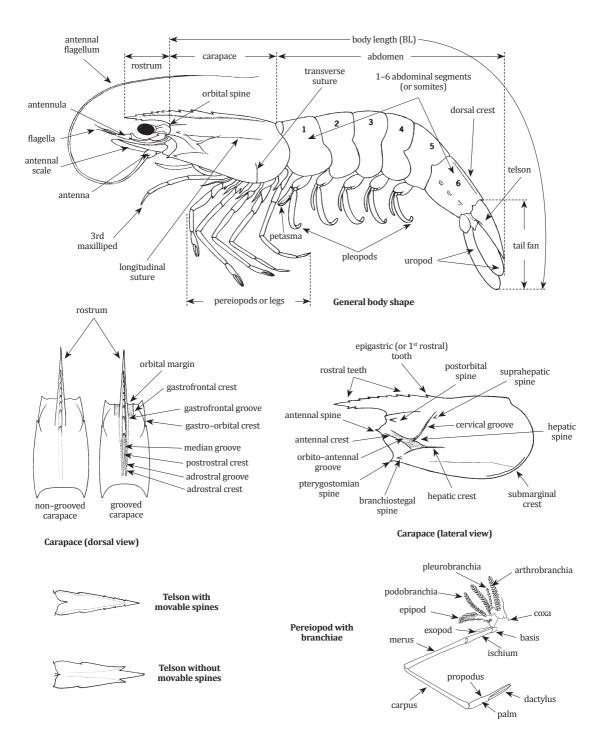
**Colour:** Dorsal surface pale orange with brown orange or reddish orange carinae; ventral surface white; merus of raptorial claw pale orange; carpus, propodus and dactylus white; a pair of red maroon patches on telson; uropods pale orange.

4 teeth on raptorial claw dactylus

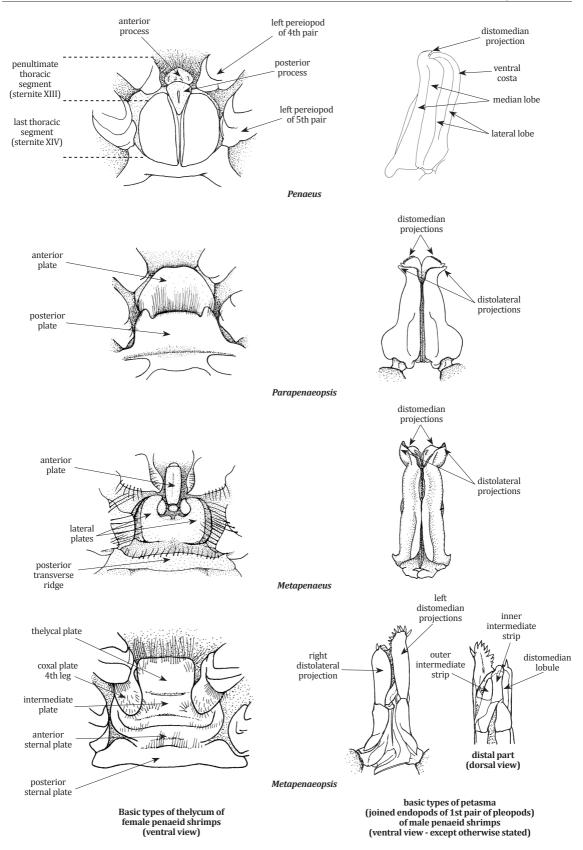
**FAO names:** Four toothed mantis shrimp (En)

# SHRIMPS AND PRAWNS

In Myanmar, shrimps are caught and farmed for both local consumption and export. Artisanal fishermen catch shrimps by gillnets, push nets (*Acetes* spp.), bag nets, stake nets and traps, while commercial offshore fisheries use bottom trawls. Penaeidae are of great commercial value on the local and international market (except those of small size). Shrimps form the food of many fishes and play a major role in food relationships and ecology in both lagoons and the sea. A total of 54 species belonging to 2 suborders and 9 families are herein included.



#### **TECHNICAL TERMS AND MEASUREMENTS**



#### **GUIDE TO SUBORDERS AND FAMILIES**

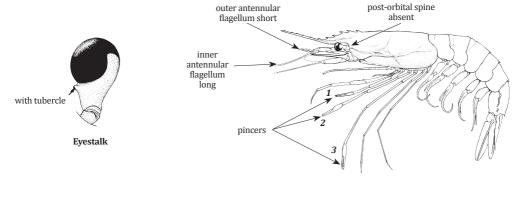
#### Suborder DENDROBRANCHIATA Sergestoid and Penaeoid shrimps

Pleuron of second abdominal segment overlapping that of third segment only; pincer of first 3 pairs of pereiopods equal or sub-equal. Eggs not carried by the female.

#### ARISTEIDAE

#### Aristeid shrimps

To about 33.4 cm (BL). Marine, deep water; benthic. Five species of interest to fisheries are included in the Guide to Species.



outer and inner

antennular flagellum of same length

#### PENAEIDAE

#### Penaeid shrimps

To about 27 cm (BL). Marine and estuarine, benthic. Thirty species of interest to fisheries are included in the Guide to Species. *Metapenaeopsis barbata* (De Haan, 1844) and *Metapenaeopsis menoui* Crosnier, 1991 although sampled during experimental trawl surveys in Myanmar's waters are not included in the guide due to their minor commercial importance. The recently erected genera in *Penaeus* s.l. and *Parapenaeopsis* s.l. are indicated as subgenera here as these taxa have not been supported by phylogenetic studies.

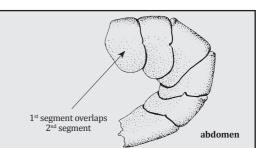


pincers

cervical groove

short

evestalk





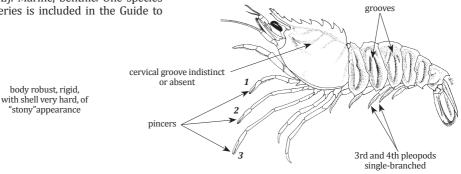
Page 25

#### **SYCYONIIDAE**

#### Page 42

#### **Rock shrimps**

To about 8 cm (BL). Marine, benthic. One species of interest to fisheries is included in the Guide to Species.

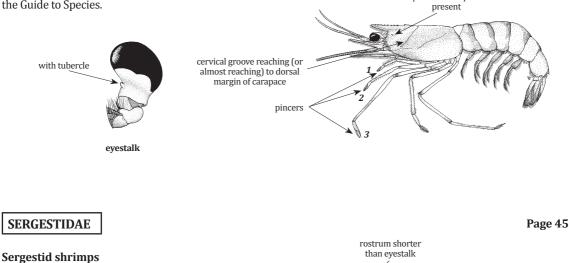


#### **SOLENOCERIDAE**

#### Page 43

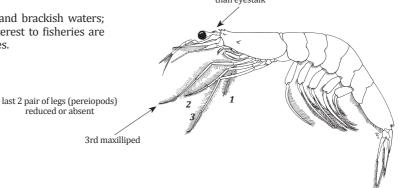
#### Solenocerid shrimps

To about 14 cm (BL). Marine, benthic, nocturnal. Four species of interest to fisheries are included in the Guide to Species.



#### To about 4 cm (BL). Marine and brackish waters; epipelagic. Two species of interest to fisheries are included in the Guide to Species.

reduced or absent



post-orbital spine

#### Infraorder CARIDEA (Suborder PLEOCYEMATA) **Caridean shrimps**

Pleuron of second abdominal segment overlapping those of first and third segments. First two pairs of pereiopods, or only the second, ending in a pincer; the last three pairs with a simple claw. Eggs carried by the female.

#### PASIPHAEIDAE

#### **Glass shrimps**

To about 11 cm (BL). Marine, pelagic. One species of interest to fisheries is included in the Guide to Species.

> 1st and 2nd pereiopods similar

pincers with many long, narrow teeth



#### **Deepsea shrimps**

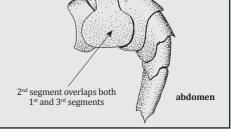
To about 13 cm (BL). Marine, pelagic and occurring in deep waters. One species of potential interest to fisheries is included in the Guide to Species. Acanthephyra fimbriata Alcock & Anderson, 1894 and Oplophorus gracilirostris A. Milne-Edwards, 1881 were found during experimental trawl surveys off Myanmar but are not included in the guide because less abundant and/or of smaller size.

pincers s on  $1^{\mbox{\scriptsize st}}\,2^{\mbox{\scriptsize nd}}$  pereiopods, of nearly equal size, and without teeth on inside border last 3 pereiopods

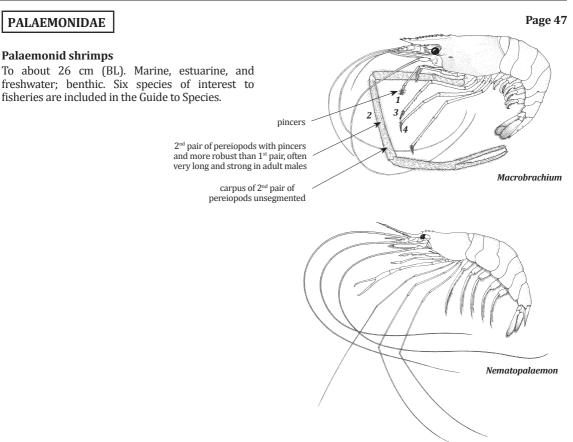
not elongated

Page 46

2<sup>nd</sup> segment overlaps both abdomen 1st and 3rd segments



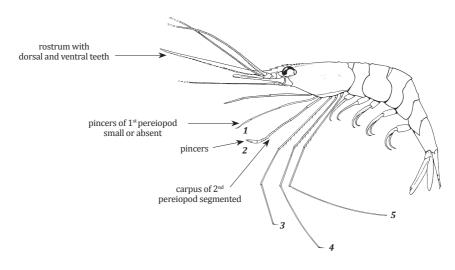
Page 46



#### PANDALIDAE

#### **Pandalid shrimps**

To about 15 cm (BL). Marine, mostly benthic and occurring in deep waters. Four species of interest to fisheries are included in the Guide to Species. *Plesionika semilaevis* Bate, 1888, sampled during experimental trawl surveys in Myanmar offshore waters is not included in the guide because less abundant.



Page 49

FAO names: Giant red shrimp (En)

#### ARISTEIDAE

#### Aristeid shrimps

#### Aristaeomorpha foliacea (Risso, 1827)

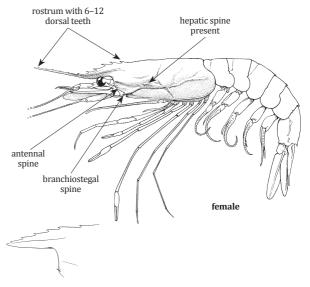
#### Local name(s): Ye Net Puzun.

**Habitat:** Found from depths of 61 to 1 300 m, but more often between 300 and 750 m; prefers mud bottoms. Moves to midwater at night.

**Fisheries:** Deep bottom trawls. Not yet fished commercially in the area.

**Distinctive Characters:** Rostrum with 6 to 12 upper teeth (including 2 teeth on carapace); very long in females and extending far beyond antennal scale, but short in males and not exceeding tip of antennular peduncle; carapace with antennal, hepatic, and branchiostegal spines; upper antennal flagella very short; 3<sup>rd</sup> to 6<sup>th</sup> abdominal segments each bearing a strong posteromedian spine; telson with 4 pairs of small movable lateral spines.

**Colour:** Body wine red with darker violet reflections on upper side of carapace; eyes black.



rostrum of male

Size: To 22.5 cm (females), 17 cm (males) (BL)

#### Aristeopsis edwardsiana (Johnson, 1868)

Local name(s): Ye Net Puzun.

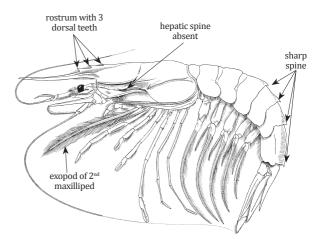
**Habitat:** Found on muddy bottom at depths of 200 to 1 850 m, usually between 400 and 900 m.

**Fisheries:** Deep bottom trawls. Not yet fished commercially in the area.

**Distinctive Characters:** Rostrum with 3 upper teeth only (including 1 tooth on carapace); very long in females reaching far beyond antennal scale, but short in males and not exceeding tip of antennal scale; carapace with antennal and branchiostegal spines but lacking hepatic spine; crests on carapace very sharp and prominent; exopod of 2<sup>nd</sup> maxilliped about twice as long as endopod, fringed by double row of long setae; 3<sup>rd</sup> to 6<sup>th</sup> abdominal segments each bearing a sharp posteromedian spine; no movable distal spine on merus of 1<sup>st</sup> and 2<sup>nd</sup> pereiopods; telson with 4 pairs of small movable lateral spines.

Colour: Entire body bright red; eyes black.

#### FAO names: Scarlet shrimp (En)



#### FAO names: Arabian red shrimp (En)

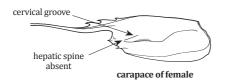
Local name(s): Ye Net Puzun.

**Habitat:** On muddy bottoms, at depths between 270 and 1 086 m.

**Fisheries:** Deep bottom trawls. Not yet fishesd commercially in the area.

**Distinctive Characters:** Integument of body glabrous; rostrum in female long and slender, 0.6–1.1 in carapace length, upper margin curved downwards till distal end of 2<sup>nd</sup> segment of antennular peduncle (in male much shorter and seldom surpassing tip of antennular peduncle); cervical groove short; hepatic spine absent; movable distal spine on merus of 1<sup>st</sup> and 2<sup>nd</sup> pereiopods; telson shorter than inner uropod and provided with 3 movable spines on distal part; pleurobranchia greatly reduced on first 4 pereiopods and not feather like; 4<sup>th</sup> pereiopod with carpus slightly shorter than merus; 5<sup>th</sup> pereiopod with carpus as long as merus.

**Colour:** Orangish red with reddish bands on the posterior border of all abdominal segments.



Aristeus mabahissae Ramadan, 1938

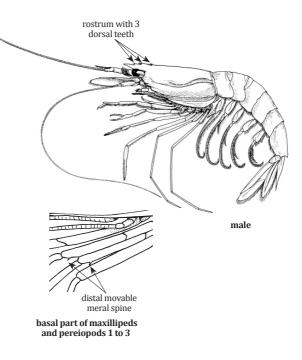
Local name(s): Ye Net Puzun.

**Habitat:** On muddy bottoms, at depths between 366 and 1 097 m.

**Fisheries:** Deep bottom trawls. Not yet fished commercially in the area.

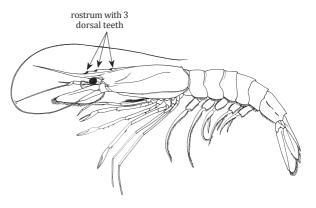
**Distinctive Characters:** Integument of body glabrous; hepatic spine absent; movable distal spine on merus of 1<sup>st</sup> and 2<sup>nd</sup> pereiopods; 5<sup>th</sup> pereiopods with 9 photophores on propodus, 11-12 on carpus and 4-6 on dactyl (photophores became indistinguishable after preservation); pleurobranchiae of first 4 pereiopods small but distinctly feather like; 4–11 photophores on 4<sup>th</sup> and 5<sup>th</sup> pereiopods; 4<sup>th</sup> pereiopod with carpus slightly longer than merus; 5<sup>th</sup> pereiopod with carpus 1.1–1.2 times longer than merus.

**Colour:** Body pinkish with reddish bands on posterior borders of all abdominal segments; eyes dark brown; photophores on pereiopods dark red.





FAO names: Deemed red shrimp (En)



#### Aristeus virilis (Bate, 1881)

#### FAO names: Stout red shrimp (En)

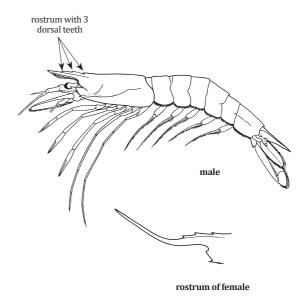
Local name(s): Ye Net Puzun.

**Habitat:** Found on sand and mud bottom, at depths from 188 to 936 m.

**Fisheries:** Deep bottom trawls.Not yet fished commercially in the area.

Distinctive Characters: Body covered with pubescence; rostrum armed with 3 upper teeth only (including 1 tooth on carapace); very long in females and extending far beyond antennal scale. but short in males and not exceeding tip of antennal scale; carapace with antennal and branchiostegal spines but lacking hepatic spine; crests on carapace without sharp edges; upper antennal flagella very short; pleurobranchia of anterior 4 pereiopods small but feather like; 4<sup>th</sup> and 5<sup>th</sup> pereiopods with carpus and propodus bearing 12-23 photophores, and carpus 1-1.2 times longer than merus; 1<sup>st</sup> and 2<sup>nd</sup> pereiopods armed with a distal movable spine on merus; 4<sup>th</sup> to 6<sup>th</sup> abdominal segments each bearing a posteromedian spine; telson with 4 pairs of small movable lateral spines.

**Colour:** Body pale white to pinkish red, with red bands on posterior margin of abdominal segments; eyes black; photophores on pereiopods purple-red.



#### Size: To 22.2 cm (females), 14.6 cm (males) (BL)

#### **PENAEIDAE** Penaeid shrimps

FAO names: Singapore rough shrimp (En)

## Megokris sedili (Hall, 1961)

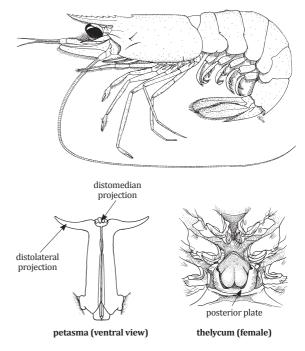
Local name(s): Thae-Puzun-Nyo.

**Habitat:** Found on mud or sand bottom, from nearshore waters to depths of about 45m.

Fisheries: Caught mainly with bottom trawls.

**Distinctive Characters:** Entire body densely pubescent; rostrum armed with 8–10 (rarely 8) upper teeth, reaching to distal half of 2<sup>nd</sup> antennular article, generally strongly upcurved in females, straight in males; postorbital, antennal and hepatic spines present; longitudinal suture short; last 4 abdominal segments with a low dorsal crest; 6<sup>th</sup> abdominal segment bearing a sharp posteromedian spine; epipod present on first 3 pereiopods; 5<sup>th</sup> pereiopod not quite reaching tip of antennal scale; male petasma horn-like; female thelycum deeply excavate, embrancing extremely long caudal extension of median protuberance, with sharply pointed apex.

**Colour:** Body yellowish-white to pale pink, often with dark yellow patches, rostrum darker; pereiopods and pleopods of same colour; uropods yellowish with endopods somewhat reddish brown.



Size: To 5.1 cm (males), 8.8 cm (females)(BL)

#### Metapenaeopsis palmensis (Haswell, 1879)

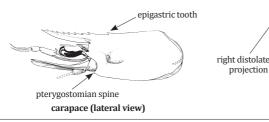
#### FAO names: Southern velvet shrimp (En) Crevette chamois méridionale (Fr)

Local name(s): Thae-Puzun.

**Habitat:** Found on sandy-mud or mud bottoms, from depths of 5 to 100 m, usually less than 90 m. **Fisheries:** Caught mainly with bottom trawls.

**Distinctive Characters:** Body densely covered with short hairs; grooves and crests on carapace indistinct; rostrum extending just to distal antennular segment and armed with 7–8 dorsal regularly spaced dorsal teeth (excluding epigastric tooth); no ventral teeth on rostrum; pterygostomian spine reduced; stridulating organ consisting of 8–13 (mostly 9–10) ridges in a wide, straight band; petasma (in males) asymmetrical, left distolateral projection with distal pipila wide and obtuse; thelycum (females) with intermediate plate as two separated flaps.

**Colour:** Body whitish, mottled with irregular red stripes; eyes dark brown; antennal flagella pale red; legs whitish, with some red spots on the sides of pleopods; distal half of uropods reddish.



right distolateral petasma thelycum (female)

Size: To 8.5 cm (males), 12 cm (females)(BL)

Metapenaeopsis sinica Liu & Zhong, 1988

Local name(s): Thae-Puzun.

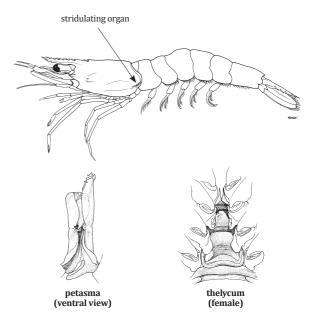
**Habitat:** Found on sandy-mud or mud bottoms, from depths of 13 to 219 m.

Fisheries: Caught mainly with bottom trawls.

**Distinctive Characters:** Body densely covered with short hairs; grooves and crests on carapace indistinct; rostrum slightly curved upwards reaching to 2/3 of the 3<sup>rd</sup> antennular segment and armed with 7 (rarely 8) dorsal teeth (excluding epigastric tooth); no ventral teeth on rostrum; stridulating organ consisting of 8–16 well separated ridges in a wide, straight band; dorsal crest of 3<sup>rd</sup> abdominal segment with median groove diverging a little posteriorly; petasma (in males) asymmetrical, pipila at left distolateral projection sharp and narrow; thelycum (in females) with intermediate plate excavate.

**Colour:** Abundant red brick marbling on a luminous white background.

FAO names: Chinese velvet shrimp (En)



Size: To about 10 cm (females)(BL)

#### Metapenaeopsis stridulans (Alcock, 1905)

FAO names: Fiddler shrimp (En) Crevette violoneux (Fr)

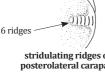
Local name(s): Thae-Puzun.

Habitat: On sandy or muddy bottoms, from depths of 9 to 90 m.

Fisheries: Caught mainly with bottom trawls.

Distinctive Characters: Body densely covered with short hairs; grooves and crests on carapace indistinct; rostrum reaching to, or almost to, tip of antennular peduncle and armed with 6-8 dorsal teeth (excluding epigastric tooth), the penultimate tooth generally anterior to orbital margin of carapace; no ventral teeth on rostrum; stridulating organ consisting of 4-7 (mostly 5-6) very strong ridges in a wide, straight band; petasma (in males) asymmetrical with some pipila on left distolateral projection greatly elongated; thelycum (in females) with 2 protuberances on intermediate plate.

**Colour:** White to reddish brown, with red to dark brown mottlings; pereiopods pinkish to dark red except on their proximal parts; uropods red to brown except for their proximal third and often their tips.



right distolateral projection

stridulating ridges on posterolateral carapace

Metapenaeus affinis (H. Milne Edwards, 1837)

Local name(s): Pazun-Pann-Yaung.

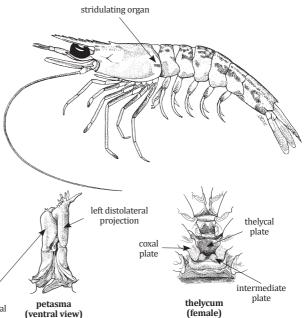
Habitat: On mud or sandy-mud bottoms, from the coastline to depths of about 90 m.

Fisheries: Caught mainly with bottom trawls.

Distinctive Characters: Generally almost entire body pubescent; rostrum armed with 8-11 teeth along entire dorsal margin and no ventral teeth; 5<sup>th</sup> pereiopod without exopod and carapace without longitudinal or vertical sutures (true of all *Metapenaeus*); merus of 5<sup>th</sup> pereiopod in male with a proximal notch, followed by a twisted, keeled tubercle; anterior plate of thelycum in females deeply grooved longitudinally and considerably wider posteriorly; petasma (in males) symmetrical (true of all Metapenaeus); distomedian projections of petasma crescent-shaped.

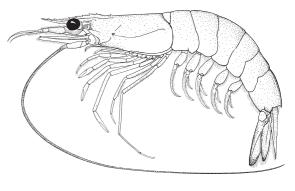
**Colour:** Body pale greenish to pale pinkish; antennae red; distal half of uropods translucent green or rust coloured, tips usually whitish to yellowish.

merus of 5th pereiopod (male)

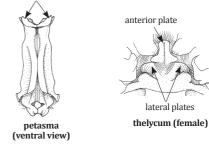


#### Size: To 8.9 cm (males), 10.6 cm (females)(BL)

FAO names: Jinga shrimp (En) Crevette jinga (Fr)



distomedian projections



Size: To 14.6 cm (males), 18.6 cm (females)(BL)

#### *Metapenaeus brevicornis* (H. Milne Edwards, 1837)

FAO names: Yellow shrimp (En) Crevette jaune (Fr)

Local name(s): Sandarr-Puzun.

**Habitat:** A marine to almost fresh-water species, found on sand or mud to depths of about 90 m, usually less than 30 m.

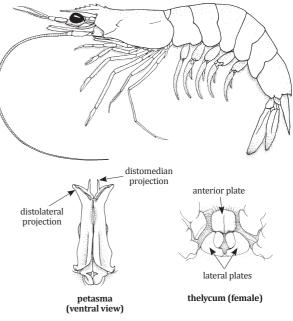
Fisheries: Caught mainly with bottom trawls.

**Distinctive Characters:** Almost entire body hairless; rostrum with 5–7 dorsal teeth (toothless on little less than its distal half) and no ventral teeth; rostral crest high; adrostral crest and groove reaching as far as 2<sup>nd</sup> rostral tooth; merus of 5<sup>th</sup> pereiopod in male with a proximal notch, followed by a keel-shaped tubercle, male petasma with distomedian projection long thread like; female thelycum with anterior plate not extending backwards onto lateral plates, lateral plate with 2 submedian swellings.

**Colour:** Body yellow to white, sometimes greyish, with distinct dark green to bluish brown specks; pleopods yellowish to pinkish; distal part of uropods brown to rusty red.

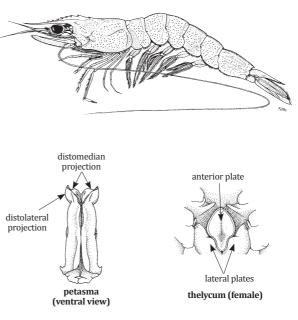


merus of 5th pereiopod (male)



Size: To 15 cm (males), 20 cm (females)(BL)

FAO names: Kadal shrimp (En) Crevette kadal (Fr)



Size: To 11.8 cm (males), 13 cm (females)(BL)

#### Metapenaeus dobsoni (Miers, 1878)

**Local name(s):** Shwe-Puzun, Lone Thar Puzun. **Habitat:** Occurs mainly in low salinity lagoons and adjacent marine areas on mud and mud and sand to a depth of 37 m.

Fisheries: Caught mainly with bottom trawls.

**Distinctive Characters:** Almost entire body pubescent; rostrum with 7–9 teeth along dorsal margin and no ventral teeth; in males, basial spine of  $3^{rd}$  pereiopod extremely long and barbed; male pestama with distolateral projection upwardly pointed; in females, lateral plates of thelycum partially sheathing anterior plate.

**Colour:** Body pale yellow to brownish with red, brown or green specks; pereiopods and pleopods white to pinkish; uropods grey-brown, darker distally.

merus of 5th pereiopod (male)

basial spine of 3rd pereiopod (male)

#### FAO names: Greasyback shrimp (En) Crevette glissante (Fr)

Local name(s): Pazun-Bawt -Jate.

Habitat: Mainly in turbid waters down to a depth of 95 m over bottoms of mud, sandy-mud or silt. Juveniles in estuaries (also in seagrass beds, mangrove banks, mud flats and open channels). Fisheries: Caught mainly with bottom trawls.

**Distinctive Characters:** Body covered with fine pubescence; rostrum armed with 8–11 teeth along entire upper margin, nearly straight; no ventral teeth; postrostral crest low; merus of 5<sup>th</sup> pereiopod in male with a basal notch followed by a long, inwardly curved spine-like process and a row of tubercles; petasma of males with distomedian process very large and triangular, covering almost entire distolateral projection in ventral view; thelycum of females with posterolateral parts of lateral plate strongly recurved into an open flap.

**Colour:** Body greyish green or dark green and covered with dense dark brown dots, large adults somewhat pinkish; distal part of uropods somewhat bluish with reddish brown margins.



merus of 5th pereiopod (male)

Motoregoug	husianasaa	(De Man	1000)
<b>Metapenaeus</b>	ivsianassa	The Man	10001

Local name(s): Pazun-Seik-Kalay.

**Habitat:** On muddy bottom in inshore waters, to depths of about 28 m.

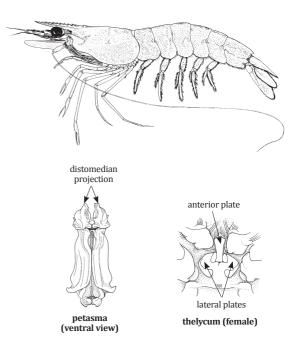
Fisheries: Caught mainly with bottom trawls.

**Distinctive Characters:** Body entirely pubescent; rostrum very short and high, not extending beyond eye and armed with 6–7 teeth along dorsal margin and no ventral teeth; adrostral crest and groove reaching to 3<sup>rd</sup> rostral tooth; merus of 5<sup>th</sup> pereiopod in male with a proximal notch followed by a large, inwardly curved process; male petasma with squarish projection between distolateral and distomedian projections; female thelycum with lateral plate as 2 submedian swellings.

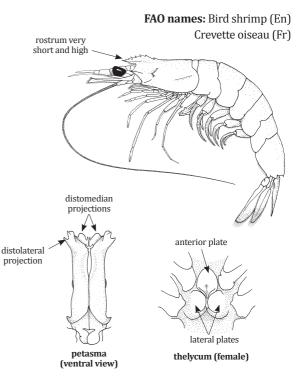
**Colour:** Body pale yellowish white and scattered with grey to pink dots, antennae and dsital parts of uropods greyish.



merus of 5th pereiopod (male)



Size: To 15.4 cm (males), 18.9 cm (females)(BL)



Size: To 6.1 cm (males), 9 cm (females)(BL)

#### Metapenaeus monoceros (Fabricius, 1798)

FAO names: Speckled shrimp (En)

Crevette mouchetée (Fr)

Local name(s): Pazun-Bawt-Jate.

**Habitat:** From the coastline down to deeper waters, on mud, sand or silt bottoms. Maximum depth 70 m.

Fisheries: Caught mainly with bottom trawls.

**Distinctive Characters:** Almost entire body pubescent; rostrum with 9–12 teeth along entire dorsal margin and no ventral teeth; merus of 5<sup>th</sup> pereiopod in male with a proximal notch followed by a long, inwardly curved spiniform process and a row of tubercles; male petasma with distomedian projection large knob-like; female thelycum with posterolateral part of lateral plate not recurved upwards.

**Colour:** Body pink, green greyish or whitish with brown specks; rostral and mid-dorsal abdominal crests brown; antennae red; distal part of uropods purple-blue, external margin of exopods red.



merus of 5th pereiopod (male)

Metapenaeus tenuipes Kubo, 1949

Local name(s): Pazun-Bawt-Jate.

**Habitat:** Occurs from the coastline and brackish waters to a depth of 30 m.

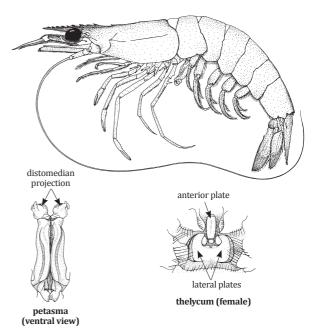
Fisheries: Caught mainly with bottom trawls.

**Distinctive Characters:** Almost entire body pubescent; rostrum extending beyond eye and armed with 6–8 teeth along dorsal margin (its distal half without teeth) and no ventral teeth; adrostral crest and groove reaching to  $2^{nd}$  rostral tooth; merus of 5<sup>th</sup> pereiopod in male with a proximal notch followed by a small, inwardly curved keeled tubercle; male petasma with distomedian projection elongate and strongly curved; female thelycum with anterior plate knob-like and much smaller than lateral plate.

**Colour:** Body from whitish to yellowish, carapace scattered with greenish dots, distal margins of uropodal exopods reddish; eyes black.



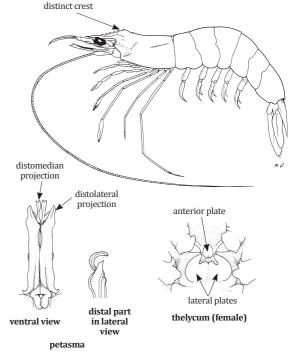
merus of 5th pereiopod (male)



Size: To 15 cm (males), 20 cm (females)(BL)

FAO names: Stork shrimp (En)

Crevette cigogne (Fr)



#### Parapenaeopsis (Alcockpenaeopsis) hungerfordii Alcock, 1905

Penaeidae - 27

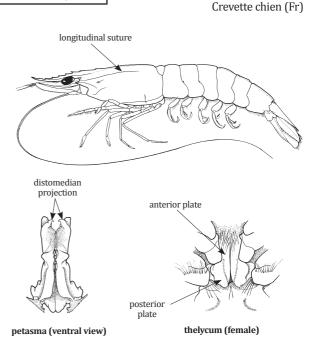
FAO names: Dog shrimp (En)

#### Local name(s): ??

**Habitat:** Found on mud or sandy mud bottoms, from depths of 5 to 45 m, usually less than 25 m. **Fisheries:** Caught mainly with bottom trawls.

**Distinctive Characters:** Rostrum long, exceeding antennular peduncle and armed with 6–8 dorsal teeth (epigastric tooth excluded); ventral side of rostrum toothless; antennal peduncle short, not reaching the middle of the eye; 1<sup>st</sup> and 2<sup>nd</sup> pereiopods without epipods but with strong, elongate basial spines; longitudinal suture long, extending almost to posterior carapace; telson unarmed; distomedian projections of petasma (males) greatly reduced; distolateal projection somewhat triangular; female thelycum with broad median furrow from anterior to posterior plates.

**Colour:** Body yellowish with most parts of rostrum, dorsal carapace and posterodorsal part of each abdominal segments dark green, uropods also dark green with margins yellowish.



Size: To 7.8 cm (males), 10.4 cm (females)(BL)

#### Parapenaeopsis (Batepenaeopsis) tenella (Bate, 1888)

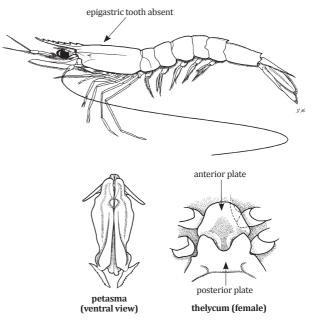
Local name(s): Khun-Kyan-Puzun.

**Habitat:** Found from depths of 40 to 90 m on clean sand, sometimes mixed with shell fragments.

**Fisheries:** Caught mainly with bottom trawls. **Distinctive Characters:** Body slender and setose; rostrum straight, not exceeding antennular peduncle and armed with 6–8 dorsal teeth; epigastric tooth absent; 1<sup>st</sup> and 2<sup>nd</sup> pereiopods without epipods; longitudinal suture extending far behind level of hepatic spine; 4<sup>th</sup> to 6<sup>th</sup> abdominal somites with dorsal carina; 3<sup>rd</sup> pereiopod with basial spine; male petasma with distolateral projection elongated but directed backwards; female thelycum with anterior margin of anterior plate convex and posterior plate with large median notch at anterior margin; telson unarmed.

**Colour:** Body scattered with red-brown to brown dots (variable in size and number); posterior margin of each abdominal somite and distal half of uropods deeper in colour; outer margin of exopods and uropods yellow.

FAO names: Smoothshell shrimp (En) Crevette glabre (Fr)



Size: To 5 cm (males), 7 cm (females)(BL)

#### Parapenaeopsis (Ganjampenaeopsis) uncta Alcock, 1905

FAO names: Uncta shrimp (En) Crevette uncta (Fr)

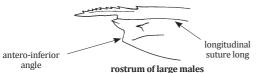
Local name(s): Khun-Kyan-Puzun. Khun-Kyan-Puzun

**Habitat:** Found from depths of 40 to 90 m on clean sand, sometimes mixed with shell fragments.

Fisheries: Caught mainly with bottom trawls.

**Distinctive Characters:** Rostrum extending to middle of  $2^{nd}$  segment of antennular peduncle, armed with 7–9 (epigastric tooth excluded) dorsal teeth; in females, sigmoid-shaped, toothless, on distal third, upcurved and usually exceeding antennular peduncle; in large males the rostral tip is straight; antero-inferior angles of carapace sharply rectangular; male petasma with distolateral projection hook-like; female thelycum with anterior margin of anterior plate convex, posterior plate with anteromedian part fused with anterior plate.

**Colour:** Carapace with a large white margined dark brown patch on posterodorsal part; abdomen with dark to ligth brown transverse bands (sometimes more or less faided on lower half of somites).



Dark brown path

Size: To 8.3 cm (males), 13 cm (females)(BL)

Parapenaeopsis (Kishinouyepenaeopsis) cornuta (Kishinouye, 1900)

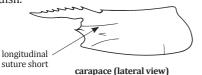
FAO names: Coral shrimp (En) Crevette corail (Fr)

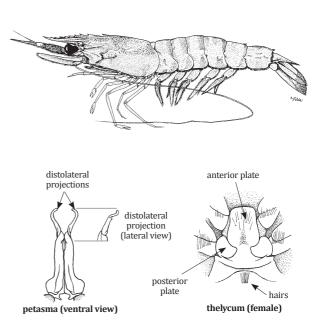
#### Local name(s): Khun-Kyan-Puzun.

**Habitat:** Found from near the coastline to about 90 m depth, but usually in less than 50 m on mud or sandy-mud.

Fisheries: Caught mainly with bottom trawls.

Distinctive Characters: Rostrum slightly upturned reaching to tip of 2<sup>nd</sup> segment of antennular peduncle and armed with 7-8 dorsal teeth; ventral side of rostrum toothless; 3<sup>rd</sup> pereiopod without basial spine; longitudinal suture short, reaching to about level of hepatic spine; male petasma curve horn-like with tip of distolateral projection bearing a small dorsal spiniform process; female thelycum with anterior plate long rectangular shaped and extending backwards onto posterior plate, a median tuft of hairs present behind posterior plate. Colour: Body pale with very faint dark brown transverse bands not extending to lower half of somites; dark-coloured dots (variable in size and number) scattered on carapace and abdomen; antennal flagellae and distal parts of pleopods reddish.





Size: To 8.5 cm (males), 10 cm (females)(BL)

#### Parapeneopsis (Kishinouyepenaeopsis) maxillipedo Alcock, 1905

FAO names: Torpedo shrimp (En) Crevette torpille (Fr)

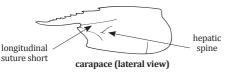
Local name(s): Khun-Kyan-Puzun.

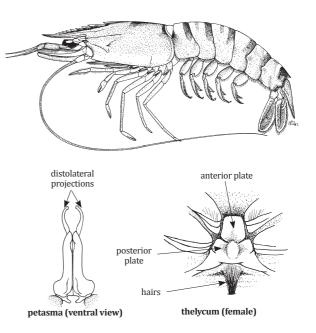
**Habitat:** Found from near the coastline to about 90 m depth, but usually in less than 50 m on mud or sandy-mud.

Fisheries: Caught mainly with bottom trawls.

**Distinctive Characters:** Rostrum straight, tip upturned reaching to distal segment of antennular peduncle and armed with 9–10 dorsal teeth (epigastric tooth excluded); ventral side of rostrum toothless; 3<sup>rd</sup> pereiopod with basial spine; longitudinal suture short, reaching to about level of hepatic spine; male petasma with distolateral projection curve horn-like but without dorsal spiniform process at tip; female thelycum with anterior plate long rectangular but not extending backwards onto posterior plate, which instead bearing large swelling at middle.

**Colour:** Abdomen with dark brown transverse bands not extending to lower half of somites; antennular flagella, uropods as well as upper parts of carapace and rostrum darkish; pleopods and ventral side of body with an orangish tinge.





#### Size: To 10 cm (males), 15 cm (females)(BL)

#### Parapenaeopsis (Mierspenaeopsis) hardwickii (Miers, 1878)

FAO names: Spear shrimp (En) Crevette javelot (Fr)

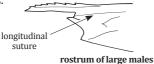
Local name(s): Khun-Kyan-Puzun.

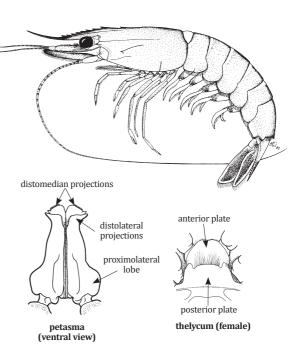
**Habitat:** Found from the coastline to depths of about 90 m, usually less than 20 m, on bottom of mud, sandy-mud or sand.

Fisheries: Caught mainly with bottom trawls.

**Distinctive Characters:** Body naked and smooth; rostrum armed with 9–11 dorsal teeth; in females, rostrum very long and of sigmoidal shape, with distal 1/3 to 1/2 toothless, extending far beyond antennular peduncle; in adult males, unarmed portion absent and slightly curving downward, only reaching to middle of  $2^{nd}$  antennular segment; longitudinal suture extending to about 3/4 or more carapace length; male petasma with distal margin somewhat convex; posterior plate of thelycum (in females) with a pair of anterolateral tooth-like projections.

**Colour:** Body greyish to greenish grey, sometimes pink, and densely covered with dark-coloured dots; basal 1/3 of antennal flagella crossed with brown narrow bands; uropods dark reddish brown with yellowish margins.





Size: To 11.1 cm (males), 13.5 cm (females)(BL)

#### Parapenaeopsis (Mierspenaeopsis) sculptilis (Heller, 1862)

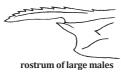
FAO names: Rainbow shrimp (En) Crevette arc-en-ciel (Fr)

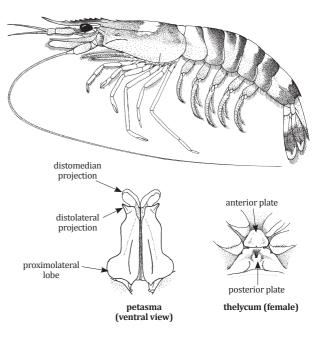
Local name(s): Pazun-Kyaung/Khun-Gyan.

**Habitat:** Usually inhabits shallow waters from the coastline to depths of about 90 m, but mainly less than 40 m, on sand, mud, or mixed bottoms.

**Fisheries:** Caught mainly with bottom trawls. **Distinctive Characters:** Rostrum armed with 7–9 dorsal teeth; in females, sigmoid-shaped, toothless, on distal third to half, upcurved and exceeding antennular peduncle; in large males, curving downward, the unarmed portion absent and only reaching to middle of 2<sup>nd</sup> antennular article; longitudinal suture extending to about 3/4 of carapace length; male petasma with distomedian projection ear-like; posterior plate of thelycum (in females) without anterolateral tooth-like projections; but bearing a median tuft of hairs.

**Colour:** Body pale with wide, dark brown (almost black) transverse bands; carapace dark brown dorsally, except for a white band about its middle; uropods yellow to pink, with a very wide, dark brown middle transverse band.





Size: To 13 cm (males), 17 cm (females)(BL)

Parapenaeopsis (Parapenaeopsis) stylifera (H. Milne Edwards, 1837)

FAO names: Kiddi shrimp (En) Crevette kidi (Fr)

#### Local name(s): ???

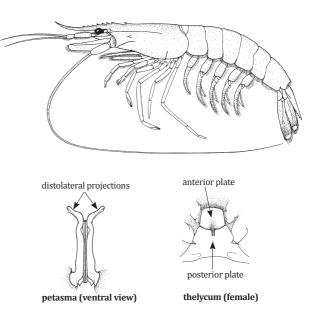
**Habitat:** Found from near the coastline to about 90 m depth, but usually in less than 50 m on mud or sandy-mud.

Fisheries: Caught mainly with bottom trawls.

**Distinctive Characters:** Rostrum sigmoid-shaped, strongly upcurved and by far overreaching tip of antennular peduncle (in males somewhat shorter), armed with 7–9 dorsal teeth; but toothless in distal half or more; telson armed with 4 pairs of small movable lateral spines; distolateral projections of petasma (males) slender, horn-like and straight; thelycum (females) with anterior plate squarish, posterior plate with a narrow median cleft on anterior margin.

**Colour:** Pale brownish or pinkish white, sometimes greyish; rostrum and abdominal crest darker; pereiopods and pleopods yellowish pink to reddish pink; distal part of uropods dark grey, their tips distinctly white.

**Remarks:** The species *Parapenaeopsis* (*Parapenaeopsis*) coromandelica Alcock, 1906, differs mainly from this species in having fewer small movable lateral telson spines, is here not recognized as a distinct species or subspecies.



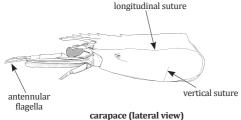
#### Parapenaeus longipes Alcock, 1905

#### Local name(s): ???

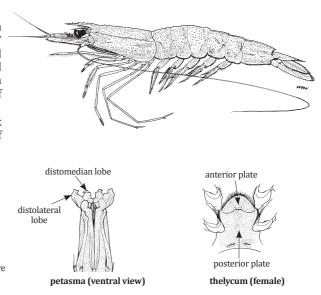
Habitat: Rather deep waters from 10 m to 90 m. Fisheries: Caught mainly with bottom trawls.

**Distinctive Characters:** Body hairless; rostrum slightly curved downward and armed with 6–7 dorsal teeth and no ventral teeth; branchiostegal spine absent; no trace of hepatic crest; longitudinal and vertical suture present; antennular flagella shorter than carapace; telson armed with 1 pair of fixed lateral spines.

**Colour:** Pink to whitish, speckled with pink chromatophores; a red spot on distomedian part of outer uropods.



FAO names: Flamingo shrimp (En) Crevette flamand (Fr)



Size: To 7.6 cm (males), 7.9 cm (females)(BL)

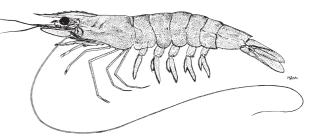
#### Penaeus (Fenneropenaeus) indicus H. Milne Edwards, 1837

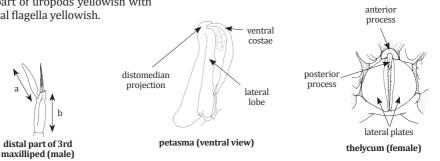
#### Local name(s): Ye-Lite-Puzun.

Habitat: Shelf areas from the coastline to 90 m. Fisheries: Caught mainly with bottom trawls.

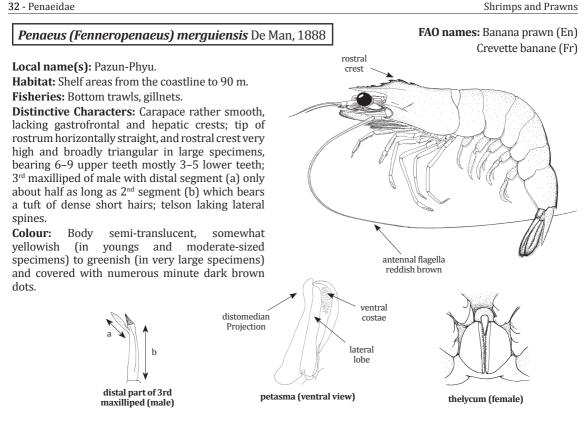
**Distinctive Characters:** Carapace rather smooth lacking gastrofrontal and hepatic crests; rostrum slightly curved at tip and sigmoidal-shaped with 7–9 teeth on dorsal and 3–6 teeth on ventral margin; 3<sup>rd</sup> maxilliped of male with distal segment (a) about as long as 2<sup>nd</sup> segment (b) which bears a tuft of dense long hairs; telson laking lateral spines. **Colour:** Body semi-translucent, somewhat yellowish white (small specimens) or greyish green and covered with numerous minute dark brown dots; distal part of uropods yellowish with red margins; antennal flagella yellowish.

FAO names: Indian white prawn (En) Crevette royale blanche (Fr)





Size: To 18.4 cm (males), 23 cm (females)(BL)



Size: To 24 cm (males), 20 cm (females)(BL)

FAO names: Redtail prawn (En)

Penaeus (Fenneropenaeus) penicillatus Alcock, 1905

#### Local name(s):???

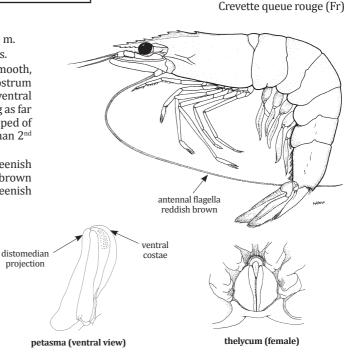
**Habitat:** Shelf areas from the coastline to 90 m. **Fisheries:** Caught mainly with bottom trawls.

**Distinctive Characters:** Carapace rather smooth, lacking gastrofrontal and hepatic crests; rostrum with 7–9 teeth on dorsal and 3–5 teeth on ventral margin; adrostral crest and groove extending as far as or just beyond epigastric tooth; 3<sup>rd</sup> maxilliped of male with distal segment (a) much longer than 2<sup>nd</sup> segment (b); telson laking lateral spines.

**Colour:** Body semi-translucent, slightly greenish and covered with numerous minute dark brown dots; distal half of uropods yellowish to greenish but always with reddish tips.

tuft of hairs

very long



distal part of 3rd maxilliped (male)

Size: To 21.2 cm (males), 16.3 cm (females)(BL)

last

brown

band

FAO names: Western kuruma prawn (En)

anterior

process

ventral

costae

#### Penaeus (Marsupenaeus) pulchricaudatus Stebbing, 1914

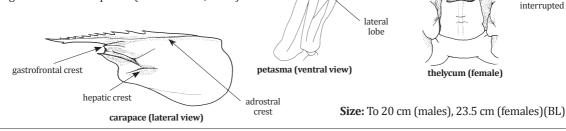
Local name(s): Thae-Puzun.

Habitat: Shelf areas from the coastline to 90 m. Fisheries: Caught mainly with bottom trawls.

**Distinctive Characters:** Carapace with grooves and crests very distinct, bearing both gastrofrontal and hepatic crests; rostrum with 9–10 upper teeth and 1 lower tooth, lacking distinct accessory crest on the blade; adrostral crest extending near to posterior margin of carapace; thelycum of females a well-developed pouch with double tubes, opened anteriorly; telson with 3 pairs of movable lateral spines.

**Colour:** Body pale yellowish and crossed with dark brown transverse bands (only reaching the middle part on the carapace); distal part of uropods with a patch of bright yellow, followed by another patch of bright blue, and with red margins.

**Remarks:** Previously synonymized with *Penaeus* (*Marsupenaeus*) *japonicus* Bate, 1888, but now regarded as a valid species (see Tsoi *et al.*, 2014).



distomedian

projection

Penaeus (Melicertus) canaliculatus (Olivier, 1811)

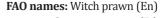
Local name(s): Pazun-Kyar-Yoe.

Habitat: Coastline to deep waters down to 50 m. Fisheries: Caught mainly with bottom trawls.

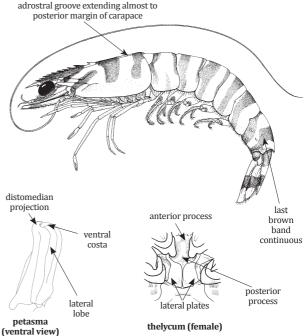
**Distinctive Characters:** Carapace with grooves and crests very distinct, bearing both gastrofrontal and hepatic crests; rostrum with 10–11 upper teeth and 1 lower tooth; thelycum of females formed by 2 subrectangular lateral plates, with their anterolateral angles diverging; anterior process suboval; posterior process somewhat triangular; telson lacking lateral spines.

**Colour:** Body pale yellowish and crossed with dark brown transverse bands; distal part of uropods with a patch of bright yellow, followed by another patch of bright blue, and with reddish margins.





Crevette sorciere (Fr)



Size: To 14.5 cm (males), 18.2 cm (females)(BL)

#### Penaeus (Melicertus) latisulcatus Kishinouye, 1896

FAO names: Western king prawn (En) Crevette royale occidentale (Fr)

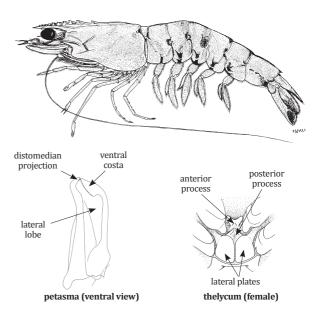
#### Local name(s): Pazun-Mee-Ni.

**Habitat:** From the coastline to depths of about 90 m, on bottoms of sand, mud, or gravel, with a clear preference for sandy substrates.

Fisheries: Caught mainly with bottom trawls.

**Distinctive Characters:** Carapace bearing both gastrofrontal and hepatic crests; rostrum generally armed with 10–11 upper teeth (including those on carapace) and 1 lower tooth; postrostral crest well developed and with a deep median groove throughout its length; adrostral groove extending almost to posterior margin of carapace and distinctly wider than postrostral crest; ischial spine on 1<sup>st</sup> pereiopod indistinct or nearly absent; telson with 3 pairs of movable lateral spines.

**Colour:** Body generally yellowish green, becoming slightly reddish in large adults; abdominal segments each with a short vertical black bar on pleuron; uropods bright yellow, with distal half and outer margins of exopods bright blue, other margins reddish.



Size: To 16.2 cm (males), 20.2 cm (females)(BL)

#### Penaeus (Melicertus) longistylus (Kubo, 1943)

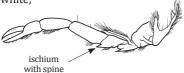
Local name(s): Pazun-Kyar-Yoe.

**Habitat:** Inhabits reefs, sand or sandy-mud bottoms in depths from 18 to 60 m.

Fisheries: Caught mainly with bottom trawls.

**Distinctive Characters:** Carapace bearing both gastrofrontal and hepatic crests; rostrum with 10–12 upper teeth and 1 lower tooth; postrostral crest well developed, with a deep median groove extending to about half of its length; adrostral groove extending almost to posterior margin of carapace and about twice as wide as postrostral crest; 1<sup>st</sup> pereiopod bearing a strong ischial spine; telson with 3 pairs of movable lateral spines.

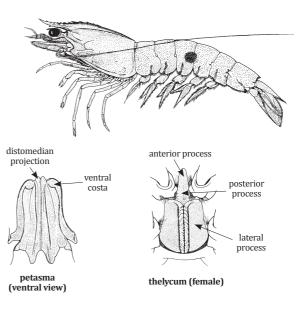
**Colour:** Body generally yellowish green, becoming slightly pinkish in large adults; lower border of carapace reddish; posteroventral carapace and abdominal pleura each with a short vertical black bar except 5<sup>th</sup> pleuron which bears 2 vertical bars; lateral side of third abdominal segment often with a large red-brown circular spot; antennal flagella yellowish white;



1st pereiopod



Crevette royale à taches rouges (Fr)



FAO names: Giant tiger prawn (En)

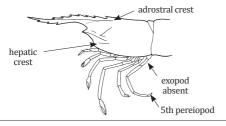
Crevette geante tigrée (Fr)

Local name(s): Pazun-Kyarr. Habitat: From the coastline to about 150 m on sand or mud bottoms; juveniles in mangrove swamps. Fisheries: Bottom trawls, gillnets.

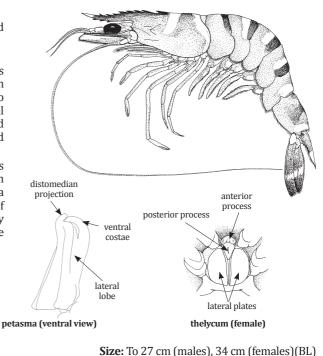
Penaeus (Penaeus) monodon Fabricius, 1798

**Distinctive Characters:** Carapace with grooves and crests distinct; rostrum with 6–8 dorsal teeth and 3 ventral teeth; adrostral crest extending to just before last postrostral tooth; gastrofrontal crest absent; hepatic crest almost horizontal and extending far behind antennal crest; 5<sup>th</sup> pereiopod without exopod; telson laking lateral spines.

**Colour:** Body green-grey to brown, sometimes reddish or bluish; dorso-posterior margin of carapace generally cream yellow; often a transverse band of the same colour near middle of carapace; abdomen with dark brown to dark grey and pale yellow dorsal transverse bands; antennae uniformly greenish brown, not banded.



Penaeus (Penaeus) semisulcatus De Haan, 1844



Size. 10 27 cm (males), 54 cm (lemales)(DL)

FAO names: Green tiger prawn (En)

Crevette tigrée verte (Fr)

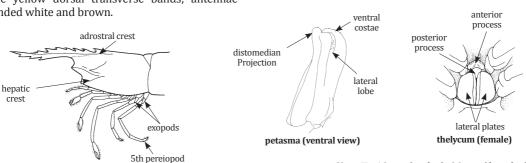
Local name(s): Pazun-Sein-Kyarr.

**Habitat:** Continental shelf from the coastline down to 130 m, on mud or sand bottoms.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Carapace with grooves and crests distinct; rostrum with 6–8 upper teeth and 3 lower teeth; adrostral crest extending beyond last postrostral tooth; gastrofrontal crest absent; hepatic crest long and extending behind antennal crest, straight but distinctly sloping anteroventrally; 5<sup>th</sup> pereiopod with exopod (somewhat hidden beneath carapace); telson laking lateral spines.

**Colour:** Body pale brown, sometimes greenish; carapace often with 2 yellow-cream dorsal transverse bands; abdomen with brown-grey and pale yellow dorsal transverse bands; antennae banded white and brown.



Size: To 18 cm (males), 23 cm (females)(BL)

## Trachysalambria aspera (Alcock, 1905)

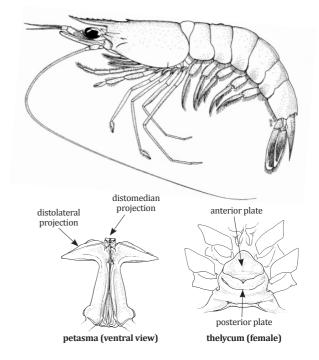
Local name(s): Gaung-Gyi-Thae-Puzun.

**Habitat:** Found on sand and mud bottoms from 8 m to about 110 m.

Fisheries: Caught mainly with bottom trawls.

**Distinctive Characters:** Body densely pubescent, with grooves and crests on carapace indistinct; rostrum armed with 8–10 (excluding epigastric tooth) dorsal teeth; in adult females, rostrum moderately upcurved to straight; in males and juveniles rostrum straight to slightly curving downwards; first 3 pairs of pereiopods bearing epipods; 1<sup>st</sup> pereiopod generally armed with an ischial spine; last 5 abdominal segments with a low dorsal crest, the 4<sup>th</sup> and 5<sup>th</sup> distinctly incised posteriorly.

**Colour:** Body pinkish red to pinkish orange, with paler lateral surfaces; antennular and antennal flagella pale white; abdominal segments whitish, somite II sometimes with a broad saddle-shaped red patch; uropods almost entirely reddish, with basal parts whitish; eyes black-brown.



Size: To 8.1 cm (males), 10.5 cm (females)(BL)

SICYONIIDAE

#### Rock shrimps

Sicyonia parajaponica Crosnier, 2003

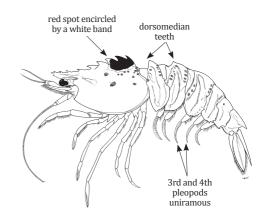
Local name(s): Not available.

Habitat: Soft bottoms from 100 m to 150 m depth. Fisheries: Bottom trawls.

**Distinctive Characters:** Body robust and pubescent; shell very hard and granular; rostrum nearly horizontal and narrow, with 2–3 dorsal teeth and 1 sub-apical tooth; lower margin with 1 tooth; carapace armed with 6 strong, crest-like postrostral teeth as well as a very strong hepatic spine; 1<sup>st</sup> abdominal segment with an upwards directed dorsomedian tooth; 2<sup>nd</sup> abdominal segment with an acute dorsomedian tooth; ventral margin of pleura of first 3 abdominal segments ending in a single spine, 4<sup>th</sup> and 5<sup>th</sup> with 2–4 spines on hind margin.

**Colour:** Body grey-green scattered with muddy white and deep brown stripes and minute redbrown dots; ventral surface and pleopods red; antennal and antennular flagellae banded; large red spot encircled by white band at posterior dorsum of carapace.

FAO names: False Japanese rock shrimp (En)



FAO names: Indian rough shrimp (En)

## SOLENOCERIDAE

## Solenocerid shrimps

#### Haliporus taprobanensis Alcock & Anderson, 1899

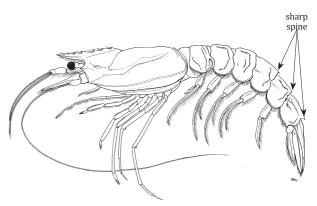
#### FAO names: Indian grooved shrimp (En)

Local name(s): Ye-Net-Puzun.

Habitat: Soft bottoms from 520 m to 1 200 m. Fisheries: Deep bottom trawls. Not yet fished commercially in the area.

**Distinctive Characters:** Rostrum slightly upwardly directed, armed with 7–8 dorsal teeth (including 3–4 teeth on carapace) and extending to end of 2<sup>nd</sup> antennular article; no ventral teeth on rostrum; antennal, post-antennal, hepatic and pterygostomian spines present but no postorbital spine; abdominal segments with a low dorsal crest; 4<sup>th</sup> to 6<sup>th</sup> abdominal segments each bearing a strong posteromedian spine; telson with movable lateral spines.

**Colour:** Body pale pinkish white; dorsal margin of abdomen; rostrum, antennal scale, antennae, maxillipeds and inner part of pleopods red-orange; eyes black.



Size: To 9.5 cm (males), 13 cm (females)(BL)

FAO names: Ridgeback shrimp (En)

Salicoque balafrée (Fr)

postrostral crest plate-like

Solenocera choprai Nataraj, 1945

Local name(s): Ye-Net-Puzun. Habitat: Soft bottoms from 75 m to 110 m. Fisheries: Deep bottom trawls.

**Distinctive Characters:** Rostrum with 8–10 dorsal teeth (including 4 teeth on carapace); lower border moderately convex; postrostral crest platelike, reaching posterior margin of carapace and interrupted by a notch just ahead of cervical groove; post-orbital spine present but no suprahepatic spine; telson with a pair of fixed lateral spines.

**Colour:** Body, pereiopods and pleopods red; antennae banded dark red and white; uropods dark red, except for some white areas.

#### Solenocera crassicornis (H. Milne Edwards, 1837)

Local name(s): Ye-Net-Puzun.

**Habitat:** Inhabits muddy bottoms close to shore, at depths from 20 to 85 m.

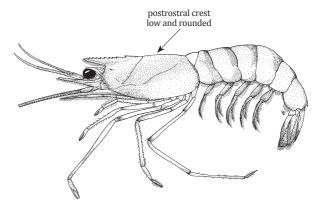
Fisheries: Bottom trawls.

**Distinctive Characters:** Rostrum with 4–7 (mostly 5) dorsal teeth; lower border unarmed and somewhat convex; postrostral crest low and rounded; post-orbital spine present but no suprahepatic spine; telson without lateral spines.

**Colour:** Body pink to pinkish orange; posterior border of each abdominal segment covered with a red cross band; eyes dark brown; antennular flagella and distal part of tail fan reddish.

Solenocera halli Starobogatov, 1972

FAO names: Coastal mud shrimp (En) Salicoque des vases côtières (Fr)



Size: To 9 cm (males), 14 cm (females)(BL)

FAO names: Malayan mud shrimp (En)

Local name(s): Ye-Net-Puzun. Habitat: Found in shallow waters at depths from 48 and 75 m. Fisheries: Bottom trawls. Distinctive Characters: Rostrum with 8-9 dorsal teeth; lower border razor-shaped, very straight or slightly concave; postrostral crest distinct but not plate-like; male petasma with dorsolateral lobe bearing 18–40 short terminal spinules; female thelycum with posterior thoracic ridge strongly bilobed and always bearing 2 pairs of protuberances in the middle, with submedian pair smaller than lateral pair; telson with a pair of fixed lateral spines. dorsolateral lobe submedian Colour: Not available. protuberances smaller straigh hepatic crest hilohed anterolateral corner rostrum petasma thelycum (female) of carapace (lateral view) (ventral view)

Size: To 10 cm (BL)

## SERGESTIDAE

## Sergestid shrimps

#### Acetes indicus H. Milne Edwards, 1830

Local name(s): Gway-Puzun.

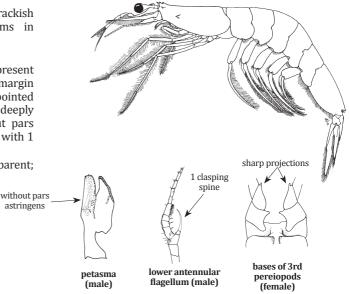
**Habitat:** Inhabits shallow, sometimes brackish coastal waters; epipelagic, usually swims in midwater or near the surface.

#### Fisheries: Push nets.

**Distinctive Characters:** Procurved tooth present between bases of 1<sup>st</sup> pleopods; inner margin of basis of 3<sup>rd</sup> pereiopods with sharply pointed projections; 3rd and 4th thoracic sternites deeply channeled longitudinally; petasma without pars astringens; and lower antennular flagellum with 1 clasping spine in males.

**Colour:** In life, whole body almost transparent; milky or yellowish when dead.

FAO names: Jawla paste shrimp (En) Chevrette jawla (Fr)



Size: To 1.5-2.5 cm (males), 2.3-4 cm (females)(BL)

## FAO names: Akiami paste shrimp (En)

Chevrette akiami (Fr)

#### Acetes japonicus Kishinouye, 1905

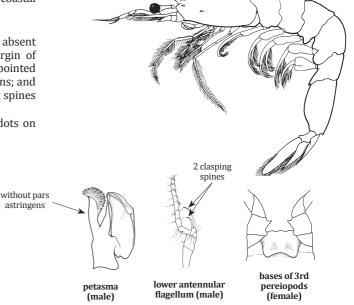
#### Local name(s): Gway-Puzun.

**Habitat:** Epipelagic, inhabits shallow coastal waters over muddy bottoms.

#### Fisheries: Push nets.

**Distinctive Characters:** Procurved tooth absent between bases of 1<sup>st</sup> pleopods; inner margin of basis of 3<sup>rd</sup> pereiopods without sharply pointed projections; petasma without pars astringens; and lower antennular flagellum with 2 clasping spines in males.

**Colour:** Body pale pink with several red dots on abdomen and basal parts of the tail fan.



Size: To 1.1-2.4 cm (males), 1.5-3.0 cm (females)(BL)

## PASIPHAEIDAE

Glass shrimps

#### Pasiphaea unispinosa Wood-Mason, 1892

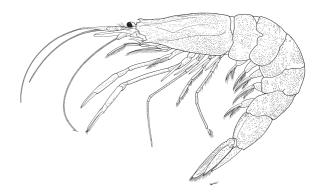
Local name(s): Puzun.

**Habitat:** Bathypelagic at depths of 365–1 133 m. **Fisheries:** Deep bottom trawls. Not yet fished commercially in the area.

**Distinctive Characters:** Carapace dorsally carinate; rostrum triangular in lateral view; abdominal somites unarmed and dorsally flattened or bluntly carinate; 1<sup>st</sup> pereiopod without spine on merus; 2<sup>nd</sup> pereiopod with 1 spine near midlength of distal 2/5 of merus; posterodistal spine of basis of 2<sup>nd</sup> pereiopod smaller than that of 1st pereiopod; fingers shorter than palm; posterior margin of telson truncated, not curve.

Colour: Not available.

FAO names: Giant glass shrimp (En)



Size: To about 5 cm (males), about 14 cm (females)(BL)

## ACANTHEPHYRIDAE

Deepsea shrimps

FAO names: Orange deepsea shrimp (En)

Acanthephyra eximia Smith, 1884

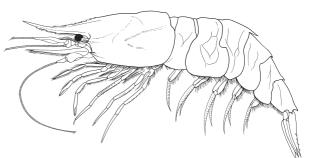
Local name(s): Puzun.

**Habitat:** Bathypelagic at depths of 200 to more than 4 700 m.

**Fisheries:** Deep bottom trawls. Not yet fished commercially in the area.

**Distinctive Characters:** Rostrum very variable in length, in adults about 4/5 as long as carapace and often exceeding antennal scale; ventral margin of rostrum convex, armed with 1–5 (usually 3) teeth; dorsal margin of carapace sharply carinate throughout most of its length; abdomen dorsally carinate on all but anterior somite; 3<sup>rd</sup> to 6<sup>th</sup> abdominal segments each with posteromedian spine; 3<sup>rd</sup> somite with posterior margin slightly escavate either side of median tooth.

Colour: Body uniformly bright orange-red.



## PALAEMONIDAE

## Palaemonid shrimps

#### Exopalaemon styliferus (H. Milne Edwards, 1840)

#### Local name(s): Pazun-Pyaung-Htote.

**Habitat:** Inhabits shallow coastal waters, brackish or marine, occasionally also in fresh water.

**Fisheries:** Bottom trawls, gillnets, bag nets. **Distinctive Characters:** Rostrum long and slender, with an elevated basal crest of 5–7 teeth over the eye; most of distal part of dorsal margin toothless, save for 1–2 subdistal teeth; branchiostegal spine and branchiostegal groove present; dactyls of 5<sup>th</sup> pair of pereiopods about 1/3 as long as propodus. **Colour:** Whitish translucent, with distal part of rostrum dark reddish brown and some darker spots on tips of uropods and telson; ovigerous females with large dark spots on first 4 abdominal pleura; eggs of berried females yellowish.

#### *Macrobrachium equidens* (Dana, 1852)

#### Local name(s): ??

**Habitat:** Inhabits lower parts of streams, river mouths and sea waters to a depth of at least 30 m. **Fisheries:** Bottom trawls, gillnets, bag nets.

**Distinctive Characters:** Rostrum rather long, reaching to about end of antennal scale, armed with 9–13 upper teeth and 4–7 lower teeth; hepatic spine located on horizontal line through antennal spine; in adult males, 2<sup>nd</sup> pair of pereiopods long and strong, the fingers, but not the other parts, covered by a dense velvety pubescence; 1 or 2 enlarged proximal teeth on cutting edges of fingers. **Colour:** Translucent, marbled or spotted with greyish, greenish or reddish; 2<sup>nd</sup> pair of pereiopods, and especially the palms, marbled with dark brownish (tortoise shell-like).

## *Macrobrachium lar* (Fabricius, 1798)

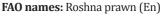
#### Local name(s): ??

**Habitat:** Adults occur mainly in fresh water; juvenile stages in brackish and salt water.

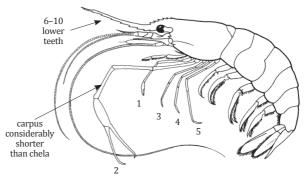
Fisheries: Bottom trawls, gillnets, bag nets.

**Distinctive Characters:** Rostrum short, armed with 7–10 upper teeth and 2–4 lower teeth; hepatic spine located below a line through antennal spine; in adult males, 2<sup>nd</sup> pair of pereiopods very large, all segments covered with a short pubescence; 1 very strong proximal tooth on cutting edges of fingers (dactylus tooth well advanced respect to the tooth on pollex).

**Colour:** Light olive to dark brown or blue, often with swirls of orange-brown, blue-gray on carapace; orange-red blotch near the base of the large chelipeds dactylus.

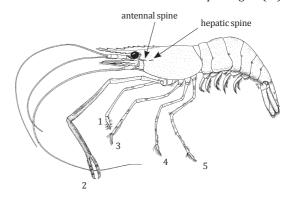


Bouget rosna (Fr)



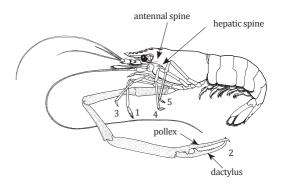
Size: To 9 cm (males), 8.6 cm (females)(BL)

FAO names: Rough river prawn (En) Bouget chagrin (Fr)



Size: To 9.8 cm (males), about 6.5 cm (females)(BL)

#### FAO names: Monkey river prawn; (En) Bouqet singe (Fr)



Size: To 18.1 cm (males), about 10 cm (females)(BL)

#### Macrobrachium malcolmsonii (H. Milne Edwards, 1844)

#### FAO names: Monsoon river prawn (En) Bouquet mousson (Fr)

#### Local name(s): ??

**Habitat:** Essentially an inhabitant of flowing waters such as rivers and estuarine areas.

#### Fisheries: ??

**Distinctive Characters:** Rostrum rather long, reaching to about end of antennal scale, forming a high basal crest above the eye armed with 7-11 upper teeth; 4-7 lower teeth on rostrum; hepatic spine situated distinctly below antennal spine; in adult males,  $2^{nd}$  pair of pereiopods with a very short pubescence which is especially distinct on the movable finger.

**Colour:** Body and anterior two pairs of pereiopods (chelipeds) dark grey, paler ventrally; antennae and inner flagella of antennules grey; outer flagella brownish.

#### *Macrobrachium rosenbergii* (De Man, 1879)

#### Local name(s): Ye-Cho-Pazun-Htote.

**Habitat:** Inhabits mainly estuarine areas and rivers but sometimes also found at sea.

Fisheries: Bottom trawls, gillnets, bag nets.

**Distinctive Characters:** Rostrum long, well extending beyond antennal scale, forming a high basal crest above the eye armed with 11–14 upper teeth; hepatic spine situated distinctly below antennal spine; in adult males, entire 2<sup>nd</sup> pair of pereiopods densely covered with spines and sharp tubercles.

**Colour:** Body generally dark green to greyish blue, with longitudinal or irregular streaks of darker and lighter colour; hinges of abdominal segments often orange; eggs yellowish; youngs and berried females often with some longitudinal golden strips on the sides of body.

## Nematopalaemon tenuipes (Henderson, 1893)

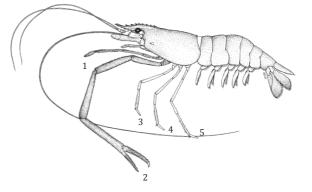
#### Local name(s): Pazun-Bawt-Jate.

**Habitat:** Inhabits shallow coastal waters to depths of about 20 m, and also found in estuarine and brackish waters.

Fisheries: Bottom trawls, gillnets, bag nets.

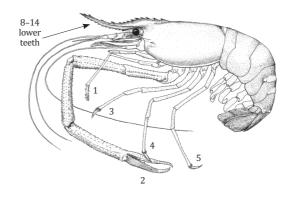
**Distinctive Characters:** Rostrum long and slender, with an elevated basal crest of 4–7 teeth over the eye; most of distal part of dorsal margin toothless save for a small subdistal tooth; dactyls of 3<sup>rd</sup> to 5<sup>th</sup> pairs of pereiopods extremely long and thin, far longer than propodus and carpus combined.

**Colour:** Whitish translucent with distal part of rostrum dark reddish brown; some reddish brown colour on antennae, antennules and distal margins of uropods and telson; also a reddish brown spot on bases of uropods.

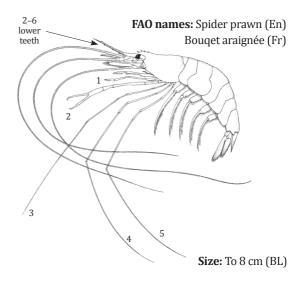


Size: To 23 cm (males), 20 cm (females)(BL)

#### FAO names: Giant river prawn(En) Bouqet géant (Fr)



Size: To 34 cm (males), 26 cm (females)(BL)



## PANDALIDAE

#### Pandalid shrimps

#### Heterocarpus chani Li, 2006

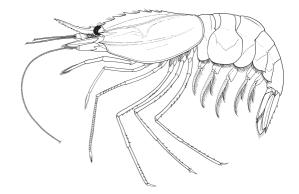
#### FAO names: Smooth nylon shrimp (En)

Local name(s): Ye-Net-Puzun.

Habitat: Sandy mud bottoms at 382 to 888 m deep. Fisheries: Deep bottom trawls. Not yet fished commercially in the area.

**Distinctive Characters:** Rostrum curved upwards extending beyond distal edge of antennal scale; dorsal margin with 8–9 teeth of which 5 are situated behind the orbit; ventral margin with 13–15 teeth along entire length (tooth size progressively reduced distally); abdomen unarmed dorsally with blunt median carina on 3<sup>rd</sup> segment; pleura of 4<sup>th</sup> and 5<sup>th</sup> abdominal segments with acute posteroventral tooth; exopod on 3<sup>rd</sup> maxilliped reduced but distinct.

**Colour:** Body orange-red; eyes black-brown; flagella, pereiopods, pleopods and tail fan generally reddish; eggs dark green.



Size: To 8.5 cm (males), about 10 cm (females)(BL)

*Heterocarpus sibogae* De Man, 1917

Local name(s): Ye-Net-Puzun.

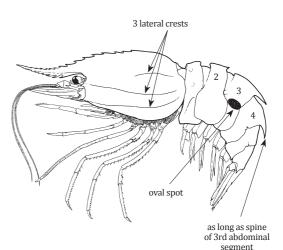
**Habitat:** Found on bottoms of sand and mud from depths of 123–850 m.

**Fisheries:** Deep bottom trawls. Not yet fished commercially in the area.

**Distinctive Characters:** Rostrum slightly curved upwards extending beyond distal edge of antennal scale; dorsal margin with 9–26 teeth of which 3–7 are situated behind the orbit; ventral margin with 6–13 teeth along entire length; carapace with 3 lateral crests on each side; distinct mid-dorsal keel on abdominal segments 1<sup>st</sup> to 4<sup>th</sup>, those of 3<sup>th</sup> and 4<sup>th</sup> produced posteriorly into a long and similar size spine.

**Colour:** Body pale pink to pale red, carapace often orangish red, a red band near tip of rostrum, a large reddish spot on lateral side of 3<sup>rd</sup> abdominal segment, eggs bright blue.

FAO names: (En) Mino nylon shrimp (Fr)Crevette nylon mino



#### Heterocarpus woodmasoni Alcock, 1901

Local name(s): Ye-Net-Puzun.

**Habitat:** Found on bottoms of sand and mud from depths of about 275–655 m.

**Fisheries:** Deep bottom trawls. Not yet fished commercially in the area.

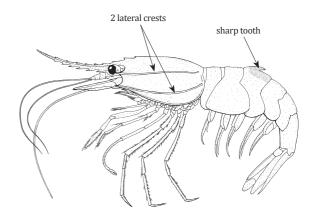
**Distinctive Characters:** Rostrum long, slightly curved, with 9–11 dorsal and 6–9 ventral teeth; dorsal teeth starting in anterior fourth of carapace; carapace with 2 lateral crests on each side, extending over the full length of carapace; mid-dorsal keel present from 3<sup>rd</sup> to 5<sup>th</sup> abdominal segments, not ending in posterior spines; a conspicuous elevated, sharp tooth at middle of dorsal crest of 3<sup>rd</sup> segment.

**Colour:** Body evenly pinkish red; eyes black brown; eggs brownish green.

FAO names: Indian nylon shrimp (En)

Shrimps and Prawns

Crevette nylon indienne (Fr)



Size: To 14.9 cm (BL)

Plesionika quasigrandis Chace, 1985

Local name(s): Ye-Net-Puzun.

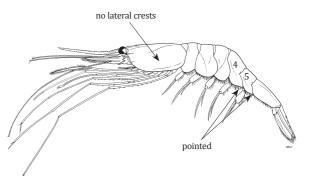
**Habitat:** Sandy mud bottom at depths of 164-501 m.

**Fisheries:** Deep bottom trawls. Not yet fished commercially in the area.

**Distinctive Characters:** Rostrum long, slightly curved, with 41–53 (including 4–7 teeth on post-rostral ridge of carapace) dorsal and 32–44 ventral teeth; posterior 10 ventral rostral teeth corresponding to 8 or fewer dorsal teeth; abdomen unarmed dorsally; pleura of 4<sup>th</sup> and 5<sup>th</sup> abdominal segments pointed.

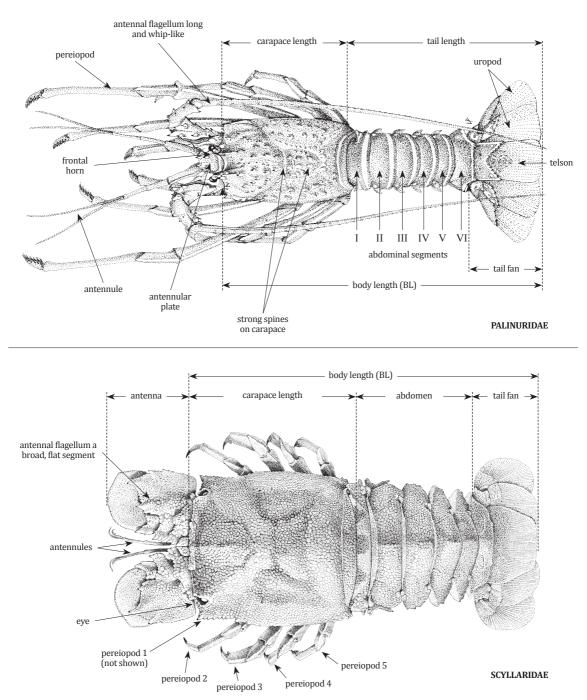
**Colour:** Body generally pale pink and covered with dense reddish pink dots; antennal flagella red or white; eggs bright blue.

FAO names: Indian pink shrimp (En)



## LOBSTERS

Lobsters of the genera *Panulirus* and *Thenus* are of high commercial value locally and internationally. Five species occur in reasonable numbers in Myanmar: *Panulirus homarus, Panulirus ornatus, Panulirus polyphagus, Panulirus versicolor* and *Thenus indicus*. These are caught along the coast by traps, gillnets and free-diving. Four species, *Metanephrops andamanicus, Linuparus somniosus, Palinustus waguensis* and *Puelurus sewelli*, have been collected during experimental trawl surveys in off-shore waters. They are presently not commercially exploited but may represent potential fishery resources. Fifteen species belonging to 3 families are included in the guide.



## **TECHNICAL TERMS AND MEASUREMENTS**

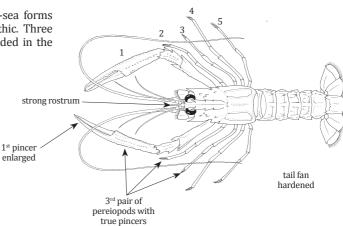
Page 53

## **GUIDE TO FAMILIES**

#### **NEPHROPIDAE**

**True lobsters and lobsterettes** 

To about 20 cm (BL). Marine, all deep-sea forms from 150 to more than 1 893 m; benthic. Three species of interest to fisheries are included in the Guide to Species.



#### PALINURIDAE

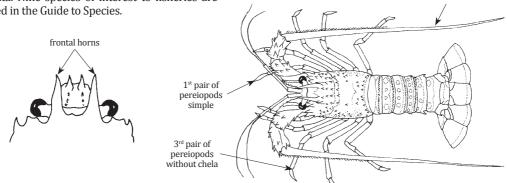
Page 54

Page 59

antennal flagellum

#### Spiny lobsters

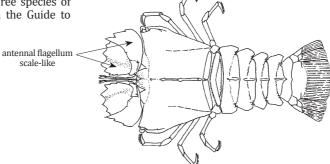
To about 50 cm (BL). Marine, mostly shallow waters on coral and sand stone reefs, some species on soft substrata. Nine species of interest to fisheries are included in the Guide to Species.



#### SCYLLARIDAE

#### **Slipper lobsters**

To about 30 cm (BL). Marine, shallow and deep waters down to 484 m; benthic. Three species of interest to fisheries are included in the Guide to Species.



## **NEPHROPIDAE**

True lobsters and lobsterettes

#### Metanephrops and amanicus (Wood-Mason, 1892)

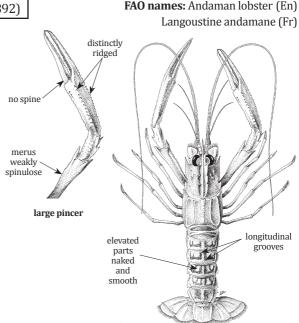
Local name(s): Ye-Net-Puzun.

**Habitat:** On hard mud in depths from 250 to 750 m, but mostly from 300 to 450 m; probably lives in burrows.

**Fisheries:** Deep bottom trawls. Not yet fished commercially in the area.

**Distinctive Characters:** Carapace smooth between the ridges and large spines; postrostral carinae with 3 teeth; abdomen with distinct transverse and longitudinal grooves; large pincers distinctly ridged; no prominent basal spine on outer edge of movable finger of large pincers; inner margin of merus of large pincers weakly spinulose.

**Colour:** Body uniformly red-orange; large pincers somewhat banded white and red; postrostral carinae white; eyes black.



Size: To 20 cm (BL)

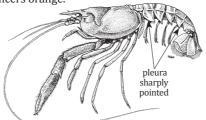
#### Nephropsis carpenteri Wood-Mason, 1885

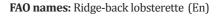
Local name(s): Ye-Net-Puzun-Htote.

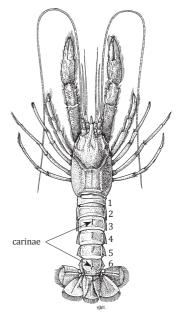
**Habitat:** Depth range between 200 and 500 m. **Fisheries:** Deep bottom trawls. Not yet fished commercially in the area.

**Distinctive Characters:** Body granular and hairy; all pleura sharply pointed ventrally but lacking spines on front edges; rostrum armed with 1 pair of lateral spines and extending to anterior margin of antennular peduncles; abdominal somites 3 to 6 with a median londitudinal carina; large pincers very hairy.

**Colour:** Dorsal side of body light orange (anterior carapace and tail fan more intensely coloured); lateral parts of carapace and of abdominal segments sometimes white; antennal and antennular flagella white to red; pereiopods white, with distal segments orange; large pincers orange.







## Nephropsis stewarti Wood-Mason, 1872

Local name(s): Ye-Net-Puzun-Htote.

**Habitat:** Deep sea at depths from 170 to 1 060 m, mostly between 500 and 750 m on soft muddy substrate.

**Fisheries:** Deep bottom trawls. Not yet fished commercially in the area.

**Distinctive Characters:** Similar to *Nephropsis carpenteri* but rostrum slightly longer; abdominal somites without any trace of median londitudinal carina.

**Colour:** Body whitish and covered with thick grey fur; anterior carapace including rostrum, ventral surface, mouth parts and tail fan pink-red; antennal and antennular flagella orange; pereiopods orangepink, with distal segments reddish; large pincers sometimes slightly orange; eggs white.

Size: To 20 cm (BL)

PALINURIDAE

Spiny lobsters

*Linuparus somniosus* Berry & George, 1972

Local name(s): Ye-Net-Puzun.

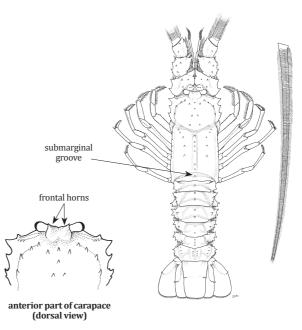
**Habitat:** On rough substrates with sand and mud in depths from 216 to 375 m.

**Fisheries:** Deep bottom trawls. Not yet fished commercially in the area.

**Distinctive Characters:** Antennal flagella straight and inflexible; frontal horns fused to a broad 2– spined median projection on the anterior margin of the carapace between the eyes; no strong median teeth present between frontal horns; abdominal pleura bearing a few enlarged tubercles but basal teeth absent; submarginal posterior groove of carapace much wider medially than laterally; vestigial pleopods present on 1<sup>st</sup> abdominal segment of female.

**Colour:** Dorsal surface of antennal peduncles, carapace and abdomen reddish brown; lateral parts of the antennal peduncles and carapace dull white; antennal flagella dirty white; ventral surface of body and pereiopods dull white, with antennal peduncles, epistome and sternum pale reddish brown.

FAO names: African spear lobster (En)



FAO names: Indian Ocean lobsterette (En) Langoustine indienne (Fr)

no median

longitudinak

carinae

**Habitat:** Inhabits shallow waters among rocks, often in the surf zone. Maximum depth 90 m.

**Fisheries:** Mostly by gillnets, traps and free-diving. **Distinctive Characters:** Carapace rounded, covered with numerous spines of various sizes; flagella of antennules longer than peduncle; rostrum absent; bases of antennae separated by a broad antennular plate bearing 2 equal, well separated pairs of principal spines and scattered smaller spines in between; each abdominal segment with a transverse groove, sometimes interrupted in the middle, its anterior margins formed into shallow scallops; pereiopods 1 to 4 without pincers.

**Colour:** Dark greenish to blackish with numerous, very small white spots especially distinct on posterior half of abdomen, without transverse bands; antennules banded with white and green; pereiopods with indistinct white spots and stripes.

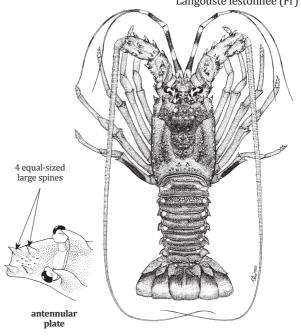
## Panulirus longipes (A. Milne-Edwards, 1868)

#### Local name(s): Ye-Net-Puzun.

Habitat: Found in shallow coral or rocky reefs (but can be found down to a depth of 130 m); nocturnal. Fisheries: Mostly by gillnets, traps and free-diving. Distinctive Characters: Carapace rounded and spiny; flagella of antennules longer than antennular peduncle; rostrum absent; antennular plate at bases of antennae bearing 1 pair of well separated principal spines and some scattered spinules; abdominal segments with complete transverse grooves.

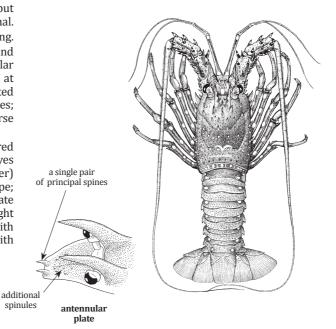
**Colour:** Body dark brown to indigo and covered with numerous white spots and markings; eyes black-brown; lateral carapace with 1 short (upper) and 1 long (lower) longitudinal white stripe; inner surfaces of antennae and antennular plate brown to purple and with stridulating pad bright blue; antennules dark brown and alternated with conspicuous white bands; abdomen covered with numerous small to medium-sized white spots.

FAO names: Scalloped spiny lobster (En) Langouste festonnée (Fr)



Size: To 31 cm (BL)

#### FAO names: Longlegged spiny lobster (En) Langouste diablotin (Fr)



#### Panulirus ornatus (Fabricius, 1798)

FAO names: Ornate spiny lobster (En) Langouste ornée (Fr)

Local name(s): Ye-Net-Puzun.

Habitat: Inhabits shallow, sometimes slightly turbid coastal waters usually on sand and mud substrates, but also on coral reefs and rocky bottoms. Maximum depth 8 m.

Fisheries: Mostly by gillnets, traps and free-diving. Distinctive Characters: Carapace rounded, covered with numerous spines and tubercles of different sizes; flagella of antennules longer than antennular peduncles; bases of antennae separated by a broad antennular plate bearing one pair of spines anteriorly and a 2<sup>nd</sup> pair in the middle of the plate; each abdominal segment smooth without a transverse groove; pereiopods without pincers.

Colour: Bluish or greenish spines on vellow carapace; anterior part of carapace and near the bases of the frontal horns and the anterior spines with a vermicular pattern of pale and dark lines; abdomen with a broad, dark transverse band over the middle of the segments, each segment with a large pale spot on sides and an additional oblique elongate mark higher up on the 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> segments; no transverse white band along posterior margin of the segments; antennular flagella banded; pereiopods with distinct, sharply defined dark and pale blotches.

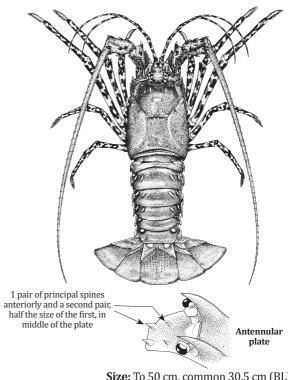
#### Panulirus penicillatus (Olivier, 1791)

Local name(s): Ye-Net-Puzun.

Habitat: Found in shallow waters, usually at depths from 1 to 4 m (maximum depth 16 m) at seaward edges of reefs, in clear waters not influenced by rivers.

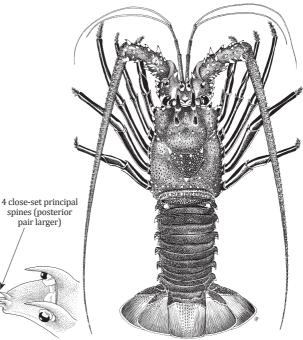
Fisheries: Mostly by gillnets, traps and free-diving. Distinctive Characters: Carapace rounded and spiny; flagella of antennules longer than antennular peduncle; rostrum absent; bases of antennae separated by a broad antennular space bearing 4 close-set principal spines (posterior pair larger); abdominal segments with a transverse groove, not continuous with pleural groove; pereiopods 1 to 4 without pincers.

Colour: Body dark blue and brown; males usually darker than females; eyes black; tips of large spines on carapace yellowish; antennular peduncle striped with white lines, flagella uniformly brownish; membranous areas at outer base of antenna light blue; legs conspicuously striped with white lines; abdomen with tiny pale dots; pleopods and soft part of tail fan black.



Size: To 50 cm, common 30.5 cm (BL)

FAO names: Pronghorn spiny lobster (En) Langouste fourchette (Fr)



antennular plate

Size: To 40 cm, common 20-30 cm (BL)

#### Panulirus polyphagus (Herbst, 1793)

#### Local name(s): Ye-Net-Puzun.

**Habitat:** Mainly found on muddy bottoms (sometimes also on rocky bottoms) in turbid waters near river mouths at depths from 3 to 90 m, but usually less than 40 m deep.

**Fisheries:** Mostly by gillnets, traps and free-diving. **Distinctive Characters:** Carapace rounded, covered with numerous spines of various sizes; flagella of antennules longer than antennular peduncle; rostrum absent; bases of antennae separated by a broad antennular space bearing a single pair of principal spines; abdominal segments without transverse grooves; pereiopods 1 to 4 without pincers.

**Colour:** Body dull green; eyes black-brown; spines on carapace with yellowish brown tips; orbital margin and posterior marginal groove yellowish white; antennular peduncle alternated with yellowish white and pale green bands; flagella banded with yellowish white and dark brown; pereiopods light brown with yellowish white blotches; abdomen with tiny pale dots; a yellowish white band with brown margins near posterior border of each segment.

#### *Panulirus versicolor* (Latreille, 1804)

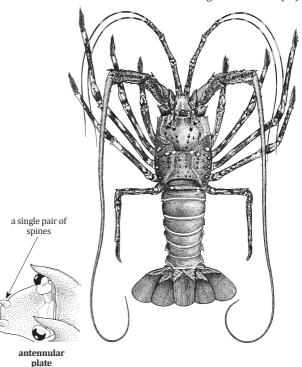
Local name(s): Ye-Net-Puzun.

**Habitat:** Shallow waters, from the sub-littoral zone down to 15 m, on coral reefs, often on the seaward edges of the reef plateau; nocturnal.

**Fisheries:** Mostly by gillnets, traps and free-diving. **Distinctive Characters:** Carapace rounded, covered with numerous spines of various sizes; flagella of antennules longer than antennular peduncle; rostrum absent; bases of antennae separated by a broad antennular space bearing 2 pairs of unequal and separate principal spines; abdominal segments without transverse grooves; pereiopods 1 to 4 without pincers; abdominal segments II and III with broad sunken pubescent areas.

**Colour:** Green-blue with a distinctive pattern of blue-black patches and white lines on carapace; a transverse band of white, bordered by 2 black lines across each abdominal segment; pereiopods and antennules longitudinally striped (blotched in *Panulirus ornatus*); bases of antennae bright pink, not extending onto antennular plate.

FAO names: Mud spiny lobster (En) Langouste de vase (Fr)



Size: To 40 cm, common 20–25 cm (BL)

FAO names: Painted spiny lobster (En) Langouste barriolée (Fr)

Pairs of unequal principal spines

antennular plate

Size: To 40 cm, common 30 cm (BL)

#### Palinustus waguensis Kubo, 1963

#### FAO names: Japanese blunthorn lobster (En)

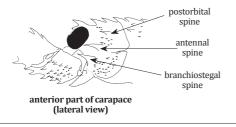
Local name(s): Ye-Net-Puzun.

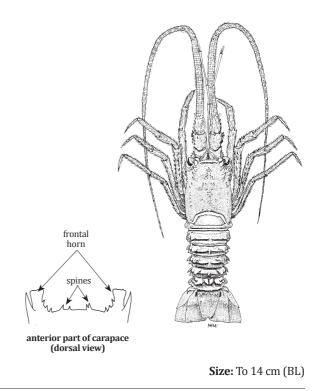
**Habitat:** Inhabits the outer parts of coral and rocky reef slopes at depths from 72 to 180 m.

**Fisheries:** Bottom trawls. Not yet fished commercially in the area.

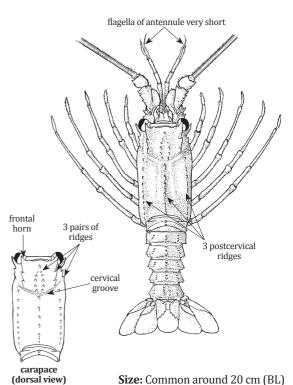
**Distinctive Characters:** Elevated parts of abdomen distinctly pubescent; carapace angular; anterior margin of carapace between frontal horns provided with 0 to 8 (mostly more than 2) irregularly arranged spines; postorbital spine distinctly shorter than antennal spine and branchiostegal spines.

**Colour:** Overall body colour orange with anterior margin of carapace between supraorbital horns reddish; antennules banded and legs covered with dense narrow red rings; hinges between carapace and abdomen with a pair of white spots; abdominal segments, as well as inner bases of endopods of uropods each with a pale spot on sides.





#### FAO names: Arabian whip lobster (En)



#### Puerulus sewelli Ramadan, 1938

Local name(s): Ye-Net-Puzun-Htote.

**Habitat:** Known from depths between 73 and 1 608 m, but most commonly found from 200 to 500 m, on hard bottoms of coarse sand, mud or shells.

**Fisheries:** Deep bottom trawls. Not yet fished commercially in the area.

**Distinctive Characters:** Carapace angular, with a median and 2 lateral tuberculate longitudinal ridges behind the transverse cervical groove, and 3 pairs of ridges in front; median postcervical ridge with 8–9 small teeth; antennular plate present, without spines, forming stridulating organs with the antennal peduncle.

**Colour:** Body rather uniformly orange-brown, with distal parts of teeth on carapace and median keel on abdomen whitish; eyes black brown; antennal flagella with basal half orange-brown while distal half whitish; pereiopods and antennules with basal segments orange-pink and distal segments somewhat whitish; abdomen with articulated parts of somites and pleural spurs whitish; eggs reddish.

## SCYLLARIDAE

Slipper lobsters

#### Ibacus novemdentatus Gibbes, 1850

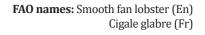
Local name(s): King-Puzun, Gyap-Pazun

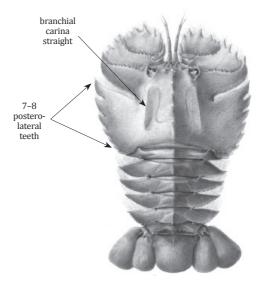
**Habitat:** Found at depths from 37 to 400 m on levelled bottom of sand and mud.

Fisheries: Bottom trawls, gillnets, traps.

**Distinctive Characters:** Body extremely flattened and with dorsal surface rather smooth or slightly pitted; carapace with nearly straight branchial carinae; posterior incision of orbit without tubercle; cervical incisions deep but narrow; posterolateral margin cut into 7–8 teeth; posterior margin of 5<sup>th</sup> abdominal segment evenly serrated, bearing a median spine; abdominal pleura directed laterally.

**Colour:** Body pale yellowish brown and marbled with reddish brown patches on dorsal surface; ventral surfaces of carapace and legs brown and white; eyes dark brown; soft part of tail fan transparent and somewhat pale yellowish; eggs orange.





Size: To 19 cm (BL)

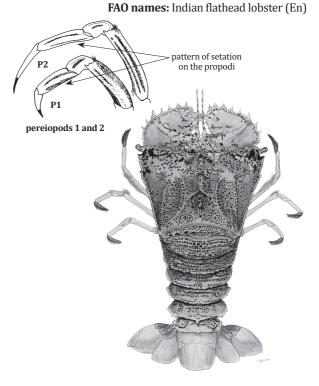
#### Thenus indicus Leach, 1815

Local name(s): King-Puzun, Gyap-Pazun Habitat: Mud and sand bottoms, mostly at depths of 10-50 m.

Fisheries: Bottom trawls, gillnets, traps.

Distinctive Characters: Body markedly depressed, with surface pubescent and granulate; carapace trapezoid, narrowing posteriorly, with weak branchial carinae and shallow cervical incisions; anterior part of lateral margin with only 2 teeth, posterior 3/4 without teeth; orbits situated at anterolateral angles of carapace; antennae broad, flattened and plate-like; all pereiopods without pincers and similar in size; abdomen with median carina and transverse grooves, 5th segment armed with a strong posteromedian spine; pleura directed downwards; outer faces of propodi of pereiopods 1 and 2 having upper-most longitudinal groove bearing obvious setae over at least proximal half; merus of 3rd maxilliped with a small spine proximally on inner ventral margin; inner margin of ischium prominently dentate along entire length. Colour: Pale yellowish brown with the granules of a darker brown; tips of the teeth whitish; tail fan with a yellow tinge; no spotting on pereiopods. **Remarks:** Previously reported under the name of

*"Thenus orientalis"* (see Burton and Davie, 2007).



Size: To 8.7 cm carapace width

#### Thenus cf. parindicus Burton & Davie, 2007

Local name(s): King-Puzun/Gyap-Pazun

**Habitat:** Mud and sand bottoms, mostly at depths of 10-50 m.

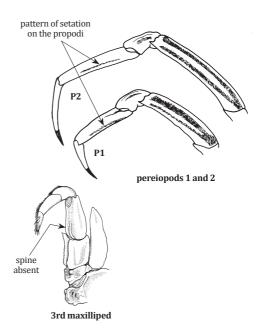
Fisheries: Bottom trawls, gillnets, traps.

**Distinctive Characters:** Similar to *Thenus indicus* but outer face of propodi of pereiopods 1 and 2 having upper-most longitudinal groove with setae reduced to thin short line near base, or completely lacking; merus of 3<sup>rd</sup> maxilliped without a small spine proximally on inner ventral margin; inner margin of ischium distally dentate, but smoother and slightly molariform proximally.

**Colour:** Pale yellowish brown with the granules of a darker brown; tips of the teeth whitish; tail fan with a yellow tinge; no spotting on pereiopods.

**Remarks:** One specimen with intermediate characters between *T. indicus* and *T. parindicus* (with  $2^{nd}$  pereiopod fits the character of the former while the  $3^{rd}$  maxilliped fits the latter species) has been collected in Myanmar (T.Y. Chan, personal communication, 2016).

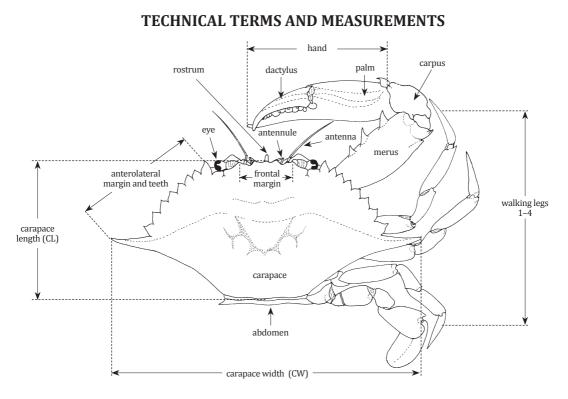
#### FAO names: False Indian flathead lobster (En)



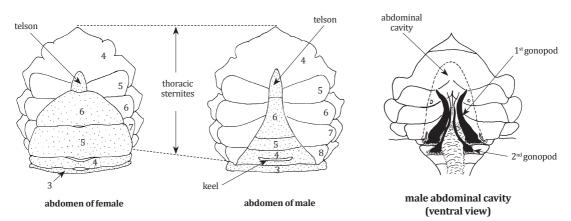
Size: To 8.8 cm carapace width

## CRABS

Many species of crabs occur in Myanmar, but only a few species are considered important to fisheries. Among these, members of the family Portunidae (except those of small size) are considered of commercial value on the local and international market and exported in whole frozen, and in form of cut crab. Some species such as *Scylla olivacea* and *S. serrata* are cultured in mangroves and mud flats. Thirty-three species, belonging to twelve families are included in the guide.



general shape (dorsal view) of a brachyuran crab (family Portunidae)



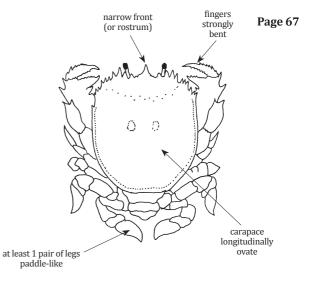
thoracic sternum and abdomen (ventral view)

## **GUIDE TO FAMILIES**

#### RANINIDAE

#### Spanner crabs

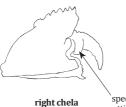
To about 15 cm (CL). Benthic crabs with preference for open sany areas. One species of interest to fisheries is included in the Guide to Species.



CALAPPIDAE

#### Box crabs

To about 12 cm (CW). Burrowing crabs on soft and mud substrates. Two species of interest to fisheries are included in the Guide to Species. *Calappa clypeata* Borradaile, 1903, recorded during experimental trawl surveys in Myanmar's waters is not included in the guide because of lesser commercial importance.



`specialized cutting tooth

## and cies opa ing

expanded clypeiform process

Page 70

## MATUTIDAE

#### Moon crabs

To about 6.5 cm (CW). Burrowing crabs on soft and mud substrates. Three species of low interest to fisheries are included in the Guide to Species.

carapace circular to ovate; legs distinctly flattened laterally, last 2 segments of all legs paddle-like



#### Page 67

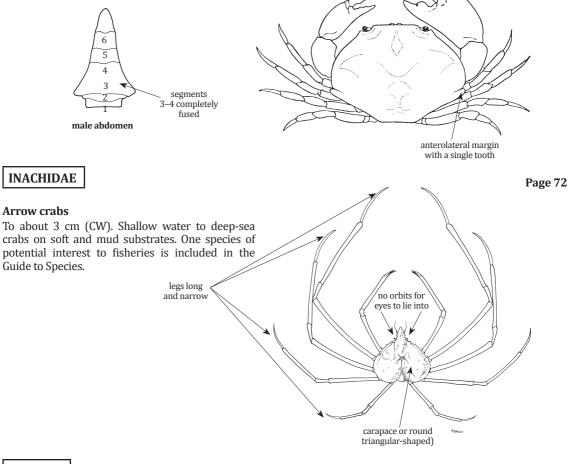
right chela with

specialized tooth

## CARPILIIDAE

#### **Reef crabs**

To about 18 cm (CW). Benthic crabs on reef habitats. Two species of interest to fisheries are included in the Guide to Species.

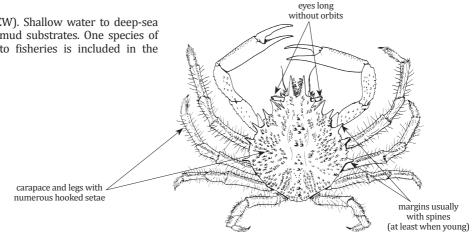


## MAJIDAE

#### Spider crabs

To about 15 cm (CW). Shallow water to deep-sea crabs on soft and mud substrates. One species of potential interest to fisheries is included in the Guide to Species.





Page 71

## OREGONIIDAE

#### **Deepwater spider crabs**

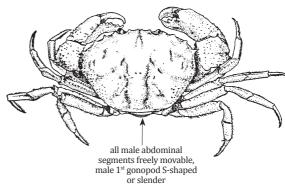
To about 8 cm (CW). Deep-sea crabs on soft and mud substrates. One species of potential interest to fisheries is included in the Guide to Species.

carapace and legs often < covered with short spines and stiff setae

#### PILUMNIDAE

#### Hairy crabs

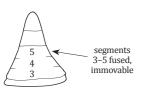
To about 8 cm (CW). Shallow water benthic crabs living on mud substrates. One species of interest to fisheries is included in the Guide to Species.



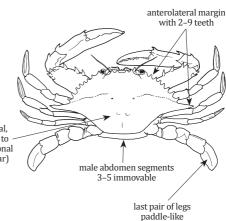
## PORTUNIDAE

#### Swimming crabs

To about 20 cm (CW). Benthic to semipelagic crabs with diverse habits. Six species of interest to fisheries are included in the Guide to Species.



carapace hexagonal, transversely ovate to transversaly hexagonal (sometimes circular)



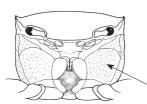
Page 74

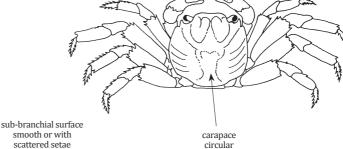
59

## GRAPSIDAE

#### **Grapsid crabs**

To about 8 cm (CW). Shore crabs on mangroves and rocky areas. One species of interest to fisheries is included in the Guide to Species.



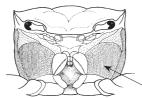


body in frontal view

#### SESARMIIDAE

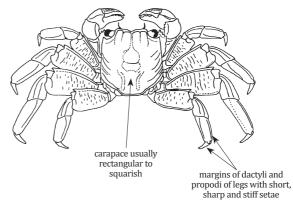
#### Sesarmid crabs

To about 8 cm (CW). Shore crabs on mangroves and seashores. One species of interest to fisheries is included in the Guide to Species.



body in frontal view

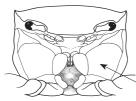
sub-branchial surface smooth or with net-like pattern of short setae



## VARUNIDAE

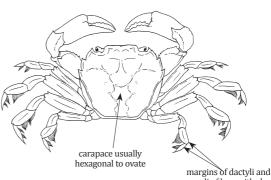
#### Varunid crabs

To about 5 cm (CW). Shore crabs on mangroves and seashores, sometimes entering freshwaters. One species of interest to fisheries is included in the Guide to Species.



body in frontal view

sub-branchial surface smooth, never with netlike pattern of short setae



margins of dactyli and propodi of legs with short, sharp and stiff setae

#### Page 81

Page 82

Page 83

## RANINIDAE

#### Spanner crabs

### Ranina ranina (Linnaeus, 1758)

Local name(s): Pin-Le'-Ga-Nann.

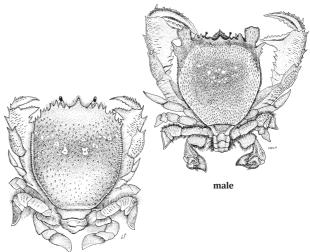
**Habitat:** Mainly in more oceanic waters, but also in intertidal waters, to depths of more than 100 m, with preference for open sandy areas.

**Fisheries:** Bottom trawls, tangle nets, gillnets fixed to a frame.

**Distinctive Characters:** Carapace very elongate, much longer than broad; anterior part much broader than narrow, posterior part waist-like; abdomen clearly visible from dorsal view; chelae greatly outsized in males; chelae and legs laterally flattened, spade-like.

**Colour:** Orange to red overall.

FAO names: Spanner crab (En)



female

Size: To 15 (males) cm (CL)

FAO names: Two-striped Box Crab (En)

## CALAPPIDAE

Box crabs

#### Calappa bilineata Ng, J. C. Y. Lai & Aungtonya, 2002

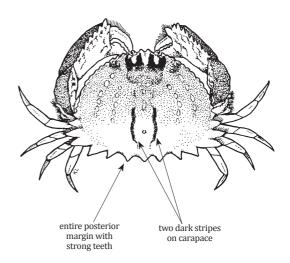
Local name(s): Pin-Le'-Ga-Nann.

**Habitat:** Prefers sandy to slightly muddy substrates at depths from 10 to 100 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Carapace convex, 1.5 wide as long; frontal and epigastric regions more densely granulate; entire posterior margin of carapace and posterolateral margin of clypeiform expansion armed with strong teeth.

**Colour:** Pale brick-red to purplish above, the surface being covered with crowded punctae of that color; eyes are longitudinally striped with black, the stripes or lines being about seven in number; 2 longitudinal stripes on carapace.



#### Calappa calappa (Linnaeus, 1758)

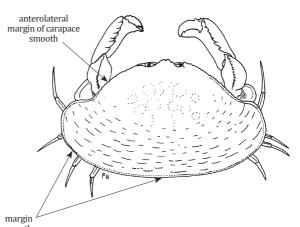
Local name(s): Pin-Le'-Ga-Nann.

**Habitat:** Found in rocky to shelly substrates, from depths of 10 to 100 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Carapace markedly convex, 1.6–1.7 wide as long, regions undefined; carapace surface minutely squamose, anteriorly with barely distinguished flattened tubercles, posteriorly with minutely beaded transverse lines, increasing in length laterally; clypeiform part (= expanded posterior edge) of carapace with entire margin smooth, entire, not armed with spines or teeth.

**Colour:** Two colour morphs are known: one uniform tan and the other speckled with numerous red to maroon spots.



smooth, unarmed

Size: To about 13 cm (CW)

Calappa exanthematosa Alcock and Anderson, 1894

FAO names: Bulbous Box Crab (En)

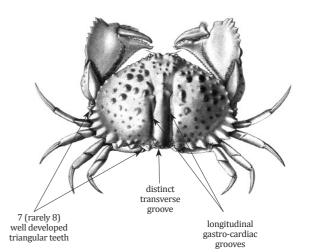
Local name(s): Pin-Le'-Ga-Nann.

**Habitat:** On sand and mud bottoms from 200 to 800 m depth.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Carapace rounded to subovate, distinctly wider than long; dorsal surface strongly convex, anterior 2/3 covered with large, round submammillate tubercles, resembling pustules, posterior 1/3 relatively smooth; longitudinal gastro-cardiac grooves deep, spaced relatively close to each other, especially along posterior part; posterior region of carapace with distinct transverse groove lined by small granules; posterolateral margin of clypeiform expansion well developed, with 7 (rarely 8) triangular teeth.

**Colour:** Maroon spots on posterior half of carapace independent, demarcated by cream or yellow area around each, not connected, area appears distinctly spotted.



FAO names: Giant box crab (En)

#### FAO names: Common box crab (En)

#### Calappa lophos (Herbst, 1782)

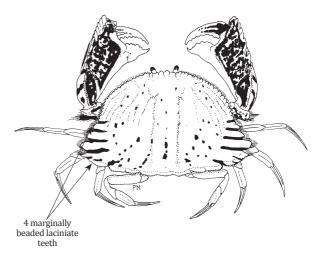
Local name(s): Pin-Le'-Ga-Nann.

**Habitat:** On sand, mud, gravel bottom depths of 5 to 200 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Carapace convex, 1.6 wide as long; frontal and epigastric regions with small tubercles; posterolateral margin of clypeiform expansion well developed, with 4 marginally beaded laciniate teeth, distalmost largest, and 3 granulate teeth.

**Colour:** Ground colour yellowish beige to yellow; posterior 1/3 of carapace with distinct red spots, posterolateral part with transverse red stripes; outer surface of cheliped with red streaks and spots.



Size: To about 10 cm (CW)

Calappa pustulosa Alcock, 1896

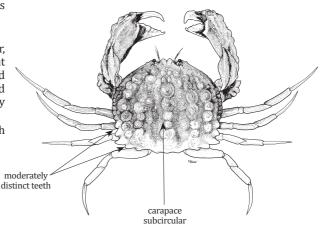
Local name(s): Pin-Le'-Ga-Nann.

**Habitat:** On sandy or muddy bottoms, at depths from of 40 to 165 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Carapace subcircular, 1.1 wide as long, surface almost smooth; front only slightly projecting, with two low, rounded teeth; clypeiform posterolateral part (= expanded posterior edge) of carapace with relatively lowteeth.

**Colour:** Carapace light brown, irregular reddish spots anteriorly.



#### FAO names: Pustule box crab (En)

## MATUTIDAE

Moon crabs

#### Ashtoret lunaris (Forsskål, 1775)

Local name(s): Pin-Le'-Ga-Nann.

**Habitat:** Found in sandy substrates, often near reefs or seagrass beds, from the intertidal zone to a depth of 50 m.

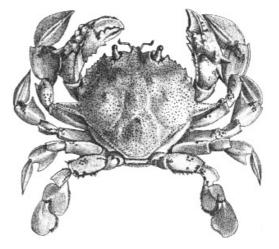
#### Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Surface of carapace minutely granular and provided with 6 mid-dorsal tubercles; anterolateral margins with 5 small tubercles followed by 3 large triangular tubercles; lateral spine 0.2 times carapace width; outer surface of palm with ridge subparallel to ventral margin

**Colour:** Carapace light yellow covered with dark red to black spots.

# ridge subparallel to ventral margin

chela (outer surface)



Size: To 5 cm (CW)

FAO names: Flower moon crab (En)

Matuta planipes Fabricius, 1798

Local name(s): Pin-Le'-Ga-Nann.

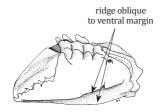
**Habitat:** Mainly in soft substrates from depths of 10 to 40 m.

Fisheries: Bottom trawls, gillnets.

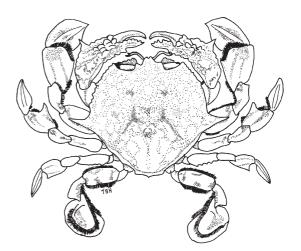
**Distinctive Characters:** Carapace rounded, with 2 long, well-developed lateral spines; anterolateral margins unevenly serrated; outer surface of palm with strong oblique ridge.

**Colour:** Mosaic to reticulate network of maroon lines on a white background.

**Remarks:** The coloration of this species is very distinctive and it cannot be confused with any other species in the area.



chela (outer surface)



FAO names: Yellow moon crab (En)

FAO names: Common moon crab (En)

### Matuta victor (Fabricius, 1781)

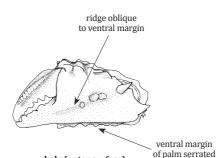
Local name(s): Pin-Le'-Ga-Nann.

**Habitat:** Prefers sandy areas, from the intertidal zone to depths of about 20 m.

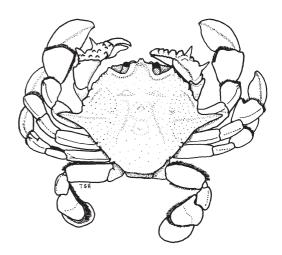
Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Carapace rounded, with 2 long, well-developed lateral spines; anterolateral margins gently serrated; outer surface of palm with low but distinct oblique ridge.

**Colour:** yellowish ground colour with numerous fine black spots and several larger ones on carapace; legs and chelae bright yellow.



chela (outer surface)



Size: To 5 cm (CW)

CARPILIIDAE Reef crabs

FAO names: Red reef crab (En)

Carpilius convexus (Forsskål, 1775)

Local name(s): Pin-Le'-Ga-Nann.

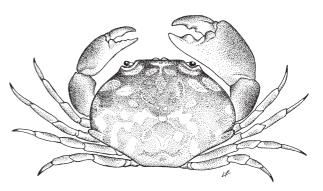
**Habitat:** A reef crab. Biology and fisheries similar to *Carpilius maculatus* (see next page).

**Fisheries:** Collected mainly by hand or with baited traps.

**Distinctive Characters:** Carapace ovate; dorsal surface very smooth and convex.

**Colour:** Uniform red to reddish brown, with irregular dark brown patches on the dorsal surface of carapace.

**Remarks:** *C. convexus* is easily distinguished from *C. maculatus* by its distinct coloration which remains even after preservation.



### Carpilius maculatus (Linnaeus, 1758)

Local name(s): Pin-Le'-Ga-Nann.

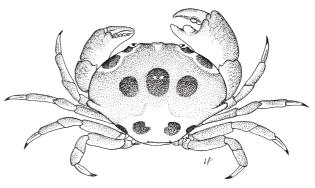
Habitat: A reef crab. Fisheries: Collected mainly by hand or with baited traps.

Distinctive Characters: Carapace ovate; dorsal surface very smooth and convex.

Colour: Cream to pink ground colour, with 9 large violet to maroon spots on dorsal surface of carapace: 3 on median region, 2 on posterior region, 2 on anterolateral region, and 2 around the orbits.

**Remarks:** There have been reports that this species is poisonous, but this could not been confirmed by biochemical tests. It is possible that after feeding on poisonous molluscs, the crabs become toxic for a short period as well.

## FAO names: Spotted reef crab (En)



Size: To 18 cm (CW)

FAO names:

## **INACHIDAE**

Arrow crabs

#### Encephaloides armstrongi Wood-Mason, in Wood-Mason & Alcock, 1891

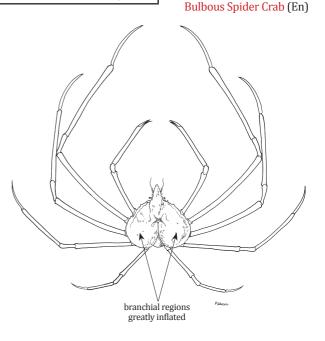
Local name(s): Pin-Le'-Ga-Nann.

Habitat: Inhabits low oxygen waters between 150-1 000 m depth.

Fisheries: Deep bottom trawls.

Distinctive Characters: Carapace heart-shaped with nodular or pustular surfaces in larger specimens (coarsely spiny in young); gastric, and hepatic regions well-defined; branchial regions greatly inflated and arched; rostrum beak-shaped with finely serrated edges; eyes small, slender, unpigmented, retracted against side of carapace; legs long, slender, cylindrical; chelipeds short, stouter than legs.

**Colour:** Uniformly orange with chelipeds and legs more intensely pigmented; ventral side of body whitish; tips of chelipeds and legs white.



Size: To about 4 cm (CW)

# MAJIDAE

spider crabs

#### Paramaja gibba (Alcock, 1895)

Local name(s): Pin-Le'-Ga-Nann.

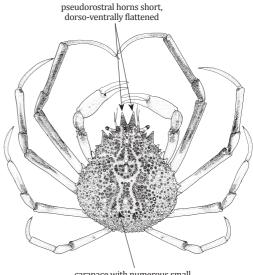
**Habitat:** Soft bottoms, sand and gravel, from 200 to 600 m depth.

Fisheries: Bottom trawls.

**Distinctive Characters:** Carapace ovate and pseudorostral horns dorso-ventrally flattened in adults; dorsal surface covered by numerous small and large distinct tubercles and granules which are never swollen, those on median row larger, tuberculate, forming low raised crest; male anterior thoracic sternum relatively broad in adults.

**Colour:** Uniformly red-orange with legs more intensely pigmented; ventral side of body whitish; tubercles and granules on posterolateral parts of carapace and the larger ones on the median row white.

#### FAO names: Alcock's Spider Crab (En)



carapace with numerous small, rounded granules

Size: To about 8 cm (CW)

## OREGONIIDAE

#### Deepwater spider crabs

#### Pleistacantha pungens (Wood-Mason, in Wood-Mason & Alcock, 1891)

#### Local name(s): Pin-Le'-Ga-Nann.

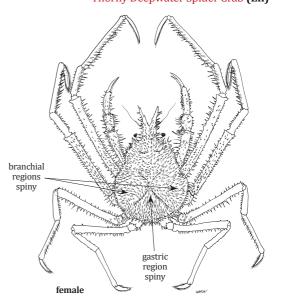
**Habitat:** Soft substrates, usually sand and mud, from 200 to 800 m depth.

#### Fisheries: Deep bottom trawls.

**Distinctive Characters:** Carapace pyriform, postrostral carapace length longer than width; rostral spines divergent, less than 1/4 postrostral carapace length; interantennular spine (ventral side of rostrum) deeply bifurcate; spination on dorsal side of carapace uniform; branchial regions nearly approximated in the longitudinal midline; cardiac region "hour-glass" shaped; chelipeds dissimilar in aduld males and females; chela in males distinctly inflated, graulate, non-spinous; female chela slender, markedly spinous.

Colour: Uniformly pale-orange.

#### **FAO names:** Thorny Deepwater Spider Crab (En)



Size: To about 10 cm (CW)

## PILUMNIDAE

Hairy crabs

#### Galene bispinosa (Herbst, 1783)

Local name(s): Pin-Le'-Ga-Nann.

**Habitat:** In shallower waters, down to depths of about 100 m, living on muddy substrates.

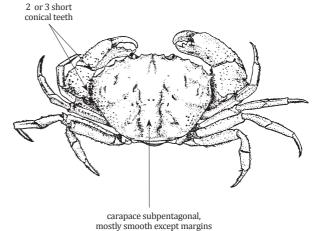
Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Carapace subpentagonal, dorsal surface gently convex, lateral regions with numerous small, rounded granules; 2 or 3 distinct conical teeth on each lateral margin (2 teeth always distinct); chelipeds stout, surfaces finely granulated.

Colour: Tan to purplish tan.

**Remarks:** Despite their common name, "hairy crabs", many pilumnids (including *Galene bispinosa*) are actually not very setose (or "hairy").

FAO names: Square-shelled crab (En)



Size: To about 8 cm (CW)

#### PORTUNIDAE

#### Swimming crabs

right cheliped

(dorsal view)

Charybdis annulata (Fabricius, 1798)

Local name(s): Pin-Le'-Ga-Nann.

**Habitat:** Prefers rocky areas and reefs, from the intertidal zone to a depth of about 20 m.

Fisheries: Bottom trawls, gillnets, bagnets.

**Distinctive Characters:** Carapace ovate, pubescent with 6 anterolateral teeth; 1<sup>st</sup> anterolateral tooth not truncate or notched; frontal-orbital border with 6 subacute teeth; merus of cheliped with 3 spines on anterior border; palm with 4 spines on upper surface.

**Colour:** Shows distinctive broad blue and white bands on the legs when alive.

1<sup>st</sup> antero-lateral tooth simple

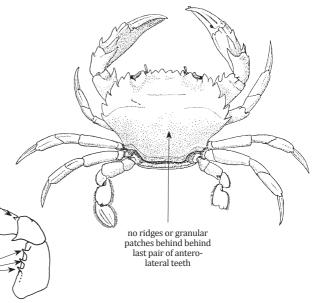
left side of carapace

(dorsal view)

6 teeth

4 spines

3 spines



FAO names: Banded-legged swimming crab (En)

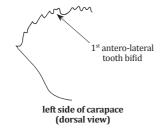
#### Charybdis feriatus (Linnaeus, 1758)

Habitat: Prefers sandy to sandy-muddy substrates, at depths from 30 to 60 m.

Fisheries: Gillnets, bottom trawls, bagnets.

Distinctive **Characters:** Carapace ovate without distinct ridges behind level of last pair of anterolateral teeth; front with 6 subequal triangular distally rounded teeth; 6 teeth on each anterolateral margin (1<sup>st</sup> anterolateral tooth distinctly bifid, last anterolateral tooth produced laterally); palm of cheliped with 4 spines on upper surface; male abdominal segment 4 keeled.

**Colour:** Distinctive pattern of longitudinal stripes of maroon and white, usually with distinct white cross on median part of gastric region; legs and pincers with numerous scattered white spots.



# no ridges distinct white cross 4 spines keel

(dorsal view)

male abdomen

#### Size: To about 20 cm (CW)

#### FAO names: Heller's swimming crab (En)

distinct spine on merus of last leg

Local name(s): Pin-Le'-Ga-Nann.

Habitat: Inhabits rocky, sandy and muddy shores and coral reefs from the intertidal zone to depths beyond 30 m.

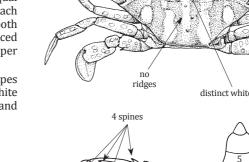
Charybdis hellerii (A. Milne-Edwards, 1867)

Fisheries: Bottom trawls, gillnets, bagnets.

Distinctive **Characters:** Carapace broad. and pubescent with 6 anterolateral teeth; 1st anterolateral tooth not truncate or notched; frontalorbital border with 6 subacute teeth; granular ridges on anterior part of carapace; no ridges discernible behind last pair of anterolateral teeth; merus of cheliped with 3 spines and a spinule (at distal end) on anterior border; palm with 5 spines on upper surface; carpus of natatory legs with a well-developed spine on posterior border.

Colour: Larger specimens with orange to creamcoloured carapace and purplish legs; smaller specimens with reddish patches on either side of the median line in the anterior part and on the entire surface in the posterior part of the carapace.

### FAO names: Crucifix crab (En)





#### Charybdis natator (Herbst, 1794)

#### FAO names: Ridged swimming crab (En)

Local name(s): Pin-Le'-Ga-Nann.

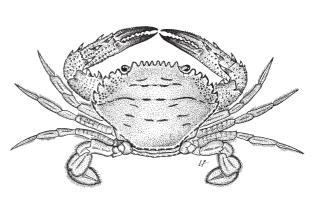
**Habitat:** Near or in rocky-sandy substrates, sometimes near reefs, from depths of 5 to 40 m. **Fisheries:** Bottom trawls, gillnets, bagnets.

**Distinctive Characters:** Carapace ovate densely covered with very short pubescence which is absent on several distinct transverse granulated ridges in anterior half; 6 teeth on each anterolateral margin; merus of cheliped with 3 claw-like spines on anterior border; palm with 5 spines on upper surface; male and female abdomen with segments 2-5 keeled; carapace with distinct ridges or granular patches behind level of last pair of anterolateral teeth.

**Colour:** Orangish red overall, with ridges on carapace and legs dark reddish brown.

distinct ridges

left side of carapace (dorsal view)



Size: To about 17 cm (CW)

#### FAO names: Anderson's swimming crab (En)

esobranchial areas

mesobranchial areas distinctly inflated

#### Charybdis riversandersoni Alcock, 1899

Local name(s): Pin-Le'-Ga-Nann.

**Habitat:** On sandy to muddy substrates, at depths from 94 to 291 m.

Fisheries: Bottom trawls, gillnets, bagnets.

**Distinctive Characters:** Carapace ovate and glabrous with 6 anterolateral teeth; 1<sup>st</sup> anterolateral tooth truncate and small; frontal-orbital border with 6 subacute teeth; mesobranchial areas of carapace distinctly swollen; merus of cheliped with 3 spines and a proximal tubercle or with 4 spines on anterior border; palm with 4 spines on upper surface.

**Colour:** Freshly preserved specimens salmon-red; frontal and anterolateral borders and the boundary between the branchial and hepatic regions with numerous large creamy spots, four similar spots in a square on the gastric region and a very large one on either branchial region near the middle of the posterolateral border; distal half of the fingers blood-red with the extreme tips milk-white.

# Monomia gladiator (Fabricius, 1798)

Local name(s): Pin-Le'-Ga-Nann.

Habitat: Sandy-muddy bottoms, up to 150 m depth.

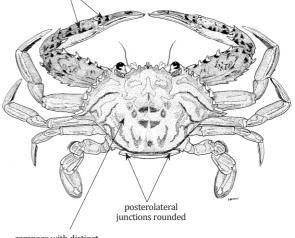
Fisheries: Bottom trawls, gillnets, bagnets.

**Distinctive Characters:** Carapace moderately broad, depressed; surface covered with pubescence; front with 4 teeth, middle pair smaller; 9 teeth on each anterolateral margin, the last tooth larger than preceding teeth; a single row of granules on the posterolateral border of the carapace; merus of cheliped with 4 spines on anterior border; palm with 1 distal spine on upper surface; posterolateral junction of carapace rounded.

**Colour:** Carapace dark green to grayish with oblong or linear spots of dark red; chelipeds with crimson to dark red spots; spines on chelipeds usually white with an orange tip.



FAO names: Gladiator crab (En)



carapace with distinct patches of white granules surrounded by red granules in life

# Size: To about 9 cm (CW)

FAO names: Sentinel crab (En)

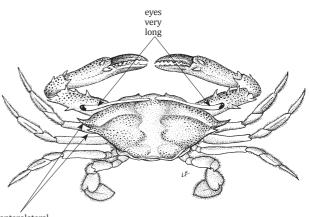
# Podophthalmus vigil (Fabricius, 1798)

Local name(s): Pin-Le'-Ga-Nann.

Habitat: On sandy to muddy substrates in offshore waters.

Fisheries: Bottom trawls, gillnets, bagnets.

**Distinctive Characters:** Carapace distinctly broader than long; anterior margin much broader than posterior margin, with posterolateral margins converging strongly towards narrow posterior carapace margin; orbits very broad; eyes very long, reaching to or extending beyond edge of carapace. **Colour:** Carapace green; chelipeds and parts of legs violet to maroon in adults.



2 anterolateral teeth

# Portunus pelagicus (Linnaeus, 1758)

Local name(s): Pin-Le'-Ga-Nann.

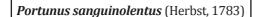
**Habitat:** Found in shallow sandy/muddy to sea grass lagoons and estuaries, brackish waters to a depth of 40 m.

Fisheries: Bottom trawls, gillnets, bagnets.

**Distinctive Characters:** Carapace with fine granulation (adults); front with 4 small but conspicuous teeth; 9 teeth on each anterolateral margin, last tooth at least 2 times larger than others; branchial regions markedly swollen; 6<sup>th</sup> male abdominal segment relatively shorter and broader; chelae elongate (more in males than in females); 3 spines on anterior margin of the merus of cheliped; cheliped meri long and slender; legs laterally flattened with last 2 segments of last pair paddle-like.

**Colour:** Carapace of males with pale white bands and blotches on a dark blue-green background; chelipeds purple-blue with rusty-red tips; females with uniformly brownish green carapace (sometimes pale spots and bands are present on posterior and branchial regions) and red tipped chelipeds; merus, carpus and manus of chelipeds speckled with pale white spots in both sexes.

**Remarks:** This species is part of a complex of four closely related species previously commonly known as "Portunus pelagicus" (see Lai, Ng & Davie, 2010).



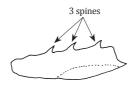
#### Local name(s): Pin-Le'-Ga-Nann.

**Habitat:** Occurs on sandy to sandy-muddy substrates, from the intertidal zone (especially juveniles) to depths of 30 m.

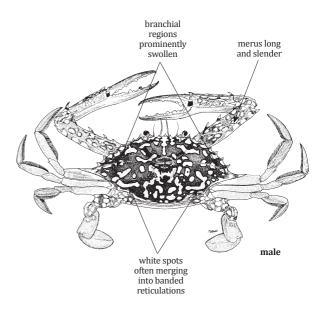
Fisheries: Bottom trawls, gillnets, bagnets.

**Distinctive Characters:** Carapace finely granulose, regions just discernible; 9 teeth on each anterolateral margin, the last tooth 2–3 times larger than preceding teeth; chelae elongated in males; larger chela with conical tooth at base of fingers; pollex ridged.

**Colour:** Olive to dark green, with 3 prominent maroon to red spots on posterior 1/3 of carapace.

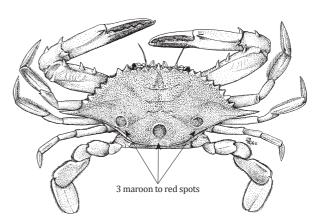


merus of cheliped (inner margin)



Size: To 20 cm (CW), 7.5 (CL)

FAO names: Three-spot swimming crab (En)



# FAO names: Common flower crab (En)

# Portunus reticulatus (Herbst, 1799)

Local name(s): Pin-Le'-Ga-Nann. Habitat: Inhabits shallow sandy lagoons Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Similar to *Portunus pelagicus* (Linnaeus, 1758) but 6<sup>th</sup> segment of male abdomen relatively narrower and more elongate; spots on carapace rarely merging into bands.

**Colour:** Males carapace greenish blue with variable pattern of large pale green spots rarely merging into broad net-like bands, to sparsely spotted thick reticulations; females carapace green brown with numerous dense spots and blotches; tips of chelipeds marked bright red.



T

Portunus pelagicus

Portunus reticulatus

male abdominal somites

# Scylla olivacea (Herbst, 1796)

Local name(s): Pin-Le'-Ga-Nann.

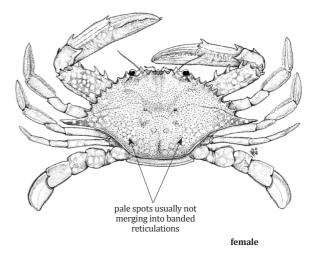
Habitat: Inhabits mangroves.

**Fisheries:** Gillnets, baited traps, hand picking, bottom trawls.

**Distinctive Characters:** Carapace smooth; front with 4 rounded and low teeth; 9 teeth on each anterolateral margin, last tooth subequal in size to others; palm of chelipeds usually with a pair of blunt prominences (may be spinous in juveniles and young adults); carpus of cheliped with only 1 low to very low granule on outer surface, never spiniform.

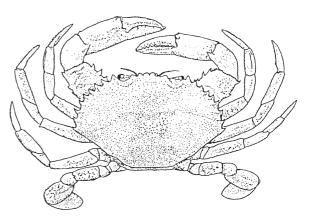
**Colour:** Carapace brownish to brownish green in colour (sometimes orangish), palm orange to yellow.

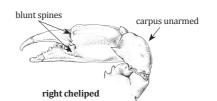
**Remarks:** This species used to be lumped under the name *"Scylla serrata"*. The latter is now recognised to be a complex of four species, two of which occur in Myanmar (Keenan, Davie & Mann, 1998).

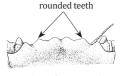


Size: To 18 cm (CW)

# FAO names: Orange mud crab (En)







frontal margin of carapace (dorsal view)

# FAO names: Reticulate flower crab (En)

# Scylla tranquebarica (Fabricius, 1798)

FAO names: Purple mud crab (En)

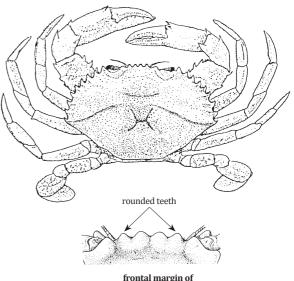
Local name(s): Pin-Le'-Ga-Nann. Habitat: Inhabits mangroves.

Habitat: Innabits mangrov

**Fisheries:** Gillnets, baited traps, hand picking, bottom trawls.

**Distinctive Characters:** Carapace smooth; front with 4 blunt moderate teeth; 9 teeth on each anterolateral margin, last tooth subequal in size to others; palm of chelipeds usually with distinct, sharp spines; carpus of cheliped with 2 distinct sharp granules or spines on outer surface.

**Colour:** Carapace usually very dark green to black; outer surface of palm purple; last legs marbled only in males.



frontal margin of carapace (dorsal view)

Size: To about 20 cm (CW)

FAO names: Giant mud crab (En)

Scylla serrata (Forsskål, 1775)

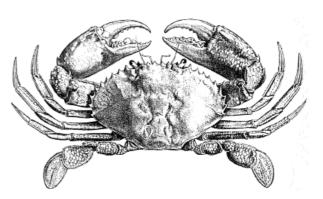
Local name(s): Pin-Le'-Ga-Nann.

**Habitat:** Prefers more oceanic waters, usually found just offshore on soft muddy bottoms. like other *Scylla* species digs deep burrows in mangroves and soft substrates in shallow or intertidal waters.

**Fisheries:** Gillnets, baited traps, hand picking, bottom trawls.

**Distinctive Characters:** Carapace smooth, with strong transverse ridges; H-shaped gastric groove deep; relatively broad frontal lobes, all more or less in line with each other; broad anterolateral teeth, projecting obliquely outwards; well-developed spines present on outer surface of chelipedal carpus and anterior and posterior dorsal parts of palm.

**Colour:** Carapace green to almost black; legs may be marbled.



sharp teeth



frontal margin of carapace (dorsal view)

# Xiphonectes hastatoides (Fabricius, 1798)

Local name(s): Pin-Le'-Ga-Nann.

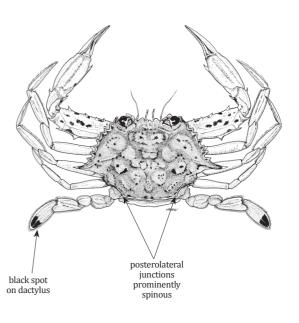
pereiopod (=natatory leg).

**Habitat:** On sandy or muddy bottoms, at depths between 5 and 205 m.

Fisheries: Bottom trawls, gillnets, bagnets.

**Distinctive Characters:** Carapace broad, depressed and densely tomentose with patches of granulation behind level of last pair of anterolateral teeth; front with 4 teeth, middle pair much narrower, but not less projecting than lateral pair; 8 teeth on each anterolateral margin, the last tooth much larger than preceding teeth; postero-lateral junction of carapace forming a conspicuous spine. **Colour:** Variable, from dark gray with oblong or linear spots of black to uniformely merging from pink to light beige; black spot on the dactyl" of 5<sup>th</sup>

#### FAO names: Fabricius' swimming crab (En)



Size: To about 4.1 cm (CW)

# GRAPSIDAE

Grapsid crabs

# Grapsus albolineatus Latreille, in Milbert, 1812

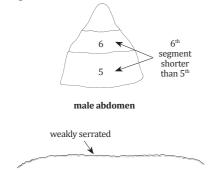
Local name(s): Pin-Le'-Ga-Nann.

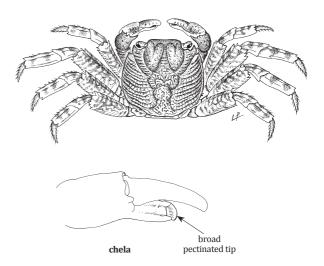
**Habitat:** Found out of the water, on rocks in the splash zone.

Fisheries: Collected by hand.

**Distinctive Characters:** Carapace rounded; front straight, entire; anterolateral margins rounded, each with 1 tooth; lateral regions with numerous oblique striae; fingertips strongly spooned.

**Colour:** Carapace with green and white transverse markings.





FAO names: Mottled Sally-light-foot (En)

frontal margin of carapace

Size: To 5 cm (CW)

# Grapsus tenuicrustatus (Herbst, 1783)

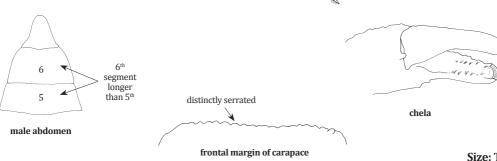
Local name(s): Pin-Le'-Ga-Nann.

Habitat: Found out of the water, on rocks in the splash zone.

Fisheries: Collected by hand.

**Distinctive Characters:** Carapace rounded; front straight, finely serrated; anterolateral margins rounded, each with 1 tooth; lateral regions with numerous oblique striae: fingertips slightly spooned.

**Colour:** Carapace with green and white transverse markings.



Size: To 8 cm (CW)

narrow pectinated tip

# SESARMIDAE

Sesarmid crabs



FAO names: Violet vinegar crab (En)

Local name(s): Pin-Le'-Ga-Nann.

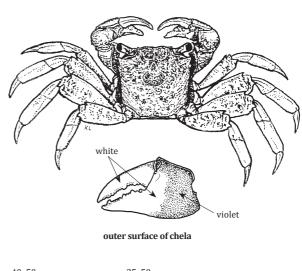
**Habitat:** All members of *Episesarma* are mangrove crabs, digging burrows at the base of trees and are predominantly herbivorous.

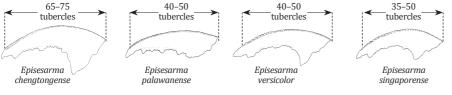
Fisheries: Collected by hand.

**Distinctive Characters:** Carapace squarish, with 1 small anterolateral tooth; dorsal surface relatively flat; regions well defined, covered with short, stiff setae; dorsal margin of dactylar finger with numerous (40 to 50) tubercles, forming a stridulatory organ.

**Colour:** Carapace brown to brownish grey; outer surface of palm with proximal parts violet, distal parts and fingers white.

**Remarks:** *Episesarma chengtongense* (Serène and Soh, 1967), *E. palawanense* (Rathbun, 1914) and *E. singaporense* (Tweedie, 1936) recorded at the border with Thailand may also occur in Myanmar.





dactylus of chela (lateral view)

Size: To 5 cm (CW)

#### FAO names: Natal Sally-light-foot (En)

# VARUNIDAE

Varunid crabs

# Varuna litterata (Fabricius, 1798)

FAO names: Oceanic paddler crab (En)

Local name(s): Pin-Le'-Ga-Nann.

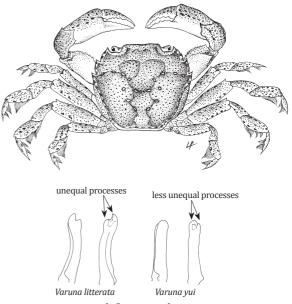
**Habitat:** Estuarine usually in slow-moving or almost stagnant bodies of water. Also found in completely fresh water. Prefers areas faced with more oceanic waters.

Fisheries: Collected mainly by hand.

**Distinctive Characters:** Carapace squarish, surface smooth; front straight; anterolateral margins each with 3 very broad, low but sharp teeth; dactylus, propodus, and carpus of legs laterally flattened, fringed with long, closely packed setae.

**Colour:** Light brown to brownish grey on dorsal surfaces.

**Remarks:** *Varuna yui* Hwang and Takeda, 1984 recorded at the border with Thailand may also occur in Myanmar.

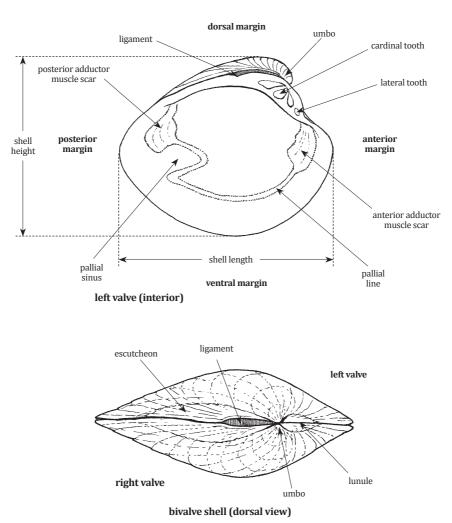


male first gonopod

Size: To 5 cm (CW)

# **BIVALVES**\*

In Myanmar, coastal species are of great interest to fisheries and have potential for export and aquaculture. Bivalves are harvested by raking in shallow waters and intertidal mudflats. They are also manually dislodged from the substrata. Some species of the genera *Pinctada* and *Pteria* are cultured for their ability to develop pearls. Others, such as giant clams of the genera *Tridacna*, are grounded up and used as construction material or as additive in chicken feed. Fifteen species belonging to seven families are included in the guide.



**TECHNICAL TERMS AND MEASUREMENTS** 

Adductor muscle: Muscle connecting the two valves of a shell, tending to draw them together.

Byssus: Clump of horny threads spun by the foot, by which a Bivalve can anchor to a hard substrate.

**Chomata:** Small denticles and corresponding pits located on the inner margin of the valves (Ostreidae and Gryphaeidae). **Hinge:** Top interlocking margin of the valves, often with shelly projections (teeth) and corresponding recesses (sockets). **Ligament:** Horny, elastic structure joining the two valves dorsally, causing the opening of shell when adductor muscles relax.

**Mantle:** Fleshy sheet surrounding vital organs and composed of two lobes, one lining and secreting each valve. **Muscle scar:** Impression marking the place of attachment of a muscle inside the shell.

**Pallial line:** A line near the internal margin of valve, marking the site of attachment of the mantle edge. **Umbo:** The first formed part of a valve, usually above the hinge.

\*Section upgraded and completed by J.-M. Poutiers (MNHN, Paris)

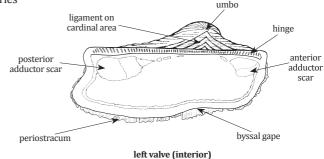
# **GUIDE TO FAMILIES**

# ARCIDAE

#### Ark shells

To 6 cm. Marine. One species of interest to fisheries is included in the Guide to Species.

Shell equivalve or slightly inequivalve, more or less inequilateral; umbones in front of the midline, on top of a wide cardinal area covered with the external ligament; hinge elongate, almost straight, with numerous small transverse teeth; adductor muscle scars subequal; pallial line without a sinus.

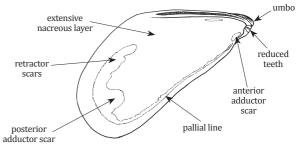


# MYTILIDAE

#### Sea mussels

To about 19 cm. Marine and brackish waters. One species of interest to fisheries is included in the Guide to Species.

Shell equivalve and very inequilateral, with a narrow byssal gape; ligament external, deep-set in a whitish marginal ridge; hinge teeth absent or reduced; adductor muscle scars unequal, the anterior one small (sometimes absent); pallial line without a sinus; inner side of shell with an extensive nacreous layer.



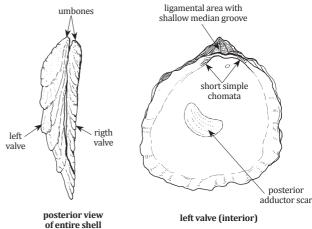
left valve (interior)

# **OSTREIDAE**

#### **Oysters**

To about 43 cm. Marine and estuarine. Two species of interest to fisheries are included in the Guide to Species.

Shell inequivalve, cemented to the substrate by the left (lower) valve which is generally larger and deeper; right (upper) valve quite flat; ligamental area with shallow median groove and 2 lateral thickenings; hinge without teeth; a single (posterior) adductor muscle scar, generally median in position; pallial line obscure to absent, without a sinus; internal margins smooth or with simple, short chomata.



# Page 39

Page 39



# Bivalves

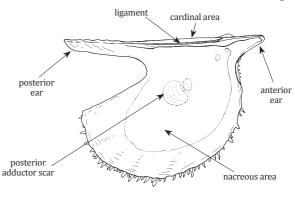
# Page 41

# **PTERIIDAE**

# **Pearl oysters**

To about 30 cm. Marine and brackish waters. Four species of interest to fisheries is included in the Guide to Species.

> Shell slightly inequivalve; dorsal margin often produced at each end into a wing-like ear, sometimes very long behind right valve with a byssal notch anteriorly; hinge toothless or with denticles; interior brilliantly nacreous; only one adductor muscle scar; pallial line without a sinus.



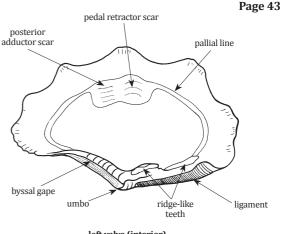
left valve (interior)

# TRIDACNIDAE

# **Giant clams**

To 137 cm. Clear shallow waters of coral reefs. Four species of interest to fisheries are included in the Guide to Species. Although here treated as a separate family, modern phylogenetic analyses included the giant clams in the family Cardiidae as a subfamily.

> Shell equivalve, thick, heavy and often very large, with strongly scalloped free margins; umbones ventral, free margins of the valves dorsal-most in position; byssal gape, when developed, internally plicate; outer surface with strong radial folds; ligament external; hinge with ridge-like cardinal and lateral teeth; a single adductor muscle scar, associated with a pedal retractor scar, submedian in position; pallial line without a sinus



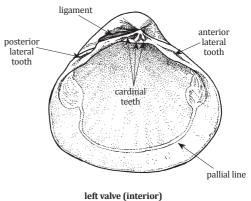
left valve (interior)

# CYRENIDAE (=CORBICULIDAE)

# Marsh clams

To about 10 cm. Fresh and brackish water. Two species of interest to fisheries are included in the Guide to Species.

> Shell equivalve, solid, umbones prosogyrate; no lunule nor escutcheon; periostracum conspicuous; ligament external; three diverging cardinal teeth in each valve, and strong anterior and posterior lateral teeth; two adductor muscle scars; pallial sinus reduced to absent.



Page 45

# ARCIDAE Ark shells

# Tegillarca nodifera (Martens, 1860)

#### Local name(s):

Habitat: On mud and sand bottoms. Intertidal and shallow sublittoral waters to a depth of 10 m.

# Fisheries: Hands and knife.

Distinctive Characters: Shell equivalve, moderately inflated and solid, oblong ovate and distinctly longer than high; about 21 radial ribs (19 to 23) at each valve; ribs quite narrow and sharp, distinctly rugose, bearing regular rounded nodules on top; periostracum rather thin and smooth; no byssal gape.

**Colour:** Outside of shell white under the medium brown periostracum; inner side milky white.

FAO names: Nodular ark (En) Arche noduleuse (Fr)



interior of right valve



exterior of left valve

Size: To 6 cm, common 4 cm shell length

# **MYTILIDAE**

Sea mussels

# Perna viridis (Linnaeus, 1758)

#### Local name(s):

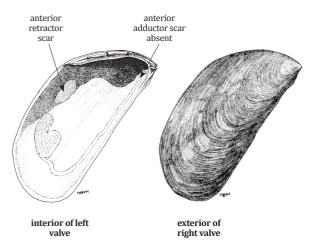
Habitat: Byssally attached to various hard objects or substrates. Littoral and sublittoral to a depth of 20 m

Fisheries: Hands and knife.

Distinctive Characters: Shell elongate, roughly trigonal-ovate in outline, swollen and pointed anteriorly, rounded and compressed posteriorly; umbones terminal and sharply tapering, rather incurved; periostracum rather thick and smooth, adherent; ligamental ridge finely pitted; anterior adductor scar absent in adult specimens; anterior retractor scar separated, elongate-ovate in shape, situated a short way to posterior end of ligament.

Colour: Outside of shell whitish under a bright periostracum which is dark brownish green anteriorly and olive-green to bright green posteriorly; interior an iridescent pale bluish green, with a vivid green margin of periostracum.

FAO names: Asian brown mussel (En) Moule verte asiatique (Fr)



# OSTREIDAE

# **Oysters**

# Crassostrea belcheri (G. B. Sowerby II, 1871)

# Local name(s):

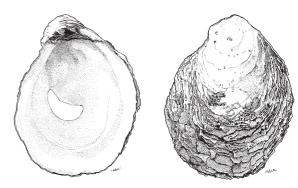
**Habitat:** Marine to brackish water areas of estuaries. Intertidal zone and shallow subtidal water to about 5 m deep.

# Fisheries: Hands and knife.

**Distinctive Characters:** Shell large to very largesized, thick, very variable in shape but generally higher than long and rounded ovate to elongate orbicular in outline; both valves convex, left (lower) valve rather thick, heavy and more convex than right (upper) valve, with rather small to large-sized attachment area; umbonal cavity present under the hinge of left valve; adductor muscle scar large, oblong-lunate, somewhat concave anterodorsally and roughly as far from ventral margin as from the hinge; chomata completely absent.

**Colour:** Outside of shell whitish to dull green; interior of valves porcelaneous white, with pearly-white muscle scar.

Bivalves



interior of left valve

exterior of right valve

Size: To 43 cm, common 15 cm shell length

# Saccostrea cuccullata (Born, 1778)

# Local name(s):

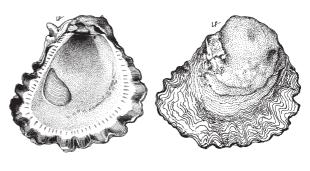
**Habitat:** Attached to various hard substrates, in marine, estuarine and mangrove areas, often in dense colonies. Intertidal and shallow subtidal levels to a depth of 5m.

#### Fisheries: Hands and knife.

**Distinctive Characters:** Shell stout,very variable in shape and size, usuallymediumsized to small and very inequivalve; left (lower) valve generally deep (occasionally very shallow), with large attachment area and strong radial ribs towards the periphery; right (upper) valve flattish, fitting down into the plicate margins of the wider opposite valve; adductor muscle scar kidney-shaped, more or less posteroventral in position; interior of valves with a crescent-shaped series of small disjunct pallial imprints between the posterior adductor scar and the anterodorsal margin.

**Colour:** Exterior of shell dirty white to greyish brown, often with shades of purple; interior creamy white, with deep purple margins and frequently a subnacreous iridescence.

FAO names: Hooded oyster (En) Huître-capuchon (Fr)



interior of left valve

exterior of right valve

# PTERIIDAE

Pearl oysters

# Pinctada margaritifera (Linnaeus, 1758)

# Local name(s):

**Habitat:** On various bottoms, byssally attached to hard substrates at least in the young stages. Mainly in clear water under the influence of currents. Often in dense colonies. Littoral and sublittoral to a depth of 20 m.

**Distinctive Characters:** Shell rather thick and large (attaining 25 cm in length), subcircular in outline, with a short and ill-defined posterior ear which is not drawn out into a wing-like process; anterior margin markedly protruding beyond the tip of anterior ear; hinge completely devoid of teeth.

**Colour:** Outside of shell dark greyish brown or green to nearly black in ground colour, with radial stripes of white or yellowish markings corresponding to the basal portion of old flattened spines; internal nacreous area silvery, with a darker smoky hue and a hint of red and green iridescence on border; non-nacreous area very dark.

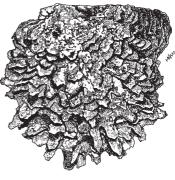
Pinctada maxima (Jameson, 1901)

# Local name(s):

**Habitat:** On various bottoms, byssally attached to hard substrates or objects, at least in the young stages. Mainly in clear water under the influence of currents. Often in dense colonies. Littoral and sublittoral to a depth of 60 m

**Distinctive Characters:** Shell rather thick and large to very large (attaining 30 cm in length), subcircular in outline, with a short and ill-defined posterior ear which is not drawn out into a wing-like process anterior margin markedly protruding beyond the tip of anterior ear; hinge completely devoid of teeth.

**Colour:** Outside of shell uniformly fawn, sometimes with radial stripes of darker spots in umbonal region; then, ground colour in that region green, dark brown, or purple; internal nacreous area highly lustrous, silvery with a variably extended golden border; non-nacreous margin clear, of a plain horny colour.



exterior of left valve

FAO names: Blacklip pearl oyster (En) Pintadine à lèvre noire (Fr)



interior of left valve

exterior of right valve

Size: To 25 cm, common 13 cm shell length

FAO names: Goldlip pearl oyster (En) Pintadine à lèvre dorée (Fr)

# Pinctada radiata (Leach, 1814)

FAO names: Rayed pearl oyster (En) Pintadine radiée (Fr)

Bivalves

## Local name(s):

**Habitat:** Byssally attached to rocks, dead corals and various submerged objects, often forming large natural banks. On soft bottoms, they aggregate to one another. Littoral, sublittoral and shelf zone, from low tide levels to a depth of about 150 m (most commonly, from depths of 5 to 25 m).

**Distinctive Characters:** Shell rather thin and small to medium sized, relatively inflated, subquadrate in outline, with a short and ill-defined posterior ear which is not drawn out into a wing-like process; dorsal margin relatively long, anterior margin protruding only slightly or not at all beyond the tip of anterior ear; hinge line with 2 small teeth in each valve: 1 rounded anterior tubercule just in front of the umbo, and 1 posterior ridge, situated behind the ligamental area and almost parallel to dorsal margin.

**Colour:** Outside of shell variable, uniform or with darker markings or radial rays, mostly of reds and browns, but sometimes of green and bronze coloration; internal nacreous area highly iridescent; non-nacreous margin glossy, light brown with dark brown or reddish blotches corresponding to the main external rays.

# interior of left valve

#### Size: To 9.5 cm, common 6 cm shell length

# Pteria penguin (Röding, 1798)

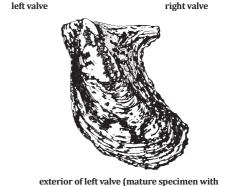
#### Local name(s):

**Habitat:** Byssally attached to rocks, corals, gorgonians and other hard objects. Littoral and sublittoral, from low tide levels to a depth of 35 m. **Distinctive Characters:** Shell solid, reaching a very large size, obliquely ovate in outline, with posterior ear drawn out into a narrow, more or less elongated, wing-like expansion; slightly inequivalve, left valve a little more inflated and with a weak rounded fold radiating from umbo to posteroventral end of shell; outline of shell variable, initially narrowly oblique, later greatly expanding ventrally and almost as high as long, or even higher than long in larger specimens and with the posterior ear relatively short; interior of shell with a wide non-nacreous margin ventrally.

**Colour:** Outside of shell plain dark brown to black; interior silvery and brilliantly nacreous, with a broad, posteroventrally expanded, glossy black margin.

FAO names: Penguin wing oyster (En) Avicule épaisse (Fr)

interior of



exterior of

exterior of left valve (mature specimen with shortened posterior wing)

Size: To 30 cm, common 20 cm shell length

#### Tridacnidae - 85

# TRIDACNIDAE

Giant clams

# Hippopus hippopus (Linnaeus, 1758)

# Local name(s):

Habitat: On sandy bottoms of coral reefs, in shallow water to a depth of 6 m.

Fisheries: Hands and knife.

Distinctive Characters: Shell very thick and heavy, medium to rather large sized, globose in shape and triangularly ovate to subrhomboidal in outline; posteroventral margin of valves without a welldefined byssal orifice, bordered by interlocking crenulations which become stronger posteriorly; dorsal free margin of shell irregularly arched and roughly triangular in shape, more protruding at about midlength, sloping and slightly depressed anteriorly and posteriorly; surface of small specimens (less than 20 cm in length) moderately rough, with prominent, conspicuously ribbed radial folds; inhalent (posterior) siphonal opening without tentacles.

Colour: Outside of shell off-white, with yellowish orange suffusion and with reddish blotches arranged in irregular concentric bands: interior porcelaneous white, frequently flushed with yellowish orange on ventral margin; Dorsally exposed mantle area of living specimens yellowish brown, dull green or grey.

Tridacna gigas (Linnaeus, 1758)

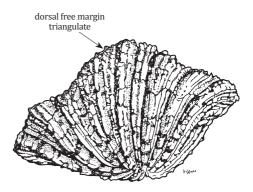
# Local name(s):

Habitat: On sand, in coral-reef areas, from depths of 2 to 20 m.

Fisheries: Hands and knife.

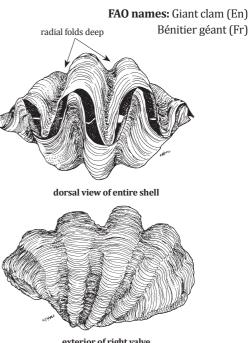
Distinctive Characters: Shell very thick and heavy, moderately to strongly inflated and rather equilateral in shape, subovate to fan-shaped in outline; posteroventral margin of valves with a moderately small byssal orifice, bordered by obsolete, non-interlocking crenulations; outer surface of each valve with 4 to 6 deep radial folds, 4 of which are generally very large, forming elongatetriangular projections on dorsal free margin; secondary sculpture of weak radial riblets (both on and between the main radial folds) and overriding, fine concentric lines of growth, becoming obsolete on later stages of growth.

Colour: Exterior of shell off-white, often strongly encrusted with marine growths; interior porcelaneous white; dorsally exposed mantle area of living specimens yellowish brown to olive green, with numerous, small, brilliant blue-green rings.



exterior of left valve

Size: To 40 cm, common 20 cm shell length



exterior of right valve

Size: To 137 cm, common 80 cm shell length

FAO names: Bear paw clam (En)

Bénitier tacheté (Fr)

# Tridacna maxima (Röding, 1798)

Bivalves

FAO names: Elongate giant clam (En) Bénitier allongé (Fr)

# Local name(s):

**Habitat:** On reefs, partially embedded in corals. Littoral and shallow water to a depth of 20 m. **Fisherics:** Hands and knife.

# Fisheries: Hands and knife.

Distinctive Characters: Shell moderately inflated, strongly inequilateral and highly variable in shape, usually elongate-ovate to somewhat triangular in outline; umbones markedly anterior in position, generally situated about the anterior 1/3 of shell length; posteroventral margin of valves with a large byssal orifice, bordered by 4 to 9 small, distinct to obsolete and non-interlocking crenulations, which become more distantly set posteriorly; outer surface of each valve with 6 or 7 very broad. moderately convex, rib-like radial folds, bearing closely set, erect but low, concentric scales; scales developed on entire shell; secondary sculpture of closely spaced, undulate concentric lines of growth, and weak radial riblets; posterior pedal retractor scar relatively large

**Colour:** Exterior of shell greyish white, often suffused with yellow or pinkish orange and strongly encrusted with marine growths. Interior porcelaneous white, sometimes with yellow to orange hues on margins; dorsally exposed mantle area of living specimens often brightly coloured and variable in colour and pattern.

Tridacna squamosa Lamarck, 1819

# Local name(s):

**Habitat:** Littoral and shallow water to a depth of 20 m.

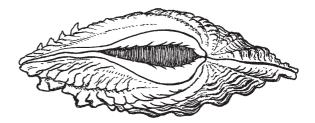
Fisheries: Hands and knife.

**Distinctive Characters:** Shell nearly equilateral in shape, semicircular in outline; umbones about midlength of shell or slightly anterior; posteroventral margin of valves with a mediumsized byssal orifice, bordered by 6 to 8 small, noninterlocking crenulations; posteroventral slope relatively broad and flat; outer surface of each valve with 5 or 6 broad, rib-like radial folds bearing large and erect, distant, blade-like concentric scales which are delicate and easily broken; secondary sculpture of many low radial riblets, crossed by concentric growth lines, giving a finely latticed pattern, mainly noticeable in the wide interstices of ribs.

**Colour:** exterior of shell highly variable, greyish white, often with different hues of orange, yellow, or pink to mauve; interior porcelaneous white, occasionally tinged with orange; dorsally exposed mantle area of living specimens mottled in various mixes of green, blue, brown, orange, and yellow.



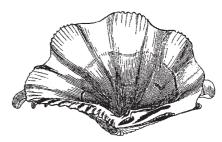
exterior of right valve



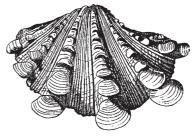
ventral view of entire shell

Size: To 35 cm, common 25 cm shell length

FAO names: Fluted giant clam (En) Bénitier écailleux (Fr)



interior of left valve



exterior of right valve

Size: To 40 cm, common 30 cm shell length

#### Cyrenidae - 87

# CYRENIDAE

# Marsh clams

# Geloina expansa (Mousson, 1849)

# Local name(s):

**Habitat:** In muddy, brackish to almost freshwater areas of mangrove swamps. Can survive during drought periods by aerial respiration at the posterior mantle margins.

Fisheries: Hands and knife.

Distinctive **Characters:** Shell equivalve, trigonal-ovate in outline, inequilateral, distinctly expanded posteriorly; umbones inflated, in front of the midline of shell; outer surface of valves concentrically striated, with a faint radial fold running from umbones to posteroventral margin; periostracum thick and fibrous, the umbones often corroded and showing the shell material; hinge teeth moderately strong; anterior and central right cardinal teeth bifid, as well as central and posterior left cardinals; lateral teeth smooth: 1 anterior and 1 posterior laterals in left valve, against 2 in right valve; pallial sinus inconspicuous.

**Colour:** Outside of shell chalky white under the greenish to yellowish brown periostracum; interior chalky or porcelaneous white.

# Polymesoda bengalensis (Lamarck, 1818)

# Local name(s):

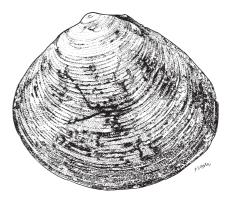
Habitat: In mud flats and estuaries of mangrove areas.

Fisheries: Hands and knife.

**Distinctive Characters:** Similar to *Geloina expansa* (Mousson, 1849) but shell not expanded posteriorly and not rostrate; shell subrhomboidalovate (rather than trigonal-ovate) in outline with peculiar ventral posterior margin.

**Colour:** No information.

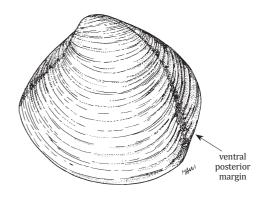
FAO names: Broad geloina (En) Cyrène large (Fr)



exterior of left valve

Size: To 10 cm, common 7 cm shell length

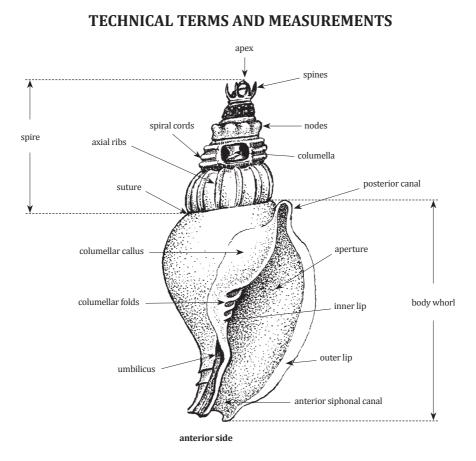
FAO names: Bengali geloina (En) Cyrène bengali (Fr)



exterior of left valve

# **GASTROPODS**\*

Several marine gastropod species are commercially important in Myanmar and are collected for food by coastal populations, and the shell used in the shellcraft industry. Nineteen species belonging to six families are included in the guide.



Gastropod shell (ventral view)

**Aperture:** Opening of shell, at the last formed margin; in a spiral shell, the margin nearer to the coiling axis forms the inner lip, and the opposite margin the outer lip.

**Base:** Lower part of the shell, anterior to level of periphery of body whorl.

Body whorl: The largest, last turn of the spiral in a coiled shell.

Callus: Thick secondary deposit of lime, generally shiny and porcellaneous.

**Columella:** Coiling axis of shell, forming the lower part of inner lip.

**Operculum:** Horny or calcareous part attached to the foot, sealing aperture when animal retracts within the shell. **Sculpture:** Relief pattern on shell surface. When parallel to the curve of whorls, sculptural elements are spiral; when parallel to the coiling axis, they are axial.

Shoulder: Distinct spiral angulation of a whorl.

Siphonal canal: Trough-like or tubular extension of aperture anteriorly, for inclosure of a fleshy siphon.

**Spire:** All the whorls of a shell, except the last one.

Suture: Spiral line or groove of shell surface, where adjacent whorls meet.

Umbilicus: Opening at base of shell made around the coiling axis when columella is hollow.

**Varix (pl. varices):** Axial rib-like thickening of the outer surface of shell, representing a previous growth halt during which the outer lip of aperture thickened.

\*Section upgraded and completed by J.-M. Poutiers (MNHN, Paris)

# **GUIDE TO FAMILIES**

# **TROCHIDAE s.l.**

# **Top shells**

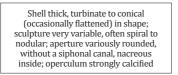
To 15 cm. Marine. Two species of interest to fisheries are included in the Guide to Species. Based on modern molecular studies, assignment of these species to the recently recognised family Tegulidae is incorrect. Pending to a correct family assignment, they are provisionally left here in the family Trochidae.



# TURBINIDAE

#### **Turban shells**

To 22 cm. Marine. Two species of interest to fisheries are included in the Guide to Species.

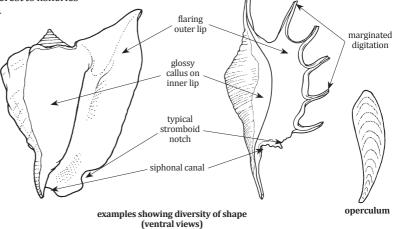


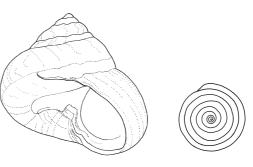


# Conchs

To 29 cm. Marine. Four species of interest to fisheries are included in the Guide to Species.

Shell thick and solid, with a relatively large body whorl; aperture with a well-marked siphonal canal; a distinct notch along the anterior margin of the outer lip; operculum corneous, claw-like.





ventral view

operculum corneous

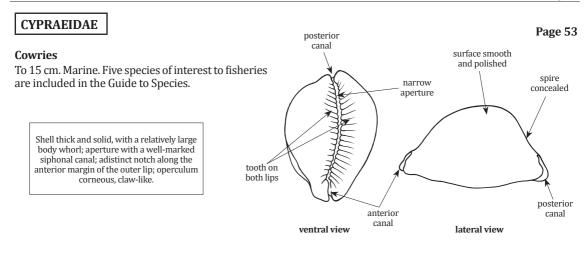




ventral view

Page 51

Page 49

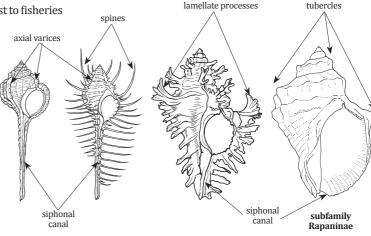


MURICIDAE

# Purpuras - Murex - Rock shells

To 33 cm. Marine. Five species of interest to fisheries are included in the Guide to Species.

Shell variably shaped, generally with a raised spire and strong sculpture with spiral ridges and often axial varices, frequently bearing spines, tubercles or blade-like processes (axial varices absent in Rapaninae); siphonal canal short to long; operculum corneous



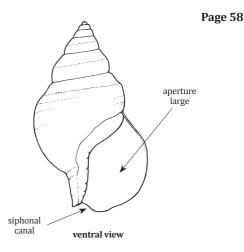
examples showing diversity of shape (ventral views)

# BABYLONIIDAE

# Ivory whelks

To 6.5 cm. Marine. One species of interest to fisheries is included in the Guide to Species. This family has been recently separated from the Buccinidae on anatomical and molecular grounds.

> Shell ovate-conical and globose to slender in shape, generally with fairly pointed spire and large body whorl; outer surface smoothish, without axial varices or developed spines; coloration typically patterned with brown to orange markings, rather regularly arranged along spiral (sometimes diagonal) rows; siphonal canal short; operculum corneous, completely occluding the aperture.



# Page 55

# TROCHIDAE

Top shells

# *Tectus niloticus* (Linnaeus, 1767)

## Local name(s):

**Habitat:** In coral reef areas, typically in shallow, high-energy portions of barrier and fringing reefs to a depth of about 10 m.

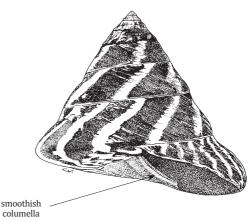
## Fisheries: Caught by hands.

**Distinctive Characters:** Shell large, thick and very heavy, conical in shape; spire tall, with pointed apex and shallow sculpture, weakening with growth; early spire whorls distinctly tuberculated just above the sutures, the following ones flat-sided and quite smooth, separated by linear sutures; body whorl of large specimens nearly smooth; base of shell flattish; umbilicus present; aperture squarish; columella long, curved and smooth, somewhat thickened marginally.

**Colour:** Under the yellowish brown periostracum, the outer surface of shell is off-white, with large, irregularly axial reddish stripes, which are usually narrower and lighter on the base; columellar ridge nacreous, with a pure white, glossy spiral margin encircling the umbilicus.

FAO names: Commercial top (En)

Trocha nacrier (Fr)



ventral view

# Size: To 15 cm, common 11 cm shell length

# *Tectus pyramis* (Born, 1778)

# Local name(s):

**Habitat:** Abundant in coral reef and rocky shore habitats. Littoral and shallow subtidal zones to a depth of about 10 m.

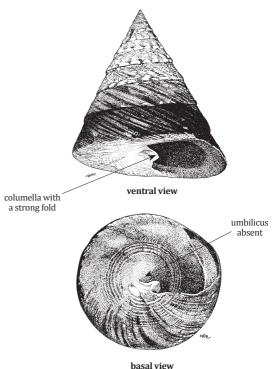
#### Fisheries: Caught by hands.

**Distinctive Characters:** Shell large, conical in shape; spire tall, with pointed apex, flat-sided whorls and reduced sculpture usually weakening with growth and becoming obsolete on body whorl of large specimens; sculpture of whorls comprising a row of low tubercles at the suture and sometimes weak spiral threads; base of shell flat; umbilicus absent; aperture squarish; columella with a strong, concave spiral fold.

**Colour:** Outside of shell lightly mottled in shades of drab grey to brown or green; base creamy brown, green or blue-green towards periphery, becoming white and glossy towards columella and aperture which is nacreous inside.

FAO names: Pyramid top (En)

Troque obélisque (Fr)



# TURBINIDAE

Turban shells

# Turbo argyrostomus Linnaeus, 1758

# Local name(s):

**Habitat:** Coral reef areas, in moderately exposed habitats and in lagoons of atolls.

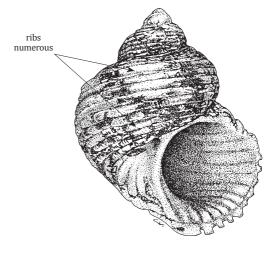
Fisheries: Caught by hands.

**Distinctive Characters:** Shell large, solid and heavy, turbinate in shape; spire, pointed with strongly convex whorls; body whorl with a rounded ovate aperture; spiral sculpture well developed, with numerous ribs and grooves; exterior of operculum prominently pustulose, with oblique marginal grooves.

**Colour:** Outside of shell either whitish or irregularly marbled with green and brown, or uniformly greenish; aperture glossy white, becoming silvery white inside; exterior of operculum white, often with a greenish centre and brown to orange outer margin.

FAO names: Silvermouth turban (En)

Turbo bouche-d'argent (Fr)



ventral view

Size: To 10 cm, common 7.5 cm shell length

FAO names: Green turban (En)

Turbo vert (Fr)

Turbo marmoratus Linnaeus, 1758

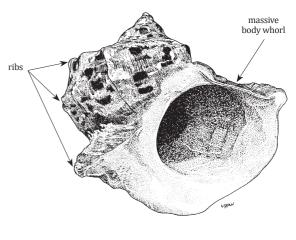
# Local name(s):

**Habitat:** In subtidal, coral reef areas open to a constant flow of clean oceanic water. Juveniles mainly living on reefs crests, at depths of 1 to 5 m; adults also occurring deeper on slopes, to about 20 m or more.

Fisheries: Caught by hands.

**Distinctive Characters:** Shell reaching a very large size, sturdy, roughly turbinate in shape with a rather small, pointed spire and a strongly developed, massive body whorl; spiral sculpture poorly developed, apart from 3 ribs on shoulder, periphery, and base of body whorl, bearing blunt tubercles; exterior of operculum smooth to finely granular.

**Colour:** Outside of shell dull-coloured, uniformly greenish or dark green or mottled dark green and whitish, often with spiral bands of alternating chestnut brown and grey spots; interior of aperture silvery white; exterior of operculum whitish.



ventral view

FAO names: Variable conch (En)

Strombe variable (Fr)

# STROMBIDAE

Conchs

# Dolomena variabilis (Swainson, 1820)

# Local name(s):

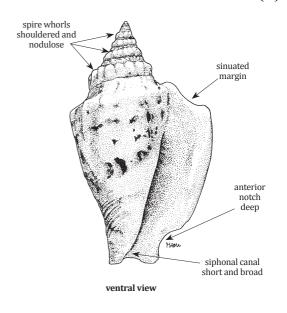
**Habitat:** On coral sand and sandy-mud bottoms. Mainlysublittoral, from low tide levels to a depth of about 50 m.

# Fisheries: Caught by hands.

**Distinctive Characters:** Shell small, elongateovate, with a relatively high, conical spire and a widely flaring outer lip; spire whorls distinctly shouldered and nodulose; outer lip roughly wingshaped and sinuated posteriorly; anterior notch deep; siphonal canal short and broad.

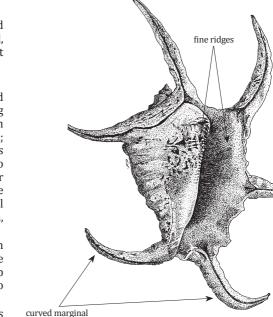
**Colour:** Outside of shell white or cream, with heavy flecking of brown leaving on body whorl 5 narrow indistinct spiral white bands; interior glossy white, ofren with a conspicuous brown patch on columella.

**Remarks:** The presence of this species in Myanmar needs to be confirmed.



Size: To 6 cm, common 4.5 cm shell length

# FAO names: Chiragra spider conch (En) Ptérocère rugueux (Fr)



digitations

ventral view

Harpago chiragra (Linnaeus, 1758)

# Local name(s):

**Habitat:** In coral reef areas, often on coarse sand with coral rubble and algae. Littoral and sublittoral, in tidal pools and low tide levels to a depth of about 25 m.

Fisheries: Caught by hands.

**Distinctive Characters:** Shell large, thick and heavy, bearing 5 five very thick, widely diverging marginal digitations on the outer lip, all of which distinctly curved except the one nearest the spire; spire whorls concave, with a row of strong knobs on the angulated shoulder; body whorl with 4 to 5 strong spiral ridges bearing tubercles, stronger on the shoulder; columella and outer lip of the aperture with many fine incised ridges; siphonal canal expanded in a well developed digitation, markedly curved towards the left.

**Colour:** Outside of shell whitish to cream with various tan to dark brown markings; aperture usually light or rich pink to orange, white deep within; spiral ridging colourless, or whitish to brownish.

**Remarks:** Sexual dimorphism strong, females usually much larger than the males.

# Lambis lambis (Linnaeus, 1758)

FAO names: Common spider conch (En) Ptérocère commun (Fr)

# Local name(s):

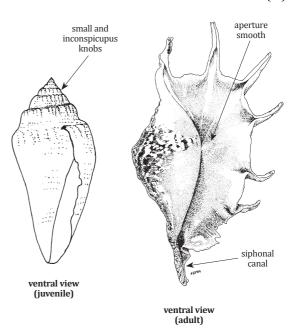
**Habitat:** Common on reef flats and on coral-rubble bottoms or in mangrove areas to a depth of about 5 m.

Fisheries: Caught by hands.

**Distinctive Characters:** Shell large, thick and heavy, bearing 6 large and slender marginal digitations on the strongly flaring outer lip; spire whorls with relatively small and inconspicuous knobs on the shoulder; body whorl rough, with 2 or 3 spiral rows of blunt tubercles forming large knobs on the shoulder; columella and outer lip of the aperture extensively glazed, smooth or nearly so; siphonal canal expanded in a relatively short and wide digitation, slightly bent towards the right. **Colour:** Outer coloration of shell variable, cream to

tan, often with various patterns of brown, purplish tan, or bluish black; glazed ventral side rich pink, orange, or purple tan, sometimes whitish.

**Remarks:** Sexual dimorphism pronounced. Shell of the males usually smaller and with shorter digitations on the outer lip.



Size: To 29 cm, common 18 cm shell length

# Laevistrombus canarium (Linnaeus, 1758)

# Local name(s):

**Habitat:** Abundant on muddy sand and algae bottoms of larger islands and continental shores. Littoral and sublittoral zones, from low tide levels to a depth of about 55 m.

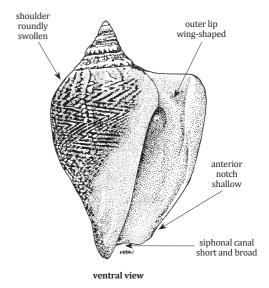
Fisheries: Caught by hands.

**Distinctive Characters:** Shell heavy, rotund and smoothish with spire whorls weakly ribbed and varicate; body whorl roundly swollen at the shoulder, smooth except for a few spiral grooves anteriorly; outer lip roughly wing-shaped, strongly thickened marginally, not expanding posteriorly beyond the last whorl; anterior notch shallow; siphonal canal short and broad, straightish.

**Colour:** Outer coloration of shell variable, light (rarely dark) yellowish brown or grey, uniform or with a network of closely spaced, fine wavy axial lines of darker brown; colour of body whorl often paler ventrally; aperture white, sometimes with a golden brown or metallic grey glaze on thickened margin of the outer lip and on columellar callus of mature specimens.

# FAO names: Dog conch (En)

Strombe isabelle (Fr)



FAO names: Tiger cowrie (En)

Porcelaine tigre (Fr)

# CYPRAEIDAE

Cowries

# Cypraea tigris Linnaeus, 1758

# Local name(s):

**Habitat:** Abundant on reef areas, on sand among rocks or corals, in tidal pools or on branched corals, often nearby seaweeds. Intertidal and sublittoral zones to a depth of about 30 m.

# Fisheries: Caught by hands.

**Distinctive Characters:** Shell large and heavy, very solid, with variable, ovate to pear-shaped outline; dorsal side inflated, with an unbranched, linear mantle groove.

**Colour:** Shell coloration very variable, ranging from almost white to nearly black, but usually whitish to light bluish grey, with a dense overlay of closely packed and irregularly sized, rounded spots of dark brown to black on dorsal and lateral sides; dark spots frequently edged with bright yellowish fawn or orange tints; dorsal mantle groove orange or light fawn; ventral side of shell white throughout, including the teeth, often with a pale greyish brown hue on mid-columellar surface.



dorsal view

Size: To 15 cm, common 9 cm shell length

# Lyncina vitellus (Linnaeus, 1758)

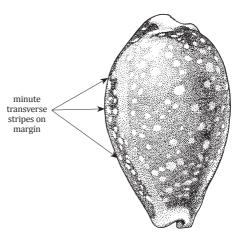
# Local name(s):

**Habitat:** In coral reef and rocky habitats, common in shallow water and tide pools, under coral slabs and stones, or among seaweeds, sometimes halfburied in sand. Intertidal and sublittoral zones to a depth of about 25 m.

# Fisheries: Caught by hands.

**Distinctive Characters:** Shell moderately large, tumid, ovate to pear-shaped in outline; dorsal side inflated, the mantle groove indistinct; ventral side slightly convex, with a narrow aperture.

**Colour:** Dorsal side of shell yellowish brown to fawn, usually with 2 obscure transverse bands of paler colour, and with a scattering of prominent white spots of varying size; lateral sides characteristically striated with minute, transverse and cloudy whitish stripes which are generally best developed on the right side of shell; ventral side creamy white, with white teeth. FAO names: Pacific deer cowrie (En) Porcelaine daim du Pacific (Fr)



dorsal view

# Mauritia eglantina (Duclos, 1833)

## Local name(s):

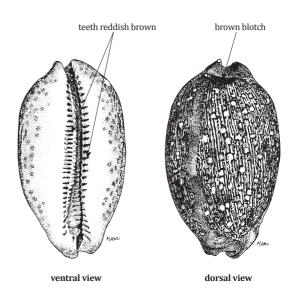
**Habitat:** Under slabs and stones, in coral reef and rocky habitats. Shallow subtidal waters.

Fisheries: Caught by hands.

**Distinctive Characters:** Shell relatively large, ovate to pear-shaped in outline; dorsal side rounded and more or less humped; ventral side convex; lateral margins more or less strongly expanded or calloused.

**Colour:** Ventral side whitish to creamy grey or pale fawn, teeth of the aperture reddish brown; dorsal side with a small brown blotch beside the spire.

FAO names: Eglantine cowrie (En) Porcelaine églantine (Fr)



Size: To 8.5 cm, common 6.5 cm shell length

# Mauritia mauritiana (Linnaeus, 1758)

#### Local name(s):

**Habitat:** Under stones and in crevices of coral reefs and rocky headlands exposed to strong wave action. Mostly active at night. Littoral and sublittoral zones, mainly in low tide and shallow subtidal levels.

Fisheries: Caught by hands.

**Distinctive Characters:** Shell large and heavy, very solid, elliptical-ovate in outline; dorsal side rounded and strongly humped, mantle groove often indistinct; lateral margins with an angular profile, markedly calloused; ventral side broad and slightly concave; teeth strong and prominent.

**Colour:** Dorsal side of shell pale tan, with brownish pattern leaving light rounded spots which often merge into one another; dorsal mantle groove sometimes enhanced by a narrow, creamy axial line; lateral sides and ventral surface of shell, including the teeth, uniformly deep chocolate brown to black, often with a translucent glossy hue of bluish grey; interstices of teeth white or cream.

FAO names: Humpback cowrie (En) Porcelaine bossue (Fr)

humped dorsal side

lateral view of shell

dorsal view

# *Talparia talpa* (Linnaeus, 1758)

# Local name(s):

**Habitat:** In coral reefs, under slabs or in large coral heads, either on the external slope or in protected areas of the reef. Intertidal and sublittoral zones to a depth of about 10 m.

Fisheries: Caught by hands.

**Distinctive Characters:** Shell large, solid, almost cylindrical in outline, with widely convex to nearly straight lateral margins and slightly produced anterior and posterior extremities; dorsal side moderately swollen, without a mantle groove; ventral side flattish, rounded laterally, with a narrow, straightish aperture; apertural teeth numerous, short and fine.

**Colour:** Dorsal side of shell cream to coffee, with 4 wide, transverse bands of darker golden brown; lateral margins, anterior and posterior extremities, ventral side and teeth deep chocolate brown to black; interstices of teeth stained with cream or white.

FAO names: Mole cowrie (En) Porcelaine taupe (Fr)

Cypraeidae - Muricidae - 97



dorsal view

Size: To 10.5 cm, common 8 cm shell length

FAO names: Adusta murex (En)

Murex bruni (Fr)

# MURICIDAE

Purpuras - Murex - Rock shells

# Chicoreus brunneus (Link, 1807)

# Local name(s):

**Habitat:** Common in various shallow water habitats, rocks, coral reefs, or clean to muddy sand bottoms. Intertidal and sublittoral zones, to a depth of about 20 m.

Fisheries: Caught by hands, baited traps.

**Distinctive Characters:** Shell moderately large, stout and heavy, roughly rhomboidal in outline, with a tall conical spire and inflated body whorl; about 3 strong and prominent, spinose axial varices per whorl, with a single broad axial node between them; spines of varices thick, branched, leaf-like and close-set; outer lip crenulate but without a tooth-like process; anterior siphonal canal broad and relatively short; operculum with subcentral to terminal nucleus (true of all *Chicoreus* species).

**Colour:** outside of shell usually brown, with darker brown to almost black spiral cords and spines, sometimes orange; aperture white or light pink, with deep pink lips. shell usually brown spire tall and conical and conical and conical and conical and conical and conical operculum external view

Size: To 11.5 cm, common 7 cm shell length

# Chicoreus ramosus (Linnaeus, 1758)

# FAO names: Ramose murex (En) Murex rameux (Fr)

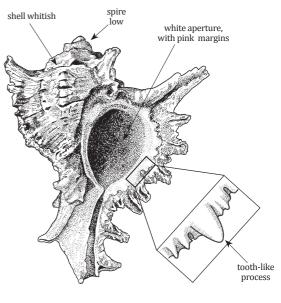
# Local name(s):

**Habitat:** Common on coral reef areas, often on clean coarse sand and rubble bottoms in which large individuals partially bury themselves. Intertidal and shallow sublittoral zones to a depth of about 10 m.

Fisheries: Caught by hands, baited traps.

**Distinctive Characters:** Shell large, solid, globose ovate with a moderately low spire and tumid body whorl; about 3 spinose axial varices per whorl, with 2 unequal, axially elongate nodes between them; spines leaf-like, moderately short; outer lip of aperture crenulate and with a prominent tooth-like process anteriorly; anterior siphonal canal moderately long, broad and narrowly open, with 2 or 3 spines.

**Colour:** Outside of shell whitish, sometimes stained rusty pink near sutures and along spiral lines; aperture white interiorly, with pink margins.



ventral view

Size: To 33 cm, common 20 cm shell length

Chicoreus torrefactus (G. B. Sowerby II, 1841)

# Local name(s):

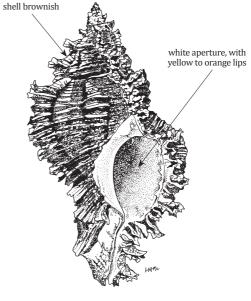
**Habitat:** Among rocks or on muddysand bottoms, near rocks and under corals. Littoral and shallow subtidal waters.

Fisheries: Caught by hands, baited traps.

**Distinctive Characters:** Shell moderately large, solid, fusiform and moderately slender in outline, with a high, acute spire and large, elongate body whorl; 3 spinose axial varices per whorl, with usually 2 or 3 axial nodes between them; spines of varices short and branched; outer lip crenulate but without a tooth-like process; anterior siphonal canal moderately short with 3 or 4 spines.

**Colour:** Outside of shell usually brown, with darker spiral cords and spines; aperture white, often with yellow to orange lips.

# FAO names: Firebrand murex (En) Murex torréfié (Fr)



ventral view

# Mancinella alouina (Röding, 1798)

#### Local name(s):

**Habitat:** On rocks, usually among marine growths and algae in sheltered areas. Littoral and shallow subtidal zones.

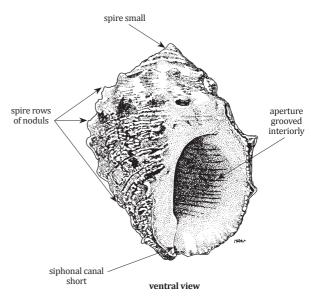
Fisheries: Caught by hands, baited traps.

**Distinctive Characters:** Shell sturdy, broadly ovate, with rather small conical spire, large globose body whorl and short siphonal canal; body whorl with many spiral grooves, 5 spiral rows of pointed nodules and distinctly knobbed band at anterior end; aperture conspicuously and finely grooved within; operculum D-shaped, with nucleus on middle of the convex rim which is callused interiorly.

**Colour:** Outside of shell cream brown, with darker rusty brown nodules; aperture and columella light to dark orange, darker orange-red on internal grooving.

# FAO names: Alou rock shell (En)

Pourpre petit-bourgeon (Fr)



Size: To 6 cm, common 5 cm shell length

Murex ternispina Lamarck, 1822

#### Local name(s):

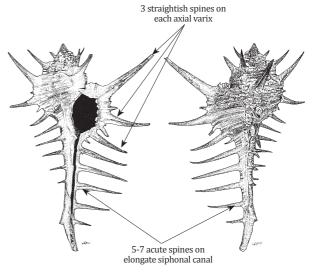
**Habitat:** On soft sublittoral bottoms, from shallow water to a depth of about 60 m.

Fisheries: Caught by hands, baited traps.

**Distinctive Characters:** Shell highly spinose, club-shaped with a moderately tall conical spire, an inflated body whorl and elongate siphonal canal which is longer than the length of the spire and aperture; 3 heavy rounded axial varices per whorl, with 3 to 5 nodulose axial ribs between them, crossed by spiral cords; each varix with 3 well developed, almost straight spines, shoulder spine longest; anterior siphonal canal tubular, with 3 single axial rows of 5 to 7 acute long spines; operculum concentrically foliate, with subcentral nucleus.

# Colour:

FAO names: Black-spined murex (En) Murex noire-épine (Fr)



ventral view

dorsal view

# BABYLONIIDAE

Ivory whelks

# Babylonia areolata (Link, 1807)

# Local name(s):

**Habitat:** On sand and mud bottoms. Sublittoral, mainly between depths of 10 and 20 m.

Fisheries: Caught by hands, baited traps.

**Distinctive Characters:** Shell rather thin but solid, elongate-ovate in shape, with a high, conical spire and large, inflated body whorl; spire whorls convex, distinctly shouldered below the sutures; outer surface smooth and polished, under the prominent, velvety periostracum; aperture large and ovate, somewhat pointed at posterior end, with a broadly open and short siphonal canal anteriorly; umbilicus deeply perforated.

**Colour:** Outside of shell white, with 3 spiral rows of large, squarish brown spots on body whorl, and 1 row of such spots on spire whorls.

FAO names: Maculated ivory whelk (En) Buccin à carreaux (Fr)



ventral view

Size: To 6.5 cm, common 5 cm shell length

# **CEPHALOPODS**

All species of octopus, squid and cuttlefish are of commercial importance, and used as bait for various fish species and lobsters. The "Guide to Orders" and "Guide to Species" include three orders and ?? species, respectively.

# TECHNICAL TERMS AND MEASUREMENTS AND GUIDE TO ORDERS

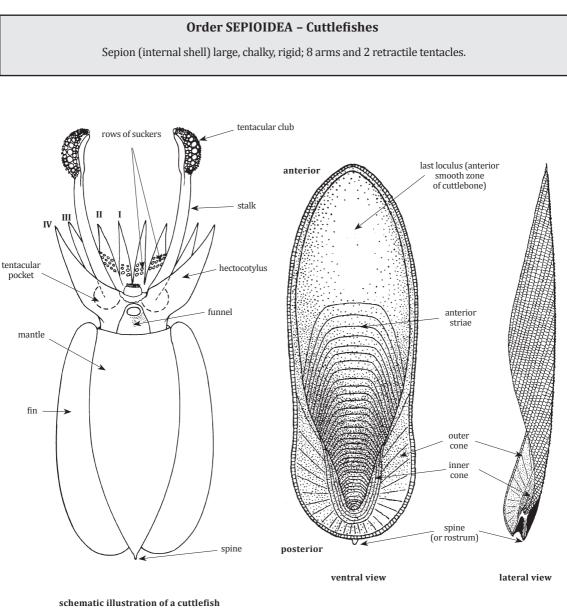
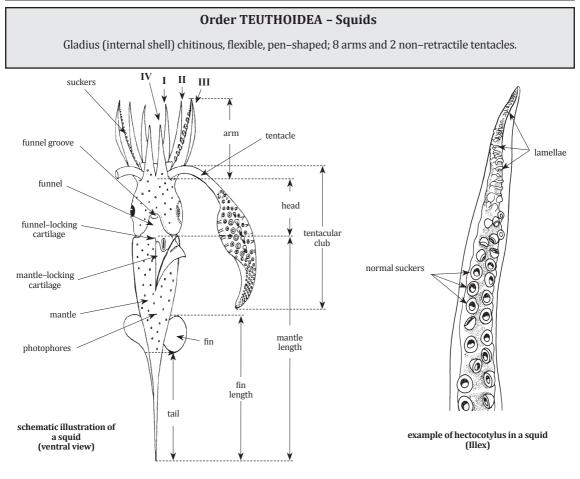


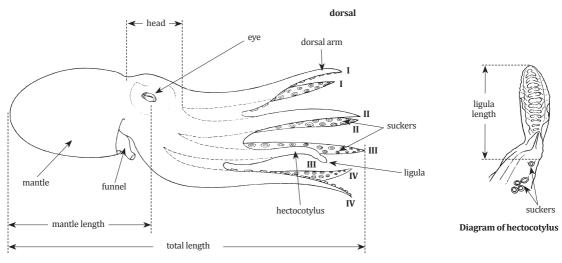
illustration of a cuttlefish (ventral view)

cuttlebone



# **Order OCTOPODA - Octopuses and Argonauts**

Internal shell reduced or absent; 8 arms, no tentacles.



Schematic illustration of an octopus (lateral view)

# NAUTILIDAE

# Chambered nautiluses

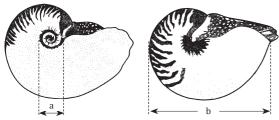
## Nautilus pompilius Linnaeus, 1758

Local name(s): Naw Ti Lus Pin-Lae-Kha-Yu.

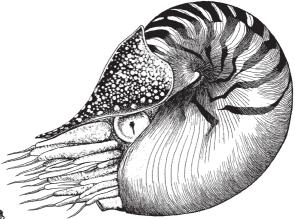
**Habitat:** Inhabits deeper continental shelf and slope waters around coral reefs, from near the surface to a depth of about 750 m.

Fisheries: Bottom trawls, scuba diving.

**Distinctive Characters:** Shell generally smooth, without growth lines; umbilicus (a) small, approximately 5% of shell diameter (b) and covered by a calcareus deposit, the umbilical callus. **Colour:** Brown to reddish brown striped colour pattern, from the shell margin extending to the umbilicus in some specimens or only half way across the shell in others.



FAO names: Emperor nautilus (En) Nautile flammé (Fr)



Size: To 18 cm (maximum shell diameter)

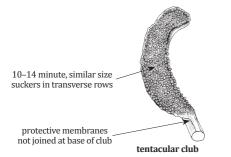


Sepia aculeata Van Hasselt, 1835

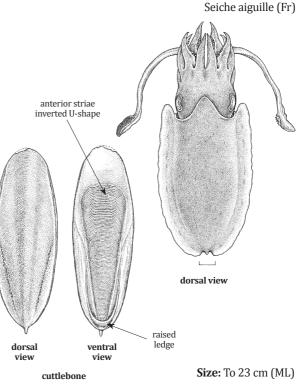
Local name(s): Soke-Khwet-Thae-Pyi-Gyi-Nga. Habitat: Demersal species, occuring to 60 m depth. Fisheries: Bottom trawls, squid jigging.

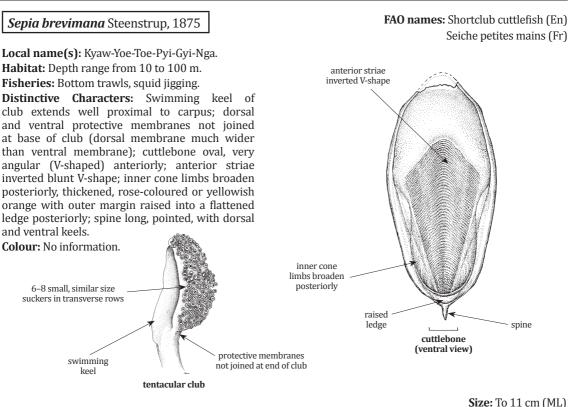
**Distinctive Characters:** Cuttlebone outline ovale; anterior striae inverted U-shape; inner cone limbs narrow anteriorly, broaden posteriorly, then raised into a thick, round ledge; outer cone narrow anteriorly, broadens posteriorly; spine long, pointed, without keel.

**Colour:** Light brown with a longitudinal orange-red pigmented stripe along dorsal surface of arms 1–3; dorsal mantle with pale transverse saddle mark and pattern of bold, broad, zebra stripes during the spawning season; 3 circular, white patches occur mid-dorsally within transverse saddle mark.



FAO names: Needle cuttlefish (En)





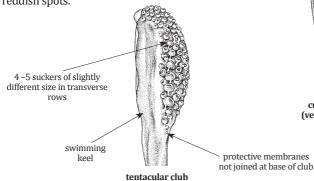
# Sepia kobiensis Hoyle, 1885

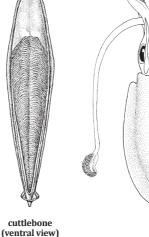
Local name(s): Kobi-Pyi-Gyi-Nga.

Habitat: Depth range subtidal, to 200 m. Fisheries: Bottom trawls, squid jigging.

Distinctive Characters: Swimming keel of club extends proximally slightly beyond carpus; dorsal and ventral protective membranes not joined at base of club; cuttlebone lanceolate, acuminate anteriorly and posteriorly; dorsal median rib indistinct, broadens anteriorly; dorsal surface pinkish, or yellowish.

Colour: Reddish brown; head with V-shape reddish stripe on dorsal margins of eve orbits and with orange stripes extending from posterior end of head to basal portions of arms I to III; dorsal mantle has reddish spots.





FAO names: Kobi cuttlefish (En)

Seiche kobi (Fr)

dorsal view

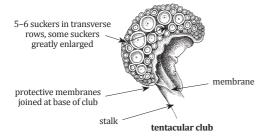
# Sepia latimanus Quoy and Gaimard, 1832

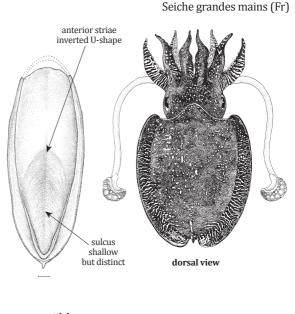
Local name(s): Soke-Khwet-Gyee-Pyi-Gyi-Nga. Habitat: Shallow water species occurring to 30 m depth.

Fisheries: Bottom trawls, squid jigging.

Distinctive Characters: Swimming keel of club extends well proximal to carpus; dorsal and ventral protective membranes separated from stalk by membrane; hectocotylus absent; cuttlebone bluntly rounded anteriorly and posteriorly; sulcus shallow but distinct, anterior striae inverted blunt V-shape; spine short, pointed, stout, keels absent.

Colour: Light brown, yellowish or dark brown (dark in males during courtship and breeding), with whitish mottle, blotches or spots; arms and fins with white bands and stripes, respectively.





FAO names: Broadclub cuttlefish (En)

cuttlebone (ventral view)

Size: To 500 cm (ML)

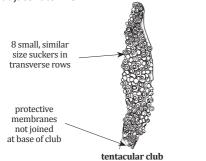
FAO names: Kisslip cuttlefish (En) Seiche baisers (Fr)

# Sepia lycidas Gray, 1849

Local name(s): Hnote-Khan-Pyi-Gyi-Nga. Habitat: Depth range from 15 to 100 m. Fisheries: Bottom trawls, squid jigging.

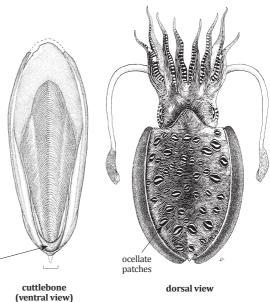
Distinctive Characters: Dorsal and ventral protective membranes not joined at base of club, extend as membranous ridges along entire stalk: buccal membrane with a few, minute suckers; cuttlebone oblong, bluntly rounded anteriorly and posteriorly; dorsal median rib absent; anterior striae inverted V-shape; sulcus deep and wide; inner cone limbs thick, broaden into a rounded ridge posteriorly; spine short and pointed.

Colour: Reddish brown or purple with scattered ocellate patches and narrow, irregular, lightcoloured, transverse stripes on dorsal mantle; wide stripe adjacent to fins.



rounded

ridge



# FAO names: Pharaoh cuttlefish (En)

Seiche pharaon (Fr)

# Sepia pharaonis Ehrenberg, 1831

Local name(s): Phar-Roe-Sin-Kyar-Pyi-Gyi-Nga. Habitat: Neritic, demersal, from the coastline to 130 m.

Fisheries: Bottom trawls, squid jigging.

Distinctive Characters: Hectocotylus present on left ventral arm with 10 to 12 transverse rows of normal size suckers at base followed by reduced suckers; cuttlebone oblong; sulcus deep, wide, flanked by rounded ribs; spine short, pointed, curves dorsally, keel(s) absent.

Colour: Pale brownish or reddish purple; head and arms with transverse zebra-stripe pattern; dorsal mantle has white blotches or spots and has a transverse zebra-stripe pattern.

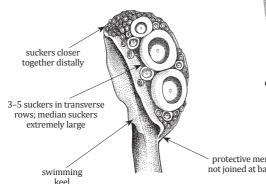
anterior striae inverted 8 suckers in transverse rows with 5 or 6 median U-shaped ones (3rd and 4th in the series) greatly enlarged protective membranes not joined at base of club bulbous cuttlebone swelling tentacular club (ventral view)

Sepia prashadi Winkworth, 1936

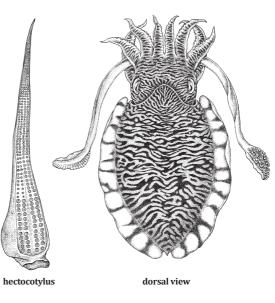
Local name(s): Soke-Khwet-Gyi-Pyi-Gyi-Nga. Habitat: From the shoreline to about 40 m. Fisheries: Bottom trawls, squid jigging.

Distinctive Characters: Swimming keel of club extends proximally slightly beyond carpus; cuttlebone oblong; sulcus shallow, narrow, flanked by rounded ribs, extends entire length of cuttlebone; inner cone limbs broaden posteriorly, raised into rounded, thickened ledge; spine long, pointed, straight, directed dorsally, with dorsal and ventral keel.

Colour: Dorsal mantle has transverse zebra-stripe pattern in breeding males.

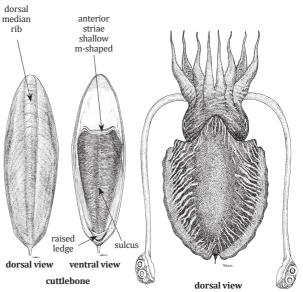


tentacular club



Size: To 42 cm (ML)

FAO names: Hooded cuttlefish (En) Seiche capuchon (Fr)



protective membranes not joined at base of club

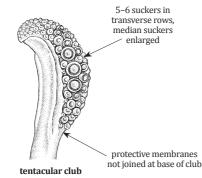
Size: To 14 cm (ML)

### Sepia recurvirostra Steenstrup, 1875

Local name(s): Su-Kway-Pyi-Gyi-Nga. Habitat: Depth range from 10 to 100 m. Fisheries: Bottom trawls, squid jigging.

**Distinctive Characters:** Swimming keel of club extends proximally slightly beyond carpus; cuttlebone oblong, very angular (V-shape anteriorly), bluntly rounded posteriorly; inner cone limbs thickened posteriorly into a rough chitinous callus; spine curves ventrally.

**Colour:** Dorsal mantle pale with opalescent blue transverse stripes; fins with pale reflective opalescent blue line along base.



thick

cuttlebone (ventral view)

calcareous callus

Size: To 17 cm (ML)

FAO names: Starry cuttlefish (En) Seiche étoilée (Fr)

dorsal view

Local name(s): Pyi-Gyi-Nga.

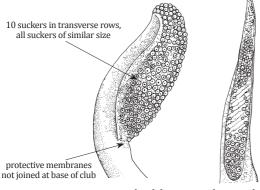
Habitat: Depth to 200 m.

Fisheries: Bottom trawls, squid jigging.

**Distinctive Characters:** Hectocotylus present; on left ventral arm with normal suckers at base, reduced suckers medially, then normal size suckers distally to arm tip; cuttlebone oval, very angular (V-shape anteriorly); dorsal median rib very pronounced; lateral ribs present; spine long, pointed, with dorsal and ventral keel.

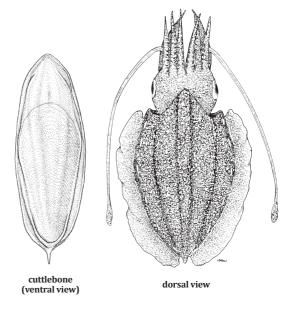
Sepia stellifera (Homenko & Khromov, 1884

**Colour:** Dorsal mantle with many small, bright, brown-pink spots, encircled with green-blue rings, the whole pattern resembling a starry sky.



tentacular club

hectocotylus



FAO names: Curvespine cuttlefish (En) Seiche hamecon (Fr)

Size: To 12 cm (ML)

Sépia inerme (Fr)

FAO names: Spineless cuttlefish (En)

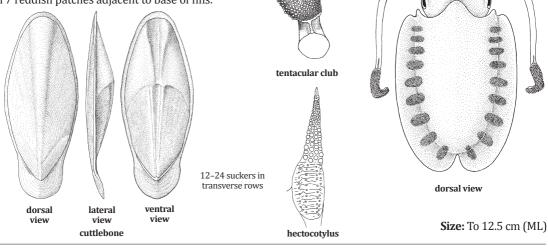
### Sepiella inermis (Van Hasselt, 1835)

**Local name(s):** Su-Ma-Shi-Pyi-Gyi-Nga. **Habitat:** Depth to 40 m.

Fisheries: Bottom trawls, squid jigging.

**Distinctive Characters:** Hectocotylus present on left ventral arm with 10 rows of reduced suckers at base; cuttlebone width 33–43% of cuttlebone length; strongly convex in lateral view; spine absent.

**Colour:** Greyish brown; dorsal mantle has more than 7 reddish patches adjacent to base of fins.



12-24 equal-sized suckers in

transverse rows

**SEPIOLIDAE** Bobtail squids

Euprymna morsei (Verrill, 1881)

Local name(s): Pyi-Gyi-Nga-Gaung-Toe.

Habitat: No information.

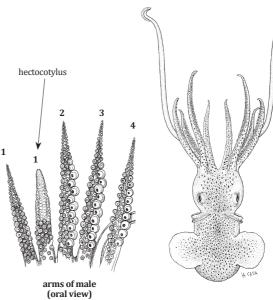
Fisheries: Bottom trawls.

**Distinctive Characters:** Mantle dome-shaped, plump; dorsal mantle fused to head; fins wide, rounded, semicircular; short, not exceeding length of mantle anteriorly or posteriorly; posteriorly with wide gap between fins; anterior origin posterior to mantle margin; non-hectocotylized arm sucker arrangement same in both sexes: arm suckers tetraserial; ventral rows of arms II to IV in males with enlarged suckers, approximately 10 on each arm from proximal third or fourth suckers; hectocotylus present;

**Colour:** Iridescent gold to purple with large black chromatophores.

**Remarks:** The taxonomic status of members of this genus is largely unresolved (Norman and Lu 1997).

FAO names: Mimika bobtail squid (En) Sépiole mimika (Fr)



Size: To 4 cm (ML)

Sepiola sp.

Local name(s): Pyi-Gyi-Nga-Gaung-Toe. Habitat: Trawled in the Bay of Bengal off the coast of Myanmar at 109 m depth. Fisheries: No information.

Distinctive Characters:

**Colour:** 

**Remarks:** Possibly an undescribed species (needs to be checked against......

109

FAO names: Unavailable(En)

dorsal view

Size: To 3.5 cm (male)(ML)

### **SEPIADARIIDAE**

Bottletail squids

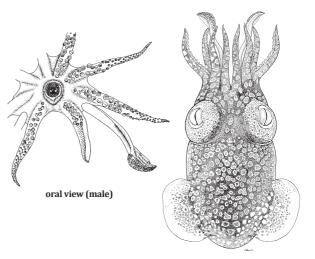
Sepiadarium kochii Steenstrup, 1881

Local name(s): Pa-Lin-Pone-Pyi-Gyi-Nga. Habitat: Depth range to 60 m. Inhabits soft sediments. Remains buried during the day. Fisheries: Bottom trawls.

**Distinctive Characters:** Hectocotylus present on left ventral arm with normal suckers (not modified) at base followed by 18–20 fleshy lamellae over distal 2/3; non-hectocotylized arm sucker arrangement same in both sexes: biserial basally, tetraserial over distal 20 transverse rows; tentacular club with 8 suckers in transverse rows (all suckers of similar minute size, very densely set).

**Colour:** Dorsal mantle surface covered with large, white leucophores (reflective cells) surrounded by smaller red-brown chromatophores.

FAO names: Koch's bottletail squid (En) Sépiolette de Koch (Fr)



dorsal view

FAO names: (En)

# LOLIGINIDAE

Inshore squids

*Loligo* sp.

Local name(s): Kinn-Mon. Habitat: Trawled in the Bay of Bengal off the coast of Myanmar at 44 m depth. Fisheries: No information. Distinctive Characters:

**Colour:** Possibly an undescribed species (needs to be checked against......

dorsal view of female

dorsal view of male

hectocotylus

tentacular club

Loliolus (Loliolus) hardwickei (Gray, 1849)

Local name(s): Kinn-Mon.

**Habitat:** Estuarine and coastal waters to a depth of 30 m.

Fisheries: Bottom trawls, squid jigging.

**Distinctive Characters:** Mantle short, stout; fins large, heart-shaped, with anterior and lateral edges rounded, width up to 76% of mantle length; left ventral arm hectocotylized in males by the modification of both ventral and dorsal series of suckers along its entire length: suckers are missing, except at the very tip where 2 or 3 minute suckers may be present; clubs small, scarcely expanded; club suckers subequal

Colour: No information.



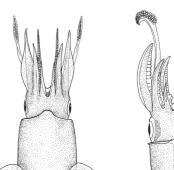


hectocotylus

tentacular club

Size: To 9 cm (male) (ML)

FAO names: Little Indian squid (En) Petite encornet indien (Fr)



dorsal view of female

dorsal view of male

# Loliolus (Nipponololigo) beka (Sasaki, 1929)

### Local name(s): Kinn-Mon.

Habitat: This species occurs in coastal and estuarine waters, particularly bays. Depth distribution is undetermined.

### Fisheries: Bottom trawls, squid jigging.

Distinctive Characters: Mantle short, slender; fins rhomboidal with round lateral angles, both fin length and width more than 50% of mantle length, up to 60%; left ventral arm hectocotylized in males with about 6-9 pairs of normal suckers on the proximal end and the distinctive ventral row of palisade-like, fused, fleshy papillae that form a wall-like crest on the distal portion; tentacular clubs expanded, lanceolate; medial manal suckers twice the diameter of the lateral suckers, with 18 to 20 (30) sharp teeth on the sucker rings.

Colour: No information.

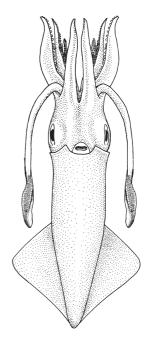




tentacular club sucker ring

arm III sucker ring

FAO names: Beka squid (En) Calmar cracheur (Fr)



ventral view of female

Size: To 8.7 cm (female) (ML)

Calmar tonnelet (Fr)

FAO names: Bigfin reef squid (En)

# Sepioteuthis lessoniana Férussac, 1831

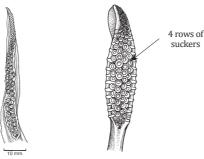
### Local name(s): Kinn-Mon.

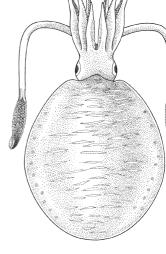
Habitat: Neritic, occurring from the surface down a maximum depth of at least 100 m.

Fisheries: Bottom trawls, squid jigging.

Distinctive Characters: Mantle long, robust, length of fin about 100% of mantle length; tentacular clubs long, expanded.

Colour: Brown on the back, with white spots and stripes, variously shaped; young specimens are usually more iridescent.





dorsal view

hectocotylus

tentacular club

FAO names: Mitre squid (En)

# Uroteuthis (Photololigo) chinensis Gray, 1849

Local name(s): Kinn-Mon.

Habitat: Depth range approximately 15 to 170 m. Fisheries: Bottom trawls, squid jigging.

Distinctive Characters: Mantle elongate, slender, bluntly pointed posteriorly, its width about 20-30% of its length; about 12 medial manal suckers of tentacular clubs enlarged to one and a half times the diameter of the lateral suckers and 2 times the largest arm sucker; large rings with 20-30 sharp, separate teeth very unequal in size: 6-12 larger ones usually interspersed with 1 to 4 smaller ones; left ventral arm hectocotylized at distal 1/3 to 1/2 by modification of more than 30 suckers and stalks in each series into slender, conical papillae that are larger in the ventral series.

Colour: No information.

# Uroteuthis (Photololigo) duvaucelii (d'Orbigny, 1835)

### Local name(s): Kinn-Mon.

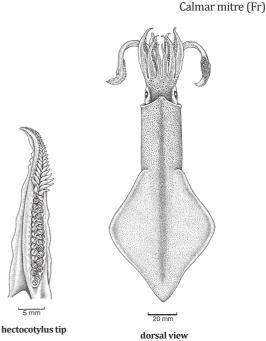
Habitat: A neritic shallow water species occurring from 30 m to 170 m; forms large aggregations during the spawning season.

Fisheries: Bottom trawls, squid jigging.

Distinctive Characters: Mantle moderately long, slender; fins gently rhombic, broad, approximately 50% of mantle length (up to 60% of mantle length); tentacular clubs expanded, large, up to 45-50% of mantle length; large median manal suckers (<2 times diameter of marginal suckers) with 14 to 22 short, sharp teeth, subequal in size, regularly spaced around the entire margin. Colour: No information.

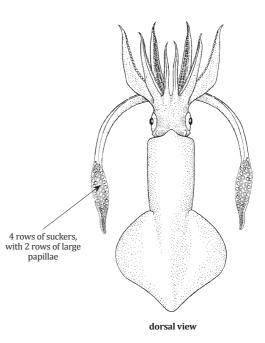


hectocotylus



Size: To 49 cm (males) (ML)

### FAO names: Indian squid (En) Calmar indien (Fr)



112

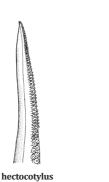
# Uroteuthis (Photololigo) edulis (Hoyle, 1885)

Local name(s): Kinn-Mon.

Habitat: Continental shelf waters.

Fisheries: Bottom trawls, squid jigging.

Distinctive Characters: Mantle moderately stout, elongate, slender in mature males; fins rhombic, attain 70% of mantle length in adults, anterior margin slightly convex, posterior margin gently concave, lateral angles rounded; suckers on arms II and III of mature males noticeably enlarged as a secondary sexual character; mature males have a cutaneous ridge on their ventral mantle surface. Colour: No information.



tentacular club

hectocotylus

tentacular club

dorsal view

Size: To 50 cm (ML)

FAO names: Mozambique squid (En) Uroteuthis (Photololigo) machelae Roeleveld and Augustine, 2005

Calmar du Mozambique (Fr)

Local name(s): Kinn-Mon.

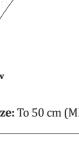
Habitat: Depth range approximately 54 to 200 m. Fisheries: Bottom trawls, squid jigging.

Distinctive Characters: Suckers on arms 2 to 3 greatly enlarged in males, much larger than median manus suckers on clubs; arm sucker rings of both sexes with wide, rough teeth distally and laterally, proximal edge smooth; left arm IV hectocotylized with 13-16 pairs of proximal suckers, 35-65% arm length modified distally, proximal papillae elongate conical; fin length 39-46% mantle length; club length 18-28% mantle length, 26-36% tentacle length.

Colour: No information.

**Remarks:** A single male specimen (13.5 cm ML) was collected during experimental trawl survey in Myanmar's waters on 20-05-2015. The species was previously known only from the Western Indian Ocean.

dorsal view



FAO names: Swordtip squid (En) Calmar épée (Fr)

Calmar siboga (Fr)

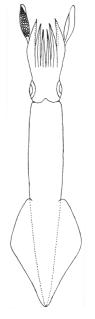
FAO names: Siboga squid (En)

# Uroteuthis (Photololigo) sibogae (Adam, 1954)

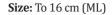
Local name(s): Kinn-Mon.

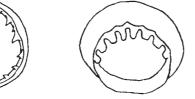
Habitat: Depth range approximately 54 to 200 m. Fisheries: Bottom trawls, squid jigging.

**Distinctive Characters:** Mantle very long, slender; width 1/5 to 1/7 of length; fins narrow, relatively short, length <50% of mantle length; tentacles short, slender, clubs short; medial suckers on manus slightly enlarged, the largest with 15–20 conical, sharp, teeth around entire ring; teeth subequal in size; arm-sucker rings smooth proximally, with 7 to 9 plate-like, truncate (squared) teeth distally. **Colour:** No information.



dorsal view





tentacular club sucker ring

arm III sucker ring

# Uroteuthis (Photololigo) singhalensis (Ortmann, 1891)

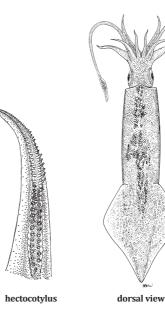
### Local name(s): Kinn-Mon.

**Habitat:** Usually occurs at depths from 30 to 120 m, but extends to bottom depths of 220 m.

### Fisheries: Bottom trawls, squid jigging.

**Distinctive Characters:** Mantle long, slender, cylindrical, tapers posteriorly into a sharplypointed tip; fins narrow, rhombic in outline, anterior margin slightly convex, posterior margin slightly concave; relatively short in young specimens, up to 50 to 60% of mantle length in adults; tentacular clubs short, slightly expanded; suckers in medial series of manus only about 25% larger than those on lateral series; with 15 to 25 conical, sharply-pointed teeth around the entire margin, occasionally interposed with small, almost inconspicuous, pointed teeth.

Colour: No information.



FAO names: Long barrel squid (En) Calmar baril (Fr)



# ANCISTROCHEIRIDAE

Sharpear enope squid

### Ancistrocheirus lesueurii (d'Orbigny, 1842)

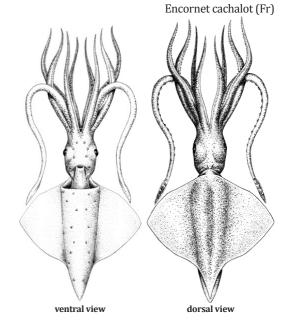
Local name(s): Kinn-Mon.

Habitat: Oceanic species.

Fisheries: Pelagic trawls.

**Distinctive Characters:** Posterior end of mantle elongate, forms tail; hooks present on all arms; tentacular clubs with 2 series of hooks on manus; suckers absent; photophores present on ventral surface of fins, mantle, funnel, head, arms, and tentacles (no photophores on eyeballs).

tentacular club



FAO names: Sharpear enope squid(En)

Size: To 41 cm (ML)

# CHIROTEUTHIDAE

Chiroteuthid squids

### Chiroteuthis veranyi (Ferussac, 1834)

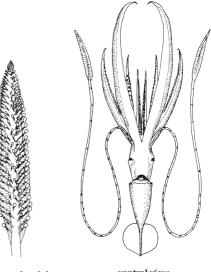
Local name(s): Ye Net Kinn Mon. Habitat: Oceanic species.

Fisheries: Pelagic trawls.

**Distinctive Characters:** Mantle narrow, elongate; arms, head and mantle with numerous chambers filled with ammonium chloride, a light-weight fluid that provides near-neutral buoyancy; tissues semi-gelatinous; funnel-mantle locking cartilages free, not fused; tentacular clubs with suckers; arms 4 longer than arms 2 and 3; fins together approximately circular, not lobed posteriorly; arms IV usually much thicker than arms II and III; funnel valve present; funnel-locking apparatus with distinct tragus present

Colour: No information.

FAO names: Verany's long-armed squid (En) Chirocalmar de Verany (Fr)



tentacular club

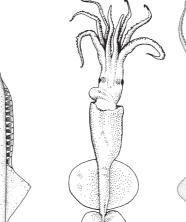
ventral view

Chirocalmar de Grimaldi (Fr)

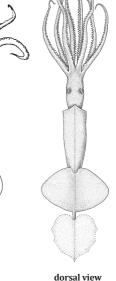
### Grimalditeuthis bonplandi (Verany, 1839)

Local name(s): Ye Net Kinn Mon. Habitat: Oceanic species. Fisheries: Pelagic trawls.

**Distinctive Characters:** Similar to *Chiroteuthis veranyi* but funnel-mantle locking cartilages (apparatus) fused; nuchal-mantle connective not fused; tentacular clubs without suckers. **Colour:** No information.



ventral view



**FAO names:** Grimaldi's chiroteuthid squid (En)

tentacular club

Size: To 25 cm (ML)

# CHTENOPTERYGIDAE

Comb-finned squids

```
Chtenopteryx sicula (Verany, 1851)
```

### Local name(s): Ye Net Kinn Mon.

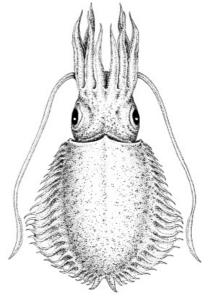
**Habitat:** Midwater squids occurring at depths of 500 to 1 000 m during the day and migrate into near-surface waters at night (upper 200 m).

### Fisheries: Pelagic trawls.

**Distinctive Characters:** Fins fused posteriorly, extend anteriorly the full length of the mantle in adults; posterior end of mantle broadly rounded; fins attach to lateral walls of muscular mantle, are comprised of slender muscle bundles (fin ribs) connected by their membranes, to produce a comb-like appearance; tentacular club suckers small to minute, in 8 to 20 irregular transverse series; tentacles narrow, clubs not expanded, no carpus (fixing apparatus).

Colour: No information.

FAO names: Sicilian comb-finned squid (En) Calmar pectiné sicilienne(Fr)



dorsal view

116

Size: To 10 cm (ML)

# CRANCHIIDAE

Cranch squids

### Liocranchia reinhardti (Steenstrup, 1856)

Local name(s): None.

Habitat: Depth from the surface to 1 200 m. Fisheries: Pelagic trawls.

**Distinctive Characters:** Mantle elongate, spindle-shaped, tapers posteriorly to narrow point, not covered with cartilaginous tubercles; 2 moderately long cartilaginous strips studded with cartilaginous tubercles extend from each funnelmantle fusion in inverted-V pattern, co-equal in length or ventral component the longest; fins unite posterior to gladius, ovoid to nearly circular; funnel valve present; gladius with short conus; eyes with 14 oval photophores.

**Colour:** No information.

### FAO names: Reinhardt's cranch squid (En) Encornet-outre de Reinhardt (Fr)



dorsal view

Size: To 25 cm (ML)

# HISTIOTEUTHIDAE Jewel squids

### *Histioteuthis hoylei* (Goodrich, 1896)

Local name(s): Ye Net Kinn Mon. Habitat: Oceanic species.

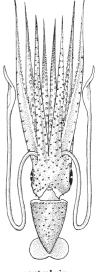
Fisheries: Pelagic trawls.

**Distinctive Characters:** Mantle conical, relatively thick-walled, relatively short, moderately stout; skin of whole body (mantle, head, arms and basal half of fins) covered with thickly spaced, low, fleshy papillae, giving a rough, textured appearance; arms long, 160 to 250% of mantle length; mature males with arms I very elongate, greater than 400% of mantle length; no photophores on arm tips. **Colour:** No information.



eyelid





### FAO names: Flowervase jewell squid (En) Loutène vase (Fr)

tentacular club

ventral view

Size: To 24 cm (females)(ML)

# **OCTOPOTEUTHIDAE**

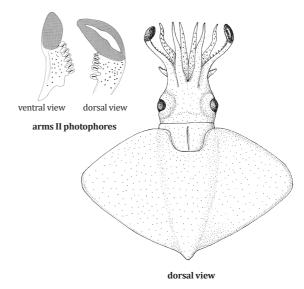
Octopus squids

### Taningia danae Joubin, 1931

Local name(s): Ye Ba Wei. Habitat: Oceanic species. Fisheries: Pelagic trawls.

**Distinctive Characters:** Tips of arms II only with a large, oval, swollen, composite photophore with a creamy white, crenulate biolouminescent producing surface, exposed when black eyelid-like skin folds are contracted open (no photophores on tips of any other arms); fins very large, occupy nearly entire mantle length by about 3 mm mantle length of the paralarva and throughout life; fins very broad, far in excess of mantle length (up to 130% of mantle length); tentacles cease to develop and are lost at a mantle length of 40–45 mm (although stumps may remain for some time); arms with large hooks in 2 series to the tips. **Colour:** Mantle intense maroon.

FAO names: Taning's octopus squid (En) Encornet-poulpe de Taning (Fr)



Size: To 170 cm (ML)

# OMMASTREPHIDAE

Flying squids

### Ornithoteuthis volatilis (Sasaki, 1915)

Local name(s): Ye Net Kinn Mon.

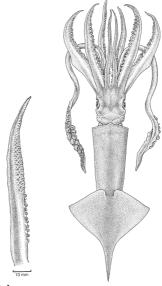
**Habitat:** From the surface (paralarvae; adults at night) to moderate depths, at the bottom in bathyal zone and in midwater above the slope.

Fisheries: Not exploited at the moment.

**Distinctive Characters:** Mantle very narrow, muscular, drawn out posteriorly into a long pointed tail; fins long, sagittate, sharply lanceolate posteriorly, posterior margins concave; head broad, considerably broader than mantle width. tentacular club expanded with very large medial manal suckers; a single, round photophore patch occurs on the ventral surface of each eye; on viscera one large, round photophore occurs near the anus and one small oval photophore occurs at the posterior end of the intestine.

Colour: No information.

FAO names: Shiny bird squid (En) Encornet planeur (Fr)



hectocotylus arms

dorsal view

Size: To 31 cm (ML)

### Sthenoteuthis oualaniensis (Lesson, 1830)

Local name(s): Ye Net Kinn Mon.

Habitat: Oceanic occurring from the surface to probably a maximum depth of 1 000 m.

Fisheries: Not exploited at the moment .

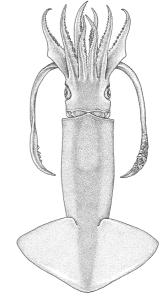
**Distinctive Characters:** Mantle muscular. conical posteriorly; 2 rows of suckers on tentacular club; a large, oval photophoric patch on antero-dorsal surface of mantle; 6 to 8 pairs of suckers occur on the hectocotylized arm of mature males.

Colour: No information.



left arm IV of male hectocotylized

tentacular club



FAO names: Purpleback flying squid (En)

Encornet bande violette (Fr)

dorsal view

FAO names: Hawaiian flying squid (En)

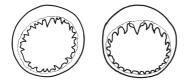
Size: To 65 cm (ML)

### Nototodarus hawaiiensis (Berry, 1912)

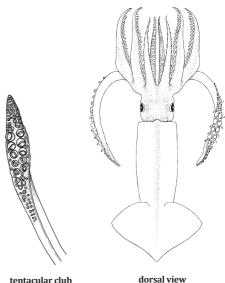
Local name(s): Ye Net Kinn Mon. Habitat: Depth range to 650 m.

Fisheries: Not exploited at the moment.

Distinctive Characters: Mantle cylindrical, muscular, it tapers to a narrow, conical tip posteriorly; fins muscular, broad, short; fin length 35-43% of mantle length; funnel groove with foveola, without side pockets; tentacular club with 4 rows of suckers on dactylus; carpal area occupies most of tentacle length along stalk (about 70%); both arms IV hectocotylized in males; proximal 1/4 of each arm IV has 4–5 enlarged cushion-like trabeculae.



tentacular club sucker rings



tentacular club

# Size: To about 29 cm (ML)

FAO names: Common clubhook squid (En)

# **ONYCHOTEUTHIDAE**

Clubhook squids

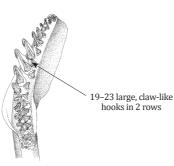
### Onychoteuthis banksii (Leach, 1817)

Local name(s): Ye Net Kinn Mon.

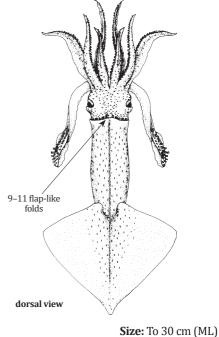
Habitat: An oceanic species occurring from the surface to about 150 m; it may also be found as deep as 800 m.

### Fisheries: Bottom trawls.

Distinctive Characters: Mantle robust: no marginal rows of suckers; gladius visible as a dark line through the skin along middle line of mantle. Colour: No information.



tentacular club

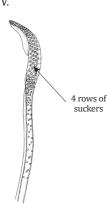


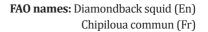
# **THYSANOTEUTHIDAE**

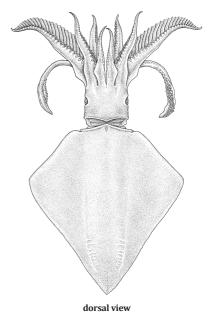
# Thysanoteuthis rhombus Troschel, 1857

Local name(s): None.

Habitat: An epipelagic, oceanic species. Fisheries: Not exploited at the moment. Distinctive Characters: Mantle thick, muscular, tapering to a blunt tip posteriorly; fins long, broad, rhombic occupying the entire length of mantle; arms with 2 rows of suckers; buccal connectives attached to ventral borders of arms IV. Colour: No information.







tentacular club

Cornet crochu (Fr)



# **OCTOPODIDAE**

Octopuses

### Amphioctopus aegina (Gray, 1849)

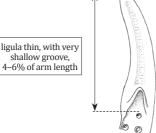
Local name(s): Ye Ba Wei.

**Habitat:** A benthic species, occurring on muddy bottoms at depths to at least 40 m.

Fisheries: Bottom trawls, pot traps.

**Distinctive Characters:** Dorsal arms shorter than ventral arms; thin, moderate size ligula, 5–8% of arm length; single cirrus over eye.

**Colour:** Pattern of dark grooves enclosing pale round spots to form a round net mesh on dorsal and lateral surfaces, most obvious on arm bases.



hectocotylus

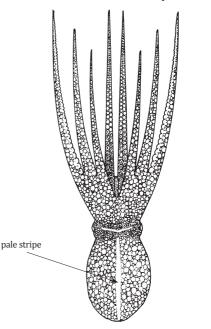
### Amphioctopus marginatus (Taki, 1964)

Local name(s): Ye Ba Wei.

**Habitat:** Known from coastal muddy waters on mud and sand substrates, subtidal to depths of at least 190 m.

Fisheries: Bottom trawls, pot traps.

**Distinctive Characters:** Lateral arms longest; ligula small and triangular, 1.5–3.5% of arm length. **Colour:** Pattern of orange-brown to purple with dark reticulations defining distinct patches in irregular longitudinal rows; suckers white to pink contrasting against dark brown to black along leading edge of arms I to III; narrow transverse "head bar" visible in live animals; white triangle below each eye; dark vein-like reticulations distinctive on lateral arm crown



FAO names: Sandbird octopus (En)

Poulpe de sables (Fr)

dorsal view

Size: To 9 cm (ML), 30 cm (TL)







white triangular blotch

head (lateral view)

dorsal view

Size: To 10 cm (ML), 30 cm (TL)

FAO names: Neglected ocellate octopus (En)

### Amphioctopus neglectus (Nateewathana and Norman, 1999)

### Local name(s): Ye Ba Wei.

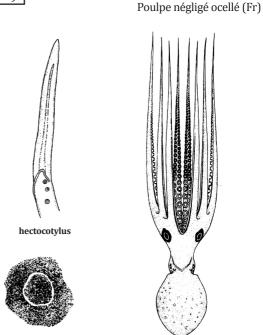
**Habitat:** Depth range unknown. Nothing is known of the biology and behaviour of this species.

Fisheries: Bottom trawls, pot traps.

**Distinctive Characters:** Lateral or ventral arms longest (typically 4=3>2>1); ligula slender and long, around 10% of arm length; skin texture of small, close-set tubercles over head, mantle and arms; 1–2 larger papillae over each eye; skin ridge around lateral margin of mantle absent.

**Colour:** Brownish-green dorsally and paler white ventrally; numerous small, rounded white spots distributed on dorsal mantle; narrow U-shaped transverse bar present between eyes; false-eye spots (ocelli) present, containing a simple blue/ purple iridescent ring.

**Remarks:** This small-size species is commonly marketed with *Amphioctopus aegina* around the world under the name 'baby octopus'.



Size: To 6.4 cm (ML), 27 cm (TL)

Poulpe royale ocellé (Fr)

FAO names: King ocellate octopus (En)

dorsal view

### Amphioctopus rex (Nateewathana and Norman, 1999)

Local name(s): Ye Ba Wei.

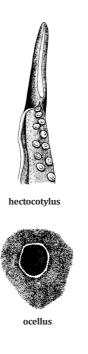
Habitat: Coastal waters on mud and sandy-mud substrates to around 80 depth.

Fisheries: Bottom trawls, pot traps.

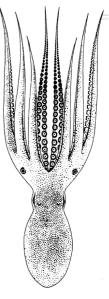
**Distinctive Characters:** Lateral and ventral arms longest (typically 4>3>2>1); ligula moderately elongate, 5–9% of arm length; skin texture consisting of a pattern of fine, rounded and closely set epidermal tubercles that cover dorsal and ventral surfaces of arms, head and mantle; single small papilla present over each eye; skin ridge around lateral margin of mantle absent.

**Colour:** A short longitudinal brownish black bar present through eye; narrow dark stripe along dorso-lateral surface of arms 1–3; false-eye spots (ocelli) present containing a small simple pink/ purple iridescent ring.

**Remarks:** This small-size species is commonly marketed with *Amphioctopus aegina* around the world under the name 'baby octopus'.



ocellus



dorsal view

### 122

### Amphioctopus siamensis (Nateewathana and Norman, 1999)

FAO names: Siamese ocellate octopus (En) Poulpe siamois ocellé (Fr)

### Local name(s): Ye Ba Wei.

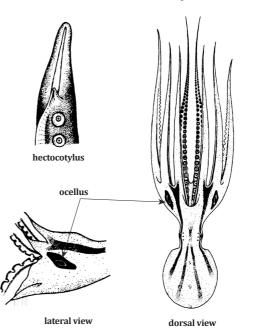
**Habitat:** Depth range unknown. Nothing is known of the biology and behaviour of this species.

Fisheries: Bottom trawls, pot traps.

**Distinctive Characters:** Lateral and ventral arms longest (typically 4=3>2>1); ligula conical and of moderate length, 9 to 10% of arm length; skin texture of small and regular rounded patches; skin ridge around lateral margin of mantle absent.

**Colour:** Brown to pink base colour with 4 dark longitudinal stripes on the mantle and head, continuing as fine dark lines along the leading edge of arms 1–3; false-eye spots (ocelli) present as dark spot with silver white iridescent ring.

**Remarks:** This ocellate species is caught in low numbers in trawl catches compared with the large commercial catches of two other co-occurring ocellate species: *Amphioctopus neglectus* and *A. rex.* 



Size: To 6.4 cm (ML), 20 cm (TL)

Callistoctopus ornatus Gould, 1852

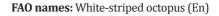
Local name(s): Ye Ba Wei.

**Habitat:** Shallow water species typically in association with coral reefs.

Fisheries: Bottom trawls, pot traps.

**Distinctive Characters:** Arms long, 6–8 times mantle length; dorsal arms longest (1>2>3>4); webs shallow, deepest around 10% of arm length; Ligula robust and cylindrical, up to 6% of arm length; skin texture of small low papillae over dorsal surfaces; 2 moderate-sized erectile papillae over each eye; continuous skin ridge around lateral margin of mantle absent; short flaps of skin can be raised from within the longitudinal stripes on the lateral mantle.

**Colour:** Red brown with a distinctive pattern of short white longitudinal stripes on the dorsal mantle; paired white spots present along the entire length of the arms.







Size: To 13 cm (ML), 120 cm (TL)

FAO names: Old woman octopus (En)

Poulpe vieille femme (Fr);

# Cistopus cf. indicus (Rapp, 1835)

Local name(s): Ye Ba Wei.

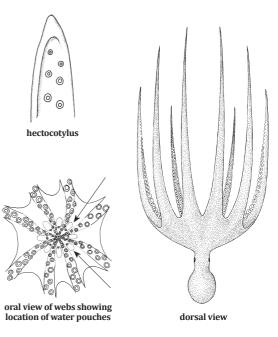
Habitat: Occurs on soft sediment substrates to depths of at least 50 m.

Fisheries: Bottom trawls, pot traps.

Distinctive Characters: Arms long, length around 6 times mantle length; dorsal arms longest (1>2>3>4); water pouches present in oral surface of webs close to mouth; pores located adjacent to level of 3rd to 4th proximal sucker; ligula tiny and blunt, 0.5 to 0.7% of arm length; calamus absent; hectocotylized arm with 116-123 suckers; skin smooth with few, scattered, low papillae on dorsal mantle.

Colour: Cream to grey on dorsal surfaces produced by low density of very small chromatophores; lateral and ventral mantle and arm crown almost iridescent pink-purple, possibly produced by iridophore layer in skin.

Remarks: An additional unresolved Cistopus species (misidentified as C. indicus) also occurs on the coasts of Asia from at least Singapore, west to southern India. It also possesses water pouches, an arm formula of 1>2>3>4 and a tiny ligula that lacks a calamus. The taxonomy of this genus requires further research.



Size: To 18 cm (ML), 100 cm (TL)

# 'Octopus' cyanea Gray, 1849

Local name(s): Ye Ba Wei.

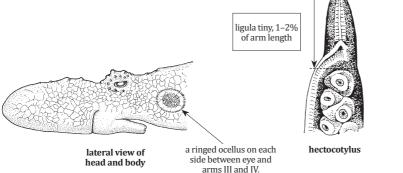
Habitat: A benthic species occurring on tropical coral reefs from intertidal flats to at least 22 m deep.

Fisheries: Spears, lured hooks, bottom trawls.

Distinctive Characters: Arms subequal in length; Ligula tiny, triangular, 1–2% of arm length; 1 large cirrus and 2 smaller tubercles over eye.

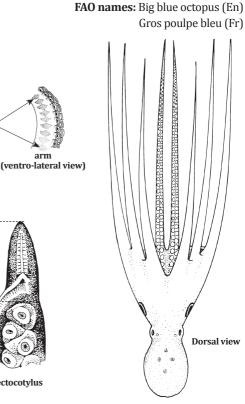
Colour: Mantle mottled, reticulate, arms with dark bars.

Remarks: This species likely belongs to a distinct genus. It is provisionally retained under the generic name 'Octopus', with quotation marks indicating its unknown position.



dark bars

arm



### Octopus cf. vulgaris Cuvier, 1797

Local name(s): Ye Ba Wei.

**Habitat:** From the coastline to the outer edge of the continental shelf down to 250 m; over rocks on coral reefs and sea grass beds.

Fisheries: Spears, lured hooks, bottom trawls.

**Distinctive Characters:** Arms stout, about equal in length and thickness; two rows of suckers on arms.

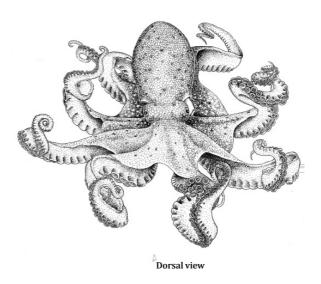
**Colour:** Grey, yellow, brown and green; changes colour to hide from predators.

**Remarks:** This taxa is now considered a complex of four unresolved geographically disjunct forms. The geographical range of the east Asian "vulgaris" type IV form encompasses the coast of Myanmar.

ligula spoon-shaped less than 2.5% of arm length

tip of hectocotylized right arm III of male

FAO names: Common octopus (En) Pieuvre (Fr)



Size: To 130 cm (males), 120 cm (females)(TL)

ARGONAUTIDAE

Argonauts

### Argonauta argo Linnaeus, 1758

Local name(s): ??

**Habitat:** An epipelagic, oceanic species occurring in near surface waters.

Fisheries: Bottom trawls.

**Distinctive Characters:** Males minute; females shell covered by the membrane of 1<sup>st</sup> pair of arms; head small, eyes prominent; 1<sup>st</sup> arms lengths variable, other arms unequal in length (arms formula: 4>2>3); 4<sup>th</sup> arms the longest, over 3 times mantle length and 20–30% longer than 2<sup>nd</sup> arms; keel narrow, consistent in size and shape around circumference of shell.

**Colour:** Body of females purple-blue to wine-red from above, light from below; extended 1<sup>st</sup> arm flap purple-red; shell, porcelain-white, early section and nodules on the keel dark brown; males with many small chromatophores.

FAO names: Greater argonaut (En) Argonaute papier (Fr)



FAO names: Lesser argonaut (En)

Argonaute mineur (Fr)

### Argonauta hians Lightfoot, 1768

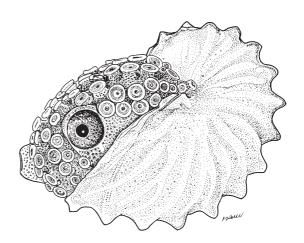
### Local name(s): ??

**Habitat:** An epipelagic, oceanic species occurring in near surface waters.

Fisheries: Bottom trawls.

**Distinctive Characters:** Males minute; females, shell covered by the membrane of 1<sup>st</sup> pair of arms; head small, eyes prominent; 1<sup>st</sup> arms lengths variable, other arms unequal in length (arms formula: 2>3>4); 2<sup>nd</sup> arms the longest, 1.4–2 times in mantle length; keel wide, its width 20–30% of shell length; keel tubercles increase in size around circumference of shell, alternate on opposing surfaces.

**Colour:** Variable from deep maroon to silver; dorsal mantle adorned with large chromatophores, smaller chromatophores present on ventral mantle; shell off-white to brown, approximately 1<sup>st</sup> third of keel tubercles stained black.

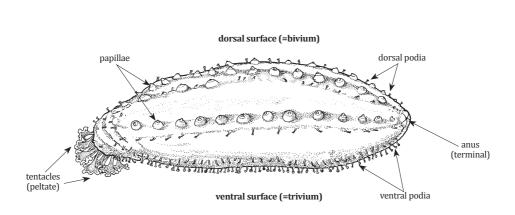


Size: To 11.8 cm (female), 1.2-2 cm (dwarf male)(TL)

# **SEA CUCUMBERS**

In Myanmar, sea cucumbers are boiled, dried (by sun or smoke) and exported mainly to Japan, Korea, China and Singapore. They are collected by hand at low tide while wading on the reefs or by divers in deeper waters during the dry season (October to April) when the sea conditions are more favourable. Two species, *Holoturia (Metriatyla) scabra* and *H. (Metriatyla) lessoni* are quite common and fetch very high prices. Ten species (belonging to two families) considered of high/medium commercial value are included in the guide.

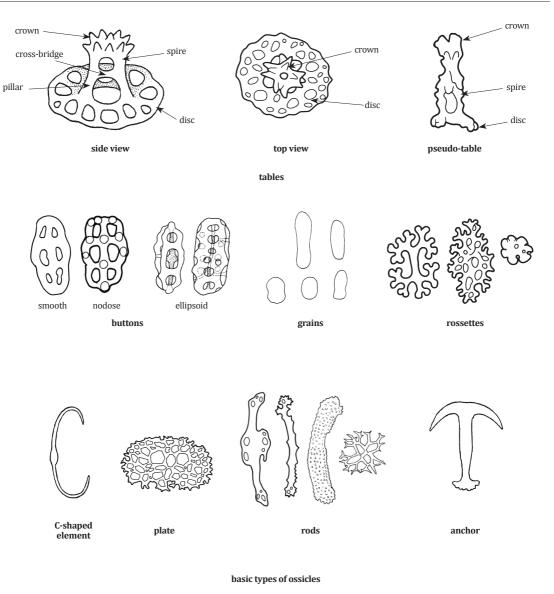
**TECHNICAL TERMS** 



main external anatomical features of a sea cucumber (lateral view)

### **MORPHOLOGICAL FEATURES**

Holothuroids or sea cucumbers have an orally-aborally elongated body. The body is formed like a short or long cylinder, with the mouth (at the anterior end) encircled by **tentacles**, and the **anus** (at the posterior end) often encircled by small papillae or heavily calcified papillae called **anal teeth**. The pentamerous symmetry (character shared with other echinoderms) is sometimes recognizable by the presence of 5 meridional **ambulacra** bearing podia (or tube feet). These are hollow tubular projections terminating in a flat disc, which allows the podium to adhere to the substratum during locomotion. Holothurians often lay on the substrate with their ventral surface (or trivium). This creeping sole bears the locomotory podia, while on the dorsal surface (or bivium), the podia are often represented by papillae. The body surface is thick, slimy in some species and bears wart-like, conical or fleshy papillae. It constitutes the part of the body that is processed for human consumption and, therefore, commercial species are characterized by a thick body wall. Ossicles (also called spicules, or deposits) are characteristic of sea cucumbers and of primary importance for identification. They are mostly of microscopic size. There is a wide variety of simple to complex shapes. **Rods** can be simple or branching, smooth, warty, or spiny, or knobbed. They can also have a characteristic C- or S-shape. Fenestrated plates also come in various shapes. Buttons are oval ossicles, perforated with a varying number of holes arranged in 2 or more rows. **Tables** are more complicated; they appear as a perforated disc, bearing an erect spire (or tower) composed of pillars that can unite to form cross-beams or bridges and that terminate in a crown and show many variations according to the arrangement of its constituents. Rosettes are short rods subdivided into short branches. Anchors are peculiar of the family Synaptidae (not included in the guide). Baskets (not included in the guide) are concave, perforated plates. Miliary bodies (grains) are very tiny spicules found in some Synaptidae. Apart from the body wall, spicules are found in the tentacles, the podia and papillae, and also in some other internal organs. Their developmental stages can differ from the definitive shapes in the adults and thus can make species identification difficult. The **calcareous ring** is a ring of usually 10 calcified plates encircling the pharynx. It is composed of alternating larger radial plates, opposite to the ambulacra, and smaller interradial plates. The plates may be simple or composed of smaller pieces. Longitudinal muscles attach to the radial plates.



dendritic peltate

basic types of tentacles

### **IDENTIFICATION NOTE**

As in other echinoderms, species identification of sea cucumbers is aided by the examination of the skeletal elements (ossicles) found in various parts of the body. The calcareous ossicles, which are hidden in the body wall (mainly in the dermis tissue), papillae, podia and tentacles are, in the species within this book, mostly just one-twentieth to one-tenth of a mm in length. They are embedded in soft tissues, but can be dissected out of the live, dried or preserved animals and isolated by the following method:

**1.** Small pieces (e.g. a few square mm) of tissue are removed with a scalpel from dorsal body wall and ventral body wall, as well as the tentacles and podia, and each placed into separate small vials.

**2.** A small volume (e.g. 0.5 ml) of sodium hypochlorite (concentrated household bleach), or sodium hydroxide, is then added to each vial in order to dissolve the organic tissue away from the calcareous ossicles. The soft tissue will be dissolved/digested in 20–30 minutes, leaving the hard ossicles to fall to the bottom of the vial.

**3.** After decanting, or pipetting, out the bleach, the ossicles are washed 5 times in distilled water. This step can be achieved by sucking the liquid out of the vial with a pipette, taking much care to rinse the pipette in fresh water each time so as not to contaminate a sample with the ossicles from another.

**4.** The ossicles can then be rinsed in alcohol and placed onto a microscope slide with a drop of a mountant (Euparal medium). They can also be put on a scanning electron microscope (SEM) stub.

**5.** After processing, the ossicles can be observed either on permanent slides with a light microscope, or prepared for a scanning electron microscope.

### **GLOSSARY OF TECHNICAL TERMS**

**Anal teeth** - radial extremely calcified papillae encircling the anus, appearing tooth-like. **Bêche-de-mer** - widely used term for the processed product of sea cucumbers (see also **trepang**)

**Decine-ue-iner** - widely used term for the processed product of sea cucumbers (see also **trepang**)

**Bivium** - the dorsal part of the body in the pentaradiate symmetry, with 2 radii and 3 interradii.

**Calacareous ring -** internal collar of plates, generally 10, surrounding the pharynx.

**Cloaca** - anal cavity where the intestine ends.

Cuvierian tubules - threads becoming sticky when ejected out of the anus and used as a defense mechanism.

**Dendritic** - branching in an arborescent manner; used to describe the shape of the tentacles in Dendrochirotida that are used for suspension feeding.

Digitations - finger-like structures, used as descriptive term for the shape of tentacles.

Fenestrated - having small window-like openings or holes.

**Interradii** (or interambulacra) - in the pentaradiate symmetry, the 5 areas between the rows of podia or papillae. **Ossicles** (or spicules) - microscopic carbonate skeleton particles in the body wall, tentacles, podia, papillae, and other body parts, useful for species identification; they come in various shapes.

Papillae - conical lumps or small fleshy extensions on the surface of the body wall.

**Peltate** - describing a structure that is circular or lobed with a stalk in the middle; used to describe the shape of the end of tentacles in Aspidochirotida that are used for deposit feeding on the sea floor.

Pentamerous - having 5 radiating parts, resulting in a pentaradiate symmetry.

**Podia** (or tube feet) - tiny water-filled tubes, terminating in a disc, used for locomotion.

Radii (or ambulacra) - in the pentaradiate symmetry, the 5 areas with podia or papillae.

Teats - large papillae at the border of the ventral surface of the animal.

Tentacles - buccal podia extended from the mouth for feeding.

Trepang - Malaysian name for sea cucumber, also used for the processed product (see also bêche-de-mer).

**Trivium** - the ventral surface of body in the pentaradiate symmetry, with 3 radii and 2 interradial areas.

# **HOLOTHURIIDAE**

### Actinopyga echinites (Jaeger, 1833)

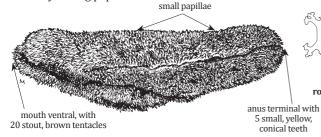
Local name(s): Ye-net-myaw-ni.

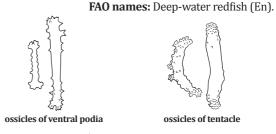
Habitat: Mostly on reef flats (reefs and seagrass beds) to about 10 m depth.

Fisheries: Collected by hand at low tide.

Distinctive Characters: Dorsal surface covered with small (2 mm) "pimply" papillae; ventral surface with numerous long yellow to green podia; mouth ventral, surrounded by 20 stout, brown tentacles; anus surrounded by 5 small yellow, conical anal teeth; cuvierian tubules small, pinkish, and generally not expelled.

Colour: Variable from beige to rusty-brown or dark brown, sometimes with fine dark marks dorsally among papillae.







ossicles of dorsal body wall



rods of ventral body wall



ossicles of tentacle



ossicles of ventral body wall



rossettes of ventral body wall

Size: To 35 cm, common 20 cm

### Actinopyga lecanora (Jaeger, 1835)

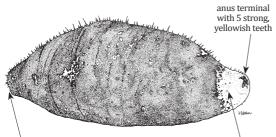
Local name(s): Not-myaw-ni.

Habitat: Lives in coral and coral rocks and reef ledges to about 20 m; nocturnal species.

Fisheries: Collected by hand at low tide and by divers.

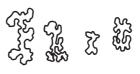
Distinctive Characters: Few papillae scattered over dorsal area; mouth ventral, surrounded by greenish brown or brown tentacles; anus terminal with five strong, yellowish teeth; cuvierian tubules absent.

Colour: Nearly uniformly beige to chocolate brown with some lighter spots and sometimes fine dark blotches; around the anus, it is usually characteristically white.



mouth ventral, surrounded by greenish brown or brown tentacles

usually white around the anus



rossettes of podia



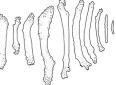
rossettes of dorsal body wall



plates of dorsal papillae



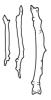
FAO names: Stonefish (En)



rods of tentacle



rossettes of ventral body wall



rods of dorsal papillae



### Bohadschia vitiensis (Semper, 1868)

### FAO names: Brown sandfish (En)

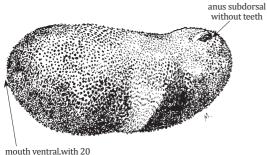
### Local name(s): Thae`-luu-myaw.

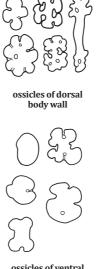
**Habitat:** Mostly on coastal lagoons and inner reef flats to about 20 m depth; abundant in sandymuddy sediments where it burrows most of the time.

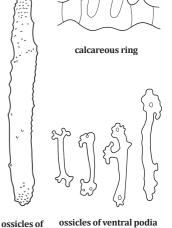
**Fisheries:** Collected by hand at low tide and by divers.

**Distinctive Characters:** Mouth ventral, surrounded by 20 short, yellowish tentacles; anus nearly dorsal, without teeth; cuvierian tubules large and numerous, readily ejected when even slightly disturbed.

**Colour:** Colour variable from cream to yellow-orange to brown with numerous brown spots (around podia) dorsally. Whitish ventrally.







ossicles of ventral body wall

tentacles

Size: To 40 cm, common 32 cm

mouth ventral, with 20 short, yellowish tentacles

Holothuria lessoni Massin, Uthicke, Purcell, Rowe and Samyn, 2009

### Local name(s): Shwe-war-myaw.

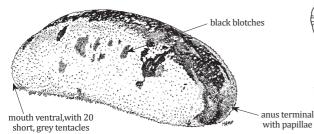
**Habitat:** On inner reef flats and coastal lagoons to about 20 depth.

**Fisheries:** Collected by hand at low tide.

**Distinctive Characters:** Dorsal surface with black papillae (3 mm long); ventral surface with moderately abundant brown podia; mouth ventral, surrounded by 20 short, grey tentacles; anus terminal, surrounded by a circle of 5 groups of papillae and without teeth; cuvierian tubules absent.

**Colour:** From dark greyish black, to beige with black blotches and spots, or beige without black spots. Ventral surface whitish (grey in the black variants).

**Remarks:** Previously recorded in the area as *Holothuria scabra* var. *versicolor* (Conand, 1986).



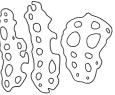
tables of dorsal body wall



tables of ventral podia

buttons of ventral podia

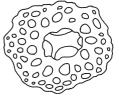
FAO names: Golden sandfish (En)



perforated plates of ventral podia



buttons of dorsal body wall



large table of dorsal body wall

### FAO names: Sand fish (En)

### Holothuria scabra Jaeger, 1833

### Local name(s): Thae`-myaw.

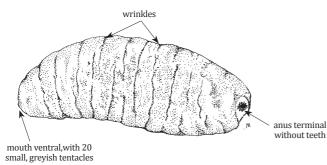
132

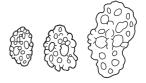
Habitat: Mostly on inner flat reefs of fringing and lagoonal reefs, and coastal sandflats and seagrass beds with muddy sandy substrates, near mangroves to about 20 m depth.

Fisheries: Collected by hand at low tide.

Distinctive Characters: Dorsal surface with deep (3 mm) wrinkles and short (1.5 mm) papillae; body often covered by fine muddy-sand; mouth ventral with 20 small, greyish, tentacles; anus terminal with no teeth; cuvierian tubules absent.

**Colour:** Black to grey or light brownish green (usually dark grey with white, beige or yellow transverse stripes in Indian Ocean populations); white or light grey with fine dark spots ventrally.





buttons of dorsal body wall



tables of dorsal body wall



rods ofpodia

Size: To 40 cm, common 24 cm

### FAO names: Brownfish (En)

Holothuria spinifera Théel, 1886

Local name(s): Myaw-nyo-maung. Habitat: On sand in shallow waters from 2 to 10 m. Believed to never be encountered in the intertidal region.

Fisheries: Collected by divers.

Distinctive Characters: This species has numerous, small, pointy papillae over the entire body.

Colour: Dorsal surface brown, becoming lighter on the ventral surface.



lateral view of table of dorsal body wall



perforated button of dorsal body wall



rod of tentacles



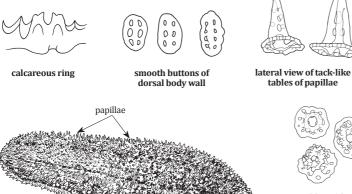


plates of ventral podia



nodose buttons of dorsal body wall

Size: To about 30 cm,



tables of dorsal body wall



# **STICHOPODIDAE**

### Stichopus chloronotus Brandt, 1835

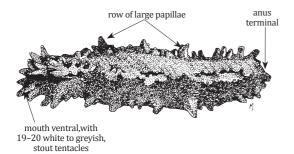
Local name(s): Kyet-Hin-Garr-Thee.

**Habitat:** Occurs on coral reefs, in shallow waters from the intertidal to depths of 10 m.

Fisheries: Collected by hand at low tide or by divers.

**Distinctive Characters:** Rows of long, conical papillae on both sides of the dorsal surface and along both lower lateral margins of the body; mouth ventral, surrounded by 19–20, white to greyish, stout tentacles; anus terminal bordered by 5 large papillae; cuvierian tubules absent.

**Colour:** Dark green to near black dorsally; dark green ventrally.









C-shaped rods of podia



C-shaped rods of dorsal body wall

### FAO names: Greenfish (En) Trépang vert (Fr).



tables of dorsal body body wall



tables of top of dorsal papllae



rossettes and rods of top of dorsal papillae

Size: To 35 cm, common 20 cm

FAO names: Curryfish (En)

Trepang curry (Fr)

### Stichopus herrmanni Semper, 1868

### Local name(s): Peinn-Ne`.

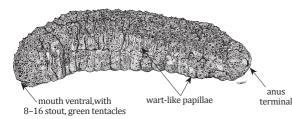
**Habitat:** Prefers seagrass beds, rubble and sandymuddy bottoms to about 25 m depth.

### Fisheries: Collected by divers.

**Distinctive Characters:** Body squarish in crosssection with 2 double rows of large wart-like papillae, bordered by fine dark rings; ventral surface with numerous podia; mouth ventral with 8–16 stout, green tentacles; anus terminal, with no teeth nor surrounding papillae; cuvierian tubules absent.

**Colour:** Light mustard-yellow to orangey-brown or brown or olive green with numerous dark brown to black spots scattered over the entire body. Lighter ventrally.

**Remarks:** Previously recorded in the area as *Stichopus variegatus* Semper, 1868.







C-shaped rod of dorsal body wall

rossettes of dorsal body wall



rods of top of dorsal papillae



tables of base of dorsal papllae





C-shaped rods of base of dorsal papillae tables of top dorsal of dorsal papillae

tables of dorsal body wall

### FAO names: Selenka's sea cucumber (En)

### Stichopus horrens Selenka, 1868

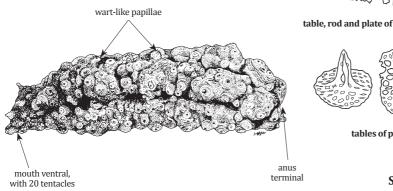
### Local name(s): Khu-Myaw.

Habitat: Mostly on rocky bottoms interspersed with sandy patches, between 2 and 20 m depth.

Fisheries: Collected by hand at low tide or by divers.

Distinctive Characters: Body covered with long and conical, or wart-like papillae; ventral surface with numerous large podia; mouth ventral, surrounded by 20 tentacles; anus terminal; cuvierian tubules absent.

Colour: Highly variable, from grey to beige to dark red, dark brown or black with different coloured blotches dorsally.



rossettes, C-shaped rods and tables of body wall table, rod and plate of ventral podia rod of



tables of papillae

calcareus ring

Size: To 40 cm, common 20 cm (ML)

FAO names: Prickly redfish (En)

Holothurie ananas (Fr).

# Thelenota ananas (Jaeger, 1833)

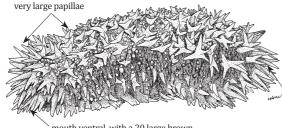
### Local name(s): Na-Garr.

Habitat: African and Indian Ocean populations, prefer coral slopes over hard substratum between 5 and 35 m.

Fisheries: Collected by divers.

Distinctive Characters: Dorsal surface covered with very large papillae, which may be long and conical or star-shaped on a short stalk or somewhat branched; ventral surface with brown to pink podia more abundant on the radii; mouth ventral with 20 large, brown tentacles, surrounded by conical papillae; anus terminal, and often hidden by large papillae; cuvierian tubules absent.

Colour: Variable dorsally, from reddish orange to brown or burgundy. Light pink to red ventrally.



mouth ventral, with a 20 large brown tentacles and conical papillae



ossicles of body wall



perforated plate of podia



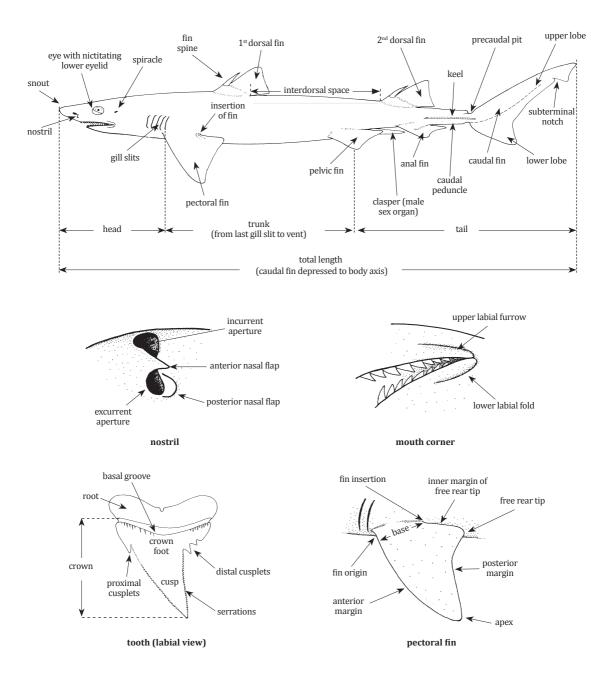
calcareus ring

anus terminal branched rod of tentacle

# **SHARKS**

The guide to "Orders and Families" includes a total of 6 orders and 20 families of sharks known or likely to occur(\*) in Myanmar. These are arranged by order using the classification adopted by Ebert et al. (2013). The "Guide to Species", includes 69 species belonging to 18 families considered to be of current or potential use in fisheries or are caught as by-catch by various gears of the Myanmar fishing fleet. Undescribed, rare or newly recorded species for Myanmar waters are marked with an asterisk (\*) besides the scientific name. If one of the latter species is recorded, the user can follow the instructions present in the introduction regarding its preservation and/or contact the EAF-Nansen and/or FishFinder Programme of FAO.

# **TECHNICAL TERMS AND MEASUREMENTS**



# **GUIDE TO ORDERS AND FAMILIES**

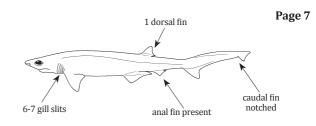
# Order HEXANCHIFORMES – Frilled and Cow sharks

Six or 7 pairs of gill slits; single dorsal fin; anal fin present.

# HEXANCHIDAE

### **Cow sharks**

To about 5 m. Mainly demersal from shallow waters at least 2 500 m. Of little interest to fisheries. Marine. One species is included in the Guide to Species.

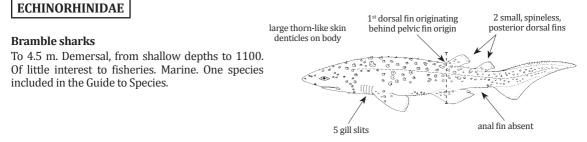


# **Order ECHINORHINIFORMES – Bramble sharks**

Five pairs of gill slits; 2 spineless similar-sized dorsal fins set close together and well back; anal fin absent; thorn-like skin denticles.

### Page 7

Sharks



# **Order SQUALIFORMES – Dogfish sharks**

5 pairs of gill slits; 2 dorsal fins, usually with spines in front of each fin; anal fin absent.

# **SQUALIDAE**

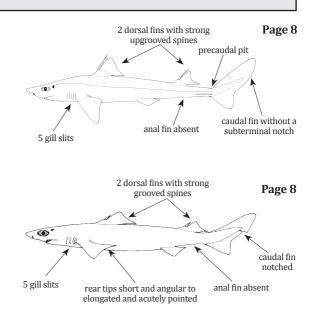
### **Dogfish sharks**

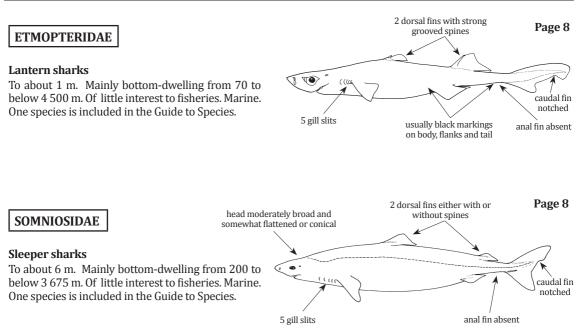
To 1.8 m. Demersal and pelagic to depths of 1 446 m. Of interest to fisheries. Marine. Three species are included in the Guide to Species.

# CENTROPHORIDAE

### **Gulper sharks**

To 1.7 m. Demersal from 200 to below 4 000 m. Of interest to fisheries. Marine. Three species are included in the Guide to Species.





## **Order LAMNIFORMES - Mackerel sharks and allies**

Five pairs of gill slits; 2 dorsal fins without spines; anal fin present; mouth strongly arched, extending well behind eyes; no movable nictidating eyelid; intestinal valve of ring type.

# **PSEUDOCARCHARIIDAE**

### **Crocodile shark**

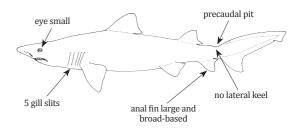
To 1.2 m. Pelagic, well offshore, from surface to at least 590 m. One species is included in the Guide to Species.

### eye very large low lateral keel gill slits large anal fin small and lower precaudal pit narrow-based present

# **ODONTASPIDIDAE**

### Sand tiger shark

To 3.6 m. Inshore to offshore, littoral and deepwater from surface to possibly 1 600 m. One species is included in the Guide to Species.



no movable nictidating eyelid

Page 8

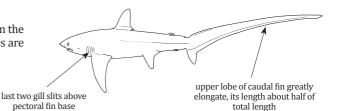
# ALOPIIDAE

138

### Page 8-9

### **Thresher sharks**

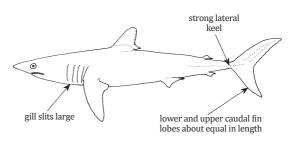
To 5.5 m. Pelagic, but also near the bottom, from the surface to depths of at least 500 m. Two species are included in the Guide to Species.



LAMNIDAE

### **Mackerel sharks**

To about 6 m. Mainly epipelagic, from the surface to depths of at least 1 280 m. One species included in the Guide to Species.



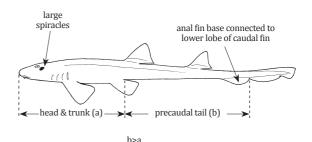
# **Order ORECTOLOBIFORMES - Carpet sharks**

Five pairs of gill slits, often the 5<sup>th</sup> overlapping the 4<sup>th</sup>; 2 dorsal fins without spines; mouth transverse, well in front of eyes, usually with barbels (*Rhincodon typus* with broad head and wide mouth).

# HEMISCYLLIIDAE

### Longtailed carpetsharks

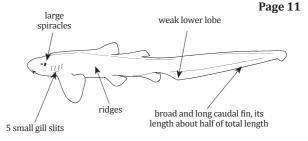
Mostly less than 1 m. Mostly inshore bottom sharks. Four species are included in the Guide to Species.



**STEGOSTOMATIDAE** 

### Zebra shark

To 2.3 m. Demersal on continental and insular shelves from the intertidal zone down to 62 m. A single species worldwide.

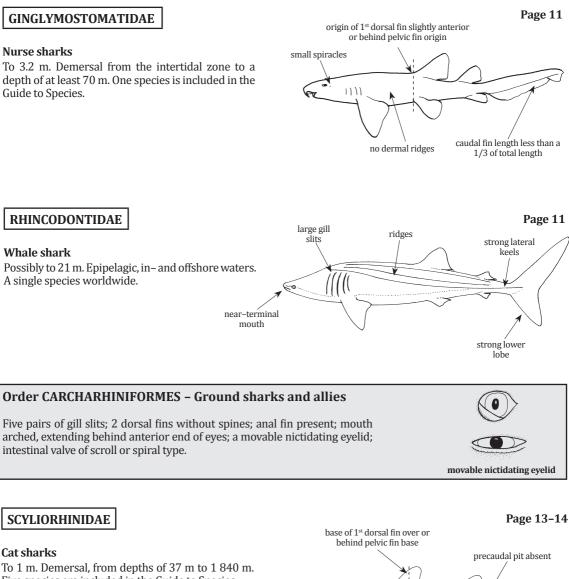


Page 9

Page 9-10



139



Five species are included in the Guide to Species.

# mouth located lower lobe absent beneath eyes or very weak base of 1st dorsal fin well ahead of pelvic fin base Page 14-15 · • 4440

# PROSCYLLIIDAE

### **Finback catsharks**

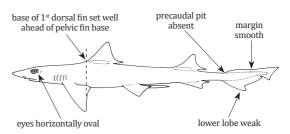
To 65 cm. Demersal from 50 to 766 m. Of little interest to fisheries. Marine. Three species are included in the Guide to Species.

# TRIAKIDAE

### Page 15-16

### Houndsharks

To 1.5 m. Demersal, from the intertidal region down to a depth of at least 1000 m. Four species are included in the Guide to Species.



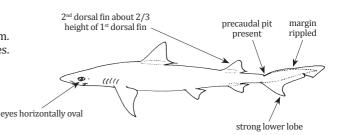
Page 16-17

# HEMIGALEIDAE

### Weasel sharks

To 2.4 m. Demersal, from depths of 1 m to 100 m. Four species are included in the Guide to Species.

intestine with a spiral valve



# CARCHARHINIDAE

### **Requiem sharks**

To 550 m. Demersal to epipelagic, from the surface to a depth of 800 m. Twenty-six species are included in the Guide to Species.



intestine with a scroll valve

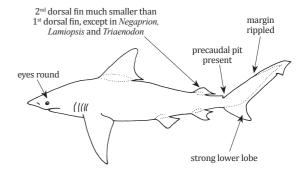
### **SPHYRNIDAE**

### Hammerhead sharks

To 6 m. Coastal and oceanic waters, from the surface to at least 275 m. Four species are included in the Guide to Species.

> head laterally expanded in "hammer" form

Page 17-27



Page 27-28



underside of head

# HEXANCHIDAE

Cow sharks

## Heptranchias perlo (Bonnaterre, 1788)

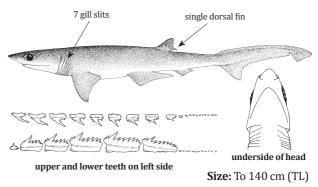
Local name(s): Nwar-Nga-Mann.

**Habitat:** Demersal on continental and insular shelves and upper slopes in depths of 100–400 m, also inshore and down to 1 000 m.

Fisheries: Bottom trawls, longlines.

**Distinctive Characters:** Eyes very large; head extremely narrow and pointed; 5 rows of lower comb-shaped anterolateral teeth on each side; 23–43 teeth on upper jaw and 20–33 on lower jaw; **Colour:** Uniform pale grey above, ligther to white below; young with dark tips on dorsal fin and terminal lobe of caudal fin, lost in adults.

FAO names: Sharpnose sevengill shark (En) Requin perlon (Fr)



### FAO names: Bluntnose sixgill shark (En) Requin griset (Fr)

Local name(s): Nwar-Nga-Mann.

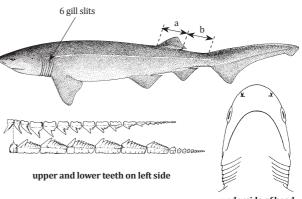
**Habitat:** Demersal on continental and insular shelves from inshore down to 2 500 m (usually 180–1 100).

Hexanchus griseus (Bonnaterre, 1788)

Fisheries: Bottom trawls, longlines.

**Distinctive Characters:** Eyes small; head broadly parabolic; single dorsal fin; 26–46 teeth on upper jaw and 19–38 on lower jaw; lower jaw with 6 rows of large comb-shaped anterolateral teeth on each side; dorsal fin base (a) separated from caudal fin origin (b) by a distance about equal to or slightly greater than its length.

**Colour:** Grey or tan with a conspicuous lighter lateral line and sometimes with darker spots on the sides; underside often lighter than the dorsal surface in newborn young but uniform in larger juveniles and adults.



underside of head

Size: To 470 cm (TL)

# **ECHINORHINIDAE**

Bramble sharks

### Echinorhinus cf. brucus (Bonnaterre 1788)

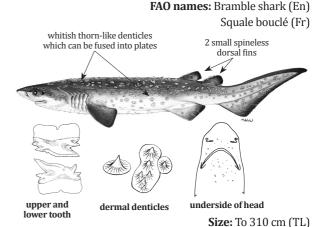
**Local name(s):** Ye-Net-Phyuu-Suu-Nga-Mann. **Habitat:** Demersal on continental and insular shelves, usually from 200 to 900 m.

Fisheries: Bottom trawls, longlines.

**Distinctive Characters:** Dorsal fins smaller than the pelvic fins, the 1<sup>st</sup> with its base over the pelvic bases; no anal fin; caudal fin without a subterminal notch; 20–26 teeth on upper jaw and 21–26 on lower jaw.

**Colour:** Grey, brownish or blackish, lighter below.; fin edges blackish.

**Remarks:** A distinct form of *Echinorhinus brucus* occurs in the Indian Ocean (G. Naylor pers. com., 2015).



# **SQUALIDAE**

Dogfish sharks

### Squalus hemipinnis White, Last & Yearsley, 2007

Local name(s): Ye-net-nga-mann.

Habitat: Continental shelves and upper slopes usually at depths greater than 100 m.

Fisheries: Bottom trawls, longlines.

Distinctive Characters: Short, broadly pointed snout; dorsal fin unequal in size; 2nd dorsal fin with a V-shaped posterior margin; precaudal vertebrae 72-76; anterior nasal flaps bifurcate.

Colour: Slate grey above, with light and dark areas sharply demarcated on head; differentiation indistinct on trunk; ventral surface white; dorsal fins grevish with dark blotch on apex and whitish base; caudal fin mainly greyish with a broad white posterior margin; dark caudal stripe present; juveniles with a distinct black caudal bar on fork.

### Squalus sp.

Local name(s): Ye-net-nga-mann. Habitat: Trawled between 485-503 m depth. Fisheries: Deep bottom trawls.

Distinctive Characters: Moderate, broadly pointed snout; 2nd dorsal fin concave but not deeply notched; head length ca 25 % of TL; caudal fork width ca 2.2 in dorsal caudal margin; precaudal vertebrae ??-??; anterior nasal flaps bifurcate.

Colour: Greyish brown above, white below; dorsal fins with dark blotch on apex and whitish base; dark caudal bar, stripe and basal marking present.

**Remarks:** Based on molecular analysis, this appears to be a regional variant of Squalus mitsukurii Jordan & Snyder, 1903, whose species specific status has not yet been determined (G. Naylor pers. com. 2018).

# **CENTROPHORIDAE Gulper** sharks

lower tooth

### Centrophorus granulosus (Bloch & Schneider, 1801)

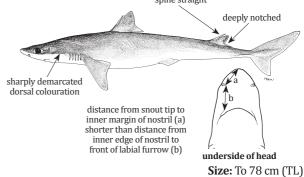
### Local name(s): Ye-net-nga-mann

Habitat: Continental shelves and upper slopes in depths from 50 to 1 440 m (usually below 200 m). Fisheries: Bottom trawls, longlines.

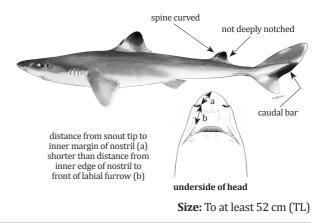
Distinctive Characters: Snout moderately long and thick; preoral length 0.9-1.2 in mouth width; lateral trunk denticles of adults rhomboidal to nearly circular sessile crowns on very low thick pedicels; crowns close-spaced but not overlapping, with a short thornlike to blunt or obsolete medial cusp; rear tips of pectoral fins narrowly angular and strongly extended; teeth blade-like unicuspidate in both jaws, with lowers much larger than uppers.

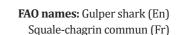
Colour: Brownish-grey above, light grey below; mouth lining often dark.

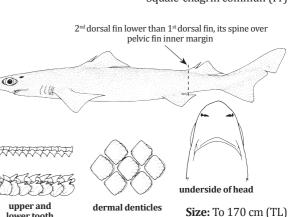




### FAO names: ???(En)







142

## Centrophorus moluccensis Bleeker, 1860

#### Local name(s): Ye-net-nga-mann.

**Habitat:** Continental and insular shelves and upper slopes in depths from 128 to 823 m.

Fisheries: Bottom trawls, longlines.

**Distinctive Characters:** Snout moderately long and flat; preoral length 1.1–1.7 in mouth width; lateral trunk denticles of adults rhomboidal to nearly circular sessile crowns on very low thick pedicels; crowns close-spaced but not overlapping, with a short thornlike to blunt medial cusp; rear tips of pectoral fins narrowly angular and strongly extended; teeth blade-like unicuspidate in both jaws, with lowers much larger than uppers.

**Colour:** Light grey-brown or pearly grey above, lighter below; dorsal fins with black anterodorsal margins; pectoral fins with light posterior margins.

## *Centrophorus uyato* (Rafinesque, 1810)

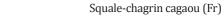
Local name(s): Ye-net-nga-mann.

**Habitat:** Continental shelves and upper slopes in depths from 50 to 1 400 m (usually below 200 m). **Fisheries:** Bottom trawls, longlines.

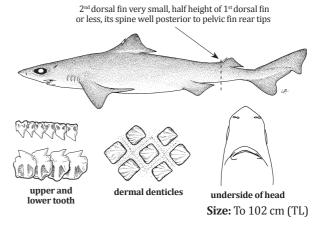
**Distinctive Characters:** Snout rather long and narrow; preoral length greater than mouth width; lateral trunk denticles of adults very broad, sessile-crowned, wide-spaced and cuspidate; rear tips of pectoral fins narrowly angular and strongly extended; teeth blade-like unicuspidate in both jaws, with lowers much larger than uppers.

**Colour:** Brownish-grey above, light grey below; mouth lining often dark.

**Remarks:** Difficult to distinguish from *Centrophorus granulosus* when immature or subadult.

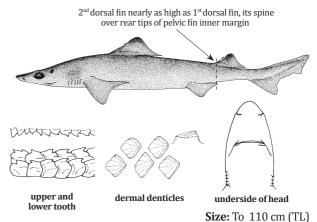


FAO names: Smallfin gulper shark (En)



FAO names: Little gulper shark (En) Petite squale-chagrin (Fr)

FAO names: Ornate dogfish (En)



# **ETMOPTERIDAE**

Lantern sharks

#### Centroscyllium ornatum (Alcock, 1889)

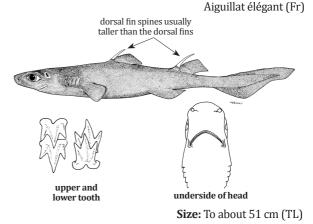
Local name(s): Ye-net-nga-mann.

**Habitat:** Upper continental slopes in depth of 521–1 262 m.

Fisheries: Deep bottom trawls.

**Distinctive Characters:** Head broad and flattened, wider than deep; preoral length about 32% of HL; 2nd dorsal fin somewhat larger than first dorsal fin; lateral trunk denticles high, conical and sharp-cusped, close-set and numerous on dorsal ventral surfaces of body; skin firm; teeth similar in both jaws with narrow cusps and cusplets, not compressed or blad-like.

**Colour:** Body uniform blackish above and below, without without white fin markings or discrete black photomarks on body.



# **SOMNIOSIDAE**

### Zameus squamulosus (Günther, 1877)

Local name(s): Ye-net-nga-mann.

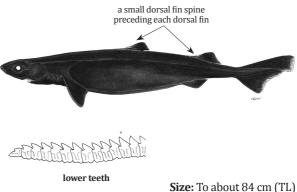
Habitat: Off continental and insular slopes in depths of 550-1 450 m.

Fisheries: Deep bottom trawls, longlines.

Distinctive Characters: Head rather low and flat; preoral length almost equal to distance from mouth to pectoral fin origins; postoral grooves much longer than upper labial furrows; caudal fin with strong subterminal notch and short lower lobe; lateral trunk denticles with cross-ridges on crowns; small lanceolate teeth without cusplets in upper jaw and large knife-cusped cutting teeth in lower jaw.

Colour: Uniformly black to dark brownish with no conspicuous markings.

**FAO names:** Velvet dogfish (En) Squale-grogneur velouté (Fr)



**PSEUDOCARCHARIIDAE** 

Crocodile shark

Pseudocarcharias kamoharai (Matsubara, 1936)

Local name(s): ????

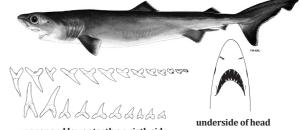
Habitat: An oceanic species usually found offshore and far from land but sometimes occurring inshore. Fisheries: Driftnets.

Distinctive Characters: Snout moderately long,pointed and bulbously conical; eves very large; anal fin narrow-based, pivoting; caudal peduncle with both upper and lower precaudal pits and low lateral keels; 26-29 teeth in upper jaw and 19-26 in lower jaw.

Colour: Grey or grey-brown dorsal surface, lighter ventral surface, and light-edged fins.



FAO names: Crocodile shark (En)



upper and lower teeth on rigth side (lingual view)

FAO names: Sand tiger shark (En)

Size: To 122 cm

**ODONTASPIDIDAE** 

Sandtiger sharks

Carcharias taurus Rafinesque, 1810

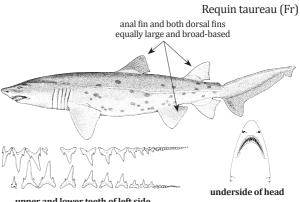
Local name(s): The'-Nga-Mann-Kyarr.

Habitat: Sandy and rocky beaches, in shallow bays. on offshore banks and reefs, in underwater caves down to at least 191 m depth.

Fisheries: Gillnets, longlines.

Distinctive Characters: Snout short and flattened; mouth long and extending behind eyes; 3 rows of large upper anterior teeth on each side of symphysis; 1st dorsal fin closer to pelvic fin bases than pectoral fin bases.

Colour: Light brown, often with darker reddish or brownish spots scattered on body; eyes with light green irises.



# ALOPIIDAE

Thresher sharks

#### Alopias pelagicus Nakamura, 1935

#### Local name(s): Hmee-She-Nga-Mann.

Habitat: Oceanic, epipelagic, caught near shore where shelf is narrow. Maximum depth 150 m. **Fisheries:** Longlines, driftnets.

**Distinctive Characters:** Long upper caudal lobe nearly as long as rest of shark; eyes small with orbits not expanded onto dorsal surface of head; labial furrows absent; 1<sup>st</sup> dorsal fin base somewhat closer to pectoral fin bases than pelvic fin bases.

**Colour:** Deep blue or grey above, white below; white colour of abdomen not extending over pectoral fin bases.

#### Alopias superciliosus Lowe, 1841

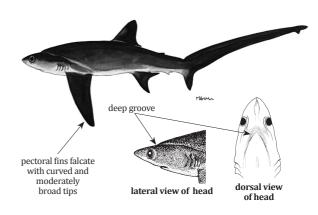
Local name(s): Hmee-She-Nga-Mann.

Habitat: Oceanic and coastal waters down to 500 m. Fisheries: Driftnets, line gear.

**Distinctive characters:** Similar to *Alopias pelagicus* but head nearly flat between eyes, with a deep horizontal groove on nape; eyes very large, with orbits expanded onto dorsal surface of head; 1<sup>st</sup> dorsal fin base closer to pelvic bases than to pectoral bases; teeth large, in 22–27 rows in upper jaw (teeth smaller and in 41–45 rows in *A. pelagicus*).

**Colour:** Body purplish grey or grey-brown on upper surface and sides with underside grey to white; light colour of abdomen not extending over pectoral fin bases.

> FAO names: Bigeye thresher (En) Renard à gros yeux (Fr)



Size: To 470 cm (TL)

**LAMNIDAE** Mackerel sharks

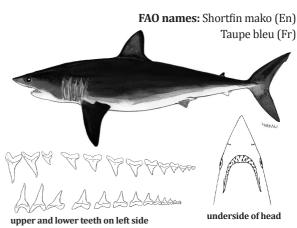
#### Isurus oxyrinchus Rafinesque, 1810

**Local name(s):** Yat Toe Nga Kun Shut Nga Mann. **Habitat:** Pelagic in oceanic and coastal waters, usually near the surface.

Fisheries: Driftnets, line gear.

**Distinctive Characters:** Snout usually acutely pointed; pectoral fins considerably shorter than head, relatively narrow-tipped in young and acutely pointed in adults; 24–26 teeth on upper jaw and 24–29 on lower jaw; cusps of upper and lower anterior teeth flexed, with tips reversed;

**Colour:** Dorsolateral coloration brilliant blue or purplish in life, white below underside of snout and mouth in adults.



145

Size: To 400 cm, common 200 cm (TL)

# HEMISCYLLIIDAE

Bamboo sharks

#### Chiloscyllium burmensis Dingerkus & DeFino, 1983

FAO names: Burmese bamboo shark (En) Requin-chabot birman (Fr)

Local name(s): Ye Net Nga Mann.

Habitat: Presumably inshore and off the Irrawaddy River delta.

Fisheries: Unknown.

**Distinctive Characters:** Eyes small, less than 1.25% of total length; distance from vent to tail tip more than 67% of TL; prepectoral length less than 15.8% of TL; snout to vent length less than 31% of TL; dorsal fins with straight or convex posterior margins.

**Colour:** Colour pattern absent in adult male, juvenile colour pattern unknown

**Remarks:** Only known from a single specimen collected off Yangon, Myanmar

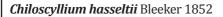
### Chiloscyllium griseum Müller & Henle 1838

Local name(s): Ye Net Nga Mann.

**Habitat:** An inshore bottom shark, on rocks and in lagoons from 5 to 80 m.

Fisheries: Bottom trawls, gillnets, line gear.

**Distinctive Characters:** interdorsal space usually more than 9.3% of TL; 1<sup>st</sup> dorsal fin height more than 6.6% of TL; 2<sup>nd</sup> fin height usually more than 5.8% of TL; dorsal fins with straight or convex posterior margins without projecting free rear tips. **Colour:** Colour pattern absent in adults but young with prominent dark saddle-marks without black edging.



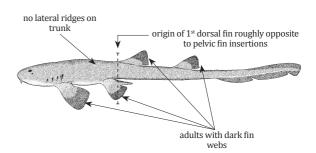
Local name(s): Ye Net Nga Mann.

**Habitat:** Probably mostly close inshore, depth to 12 m.

Fisheries: Bottom trawls, gillnets, line gear.

**Distinctive Characters:** Interdorsal space usually less than 9.3% of TL; 1<sup>st</sup> dorsal fin height less than 6.6% of TL; 2<sup>nd</sup> fin height usually less than 5.8% of TL; dorsal fins with straight or convex posterior margins without projecting free rear tips.

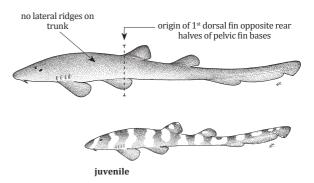
**Colour:** Colour pattern absent in adults except for dusky fins, but saddle-markings of juveniles with black edging.



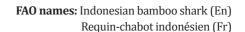
Size: To 57 cm (TL)

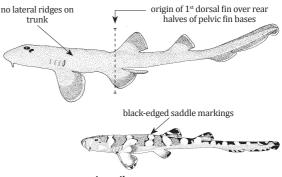
FAO names: Grey bambooshark (En)

Requin-chabot gris (Fr)



Size: To 77 cm (TL)





juvenile

Size: To 61 cm (TL)

## Chiloscyllium indicum (Gmelin, 1789)

Local name(s):Ye Net Nga Mann.

**Habitat:** An inshore bottom shark, on rocks and in lagoons from 5 to 80 m.

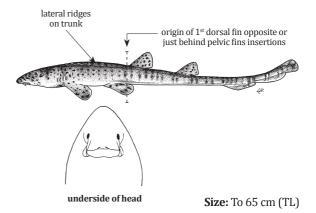
Fisheries: Bottom trawls, gillnets, line gears.

**Distinctive Characters:** Body and tail very slender; dorsal and anal fins set far back on very long thick tail; dorsal fins with straight or convex posterior margins.

**Colour:** Numerous dark brown or blackish spots, dashes and bars on light brown background present in juveniles and adults; saddle-markings or bars of young without prominent black edging.

# FAO names: Slender bambooshark (En)

Requin-chabot élégant (Fr)



#### Chiloscyllium punctatum Müller and Henle, 1838

#### FAO names: Brownbanded bamboo shark (En) Requin-chabot bambou (Fr)

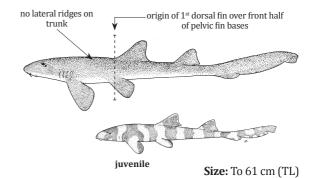
#### Local name(s): Ye Net Nga Mann.

**Habitat:** Coral reefs, tidepools, tidal flats, reef faces. Probably also on soft bottom offshore to at least 85 m.

Fisheries: Bottom trawls, gillnets, line gear.

**Distinctive Characters:** Interdorsal space slightly greater than 1<sup>st</sup> dorsal fin base and 9.1–12.7% of TL; posterior margins of dorsal fins distintly concave with free rear tips projecting.

**Colour:** Light brown in adults, usually without a colour pattern, but young with broad dark transverse bars and usually a scattering of small blackish spots, bars not prominently edged with black.



# **STEGOSTOMATIDAE**

Zebra shark

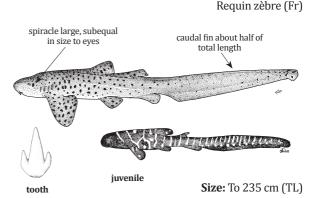
#### Stegostoma fasciatum (Hermann, 1783)

#### Local name(s): Kyarr-Nga-Mann.

Habitat: Inshore, very common on coral reefs. Fisheries: Gillnets, line gear.

**Distinctive Characters:** Body moderately stout with prominent ridges on dorsal surface and sides; small transverse mouth in front of laterally positioned eyes; small barbles; caudal fin with lower lobe hardly developed; no lateral keels or precaudal pits on caudal peduncle.

**Colour:** Sub-adults and adults with scattered dark spots on a yellowish background, shading into the whitish ventral surfaces; juveniles dark brown with vertical yellow stripes and spots.



FAO names: Zebra shark (En)

# GINGLYMOSTOMATIDAE

Nurse sharks

#### Nebrius ferrugineus (Lesson, 1831)

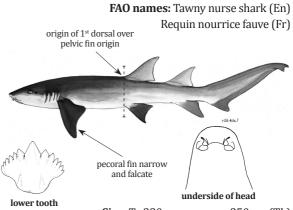
Local name(s): The'-Nga-Mann.

**Habitat:** Demersal in shallow waters on coral and rocky reefs, in lagoons and on sand flats down to 70 m.

Fisheries: Gillnets, line gear, bottom trawls.

**Distinctive Characters:** Mouth in front of laterally positioned eyes; barbles fairly long, almost reaching mouth; minute spiracles; no circumnarial grooves; angular dorsal fins; 1<sup>st</sup> dorsal fin larger than 2<sup>nd</sup> dorsal and anal fins; pectoral, dorsal and anal fins apically angular; body without lateral ridges.

**Colour:** No colour pattern, tan above, lighter below; fins slightly dusky.



Size: To 320 cm, common 250 cm (TL)

FAO names: Whale shark (En)

# RHINCODONTIDAE

Whale shark

Rhincodon typus Smith, 1828

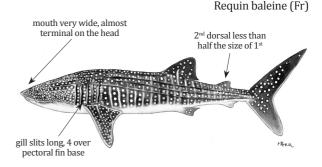
Local name(s): Way-La-Nga-Mann, A Yae Yo Nga Mann.

**Habitat:** Pelagic often near the surface down to 980 m.

Fisheries: Gillnets.

**Distinctive Characters:** Head very wide and flattened; teeth minute; caudal fin with a strong lower lobe but no subterminal notch; caudal peduncle depressed with a strong keel on each side; upper precaudal pit present.

**Colour:** Dark grey, reddish or greenish grey above, with white or yellow spots and transverse stripes; white or yellowish below.



Size: To 12 m, possibly to 21 m (TL)

FAO names: Broadnose catshark (En)

# **SCYLIORHINIDAE**

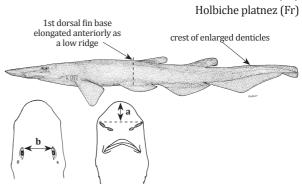
Catsharks

#### Apristurus investigatoris (Misra, 1962)

Local name(s): Kyaung-Nga-Mann.

Habitat: Continental slope in depths of 767–1 040. Fisheries: Deep bottom trawls.

**Distinctive Characters:** Head broadly flattened and spatulate; snout bell-shaped; pre-outer nostril length (a) much shorter than interorbital width (b); upper labial furrows longer than lowers; 1st dorsal fin about 3/4 as large as 2nd, with its origin over first fourth of pelvic fin bases; interdorsal space equal to or slightly less than 1st dorsal fin base; caudal fin with a creast of enlarged denticles. **Colour:** Body uniform dark brown above and below, without fin markings.



dorsal view of head ventral view of head

Size: To 26 cm (TL)

#### Apristurus macrostomus Chu, Meng & Li, 1985

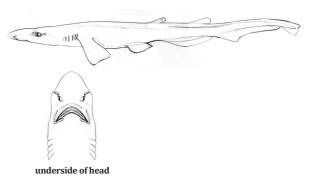
#### FAO names: Broadmouth catshark (En)

Local name(s): Kyaung-Nga-Mann.

Habitat: Continental slope in depths of 503–1040. Fisheries: Deep bottom trawls.

Distinctive Characters: Similar to Apristurus investigatoris but 1st dorsal fin less than half size of 2nd; origin of 1st dorsal fin well behind pelvic fin bases; interdorsal space greater than 1st dorsal fin base; no modified dermal denticles on the dorsal margin of the caudal fin.

Colour: Dark brown or grey brown above and below; rear fin margins blackish.



Size: To 49.5 cm (TL)

Chien corail (Fr)

FAO names: Coral catshark (En)

# Atelomycterus marmoratus (Anonymous [Bennett] 1830)

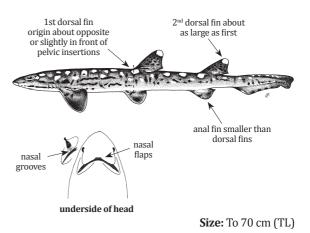
Local name(s): Thanda Kyauk Tan Kyaung-Nga-Mann.

Habitat: Inshore on coral reefs and though to inhabit crevices and holes on reefs.

Fisheries: Gillnets, line gear, bottom trawls.

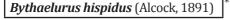
Distinctive Characters: Head slightly angular in dorsoventral view; anterior anterior nasal flaps greatly expanded and reaching to mouth; very long labial furrows; nasoral grooves present; eyes horizontal and oval.

**Colour:** Enlarged black spots merging to form dash and bar marks that bridge not clear saddle areas; large white spots scattered on sides, back and fin margins.





Holbiche mignonne (Fr)



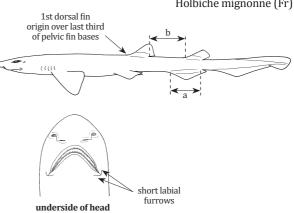
#### Local name(s): Kyaung-Nga-Mann.

Habitat: Upper continental slopes at depths of 260-766 m.

#### Fisheries: Bottom trawls.

Distinctive Characters: Snout short and rounded: short labial furrow present along both upper and lower jaws; 1st dorsal fin origin over last third of pelvic fin bases; anal fin base (a) slightly shorter than interdorsal space (b); roof of mouth with numerous small papillae; eye diameter less than 14 times in predorsal distance in adults (24–29 cm).

Colour: Pale brown above (sometimes with dark brown saddle marks), white below; fins with narrow pale edges



## Cephaloscyllium cf. silasi (Talwar, 1974)

#### Local name(s): Kyaung-Nga-Mann.

Habitat: Bottom-dwelling on upper continental slope in depths of 250–500 m.

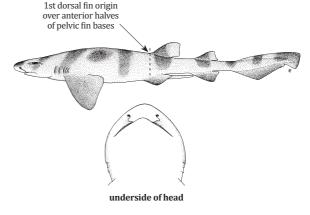
#### Fisheries: Bottom trawls.

Distinctive Characters: Stout bodv with expanded belly; head depressed, flattened and broad, rounded in dorsoventral view; lower jaw covering upper teeth; labial furrows absent or vestigal; anterior nasal flaps broadly subtriangular, overlapping mouth posteriorly; eyes dorsolateral and slit-like.

Colour: Light brown with 7 moderately broad dark brown saddles, plus an obscure darker blotch over pectoral fin inner margin; underside of head and abdomen unspotted.

Remarks: Inclusion based on photographic record.

FAO names: Indian swellshark (En) Holbiche indienne (Fr)



Size: To 45 cm (TL)

Requin chat pygmée (Fr)

# PROSCYLLIIDAE

Finback catsharks

#### Eridacnis radcliffei Smith, 1913

#### Local name(s): Kyaung-Nga-Mann

Habitat: Mud bottoms on upper continental and insular slopes and the outer shelves at depths from 71 to 766 m.

#### Fisheries: Bottom trawls.

Distinctive Characters: Head and snout narrowly rounded in dorsoventral view; preoral snout (a) less than 1.5 times in mouth length (b); labial furrows rudimentary or absent; anterior nasal flaps short, with posterior edges well in front of mouth; lateral trunk denticles narrow-crowned and with long, narrow cusps; 72-78 teeth on upper jaw and 65-77 on lower jaw.

**Colour:** Brown, with prominent dark banding on tail and dark markings on dorsal fins.

Ctenacis cf. fehlmanni (Springer, 1968)

Local name(s): Kyaung-Nga-Mann Habitat: Known from 70 to 170 m depth. Fisheries: Bottom trawls.

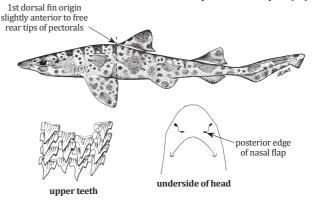
Distinctive Characters: Head and snout broadly rounded in dorsoventral view; preoral snout about 0.7 in mouth width; anterior nasal flaps small, with posterior edges well in front upper symphysis; labial furrows very short; inside of mouth and edges of gill bars with papillae; anal fin origin appreciably posterior to origin of 2nd dorsal fin; dorsal margin of caudal fin about 23% of TL.

Colour: Large reddish-brown, irregular dorsal saddle blotches on body, interspaced with smaller round spots and vertical bars; sposts also on fins. Remarks: Inclusion based on photographic record. 1st dorsal fin origin dark markings caudal fin ribbon-like over pectoral fin inner margin with dark banding 666 anal fin less than half height of dorsal fins underside of head

FAO names: Pygmy ribbontail catshark (En)

Size: To 24 cm (TL)

FAO names: Harlequin catshark (En) Requin chat arlequin (Fr)



Size: To 46 cm (TL)

#### FAO names: Magnificent catshark (En)

#### Local name(s): Kyaung-Nga-Mann

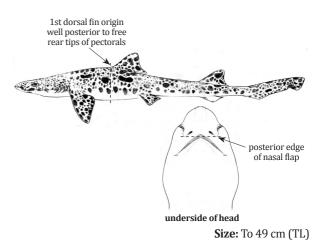
**Habitat:** Near edge of outer continental shelf, from141 to 144 m.

Fisheries: Bottom trawls.

**Distinctive Characters:** Head and snout narrowly rounded in dorsoventral view; anterior nasal flaps large, with posterior ends nearly? reaching upper symphysis; 2<sup>nd</sup> dorsal origin slightly forward of the anal fin origin; snout to cloaca length more than twice (2.1–2.3) interdorsal space.

**Colour:** Pattern of small and large spots and dots, including clusters of small round spots above a large upcurved spot and an intermediate small spot forming "clown faces" below dorsal fins.

**Remarks:** The genus may be wrongly allocated (pers. com., W. White, 2019).



# **TRIAKIDAE** Houndsharks – Smoothounds – Topes

#### Iago omanensis (Norman 1939)

Local name(s): Nga Mann Mote Soe Myet Pyuu. Habitat: Continental shelf and slope between 78–1 000 m or more; often in oxygen-poor water masses. Fisheries: Line gears, bottom trawls.

**Distinctive Characters:** Head and snout subangular in dorsoventral view; snout rather short, preoral length about 0.7–0.9 in mouth width; distance from spiracle to 5th gill slit greater than prespiracular head; width of longest gill slits nearly equal to eye length; eyes lateral on head, subocular ridges obsolete; large gill slits, width of longest nearly equal to eye; small blade-like teeth. **Colour:** Greyish above and lighter below, with no conspicuous markings; tips of dorsal fins and upper caudal lobe often darker.

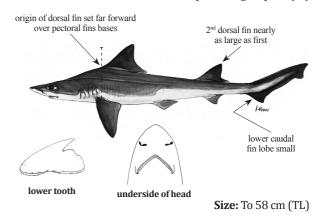
### Iago garricki Fourmanoir & Rivaton, 1979

**Local name(s):** Nga Mann Mote Soe Hnar Shae. **Habitat:** Uppermost slope between 250–520 m depth.

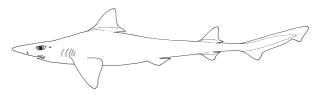
Fisheries: Deep bottom trawls.

**Distinctive Characters:** Similar to *lago omanensis* but snout longer (preoral length about 1.1 in mouth width); distance from spiracle to 5th gill slit less than prespiracular head; width of longest gill slits much less than eye length; labial furrows rather long, uppers reaching level of lower symphysis (vs falling well behind level of lower symphysis).

**Colour:** Greyish-brown with conspicuous black fin tips and upper rear edges, and pale free rear edges to dorsal fins; tips and trailing edges of anal, caudal and pectoral fins white. FAO names: Bigeye houndshark (En) Requin-hâ à gros yeux (Fr)



FAO names: Longnose houndshark (En) Requin-hâ long nez (Fr)



underside of head

#### FAO names: Lowfin houndshark (En)

#### *Iago* sp. A

**Local name(s):** Nga Mann Mote Soe Suu Taung Gyi. **Habitat:** Outer continental shelf and upper slope between 183–400 m, also semipelagic.

Fisheries: Deep bottom trawls.

**Distinctive Characters:** Similar to *lago omanensis* but with shorter head; slimmer body; much lower dorsal fins; smaller pectoral fins; softer skin and muscles and darker coloration.

**Colour:** Metal grey above and lighter below, with somewhat darker pigmentation above gill slits, on distal half of dorsal fins and on caudal fin web.

**Remarks:** A *lago* species (yet to be described) often confused with *lago* omanensis, which has been recorded off the Gulf of Aden, Pakistan, West coast of India and now also in Myanmar.

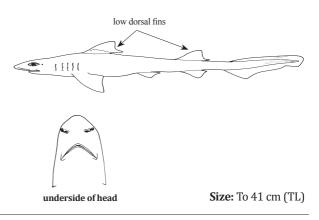
Mustelus stevensi White & Last, 2008

Local name(s): Arab Nga Mann Mote Soe.

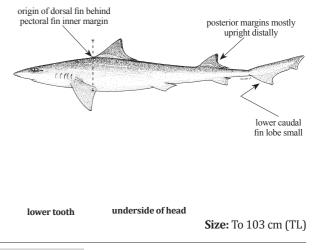
**Habitat:** Outer continental shelf and upper slope between 68–735 m.

Fisheries: Line gears, bottom trawls.

**Distinctive Characters:** Head almost straight parabolic in dorsoventral view; anal fin insertion slightly anterior to its apex; 1st dorsal fin base 1.6–2.1 in anal-caudal space; eyes dorsolateral on head; subocular ridges strong; buccopharyngeal denticles covering entire palate and floor of mouth; lower edge of spiracle usually at level with lower edge of eye; upper labial furrows much longer than lower furrows; teeth pavement-like in 72/75 rows. **Colour:** Light grey above, lighter below; numerous small, diffuse-edged white spots in staggered, irregular rows on postspiracular head and body (absent in the Myanmar specimen).









Weasel sharks

#### Chaenogaleus macrostoma (Bleeker 1852)

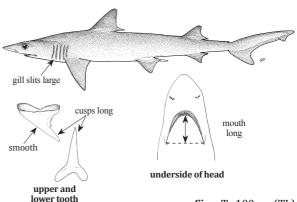
Local name(s): Phyan Nga-mann.

**Habitat:** Continental and insular shelves at depths down to 59 m.

Fisheries: Gillnets, line gears, bottom trawls.

**Distinctive Characters:** Snout obtusely wedgeshaped in dorsoventral view; very long parabolic mouth with prominently protruding lower teeth; gill slits more than twice eye length; fins not falcate; lower jaw rounded at symphysis; no toothless space at midline of jaws; 33–38 teeth on upper jaw and 34–36 on lower jaw; proximal edges of teeth smooth; lower teeth with extremely long, hooked cusps, sometimes a few cusplets at their bases.

**Colour:** Light grey or bronze colour with no prominent markings.



Size: To 100 cm (TL)

FAO names: Hooktooth shark (En)

Milandre harpon (Fr)

# *Hemipristis elongata* Klunzinger, 1871

Local name(s): Phyan Nga-mann.

Habitat: Continental and insular shelves at depths down to 132 m.

Fisheries: Line gears, bottom trawls.

Distinctive Characters: Snout long, broadly rounded in dorsoventral view; mouth with truncated lower symphysis and prominently protruding lower teeth; gill slits more than twice eye length; fins strongly falcate; 26-30 teeth on upper jaw and 30-36 on lower jaw; upper teeth with distal cusplets and proximal serrations, lower teeth with extremely long, hooked cusps and cusplets and serrations at their bases.

Colour: Grey or grey-brown above, lighter below, no prominent markings.

#### Hemigaleus microstoma Bleeker, 1852

Local name(s): Phyan Nga-mann.

Habitat: Inshore and offshore at depths down to 170 m.

Fisheries: Line gears, bottom trawls.

Distinctive Characters: Snout long, rounded in dorsoventral view; mouth very short and broadly arched, its length 31-43% of its width; lower teeth not protruding when mouth is closed; gill slits less than twice eye length; fins strongly falcate; 25-34 teeth on upper jaw and 37-43 on lower jaw; proximal edges of upper teeth smooth; lower teeth with short, straight cusps, without cusplets or serrations.

Colour: Grey-brown above, lighter below, dorsal fins with white tips and posterior margins; sometimes white spots on sides of body.

## Paragaleus randalli Compagno, Krupp & Carpenter, 1996

#### Local name(s): Phyan Nga-mann.

Habitat: Lives in shallow water to 20 m depth on the continental shelf.

Fisheries: Gillnets, line gears, bottom trawls.

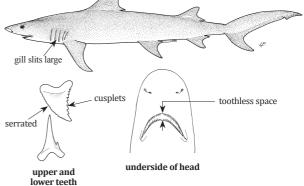
Distinctive Characters: Snout long, narrowly rounded in dorsoventral view; mouth long, jaw symphyses extending well anterior to upper labial furrows; gill slits less than twice eye length; 28-30 teeth on upper jaw and 28-33 on lower jaw; proximal edges of upper teeth smooth; 5 or more rows of lower anterolateral teeth with distal cusplets; lower anterior teeth mostly with oblique cusps; 164-187 total vertebrae.

Colour: Body greyish above, lighter below; a pair of longitudinal black lines on underside of prenarial snout.

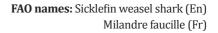


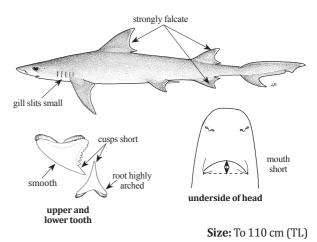
Milandre chicor (Fr)

FAO names: Snaggletooth shark (En)

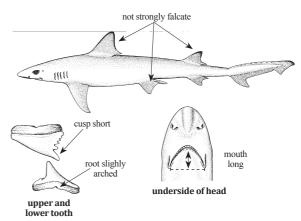


Size: To 240 cm (TL)





FAO names: Slender weasel shark (En)



Size: To 94. cm (TL)

# CARCHARHINIDAE

**Requiem sharks** 

## Carcharhinus albimarginatus (Rüppell, 1837)

Local name(s): Nga-Mann-Taung-Phyu.

154

Habitat: Coastal and oceanic, common near slopes, from the surface to deeper waters down to 500 m. **Fisheries:** Driftnets, gillnets, line gears.

**Distinctive Characters:** Snout moderately long and broadly parabolic in dorsoventral view; 1<sup>st</sup> dorsal fins moderately high; large semifalcate pectoral fins; 24–28 teeth on upper jaw and 24–28 on lower jaw; erect to moderately oblique-cusped strongly serrated teeth in the upper jaw; lower teeth with erect, stout, serrated cusps.

**Colour:** Dorsal surface dark grey or grey-brown, ventral surface white; all fins have conspicuous white tips and posterior margins.

## Carcharhinus altimus (Springer, 1950)

#### Local name(s): ????

**Habitat:** Offshore, near the edge of the continental and insular shelves and uppermost slopes.

Fisheries: Driftnets, line gears.

**Distinctive Characters:** Snout bluntly pointed to rounded in dorsoventral view; long nasal flaps; 1<sup>st</sup> dorsal and 2<sup>nd</sup> dorsal fins moderately high with short rear tips; long nearly straight pectoral fins; 28–30 teeth in upper jaw and 28–30 in lower jaw; upper jaw with high, triangular, serrated teeth; lower jaw with erect narrow-cusped serrated teeth.

**Colour:** Light grey above, white below, with dusky fin tips (except for pelvics) but no conspicuous markings.

## Carcharhinus amblyrhynchoides (Whitley 1934)

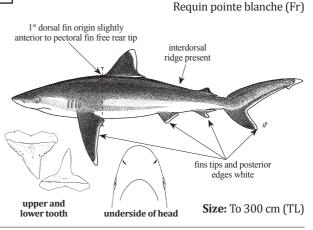
#### Local name(s): Nga-Mann-Taung-Mee.

**Habitat:** Coastal, pelagic on continental and insular shelves.

#### Fisheries: Gillnets, line gears.

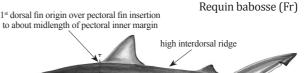
**Distinctive Characters:** Snout fairly short, wedgeshaped in dorsoventral view; large triangular 1<sup>st</sup> dorsal and moderately high 2<sup>nd</sup> dorsal fins, both fins with short rear tips; moderately large falcate pectoral fins; 31–33 teeth on upper jaw and 29–33 on lower jaw; erect and narrow-cusped serrated teeth in both jaws.

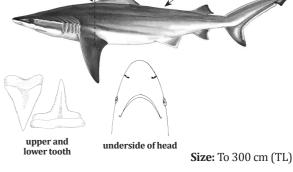
**Colour:** Grey or grey-brown above, white below; pectoral, dorsal and pelvic fins, and ventral lobe of caudal fin black or dusky-tipped, sometimes inconspicuously.



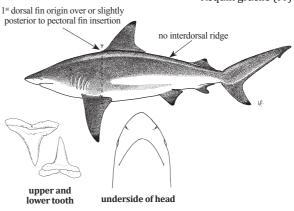
FAO names: Bignose shark (En)

FAO names: Silvertip shark (En)





FAO names: Graceful shark (En) Requin gracile (Fr)



## Carcharhinus amblyrhynchos (Bleeker, 1856)

Local name(s): Kyauk Tann Nga-Mann Nyo.

Habitat: Occurs on continental and insular shelves and oceanic waters adjacent to them.

Fisheries: Gillnets, line gears.

**Distinctive Characters:** Snout moderately long and broadly rounded in dorsoventral view; moderately high 1<sup>st</sup> dorsal and 2<sup>nd</sup> dorsal fins, both fins with short rear tips; narrow and falcate pectoral fins; 28–30 teeth on upper jaw and 27–29 on lower jaw; teeth with serrated edges but with cusplets low or absent on upper teeth, always absent on lowers.

**Colour:** Dark grey or bronze-grey above, white below;  $1^{st}$  dorsal fin plain or irregularly to prominently white-edged;  $2^{nd}$  dorsal, anal and pelvic fins with blackish tips.

## Carcharhinus amboinensis (Müller & Henle, 1839)

**Local name(s):** Nga-Mann-Wet-Myet-Hmay. **Habitat:** Inshore and offshore, from the surface to the bottom.

Fisheries: Gillnets, line gears.

**Distinctive Characters:** Snout very short, bluntly rounded in dorsoventral view; eyes small; large triangular 1<sup>st</sup> dorsal fin (over 3 times 2<sup>nd</sup> dorsal height), both fins with short rear tips; large angular pectoral fins; 23–27 teeth on upper jaw and 23–25 on lower jaw; broadly triangular serrated teeth in upper jaw; slightly narrower cusped teeth with arched roots in lower jaw.

**Colour:** Grey above, light below, fin tips dusky, especially in young, but not strikingly marked; an inconspicuous white band on flank.

#### Carcharhinus brevipinna (Müller & Henle, 1839)

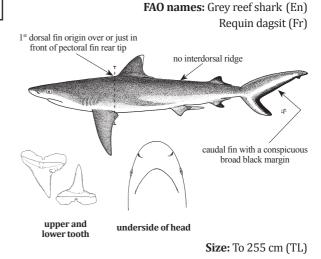
#### Local name(s): Lunn Nga Mann.

**Habitat:** Coastal, pelagic on continental and insular shelves.

Fisheries: Gillnets, line gears.

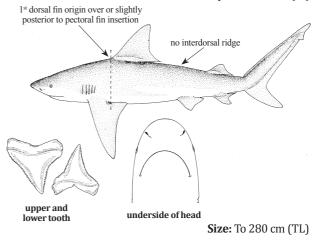
**Distinctive Characters:** Snout pointed and long, its length equal to or greater than mouth width; small 1<sup>st</sup> dorsal and moderately high 2<sup>nd</sup> dorsal fins, both fins with short rear tips; small falcate pectoral fins; 32–39 teeth on upper jaw and 29–37 on lower jaw; erect and narrow-cusped teeth in both jaws; uppers with entirely or partly serrated edges, lowers smooth.

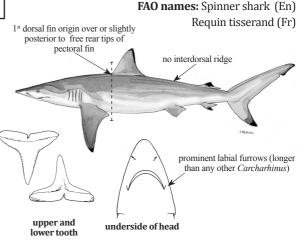
**Colour:** Grey on back, white below;  $2^{nd}$  dorsal, anal, undersides of pectorals and lower caudal fin lobe black or dark grey-tipped in subadults and adults, but unmarked or nearly so in small individuals (below 1 m).



# FAO names: Pigeye shark (En)

# Requin balestrine (Fr)





Size: To 280 cm (TL)

## Carcharhinus dussumieri (Müller & Henle 1839)

#### Local name(s): Mae Phyu Nga Mann.

Habitat: Found on the continental and insular inshore areas.

Fisheries: Gillnets, line gears.

Distinctive Characters: Snout moderately long and rounded in dorsoventral view; fairly large horizontally-oval eyes; small triangular 1<sup>st</sup> dorsal fin and a moderately large 2<sup>nd</sup> dorsal fin, both fins with short rear tips; small semifalcate pectoral fins; 24-31 teeth on upper jaw and 22-32 on lower jaw; oblique-cusped serrated teeth in both jaws?, upper teeth with strong, serrated cusplets.

Colour: Grey, or grey brown; black or dusky tip present on 2<sup>nd</sup> dorsal fin only, other fins with pale trailing edges; light stripe on flank not conspicuous.

#### Carcharhinus falciformis (Müller & Henle, 1839)

#### Local name(s): Nga Mann Chaw.

Habitat: Coastal and oceanic, common near slopes, from the surface to deeper waters down to 500 m. Fisheries: Driftnets, gillnets, line gears.

Distinctive Characters: Snout narrowly rounded in dorsoventral view; 1st dorsal fin low to moderately high; 2<sup>nd</sup> dorsal fin free rear tip very long, more than 2 times the fin height; long narrow pectoral fins; 29-35 teeth on upper jaw and 27-37 on lower jaw; oblique-cusped serrated teeth in the upper jaw, upper teeth with basal cusplets or very strong serrations; lower teeth smooth-edged.

**Colour:** Dark grey to grey-brown above with an inconspicuous pale flank band, white below; fin marking inconspicuous; fin tips dusky except for 1<sup>st</sup> dorsal.

#### Carcharhinus leucas (Müller & Henle, 1839)

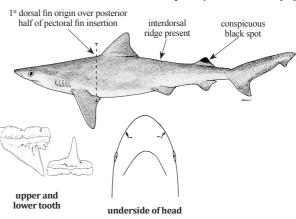
#### Local name(s): Na Thow Nga Mann.

Habitat: Coastal. estuarine. riverine and lacustrine waters, usually found close inshore in marine habitats from 1 m to 152 m.

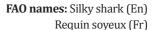
Fisheries: Gillnets, line gears.

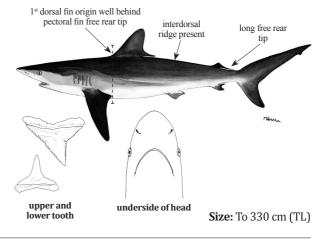
Distinctive Characters: Snout very short, bluntly rounded in dorsoventral view; eyes small; large triangular 1st dorsal fin (less than 3.2 times 2nd dorsal height), both fins with short rear tips; large angular pectoral fins; 24-29 teeth on upper jaw and 24-28 on lower jaw; broadly triangular serrated teeth in upper jaw; slightly narrower cusped teeth with arched roots in lower jaw.

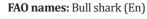
**Colour:** Back greyish, belly white; fin tips dusky, especially in young, but not strikingly marked; an inconspicuous white band on flank.



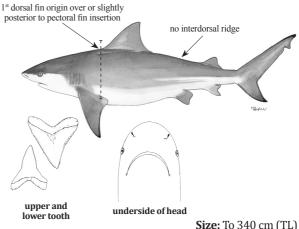
Size: To 100 cm (TL)







Requin bouledogne (Fr)



# FAO names: Whitecheek shark (En)

Requin à joues blanches (Fr)

Sharks

# Carcharhinus limbatus (Müller & Henle, 1839)

#### Local name(s): Nga-Mann-Pu.

Habitat: Coastal and offshore but not truly oceanic species.

Fisheries: Gillnets, line gears.

**Distinctive Characters:** Snout moderately long and pointed in dorsoventral view; large 1<sup>st</sup> dorsal fin and moderately large 2<sup>nd</sup> dorsal fin, both fins with short rear tips; moderately large pectoral fins; 30–35 teeth on upper jaw and 27–34 on lower jaw; erect, narrow–cusped serrated teeth in both jaws.

**Colour:** Grey above, white below; black tips usually present on pectorals,  $2^{nd}$  dorsal, and ventral caudal lobe, and sometimes on pelvic and anal fins (anal usually plain), and black edges usually present on  $1^{st}$  dorsal apex and dorsal caudal lobe.

*Carcharhinus longimanus* (Poey, 1861)

Local name(s): Suu Taung Phyu Nga Mann.

**Habitat:** Oceanic, epipelagic mostly far offshore but occasionally in coastal waters.

Fisheries: Driftnets, line gears.

**Distinctive Characters:** Snout short and broadly rounded in dorsoventral view; 1<sup>st</sup> dorsal fin noticeably large with a very broadly rounded apex; pectoral fins long and paddle–shaped; 27–32 teeth on upper jaw and 27–33 on lower jaw.

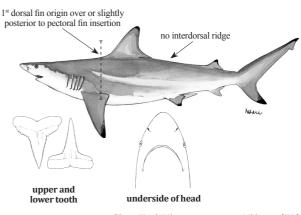
**Colour:** Back usually dark grey with a bronze tinge or bluish; belly whitish or with a yellow tinge; mottled white fin tips on 1<sup>st</sup> dorsal, pectoral, and pelvic fins, and at tip of upper and lower caudal fin; 2<sup>nd</sup> dorsal and anal fins black; juveniles with some black on pelvic fins and on caudal fin tips, and black saddle-marks on caudal peduncle.

## Carcharhinus macloti (Müller & Henle, 1839)

Local name(s): Hnote-Thee-Mar-Nga-Mann. Habitat: Inshore and offshore continental waters. Fisheries: Gillnets, line gear, bottom trawls.

**Distinctive Characters:** Long narrowly rounded or somewhat pointed snout with an hypercalcified rostrum (can easily be felt by pinching its snout); 1<sup>st</sup> and 2<sup>nd</sup> dorsal fins small with extremely long rear tips; small pectoral fins; 29–32 teeth on upper jaw and 26–29 on lower jaw; oblique-cusped smooth-edged upper teeth with strong proximal and distal cusplets.

**Colour:** Grey or grey-brown above, white below, fins with light edges but not conspicuously marked; light flank marks not conspicuous.

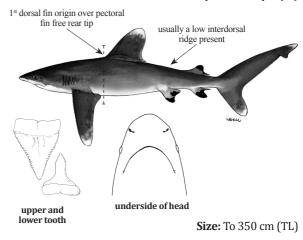


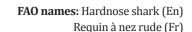
Size: To 275 cm, common 150 cm (TL)

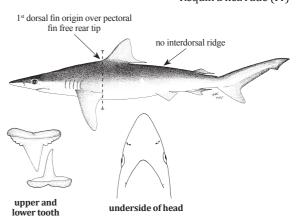
FAO names: Blacktip shark (En)

Requin bordé (Fr)

FAO names: Oceanic whitetip shark (En) Requin océanique (Fr)







Size: To 100 cm (TL)

#### Carcharhinus melanopterus (Quoy & Gaimard, 1824)

Local name(s): Suu Taung Me Kyauk Tann Nga Mann.

**Habitat:** Inshore and sometimes offshore, on continental and insular shelves.

Fisheries: Gillnets, line gears.

**Distinctive Characters:** Snout very short and bluntly; 1<sup>st</sup> dorsal fin moderately large, 2<sup>nd</sup> dorsal fin moderately high with a short rear tip; 23–28 teeth on upper jaw and 21–27 on lower jaw; upper teeth with narrow, strongly serrated, erect to oblique, high cusps, and crown feet with coarser serrations and cusplets.

**Colour:** Light brown above, white below; 1<sup>st</sup> dorsal and ventral caudal lobe with a conspicuous black apical blotch, brilliantly highlighted proximally with white; other fins, generally with less prominent black fin tips; a conspicuous white band on flank.

### Carcharhinus plumbeus (Nardo, 1827)

Local name(s): Thaung-Nga-Mann.

**Habitat:** Coastal pelagic, on continental and insular shelves and deeper waters adjacent to them. Maximum depth 280 m.

Fisheries: Gillnets, line gears.

**Distinctive Characters:** Snout short and broadly rounded or broadly parabolic in dorsoventral view; 1<sup>st</sup> dorsal fin triangular extremely tall and semifalcate; pectoral fins large, semifalcate, with narrowly rounded or pointed apices; 27–32 teeth on upper jaw and 25–32 on lower jaw; high, triangular, sawedged upper teeth.

**Colour:** Grey-brown above, white below; tips and posterior edges of fins often dusky, but no conspicuous markings; an inconspicuous white band on flank.

#### *Carcharhinus sealei* (Pietschmann, 1916)

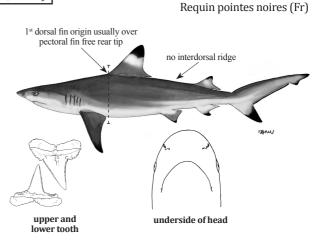
Local name(s): Nga-Mann-Mee-Kwet.

**Habitat:** Continental and insular shelves, from the surf line and intertidal to a depth of 40 m.

Fisheries: Gillnets, line gears.

**Distinctive Characters:** Snout moderately long and rounded in dorsoventral view; large oval eyes; anterior nasal flaps expanded;  $1^{st}$  dorsal fin strongly falcate,  $2^{nd}$  dorsal fin high with a short rear tip; 24–26 teeth on upper jaw and 22–26 on lower jaw; oblique-cusped serrated teeth in both jaws.

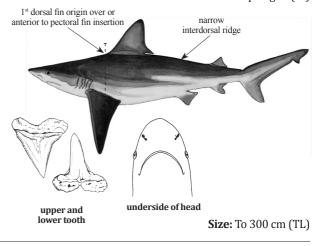
**Colour:** Back greyish or grey-brown, belly whitish; a black spot on the  $2^{nd}$  dorsal fin is the only conspicuous marking.



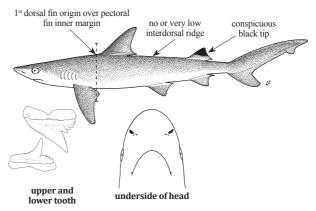
Size: To 200 cm (TL)

FAO names: Sandbar shark (En) Requin gris (Fr)

FAO names: Blacktip reef shark (En)



FAO names: Blackspot shark (En) Requin à tache noire (Fr)



# Carcharhinus sorrah (Müller & Henle, 1839)

#### Local name(s): Nga Mann Out Hmee Mae.

**Habitat:** Continental and insular shelves around coral reefs, usually 20–50 m. Maximum depth 140 m.

#### Fisheries: Gillnets, line gear.

**Distinctive Characters:** Snout moderately long and pointed in dorsoventral view; 1<sup>st</sup> dorsal fin moderate-size with a short rear tip; 2<sup>nd</sup> dorsal fin small with a long rear tip; pectoral fins fairly small, and falcate; 23–30 teeth on upper jaw and 23–30 on lower jaw; oblique-cusped serrated teeth in both jaws, upper teeth with strong cusplets.

**Colour:** Grey above white below; a conspicuous and large black tip on the pectorals, second dorsal, and ventral caudal lobe, but  $1^{st}$  dorsal only with black edge at most; a conspicuous white band on flank.

# Galeocerdo cuvier (Péron & Lesueur, 1822)

Local name(s): Kyarr Nga Mann.

**Habitat:** Inshore and offshore waters near the surface and bottom.

Fisheries: Gillnets, line gear.

**Distinctive Characters:** Snout very short and bluntly rounded; upper labial furrows very long, extending to front of eye; spiracles present; a low rounded keel on each side of the caudal peduncle; interdorsal ridge present; 18–26 teeth on upper jaw and 18–26 on lower jaw; cockscomb-shaped curved teeth with heavy serrations and distal cusplets.

**Colour:** Back dark-grey or greyish brown with dark brown or black rectangular spots often forming bars on sides of the fins but fading with growth.

#### *Glyphis gangeticus* (Müller & Henle, 1839)

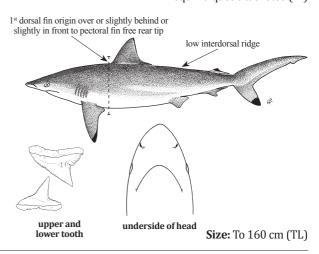
Local name(s): Ayeyarwady-Yae-Cho-Nga-Mann. Habitat: Estuarine or riverine?

#### Fisheries: Gillnets, line gears.

**Distinctive Characters:** Snout very short and broadly rounded in dorsoventral view; minute eyes; 2<sup>nd</sup> dorsal rather large, about half height of 1<sup>st</sup> dorsal; upper precaudal pit longitudinal; anal fin deeply notched; 29 teeth on upper jaw and 29 on lower jaw; upper teeth with high, broad, serrated triangular cusps; 1<sup>st</sup> few lower front teeth with weakly serrated cutting edges and low cusplets on crown foot; 209 total vertebrae.

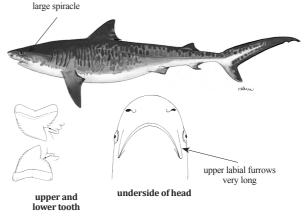
**Colour:** Grey-brown above, white below; no conspicuous markings.

**Remarks:** *Glyphis siamensis* (Steindachner, 1896) described from a single juvenile male from the Irrawaddy River mouth is a junior synonym.



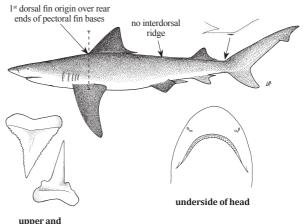
FAO names: Tiger shark (En)

Requin tigre commun (Fr)



Size: To 550 cm, common 400 cm (TL)

#### FAO names: Ganges shark (En)



Size: To 204 cm (TL)

# FAO names: Spot-tail shark (En) Requin à queue tachetée (Fr)

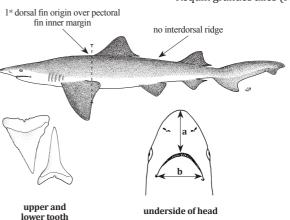
# Lamiopsis temminckii (Müller & Henle 1839)

Local name(s): Suu Pyar Kyae Nga Mann. Habitat: Inshore continental shelf. Fisheries: Gillnets, line gears.

Distinctive Characters: Snout (a) moderately long, nearly equal to mouth width (b); small round eyes; 2<sup>nd</sup> dorsal fin nearly as large as 1<sup>st</sup>; upper precaudal pit longitudinal; pectoral fin broad and triangular; anal fin with posterior margin nearly straight; 29-37 teeth on upper jaw and 28-34 on lower jaw; upper teeth serrated and with broad triangular cusps; lower teeth with smooth, hooked, narrow cusps.

Colour: Light grey or tan above, light below, with no prominent markings.

#### FAO names: Broadfin shark (En) Requin grandes ailes (Fr)



Size: To 168 cm (TL)

FAO names: Sliteve shark (En)

## Loxodon macrorhinus Müller & Henle, 1839

Local name(s): Nga Mann Myet Hmae.

Habitat: Coastal clean waters, near the surface and bottom, from 7 m to 80 m.

Fisheries: Gillnets, line gears.

Distinctive Characters: Snout long and narrow; short labial furrows; big eyes with rear notches; 2nd dorsal origin behind anal fin origin, anal fin with very long preanal ridges; 24-28 teeth on upper jaw and 24-29 on lower jaw; small, oblique-cusped teeth with smooth edges.

Colour: Grey above, pale below; fins with pale edges (transparent in life) caudal and 1st dorsal fin with a narrow dark margin.

## Negaption acutidens (Rüppell, 1837)

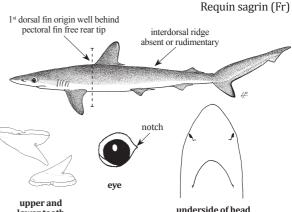
Local name(s): Suu Kutt Nga Mann.

Habitat: Shallow inshore and offshore waters near the bottom often around coral reefs and sand plateaus down to 23 m.

Fisheries: Gillnets, line gears.

Distinctive Characters: Snout (a) blunt, shorter than mouth width (b); 2<sup>nd</sup> dorsal fin nearly as large as the 1<sup>st</sup> dorsal fin; dorsal, pectoral and pelvic fins strongly falcate; 29-32 teeth on upper jaw and 28-30 on lower jaw; narrow, smooth-cusped teeth in both jaws.

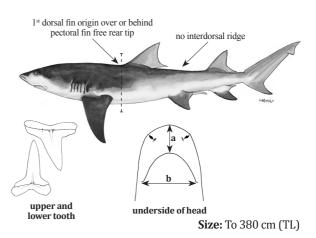
Colour: Yellowish brown above, paler below.



lower tooth

Size: To 98 cm (TL)

#### FAO names: Sicklefin lemon shark (En) Requin limon faucille (Fr)



#### Local name(s): Nga Mann Pyar.

Habitat: Oceanic, epipelagic, usually near the surface.

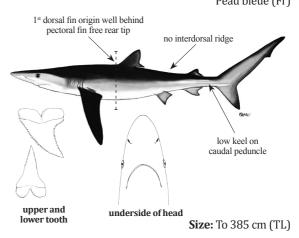
Fisheries: Driftnets, longlines.

**Distinctive Characters:** A slim, graceful blue shark with a long, conical snout; large eyes; pectoral fins long and pointed; 1<sup>st</sup> dorsal fin closer to pelvic fins origin than pectoral fins free rear tips; 24–31 teeth on upper jaw and 24–34 on lower jaw; curved triangular upper teeth with saw edges.

**Colour:** Dark blue on back, bright blue on sides, white below, fading to purple blackish after death; tips of pectoral and anal fins dusky.

# Carcharhinidae 161

#### FAO names: Blue shark (En) Peau bleue (Fr)



### *Rhizoprionodon acutus* (Rüppell, 1837)

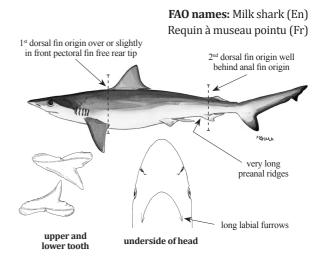
Local name(s): Noah Nga Mann.

**Habitat:** Inshore and offshore, from the surf line down to 200 m.

Fisheries: Gillnets, line gears.

**Distinctive Characters:** A small shark with a long, narrow snout; big eyes without rear notch; long upper and lower labial furrows; 2<sup>nd</sup> dorsal fin smaller than anal fin; interdorsal ridge absent or rudimentary; 23–27 teeth on upper jaw and 22–26 on lower jaw; oblique-cusped teeth with smooth or weakly serrated edges.

**Colour:** Grey or greyish brown above, white below; dorsal and anal fins slightly darker than back.



Size: To 180 cm, common 110 cm (TL)

### *Rhizoprionodon oligolinx* Springer 1964

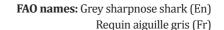
Local name(s): Hmee Kho Yaung Hnar Chun Nga Mann.

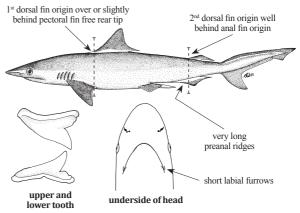
**Habitat:** Inshore and offshore shark found on continental and insular shelves, from the surf line down to 36 m.

Fisheries: Gillnets, line gears.

**Distinctive Characters:** Very small shark with a long snout; big eyes without rear notch; short upper and lower labial furrows; 2<sup>nd</sup> dorsal fin smaller than anal fin; interdorsal ridge absent or rudimentary; 23–25 teeth on upper jaw and 21–24 on lower jaw; oblique-cusped teeth with smooth or weakly serrated edges.

**Colour:** Grey or brownish grey above, pale below, bronzy when fresh, fins with dusky edges but not conspicuously marked.





# Scoliodon cf. laticaudus Müller & Henle, 1838

Local name(s): Hnarr Pyar Nga Mann.

**Habitat:** Rocky substrates of coastal waters and lower reaches of tropical rivers.

Fisheries: Bottom trawls, gillnets, line gear.

**Distinctive Characters:** Small stocky shark with a very long flattened, spade-like snout; small eyes; short, broad triangular pectoral fins; no interdorsal ridge; 25–33 teeth on upper jaw and 24–34 on lower jaw; small smooth-edged blade-like teeth with oblique cusps, distal blades, and no cusplets (teeth longer and more flexed in males)

**Colour:** Grey-brown above, light below, sometimes with obscure saddle bands; all fins with light margins.

Remarks: ???

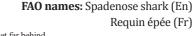
## Triaenodon obesus (Rüppell, 1837)

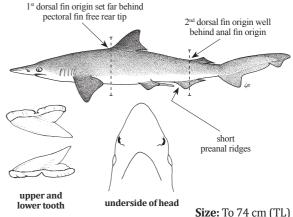
Local name(s): Suu Taung Phyu Kyauk Tann Nga Mann.

**Habitat:** Coastal clear waters and offshore islands, very common within coral reefs, lying inside crevices.

Fisheries: Gillnets; line gears.

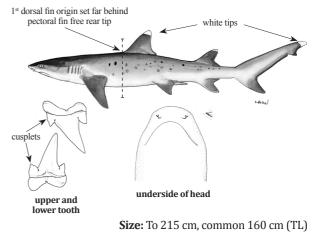
**Distinctive Characters:** Snout extremely short and broadly rounded; horizontally oval eyes with posterior notches; downslanted mouth; prominent expanded, tubular anterior nasal flaps, a large 2<sup>nd</sup> dorsal fin that is still considerably smaller than the 1<sup>st</sup> dorsal; no interdorsal ridge; 45–50 teeth on upper jaw and 42–48 on lower jaw; small smoothedged teeth with strong cusplets in both jaws.





FAO names: Whitetip reef shark (En)





# SPHYRNIDAE

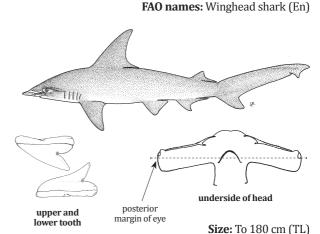
Hammerhead sharks

#### Eusphyra blochii (Cuvier 1816)

Local name(s): Gyo-Shae-Kywe-Nga-Mann. Habitat: Shallow water, continental and insular shelves.

Fisheries: Gillnets, line gears, driftnets.

**Distinctive Characters:** Unmistakable broad, wing-shaped head, with narrow blades nearly or quite half the shark's length; posterior margin of eyes below level of front of mouth; upper precaudal pit longitudinal, not crescent-shape; 30–31 teeth on upper jaw and 29 on lower jaw. teeth serrated? **Colour:** Grey or grey-brown above, paler below.



# Sphyrna lewini (Griffith & Smith, 1834)

Local name(s): Gyo-Toe-Kywe-Nga-Mann.

Habitat: Inshore, offshore and semi-oceanic waters.

Fisheries: Gillnets, line gear, driftnets, bottom trawls.

**Distinctive Characters:** Anterior margin of head with central notch and two smaller lateral indentations; posterior margin of eyes at about level of front of mouth; 1<sup>st</sup> dorsal fin high, moderately falcate; 2nd dorsal fin origin over midbase of anal fin; pelvic fin with a nearly straight posterior margin; 30–36 teeth on upper jaw and 30–35 on lower jaw; teeth with long slender smooth-edged cusps.

**Colour:** Greyish brown or olivaceous above, shading to white below; pectoral fins tipped grey or black ventrally.

## Sphyrna mokarran (Rüppell, 1837)

Local name(s): Gyo-Toe-Kywe-Nga-Mann.

Habitat: Semi-oceanic also in inshore waters, often found around and on coral reefs.

Fisheries: Gillnets, line gear, driftnets.

**Distinctive Characters:** Anterior margin of head nearly straight with a notch at the centre; posterior margin of eyes well anterior to front of mouth; 1<sup>st</sup> dorsal fin very high, strongly falcate; 2<sup>nd</sup> dorsal fin origin about over anal fin origin; pelvic fins with a deeply concave posterior margin; 36–37 teeth on upper jaw and 34–35 on lower jaw; teeth strongly serrated at all sizes.

**Colour:** Grey or grey-brown above, paler below; fins with dusky tips in young.

#### Sphyrna zygaena (Linnaeus, 1758)

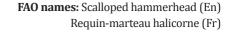
Local name(s): Gyo-Toe-Kywe-Nga-Mann.

**Habitat:** Continental and insular shelves, from close inshore to well offshore.

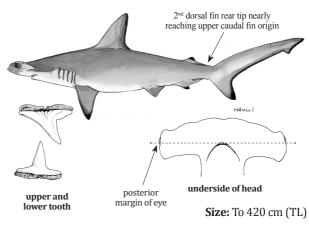
Fisheries: Gillnets, line gear, driftnets.

**Distinctive Characters:** Anterior margin of head broadly curved without a median indentation; posterior margin of eyes below level of front of mouth; 1<sup>st</sup> dorsal fin moderately high, broad, semicurved; 2<sup>nd</sup> dorsal fin origin over midbase of anal fin; pelvic fins with a deeply concave posterior margin; 30–32 teeth on upper jaw and 29–30 on lower jaw; teeth with very broad cusps and smooth to wakly serrated edge.

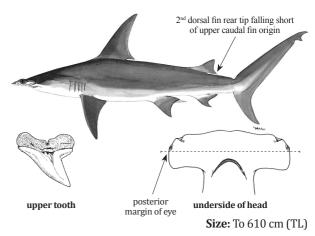
**Colour:** Dark olive or dark grey-brown above, white below; undersides of pectoral fin tips dusky.

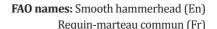


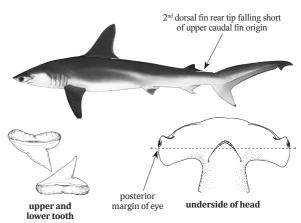
Sphyrnidae - Squatinidae 163



#### FAO names: Great hammerhead (En) Grand requin-marteau (Fr)





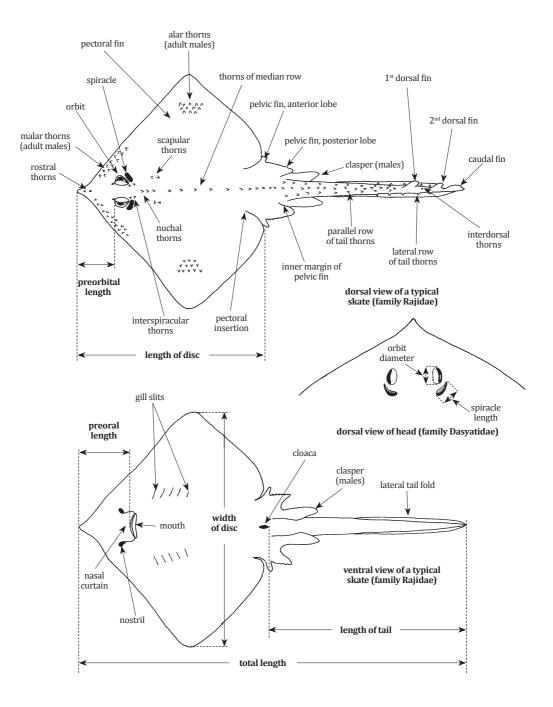


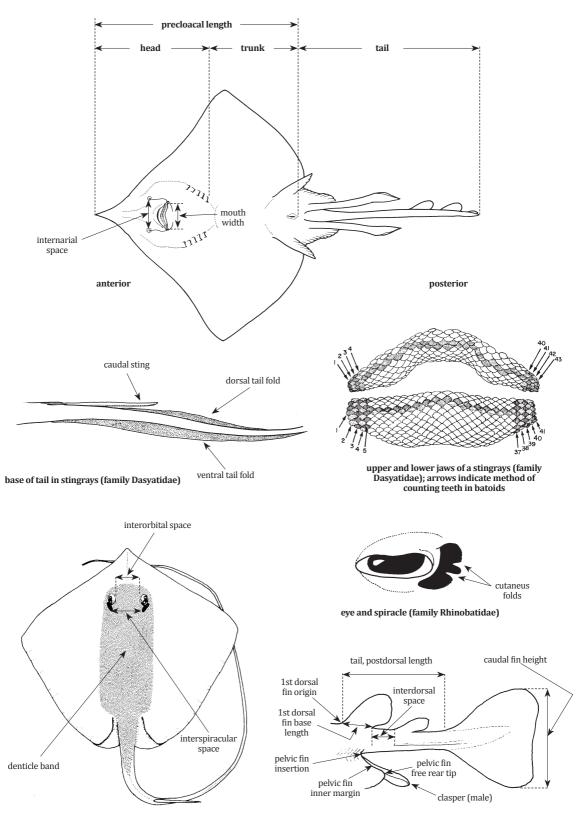
Size: To 400 cm (TL)

# **BATOID FISHES**

The "Guide to Orders and Families", includes a total of 4 Orders and 18 Families. The classification follows taxonomic and nomenclature modifications adopted in the *Rays of the World* book by Last et al 2016. The "Guide to Species", includes 44 species belonging to 18 families. Undescribed, rare or newly recorded species for Myanmar waters are marked with an asterisk (\*) besides the scientific name. If one of the latter species is recorded, the user can follow the instructions present in the introduction regarding its preservation and/or contact the EAF-Nansen and/or FishFinder Programme of FAO.

# **TECHNICAL TERMS AND MEASUREMENTS**





dorsal view of a typical stingray (family Dasyatidae)

lateral view of tail (family Torpedinidae)

# **GUIDE TO ORDERS AND FAMILIES**

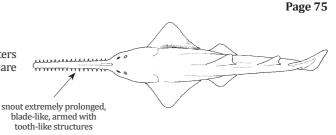
# **Order RHINOPRISTIFORMES**

Body shark–like; pectoral fins variably fused to the head and trunk , forming a flattened wedge- or shovel-shaped disc in guitarfishes and giant guitarfishes; snout saw–like, or varying from broadly rounded to acutely pointed; tail massive, not demarcated from trunk; caudal fin well-developed with or without a distinct lower lobe.

# PRISTIDAE

#### Sawfishes

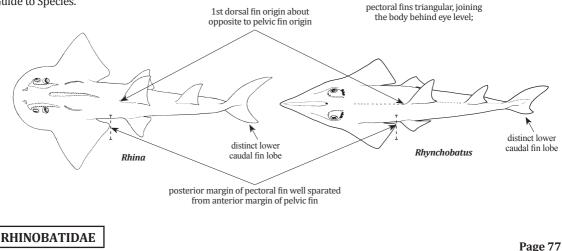
To 7 m TL. Demersal, in shallow marine waters and estuaries, enters freshwaters. Four species are included in the Guide to Species.



# RHINIDAE

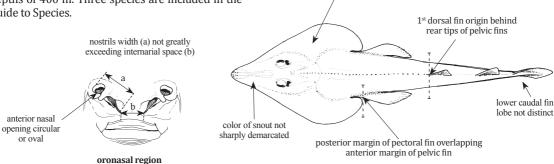
#### Wedgefishes

To 3.1 m TL. Demersal, from shallow waters to depths of 400 m. Three species are included in the Guide to Species.



#### Guitarfishes

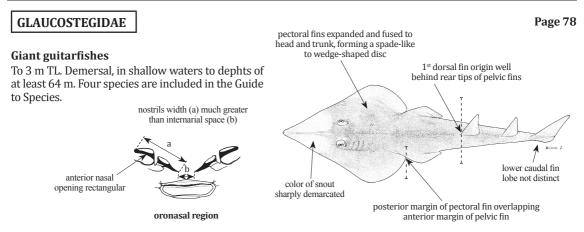
To 1.7 m TL. Demersal, from shallow waters to depths of 400 m. Three species are included in the Guide to Species.



pectoral fins expanded and fused to

head and trunk, forming a wedge- or

shovel-shaped disc



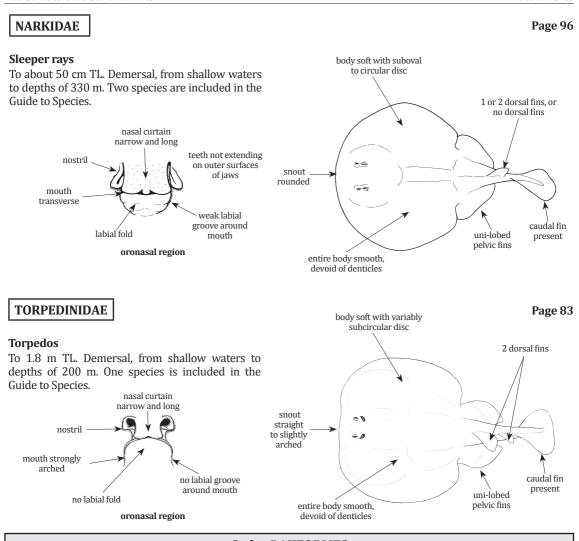
### **Order TORPEDINIFORMES**

Pectoral fins greatly expanded and fused with head and trunk, forming a large oval to subcircular disc; tail stout to elongate, variably demarcated from disc, without caudal sting(s); uni-lobed pelvic fins; caudal fin elongate without a distinct lower lobe; most species with a large electric organ on each side of head, usually visible through the skin as a pattern of hexagonal markings.

# PLATYRHINIDAE

#### **Fanrays**

body firm with subcircular To 90 cm TL. Demersal, from shallow waters to to shovel-shaped disc depths of 160 m. One species is included in the Guide to Species. tail slender, demarcated from disc with 2 dorsal fins anterior nasal flaps short and not joined together a nasal curtain anterior snout broadly nasal wedge-shaped opening posterior nasal caudal fin opening uni-lobed present pelvic fins oronasal region body with denticles and thorns on dorsal durface of disc and tail NARCINIDAE Page 80 body soft with circular, Numbfishes oval or shovel-shaped disc To 75 cm TL. Demersal, from shallow waters to 2 dorsal fins depths of 1 071 m. Nine species are included in the Guide to Species. anterior nasal flaps fused medially to form a short and broad nasal curtain 0 snout rounded nostril teeth mostly 90 visible on outer surfaces of jaws mouth transverse caudal fin deep labial present groove around uni-lobed labial fold lower iaw mouth pelvic fins entire body smooth, teeth devoid of denticles oronasal region

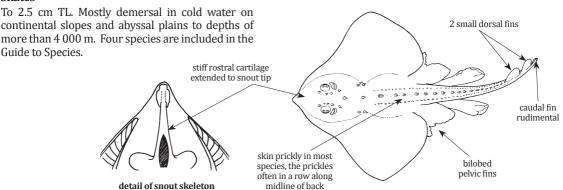


## **Order RAJIFORMES**

Body depressed with pectoral fins greatly expanded and fused with head and trunk to form a large rhombic to circular disc; pelvic fins moderately to strongly bilobate; tail rather slender, well demarcated from disc and without caudal sting(s).

# RAJIDAE

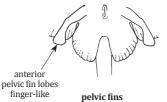
#### Skates



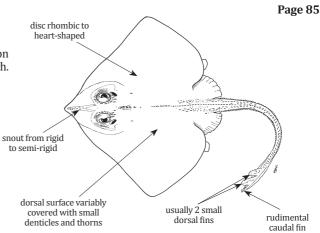
## GURGESIELLIDAE

#### Pygmy skates

To 59 cm TL. Demersal, mostly in deep water on continental and insular slopes to 1 095 m depth. One species is included in the Guide to Species.



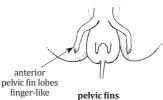
(ventral view)



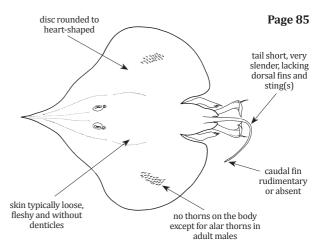
ANACANTHOBATIDAE

#### Legskates

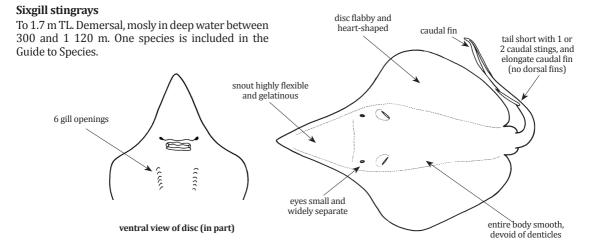
To 75 cm TL. Demersal, mosly in deep water between 150 and 1 725 m. One species is included in the Guide to Species.



pelvic fins (ventral view)



#### HEXATRYGONIDAE



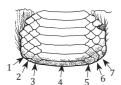
#### Order MYLIOBATIFORMES Batoids with enlarged, expanded pectoral fins variably fused to the head and trunk and forming subrhombic to diamond-shaped, or broadly lozenge-shaped disc; a single dorsal fin that is variably present or absent; pelvic fins uni-lobed; tail mostly long and whip-like, well demarcated from disc, often with serrated sting(s). Page 86 **GYMNURIDAE** disc lozenge-shaped, at least 1.5 times broader than long **Butterfly rays** To at least 2.6 m disc width. Demersal, in marine coastal waters. Two species are included in the Guide to Species. posterior margin of jaws small and nasal curtain smooth slender, bearing skin usually small, uniform entirely smooth teeth in bands no oral papillae on tail slender, serrated caudal sting(s) and mouth wide floor of mouth shorter than a short dorsal fin variably oronasal region and arched disc, with 1 or no present or absent dorsal fins Page 87 DASYATIDAE tail slender, elongated, typically longer than disc, and lacking dorsal and caudal fins **Stingrays** To 2.2 m disc width. Demersal, in coastal marine waters, enters freshwaters. Twenty-one species are included in the Guide to Species. disc almost circular posterior margin of to rhombic nasal curtain fringed teeth of upper jaw 1 or more serrated caudal stings skin variable, from teeth of oral entirely smooth lower jaw papillae to covered with denticles and thorns oronasal region Page 94 PLESIOBATIDAE tail slender disc oval (shorter than disc) soft and flabby with an elongate caudal fin and no **Giant stingrays** dorsal fins To 1.3 m disc width. Demersal, in deep water. One caudal fin species is included in the Guide to Species. snout flexible without rostral cartilage usually a strong caudal stings skin densely covered with small denticles

## **MYLIOBATIDAE**

#### **Eagle rays**

To at least 3 m disc width. Demersal and semipelagic in coastal waters. Three species are included in the Guide to Species.

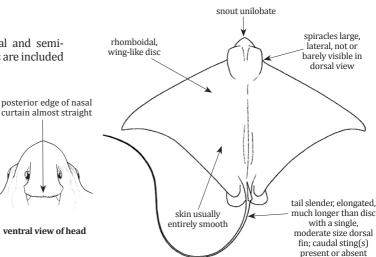
6-10 (typically 7) rows of plate-like teeth



arrangement of teeth in upper jaw



ventral view of head



snout unilobate

rhomboidal, wing-like disc

skin usually

entirely smooth

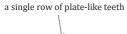
caudal sting(s)

always present

# AETOBATIDAE

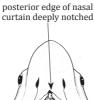
#### Pelagic eagle rays

To at least 3 m disc width. Pelagic in coastal (including estuaries) and offshore waters. Two species are included in the Guide to Species.





arrangement of teeth in upper jaw



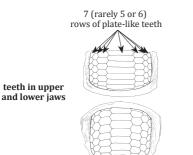


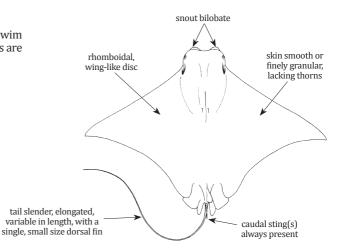
ventral view of head



#### **Cownose rays**

To 1.7 m disc width. Demersal, but often swim above the bottom in coastal waters. Two species are included in the Guide to Species.







Page 96

Page 95

spiracles large, dorsolateral, visible

in dorsal view



tail slender, elongated, much

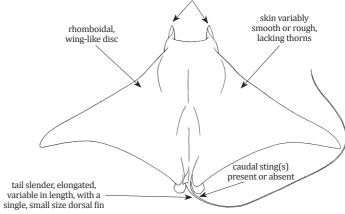
longer than disc with a single,

moderate size dorsal fin

# MOBULIDAE

#### Manta rays - Devil rays

To 7 m disc width. Pelagic, in coastal and oceanic waters. Six species are included in the Guide to Species.



cephalic fins

#### Batoid Fishes

# PRISTIDAE

Sawfishes

## Anoxypristis cuspidata (Latham, 1794)

Local name(s): Nga-Mann-Swe-Thwe.

**Habitat:** Found inshore, often in river deltas and estuaries.

**Fisheries:** Incidental catches, mainly with set nets. **Distinctive Characters:** Body subcylindrical, barely depressed anteriorly; rostrum long and slender, barely tapering; rostral teeth 16–26 (usually 20–25) blade-like, flattened and broadly triangular, becoming curved in adults; pectoral fin bases narrow; caudal fin lunate with distinctive subterminal projection on upper lobe, and lower lobe well developed.

**Colour:** Uniform slate grey above, white below **Remarks:** A very rare, seriously threatened species, possibly locally extinct in Myanmar.

## **Pristis clavata** Garman, 1906

Local name(s): Nga-Mann-Swe-Thwe.

Habitat: Inshore and intertidal, and in fresh-water rivers and lakes.

**Fisheries:** Incidental catches, mainly with set nets. **Distinctive Characters:** Body depressed, more so anteriorly; rostrum broad and stout, converging slightly to its tip; rostral teeth 18–24 peg-like, flattened slightly and elongate, young with shallow posterior groove; pectoral fin bases broad; caudal fin with posterior margin almost straight; no fleshy projection on upper caudal lobe.

**Colour:** Greenish grey to greenish brown above, white below.

**Remarks:** A very rare, seriously threatened species, possibly locally extinct in Myanmar.

## Pristis pristis (Linnaeus, 1758)

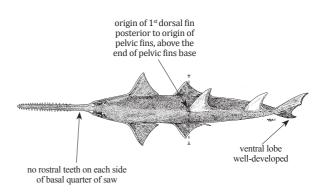
Local name(s): Nga-Mann-Swe-Thwe.

Habitat: Inshore and intertidal, and in fresh-water rivers and lakes.

**Fisheries:** Incidental catches, mainly with set nets. **Distinctive Characters:** Body robust, somewhat depressed anteriorly; rostrum broad througout its length, coverging distally; rostral teeth 14–24 peglike, flattened and elongate, with variable posterior groove at all ages; pectoral fin bases broad; caudal fin with posterior margin straight to slightly concave with an obvious lower lobe; no fleshy projection on upper caudal lobe.

**Colour:** Yellowish to greyish above, fins distinctly yellowish; ventral side white.

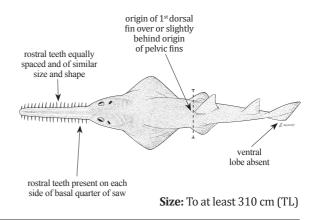
**Remarks:** A very rare, seriously threatened species, possibly locally extinct in Myanmar.



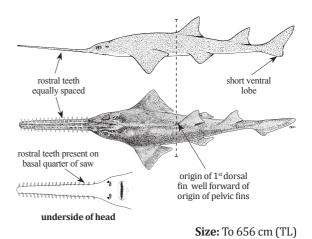
Size: To at least 350 cm (TL)



FAO names: Narrow sawfish (En)



FAO names: Largetooth sawfish (En)



FAO names: Longcomb sawfish (En)

## Pristis zijsron Bleeker, 1851

Local name(s): Nga-Mann-Swe-Thwe.

**Habitat:** Inshore and intertidal species known to enter freshwater in some areas.

Fisheries: Incidental catches, mainly with set nets.

**Distinctive Characters:** Body depressed, more so anteriorly; rostrum rather narrow, not coverging to its tip; rostral teeth 23–37 (usually 24–31) peg or awl-like, flattened and elongate, with variable posterior groove at all ages; pectoral fin bases broad; caudal fin with posterior margin convex in young and straight in adults, no lower lobe or fleshy projection on upper lobe.

**Colour:** Uniformly olive greenish brown above, white below.

**Remarks:** A very rare seriously threatened species possibly locally extinct in Myanmar.

# origin of 1<sup>st</sup> dorsal fin above mid-base origin of pelvic fins rostral teeth unequally spaced ventral lobe absent

Size: To 730 cm (TL)

**RHINIDAE** Wedgefishes

rostral teeth present on each

side of basal quarter of saw

#### *Rhina ancylostoma* Bloch & Schneider, 1801

Local name(s): Nga-Mann-Be-Lu.

**Habitat:** Inhabits coastal areas and on coral reefs, close inshore from 3 m to 90 m.

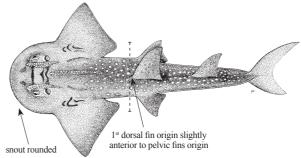
Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Snout rounded; heavy ridges with greatly enlarged denticles on back, over eyes and spiracles; caudal fin lunate, almost symmetrical.

**Colour:** Grey above, white below; numerous white spots dorsally on fins, body and tail; black spots on head and shoulders but no eyespots or ocelli.

FAO names: Bowmouth guitarfish (En) Angelot (Fr)

FAO names: Bottlenose wedgefish (En)



Size: To 270 cm (TL)

## Rhynchobatus australiae Whitley, 1939

Local name(s): Nga-Mann-Be-Lu.

Habitat: Benthic, coastal inshore to 60 m depth. Fisheries: Bottom trawls, gillnets, line gears.

**Distinctive Characters:** Snout narrowly angular; thorns small, blunt present along dorsal midline, on shoulder, beside spiracle and around upper margin of eye; dorsal fins distinctly falcate in adults; 1st dorsal fin much larger than 2nd; pectoral fin apices angular; total free vertebral centra 144–164.

**Colour:** Grey to yellowish above with sparse coverage of white spots, and a dark pectoral marking surrounded by a distinctive pattern of white spots (white spots indistinct in large adults).

dorsal fins dinstinctly falcate in adults



# *Rhynchobatus laevis* (Bloch & Schneider, 1801)

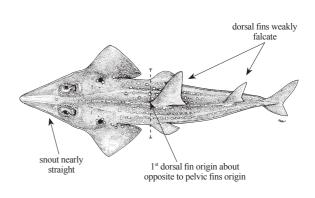
# FAO names: Smoothnose wedgefish (En)

Local name(s): Nga-Mann-Be-Lu.

Habitat: Demersal inshore on the continental shelf. Fisheries: Bottom trawls, gillnets, line gears.

**Distinctive Characters:** Snout short, broad and bluntly angular in young, narrower in adults; thorns small, blunt present along dorsal mid-line, on shoulder, beside spiracle and around upper margin of eye; dorsal fins weakly falcate; 1st dorsal fin 1.2–1.5 taller than 2nd; pectoral fin apices angular; total free vertebral centra 135–144.

**Colour:** Greyish brown above, white below; prominent dark pectoral marking usually surrounded by 4–5 white spots; upper body with multiple rows of white spots posterior to level of pectoral markings; a black blotch on anterior half of snout ventrally; orbital membrane usually with curved black markings.



Size: To at least 147 cm (TL)

FAO names: Annandale's guitarfish (En)

# RHINOBATIDAE

Guitarfishes

Rhinobatos annandalei Norman, 1926

#### Local name(s): Kyei-Nga-Mann.

**Habitat:** Demersal inshore on the continental shelf to at least 90 m depth.

Fisheries: Bottom trawls, gillnets, line gears.

**Distinctive Characters:** Snout long and triangular, its tip bluntly pointed; lateral margins a little concave; disc thin, length 1.1 times its width; orbit length 3.6–4.3 in preorbital length; tail 1.2–1.3 times longer than disc; skin covered with minute denticles, rather smooth to touch.

**Colour:** Greyish to brownish dorsally with symmetrical pattern of small widely spaced white spots; ventral surface white with sparse dusky blotches and dark edges on pectoral and pelvic fins.

#### Rhinobatos lionotus Norman, 1926

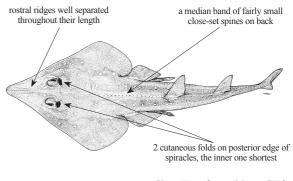
Local name(s): Kyei-Nga-Mann.

**Habitat:** Demersal inshore on the continental shelf to at least 77 m depth.

Fisheries: Bottom trawls, gillnets, line gears.

**Distinctive Characters:** Snout moderate, broadly triangular, its lateral margins weakly undulate; disc thin, length 1.2–1.4 times its width; orbit length 3.2–3.6 in preorbital length; tail 1.4–1.5 times longer than disc; skin finely granular, covered with minute denticles; thorns very short, only slghtly larger than adjacent denticles.

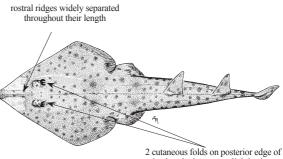
**Colour:** Greenish brown dorsally covered all over with dense symmetrical pattern of darker brown blotches, paler beside rostral ridges; ventral surface white.



Size: To at least 80 cm (TL)

(Plate V, 38)

FAO names: Smoothback guitarfish (En)



2 cutaneous folds on posterior edge of spiracles, the inner one slightly shorter

# Batoid Fishes

FAO names: ??? guitarfish (En)

## *Rhinobatos* sp.

Local name(s): Kyei-Nga-Mann.

**Habitat:** Demersal inshore on the continental shelf to at least 68–108 m depth.

Fisheries: Bottom trawls, gillnets, line gears.

**Distinctive Characters:** Snout bottle-shaped?, its lateral margins weakly undulate to almost straight; disc moderately thick, length ?-? times its width; orbit length ?-? in preorbital length; tail ?-? times longer than disc; skin covered with minute denticles, rather smooth to touch.

**Colour:** Medium brown dorsally with darker and paler cloud-like blotches roughly symmetrical, paler beside rostral ridges; ventral surface white with darker pectoral and pelvic margins.

**Remarks:** An undescribed species presently under description by Last et al. (P. Last pers. com., 2018).



Local name(s): Kyei-Nga-Mann.

**Habitat:** Ranges from the intertidal to offshore continental shelves down to 120 m.

Fisheries: Bottom trawls, gillnets, line gears.

**Distinctive Characters:** Snout very long and acute with pointed tip, its lateral margins straight or rather concave; disc thickened centrally, its length 1.3–1.4 times width; orbit very small in adults, length 9–16 times in preorbital length; tail 1–1.4 times longer than discs; skin rough, densely covered with small denticles; a pair of large thorns on each shoulder; a row of thorns median to spiracle and eye and on each rostral ridge in young. **Colour:** Yellowish-brown to greyish dorsally, except for large traslucent area on snout to each side of rostral cartilages; whitish below.

#### Glaucostegus obtusus Müller & Henle, 1841

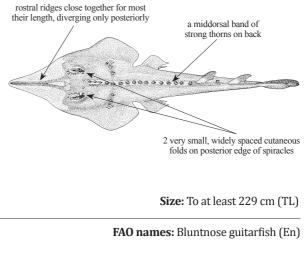
#### Local name(s): Kyei-Nga-Mann.

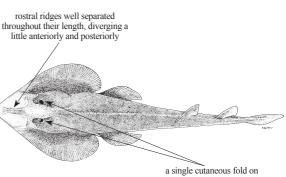
**Habitat:** Benthic inshore and over inner continental and insular shelves to 60 m depth. **Fisheries:** Bottom trawls, gillnets, line gears.

**Distinctive Characters:** Snout short, broadtipped, and obtusely pointed, its lateral margins largely convex; disc flattened centrally, length 1.2 times its width; orbit very small, its length 6.5 times in preorbital length; tail long, 1.4–1.6 times in disc length; skin rough, covered with small denticles; juveniles with preorbital, scapular and middorsal band of thorns on back; no distinct series of thorns or spines in adults.

**Colour:** Adults light-brown (juveniles dark grey) dorsally, except for large traslucent area on snout to each side of rostral cartilages; whitish below.

FAO names: Granulated guitarfish (En)





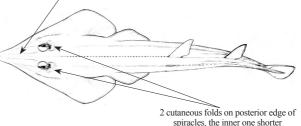
a single cutaneous fold on posterior edge of spiracles

176

## (Plate V, 38)

**GLAUCOSTEGIDAE** Giant guitarfishes

rostral ridges separated almost throughout their length, more widely separated posteriorly



Size: To ?? cm (TL)

# Glaucostegus thouin (Anonymous, 1798)

#### Local name(s): Kyei-Nga-Mann.

**Habitat:** Benthic inshore and over inner continental and insular shelves to 60 m depth. **Fisheries:** Bottom trawls, gillnets, line gears.

**Distinctive Characters:** Snout long with a lobelike bulbous tip; disc thickened centrally, length 1.4–1.5 times its width; orbit small, its length 9–12 times in preorbital length; tail about 2 times longer than disc; skin rough, covered with small denticles; small thornlets on interorbit; no enlarged thorns on snout tip or around orbits.

**Colour:** Uniformly pale brown yellowish or greyish; most of snout translucent, sharply demarcated from rostral ridges and anterior part of cranium; bulbous snout tip greyish; ventral surface white.

### Glaucostegus typus (Bennett, 1830)

#### Local name(s): Kyei-Nga-Mann.

**Habitat:** Benthic inshore and over inner continental and insular shelves to 100 m depth. **Fisheries:** Bottom trawls, gillnets, line gears.

**Distinctive Characters:** Snout long and triangular, its tip narrowly rounded; lateral margins almost straight; disc thickened centrally, length 1.2–1.3 times its width; orbit small, its length 6.1–7.8 times in preorbital length; tail 1.3–1.5 times longer than disc; skin rough, densely covered with small denticles; no obvious patch on each shoulder or greatly enlarged thorns on snout tip and around orbit.

**Colour:** Uniformly yellowish to greyish brown, ventral surface mostly white; sides of snout translucent, sharply demarcated from rostral ridges and anterior part of cranium; snout apex usually with dark blotch.

rostral ridges close together for most their length a middorsal band of small thoms on back a middorsal band of small thoms on back a very small, widely separated cutaneous folds on posterior edge of spiracles **Gize:** To 300 cm (TL) **FAO names:** Giant guitarfish (En)



Fanrays

#### Platyrhina psomadakisi White & Last, 2016

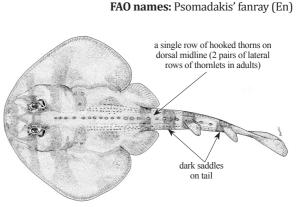
#### Local name(s): Kyei-Nga-Mann.

**Habitat:** Benthic inshore and over inner continental at 60–160 m depth.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Broadly rounded to shovel-shaped disc, its length much shorter than tail; preorbital length 2–2.2 in interorbital space; interdorsal space 8.5–9.1% of TL; thorns on orbital, nape and scapular regions not encircled by pale pigment; dorsal surface of adults with patches of prickly denticles.

**Colour:** Greyish brown dorsally with a series of darker brown saddles on tail.



#### FAO names: Clubnose guitarfish (En)

Size: To at least 38 cm (TL)

2 very small, widely separated

cutaneous folds on posterior

edge of spiracles

Size: To at least 270 cm (TL)

# NARCINIDAE

Numbfishes

#### Benthobatis moresbyi Alcock, 1898

Local name(s): Nga-Let-Htone.

**Habitat:** Benthic on continental slope between 376–1 070 m depth.

Fisheries: Deep bottom trawls.

**Distinctive Characters:** Disc soft, elongate and oval; disc widest posterior to its mid-length; disc length almost 50% of TL; body entirely naked; lower tooth band subtriangular and smaller than upper tooth band; tail slightly longer than disc. **Colour:** Uniform dark brown brown dorsally and ventrally with scattered small white pores.

Benthobatis cf. yangi Carvalho, Compagno & Ebert, 2003

#### Local name(s): Nga-Let-Htone.

**Habitat:** Benthic on continental slope at 300–523 m depth.

Fisheries: Deepottom trawls.

**Distinctive Characters:** Similar to *Benthobatis moresbyi* but disc widest at about its mid-length; disc shorter, its length 38.6–41.5% of TL; preorbital length 12.8–15.2% (vs 19.3%) of TL; interdorsal space 6.4–12% (vs 2.3%) of TL; 2nd dorsal-caudal space 4.7–9.7% (vs 0.7%) of TL; dorsal fins with markedly different outlines; narrower gill slits; creamy white blotches on ventral side of body.

**Colour:** Purplish or purplish-black on both dorsal and ventral surfaces with irregular creamy white blotches ventrally.

**Remarks:** Myanmar specimens need to be checked against the types of *Benthobatis yangi* for confirmation.

#### Narcine atzi Carvalho & Randall, 2003

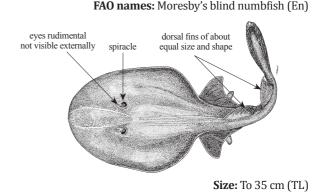
Local name(s): Nga-Let-Htone.

Habitat: Benthic in shallow coastal waters to 30 m depth.

Fisheries: Gillnets, bottom trawls.

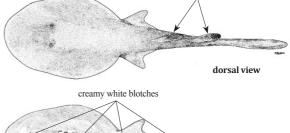
**Distinctive Characters:** Disc soft, subcircular to broadly oval or heart-shaped; eyes well developed (true of all *Narcine* species); spiracles wider than long, with smooth elevated rims; 1st dorsal fin originating slightly anterior to pelvic fin insertions; preoral length greater than preorbital length; mouth wider than internarial width; tooth bands with broad rounded margins with upper band wider than lower band.

**Colour:** Pale brown to greyish brown above covered numerous small dark brown spots or vermiculations, coupled with faint larger blotches on disc; ventral surface creamy white, sometimes with dusky margins and blotches on tail.

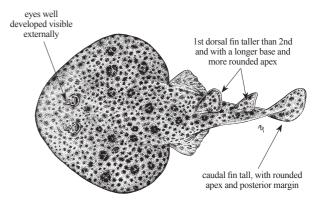


#### FAO names: Yang's blind numbfish (En)

dorsal fins markedly different, the 2nd having a more slanted anterior margin, a much broader apex and more convex posterior margin



#### FAO names: Oman numbfish (En)



Size: To 36 cm (TL)

Size: To 37 cm (TL)

#### Narcine brevilabiata Bessednov, 1966

Local name(s): Nga-Let-Htone.

**Habitat:** Benthic, offshore on inner continental shelf at 20–70 m depth.

Fisheries: Gillnets, bottom trawls.

**Distinctive Characters:** Disc soft, broadly oval (usually slightly wider than long); eyes slightly longer than spiracles; spiracles slightly oblique in relation to eyes with weakly elevated rims; 1st dorsal fin origin over posterior end of pelvic fins; preoral length greater than preorbital length; mouth wider than internarial space; tooth bands very narrow (especially lower band), triangular with upper band wider than lower band.

**Colour:** Ligth brown above, covered with numerous very small dark brown spots, coupled with fewer faint larger blotches; ventrally uniformly pale, with greyish blotches on posterior pelvic fins and disc.

Narcine lingula Richardson, 1846

Local name(s): Nga-Let-Htone.

**Habitat:** Benthic, inshore in shallow water near the coast.

Fisheries: Gillnets, bottom trawls.

**Distinctive Characters:** Disc soft, oval to rounded or heart-shaped (usually slightly wider than long), widest near mid-length; eyes and spiracles subequal in size; spiracles subcircular, with thin, elevated rims; 1st dorsal fin origin over posterior end of pelvic fins; preoral length about equal to preorbital length; mouth about equal to internarial space; tooth bands rounded and equal in width.

**Colour:** Dorsal surface and fins pale brownish, densely covered with large darker brown, oval, circular or crescent-shape spots; ventrally creamy white, frequently with darker disc margins.

#### Narcine maculata (Shaw, 1804)

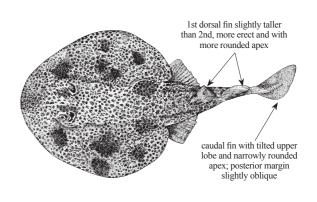
#### Local name(s): Nga-Let-Htone.

**Habitat:** Benthic, inshore in shallow water near the coast.

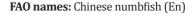
Fisheries: Gillnets, bottom trawls.

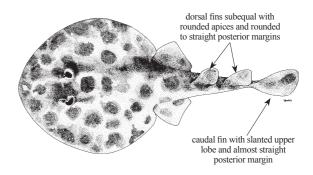
**Distinctive Characters:** Disc soft, broadly oval to heart-shaped (usually slightly wider than long), widest near mid-length; eyes barely longer than spiracles; spiracles subcircular, with thin, elevated rims; 1st dorsal fin origin slightly posterior to pelvic fin insertion; preoral length about equal to preorbital length; internarial space slightly exceeding mouth width; tooth bands broad, rounded and subequal in width.

**Colour:** Dorsal surface and fins brownish with darker reddish brown to blackish brown spots (varying both in shape and size); ventrally creamy white, sometimes with darker disc margins.



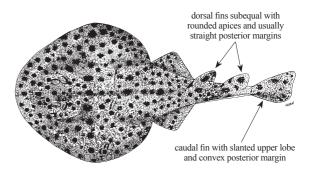
Size: To 32 cm (TL)





Size: To 35 cm (TL)

FAO names: Smallspot numbfish (En)



179

FAO names: Brown numbfish (En)

#### Narcine timlei (Bloch & Schneider, 1801)

#### Local name(s): Nga-Let-Htone.

**Habitat:** Benthic, inshore in shallow water near the coast.

Fisheries: Gillnets, bottom trawls.

**Distinctive Characters:** Disc soft, oval or subtrapezoidal, widest near mid-length; eyes usually smaller than spiracles; eyes and spiracles joined together; spiracles rounded, with elevated smooth rims; 1st dorsal fin originating slightly posterior to pelvic fin insertion; mouth width slightly wider than internarial space; tooth bands subequal about half of mouth width.

**Colour:** Dorsally uniform yellowish, brownish or purplish brown; posterior margins of dorsal fins, lateral tail region and posterior pelvic borders whitish; ventrally creamy white.

#### Narcine sp. 1

Local name(s): Nga-Let-Htone.

**Habitat:** Trawled between 73–89 m depth.

Fisheries: Bottom trawls.

**Distinctive Characters:** Disc soft, subcircular to broadly oval or heart-shaped; spiracles oval, with elevated smooth rims; 1st dorsal fin originating slightly posterior to pelvic fin insertion; internarial space slightly wider than mouth width; tooth bands strongly subtriangular with upper band clearly wider than lower band.

**Colour:** Dorsal surface pale brown, covered with symmetrical pattern of dark brown blotches and smaller spots; ventrally creamy white with darker posterior pelvic fins and disc margins.

**Remarks:** Based on molecular analysis, this appears to be a regional variant of *Narcine brevilabiata*, whose species specific status has not yet been determined (G. Naylor pers. com., 2018).

preorbital length shorter

NARKIDAE

# Sleeper rays

Narke dipterygia (Bloch & Schneider, 1801)

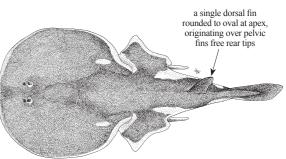
Local name(s): Nga Let Htone.

Habitat: Found in continental waters, both inshore and offshore to over 100 m depth.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Disc soft, subcircular; eyes and spiracles tightly adjacent; spiracles much larger than eyes; a single dorsal fin; pelvic fins with a single lobe; lower labial groove deep.

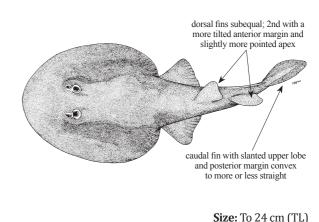
**Colour:** Dorsal surface medium to dark brown or reddish, usually with creamy blotches above pelvic fins bases, pectoral fin insertions, and along base of tail; ventrally white, sometimes with darker posterior disc margins.



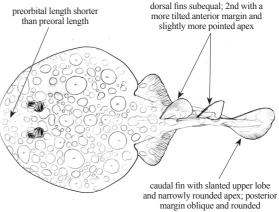
Size: To 32 cm (TL)

FAO names: Spottail sleeper ray (En)

# 180



# FAO names: ???? numbfish (En)



#### Temera hardwickii Gray, 1831

Local name(s): Nga Let Htone.

Habitat: Benthic, mainly inshore on soft substrates. Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Disc soft, circular and disproportionately large; eyes very small and oval; spiracles circular slightly larger than eyes; eyes and spiracles tightly adjacent; median and lower labial gooves inconspicuous or absent.

**Colour:** Dorsal surface dark brown; ventral surface creamy white or tan; outer margins of disc and pelvic fins pale brown or grey.

**Remarks:** A mature male specimen (11.5 cm TL) collected off the coast of Myanmar with oval disc and white pigmentation around eyes and inside spiracles, may be a distinct species and needs to be checked against the types of *T. hardwickii*.

# no dorsal fins

Size: To 15 cm (TL)

# TORPEDINIDAE Torpedos

#### Tetronarce cf. formosa (Haas & Ebert, 2006)

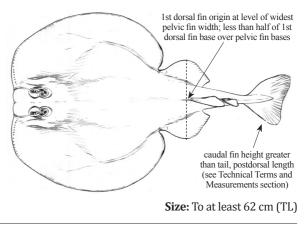
Local name(s): Tor-Pe-To-Nga-Let-Htone. Habitat: Offshore between 265–316 m depth. Fisheries: Deep bottom trawls.

**Distinctive Characters:** Disc broadly circular, its length 82–88% of width; spiracles smooth, rims not elevated, 3.6–3.8% of disc length; eyes and spiracles close together; internarial width 5.5–5.6% of TL; preorbital length 7.7–8.7% of TL; 25–27 trunk vertebrae; 12–13 spiral valve turns. **Colour:** Uniform purplish brown above; ventral surface white abruntly darker on posterior disc

surface white, abruptly darker on posterior disc and pelvic fin margin; lateral skin fold white. **Remarks:** Status uncertain; Myanmar specimens

need to be checked against types of *T. formosa*.

FAO names: Taiwanese torpedo (En)



RAJIDAE Skates

#### Dipturus johannisdavisi (Alcock, 1899)

Local name(s): Kyei-Nga-Mann-Gyee.

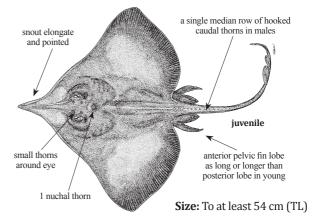
**Habitat:** Demersal on upper continental slope at 252–660 m depth

Fisheries: Deep bottom trawls.

**Distinctive Characters:** Disc broad and rhombic, its width about 1.2 times in length; disc not especially thick; preorbital length 5.4–6.2 times in orbit diameter; interorbital space 1.2–1.4 times in orbit length; tail short, thick, its length 0.8–0.9 in precloacal length in adults (tail long and slender in young); about 30–38 tooth rows in lower jaw.

**Colour:** Dorsal surface purplish brown, slightly darker on pelvic fins and along pectoral fin hind margin; ventral surface darker greyish brown.

FAO names: Travancore skate (En)



FAO names: Finless sleeper ray (En)

# Dipturus sp. 2

Local name(s): Kyei-Nga-Mann-Gyee. Habitat: Trawled between 252–376 m depth Fisheries: Deep bottom trawls.

**Distinctive Characters:** Disc broad and rhombic, its width about 1.2 times in length; prorbital length 4.9–6.1 times orbit diameter; interorbital space 1.9–2.2 times in orbit length; tail length 0.7–0.8 times precloacal length in adults; 2–3 interspiracular thorns in adult males (adult females with a patch of thorns on each side); malar and alar thorns in males; ca 15–17 tooth rows in lower jaw.

**Colour:** Dorsal and ventral surface purplish brown (ventral surface paler in adult females).

**Remarks:** An undescribed species, presently being described by Last et al.(P. Last pers. com., 2018).

# Orbiraja powelli (Alcock, 1898)

Local name(s): Kyei-Nga-Mann-Gyee.

**Habitat:** Benthic on inner continental shelf to upper slope at 15–460 m depth.

Fisheries: Mainly bottom trawls.

**Distinctive Characters:** Disc rhombic, its width about 1.1–1.2 times in length; preorbital length 3.9–4.7 times orbit length; interorbital space 1.0–1.6 times in orbit diameter; tail length 0.9 times precloacal length; small thorns around eyes; no malar or scapular thorns; 71–75 tooth rows in upper jaw.

**Colour:** Dorsal surface dark brown, variably covered with irregular pale spots; ventral surface uniformly white; a pair of ocelli on pectoral fins, usually with pale speckled or dark blue centre surrounded by continuous dark brown and broken yellowish rings; no dark sensory pores ventrally.

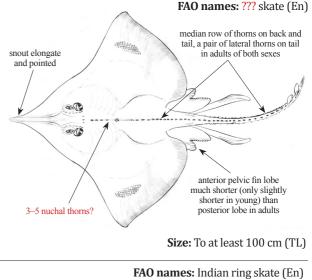
# **Rajella** sp.

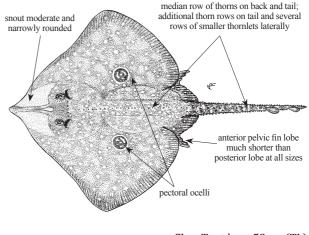
Local name(s): Kyei-Nga-Mann-Gyee. Habitat: Trawled between 767–777 m depth. Fisheries: Deep bottom trawls.

**Distinctive Characters:** Disc heart-shaped its width ca 1.05 times in length; tail longer than body, its length ca 52.3% of TL; dorsal disc entirely prickly, except anterior pelvic fin lobes; dense band of large thorns and smaller thornlets extending along trunk and tail; a single large nuchal thorn followed by a triangular patch of smaller scapular thorns; tail very strongly armed with median row of large-based thorns flanked by irregular parallel rows of hooked thorns; ventral surface of disc smooth.

**Colour:** Dorsal and ventral surface light grey (a dark mucus on upper surface of disc easily coming off when rinsed with water).

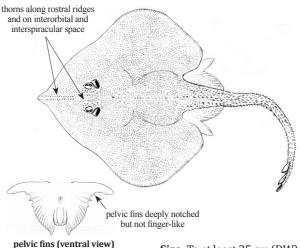
**Remarks:** Taxonomic status uncertain. Generic revision needed to establish its specific identity.





Size: To at least 53 cm (TL)

FAO names: ??? skate (En)



Size: To at least 25 cm (DW)

# GURGESIELLIDAE

Pygmy skates

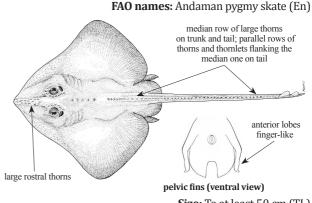
#### Cruriraja andamanica (Lloyd, 1909)

Local name(s): Kyei-Nga-Mann-Gyee.

**Habitat:** Benthic at depths of 275–525 m. **Fisheries:** Deep bottom trawls.

**Distinctive Characters:** Disc rhombic, about 1.2– 1.3 times broader than long; tail long, its length about 1.6 times precloacal length; 8 large thorns on each orbital rim; posterior lobes of pelvic fin distinctly separate, anterior lobe finger-like; 2 dorsal fins; dorsal surface largely covered with small dermal denticles.

**Colour:** Dorsal and ventral surface slate grey.



Size: To at least 50 cm (TL)

# ANACANTHOBATIDAE

#### Legskates

#### Sinobatis andamanensis Last & Bussarawit, 2016

Local name(s): Kyei-Nga-Mann-Gyee.

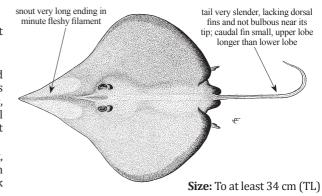
**Habitat:** Little known, probably benthic on soft bottoms of continental slope.

Fisheries: Deep bottom trawls.

**Distinctive Characters:** Disc heart-shape and strongly flattened; preorbital length 1.8–2.5 times in DW; pelvic fins consist of 2 separate lobes, finger-like anterior lobes resemble "legs"; dorsal surface smooth except for small alar patch in adult male.

**Colour:** Dorsal surface brownish to greyish pink, whitish along anterior disc margin, hind margin (including posterior lobe of pelvic fins) dark brown; undersurface whitish to translucent.

FAO names: Andaman legskate (En)



# HEXATRYGONIDAE

Sixgill stingrays

#### Hexatrygon bickelli Heemstra & Smith, 1980

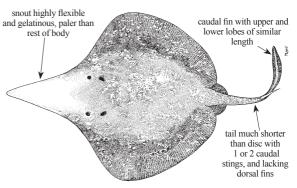
Local name(s): Leik-Kyauk-Nharr-Chun.

**Habitat:** Deepwater, demersal occurring mainly on continental slopes at 360–1 120 m depth.

# Fisheries: Deep bottom trawls.

**Distinctive Characters:** Soft, extremely flabby heart-shape disc; snout broad-based, long and triangular; eyes small and widely separate; 6 widely separated pairs of small gill slits; entire body smooth, devoid of denticles; tail much shorter than disc with 1 or 2 stings.

**Colour:** Purplish brown on dorsal surface when alive, white below with dusky margin on disc and pelvic fins; underside of tail dark.



Size: To 170 cm (TL)

FAO names: Sixgill stingray (En)

# GYMNURIDAE

Butterfly rays

## Gymnura poecilura (Shaw, 1804)

Local name(s): Hta -Min-Ni.

Habitat: Occurs in shallow inshore waters. Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Disc lozenge-shaped, much broader than long (1.7–2.1 times); tail very long, its length 31–54% of DW; dorsal fin absent; no tentacle on posterior margin of spiracle; caudal stings variously present or absent.

**Colour:** Dorsal surface usually plain, sometimes with faint pale spots; ventral side whitish to brownish; tail banded, dark spot frequently between each black band; tail banding less well defined in very large individuals.

# Gymnura zonura (Bleeker, 1852)

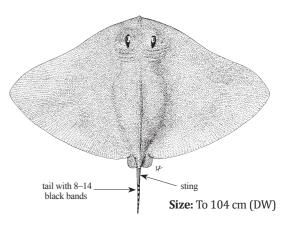
Local name(s): Hta -Min-Ni.

Habitat: Occurs in shallow inshore waters. Fisheries: Bottom trawls, gillnets.

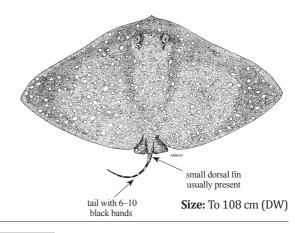
**Distinctive Characters:** Disc lozenge-shaped, much broader than long (1.8–2.1 times); tail moderately long, its length 23–36% of DW; dorsal fin usually present; no tentacle on posterior margin of spiracle; caudal stings mostly present.

**Colour:** Dorsal surface uniform brown or with numerous small round whitish spots; ventral side whitish to brownish; tail banded, pale sections often with a single dark spot frequently between each black band.









# DASYATIDAE

Stingrays

#### Bathytoshia lata (Garman, 1880)

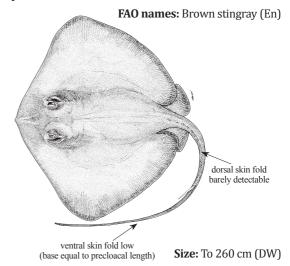
Local name(s): Nga-Leik-Kyauk.

**Habitat:** Demersal on insular and continental shelves to 800 m depth.

Fisheries: Bottom trawls, gillnets, line gears.

**Distinctive Characters:** Disc rhombic with narrowly rounded apices; anterior margins of disc weakly undulate; snout short, broadly triangular; skin of juveniles (<60 cm DW) smooth, sometimes with stellate thorns on midline of disc and tail; dorsal surface finely granular with denser coverage of large thorns centrally in adults; tail beyond sting very thorny; tail broad and depressed at base.

**Colour:** Dorsal surface greyish brown to blackish, ventral surface entirely white; tail dark before sting above, usually white ventrally; all surfaces black beyond sting.



# Brevitrygon cf. heterura (Bleeker, 1852)

Local name(s): Nga-Leik-Kyauk-A-Gyee-Seik. Habitat: Demersal on inner continental shelf to at least 50? m depth.

Fisheries: Bottom trawls, gillnets, line gears.

Distinctive Characters: Similar to Brevitrygon imbricata (see below) but usually has a shorter tail (1.0-1.7 times DW) and smaller interspiracular space.

**Colour:** Description same as for *Brevitrygon* imbricata (see bleow).

**Remarks:** Inclusion based on a single mature female (21 cm DW) from Myanmar with an undetectable denticle band on disc and lacking enlarged thorns on tail.

# *Brevitrygon imbricata* (Bloch & Schneider, 1801)

Local name(s): Nga-Leik-Kyauk-A-Gyee-Seik. Habitat: Demersal on inner continental shelf to at least 55? m depth.

Fisheries: Bottom trawls, gillnets, line gears.

Distinctive Characters: Disc suboval with broadly rounded apices; anterior margins markedly concave; snout acutely pointed; interspiracular space 18-19% of DW; tail stout and oval at base, its length 1.5-1.7 times in DW; a broad median denticle band from interorbital to base of spine on tail: denticle band constricted besides spiracles: tail with fleshy ridges along sides (no folds); usually 2 caudal stings.

**Colour:** Brownish to greenish brown, margin of disc pale: ventral surface of disc white with yellowish brown margins; tail forward to sting brownish above and white below; lateral ridges white, demarcated by darker surface of tail behind sting.

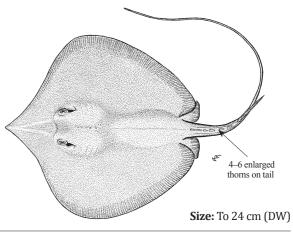
Himantura leoparda Manjaji-Matsumoto & Last, 2008

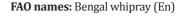
Local name(s): Nga-Leik-Kyauk-Kyar-Thit-Kywet. Habitat: Occurs mainly inshore and coastal to depths of at least 70 m.

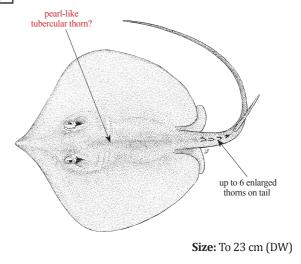
Fisheries: Bottom trawls, gillnets, line gears.

Distinctive Characters: Disc weakly rhombic with narrowly rounded apices; anterior margin of disc straight or weakly concave; snout with a small apical lobe; tail narrow-based, suboval in crosssection, tapering gently toward the sting; denticle band well developed (extending onto tail) in adults, developing relatively slowly in young; 2 enlarged heart-shaped denticles on back, preceded and followed by a row of smaller denticles of similar shape; tail usually with 1 sting and no skin folds.

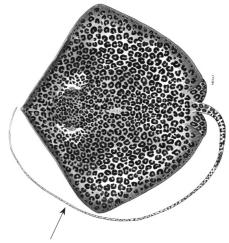
**Colour:** Dorsal surface covered with leopard-like spots in adults and large dark brown polygonal spots in young (<55 cm DW); ventral disc surface uniforly pale.







FAO names: Leopard whipray (En)



tail banded behind sting

FAO names: Dwarf whipray (En)

#### Himantura uarnak (Gmelin, 1789)

Local name(s): Nga-Leik-Kyauk-Kyaw-Me'-Set-Pyauk.

**Habitat:** Inshore ray occurring on soft substrates; often intertidal, but to depths of at least 50 m.

Fisheries: Gillnets, bottom trawls, line gears.

**Distinctive Characters:** Similar to *Himantura leoparda* but central disc only with 1–3 small heart-shaped thorns but no other enlarged thorns extending along midline of disc and tail

**Colour:** Dorsal surface of adults covered with small brownish spots and flecks; newborns with pattern of similar sized, closely set black spots, subadults with fine reticulate pattern; ventral surface almost entirely white.

#### *Himantura undulata* (Bleeker, 1852)

Local name(s): Nga-Leik-Kyauk-Kyar-Thit-Kywet. Habitat: Inshore ray occurring on soft substrates; often intertidal, but to depths of at least 50 m. Fisheries: Gillnets, bottom trawls, line gears.

**Distinctive Characters:** Similar to Himantura leoparda but disc suboval with broadly rounded apices; central disc with a large pearl-shaped yellowish thorn followed by 2–3 slightly smaller similar thorns in adults (1st of these usually white), no other enlarged thorns extending along midline of disc and tail.

**Colour:** Dorsal surface of large adults with a dense pattern of large dark, thick-lined rings (larger than in *H. leoparda*) and reticulations; young with large dusky spots and blotches that coalesce to form reticulations during growth; ventral surface almost entirely white.

#### Himantura gerrardi (Gray, 1851)

Local name(s): Nga-Leik-Kyauk- Phyu-Set.

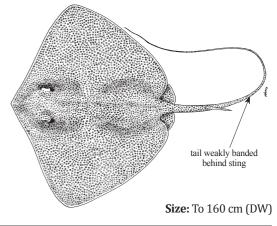
**Habitat:** Demersal over sandy and mud bottoms from inshore to depths of at least 60 m; also found in river mouths.

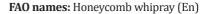
Fisheries: Bottom trawls, gillnets, line gears.

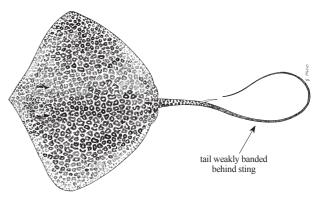
**Distinctive Characters:** Disc rhombic with rounded to somewhat angular apices; head length 41–45% of DW; internasal width 6.4–7.7% of DW; anterior margin of disc weakly concave; snout broadly triangular with small tip; tail slightly depressed in cross-section, very slender, whip-like beyond sting; denticle band well developed in adults and developing early in young; some enlarged denticles before and after pearl-like tubercular thorn; no skin folds on tail.

**Colour:** Upper surface with numerous white spots (may be dark-edged) or with spots confined to posterior portion of disc; ventral surface white.

FAO names: Reticulate whipray (En)

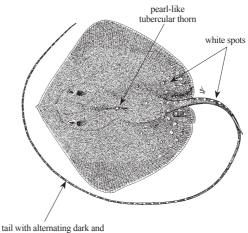






Size: To 130 cm (DW)

FAO names: Whitespotted whipray (En)



white bands behind sting

(Plate V, 42)

Size: To 116 cm (DW)

# Maculabatis pastinacoides (Bleeker, 1852)

Local name(s): Nga-Leik-Kyauk.

**Habitat:** Inshore in coastal waters, estuaries and near large river mouths.

Fisheries: Bottom trawls, gillnets, line gears.

**Distinctive Characters:** Disc broadly suboval (as wide as long); anterior margin of disc weakly convex; snout rather short and broadly triangular; tail narrow-based, subcircular in cross-setion, slender, whip-like beyond sting; denticle band very broad, well-defined and developing rapidly with growth (fully developed by 30 cm DW); usually pearl-shaped thorns on back (anteriormost largest); no thorns or skin folds on tail; tail beyond caudal sting densely granular.

**Colour:** Uniform brownish, greyish to greenish above, white below; tail blackish behind sting.

#### *Megatrygon microps* (Annandale, 1908)

**Local name(s):** Nga-Leik-Kyauk-Myet-Lone-Thae. **Habitat:** Benthopelagic (and possibly pelagic) over continental and insular shelves.

Fisheries: Bottom trawls, gillnets, line gears.

**Distinctive Characters:** Disc rhombic, very broad and angular (width 1.4–1.5 times its length); anterior margin of disc almost straight; snout short, bluntly rounded, tip not extended; tail short, very broad and depressed to sting, becoming filamentous beyond sting; skin rough, densely covered with minute, stellate denticles but lacking enlarged thorns or bucklers; skin folds on tail reduced (dorsal) or very low (ventral).

**Colour:** Disc brownish or pinkish above with diagonal row of white spots on each pectoral base; ventral surface white with dusky margins.

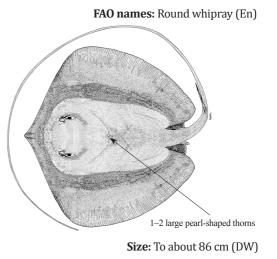
#### Neotrygon caeruleopunctata Last & White, 2016

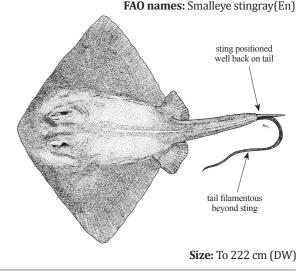
**Local name(s):** Nga-Leik-Kyauk- Kyaw-Pyar-Set. **Habitat:** Inshore species living mainly on sandy substrates to a depth of 90 m.

Fisheries: Bottom trawls, gillnets, line gears.

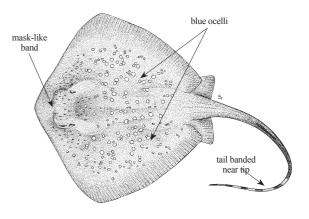
**Distinctive Characters:** Disc rhomic with abruptly angular apices; anterior margin straight to weakly convex; snout short, broadly rounded, tip not extended; tail firm (not whip-like), rather broad based and depressed anteriorly, slender and compressed beyond sting; denticles confined to single row of short, thorn-like elements along disc mid-line; skin folds present on tail.

**Colour:** Dorsal surface pale greenish brown with small blu ocelli; spots less dense on medial strip of disc; ventral surface white with sharply defined dark submarginal band; skin folds almost entirely dark; mask-like band weak.





FAO names: Blue-spotted maskray (En)



Size: To 47 cm (DW)

#### Pastinachus ater (Macleay, 1883)

Local name(s): Nga-Leik-Kyauk-Nwar-Mee. Habitat: Demersal on continental and insular shelves (also in estuaries and freshwater).

Fisheries: Bottom trawls, gillnets, line gears.

Distinctive Characters: Disc rhombic with angular apices; anterior margins of disc straight; snout short, obtuse, with small lobe at tip; tail about twice DW or less, its base very broad and strongly depressed, tapering gently beyond sting; denticle band distinct, becoming less dense toward outer pectoral fin; usually 4 small thorns on back; ventral fold very deep, height behind sting 3.6-5.7 times adjacent tail heigth; dorsal tail fold absent.

**Colour:** Upper surface uniform, grevish brown to black; tail fold and tail tip black; ventral surface white, often with fine black edge; ventral tail with black areas before sting.

#### Pateobatis bleekeri (Blyth, 1860)

Local name(s): Nga-Leik-Kyauk.

Habitat: Demersal over sandy and mud bottoms from inshore to depths of at least 40 m.

Fisheries: Bottom trawls, gillnets, line gears.

Distinctive Characters: Disc subcircular with broadly rounded apices; anterior margin of disc weakly to moderately concave; snout pointed; tail narrow-based, subcircular in cross-setion, slender, whip-like beyond sting; a very broad median denticle band from well before interorbit, extending along centre of disc and onto upper tail; pearl thorn (more prominet in young) on back, preceded and followed by a few slightly enlarged thorns: no thorns or skin folds on tail.

Colour: Uniformly brownish (greenish brown centrally) dorsally; ventral surface white with darker margins in young, becoming almost entirely dark, with occasional white patches in adults.

#### Pateobatis fai (Jordan & Seale, 1906)

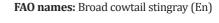
Local name(s): Nga-Leik-Kyauk-Mee-Shae-Pann-Yaung.

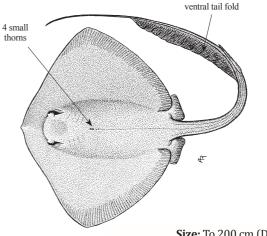
Habitat: Demersal over sandy bottoms and coral rubble from inshore to depths of at least 70 m.

Fisheries: Bottom trawls, gillnets, line gears.

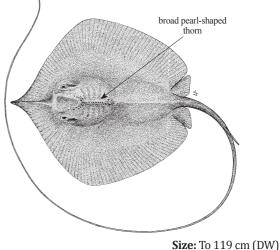
Distinctive Characters: Disc rhombic with narrowly rounded apices, anterior margins weakly concave; snout short and broad; tail whip-like, subcircular in cross-section; denticle band on central disc loosely defind, becoming indiscernible in individuals larger than 90 cm DW; no enlarged thorny denticles on mid-line of disc and tail; no skin folds on tail.

Colour: Dorsal surface pale pinkish brown to greyish; small white patch anterior to orbits; tail black behind sting; white with dark margin ventrally.



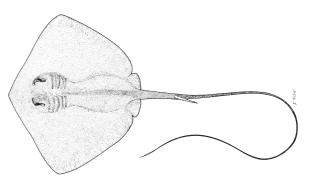


Size: To 200 cm (DW)



FAO names: Bleeker's whipray (En)

FAO names: Pink whipray (En)



Size: To 146 cm (DW)

#### Pateobatis jenkinsii (Annandale, 1909)

Local name(s): Nga-Leik-Kyauk-Mee-Shae-Pann-Yaung.

**Habitat:** Benthic over sandy bottoms to depths of about 90 m.

Fisheries: Bottom trawls, gillnets, line gears.

**Distinctive Characters:** Disc rhombic with narrowly rounded apices, anterior margins straight; snout moderately broad, obtuse, rather short; tail short, subcircilar in cross-section, slender, whip-like beyond sting; denticles on back in a narrow, asimmetrical well-defined band; a row of prominet thorns along mid-line of disc and tail before sting (denticle band and thorns reduced or absent in young); no skin folds on tail.

**Colour:** Dorsal surface uniform yellowish brown (young with small dark spots on rear margins of disc); tail blackish beyond sting; ventral surface white (a sharply defined dark submarginal band in young).

#### Pateobatis uarnacoides (Bleeker, 1852)

**Local name(s):** Nga-Leik-Kyauk-Hmee-Shae-Phyu-Kywet.

**Habitat:** Mainly demersal over soft bottoms, offshore beyond 30 m depth.

Fisheries: Bottom trawls, gillnets, line gears.

**Distinctive Characters:** Disc subcircular with broadly rounded apices; anterior margin of disc strongly concave; snout long, apical lobe prominent and triangular; tail narrow-based, subcircular in cross-setion, slender, whip-like beyond sting; denticle well-defined in adults, much wider than twice interorbit at level of eyes, band from, and then tapering slightly to tail; usually 2 pearlshaped thorns (more prominet in young) on back; no thorns or skin folds on tail.

**Colour:** Dorsal surface greyish or brownish; ventral surface greyish brown with narrow medial pale area; tail brownish behind sting.

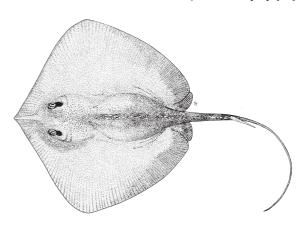
*Pteroplatytrygon violacea* (Bonaparte, 1832)

**Local name(s):** Ye-Paw-Hlwar-Nga-Leik-Kyauk **Habitat:** Found in open waters usually in the first 100 m.

Fisheries: Driftnets, line gears.

**Distinctive Characters:** Disc cone-shaped, very broad (width 1.3–1.4 times its length); apices angular; anterior margin uniformly convex; snout very short and obtuse; tail slightly depressed anteriorly, whip-like beyond sting; denticles confined to a single row of small, thorns along disc midline in adults; ventral skin fold very low, terminating well befor tail tip.

**Colour:** Upper surface uniform dark purple to black; ventral surface almost entirely dark, but usually slightly lighter than dorsal surface; cloaca, thorns and sting mostly pale.

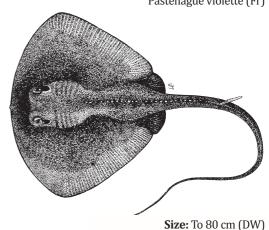


Size: To 150 cm (DW)

FAO names: Whitenose whipray (En)

Size: To 119 cm (DW)

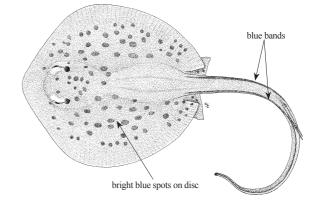
FAO names: Pelagic stingray (En) Pastenague violette (Fr)



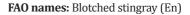
FAO names: Jenkin's whipray (En)

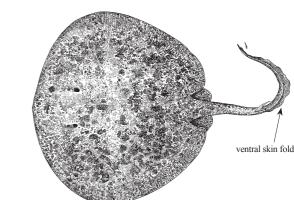
# FAO names: Bluespotted ribbontail ray (En)

Pastenague queue à ruban (Fr)



Size: To 35 cm (DW),





Size: To 180 cm (DW))

FAO names: Indian sharpnose ray (En)



Size: To 40 cm (DW))

# Taeniura lymma (Forsskål, 1775)

**Local name(s):** Nga-Leik-Kyauk-Kyaw-Pyarr-Set-Hmee-Pyar.

Habitat: Sandy bottoms of coastal waters down to 20 m.

Fisheries: Bottom trawls, gillnets, line gears.

**Distinctive Characters:** Disc oval; anterior margin slightly convex; snout bluntly rounded, tip not pointed; tail short, broad-based, depressed, anteriorly (about 1.5 times in DW when undamaged), tapering rapidly to sting; mostly with 2 stings located posteriorly on tail; disc smooth, except for patch of small, widely spaced thorns in nuchal area; ventral skin fold extending to tail tip.

**Colour:** Golden-brown with blue spots on disc and 2 broad blue bands on tail before sting.

#### Taeniurops meyeni (Müller & Henle, 1841)

**Local name(s):** Nga-Leik-Kyauk-Gaung-Lone-Phae-Pyarr-Hmee.

**Habitat:** Benthic around coral reef habitats and on sand substrates from the surf zone to 439 m.

Fisheries: Bottom trawls, gillnets, line gears.

**Distinctive Characters:** Disc subcircular; anterior margin uniformly convex; snout short, very obtuse, tip not pointed; tail short (length slightly longer than DW when undamaged), relatively broadbased, depressed, tapering rapidly at sting; disc surface of adults covered with short, star-shaped denticles (no thorns); ventral skin fold prominent, extending to tail tip, several times deeper than tail above; dorsal tail fold absent.

**Colour:** Dorsal surface mottled black and white (sometimes uniformly brownish or black); ventral surface of disc uniformly pale; skin fold and tail uniformly black behind sting.

# Telatrygon crozieri (Blyth, 1860)

Local name(s): Nga-Leik-Kyauk-Hnar-Chunn. Habitat: Demersal on continental shelf.

Fisheries: Bottom trawls, gillnets, line gears.

**Distinctive Characters:** Disc weakly rhombic with broadly rounded apices; deeply concave anterior margins; snot elongate, tip narrow and angular (length 33–36% of DW); tail narrow-based, depressed slightly, becoming filamentous beyond sting; skin largely smooth, lacking denticles in both young and adults; short, single row of small thornlets on nape; up to 12 mush larger thorns on tail before sting in adults; dorsal tail fold prominent, ventral tail fold long (base 65–67% of DW)

**Colour:** Disc uniformly dark brown with broad dark margin; ventral surface white; tail behind sting usually dusky above and below, sides paler.

#### Urogymnus asperrimus (Bloch & Schneider, 1801)

Local name(s): Nga-Leik-Kyauk-Suu-Pyann. Habitat: Demersal, in inshore waters.

Fisheries: Bottom trawls, gillnets, line gears.

Distinctive Characters: Disc very thick, oval to subcircular with broadly rounded apices; snout short, obtuse, tip with short lobe; tail short, slender, about equal to disc length, almost cylindrical in cross-section; upper mid-disc and tail extremely rough and prickly, densely covered with a broad band of flat, plate-like denticles, interspersed with fewer, taller upright thorns in adults; outer disc with fewer denticles but similar coverage of upright thorns; caudal stings and skin folds absent. **Colour:** Disc light grey, yellowish or whitish above, thorns often paler; white below; posterior half of tail blackish.

#### Urogymnus granulatus (Macleay, 1883)

Local name(s): Nga-Leik-Kyauk-Suu-Pyann. Habitat: Young live mainly in mangroves and estuaries; adults on coral reefs.

Fisheries: Bottom trawls, gillnets, line gears.

Distinctive Characters: Disc very thick, oval; with broadly rounded apices; snout short with a weak apical lobe: tail broad-based, subcircular in cross-section, slender, whip-like beyond sting, its length 1.3-2.1 times DW; well-developed denticle band with sparse denticles; no enlarged thorns or thornlets on body; no denticles on undersurface or sides of tail; caudal skin folds absent.

**Colour:** Dorsal surface grevish or vellowish brown, covered with small white flecks and often with dark mucus; ventral surface white in young, with dense black blotches in adults; broad dark margin usually around disc and outer edges of pelvic fins.

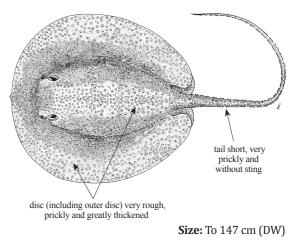
#### Urogymnus polylepis (Bleeker, 1852)

Local name(s): Nga-Leik-Kyauk-Suu-Pyann. Habitat: Inhabits freshwater and low salinity embayments near the coast.

Fisheries: Bottom trawls, gillnets, line gears.

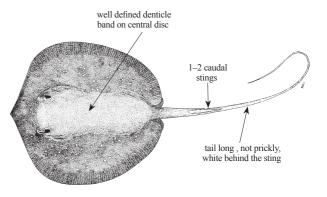
Distinctive Characters: Disc with oval, thick trunk and thin highly flexible pectoral fins; snout very broad with pronounced triangular apical lobe; tail narrow-based, compressed to subcircular in cross-section, slender, whip-like beyond sting, its length 2.8-3.1 times DW; skin on upper surface entirely covered with fine granular denticles; 1-6 mid-shoulder enlarged denticles, mostly small or inconspicuous; caudal skin folds absent.

Colour: Dorsal surface uniform greyish or brownish; ventral surface white with outer margin dark broadly dark brown or greyish, widest posteriorly and with blotchy inner margin.



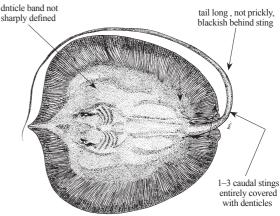
FAO names: Mangrove whipray (En)

FAO names: Porcupine whipray (En)



Size: To 141 cm (DW)

#### FAO names: Giant freshwater whipray (En)



Size: To 192 cm (DW)

# PLESIOBATIDAE

Giant stingrays

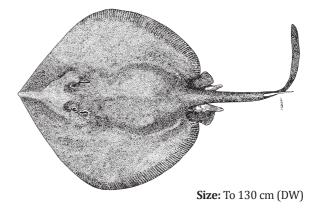
#### Plesiobatis daviesi (Shaw, 1804)

Local name(s): Leik-Kyauk.

Habitat: Benthic on soft bottoms at 275–680 m. Fisheries: Deep bottom trawls.

**Distinctive Characters:** Disc soft, subcircular in young, becoming oval in adults; snout flexible, broadly triangular and pointed; tail narrow-based, slender (not whip-like), shorter than disc and usually with as trong caudal sting; caudal fin elongate and slender, base about half length of tail; upper disc and tail covered with small denticles in both adults and young; ventral side of disc smooth **Colour:** Dorsal surface greyish, purplish or reddish brown; tail dark brownish to black; caudal fin black; ventral surface white, with narrow dark margins

FAO names: Giant stingray (En)



# MYLIOBATIDAE

Eagle rays

Aetomylaeus maculatus (Gray, 1834)

Local name(s): Be' Leik-soon.

Habitat: Pelagic over coastal inshore habitats. Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Disc very broad and short (disc slightly longer in adult females); pectoral fins weakly falcate, joining head below eye, separate from rostral lobe; caudal sting absent; spiracles lateral, not visible in dorsal view (the last three characters valid for all *Aetomylaeus* species occurring in the area); tail long, its length about 3.0–4.4 times length of body; disc smooth, without thorns or denticles; dorsal fin origin just behind pelvic fin insertion.

**Colour:** Dorsal surface browhish to greenish; disc with numerous, usually faint, whitish spots mostly concentrated on posterior half of disc; white below.

#### Aetomylaeus nichofii (Bloch & Schneider, 1801)

**Local name(s):** Be' Leik-Soon-Kyaw-Zin-Gyee. **Habitat:** Mainly pelagic over soft bottoms from inshore to at least 100 m depth.

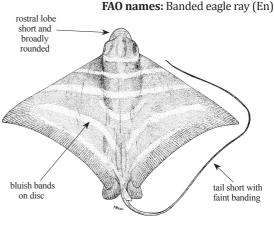
Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Similar to *Aetomylaeus maculatus* but no spots on disc; tail shorter, its length about 1.4–1.8 times length of body; rostral lobe more rounded; dorsal fin origin at level of pelvic fin insertions

**Colour:** Dorsal disc surface greyish brown; disc with 5–8 pale blue (sometimes dark-edged) transverse bands beginning at interorbital region; bands becoming faint in large adults; faint banding present on tail; ventral surface white with brownish pectoral fin apices.

FAO names: Mottled eagle ray (En) rostral lobe short and moderately tail long rounded without banding spiracle white spots iuvenile no sting pectoral fin rostral lobe

Size: To at least 100 cm (DW)



Size: To about 72 cm (DW)

# Aetomylaeus vespertilio (Bleeker, 1852)

#### Local name(s): ????

**Habitat:** Mostly pelagic over coral reefs and inshore muddy bays to at least 110 m depth. **Fisheries:** Bottom trawls, gillnets.

**Distinctive Characters:** Disc very broad and short; pectoral fins weakly falcate, joining head below eye, separate from rostral lobe; caudal sting absent; tail elongate, its length about 3 times DW; disc mostly smooth, without thorns (adults with a narrow band of flat denticles along midline of disc and predorsal tail); dorsal fin small, no free rear tip, its origin behind pelvic fin insertions.

**Colour:** Dorsal surface brown to bluish grey with broken transverse black lines anteriorly and an open network of black lines posteriorly; posterior margin of disc with white spots; head with black spots and stripes; ventral surface white.

# \_\_\_\_\_

Aetobatus flagellum (Bloch & Schneider, 1801)

Local name(s): Be' Leik-Soon-Lin-Yone-Gaung-Shae.

**Habitat:** Pelagic in inshore waters; also found in estuaries.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Disc diamond-shaped, very broad but relatively short; rostral lobe very long, narrowly pointed; skin smooth; teeth plate-like, in a single row in both jaws, those in lower jaw chevron-shaped; nasal curtain deeply notched, centrally; spiracles large, visible in dorsal view (the last three, are shared characters of all aetobaids); skin entirely smooth.

**Colour:** Dorsal surface uniformly brownish to greenish brown, without other markings; ventral surface mostly white.

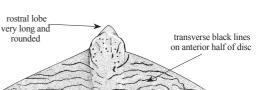
# Aetobatus ocellatus (Kuhl, 1823)

**Local name(s):** Be' Leik-Soon-Kyaw-Me'-Phyu-Set. **Habitat:** Pelagic in inshore and offshore waters; also found in estuaries.

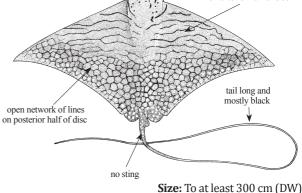
Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Disc very broad and short, rostral lobe moderately long (shorter in juveniles) and parabolic; skin smooth; teeth plate-like, in a single row in both jaws, those in lower jaw chevron-shaped; nasal curtain deeply notched centrally, spiracles large, visible in dorsal view; tail very long, 2,1–2.5 times DW.

**Colour:** Dorsal surface greenish grey with numerous, similar size white to pale blue spots (occasionaly without spots or with spots confined to rear disc); ventral surface mostly white.



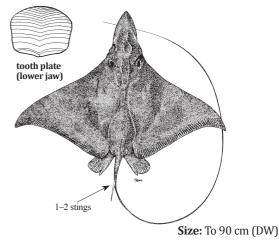
FAO names: Ornate eagle ray (En)



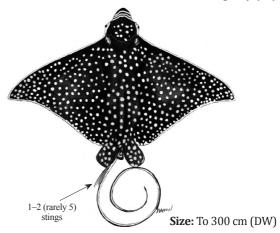
# AETOBATIDAE

Pelagic eagle rays

FAO names: Longheaded eagle ray (En)



FAO names: Ocellated eagleray (En)



# RHINOPTERIDAE

Cownose rays

#### Rhinoptera javanica Müller & Henle, 1841

Local name(s): Be'-Leik-Gar-Bar-Dee-Doke.

**Habitat:** Most common inshore in bays, estuaries and near coral reefs.

Fisheries: Gillnets, bottom trawls.

**Distinctive Characters:** Disc broad and short; snout strongly notched medially to form two lobes; head relatively narrow, its width across middle of eye 13.5–15%; cephalic lobe posterior edge not (or just) reaching mouth; tail long, usually 2.4–3.4 in disc length (when undamaged); dorsal fin origin distinctly behind pectoral fin insertions; posterior margin of dorsal fin strongly concave; sting (when present) behind dorsal fin free rear tip.

**Colour:** Disc plain greenish brown to blackish above, white below; tail remainder of tail black.

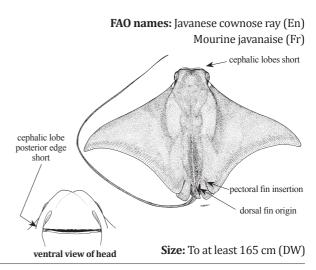
#### Rhinoptera jayakari Boulenger, 1895

**Local name(s):** Be'-Leik-Dee-Doke-Gaung-Gyee. **Habitat:** Usually pelagic in large schools, near the coast and well offshore.

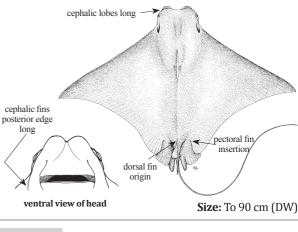
Fisheries: Gillnets, bottom trawls.

**Distinctive Characters:** Similar to *Rhinoptera javanica* but head broader, its width across middle of eye 14.5–17.4% of DW; cephalic lobe posterior edge extending past mouth (almost to 1<sup>st</sup> gill slit); tail shorter, about 1.4–1.8 in disc length (when undamaged); dorsal fin origin over or slightly forward of pectoral fin insertions; posterior margin of dorsal fin weakly convex; sting (when present) beneath dorsal fin inner margin.

**Colour:** Olivaceus above, white below; tail black distally.



FAO names: Shorttail cownose ray (En)



MOBULIDAE

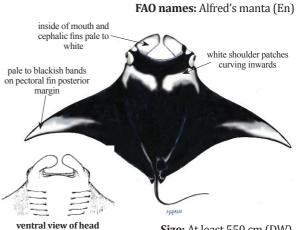
Devil rays

#### Mobula alfredi (Krefft, 1868)

Local name(s): Be'-Leik-Gyee-Kyaw-Me'-Phyu. Habitat: Pelagic, mainly inshore around coral and rocky reefs and areas associated with upwelling. Fisheries: Driftnets, gillnets.

**Distinctive Characters:** Disc very broad and short, length 42–47% of width; mouth terminal; spiracles slit-like, on dorsal surface behind eyes; denticles on dorsal surfaces small, not overlapping and uniformly distributed; tail whip-like about 1.2 times disc length when undamaged; no spine or calcified lump behind dorsal fin.

**Colour:** Dorsal surface black with pale to white shoulder patches; ventral surface mostly white (rarely entirely black), occasionaly with dark spots or patches.



Size: At least 550 cm (DW)

# Mobula birostris (Walbaum, 1792)

Local name(s): Be'-Leik-Gyee-Kyaw-Me'-Nyo.

**Habitat:** Pelagic, mostly along coastlines with regular upwelling, oceanic islands and offshore seamounts

#### Fisheries: Driftnets.

**Distinctive Characters:** Similar to *Manta alfredi* but calcified lump containing an embedded spine behind dorsal fin present; denticles on dorsal and ventral surfaces prominent, strongly overlapping and forming length-wise ridges; different pattern of white shoulder patches (see colour description below).

**Colour:** Dorsal surface black, with pale to white shoulder patches present, their anterior margins running parallel with the front of head; ventral surface mostly white (rarely entirely black) with dark spots or patches.

#### Mobula kuhlii (Muller & Henle, 1841)

Local name(s): Be'-Leik-Gyo-Taung-Kyaw-Nyo-Zin.

Habitat: Pelagic, mainly in coastal waters.

Fisheries: Driftnets, gillnets.

**Distinctive Characters:** Disc broad and short, length 50–59% of width; mouth subterminal; spiracles very small, circular, located below pectoral fin origin; denticles mostly absent; tail whip-like and long, greater than disc width in embryos and juveniles, shorter than disc width in adults; caudal spine absent.

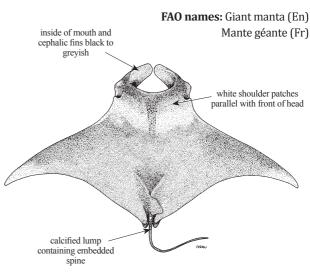
**Colour:** Dorsal surface blackish to greyish brown; dorsal fin plain or with a white tip; ventral surface mostly white.

#### *Mobula mobular* (Bonnaterre, 1788)

Local name(s): Be'-Leik-A-Mee-Shae-Par-Phyuu. Habitat: Pelagic, in coastal and oceanic waters. Fisheries: Driftnets, gillnets.

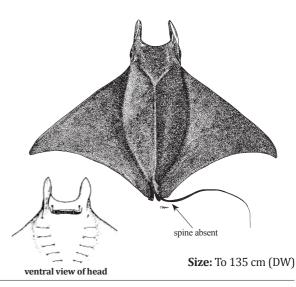
**Distinctive Character:** Disc broad and short, length 44–53% of width; mouth subterminal; spiracles very small, circular, located below pectoral fin origin; denticles dense; tail whip-like and very long, subequal to or exceeding disc width when undamaged; a short serrated caudal spine typically present behind dorsal fin, covered by a blck epithelium.

**Colour:** Bluish black above with 2 crescentic white patches on shoulders, most obvious in embryos and juveniles, fading in adults; white ventrally, sometimes with dark patches in adults;

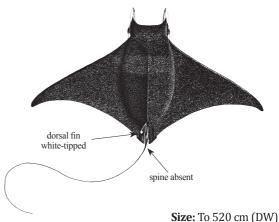


Size: To at least 700 cm (DW)

FAO names: Kuhl's devilray (En)



FAO names: Giant devilray (En)



#### Mobula tarapacana (Philippi, 1892)

Local name(s): Be'-Leik-Gye-Hmee-Htik-Phyuu. Habitat: Pelagic, in coastal and oceanic waters. Fisheries: Driftnets, gillnets.

**Distinctive Characters:** Disc elongate and strongly falcate, 57–67% of width; mouth subterminal; spiracles slit-like and elliptical, located above edge of disc; denticles densely cover most of the body surfaces, very rough to touch; a strong bony ridge present along dorsal mid-line; tail whip-like but short, slightly longer than disc in juveniles, much less than disc length in adults; caudal spine absent. **Colour:** Uniform greyish green to greyish brown above; dorsal fin plain, without a white tip; ventral surface whitish anteriorly, pale greyish posteriorly.

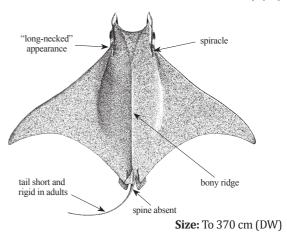
#### Mobula thurstoni (Lloyd, 1908)

Local name(s): Be'-Leik-A-Hmee-Chaw. Habitat: Pelagic, mainly in coastal waters. Fisheries: Driftnets, gillnets.

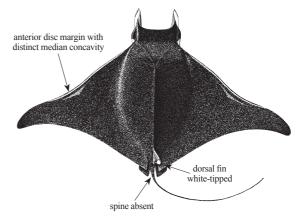
**Distinctive Characters:** Disc broad and short, length 50–61% of width; mouth subterminal; spiracles very small, circular, located below pectoral fin origin; denticles very sparse on body surface; tail whip-like and long, about 60% of disc width in adults when intact; caudal spine absent.

**Colour:** Bluish to black with purplish hues above; blackish margin along anterior disc becoming broad and very distinctive at level of concavity; dorsal fin with a distinct white tip (becoming faint in adults); ventral surface mostly white

FAO names: Sicklefin devilray (En)



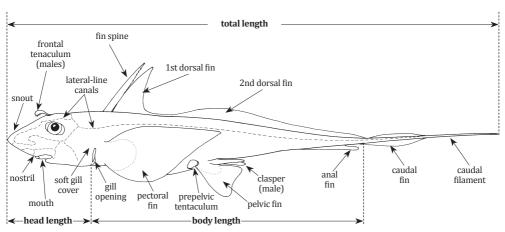




Size: To at least 189cm (DW)

# **CHIMAERAS**

The "Guide to Orders and Families", includes a total of 1 order and 2 families. The "Guide to Species", includes 3 species belonging to 2 families. Given their deep-water habitat and lack of specimens in museum collections, the diversity and biology of chimaeroid fishes occuring in the area is poorly understood. If one or more specimens are recorded, the user can follow the instructions present in the introduction regarding its preservation and/or contact the EAF-Nansen and FishFinder Programme of FAO.



# **TECHNICAL TERMS AND MEASUREMENTS**

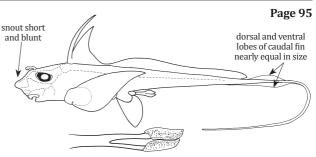
#### **Order CHIMAERIFORMES**

Body shark-like typically tapering rearwards to a filamentous tail; head very large; prominent 1st dorsal fin spine preceding a large, erect triangular dorsal fin; 2nd dorsal fin long and spineless; pectoral fins broad wing-like; noticeable lateral line canals on head and trunk; mouth small, ventral and connected to the nostrils by deep grooves; teeth plate-like; fleshy operculum covering the 4 gill openings, leaving one opening on each side; skin smooth.



#### Shortnose chimaeras

To 1.50 m TL. Generally inhabit deep-water, usually from depths of 200 to over 2 500 m. Two species are included in the Guide to Species.

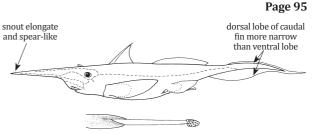


bifurcate pelvic claspers

# RHINOCHIMAERIDAE

#### Longwnose chimaeras

To 1.50 m TL. Generally inhabit deep-water, usually found at depths of 250 to 3 000 m. One species is included in the Guide to Species.



rod-like pelvic claspers

# CHIMAERIDAE

Shortnose chimaeras

#### Chimaera sp.

Local name(s): Nga-Kywet-Hmee.

Habitat: Trawled between 520–522 m depth Fisheries: Deep bottom trawls.

**Distinctive Characters:** Body tapering to a slender tail ending in a whip-like filament; oral (O) and preopercular (POP) lateral line canals branching off the infraorbital (IO) canal from the same point; ventral caudal margin ending slightly posterior to dorsal caudal margin; proximal half of lateral slightly wayy; skin deciduous, smooth.

**Colour:** Uniform purplish brown (whitish where skin deciduous) and all fins blackish in fresh specimens.

**Remarks:** An undescribed species, presently being described by Last et al.

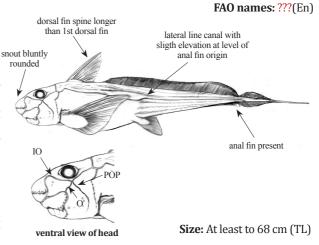
# Hydrolagus cf. africanus (Gilchrist, 1922)

Local name(s): Nga-Kywet-Hmee.

**Habitat:** Upper slope from 421 to 777 m depth. **Fisheries:** Deep bottom trawls.

**Distinctive Characters:** Body elongate, slender, rapidily tapering behind pelvic fins to a very long, slender, narrow, whip-like filamentous tail; oral (O) and preopercular (POP) lateral line canals sharing a common branch off the infraorbital (IO) canal; lateral line non-wavy; skin deciduous, smooth.

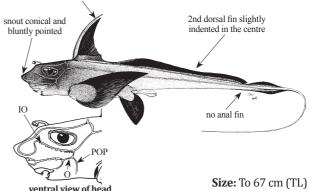
**Colour:** Body and fins uniform blackish brown. **Remarks:** Inclusion based on a juvenile *Hydrolagus* specimen (17.5 cm TL), which is most likely a geographic variant of *H. africanus*, a species presently known only from the West Indian Ocean.



FAO names: African chimaera (En)

FAO names: Sicklefin chimaera (En)

dorsal spine curved, long, equal to or exceeding the height of the 1st dorsal fin



# RHINOCHIMAERIDAE

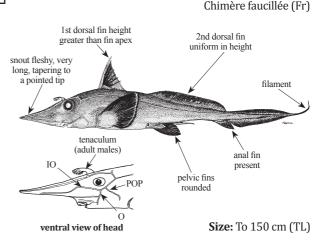
Longnose chimaeras

#### Neoharriotta pinnata (Schnakenbeck, 1931)

Local name(s): Nga-Kywet-Hmee-Hnar-Shae'. Habitat: Occurs from 200–550 m depth Fisheries: Deep bottom trawls.

**Distinctive Characters:** Body elongate, tapering to a caudal fin with short terminal filament; oral (O) and preopercular (POP) lateral line canals branching off separately from the infraorbital (IO) canal; pectoral fins short and broad; anal fin distinct and curved; frontal tenaculum prominent in adult males.

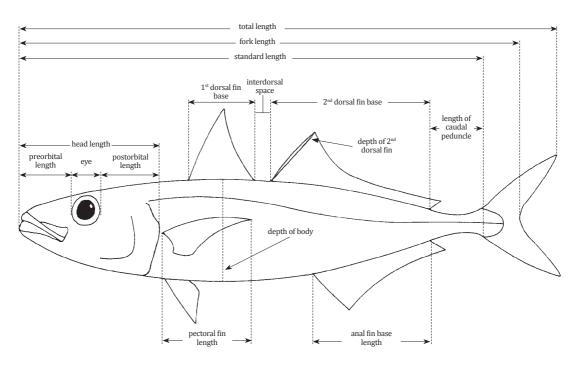
**Colour:** Uniform chocolate brown without any distinctive blotches, spots or stripes.



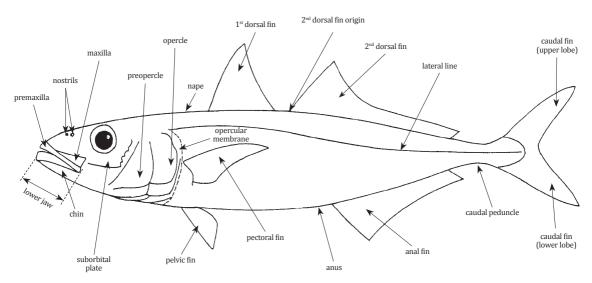
# **BONY FISHES**

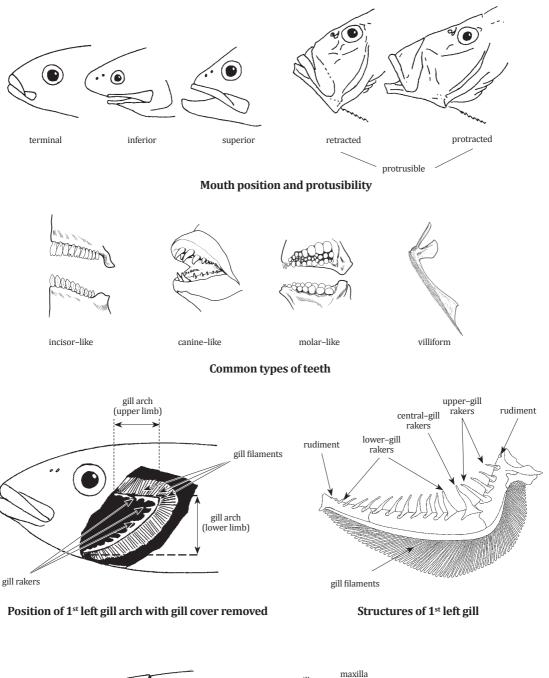
The "Guide to Orders and Families", includes a total of 21 orders and 115 families. These are arranged by order (and suborder in the case of some Perciformes) using the classification adopted by Eschmeyer and Fricke (2015) which best reflects current use. Page numbers refer to those families that are treated in more detail in the species identification guide. The "Guide to Species", includes 594 species belonging to 110 families. Species reported in the literature to occur in Myanmar but not found by the authors during field work are marked with an asterisk (\*) besides the scientific name. If one of the latter species is recorded, the user can follow the instructions present in the introduction regarding its preservation and/or contact the FAO FishFinder Programme.

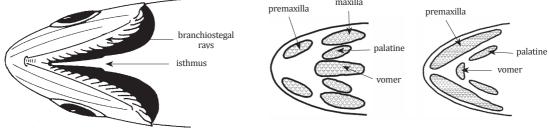
# **TECHNICAL TERMS AND MEASUREMENTS**



#### General Nomenclature of the External Morphology

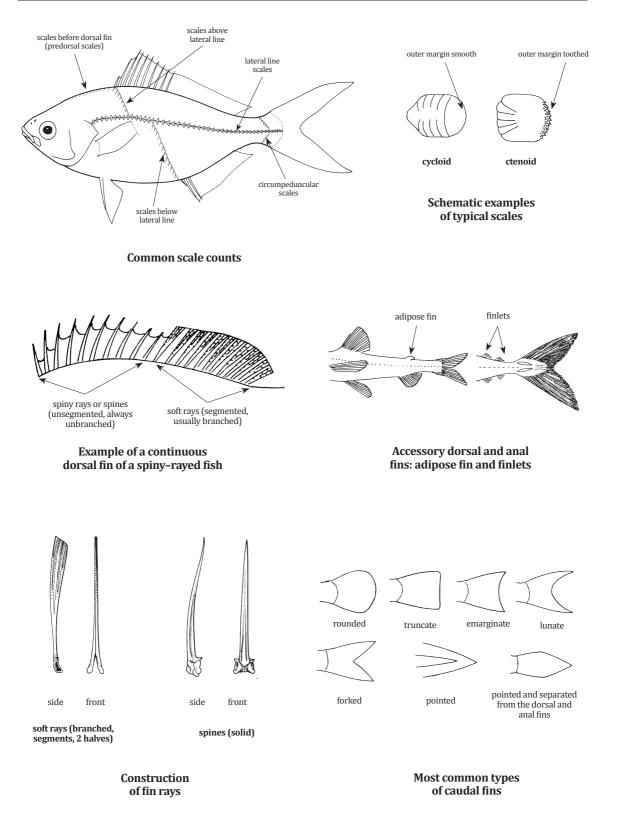






Structures on ventral side of head

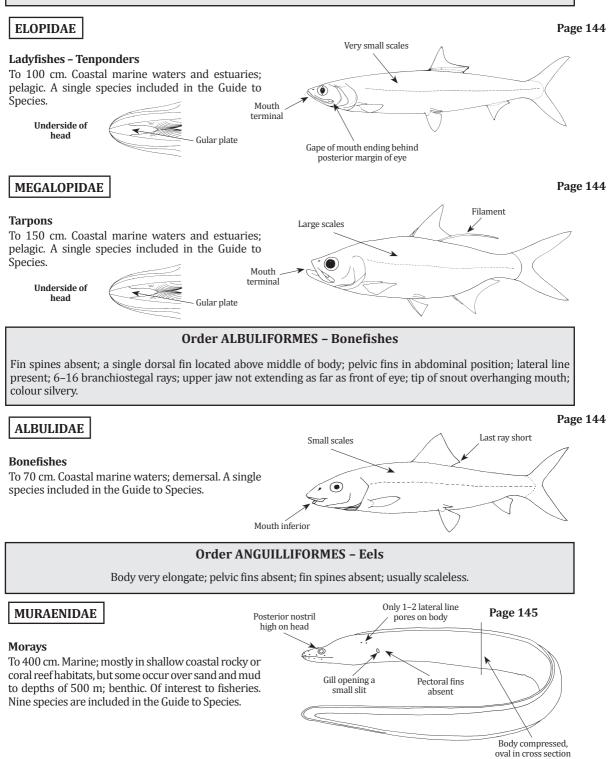
Roof of mouth and upper jaw

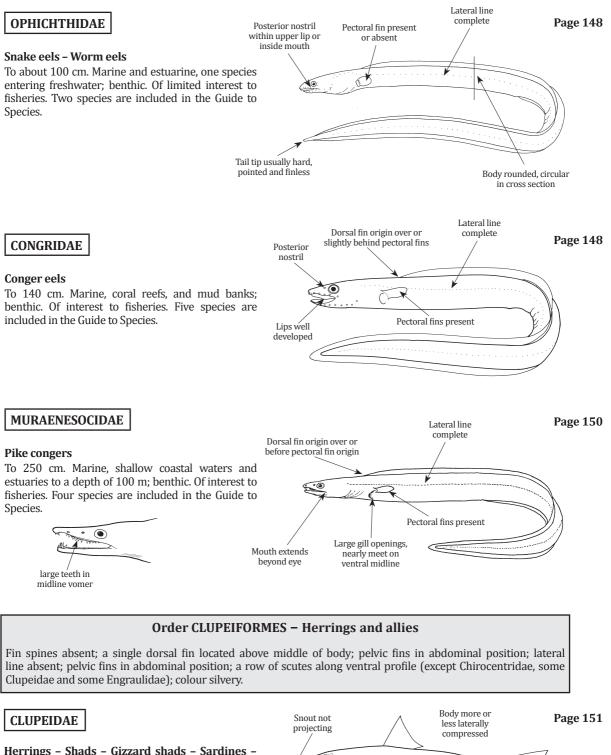


# **GUIDE TO ORDERS AND FAMILIES**

#### **Order ELOPIFORMES - Tarpons and allies**

Fin spines absent; a single dorsal fin located above middle of body; pelvic fins in abdominal position; lateral line present; 20–27 branchiostegal rays; upper jaw extending past eye; tip of snout not overhanging mouth; colour silvery.

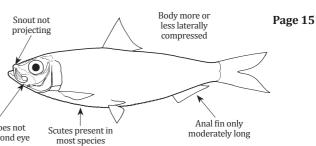




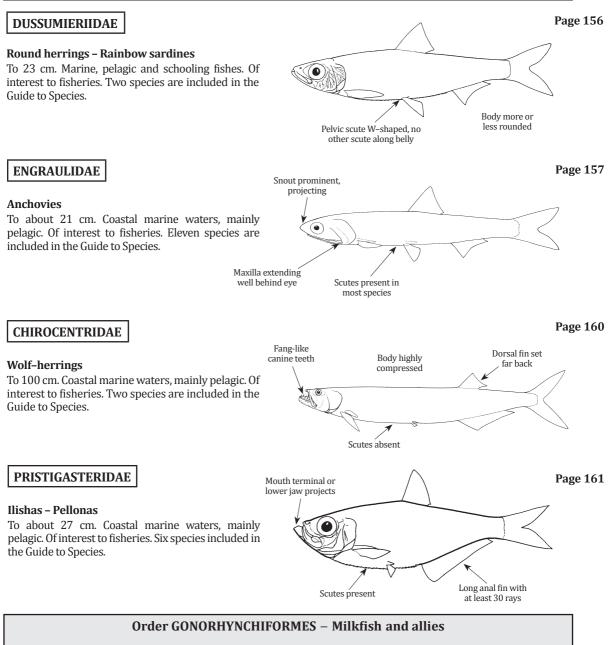
#### Herrings – Shads – Gizzard shads – Sardines Sardinellas

To 60 cm. Coastal marine waters, estuaries and freshwater; mainly pelagic. Of interest to fisheries. Sixteen species are included in the Guide to Species.

Maxilla does not extend beyond eye



Page 163

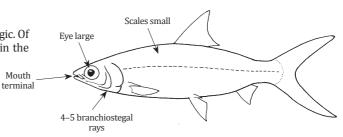


Fin spines absent; a single dorsal fin; pelvic fins in abdominal position; lateral line present; 4–5 branchiostegal rays; mouth small, jaws toothless or teeth reduced; colour silvery.

# CHANIDAE

#### Milkfish

To 180 cm. Marine and estuarine waters; pelagic. Of interest to fisheries. One species is included in the Guide to Species.



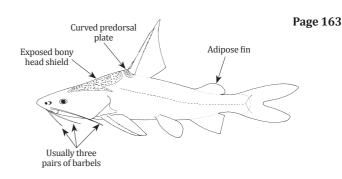
# **Order SILURIFORMES – Catfishes**

Barbels present around mouth; a strong spine usually present at front of dorsal and pectoral fins; an adipose fin often present; scales absent, but a bony head shield often present.

# ARIIDAE

#### Sea catfishes

To 185 cm. Coastal marine and estuarine waters; also freshwaters; benthic. Of interest to fisheries. Fourteen species are included in the Guide to Species.

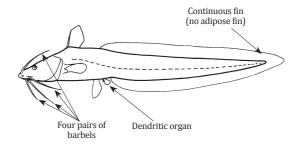


# PLOTOSIDAE

#### **Eel catfishes**

To about 40 cm. Marine, entering brackish and freshwaters; benthic. Of interest to fisheries. Two species are included in the Guide to Species.

#### Page 168



#### **Order STOMIIFORMES - Hatchetfishes - Viperfishes and allies**

Deep-sea fishes, having light organs (photophores); chin barbels present in some; premaxilla and maxilla both with teeth, and included in gape of mouth; ventral adipose fin present in some.

#### GONOSTOMATIDAE

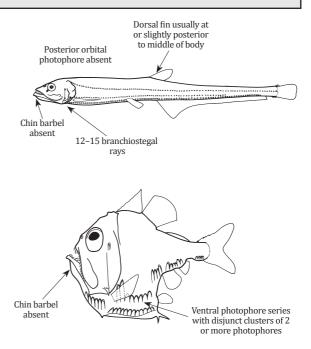
#### Bristlemouths

To about 25 cm. Marine, mostly deeper waters at depths below 200 m; meso– and bathypelagic. Of no interest to fisheries. Members of the genus *Gonostoma* have been identified from photographic records in Pakistan's waters without identification to the species level.

# STERNOPTYCHIDAE

#### **Marine hatchetfishes**

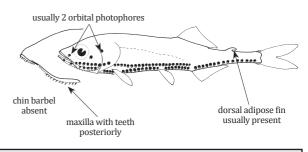
To about 20 cm. Marine, from the surface to depths below 300 m; meso– and bathypelagic. Of no interest to fisheries. Members of this family have been identified from photographic records in Pakistan's waters without identification to the species level.



# PHOSICHTHYIDAE

#### Lightfishes

To about 30 cm. Marine, Mesopelagic from 200 to over 1 000 m. Of no interest to fisheries. Members of the genus *Vinciguerria* have been identified from photographic records in Pakistan's waters without identification to the species level.



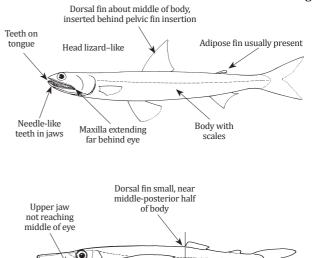
#### Order AULOPIFORMES - Greeneyes - Lizardfishes and allies

Premaxilla forming the gape of the mouth (maxilla excluded); upper jaw not protrusible; adipose fin usually present; no fin spines; caudal fin forked.

# SYNODONTIDAE

#### Lizardfishes

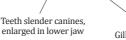
To 60 cm. Marine, from shallow waters to depths of 200 m, benthic. Of interest to fisheries. Eight species included in the Guide to Species.



# PARALEPIDIDAE

#### Barracudinas

To about 15 cm. Marine, deep water, often migrating to near–surface at night. Members of this family have been identified from photographic records in Pakistan's waters without identification to the species level.



Gill rakers reduced to short teeth or spines

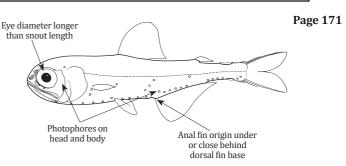
#### **Order MYCTOPHIFORMES - Lanternfishes and allies**

Fin spines absent; adipose fin present; light organs (photophores) sometimes present; maxilla toothless and excluded by gape by premaxilla; deep sea fishes.

#### **MYCTOPHIDAE**

#### Lanternfishes

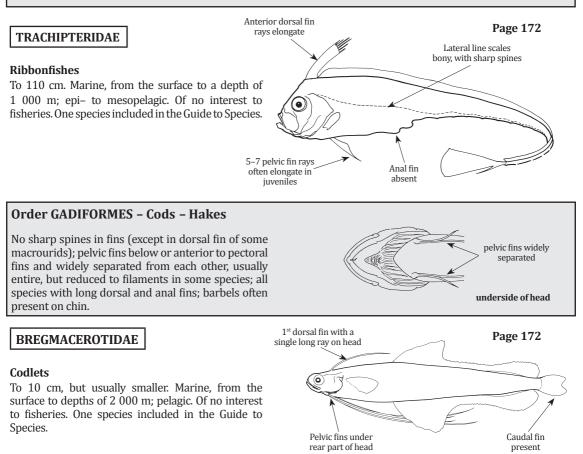
To 10 cm. From the surface (at night) to depths below 2 000 m; mesopelagic to bathypelagic. Of little interest to fisheries. Two species included in the Guide to Species.



#### Page 168

# **Order LAMPRIFORMES – Opahs and allies**

A diverse group of often strange looking fishes. No true spines in fins; pelvic fins under bases of pectorals.



#### **Order OPHIDIIFORMES - Cusk eels - Brotulas**

No sharp spines in fins; pelvic fins absent in some species; when present these fins are placed anterior to pectoral fins, sometimes far forward on underside of head; they are always close together and filamentous, each with not more than 2 rays; caudal fin separate or joined to dorsal and anal fins; snout without barbels.

# pelvic fins filamentous and close together when present underside of head

Dorsal fin rays usually equal

fin rays

or longer than opposing a Raige 172

# OPHIDIIDAE

#### Cusk eels - Brotulas

To 100 cm. Marine, at depths of 650 m; benthic. Of no interest to fisheries. One species included in the Guide to Species.



Spine on

opercle

Anterior nostril

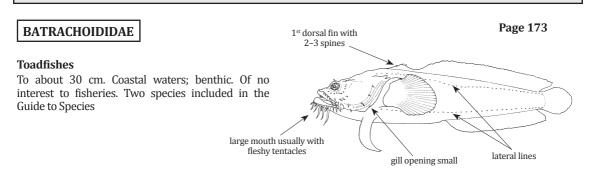
midway between

upper lip and

posterior nostril

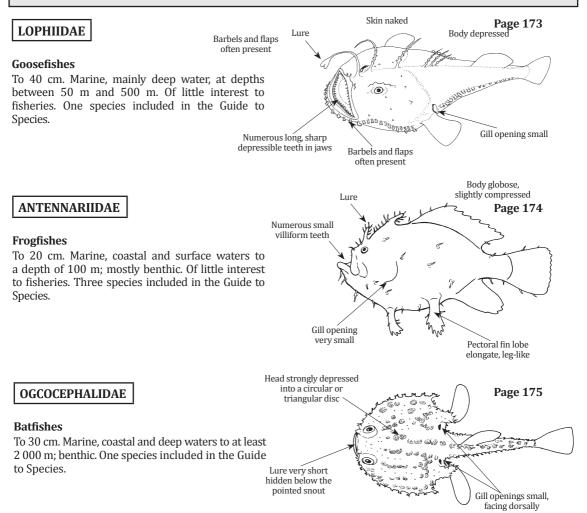
# **Order BATRACHOIDIFORMES – Toadfishes**

Head large and depressed, body compressed; two dorsal fins, the 1<sup>st</sup> with 2 or 3 spines; pelvic fins under throat; gill openings small, restricted to sides of head; one to several lateral lines on body.



#### **Order LOPHIIFORMES - Anglerfishes and allies**

Body globulose or depressed; 1<sup>st</sup> spine of dorsal fin modified to form a 'fishing pole'; gill openings small and circular, usually located below or behind pectoral fins; pelvic fins absent or in front of pectoral fins.



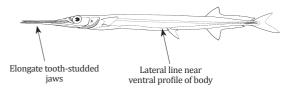
#### **Order BELONIFORMES – Flyingfishes and allies**

Either snout beak–like with upper or lower jaws greatly prolonged, or with enlarged, wing–like pectoral, and sometimes also pelvic fins; lateral line absent or near ventral profile of body; a single dorsal fin consisting of soft rays; non-protrusible upper jaw; pelvic fins abdominal.

#### BELONIDAE

#### Needlefishes

To 150 cm. Marine, coastal and offshore waters, some entering estuaries and even freshwater; generally pelagic, swimming near the surface. Of interest to fisheries. Six species included in the Guide to Species.

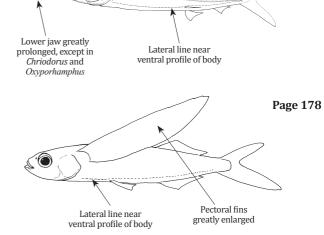


Page 177

# HEMIRAMPHIDAE

#### Halfbeaks

To 45 cm. Marine, coastal and offshore waters, some entering estuaries and even freshwater; generally pelagic, swimming near the surface. Of interest to fisheries. Four species included in the Guide to Species.



# EXOCOETIDAE

#### Flyingfishes

To 35 cm. Marine, pelagic in surface waters; capable of jumping out of the water and gliding for long distances. Of little interest to fisheries. Eight species included in the Guide to Species.

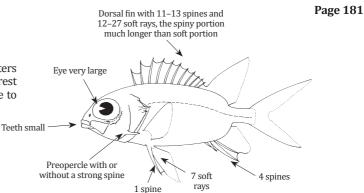
#### **Order BERYCIFORMES – Squirrelfishes and allies**

Head with spines and crests well developed; fin spines well developed (except in Anoplogastridae and Diretmidae); scales heavy and strongly ctenoid (rough).

# HOLOCENTRIDAE

#### Squirrelfishes - Soldierfishes

To about 30 cm. Marine, from shallow coastal waters to depths below 200 m; demersal. Of little interest to fisheries. Three species included in the Guide to Species.



#### 209

# Page 175

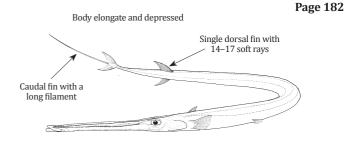
#### **Order SYGNATHIFORMES – Pipefishes and allies**

Body elongate, snout tube-like, mouth small; scales sometimes modified to form series of body plates.

#### FISTULARIIDAE

#### **Cornetfishes - Flutemouths**

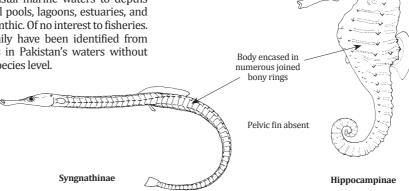
To about 200 cm. Marine, shallow coastal waters. Of little interest to fisheries, but flesh excellent. Two species included in the Guide to Species.



**SYNGNATHIDAE** 

#### Pipefishes – Seahorses

To about 30 cm. Coastal marine waters to depths of about 90 m, littoral pools, lagoons, estuaries, and freshwater; mostly benthic. Of no interest to fisheries. Members of this family have been identified from photographic records in Pakistan's waters without identification to the species level.



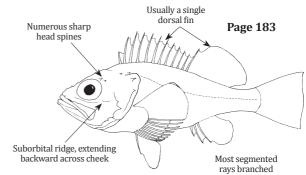
#### **Order SCORPAENIFORMES - Scorpionfishes and allies**

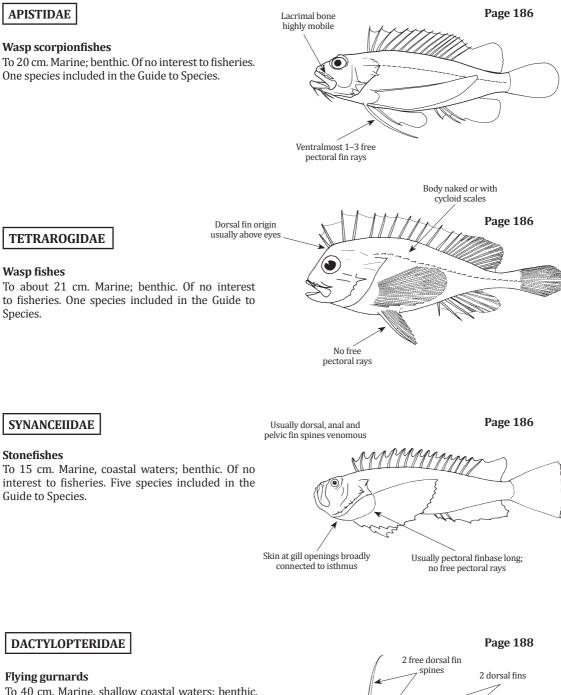
Cheeks with a bony strut (posterior extension of suborbital bone to preopercle); usually well developed spines on head and prominent spines in dorsal fin; pectoral fins usually rounded, sometimes greatly enlarged; membranes between lower rays of pectoral fins often incised; caudal fin usually rounded (rarely truncate, emarginate or forked).

#### **SCORPAENIDAE**

#### Scorpionfishes - Rockfishes

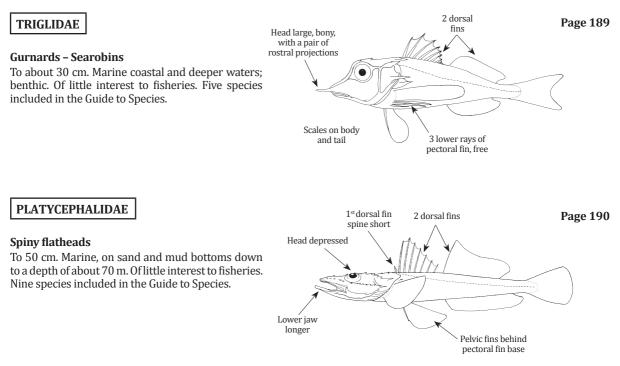
To about 30 cm. Marine, mostly in near shore rocky or coral reef habitats to a depth of 150 m; some species over soft bottoms to depths of 800 m; benthic. Of interest to fisheries. Nine species included in the Guide to Species.





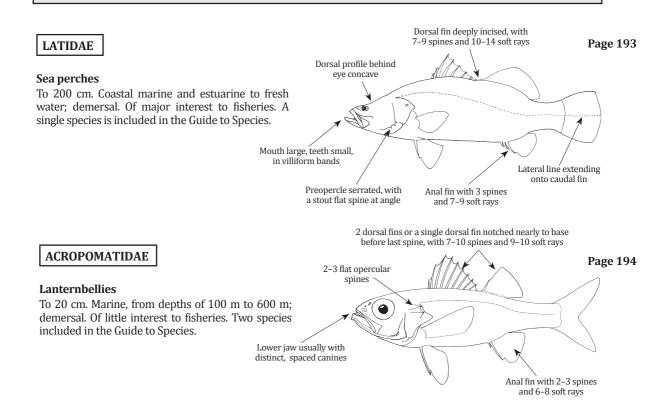
To 40 cm. Marine, shallow coastal waters; benthic. Of no interest to fisheries. Two species included in the Guide to Species.

Head armoured



#### **Order PERCIFORMES: PERCOIDEI – Perch-like fishes**

Shape extremely variable; either two dorsal fins, or one dorsal fin with anterior elements being sharp spines; pelvic fins usually thoracic, and with one spine and five soft rays, placed well forward on ventral surface of body; maxillary bone not included in gape of mouth, but dorsal to the tooth-bearing premaxilla.



# DINOPERCIDAE

#### Cavebasses

To 65 cm. Marine, on rocky reefs to depths beyond 50 m; demersal. Of interest to fisheries. A single species is included in the Guide to Species.

# SERRANIDAE

#### Groupers – Seabasses – Rockcods – Hinds – Combers – Coral trouts – Lyretails

To 230 cm. Marine, from the coastline to depths beyond 380 m; also estuarine; mostly demersal; a large and diverse family. Of major interest to fisheries. Twenty–four species included in the Guide to Species.

# PSEUDOCHROMIDAE

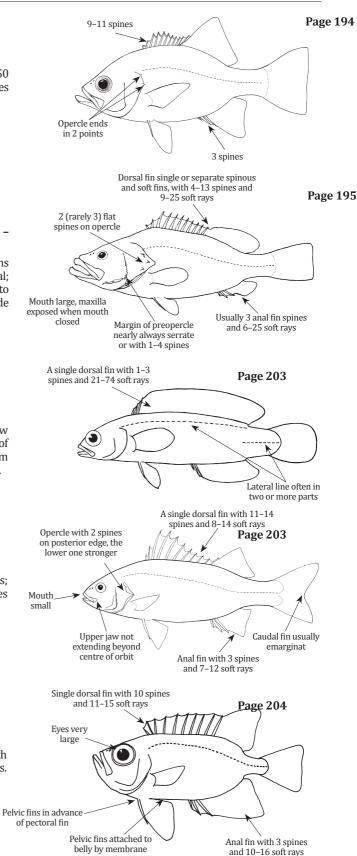
#### Dottybacks

To 10 cm, but most species less than 5 cm. Shallow coastal waters, especially coral reefs to depths of about 100 m; benthic. Of interest to the aquarium trade. One species included in the Guide to Species.

#### TERAPONTIDAE

#### Grunters

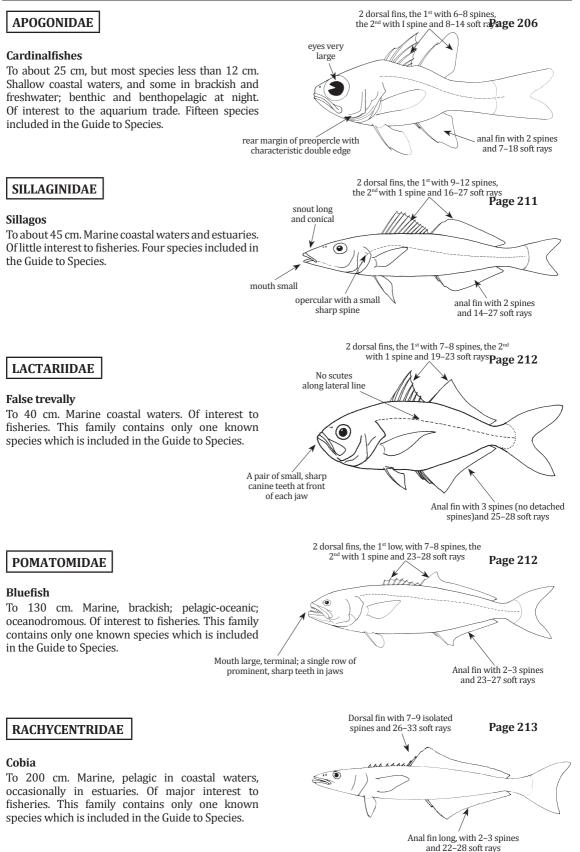
To 30 cm. Marine, coastal waters and estuaries; demersal. Of little interest to fisheries. Four species included in the Guide to Species.



PRIACANTHIDAE

#### **Bigeyes**

To about 68 cm. Marine, from the coastline to a depth of about 200 m; demersal. Of little interest to fisheries. Four species included in the Guide to Species.



### **ECHENEIDAE**

#### **Remoras - Sharksuckers**

To about 110 cm. Marine, pelagic; attach to larger marine animals such as sharks, turtles, and marine mammals. Of little interest to fisheries. Four species included in the Guide to Species.

### CARANGIDAE

6

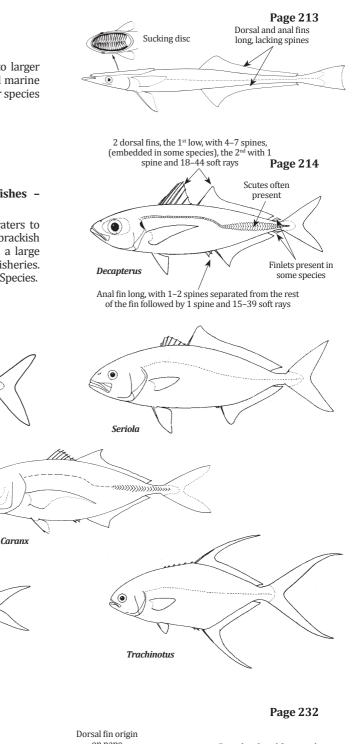
Alectis

Scomberoides

**CORYPHAENIDAE** 

#### Jacks – Trevallies – Scads – Queen-fishes – Runners – Pompanos

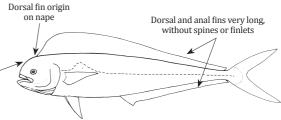
To about 190 cm. Marine, from coastal waters to a depth of 200 m; a few species entering brackish waters; coastal pelagic or oceanic pelagic; a large and diverse family. Of major interest to fisheries. Fifty-three species included in the Guide to Species.

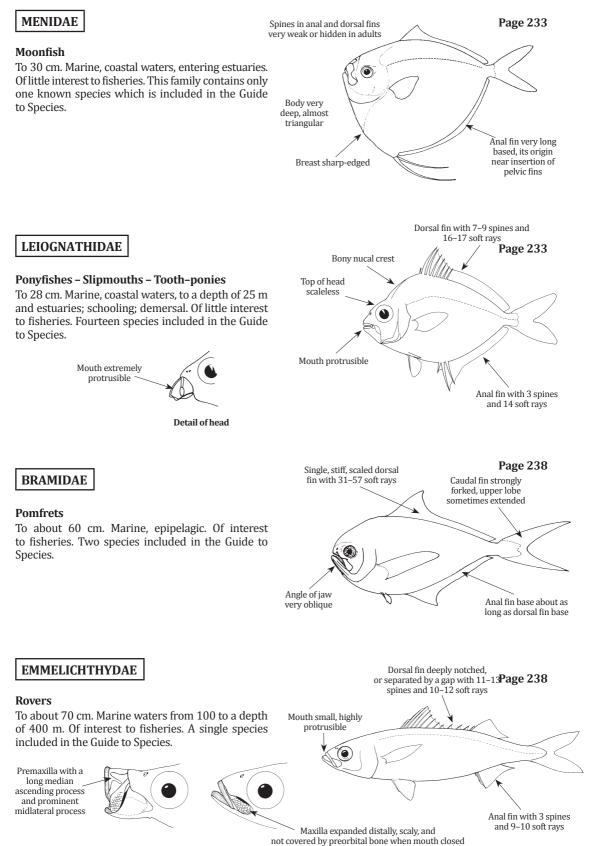


**Dolphinfishes** To 200 cm. Marine, oceanic pelagic, but sometimes close to the coast. Of major interest to fisheries. Two species included in the Guide to Species.

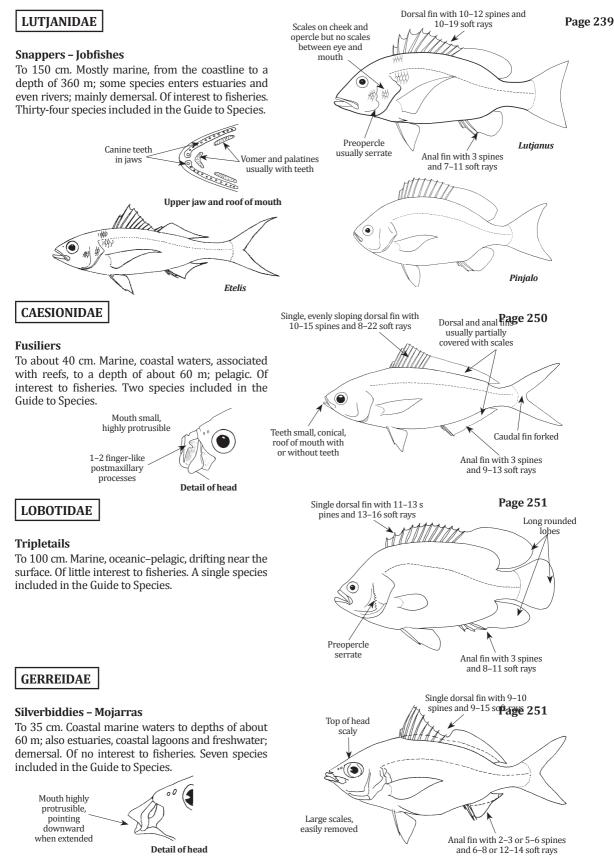
Adult males , with bony crest

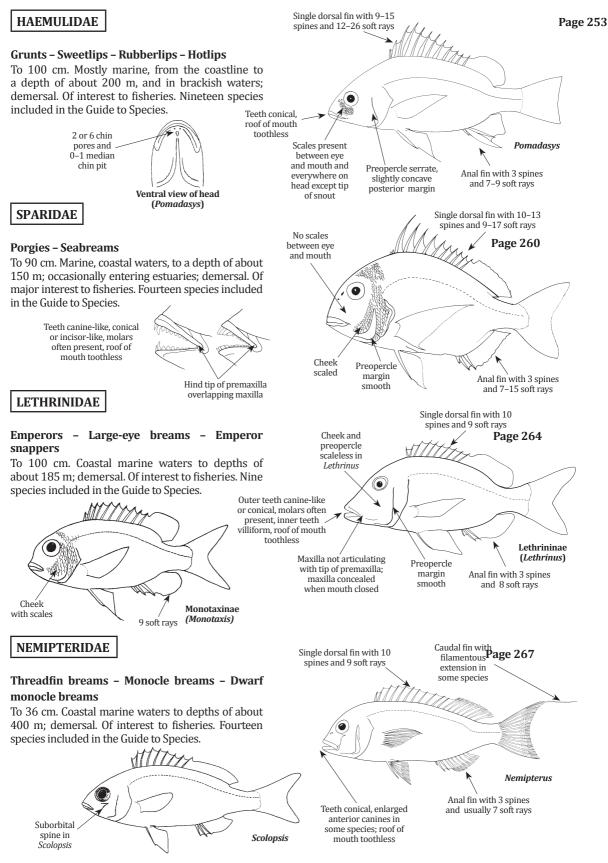
6





216

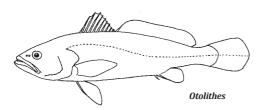


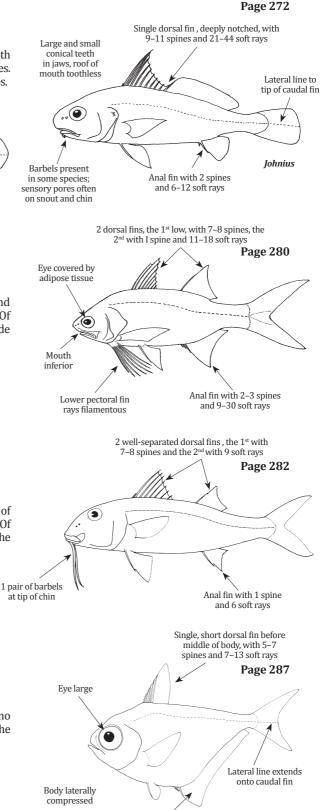


## SCIAENIDAE

### Croakers - Drums - Meagres - Weakfishes

To 180 cm. Marine, from coastal waters to a depth of about 100 m; demersal. Of interest to fisheries. Twenty-five species included in the Guide to Species.





Long anal fin, with 3 spines and 18–45 soft rays

## Threadfins

**MULLIDAE** 

Guide to Species.

PEMPHERIDAE

**Sweepers** 

Guide to Species.

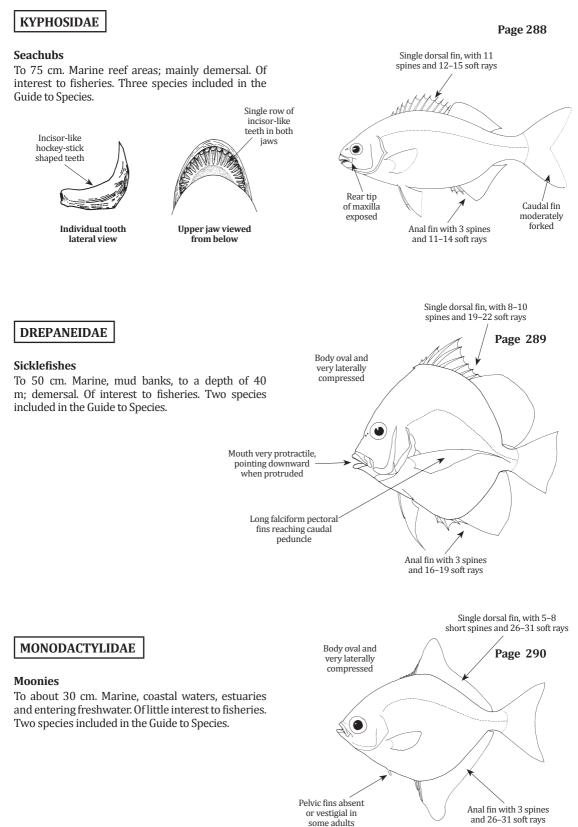
Goatfishes - Red mullets

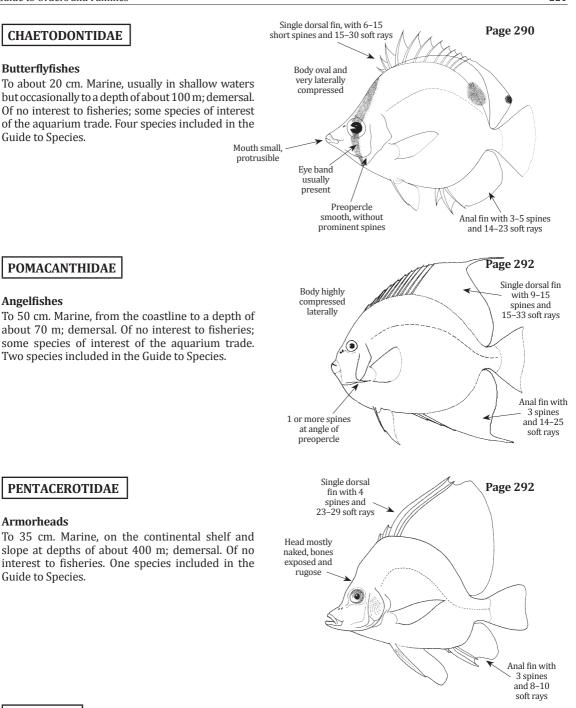
POLYNEMIDAE

To 200 cm. Coastal marine waters, estuaries and coastal lagoons; fresh river mouths; demersal. Of interest to fisheries. Six species included in the Guide to Species.

To 50 cm. Marine, from the coastline to a depth of about 100 m; occasionally in estuaries; demersal. Of interest to fisheries. Fifteen species included in the

To about 17 cm. Coastal marine waters. Of no interest to fisheries. Two species included in the

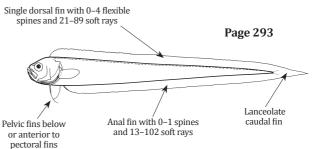




### CEPOLIDAE

### Bandfishes

To 35 cm. Marine, from shallow waters to depths of 475 m; benthic. Of little interest to fisheries. One species included in the Guide to Species.



Page 299

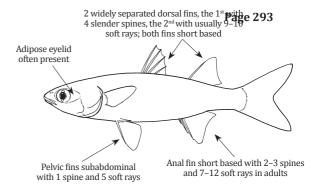
### **Order PERCIFORMES: MUGILOIDEI – Mullets**

Body elongate and subcylindrical; head often broad and flattened dorsally; mouth small or moderate in size, terminal or inferior; pectoral fins high on body; 2 widely separated dorsal fins; sides silvery; no lateral line.

### MUGILIDAE

#### Mullets

To 90 cm. Coastal marine, estuaries and freshwater, at shallow depths (less than 20 m); mostly benthic in food habits, but usually swim near the surface. Of interest to fisheries. Twelve species included in the Guide to Species.



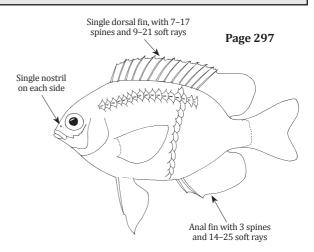
### **Order PERCIFORMES: LABROIDEI – Wrasses and allies**

Well developed teeth, coalesced into plates in the Scaridae; scales usually large and cycloid (smooth); body compressed; usually colourful species.

### POMACENTRIDAE

#### Damselfishes

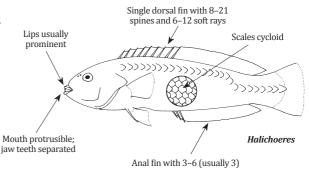
To about 25 cm, but most species smaller than 5 cm. Coastal marine waters and estuaries; mostly demersal. Of no interest to fisheries, some species of interest to the aquarium trade. Five species included in the Guide to Species.



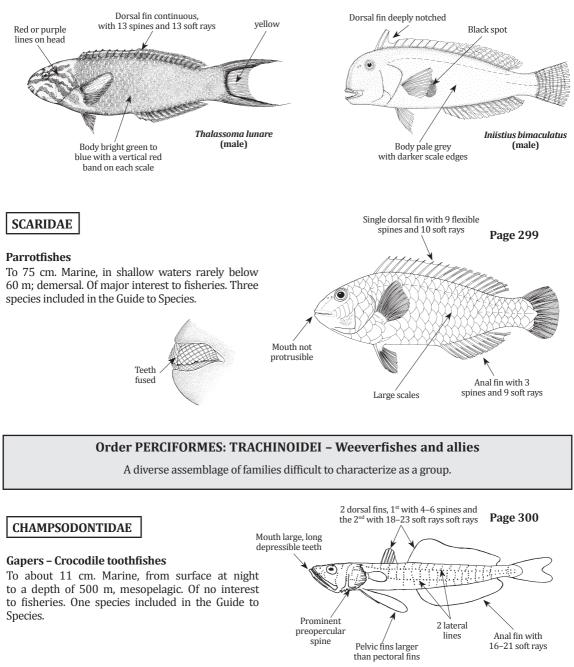
### LABRIDAE

### Wrasses - Hogfishes - Tuskfishes

To about 14 cm. Coastal marine waters to a depth of about 160 m; mostly demersal. Of interest to fisheries. A large and diverse group. *Iniistius bimaculatus* (Rüppell, 1829) and *Thalassoma lunare* (Linnaeus, 1758) apparently occur in Pakistan but not included in the Guide to Species because not supported by published records and/or voucher specimens. One species included in the Guide to Species.



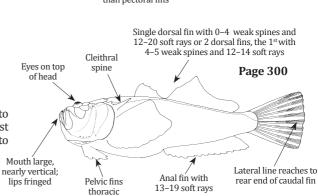
spines and 7–18 soft rays



### URANOSCOPIDAE

#### Stargazers

To about 24 cm. Marine and estuarine; benthic to a depth of 500 m, mesopelagic. Of little interest to fisheries. One species included in the Guide to Species.



on opercle. Sandperches To about 30 cm. Marine, coastal waters; benthic. Of little interest to fisheries. Two species included in the Guide to Species. Recurved canines at front of jaws Anal fin with 1 spine and 16-20 soft rays **Order PERCIFORMES: BLENNIOIDEI - Blennies and allies** Dorsal fin long; pelvic fins reduced, with 1 hidden spine and 2 to 4 soft rays, located ahead of pectoral fins; tentacles often present on head; 2 anal-fin spines (one of them often difficult to see). Head often with Page 301 Segmented ravs cirri on eves. **BLENNIIDAE** Spines outnumbering spines nasal openings. nape, or cheeks Eyes on top **Blennies** of head To about 60 cm, but most species much less than

> Gill openings continuous across lower surface of head or

restricted to small opening on

each side of head

Strong spine

15 cm. Marine, in coastal waters, usually at depths less than 20 m; also estuaries and coastal lagoons; benthic. Of no interest to fisheries; some species of interest to the aquarium trade. One eel-like species *Xiphasia setifer* Swainson, 1839 included in the

Guide to Species.

### **Order PERCIFORMES: CALLIONYMOIDEI – Dragonets**

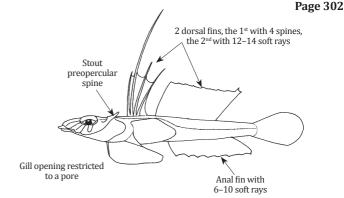
Xiphasia setifer

Head broad and depressed; sharp spine on either preopercle or, opercle and subopercle; pelvic fins with I spine and 5 soft rays; body scaleless; size usually less than 25 cm.

### CALLIONYMIDAE

#### Dragonets

To about 16 cm. Marine, mainly from coastal reefs; benthic. Of no interest to fisheries; some species of interest to the aquarium trade. One species included in the Guide to Species. *Callionymus marleyi* Regan, 1918 identified from photos in Pakistan's waters and *Callionymus hindsii* Richardson, 1844 recorded in Pakistan (see Fricke, 2002) are not included in the Guide to Species.



No scales

on body

Single dorsal fin with 4-5

spines and 20-24 soft rays

PINGUIPEDIDAE

Page 301

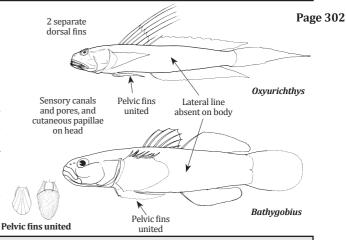
### **Order PERCIFORMES: GOBIOIDEI – Gobies and allies**

Usually small fishes with pelvic fins either very close together or united into a single cup-like structure; sensory canals restricted to head.

### GOBIIDAE

#### Gobies

To about 23 cm, but most species below 10 cm. Marine and brackish waters and some in freshwaters; usually in shallow waters, but a few species to a depth of below 150 m; benthic. The largest family of fishes. Of no interest to fisheries. Five species included in the Guide to Species. Members of the genera *Oxyurichthys, Glossogobius* and *Bathygobius* have been identified from photographic records in Pakistan's waters. *Odontamblyopus tenuis* (Day, 1876) recorded in Pakistan (see Murdy and Shibukawa, 2000) is not included in the Guide to Species.



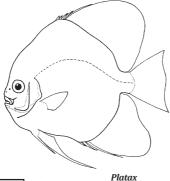
### **Order PERCIFORMES: ACANTHUROIDEI - Surgeonfishes and allies**

Body deeply compressed laterally; scales small in most species; mouth small, slightly or non-protrusible; gill membranes broadly united to isthmus, restricting gill opening ventrally; pelvic fins with I–II spines and 3–5 soft rays.

### **EPHIPPIDAE**

#### **Spadefishes**

To 75 cm. Marine, shallow waters on mud banks; demersal. Of little interest to fisheries. Three species included in the Guide to Species.

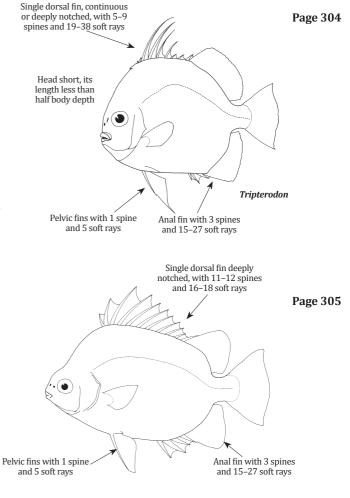


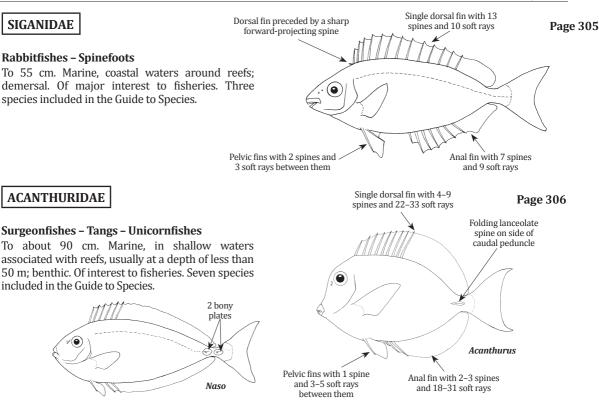
SCATOPHAGIDAE

Пицил

#### Scats

To about 38 cm. Marine and estuarine. Of little interest to fisheries. One species included in the Guide to Species.





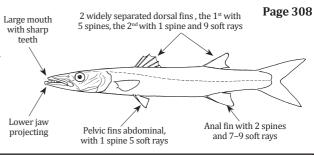
### **Order PERCIFORMES: SPHYRAENOIDEI – Barracudas**

Body elongate, upper jaw not protrusible; generally silvery on sides; head and snout both very long; teeth strong; two dorsal fins.

### **SPHYRAENIDAE**

#### Barracudas

To 200 cm. Marine, from coastal waters to a depth of about 100 m; pelagic neritic. Of interest to fisheries. Eight species included in the Guide to Species.



Bony Fishes

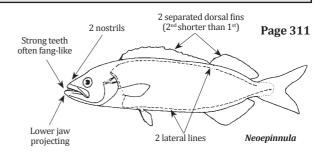
### **Order PERCIFORMES: SCOMBROIDEI – Tunas and allies**

Finlets usually present at posterior ends of dorsal and anal fins; 1 to 3 keels on either side of caudal peduncle (except in most species of Gempylidae).

### GEMPYLIDAE

#### **Snake mackerels**

To about 30 cm. Marine, from the surface (at night) to depths below 600 m; pelagic. Of interest to fisheries. One species included in the Guide to Species.



## TRICHIURIDAE

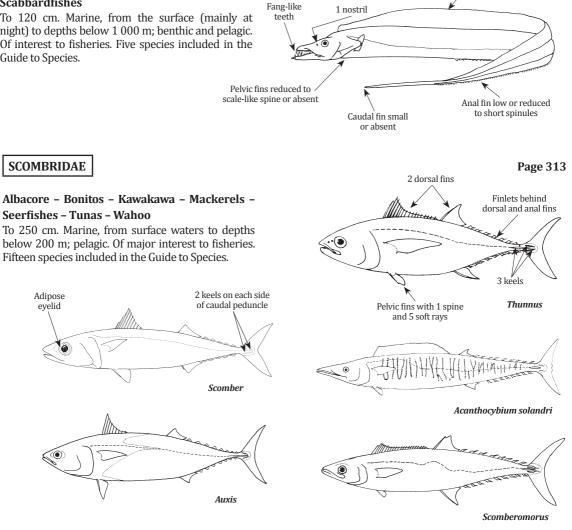
Adipose

evelid

Ô

#### Cutlassfishes - Hairtailfishes - Frostfishes -Scabbardfishes

To 120 cm. Marine, from the surface (mainly at night) to depths below 1 000 m; benthic and pelagic. Of interest to fisheries. Five species included in the Guide to Species.



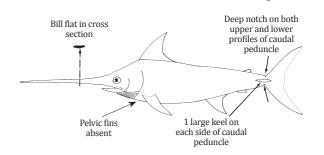
### **Order PERCIFORMES: XIPHIOIDEI – Billfishes**

Characterized by the prolongation of the upper jaw, much beyond the lower jaw into a long rostrum which is flat and swordlike (swordfish) or rounded and spearlike (sailfishes, spearfishes and marlins).

### **XIPHIIDAE**

### Swordfish

To 455 cm. Marine, from the surface to depths below 800 m; pelagic. Of major interest to fisheries. A single species worldwide, included in the Guide to Species.



Page 318

### Page 311

Single continuous dorsal fin or

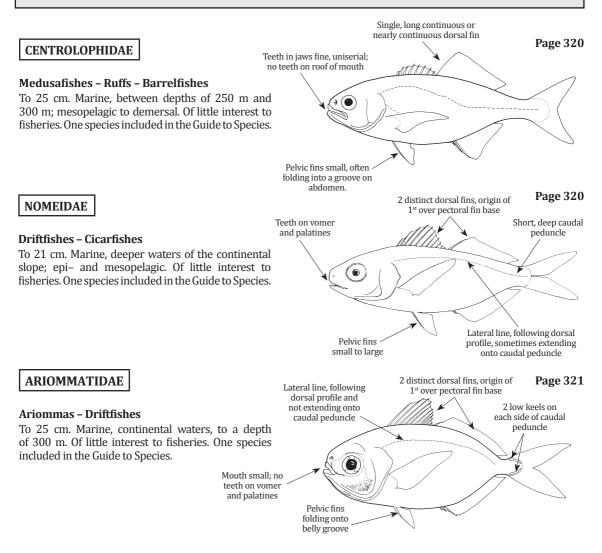
separated by shallow notch

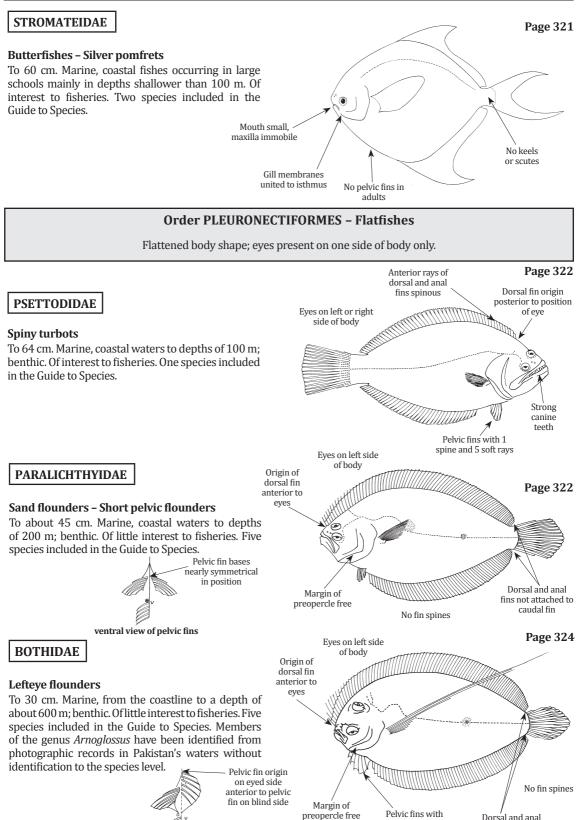
#### Page 318

### **ISTIOPHORIDAE** 2 keels on each side Bill round in of caudal peduncle Marlins - Sailfishes - Spearfishes cross section To 500 cm. Marine, pelagic oceanic, usually above the thermocline. Of major interest to fisheries. Five species included in the Guide to Species. Makaira Pelvic fins elongate 0 Tetrapturus Istiophorus

### **Order PERCIFORMES: STROMATEOIDEI - Harvestfishes and allies**

Shape variable; snout blunt and thick; toothed saccular outgrowths (pharyngeal sacs) present in the gullet immediately behind the last gill arch; teeth small, approximately uniserial.

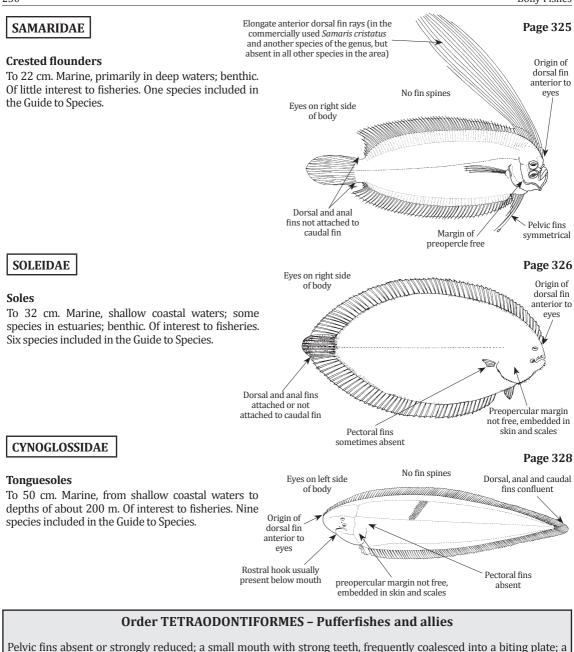




6-7 soft rays

fins not attached to caudal fin

Ventral view of pelvic fins

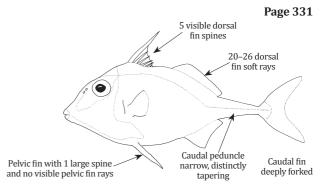


small gill opening; skin thick or rough, sometimes with prickles, spines or scaly plates.

### TRIACANTHIDAE

### Tripodfishes

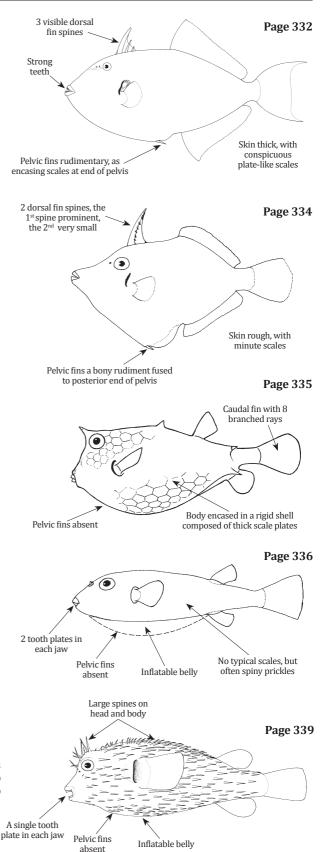
To 30 cm. Marine, from the coastline to 100 m; benthic. Of no interest to fisheries. Three species included in the Guide to Species.



## BALISTIDAE

### Triggerfishes

To about 60 cm. Marine, from the coastline to a depth of about 100 m; mostly benthic, a few benthopelagic. Of interest to fisheries. Six species included in the Guide to Species.



MONACANTHIDAE

#### Filefishes - Leatherjackets

To 100 cm, but most smaller than 10 cm. Marine, from the coastline to a depth of about 100 m; mostly benthic. Of no interest to fisheries. Four species included in the Guide to Species

**OSTRACIIDAE** 

#### Boxfishes

To 50 cm. Marine, from the coast to a depth of about 100 m; benthic. Of no interest to fisheries, but of interest of the aquarium trade. Three species included in the Guide to Species

### TETRAODONTIDAE

#### Puffers

To about 100 cm. Coastal marine waters, estuaries, brackish lagoons, and occasionally freshwater; from the coastline to a depth of about 180 m; benthic. Poisonous and not eaten. Eight species included in the Guide to Species

### DIODONTIDAE

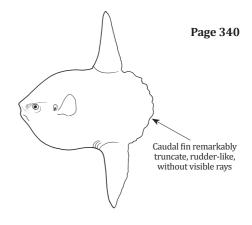
### Porcupinefishes - Spiny puffers - Burrfishes

To 75 cm. Marine, from the coastline to a depth of about 100 m; mostly benthic. Of no interest to fisheries. Four species included in the Guide to Species.

## MOLIDAE

#### Molas - Ocean sunfishes

To 330 cm or more. Marine, from the surface to a depth of about 360 m; pelagic oceanic. Of little interest to fisheries. Two species included in the Guide to Species.



# ELOPIDAE

Ladyfishes - Tenpounders

### Elops machnata (Forsskål, 1775)

FAO names: Tenpounder (En)

Local name(s): A Shin Poke.

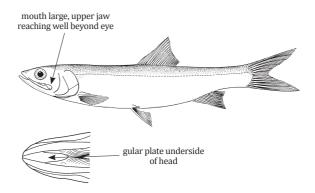
Habitat: Pelagic in coastal waters entering lagoons and estuaries.

Fisheries: Gillnets.

**Distinctive Characters:** Teeth on jaws villiform; no spines in fins; single dorsal fin with 20–27 rays, its origin a little behind mid-point of body; anal fin short, with 14–17 rays, its origin well behind dorsal fin base; pelvic fin slightly in front of dorsal fin origin; scales very small, about 100 on lateral line.

**Colour:** Back blue-grey, sides silvery with a yellow tinge; fins faint yellow.

**Remarks:** This is probably a complex of species that have not yet been sorted out.



Size: To 100 cm, common 50 cm (TL)

## MEGALOPIDAE

Tarpons

Megalops cyprinoides (Broussonet, 1782)

Local name(s): Ka Law Le'.

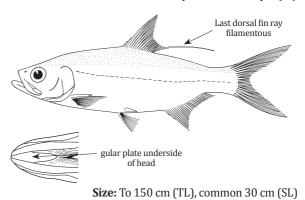
Habitat: Pelagic in coastal waters entering lagoons and estuaries.

Fisheries: Gillnets.

**Distinctive Characters:** Lower jaw projecting; fins lacking spines; dorsal fin origin at about midpoint of body; anal fin origin a little behind end of dorsal fin base; 26–27 branchiostegal rays; large scales, 30–40 on lateral line.

Colour: Back blue-green, flanks silvery.

FAO names: Indo-Pacific tarpon (En) Tarpon Indo-Pacifique (Fr)



ALBULIDAE

Bonefishes

Albula argentea (Forster, 1801)

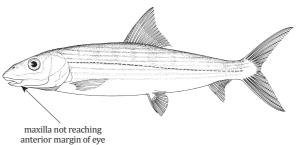
Local name(s): Nga Gyee Seik.

**Habitat:** Inshore, shallow waters on sandy and muddy bottoms.

Fisheries: Gillnets.

**Distinctive Characters:** Lower jaw angular, with a pointed symphysis; 68–73 pored lateral line scales; 8 scale rows above lateral line; tip of pelvic fin not reaching to anus.

**Colour:** Head and body bright silvery, white on side and below; posterior margin of caudal fin black; base of pectoral and pelvic fins slightly yellow.



FAO names: Indo-Pacific Longjaw bonefish (En)

Size: To 70 cm (SL)

## **SYNAPHOBRANCHIDAE**

Cutthroat eels

#### Dysomma bucephalus Alcock, 1889

Local name(s): Pin Le' Nga Shint.

Habitat: Benthopelagic from 161 to 353 m depth. Fisheries: Deep bottom trawls.

**Distinctive Characters:** Eyes small; pectoral fins present; dorsal fin origin well in front of anus; scales absent; 2 intermaxillary teeth present; a row of 4 large, compound teeth on vomer; anterior dentary teeth enlarged; branchial region expanded; gill openings well-separated on ventral midline; no open pores on lateral line; vertebrae 107.

**Colour:** Body dirty pale greyish tan, darker on branchial region; margins of dorsal, anal and caudal fins black; pectoral fin black basally.



Local name(s): Pin Le' Nga Shint.

Habitat: Benthopelagic from 432 to 505 m depth. Fisheries: Deep bottom trawls.

**Distinctive Characters:** Eyes relatively small; pectoral fins absent; dorsal fin origin well in front of anus; scales absent; 2 intermaxillary teeth present; a row of 4-5 large, compound teeth on vomer; widely spaced large canines on anterior half of dentary (lower jaw), followed by a row of tiny conical, closely set teeth on posterior half; gill openings well-separated on ventral midline; no open pores on lateral line; vertebrae 153–157.

**Colour:** Head and body uniformly medium brown with paler snout; margins of dorsal, anal and caudal fins black.

### Dysommina sp.

Local name(s): Pin Le' Nga Shint.

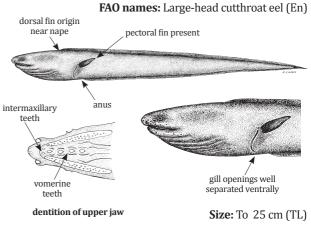
Habitat: Benthopelagic at 260 m depth.

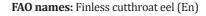
Fisheries: Deep bottom trawls.

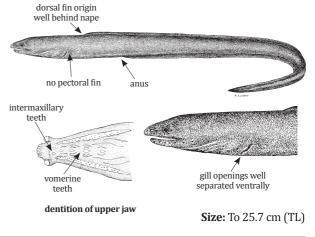
**Distinctive Characters:** Eyes relatively small; dorsal fin origin over pectoral fin; anus about one head length behind pectoral fin; gill opening relatively small, below and separated from pectoral fin; intermaxillary teeth absent; vomer with a few enlarged, compound teeth in a single row; maxillary and mandibular teeth small, multiserial; no open pores on lateral line; vertebrae 120+ (tip of tail missing).

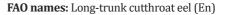
**Colour:** Medium brown or gray, ventral surface near tip of tail darker.

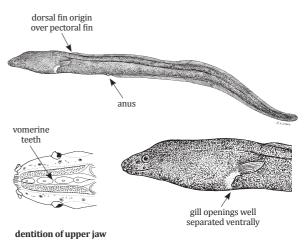
**Remarks:** The identity of this species is uncertain. It needs to be critically compared to other *Dysommina* specimens held in museun collections worldwide (D.G. Smith pers. comm., 2017).











Size: To at least 25.5 cm (TL)

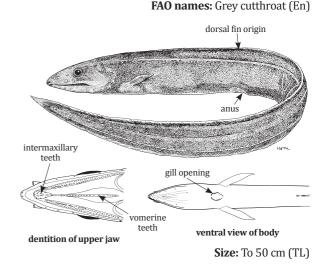
### Synaphobranchus affinis Günther, 1877

Local name(s): Pin Le' Nga Shint.

Habitat: Benthopelagic from 290 to 2 334 m depth. Fisheries: Deep bottom trawls.

Distinctive Characters: Eyes relatively large; gill openings united ventrally; dorsal fin origin at or just posterior to level of anus; pectoral fin present; musculature very firm; scales oval, not so regularly arranged; vomerine teeth uniserial without enlarged teeth anteriorly (largest teeth only subequal to smallest tooth in intermaxillary tooth patch); 25-29 lateral line pores to level of anus; vertebrae 128-140.

Colour: Uniformly blackish purple.



**MURAENIDAE** 

Morays

Echidna nebulosa (Ahl, 1789)

Local name(s): Nga Kywet, Pin Le' Nga Shint. Habitat: Shallow reef areas from 2 m to 48 m. Fisheries: Line gears, baited traps.

Distinctive Characters: Anus in about middle of body; head length 8.6-8.9 in TL; trunk length 2.6-2.7 in TL; body depth at gill opening 19.1-26.5 in TL; teeth broadly conical, blunter with age; teeth uniserial on jaws (maxillary and mandibular), becoming biserial with age; a patch on intermaxillary; teeth on vomer molariform in 2 rows: 120-125 vertebrae.

**Colour:** Variable, but body typically milky yellow with 2-3 rows of large black vertical blotches, sometimes reduced to star-like patterns, on the body; anterior nostrils and iris yellowish.

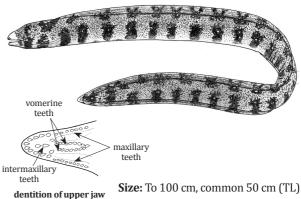
### *Gymnothorax favagineus* Bloch & Schneider, 1801

Local name(s): Nga Kywet/Pin Le' Nga Shint. Habitat: Inhabits reef flats and outer reef slopes of continental reefs.

Fisheries: Line gears, baited traps.

Distinctive Characters: Anus before midbody: head length 7.2-9 in TL; trunk length 2.7-3.1 in TL; body depth at gill opening 10.8–17 in TL; maxillary teeth uniserial; usually 4 large canines anteriorly on each side, the more posterior teeth much smaller and angling backward; intermaxillary teeth a single median row, longer than lateral canines; 138-144 vertebrae.

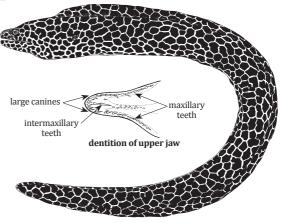
**Colour:** Pale yellowish white to light brownish with numerous close-set large rounded or polygonal black spots, the pale interspaces forming a honeycomb-like pattern.



Size: To 100 cm, common 50 cm (TL)

FAO names: Snowflake moray (En)

FAO names: Laced moray (En)



Size: To 180 cm (TL)

FAO names: Fimbriated moray (En)

### *Gymnothorax fimbriatus* (Bennett, 1832)

**Local name(s):** Nga Kywet, Pin Le' Nga Shint. **Habitat:** Occurs in lagoons, reef flats and seaward reefs. Depth range 7–50 m.

Fisheries: Line gears, baited traps.

**Distinctive Characters:** Anus before midbody; head length 6.7–7.1 in TL; trunk length 2.9–3.4 in TL; body depth at gill opening 14–20 in TL; teeth in jaws (maxillary and mandibular) uniserial with large canines anteriorly; intermaxillary teeth a single median row, longer than lateral canines; 128–142 vertebrae.

**Colour:** Pale yellowish white to brownish with numerous, blackish brown spots in 3-4 longitudinal rows (spots may link vertically forming several wavy bars); comb-like bands on posterior part of median fins.

### Gymnothorax flavimarginatus (Rüppell, 1830)

**Local name(s):** Nga Kywet, Pin Le' Nga Shint. **Habitat:** Occurs in coral or rocky areas of reef flats and protected shorelines to seaward reefs.

Fisheries: Line gears, baited traps.

**Distinctive Characters:** Anus before midbody; head length 6.5–10 in TL; trunk length 2.9–3.2 in TL; body depth at gill opening 11–18 in TL; teeth in jaws uniserial with large canines anteriorly; intermaxillary teeth a single median row of large canines; vertebrae 129–137.

**Colour:** Body yellowish to brownish, densely mottled with dark brown spots; front of head purplish grey; a black spot on gill opening; posterior margin of median fins with a yellow green margin; juveniles are plain brown (sometimes bright yellow with brown blotches).

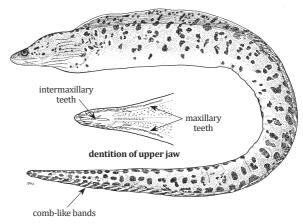


Local name(s): Nga Kywet, Pin Le' Nga Shint. Habitat: Found in lagoon and seaward reefs. Fisheries: Line gears, baited traps.

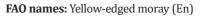
**Distinctive Characters:** Anus before midbody; head length 7.5–7.8 in TL; trunk length 2.9–3.0 in TL; body depth at gill opening 14.4–17.7 in TL; teeth in jaws uniserial all of equal size (small specimens, less than 30 cm TL, may have a few inner maxillary teeth); intermaxillary teeth a

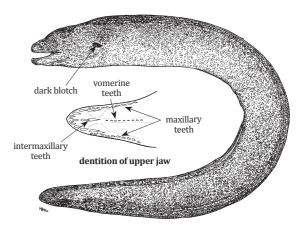
single median row of 2–3 large canines; 140–143 vertebrae.

**Colour:** Brownish, with many large irregular dark brownish blotches, separated from each other by a paler net-like pattern; lower jaw and abdomen paler; blackish corners of mouth and a black spot on gill openings.



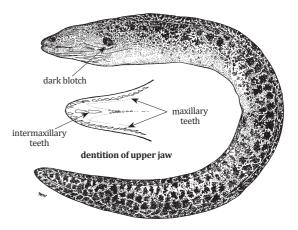
Size: To 80 cm (TL)





Size: To 240 cm (TL)

FAO names: Giant moray (En)



### Gymnothorax minor (Temminck & Schlegel, 1846)

**Local name(s):** Nga Kywet, Pin Le' Nga Shint. **Habitat:** Caught at depths from 67 to 175 m on sandy gravel bottom.

Fisheries: Bottom trawls.

**Distinctive Characters:** Anus before midbody, head length 6.6–10 in TL; trunk length 3.0–3.1 in TL; body depth at gill openings 16–22 in TL; teeth in jaws with fine serrations on anterior and posterior edges; maxillary teeth usually in a single row (small specimens sometimes with 1 or 2 inner rows anteriorly); 0–3 intermaxillary teeth; 129–143 vertebrae.

**Colour:** Body behind gill opening with 15–22 bars, well defined on ventral half of body, obscured and nearly lost by spots on dorsal half; spots on head more or less round, not in form of horizontal lines.

### Gymnothorax reticularis Bloch, 1795

Local name(s): Nga Kywet, Pin Le' Nga Shint. Habitat: Caught at depths to 100 m on sandy gravel bottom.

Fisheries: Bottom trawls.

**Distinctive Characters:** Anus slightly before midbody; head length 6.5–8.2 in TL; trunk length 3.1–3.3 in TL; body depth at gill openings 16–18.4 in TL; teeth in jaws with fine serrations on anterior and posterior edges; maxillary teeth usually in a single row (small specimens sometimes with 1 or 2 inner rows anteriorly); 0–3 intermaxillary teeth; 114–138 vertebrae.

**Colour:** Body behind gill opening with 15–20 bars, more prominent on ventral half of body, obscured by spots on dorsal half; head and chin with closely spaced brown spots separated by narrow pale interspaces giving the impression of horizontal lines, especially in branchial region.

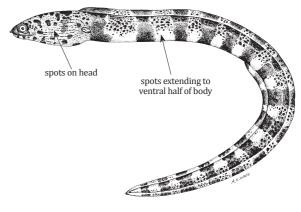
### Gymnothorax cf. sokotrensis Kotthaus, 1968

Local name(s): Nga Kywet, Pin Le' Nga Shint. Habitat: Depth range: 173–200 m depth. Fisheries: Bottom trawls.

**Distinctive Characters:** Anus in about middle of body; head length 6.8–9.4 in TL; trunk length 2.8 in TL; body depth at gill opening 9–14 in TL; teeth in jaws uniserial, tall, strong, serrated; median intermaxillary teeth absent; teeth on vomer hidden in folds of skin; 140–143 vertebrae.

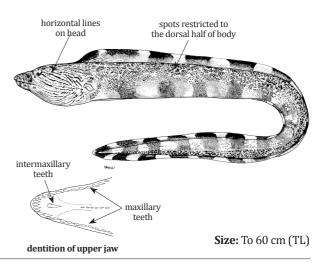
**Colour:** Reddish brown, with many white spots, the largest about the size of the eye.

**Remarks:** The Myanmar specimen needs to be checked against the holotype of *G. sokotrensis* for confirmation.

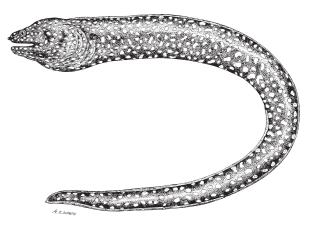


Size: To 54.5 cm (TL)





FAO names: Sokotra moray (En)



FAO names: Barspotted moray (En)

237

Size: To at least 61 cm (TL)

### Gymnothorax thyrsoideus (Richardson, 1844)

**Local name(s):** Nga Kywet, Pin Le' Nga Shint. **Habitat:** Occurs on reef flats where it is usually encountered in shallow tidal pools.

Fisheries: Line gears, baited traps.

**Distinctive Characters:** Anus before midbody; head length 9.1–9.9 in TL; trunk length 2.6–3.4 in TL; body depth at gill openings 16.5–17.4 in TL; teeth in jaws biserial (in two rows) with large canines anteriorly; vomerine teeth biserial and diverging anteriorly with the posterior most 3–4 teeth forming a single row; 125–137 vertebrae.

**Colour:** Cream brownish with many dark brown spots; anterior half of head uniformly dark brown; small individuals with white median fin margins and pale snout; eye white in life.

#### Strophidon sathete (Hamilton, 1822)

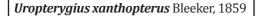
**Local name(s):** Nga Kywet, Pin Le' Nga Shint. **Habitat:** Benthic, in shallow coastal waters, muddy areas, estuaries and river mouths.

Fisheries: Line gears, bottom trawls.

**Distinctive Characters:** Body very elongated; anus well before midbody; head length 8.5–14 in TL; trunk length 2.6–3.4 in TL; body depth at gill openings 25–49 in TL; eye far forward over anterior third of gape; jaw (maxillary and mandibular) teeth biserial for most of their extent; vomerine teeth uniserial, short and sharp; 183–212 vertebrae.

**Colour:** Head, body and fins uniform brown.

**Remarks:** This is probably a complex of species that have not yet been sorted out.

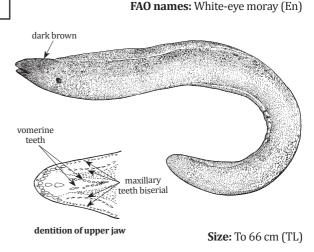


**Local name(s):** Nga Kywet, Pin Le' Nga Shint. **Habitat:** Found in crevices of shallow reefs, as well as drop-offs.

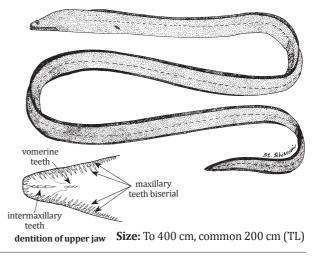
Fisheries: Line gears, baited traps.

**Distinctive Characters:** Dorsal and anal fins restricted to tail tip; 2 lateral line pores above and ahead of gill opening; anus near midlength; head length 7.5 in TL; body depth at gill openings 25–30 in TL; teeth in jaws biserial with inner teeth larger and depressible; intermaxillary with few depressible fangs; vomerine teeth small and uniserial; 118–126 vertebrae.

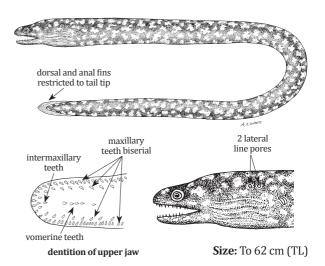
**Colour:** Mottled brown with prominent white specks especially on the head; caudal tip yellow.



FAO names: Slender giant moray (En)



FAO names: Freckleface reef-eel (En)



## COLOCONGRIDAE

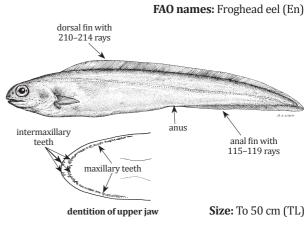
Colocongrids

### Coloconger raniceps Alcock, 1889

Local name(s): Nga Shint. Habitat: Depth range 300-1 134 m. Fisheries: Deep bottom trawls.

Distinctive Characters: Body short and stubby; snout blunt and short, its length 3/4 of eye diameter; anus placed well behind mid-length; maxillary and mandibular teeth uniserial; intermaxillary teeth in 2 transverse rows, the posterior row continuous with maxillary teeth: no vomerine teeth: dorsal fin origin over base of pectoral or slightly further back; dorsal fin considerably higher than anal fin; 22 pectoral fin rays; 69 lateral line pores before anus; 145 vertebrae.

Colour: Blackish purple; peritoneum black.



## **OPHICHTHIDAE**

Snake eels - Worm eels

Neenchelys buitendijki Weber & de Beaufort, 1916

FAO names: Fintail serpent eel (En)

Local name(s): Mway Nga Shint.

Habitat: Benthic, in shallow coastal waters down to 72 m depth.

Fisheries: Bottom trawls.

Distinctive Characters: Body robust, its depth at anus 19–32 in TL: head length 7.8–8.5 in TL: pectoral fin longer than snout, 4.0-4.8 in HL; anterior nostril tubular, posterior nostril above lip, opening entirely outside mouth (true of all *Neenchelys* species); origin of dorsal fin well before anal fin origin; predorsal length 5.7-6.0 in TL; large gill opening, its height 6.8-8.5 in HL; teeth conical, slender, uniserial in jaws and vomer; total vertebrae 135-148.

Colour: Light brown dorsally; throat and abdomen pale; posterior portions of dorsal and anal fins black.

### Neenchelys cheni (Chen & Weng, 1967)

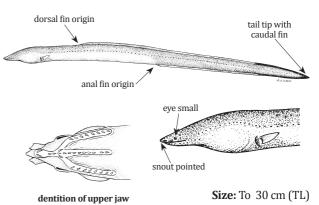
Local name(s): Mway Nga Shint.

Habitat: Benthic, in shallow coastal waters down to 72 m depth. Adults apparently have a pelagic lifestyle.

Fisheries: Bottom and midwater trawls.

Distinctive Characters: Body moderately elongate, its depth at anus 29–40 in TL; head length 10.1–11.6 in TL; pectoral fin shorter than snout, 7.0-7.8 in HL; origin of dorsal fin slightly posterior to anal fin origin; predorsal length 2.4-2.7 in TL; teeth conical, slender, uniserial in jaws and vomer; total vertebrae 180-183.

**Colour:** Ligth brown grevish dorsally; throat ad abdomen pale; posterior portions of dorsal and anal fins black.



dorsal fin origin eve moderate anal fin origin snout broad tail tip with caudal fin dentition of upper jaw Size: To 37 cm (TL)

FAO names: Chen's worm eel (En)

### Ophichthus cephalozona Bleeker, 1864

Local name(s): Mway Nga Shint.

Habitat: Burrows in muddy to sandy inshore areas. Fisheries: Bottom trawls.

**Distinctive Characters:** Body moderately elongate, cylindrical, tapering and laterally compressed posteriorly; snout and tail tip pointed; body depth behind gill openings 30 in TL; anus slightly before midbody; head length 11 in TL; pectoral fin 4 in head length; eye ending before corner of jaw; posterior nostril in upper lip, opening into mouth, not visible externally; teeth pointed, small, numerous and uniserial; vertebrae 154–157.

**Colour:** Body and tail uniform brown, belly paler; snout and jaw black, a pale band behind eye, followed by a black saddle followed by a pale band; median fins black with a thin white margin; pectoral fins dark.

Ophichthus lithinus (Jordan & Richardson, 1908)

Local name(s): Mway Nga Shint.

Habitat: Burrows in muddy to sandy inshore areas. Fisheries: Bottom trawls.

**Distinctive Characters:** Body elongate, cylindrical, tapering and laterally compressed posteriorly; snout and tail tip pointed; body depth behind gill openings 26–39 in TL; anus at midbody; head length 9.5–10.8 in TL; pectoral fin 8 in HL; notable barbel beneath mid-snout; eye ending before corner of jaw; posterior nostril in upper lip, opening into mouth, not visible externally; teeth pointed, uniserial, medium-sized and retrorse; vertebrae 147–157.

**Colour:** Head and body brownish yellow, overlain dorsally by irregular brown saddles; a large dark spot at mid-head; fins pale.

### Ophichthus naga McCosker & Psomadakis, 2018

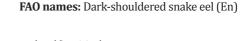
Local name(s): Mway Nga Shint.

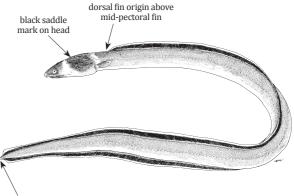
Habitat: Depth range: 455-459 m.

Fisheries: Deep bottom trawls.

**Distinctive Characters:** Body stout, cylindrical, slightly compressed posteriorly; snout and tail tip not notably pointed; body depth behind gill openings 23 in TL; anus at midbody; HL 8.5 in TL; pectoral fin 3.5 in HL; snout short, lower jaw reaches ahead of anterior nostril bases; eye ending above corner of jaw; posterior nostril a hole above upper lip, covered by a flap; teeth small, pointed, numerous and mostly uniserial; vertebrae 153.

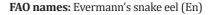
**Colour:** Head and body dark brown; inner margin of lips pale; median fins dark with a pale margin; pectoral fins dark with a pale ventral margin; tail tip, anal opening, inside of mouth, and peritoneum pale.

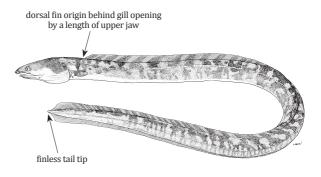




finless tail tip

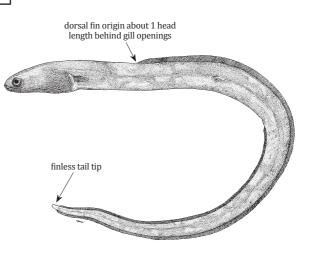
Size: To 115 cm (TL)





Size: To 148 cm (TL)

FAO names: Deepwater demonic snake eel



Size: At least to 57 cm (TL)

### Ophichthus nansen McCosker & Psomadakis, 2018

#### FAO names: Nansen's snake eel (En)

Local name(s): Mway Nga Shint. Habitat: Depth range: 103–106 m. Fisheries: Deep bottom trawls.

**Distinctive Characters:** Body elongate, cylindrical tapering and laterally compressed posteriorly; snout acute but not sharply pointed; tail tip sharply pointed; body depth behind gill openings 29 in TL; tail longer tan body, 1.6 in TL; head length 12 in TL; pectoral fin 2.76 in head length; a notable barbel behind anterior nostril base; eye large, ending before corner of jaw; posterior nostril a hole above upper lip, covered by a flap; teeth pointed, small, numerous and biserial; vertebrae 146.

**Colour:** Head and body dark gray-brown, paler in throat region and from mid-flanks to belly; median fins black; pectoral fins black, their upper margin pale.



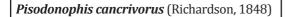
Local name(s): Mway Nga Shint.

Habitat: Lagoons and estuaries, enters freshwater and paddy fields.

Fisheries: Bottom trawls.

**Distinctive Characters:** Body cylindrical, compressed only along extreme tail tip; anterior nostril tubular, posterior along lower edge of lip; teeth granular to molariform, multiserial bands in jaws and vomer, but sharper in jaws; vertebrae 167–170.

**Colour:** Uniformly brownish olive above, lighter below; dorsal fin with a narrow black edge.

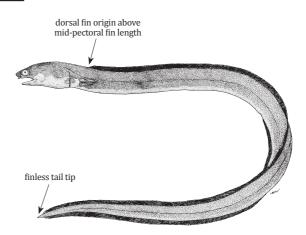


#### Local name(s): Mway Nga Shint.

Habitat: Lagoons and estuaries, enters freshwater. Fisheries: .

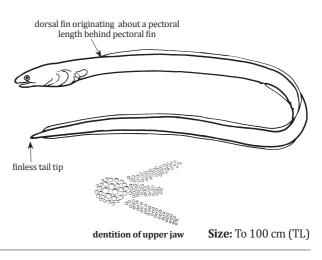
**Distinctive Characters:** Body cylindrical, compressed only along extreme tail tip; anterior nostril tubular, posterior along lower edge of lip; teeth granular to molariform, multiserial bands in jaws and vomer, but sharper in jaws; vertebrae 152–163.

**Colour:** Uniformly brownish olive above, light yellow below; dorsal fin with a narrow black edge.

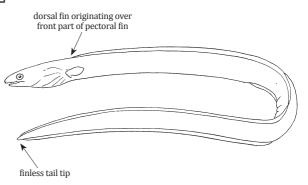


Size: To 40 cm (TL)

FAO names: Rice-paddy eel (En) Serpenton des rizières (Fr)



#### FAO names: Longfin snake-eel (En)



### Xyrias revulsus Jordan & Snyder, 1901

#### Local name(s): Mway Nga Shint.

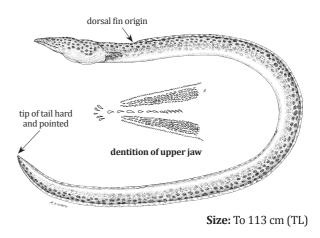
**Habitat:** Benthic, on soft bottoms between a few to 300 m.

### Fisheries: Bottom trawls.

**Distinctive Characters:** Body cylindrical, compressed only along extreme tail tip; HL 9.1–9.6 in TL; pectoral fin 5.3–6.1 in TL; snout length more than twice in upper jaw; posterior margin of orbit above middle of upper jaw; anterior nostril in a short tube; posterior nostril in upper lip; teeth strong, conical, not extremely enlarged, those of vomer largest, uniserial and widely spaced; inner row of maxillary teeth in a broad patch; vertebrae 155–160.

**Colour:** Body and head covered with numerous small to medium brown spots.

#### FAO names: Strict snake eel (En)



## MURAENESOCIDAE

Pike congers

### Congresox talabonoides (Bleeker, 1853)

FAO names: Indian pike conger (En)

Local name(s): Nga Shwe.

**Habitat:** Benthic, on soft bottoms, in estuaries, lagoons and shallow coastal waters down to 100 m. **Fisheries:** Bottom trawls, line gears.

**Distinctive Characters:** Body elongate, cylindrical in front, compressed along tail; gill openings almost meeting at ventral midline of body; large vomerine teeth needle-like, without basal cusps; pectoral fins relatively small, about 4 times in head length; 57–68 dorsal fin rays and 35–40 lateral line pores before level of anus, respectively; vertebrae 132–145.

**Colour:** Head and body yellow, tinged with bronze, white below; dorsal and anal fins with narrow black edges.

### Congresox talabon (Cuvier, 1829)

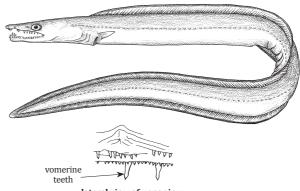
Local name(s): Nga Shwe.

**Habitat:** Lives in coastal waters down to about 100 m and in estuaries, over soft bottoms.

Fisheries: Bottom trawls, line gears.

**Distinctive Characters:** similar to *Congresox talabanoides* (Cuvier, 1829) but length of pectoral fins longer, about 3.2 in head; dorsal fin rays before anus 70–75; lateral line pores before anus 41–42; vertebrae 143–149

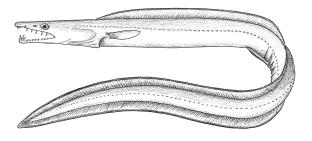
**Colour:** Head and body yellow, tinged with bronze, white below; dorsal and anal fins with narrow, black edges.



lateral view of upper jaw

Size: To 250 cm, common 180 cm (TL)

#### FAO names: Yellow pike conger (En)



### Muraenesox bagio (Hamilton, 1822)

Local name(s): Nga Shwe.

**Habitat:** Benthic on soft bottoms in deeper waters down to 100 m.

Fisheries: Bottom trawls, line gears.

**Distinctive Characters:** Body elongate, cylindrical in front, compressed along tail; gill openings almost meeting at ventral midline of body; large vomerine teeth compressed, "blade-like" with 1–2 basal cusps; principal teeth in lower jaw triangular; snout long; eye diameter 3 in snout length; interorbital width about 10.7 in HL; posterior nostrils only slightly nearer to eye than to anterior nostrils; 47–59 dorsal fin rays and 33–39 lateral line pores before level of anus, respectively.

**Colour:** Light greyish brown with olive bronze above, lighter below; dorsal and anal fins with narrow black edges.

### Muraenesox cinereus (Forsskål, 1775)

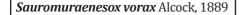
Local name(s): Nga Shwe.

**Habitat:** Benthic, on soft bottoms, in estuaries, lagoons and shallow coastal inlets down to about 100 m.

Fisheries: Bottom trawls, line gears.

**Distinctive Characters:** Similar to *Muraenesox bagio* but snout longer, eye diameter 2–2.5 in snout length; interorbital width about 8 times in HL; 66–78 dorsal fin rays and 40–47 lateral line pores before level of anus, respectively.

**Colour:** Light to dark greyish brown above, lighter below; dorsal and anal fins with narrow black edges.

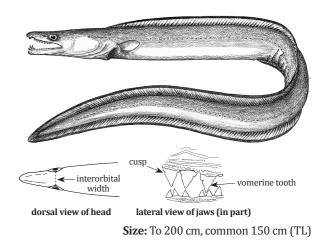


#### Local name(s): Nga Shwe.

Habitat: Benthopelagic between 274–469 m depth. Fisheries: Deep bottom trawls.

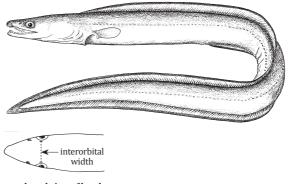
**Distinctive Characters:** Trunk high and well marked off from the head and tail; snout long, pointed; upper jaw overlapping the lower; complete row of teeth in each jaw and a 2<sup>nd</sup> incomplete row in the maxilla; intermaxillary teeth and those at the mandibulary symphysis fang-like; 4 large conical teeth slightly recurved, increasing in size from anterior to posterior, in a row in the vomer; dorsal and anal fins poorly developed; dorsal fin origin well anterior to gill opening; pectoral fin longer than snout; lateral line well developed.

**Colour:** Head and dorsum blackish purple; abdomen pale silvery slate.



FAO names: Daggertooth pike conger (En)

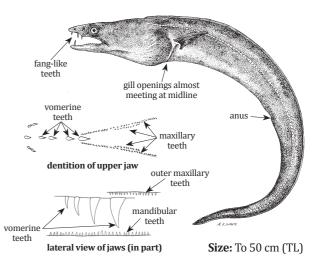
Murénésoce-dague (Fr)



dorsal view of head

Size: To 220 cm, common 80 cm (TL)

#### FAO names: Large-head pike conger (En)



# NETTASTOMATIDAE

Duckbill eels

#### Facciolella sp.

244

Local name(s): Be' Hnote Thee Nga Shint. Habitat: Bentopelagic between 288–291 m depth. Fisheries: Deep bottom trawls.

**Distinctive Characters:** Body elongate, cylindrical anteriorly, compressed near tail; pectoral fin absent; dorsal fin origin slightly before gill opening; anterior nostril tubular, near tip of snout; posterior nostril opening as a slit in upper lip before eye; teeth small, conical, multiserial; intermaxillary tooth patch longer than broad, separated from vomer; vomerine tooth patch elongate, about <sup>3</sup>/<sub>4</sub> length of maxillary patch.

**Colour:** Brown-gray above lateral line, pale below. **Remarks:** Generic revision needed to establish the specific identity of the *Facciolella* specimen collected in Myanmar (D.G. Smith pers. com., 2017).

Nettastoma solitarium Castle & Smith, 1981

Local name(s): Be' Hnote Thee Nga Shint.

Habitat: Bentopelagic between 415–610 m depth. Fisheries: Deep bottom trawls.

**Distinctive Characters:** Body elongate, round in cross section; tail slender and attenuate, tip delicate and easily damaged; pectoral fin absent; dorsal fin origin above gill opening; posterior nostril near anterodorsal corner of eye; lateral line pores before anus 42–45; maxillary and mandibular teeth in bands; intermaxillary tooth patch short, continuous with maxillary teeth; vomerine tooth patch elongate, reaching level of eye, median vomerine teeth somewhat enlarged. **Colour:** Brownish purple; opercular region darker; vertical fins and tip of caudal region black-edged.

#### Saurenchelys sp.

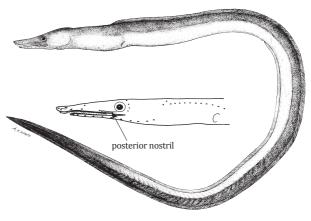
Local name(s): Be' Hnote Thee Nga Shint.

Habitat: Benthopelagic between 80–106 m depth. Fisheries: Deep bottom trawls.

**Distinctive Characters:** Body elongate, cylindrical anteriorly, compressed near tail; preanal length about 1/4 TL; dorsal fin origin slightly behind gill opening; pectoral fin absent; posterior nostril in front of mid-eye; maxillary and mandibular teeth in bands; vomerine tooth patch elongate, with a median series of large teeth and a series of much smaller teeth on each side; teeth present on pterygoid.

**Colour:** Light tan or gray, sometimes with dark pigment on fins and around head.

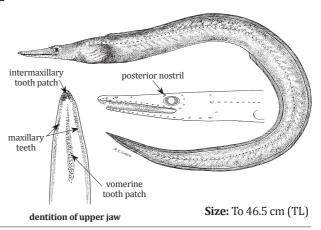
**Remarks:** Generic revision needed to establish the specific identity of the *Saurenchelys* specimens collected in Myanmar (D.G. Smith pers. com., 2017).



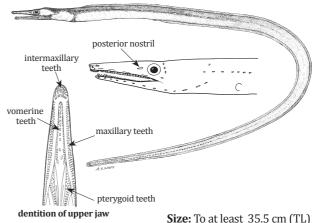
FAO names: Hidden-nostril duckbill eel (En)

Size: To at least 67 cm (TL)

FAO names: Solitary duckbill eel (En)



FAO names: Sawtooth duckbill eel (En)



## CONGRIDAE

Conger eels

### Ariosoma cf. gnanadossi Talwar & Mukherjee, 1977

Local name(s): Pin Lei Nga Shint.

Habitat: Soft bottoms downs to 250 m depth. Fisheries: Bottom trawls.

Distinctive Characters: Dorsal fin origin approximately over gill opening; eye diameter equal to length of snout; well developed flanges on lips; vertical fin rays unsegmented; posterior nostril somewhat below mid-eye level; teeth minute, conical in 2-5 irregular rows on each jaw; intermaxillary tooth patch scarcely visible in front of closed mouth; 44-47 preanal lateral line pores; 141-145 total vertebrae.

Colour: Light brown above, paler below; dorsal and anal fins with a narrow blackish border; pectoral fins usually dusky.

Remarks: Generic revision needed (D.G. Smith pers. com., 2017).

### Bathycongrus nasicus (Alcock 1894)

Local name(s): Pin Lei Nga Shint.

Habitat: Depth range 230–1 040 m. Fisheries: Deep bottom trawls.

Distinctive Characters: Dorsal fin origin over base of pectoral fins; snout projecting in front of lower jaw, its length about twice horizontal eye diameter; flange only on lower lip; vertical fin rays segmented; posterior nostril at mideve level; maxillary and mandibular teeth multiserial; vomerine teeth in a small cluster of sharp teeth anteriorly; intermaxillary and anterior mandibular teeth slightly enlarged, but not fang-like; 29–32 preanal lateral line pores; cephalic pores along upper lip enlarged: 149-152 total vertebrae.

**Colour:** Head and dorsum brownish purple; abdomen ivory white; opercular region darker; black peritoneum.

### Bathymyrus echinorhynchus Alcock, 1889

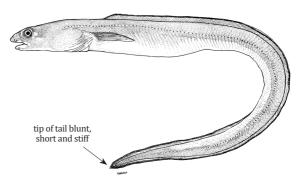
Local name(s): Pin Lei Nga Shint.

Habitat: Benthic on sandy or muddy bottoms; depth range: 78-300 m.

Fisheries: Bottoms trawls.

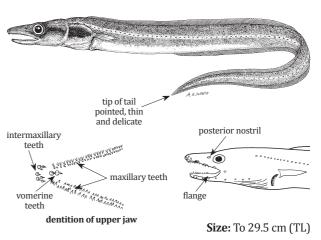
Distinctive Characters: Dorsal fin origin slightly behind the base of pectoral fins; eye diameter equal to length of snout; well-developed flanges on lips; posterior nostril below mid-eye level; vertical fin rays unsegmented; uniserial incisiform teeth on each side of jaws; intermaxillary tooth patch fully exposed and curving upward on anterior face of snout, its height less than half of eve diameter; cephalic pores small.

Colour: Uniformly brownish yellowish; fins light.

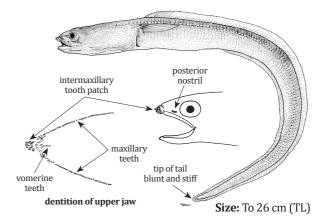


Size: To 37.6 cm (TL)

FAO names: None (En)



FAO names: Rough-nose conger (En)



FAO names: Indian conger (En)

FAO names: Long tooth conger (En)

### Bathyuroconger cf. vicinus (Vaillant 1888)

Local name(s): Pin Lei Nga Shint.

Habitat: Benthopelagic; depth range 120–1 318 m. Fisheries: Deep bottom trawls.

**Distinctive Characters:** Dorsal fin originating over pectoral fin; pectoral fins small and delicate; mouth terminal; cephalic pores along upper lip enlarged; flange only on lower lip; vertical fin rays segmented; posterior nostril at about mideye level; teeth on maxillary and dentary biserial; intermaxillary and anterior mandibular teeth enlarged and fang-like; vomerine teeth in a small cluster of sharp teeth anteriorly; 42–47 preanal lateral line pores; ca. 182 (for Myanmar specimens) total vertebrae.

**Colour:** Myanmar specimens uniformly light purple; opercle with bluish tinge; lining of mouth and gill slits jet-black.

**Remarks:** Generic revision needed (D.G. Smith pers. com., 2017).

Blachea xenobranchialis Karrer & Smith, 1980

#### Local name(s): Pin Lei Nga Shint.

**Habitat:** Benthic on soft bottom of the continental slope and shelf; depth range: 178–400 m.

Fisheries: Deep bottom trawls.

**Distinctive Characters:** Dorsal fin originating behind base of pectoral fin; well-developed flanges on lips; vertical fin rays segmented; posterior nostril at mideye level; pectoral fins slightly longer than snout; tail very tapered, its point flexible; ends of some branchiostegal rays protruding freely through gill opening; maxillary and mandibular teeth small, conical, always uniserial; 3–5 enlarged intermaxillary teeth anteriorly on each side; a transverse series of teeth on head of vomer; lateral line very broad, nearly 1/3 the height of the body; pores at the centre of lateral line greatly enlarged. **Colour:** Silvery gray with scattered melanophores on ventral side; dark blotch behind gill opening.

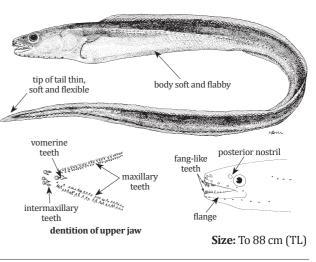
### Conger cinereus Rüppell, 1830

Local name(s): Pin Lei Nga Shint.

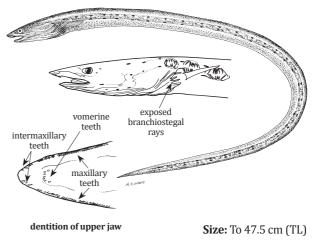
Habitat: Benthic on reefs and active at night. Fisheries: Bottom trawls, line gears.

**Distinctive Characters:** Dorsal fin originating over middle of pectoral fins; well-developed flanges on lips; vertical fin rays segmented; posterior nostril at mideye level; 2 rows of teeth in jaws, those of outer row larger, closely set and compressed to form a cutting edge; 6<sup>th</sup> infraorbital pore located close and slightly above posterior angle of jaw; 36–39 preanal lateral line pores.

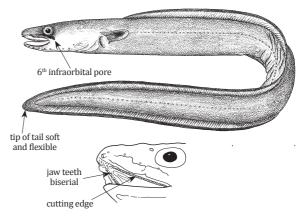
**Colour:** Grey to brown with a broad black margin on median fins; a black spot on pectoral fins (absent on juveniles) and a black bar under the eye; in life with dark crossbars (only at night).



FAO names: Frillgill conger (En)



FAO names: Longfin conger (En)



### 'Congromuraena' musteliceps Alcock, 1894

Local name(s): Pin Lei Nga Shint. Habitat: Depth range 265–469 m. Fisheries: Deep bottom trawls.

**Distinctive Characters:** Dorsal origin slightly ahead of gill opening; pectoral fins slender; snout acutely pointed, much longer than eye; no flange on upper lip, a narrow flange on lower lip; vertical fin rays segmented; posterior nostril at mideye level; teeth minute, conical, those on intermaxillary and particularly vomer much blunter than jaw teeth; outermost jaw teeth larger than remainder; all teeth multiserial; 33–34 preanal lateral line pores; cephalic pores reduced.

**Colour:** Dark purple-brown becoming silvery on the abdomen; opercle black; edges of dorsal and anal fins black; peritoneum pale.

**Remarks:** This species is provisionally included under the genus '*Congromuraena*', with quotation marks indicating its unknown generic position.

#### Gavialiceps taeniola (Alcock, 1889)

Local name(s): Nga Shwe.

**Habitat:** Benthopelagic on continental slope between 350–1 046 m.

Fisheries: Deep bottom trawls.

**Distinctive Characters:** Snout long and slender with upper jaw strongly protruding over the lower jaw; lips reduced; vertical fin rays segmented; posterior nostril at mideye level; teeth conical, tightly spaced in 3 rows on jaws; vomer with large median teeth; pectoral fins absent or reduced to a rudiment; 40–43 (usually 40) preanal lateral line pores; 46–51 abdominal vertebrae.

**Colour:** Head black, body dark brown; peritoneum pigmented.

#### Parabathymyrus sp.

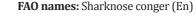
**Local name(s):** Pin Le' Nga Shint. **Habitat:** Depth range: 109–113 m.

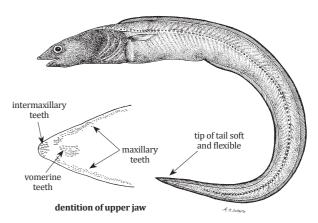
Fisheries: Deep bottom trawls.

**Distinctive Characters:** Dorsal fin origin over base of pectoral fin; snout relatively short and blunt; eye large; preanal length about 40% of TL; anterior nostril tubular, near tip of snout; posterior nostril on upper lip, covered by a flap; vertical fin rays unsegmented; teeth small, conical; intermaxillary tooth patch slightly longer than broad; maxillary and mandibular teeth uniserial for most of length; vomerine teeth in a short median row, cephalic pores reduced.

**Colour:** Light brown, paler below, vertical fins edged in black posteriorly.

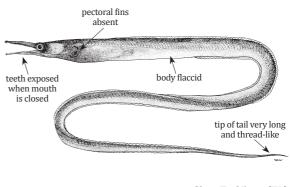
**Remarks:** Generic revision needed to establish the specific identity of the *Parabathymyrus* specimen collected in Myanmar (D.G. Smith pers. com., 2017).





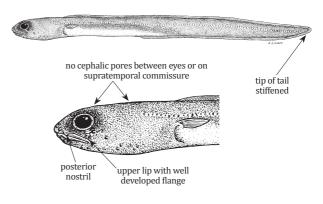
Size: To 45 cm (TL)

FAO names: Gavial eel (En)



Size: To 85 cm (TL)

FAO names: Shortnose conger (En)



FAO names: Small-toothed conger (En)

### *Rhynchoconger squaliceps* (Alcock, 1894)

#### Local name(s): Pin Le' Nga Shint.

Habitat: Found on soft bottoms down to 500 m depth.

Fisheries: Bottom trawls.

**Distinctive Characters:** Dorsal fin origin in front of base of pectoral fins; upper jaw projects in front of lower jaw, leaving intermaxillary teeth exposed; small flange on upper lip; vertical fin rays segmented; posterior nostril at mideye level; intermaxillary teeth small, conical, in a multiserial patch; vomerine teeth similar in shape; maxillary and dentary teeth minute in irregular rows; no enlarged teeth present; 27–33 preanal lateral line pores.

**Colour:** Dorsal side of head and body olive-grey, ventral side white; edges of dorsal and anal fins black; peritoneum pale.

### Uroconger cf. lepturus (Richardson, 1845)

Local name(s): Pin Le' Nga Shint.

Habitat: Offshore on soft sand-mud bottoms.

Fisheries: Bottom trawls.

**Distinctive Characters:** Dorsal fin originating over base of pectoral fin; pectoral fins small and delicate; flanges on lips poorly developed; vertical fin rays segmented; posterior nostril at mideye level; teeth very sharp and prominent, those on maxillary and dentary biserial, forming a band, but no cutting edge; vomerine teeth with a small patch at anterior end followed by a single row extending far back on roof of mouth; 42–44 preanal lateral line pores.

**Colour:** Light greyish brown, darker on opercle, the lower surface of head and trunk white; lateral line pores white; posterior part of dorsal and anal fins black; peritoneum pale.

Remarks: Generic revision needed.

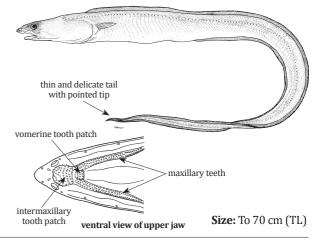
### Xenomystax trucidans Alcock, 1894

Local name(s): Pin Lei Nga Shint.

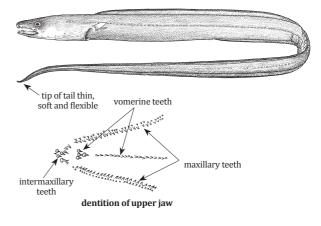
Habitat: Bathydemersal between 767–1 316 m depth. Fisheries: Deep bottom trawls.

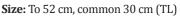
**Distinctive Characters:** Dorsal fin origin slightly ahead of gill opening; pectoral fins narrow, pointed, more than half the snout length; snout depressed and sharply pointed, nearly 4 times eye diameter; lips reduced; vertical fin rays segmented; posterior nostril at mideye level; teeth caniniform in broad bands, mostly depressible; inner row of maxillary and mandibular teeth separated from outer rows by an edentulous groove; maxillary and lateral mandibular teeth exposed when mouth closed; gill opening wide, separated by a very narrow interspace.

**Colour:** Uniformly blue-black; pores of head and lateral line white.

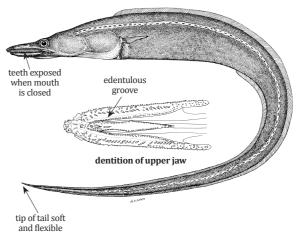


FAO names: Slender conger (En)





### FAO names: Bristletooth conger (En)



Size: To 78 cm (TL)

### MORINGUIDAE

Spaghetti eels

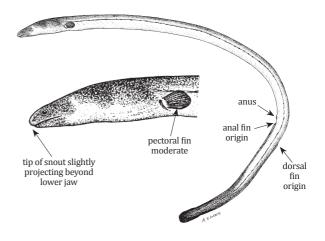
#### Moringua sp.

Local name(s): Pin Le' Nga Shint. Habitat: Depth range: 51-53 m. Fisheries: Bottom trawls.

Distinctive Characters: Dorsal fin origin behind anus; anal fin origin slightly but distinctly behind anus; anus far behind midlength, preanal length about 2/3 TL; anterior nostril with a short raised rim, near tip of snout; posterior nostril with a raised rim, in front of mid-eve; teeth conical, moderate in size: intermaxillary teeth arranged in a lateral series on each side continuous with maxillary teeth, and one or two median teeth continuous with vomerine teeth; vomerine teeth biserial, extending nearly to end of maxillary teeth; maxillary and mandibular teeth uniserial; pores not evident on head or body.

Colour: Dark brown, lighter on underside of head and throat, fins nearly black at posterior end.

Remarks: The Moringuidae is a poorly understood family, and the number and distribution of species is uncertain. The Myanmar specimen resembles Moringua raitaborua (Hamilton, 1822), found from India to Indonesia, in the moderately elongate body (compared to other species) and the slightly protruding upper jaw, but further studies are necessary to define that species adequately (D.G. Smith pers. com., 2017).



FAO names: Short-body spaghetti eel (En)

Size: To at least 38.5 cm (TL)

### **NEMICHTHYIDAE**

Snipe eels

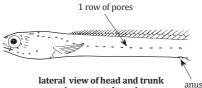
Avocettina infans (Günther, 1878)

Local name(s): Nga Shint.

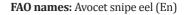
Habitat: Bathypelagic; depth range 785-4 580 m. Fisheries: Deep bottom trawls.

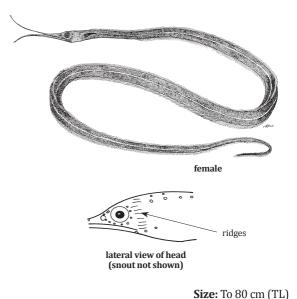
Distinctive Characters: Jaws and snout produced into a long, non-occlusible beak in females and immatures, short in males; caudal region well developed (not thread-like); 1 row of pores in lateral line; small, longitudinal dermal ridges on head; anus located behind pectoral fins; 176-201 lateral line pores.

Colour: Uniform dusky brown, except jaws, pectoral fins, and lower abdomen which are paler.



lateral view of head and trunk (snout not shown)





249

### Nemichthys scolopaceus Richardson, 1848

#### Local name(s): Nga Shint.

Habitat: Bathypelagic; depth range 100–4 337 m. Fisheries: Deep bottom trawls.

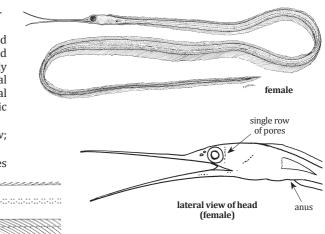
**Distinctive Characters:** Jaws and snout produced into a long, non-occlusible beak in females and immatures, short in males; caudal region extremely elongated and thread-like; 3 rows of pores in lateral line; no dermal ridges on head; 6–17 postorbital pores arranged in a single row (Indo-Pacific populations); preopercular pores 6–13.

**Colour:** Dark brown or grey, often darker below; anal fin and tips of pectoral fins almost black.

**Remarks:** This is probably a complex of species that have not yet been sorted out.

3 row of pores

FAO names: Slender snipe eel (En)



lateral view of trunk

ANGUILLIDAE

Freshwater eels

Anguilla bengalensis (Gray, 1831)

Local name(s): Nga-me-toung.

**Habitat:** Lives in freshwaters, but also occurs in estuaries and in the sea during early life and near maturity.

Fisheries: Bottom trawls, baited traps.

**Distinctive Characters:** Body elongate, head conical and dorsally flattened; lips thick and prominent; teeth in narrow bands in jaws; distance between verticals through anus and origin of dorsal fin 9.1 to 13.7% TL.

**Colour:** Brown yellowish with mottled pattern.

**Remarks:** Widespread throughout the Indo-Pacific and divisible in two subspecies: *A. bengalensis bengalensis* and *A. bengalensis labiata* occurring in the eastern and western Indian Ocean, respectively.

Anguilla bicolor McClelland, 1844

Local name(s): Nga-she-gya.

**Habitat:** Lives in fresh water areas as an adult, in estuaries and seas as young.

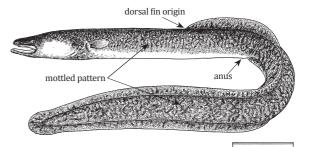
Fisheries: Bottom trawls, baited traps.

**Distinctive Characters:** Similar to *Anguilla bengalensis* (Gray, 1831) but distance between verticals through anus and origin of dorsal fin –3 to 3.9% TL; colour pattern unmottled.

**Colour:** Olive to dark bluish brown dorsally, lighter ventrally from jaw to anus.

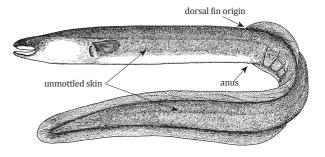
**Remarks:** Widespread throughout the Indo-Pacific and divisible in two subspecies: *A. bicolor bicolor* in the Indian Ocean and *A. bicolor pacifica* in the Pacific Ocean and Indonesian Seas. FAO names: Tropical mottled eel (En)

Size: To 130 cm (TL)



Size: To 200 cm, common 80 cm (TL)

FAO names: Indonesian shortfin eel (En)



Size: To 123 cm, common 65 cm (TL)

FAO names: Smoothbelly sardinella (En)

# **CLUPEIDAE**

# Herrings - Shads - Gizzard shads - Sardines - Sardinellas

# Amblygaster leiogaster (Valenciennes, 1847)

Local name(s): Nga Than Than.

Habitat: Coastal, pelagic, schooling.

**Fisheries:** Seines, gillnets, bagnet, bottom trawls. **Distinctive Characters:** Body subcylindrical, abdomen rather rounded, prepelvic and postpelvic scutes not prominent; a median series of predorsal scales; 2 fleshy outgrowths on posterior margin of gill opening; opercle smooth, without bony striae; pelvic fin insertion about equal with point between verticals through bases of 1<sup>st</sup> and 3<sup>rd</sup> dorsal fin rays. **Colour:** Blue-green above and silvery below, without spots along flanks; dorsal fin blackish (or dusky when fully extended).

Amblygaster sirm (Walbaum, 1792)

Local name(s): Nga Than Than.

**Habitat:** Coastal, pelagic, schooling. Inhabits coral reef lagoons and adjacent waters.

Fisheries: Seines, gillnets, bagnet, bottom trawls.

**Distinctive Characters:** Similar to *Amblygaster leiogaster* (Valenciennes, 1847) but series of 10–20 dark bluish gold spots on flanks; pelvic fin insertion about equal with point between verticals through bases of 6<sup>th</sup> to 10<sup>th</sup> dorsal fin rays; 33–43 lower gill rakers.

**Colour:** Dorsum darkly coloured blue-green, flanks silvery; lower head gold, and usually with a lateral series of 10-20 dark bluish gold spots (black in preservation); dorsal and caudal fins dusky yellow and other fins pale.

# Anodontostoma chacunda (Hamilton, 1822)

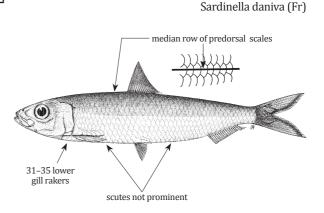
Local name(s): Nga Wun Pu.

**Habitat:** Pelagic in inshore waters; also in estuaries.

Fisheries: Seines, gillnets, bagnet, bottom trawls.

**Distinctive Characters:** Body depth 40–70% of SL in fishes over 10 cm; last dorsal fin ray not produced; abdomen fully scuted; 2<sup>nd</sup> supramaxilla splint-shaped; mouth inferior, longest gill rakers on lower part of arch less than corresponding gill filaments; hind edges of scales denticulated, the teeth slightly wider than gaps between them.

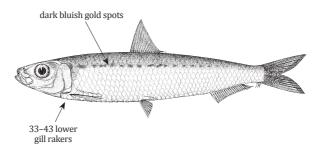
**Colour:** Large part of nape yellowish, flanks silvery, fins generally pale, caudal fin yellowish.



Size: To 23 cm, common 18 cm (SL)

FAO names: Spotted sardinella (En)

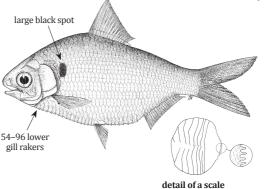
Sardinella tachetee (Fr)



Size: To 23 cm, common 20 cm (SL)

FAO names: Chacunda gizzard shad (En)

Alose chaconde (Fr)



Size: To 18 cm, common 14 cm (SL)

### Anodontostoma thailandiae Wongratana, 1983

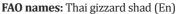
### Local name(s): Nga Wun Pu.

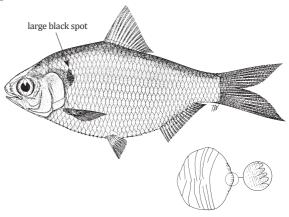
Habitat: Marine, pelagic, and inshore, probably entering estuaries.

Fisheries: Seines, gillnets, bagnet, bottom trawls.

Distinctive Characters: Similar to Anodontostoma chacunda Wongratana, 1983 but longest gill rakers on lower part of arch equal to or longer than corresponding gill filaments; hind edges of scales denticulated, with very narrow gaps between them.

**Colour:** A large dark blotch on shoulder posterior to gill opening.





detail of a scale

Size: To 18 cm, common 10–14 cm (SL)



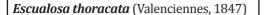
### Local name(s): Nga Par Sharr.

Habitat: Coastal and in rivers, presumably tolerating brackish water, if not fully fresh conditions.

Fisheries: Seines, gillnets, bagnet, bottom trawls.

Distinctive Characters: Body compressed, its depth 33-37% of SL; mouth subterminal; maxilla straight; predorsal scales paired, but not overlapping in midline; last dorsal fin ray filamentous; abdomen fully scuted, with 17-18 (usually 18) prepelvic and 11-12 postpelvic scutes. **Colour:** A dark spot behind gill opening, followed by additional spots on flank.

**Remarks:** Recorded at the border with Thailand. Most likely occurring also in Myanmar (at least in the south-eastern part).

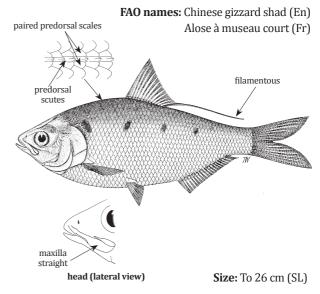


### Local name(s): Nga Par Sharr.

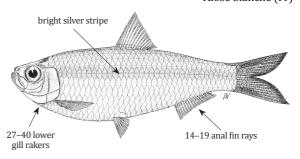
Habitat: Coastal, pelagic, schooling species; juveniles apparently entering the lower parts of rivers.

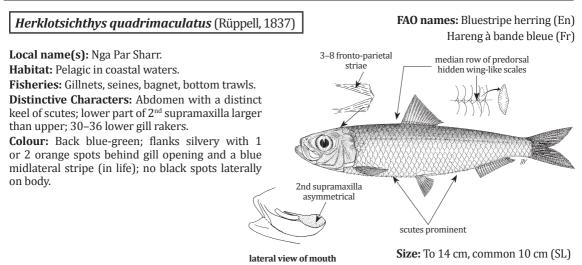
Fisheries: Seines, gillnets, bagnet, bottom trawls. Distinctive Characters: Body depth 27-37% of SL; abdomen with 29 scutes (rarely 28-30); 7 pelvic fin rays; 2<sup>nd</sup> supramaxilla almost rectangular; opercle smooth; no fleshy outgrowths on posterior margin of gill opening.

Colour: Body white to pale gray, inner edges of caudal fin darkish.



FAO names: White sardine (En) Alose blanche (Fr)





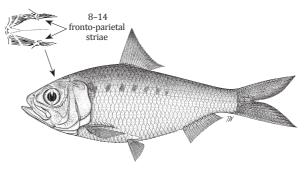
# Hilsa kelee (Cuvier, 1829)

Local name(s): Nga Tha Lauk Yauk Pha.

Habitat: Pelagic in coastal waters, enters estuaries. Fisheries: Seines, gillnets, cast nets, bottom trawls. Distinctive Characters: Abdomen with 27–31 scutes; mouth terminal; upper jaw with a distinct median notch; gill rakers on inner arches distinctly curled outward; a series of small triangular scales above axil of pectoral fins; hind part of body scales perforated.

**Colour:** Back blue-green, flanks silvery; a black spot behind gill cover, usually followed by up to 10 spots along flank.

FAO names: Kelee shad (En) Alose palli (Fr)



Size: To 35 cm (TL), common 16.5 cm (SL)

### Nematalosa galatheae Nelson & Rothman, 1973

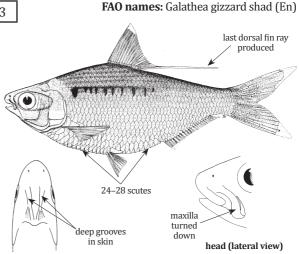
### Local name(s): Nga Kyo Nyo.

**Habitat:** Marine, but may also penetrate and presumably breed in fresh water.

Fisheries: Gillnets, seines, bagnet, bottom trawls.

**Distinctive Characters:** Body compressed, its depth 36–44% of SL; mouth inferior; maxilla curved downward; pair of grooves in spongy skin on top of head, converging posteriorly; posterior edge of scales not toothed; anterior arm of preoperculum with 3<sup>rd</sup> infra-orbital bone immediately above it, no fleshy gap between; last dorsal fin ray filamentous.

**Colour:** A dark spot behind gill opening followed by a series of smaller spots along flank



dorsal view of head

Size: To 16.3 cm (SL)

### Nematalosa nasus (Bloch, 1795)

### Local name(s): Nga Kyo Nyo.

**Habitat:** A pelagic species known from estuaries and coastal areas.

Fisheries: Seines, gillnets, bagnet, bottom trawls.

**Distinctive Characters:** Similar to *Nematalosa galathae* Nelson & Rothman, 1973 but no grooves on top of head; anterior arm of preopercle with third infraorbital bone immediately above it, no fleshy gap between; posterior edge of scales distinctly toothed; more scutes along abdomen; dark spot present behind gill opening not followed by spots along flanks.

**Colour:** Dark bluish dorsally, silvery below; a dark spot behind gill opening.

### Sardinella albella (Valenciennes, 1847)

Local name(s): Nga Kone Nyo Phyu.

Habitat: Pelagic in coastal waters and estuaries. Fisheries: Seines, gillnets, bagnet, bottom trawls.

**Distinctive Characters:** Abdomen with a sharp keel of 30–32 scutes; predorsal scales paired and overlapping; 41–68 (usually less than 60) lower gill rakers; scales with somewhat developed posterior median extensions; pelvic fin with 1 unbranched and 7 branched rays.

**Colour:** Dorsum and head blue-green above shading to silvery white below; flanks silvery; no spots on body; a dark spot at dorsal fin origin, otherwise fins pale yellow.

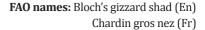
### Sardinella brachysoma Bleeker, 1852

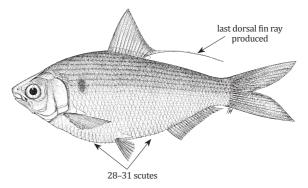
Local name(s): Nga Kone Nyo Wa Toke. Habitat: Pelagic in coastal waters.

Fisheries: Seines, gillnets, bagnet, bottom trawls.

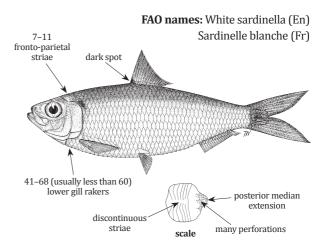
**Distinctive Characters:** Abdomen keeled with 29–32 scutes; predorsal scales paired and overlapping; vertical striae on scales overlapping or sometimes continuous at centre of scale; numerous small perforations on posterior part of scale; pelvic fin with 1 unbranched and 7 branched rays; 48–67 lower gill rakers.

**Colour:** Back blue-green, flanks silvery; a dark spot at dorsal fin origin; no dark markings on dorsal and caudal fins.

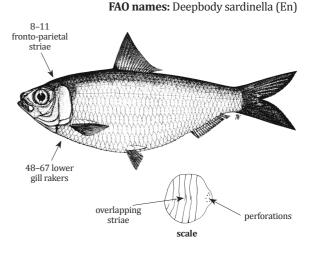




Size: To 22 cm (TL), common 13–15 cm (SL)



Size: To 14 cm, common 10 cm (SL)

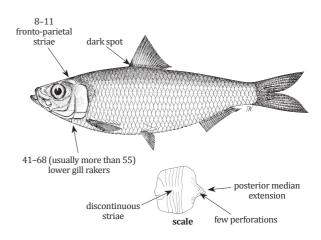


Size: To 13 cm, common 12 cm (SL)

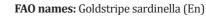
# Sardinella fimbriata (Valenciennes 1847)

Local name(s): Nga Kone Nyo A Gyee Phwar. Habitat: Pelagic in coastal waters and estuaries. Fisheries: Seines, gillnets, bagnet, bottom trawls. Distinctive Characters: Abdomen with a sharp keel of 29–33 scutes; predorsal scales paired and overlapping; 54–82 (usually more than 55) lower gill rakers; scales with well-developed posterior median extensions (Indian Ocean populations); pelvic fin with 1 unbranched and 7 branched rays. Colour: Back blue-green, flanks silvery; a dark spot at dorsal fin origin; tips of caudal and dorsal fins blackish.

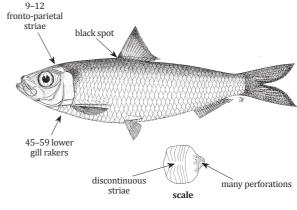
### FAO names: Fringescale sardinella (En)



Size: To 13 cm, common 11 cm (SL)

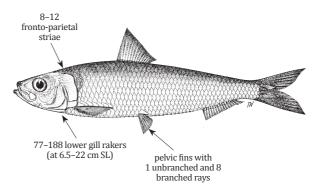


### Sardinelle dorée (Fr)



Size: To 17 cm, common 15 cm (SL)

### FAO names: Bali sardinella (En)



### Sardinella gibbosa (Bleeker, 1849)

Local name(s): Nga Kone Nyo Shwe Zinn.

Habitat: Pelagic in coastal waters.

Fisheries: Seines, gillnets, bagnet.

**Distinctive Characters:** Abdomen with a sharp keel of 32–34 scutes; predorsal scales paired and overlapping; discontinuous striae on body scales; pelvic fin with 1 unbranched and 7 branched rays; 45–59 lower gill rakers.

**Colour:** Back blue-green, flanks silvery; tip of dorsal fin and margin of caudal fin dusky, remainder of caudal faintly yellow, other fins clear; a small black spot at dorsal fin origin.

# Sardinella lemuru Bleeker, 1853

### Local name(s): Nga Kone Nyo Bar Li.

Habitat: Coastal, pelagic, schooling, strongly migratory.

**Fisheries:** Seines, gillnets, bagnet, bottom trawls. **Distinctive Characters:** Abdomen keeled with 32– 35 scutes; predorsal scales paired and overlapping; pelvic fins with 1 unbranched and 8 branched rays; discontinuous striae on body scales, without small perforations on posterior part of scale.

**Colour:** No dark spot at dorsal fin origin; a faint golden spot behind gill opening, followed by a faint golden midlateral line; also with a distinct black spot at posterior border of gill cover.

Size: To 23 cm, common 20 cm (SL)

# Sardinella melanura (Cuvier, 1829)

Local name(s): Nga Kone Nyo Myee Mee. Habitat: Pelagic in coastal waters.

Fisheries: Seines, gillnets, bagnet, bottom trawls.

**Distinctive Characters:** Abdomen with a sharp keel of 27–31 scutes; predorsal scales paired and overlapping; no perforations on posterior part of scales; discontinuous striae on body scales; pelvic fin with 1 unbranched and 7 branched rays; 38–74 lower gill rakers.

**Colour:** Back blue-green, flanks silvery; tips of caudal fin black distinguish this species from all other *Sardinella* species in the area.

# Spratelloides delicatulus (Bennett, 1832)

Local name(s): Nga Kone Nyo.

Habitat: Pelagic in shallow waters, bottom trawls. Fisheries: Seines, gillnets, bagnet.

**Distinctive Characters:** No pre-pelvic or postpelvic scutes, except for a W-shaped pelvic scute; usually 6–7 branchiostegal; 26–32 lower gill rakers.

**Colour:** No bright silver band along flanks; 2 prominent dark streaks on caudal fin base.

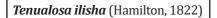
### Spratelloides gracilis (Temminck & Schlegel, 1846)

### Local name(s): Nga Kone Nyo.

Habitat: Pelagic in shallow waters.

**Fisheries:** Seines, gillnets, bagnet, bottom trawls. **Distinctive Characters:** No pre-pelvic or postpelvic scutes, except for a W-shaped pelvic scute; usually 7 branchiostegal rays below mouth; dorsal fin at about mid-point of body; anal fin very short and far behind dorsal fin base.

**Colour:** Back blue-green, flanks with a distinct silvery stripe.

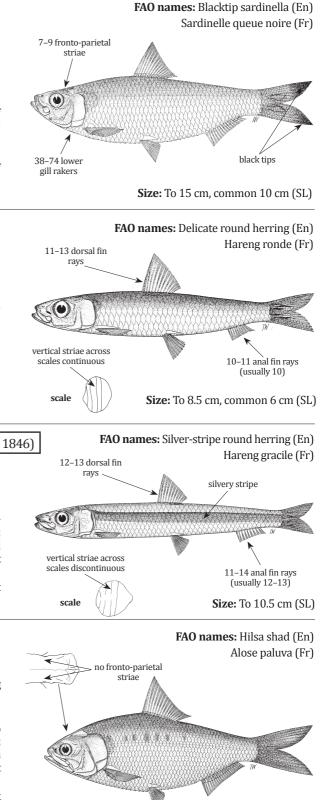


### Local name(s): Nga Tha Lauk.

Habitat: Schooling in coastal waters and ascending rivers as much as 1 200 km (usually 50–100 km). Fisheries: Seines, gillnets, bagnet, bottom trawls.

**Distinctive Characters:** Head length 28–32% of SL; mouth terminal; belly with 30–33 scutes; distinct median notch in upper jaw; gill rakers on inner arches straight; scales not perforated; last dorsal fin ray not produced.

**Colour:** Back blue-green, flanks silvery, with a dark blotch behind gill opening, followed by a series of small spots along flanks in juveniles.



# Tenualosa toli (Valenciennes, 1847)

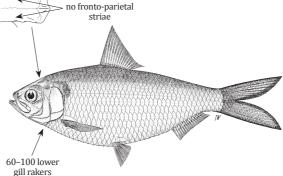
Local name(s): Nga Tha Lauk Yauk Pha.

**Habitat:** Schooling in coastal waters, euryhaline and perhaps anadromous, ascending rivers to breed.

**Fisheries:** Seines, gillnets, bagnet, bottom trawls. **Distinctive Characters:** Head length 25–27% of SL; mouth terminal; belly with 28–30 scutes, distinct median notch in upper jaw, gill rakers on inner arches straight, scales not perforated; last dorsal fin ray not produced.

**Colour:** Back blue-green, flanks silvery, with a dark blotch behind gill opening.

# FAO names: Toli shad (En) Alose toli (Fr)



Size: To 60 cm, common 40 cm (TL)

# **DUSSUMIERIIDAE** Round herrings – Rainbow sardines

# Dussumieria acuta Valenciennes, 1847

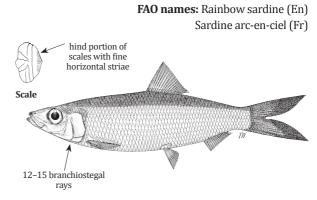
Local name(s): Thet Tant Nga Kway Nyo.

Habitat: Pelagic in inshore waters.

Fisheries: Seines, gillnets, bottom trawls.

**Distinctive Characters:** Body elongate, cylindrical, its depth 22–29% of SL; belly rounded without scutes; dorsal fin origin behind mid-point of body; pelvic fins below dorsal fin base; 19–26 gill rakers on lower limb of 1<sup>st</sup> arch.

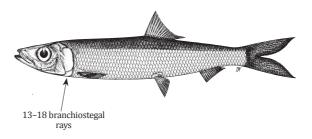
**Colour:** Back iridescent blue with a shiny goldenbrass line below; flanks silvery; caudal fin with a dark hind margin.



Size: To 20 cm, common 10-15 cm (SL)

# FAO names: Slender rainbow sardine (En)

Sardine arc-en-ciel gracile (Fr)



# Dussumieria elopsoides Bleeker, 1849

**Local name(s):** Nga Kyaw Nyo Pein Thaye. **Habitat:** A Pelagic inshore species.

Fisheries: Seines, gillnets, bottom trawls.

**Distinctive Characters:** Body elongate, slender, depth usually 16–22% of SL; belly rounded without scutes; no striae on posterior part of scales; 21–32 gill rakers on lower limb of 1<sup>st</sup> arch.

**Colour:** Back iridescent greenish blue with a narrow lateral band of silvery grey below; flanks and abdomen silvery white; upper surface of eye and head emerald-green; snout strongly pigmented; fins pale; caudal fin dusky with dark posterior margin.

# ENGRAULIDAE

Anchovies

# *Coilia dussumieri* (Valenciennes, 1848)

Local name(s): Shwe Kwayt Mee Tan Thwe.

Habitat: Inhabits coastal waters and estuaries. Fisheries: Seines, bagnet, gillnets, bottom trawls.

**Distinctive Characters:** Anal fin very long and joined to caudal fin; caudal fin small, pointed (true of all *Coilia* species); belly with 12–15 total scutes; maxilla tip pointed, not quite reaching to edge of gill cover.

**Colour:** Flanks and belly with golden or pearly spots (light organs) in rows below scales also along isthmus, lower jaw, on cheek and gill cover.

# Coilia neglecta (Whitehead, 1967)

Local name(s): Mee Tan Thwe.

Habitat: Inhabits coastal waters and estuaries. Fisheries: Seines, bagnet, gillnets, bottom trawls.

**Distinctive Characters:** Belly with 12–16 total scutes; maxilla tip pointed, almost or just reaching to edge of gill cover.

**Colour:** Back light brown, flanks silvery, without golden or pearly spots.

# Coilia ramcarati (Hamilton 1822)

Local name(s): Mee Tan Thwe.

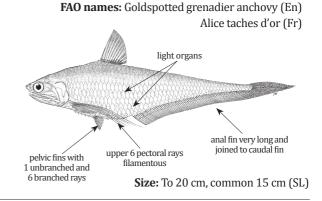
Habitat: Inhabits coastal waters and estuaries. Fisheries: Seines, bagnet, gillnets, bottom trawls. Distinctive Characters: Caudal fin small, pointed; belly with 15–16 total scutes; maxilla tip pointed, not reaching to edge of gill cover. Colour: No distinctive colour pattern.

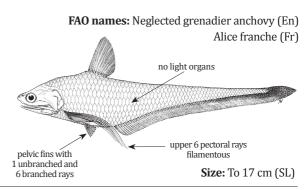
*Encrasicholina heteroloba* (Rüppell, 1837)

Local name(s): Gaung Toe Nga Ni Tu.

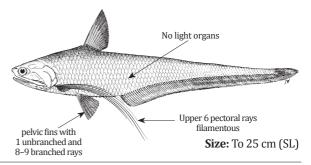
Habitat: Inhabits coastal waters and estuaries. Fisheries: Seines, bagnet, gillnets, bottom trawls. Distinctive Characters: Head length, 24.9–28.9% SL; abdomen rounded with 3–7 (usually 5) sharp needle-like prepelvic scutes; no postpelvic scutes; maxilla tip pointed, projecting posteriorly beyond 2nd supramaxilla; dorsal and anal fins with 3 unbranched fin rays; 20–26 lower gill rakers.

**Colour:** In life, body milky white, with a silver band on flank, its width subequal to pupil diameter; a narrow blue-black band along silver band dorsally.

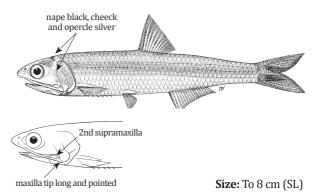




FAO names: Ramcarat grenadier anchovy (En)



FAO names: Davi's anchovy (En)



# Encrasicholina punctifer (Fowler, 1938)

Local name(s): Nga Ni Tuu Ngwe Zinn.

Habitat: Inhabits coastal waters and estuaries. Fisheries: Seines, bagnet, gillnets, bottom trawls.

Distinctive Characters: Abdomen rounded, with 3-6 (rarely 2 or 7) sharp needle-like prepelvic scutes; no postpelvic scutes; maxilla tip blunt, scarcely projecting posteriorly beyond 2nd supramaxilla, not reaching to anterior border of preopercle; dorsal and anal fins with 3 unbranched fin rays; 23-26 lower gill rakers.

Colour: Body pale cream (when scales lost), with a bright silver lateral stripe along flanks.

### Setipinna breviceps (Cantor 1849)

Local name(s): Nga Pa Sharr Zet Htaun.

Habitat: Marine or estuarine, perhaps also ascending into fresh water.

Fisheries: Seines, bagnet, gillnets, bottom trawls. Distinctive Characters: Abdomen with 27-32 keeled scutes from isthmus to anus; lower gill rakers 11-12, without clumped serrae except some enlarged and spiky at either end of each raker;

pectoral fins with 1<sup>st</sup> fin ray produced as a long filament (true of all *Setipinna*) with its tip reaching posteriorly to base of 35<sup>th</sup> to 41<sup>st</sup> anal fin ray.

Colour: No dark pigment on gill cover or pectoral fin.

Setipinna taty (Valenciennes, 1848)

Local name(s): Nga Pa Sharr Par Hmwe Shay. Habitat: Inhabits coastal waters and estuaries.

Fisheries: Seines, bagnet, gillnets, bottom trawls. Distinctive Characters: Abdomen with 32-40 (mostly 33-39) keeled scutes from isthmus to anus; lower gill rakers 17-21 (mostly 18-20), their serrae distinctly clumped; pectoral fins with 1<sup>st</sup> fin ray produced as a long filament with its tip reaching posteriorly to base of 23<sup>rd</sup> to posteriormost anal fin rav.

Colour: Dorsum brown or blue, flanks silvery; otherwise no distinctive colour pattern.

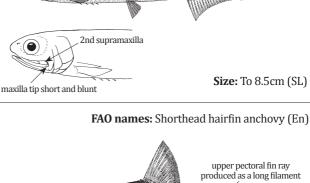
# Setipinna tenuifilis (Valenciennes, 1848)

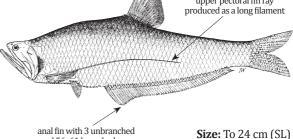
Local name(s): Nga Pa Sharr Shwe Gaung. Habitat: Inhabits coastal waters and estuaries.

Fisheries: Seines, bagnet, gillnets, bottom trawls. Distinctive Characters: Abdomen with 25-27 keeled scutes from isthmus to anus; lower gill rakers 13-17, their serrae uneven, with slight or sometimes distinct clumps of larger serrae; pectoral fins with 1<sup>st</sup> fin ray produced as a long filament which reaches posteriorly to base of 1<sup>st</sup> to 31<sup>st</sup> anal fin ray.

Colour: Head gold, body yellow and stippled above, silver-white below.

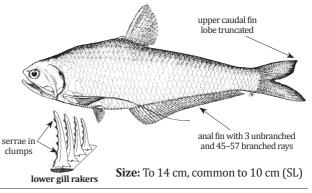




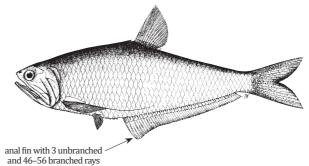


and 56-61 branched rays

FAO names: Scaly hairfin anchovy (En)



FAO names: Common hairfin anchovy (En)



Size: To 14 cm, common to 10 cm (SL)

### Setipinna wheeleri Wongratana, 1983

**Local name(s):** Nga Pa Sharr Par Hmwe Shay. **Habitat:** A riverine species, but probably tolerating some salinity in estuaries.

**Fisheries:** Seines, bagnet, gillnets, bottom trawls. **Distinctive Characters:** Abdomen with 21–22 keeled scutes from isthmus to anus; lower gill rakers 21–22, their serrae in distinct clumps; pectoral filament long, reaching to base of 45<sup>th</sup> to 51<sup>st</sup> anal fin ray; upper caudal fin lobe truncated, shorter than lower.

Colour: No distinctive colour pattern.



Local name(s): Nga Ni Tu Ngwe Zinn.

Habitat: Inhabits coastal waters and estuaries. Fisheries: Seines, bagnet, gillnets, bottom trawls.

**Distinctive Characters:** Posterior border of preopercle concave, indented near maxilla tip; maxilla tip pointed, reaching posteriorly to or beyond posterior border of preopercle; pelvic fin tips not reaching beyond vertical through dorsal fin origin; 20–21 lower gill rakers.

**Colour:** A silver stripe along flanks; no double pigment line on dorsum posterior to dorsal fin; otherwise no distinctive colour patterns.

### Stolephorus commersonnii Lacepède, 1803

Local name(s): Nga Ni Tu Kyaw Me'.

Habitat: Pelagic in coastal waters.

**Fisheries:** Seines, gillnets bagnets, bottom trawls. **Distinctive Characters:** Posterior border of preopercle convex, rounded; maxilla tip pointed, reaching posteriorly to or slightly beyond posterior border of preopercle; pelvic fin tips reaching beyond dorsal fin origin; 23–28 lower gill rakers.

**Colour:** Body light transparent fleshy brown, with silvery band down flanks; back with 2 pigmented areas behind head; a double pigmented line before dorsal fin origin.

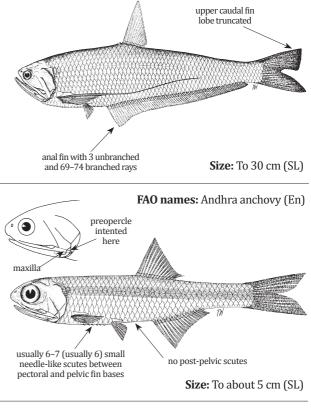
# *Stolephorus indicus* (van Hasselt, 1823)

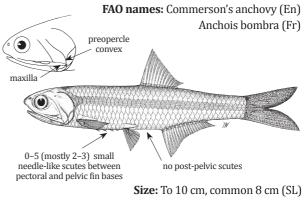
Local name(s): India Nga Ni Tu.

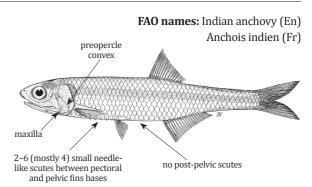
Habitat: Pelagic in coastal waters.

**Fisheries:** Seines, gillnets bagnets, bottom trawls. **Distinctive Characters:** Posterior border of preopercle convex, rounded; maxilla tip short, not reaching anterior border of preopercle; pelvic fin tips not reaching to dorsal fin origin; 20–28 lower gill rakers.

**Colour:** Light transparent fleshy brown, with a silver band down flanks; no dark pigment lines on back between head and dorsal fin origin.







FAO names: Burma hairfin anchovy (En)

Size: To 15.5 cm, common 12 cm (SL)

# *Stolephorus insularis* Hardenberg, 1933

Local name(s): Nga Ni Tu.

Habitat: Pelagic in coastal waters.

Fisheries: Seines, gillnets bagnets, bottom trawls.

**Distinctive Characters:** Posterior border of preopercle slightly concave, indented near maxilla tip; maxilla tip pointed, reaching posteriorly to or beyond posterior border of preopercle; pelvic fin tips reaching posteriorly to a point equal with vertical through or slightly anterior to dorsal fin origin; 21–28 lower gill rakers.

**Colour:** A double pigment line on dorsum posterior to dorsal fin; tail deep yellow.

### Stolephorus waitei Jordan & Seale, 1926

Local name(s): Nga Ni Tu Parr Set Pyauk.

Habitat: Pelagic in coastal waters.

Fisheries: Seines, gillnets bagnets, bottom trawls.

**Distinctive Characters:** Posterior border of preopercle almost always convex, rounded; maxilla tip pointed, reaching to posterior border of preopercle; pelvic fin tips only rarely reaching posteriorly to vertical through dorsal fin origin; 19–25 (usually 20–21) lower gill rakers.

**Colour:** Body pale with numerous black spots below level of eye and on tip of lower jaw and underside of snout; a dark patch posterior to occiput.

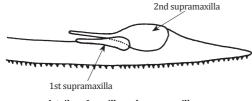
### Thryssa baelama (Forsskål, 1775)

Local name(s): Nga Tha Pyar Shwe Gaung.

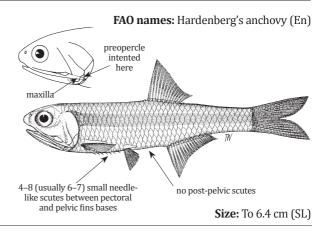
**Habitat:** Pelagic in coastal waters, perhaps also in estuaries.

**Fisheries:** Seines, gillnets, bagnets, bottom trawls. **Distinctive Characters:** Belly with 12–18 (usually 14–17) scutes from about below pectoral fin base to anus; usually 18–26 (mostly 20–24) lower gill rakers; 1<sup>st</sup> and 2<sup>nd</sup> supramaxillae relatively long; pseudobranch very short, with about 20 filaments. **Colour:** Dorsum dark blue, brown to olive above, flanks silvery below, with dark patch on shoulder; no silver lateral stripe; head golden.

**Remarks:** Recorded at the border with Thailand. Most likely occurring also in Myanmar (at least in the south-eastern part).

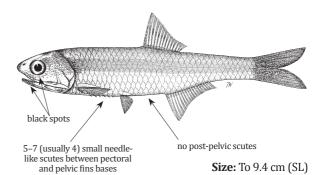


detailes of maxilla and supramaxillae



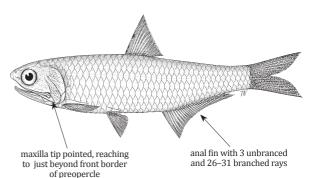
FAO names: Spotty-face anchovy (En)

Anchois joues tachetées (Fr)



FAO names: Baelama anchovy (En)

Anchois-moustache sardin (Fr)



# Thryssa dussumieri (Valenciennes, 1848)

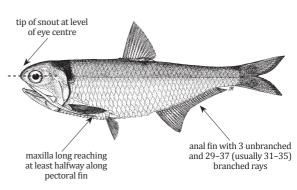
Local name(s): Nga Tha Pyar Par Yoe Shae.

**Habitat:** Pelagic in coastal waters, perhaps also in estuaries.

**Fisheries:** Seines, gillnets, bagnets, bottom trawls. **Distinctive Characters:** Belly with 21–24 scutes from isthmus to anus; usually 17–19 lower gill rakers; 1<sup>st</sup> supra-maxilla absent; pseudobranch hidden under skin.

**Colour:** A dark blotch behind upper part of gill opening, sometimes joined to a dark saddle on nape.

FAO names: Dussumier's thryssa (En) Anchois-moustache mandeli (Fr)



Size: To 11 cm (SL)

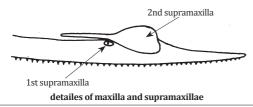
### Thryssa hamiltonii (Gray, 1835)

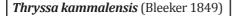
Local name(s): Nga Tha Pyar Kyaw Me'.

**Habitat:** Pelagic, in coastal waters, perhaps also in estuaries.

**Fisheries:** Seines, gillnets, bagnets, bottom trawls. **Distinctive Characters:** Belly with 26–31 scutes from isthmus to anus; usually 12–14 lower gill rakers; 1<sup>st</sup> supra-maxilla oval, minute; pseudobranch hidden under skin.

**Colour:** A dark blotch of horizontal wavy black lines behind upper part of gill opening.



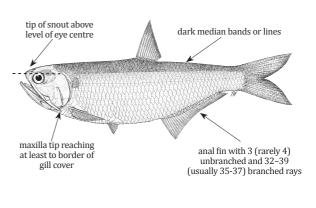


**Local name(s):** Nga Tha Pyar Gote Myee Kywet. **Habitat:** Pelagic in coastal waters, perhaps also in estuaries.

**Fisheries:** Seines, gillnets, bagnets, bottom trawls. **Distinctive Characters:** Belly with 23–25 (rarely 22 or 26) scutes from isthmus to anus; 26–32 (usually 29 or more) lower gill rakers; 1st supramaxilla large, about 1/2 as long as 2nd; pseudobranch very short, with only 4 to 10 filaments.

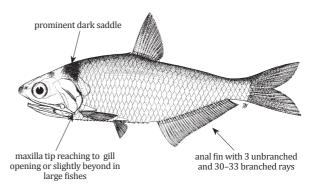
**Colour:** A prominent but diffuse dark saddle on nape.

**Remarks:** Recorded at the border with Thailand. Most likely occurring also in Myanmar (at least in the south-eastern part). FAO names: Hamilton's thryssa (En) Anchois-moustache mamata (Fr)



Size: To 20 cm, common 17 cm (SL)

FAO names: Kammal thryssa (En)

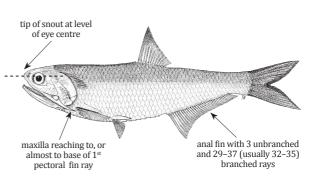


**Local name(s):** Nga Tha Pyar Kyaw Tachan Me'. **Habitat:** Pelagic coastal schooling species, also in estuaries.

**Fisheries:** Seines, gillnets, bagnets, bottom trawls. **Distinctive Characters:** Belly with 24–32 scutes from isthmus to anus; 1st supra-maxilla oval, minute; usually 14–16 lower gill rakers; pseudobranch hidden under skin.

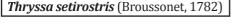
**Colour:** A dark blotch of wavy lines behind of gill opening; gill cavity ligth orange in life; dorsal fin tip black, upper, lower and posterior border of caudal fin black.

FAO names: Moustached thryssa (En) Anchois-moustache sardelle (Fr)



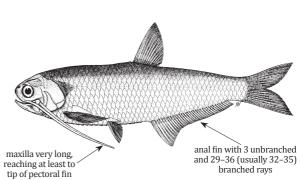
Size: To 15.5 cm (SL)

FAO names: Longjaw thryssa (En) Anchois-moustache cornu (Fr)



Local name(s): Nga Tha Pyar Myee Yoe Shae. Habitat: Pelagic, in coastal waters, also in estuaries. Fisheries: Seines, gillnets, bagnets, bottom trawls. Distinctive Characters: Belly with 25–28 scutes from isthmus to anus; 10–12 lower gill rakers; pseudobranch hidden under skin.

**Colour:** Head with gold tints; anal and caudal fins deep yellow; dark horizontal lines behind upper part of gills.



Size: To 18 cm (SL)

FAO names: Orangemouth anchovy (En)

Anchois-moustache cristal (Fr)

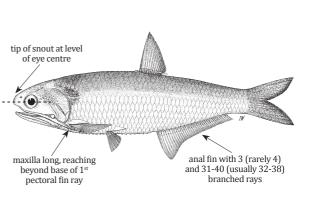
Thryssa vitrirostris (Gilchrist & Thompson, 1908)

### Local name(s): Nga Tha Pyar.

Habitat: Pelagic in inshore areas, enters estuaries and lagoons.

**Fisheries:** Seines, gillnets, bagnets, bottom trawls. **Distinctive Characters:** Belly with 24–30 scutes from isthmus to anus; 1<sup>st</sup> supra-maxilla minute, oval; 18–24 lower gill rakers.

**Colour:** Back blue-green, flanks silvery; a dark blotch behind upper part of gill opening; inside of gill cavity bright orange.



# CHIROCENTRIDAE

Wolf-herrings

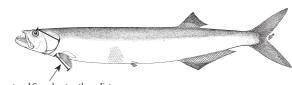
### Chirocentrus dorab (Forsskål, 1775)

Local name(s): Nga Da Lwe.

Habitat: Pelagic in coastal waters down to 120 m. Fisheries: Gillnets, bottom trawls.

**Distinctive Characters:** Dorsal fin with 16–19 rays; anal fin with 29–36 rays.

**Colour:** Back with bands of green and blue; tip of dorsal fin and front of anal fin black.



pectoral fins shorter than distance between eye centre and behind border of gill cover

Size: To 100 cm, common 60 cm (SL)

FAO names: Dorab wolf-herring (En)

Chirocentre dorab (Fr)

FAO names: Whitefin wolf-herring (En)

Chirocentre sabre (Fr)

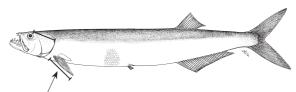
Chirocentrus nudus Swainson, 1839

Local name(s): Nga Da Lwe.

Habitat: Pelagic in coastal waters down to 150 m. Fisheries: Gillnets, bottom trawls.

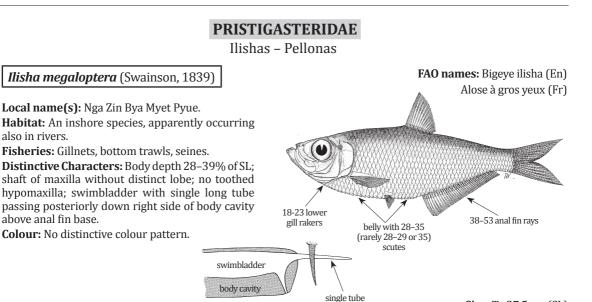
**Distinctive Characters:** Dorsal fin with 16–19 rays; anal fin with 29–36 rays.

**Colour:** Dorsal and anal fins colourless; back with bands of green and blue.



pectoral fins longer than distance between eye centre and behind border of gill cover

Size: To 100 cm, common 60 cm (SL)



# Ilisha melastoma (Bloch and Schneider, 1801)

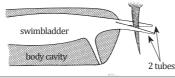
Local name(s): Nga Zin Bya.

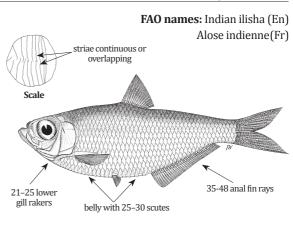
**Habitat:** An inshore species, apparently occurring also in rivers.

Fisheries: Gillnets, bottom trawls, seines.

**Distinctive Characters:** Body depth 33–42% of SL; shaft of maxilla without distinct lobe; no toothed hypomaxilla; swimbladder with 2 tubes passing posteriorly into body muscles on either side of haemal spine.

Colour: No distinctive colour pattern.





Size: To 17 cm (SL)

Ilisha sirishai Seshagiri Rao, 1975

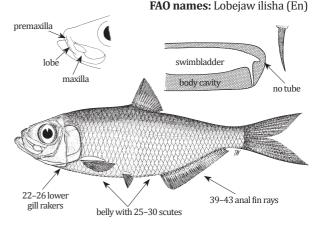
Local name(s): Nga Zin Bya Myee Yoe Gyi.

**Habitat:** An inshore species, apparently occurring also in rivers.

Fisheries: Gillnets, bottom trawls, seines.

**Distinctive Characters:** Body depth 32–37% SL; shaft of maxilla with distinct lobe; no toothed hypomaxilla; swimbladder without posterior tube (or tubes) passing posteriorly into body muscles. **Colour:** No distinctive colour pattern.

**Remarks:** Recorded in the Bay of Bengal and Andaman coast of Thailand. Most likely occurring also in Myanmar (at least in the south-eastern part).



Size: To 23 cm (TL)

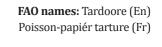
Opisthopterus tardoore (Cuvier, 1829)

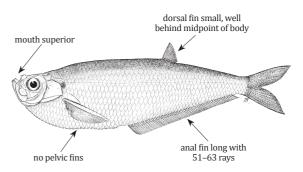
Local name(s): Nga Zin Bya Gaung Maw.

**Habitat:** Schooling pelagic species in coastal waters.

**Fisheries:** Seines, gillnets, bagnet, bottom trawls. **Distinctive Characters:** Belly convex in front with 29–35 scutes; no toothed hypomaxilla; pectoral fin with 12–14 rays, its length about equal to head length or greater; 46–51 scales in lateral series; dorsal fin small, well behind midpoint of body.

**Colour:** Back blue-green or grey, flanks silvery; a dark spot on body behind gill opening.





Size: To 20 cm (SL)

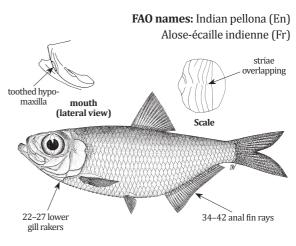
Local name(s): India Zin Bya.

**Habitat:** Pelagic in coastal waters, in estuaries, lagoons and rivers.

Fisheries: Gillnets, bottom trawls, seines.

**Distinctive Characters:** Belly with 26–28 scutes; toothed hypomaxilla present; scales with upper and lower vertical striae slightly overlapping each other at center of scales; swimbladder without posterior tube (or tubes) passing posteriorly into body muscles.

**Colour:** Head gold, snout and chin dusky; body dusky above, gold on flanks and silvery below.



Size: To 16 cm, common 13 cm (SL)

FAO names: Raconda (En)

# Raconda russeliana Gray, 1831

### Local name(s): Nga Da La.

**Habitat:** Marine, close to shore, also entering estuaries.

**Fisheries:** Seines, gillnets, bagnets, bottom trawls. **Distinctive Characters:** Belly convex in front with 33–38 scutes; dorsal fin absent; no toothed hypomaxilla; 60–68 scales in lateral series; dorsal fin absent; uppermost pectoral fin ray enlarged, bony; pelvic fins absent; anal fin origin well in advance of vertical through midpoint of body; caudal fin small.

Colour: A dark spot posterior to gill opening.

mouth superior dorsal fin absent

Size: To 19 cm (SL)

FAO names: Milkfish (En)



Milkfish

# Chanos chanos (Forsskål, 1775)

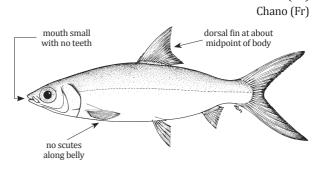
Local name(s): Nga Tein.

Habitat: Coastal pelagic, entering estuaries, rivers and lakes.

**Fisheries:** Gillnets; important to fisheries for culture in fresh and brackish waters.

**Distinctive Characters:** Lower jaw with a small tubercle at tip; dorsal fin with 13–17 rays; anal fin with 8–11 rays; scales small; lateral line present.

**Colour:** Back olive green, flanks silvery; dorsal, anal and caudal fins with dark margins.



# PLOTOSIDAE

Eel catfishes

# Plotosus canius Hamilton, 1822

### Local name(s):

**Habitat:** Usually in lagoons and estuaries, and sometimes found in rivers.

Fisheries: Gillnets, bottom trawls.

**Distinctive Characters:** Profile straight from tip of snout to dorsal fin origin; anterior nostrils located on end of snout at edge of upper lip; eyes small, 7 to 12% of head length; nasal and maxillary barbels long, reaching at least to pectoral fin base; total fin rays in confluent median fins 247 to 281.

**Colour:** Plain dusky-brown with a black dorsal fin tip; banded pattern at night.

**Remarks:** First dorsal and pectoral spines are venomous.

### Plotosus lineatus (Thunberg, 1787)

### Local name(s):

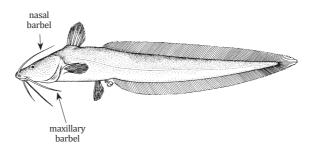
**Habitat:** Reefs, estuaries and tidal pools; juvenils in schools.

Fisheries: Gillnets, bottom trawls.

**Distinctive Characters:** Profile slightly arched from tip of snout to dorsal fin origin; anterior nostrils located on end of snout at edge of upper lip; eyes moderate to large, 12 to 26% of head length nasal and maxillary barbels short, reaching to, or only slightly past, posterior margin of eye; total fin rays in confluent median fins 139 to 200.

**Colour:** Body usually with 2 or 3 whitish stripes, 2 of which extend onto head; margins of median fins blackish; small juveniles may have a dark belly.

**Remarks:** First dorsal and pectoral spines are venomous.

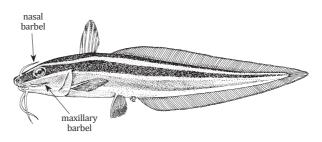


Size: To 150 cm, common 80 cm (TL)

FAO names: Eel-catfish (En)

Balibot canin (Fr)

FAO names: Striped eel catfish (En) Balibot rayé (Fr)



Size: To 30 cm (TL)



Pangasiid catfishes

### Pangasius cf. pangasius (Hamilton 1822)

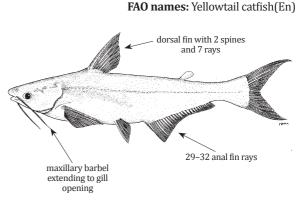
Local name(s): Nga Tan.

Habitat: Found in large rivers and estuaries.

**Fisheries:** Gillnets; important to fisheries for culture in fresh and brackish waters.

**Distinctive Characters:** Two pairs of barbels (1 mental and 1 maxillary); eye small, its diameter more than 7 times in head length (in 18 cm long specimens); teeth on roof of mouth in 4 separate patches (2 vomerine and 2 palatine patches); 23–28 gill rakers on 1st arch.

**Colour:** Median and paired fins bright red yellowish (at least in adults collected in Myanmar).



Size: To 300 cm (SL)

# ARIIDAE Sea catfishes

### Arius arius Hamilton, 1822

Local name(s): Nga Yaung Sue Gyi. Habitat: Estuaries and inshore waters. Fisheries: Gillnets, bottom trawls,

Distinctive Characters: Snout rounded to acute, about twice eye diameter; head shield smooth anteriorly, a series of granules and rugae posteriorly; palatal teeth peg-like or molariform, in 2 oval-elliptical patches, 1 on each side, placed forward on palate and usually parallel to each other; 14–17 total gill rakers on 1st gill arch; lateral line bifurcates at tail base.

**Colour:** Body bluish brown above, white below; fins yellow; dorsal and caudal fins with dark margins; adipose fin with large black spot.

# Arius gagora (Hamilton 1822)

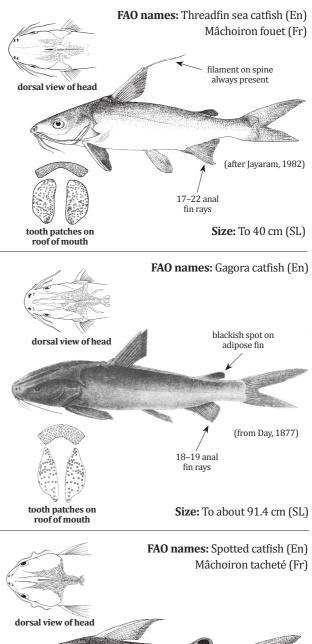
Local name(s): Nga Yaung Hnar Lone.

Habitat: Inshore waters, tidal reaches of rivers and fresh waters.

Fisheries: Gillnets, bottom trawls.

Distinctive Characters: Snout rounded, 3 times eye diameter; head shield extensive and granular; palatal teeth molariform in 2 oval-oblong patches, 1 on each side, placed well forward on palate and usually parallel to each other, extensive.

**Colour:** Purplish above, white below; fins dusky; adipose fin with blackish spot.

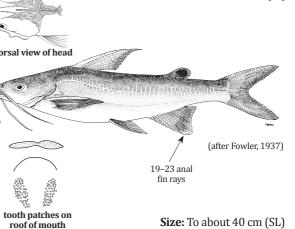


### Arius maculatus (Thunberg, 1792)

Local name(s): Nga Yaung Baik Kywet. Habitat: Estuaries and inshore waters. Fisheries: Gillnets. bottom trawls.

Distinctive Characters: Snout rounded; head shield and supraoccipital process striate, rugose, and finely granular; palatal teeth peg-like or molariform, in 2 oval patches, 1 on each side, placed well back on palate, their long axes tending to converge posteriorly; 17-21 total gill rakers on 1<sup>st</sup> gill arch; lateral line bifurcates at tail base; dorsal fin spine with a filament on its tip.

**Colour:** Body bluish brown above, white below; fins yellow, dorsal and caudal fins with dark margins; adipose fin with a large black spot.



Size: To about 40 cm (SL)

# Arius venosus Valenciennes, 1840

Local name(s): Nga Yaung A Kyaw Mar. Habitat: Coastal waters and estuaries. Fisheries: Gillnets, bottom trawls,

Distinctive Characters: Snout rounded; head shield smooth and venulose to slightly granular; teeth in 1 patch on each side of palate, tooth patches triangular, their base anterior, apex posterior; long axes of patches almost parallel longitudinally on palate, at about 80° to curve of the mouth; palatal teeth conical, slender, and sharp; lateral line bifurcates at tail base; dorsal fin spine with a filament on its tip.

Colour: Body reddish brown to bluish green above, white below; fins with grey or brown margins and pectoral and pelvic fins dark above.

### Arius subrostratus Valenciennes, 1840

### Local name(s):

Habitat: Estuaries, tidal rivers and marine waters. Fisheries: Gillnets, bottom trawls.

Distinctive Characters: Snout long, spatulate; maxillary barbels scarcely reach eye; palate teeth villiform or peg like, in a single small ovate patch on each side, each patch as long as eve diameter; dorsal fin filament often long.

**Colour:** Silvery blue above, becoming lighter on sides and belly; series of vertical bands on the body; fins edged with grey.

**Remarks:** Recorded at the Andaman Islands and east coast of Thailand. Most likely occurring also in Myanmar.



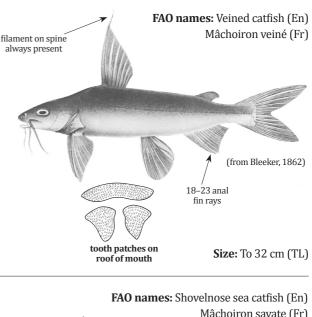
### Local name(s): Nga Yaung.

Habitat: Marine coastal waters, also in estuaries and tidal rivers.

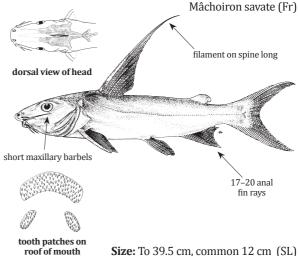
### Fisheries: Gillnets, bottom trawls,

Distinctive Characters: Wide band of conical. blunt teeth in both jaws; palatal teeth conical and blunt tipped, in a short longitudinal band on each side of palate, close to jaw teeth; eyes placed well forward; head shield exposed; only mandibulary barbels present; fin spines strong and flattened, denticulated.

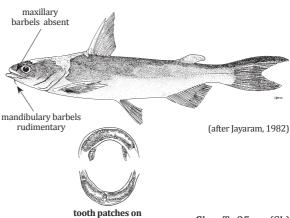
Colour: Body dark brown above, white below; fins dusky yellow, upper lobe of caudal fin dark.



269



FAO names: Beardless sea catfish (En) Mâchoiron imberbe (Fr)



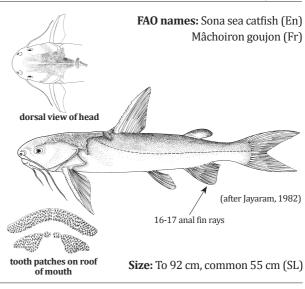
### *Hemiarius sona* (Hamilton, 1822)

Local name(s): Nga Yaung.

Habitat: Coastal marine waters and estuaries. Fisheries: Gillnets, bottom trawls.

**Distinctive Characters:** Palate teeth strong and sharp, in 2 patches placed side by side, the middle patch much smaller than the outer triangular patches; head shield and dorsal fin spine strong, granulated.

**Colour:** Brownish above, dashed with gold on sides, dull white below; outer adipose, caudal and anal fins bluish black.



### Hemiarius sumatranus (Anonymus [Bennet], 1830)

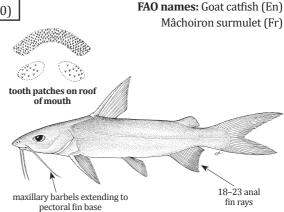
Local name(s): Nga Yaung.

**Habitat:** Marine coastal waters, also in estuaries and tidal rivers.

Fisheries: Gillnets, bottom trawls.

**Distinctive Characters:** Palate teeth slender and sharp, in a single ovate or triangular patch on each side; head shield smooth to slightly granular; dorsal and pectoral fin spines denticulate along hind edges.

**Colour:** Dark brown, reddish, or bluish green above, lighter on sides and belly; fins grey-edged; pectoral and pelvic fins dark above.



Size: To 32 cm, common 12 cm (SL)

### Hexanematichthys sagor (Hamilton, 1822)

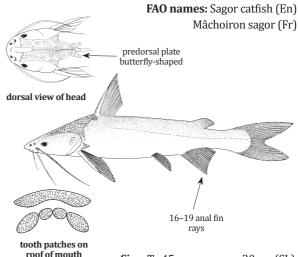
### Local name(s): Nga Yaung.

**Habitat:** Marine coastal waters, also in estuaries and tidal rivers.

### Fisheries: Gillnets, bottom trawls.

**Distinctive Characters:** Head shield striate and rugose; 4 oval patches of villiform teeth across front of palate, 2 on each side, inner patches smaller than outer patches; all spines with short filament; barbels flattened and strap-like, maxillary barbels often long.

**Colour:** Body bluish brown above, white below; fins dusky, paired fins with white margin; peritoneum fawn or dark grey.



Size: To 45 cm, common 30 cm (SL)

# Ketengus typus Bleeker 1846

Local name(s): Nga Yaung.

**Habitat:** Nearshore coastal and brackish waters to tidal reaches of rivers.

Fisheries: Gillnets, bottom trawls.

**Distinctive Characters:** Snout rounded; eye situated well forward; mouth inferior, its opening wide, extending behind eye; single series of incisor-like, compressed teeth in each jaw, teeth blunt or with a central tip; no teeth on smooth palate; 3 pairs of barbels, all of them very short, equal to or shorter than eye diameter; 15 gill rakers on 1<sup>st</sup> gill arch; gill opening restricted, closed across isthmus from level of lower pectoral fin base.

**Colour:** Body dark blue above, white below, iridescent grey on back and sides.

**Remarks:** Presence of this species in Myanmar needs confirmation.

# Nemapteryx nenga (Hamilton, 1822)

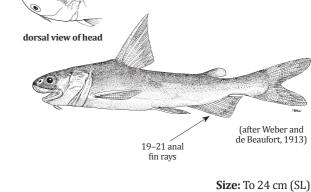
### Local name(s): Nga Yaung.

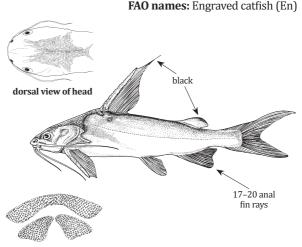
Habitat: Mostly marine, enters estuaries and tidal rivers.

Fisheries: Gillnets, bottom trawls.

**Distinctive Characters:** Head shield granulated in series; palate teeth sharp and strong and densely packed in a single small, roughly triangular patch on each side; jaws strong, mouth gape wide; fin spines strong, rugose, serrated, dorsal tipped with filament.

**Colour:** Body bronze above; fins yellow; barbels and fin filaments black.





tooth patches on roof of mouth

Size: To 45 cm, common 24 cm (SL)

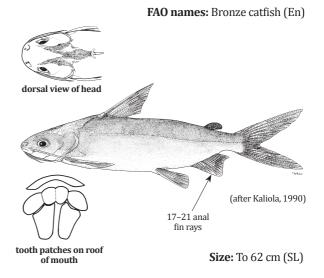
Netuma bilineata (Valenciennes, 1840)

Local name(s): Nga Yaung.

Habitat: Coastal marine waters and estuaries. Fisheries: Gillnets, bottom trawls.

**Distinctive Characters:** Snout rounded; mouth subterminal; fine sharp teeth arranged in 3 patches on each side of palate; patches usually forming a large triangle; inner patches fusing in older fish; adipose fin short-based and situated posteriorly; caudal fin lobes slender and tapered.

**Colour:** Body reddish or bluish brown, with bronze iridescence over back and sides; adipose fin dark brown.



### FAO names: Largemouthed catfish (En)

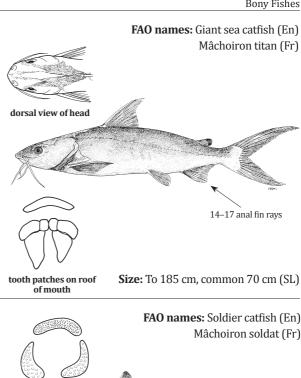
# Netuma thalassina (Ruppell, 1837)

### Local name(s): Nga Yaung.

Habitat: Coastal marine waters and estuaries. Fisheries: Gillnets. bottom trawls.

Distinctive Characters: Snout prominent and somewhat pointed; mouth inferior; fine sharp teeth arranged in 3 patches on each side of palate; patches generally forming a large triangle; inner patches always separated at midline; adipose fin short-based and situated posteriorly; caudal fin lobes slender and distinctly tapered.

**Colour:** Body greyish blue to fawn, back and sides iridescent coppery or golden.



Local name(s): Nga Yaung.

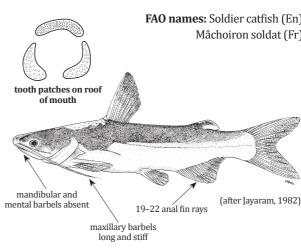
Habitat: Lower courses of rivers, coastal-lake systems, and inshore waters.

Osteogeneiosus militaris (Linnaeus, 1758)

Fisheries: Gillnets. bottom trawls.

**Distinctive Characters:** Head strongly depressed and head shield smooth; palatal teeth conical with blunt tips, grouped into 2 large, elliptical patches, 1 on each side; no mental nor mandibulary barbels; stiff maxillary barbel reaching at least to pectoral fin base; thin fin spines.

**Colour:** Bluish above, white or cream below; margins of dorsal and adipose fins dark blue.



Size: To 35 cm, common 23 cm (SL)

FAO names: Blacktip sea catfish (En)

### Plicofollis dussumieri (Valenciennes, 1840)

### Local name(s): Nga Yaung.

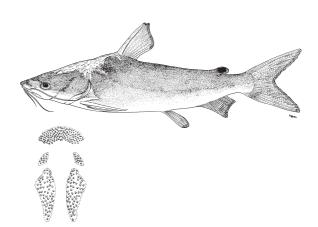
Habitat: Purely marine waters down to 100 m. Fisheries: Gillnets, bottom trawls.

Distinctive Characters: Palate teeth stout and peg-like, in 2 separate patches on each side, placed one behind the other, anterior patches much smaller and ovate; anal fin with 14-18 rays.

Colour: Bluish black on dorsal surface and sides, dull white below; fin tips edged with black.



dorsal view of head



tooth patches on roof of mouth

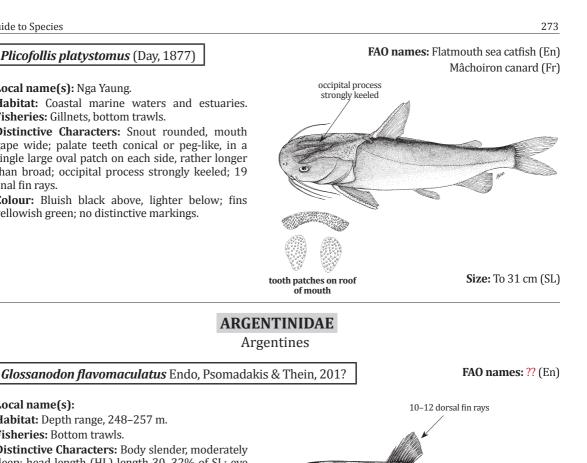
# Plicofollis platystomus (Day, 1877)

Local name(s): Nga Yaung.

Habitat: Coastal marine waters and estuaries. Fisheries: Gillnets, bottom trawls.

Distinctive Characters: Snout rounded, mouth gape wide; palate teeth conical or peg-like, in a single large oval patch on each side, rather longer than broad; occipital process strongly keeled; 19 anal fin ravs.

Colour: Bluish black above, lighter below; fins vellowish green; no distinctive markings.



Local name(s):

Habitat: Depth range, 248-257 m. Fisheries: Bottom trawls.

Distinctive Characters: Body slender, moderately deep; head length (HL) length 30-32% of SL; eye diameter 25-27% of HL; small conical teeth on vomer, palatines, lower jaws (6–15 teeth entirely), and tongue (3-7 teeth on tip); no teeth on upper jaws; adipose fin slender; 19-20 pectoral fin rays; 11–12 pelvic fin rays; 46 vertebrae.

Colour: Body whitish with a silver band on sides and some faint dark blotches on dorsum; no longitudinal black stripe on sides; snout and upper jaw blackish; fin bases and caudal fin partly blackish.

# ATELEOPODIDAE

32-33 gill rakers on 1st gill arch

**Iellynoses** 

Ateleopus indicus Alcock, 1891

### FAO names: None (En)

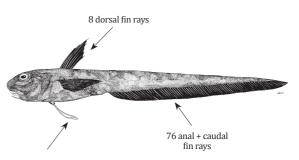
Size: To 18.5 cm (SL)

### Local name(s):

Habitat: Bathydemersal in depths of 344-494 m. Fisheries: Deep bottom trawls.

Distinctive Characters: Body soft and flabby; snout broad, depressed, marginally rounded, its length twice the major diameter of eye; mouth strongly protractile; maxilla reaching nearly to vertical through middle of eye; narrow band of minute teeth in upper jaw; lower jaw toothless; pelvic fin consisting of one elongated ray not reaching halfway to the anus; 12 pectoral fin rays.

Colour: Mottled dark brown to purple-black; fins black, except the ventrals.



11-13 anal fin rays

Size: To 37 cm (TL)

# CHLOROPHTHALMIDAE

Greeneves

" hump-like"

### Chlorophthalmus acutifrons Hiyama 1940

Local name(s): Myet Lone Sein Nga.

Habitat: Benthic in deep water between 250-500 m depth.

Fisheries: Deep bottom trawls.

Distinctive Characters: Body elongate and compressed; "hump-like" dorsal profile (in large adults); no horizontal forward directed spine-like teeth on lower jaw tip; 18-19 gill rakers on 1st gill arch.

Colour: Brown-grey above, pink-white ventrally; sides silvery; oblong dark patches on sides of body; caudal and paired fins darkish; dorsal fin darker distally and basally; anal fin; opercle with a golden blotch in fresh condition.



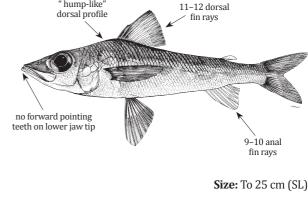
Local name(s): Myet Lone Sein Nga.

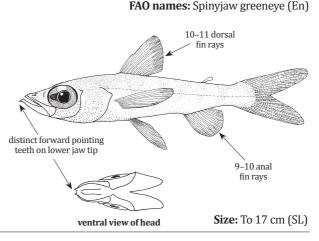
Habitat: Benthic in deep water between 265-458 m depth.

Fisheries: Deep bottom trawls.

Distinctive Characters: Body elongate and compressed; lower jaw terminating in a distinctly projecting horizontal plate with a pair of strong, forward pointing spine-like teeth; 22–26 gill rakers on 1<sup>st</sup> gill arch.

Colour: Silvery grey with minute black dots, fine oblique lines and traces of broad darker crossbars; opercle dark dorsally; dorsal fin darker distally and basally; caudal and pectoral fin black.





**SYNODONTIDAE** 

Lizardfishes

Harpadon nehereus (Hamilton, 1822)

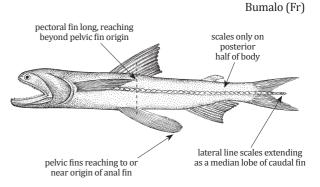
### Local name(s): Nga Hnut.

Habitat: Benthic in offshore waters, also in deltas of rivers to feed during monsoons.

### Fisheries: Bottom trawls.

Distinctive Characters: Body elongate and compressed: 9 pelvic fin rays subequal in length (true of all Harpadon species); scales present only on posterior half of body; snout rounded; mouth very wide, armed with slender, recurved and depressible teeth of unequal size; vomerine and palatine teeth present; 12-13 dorsal fin rays.

**Colour:** Uniform ligth grey or brownish; semitransparent in appearance; caudal fin darkish distally.



FAO names: Humpback greeneve (En)

FAO names: Bombay duck (En)

### Synodon Rtichae Fishes

### FAO names: None (En)

# Harpadon sp.

### Local name(s): Nga Hnut.

Habitat: Benthic in deeper offshore waters. Caught at 498 m depth.

Fisheries: Deep bottom trawls.

Distinctive Characters: Body elongate, slender and compressed, its depth 8-10 in SL; snout pointed; nostrils in a single pair; small embedded scales (not visible) over whole of body; 12 dorsal fin rays; mouth very wide, armed with slender recurved and depressible teeth of unequal size; vomerine teeth absent.

Colour: Silvery grey, semitransparent in appearance; caudal fin dusky; dorsal and anal fins darkish basally and distally; pelvic fins jet-black.

**Remarks:** This species appears to be close to Harpadon nudus Ganga, Thomas & Sukumaran, 2015, recently described from deeper waters of the Arabian Sea.

Harpadon squamosus (Alcock, 1891)

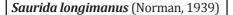
Local name(s): Nga Hnut.

Habitat: Benthic in deeper offshore waters between 439-777 m.

Fisheries: Deep bottom trawls.

Distinctive Characters: Body elongate and compressed, its depth 5.8 in SL; snout rounded; nostrils in 2 pairs; vomerine and palatine present; body totally scaled; 12-14 dorsal fin rays; pelvic fins almost reaching origin of anal fin.

Colour: Body greyish with caudal, pectoral and pelvic fins black; peritoneum black.



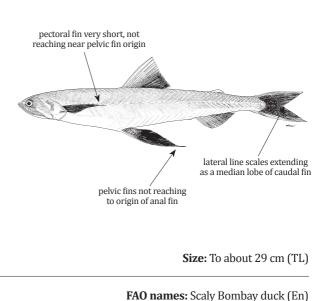
Local name(s): Nga Pulway.

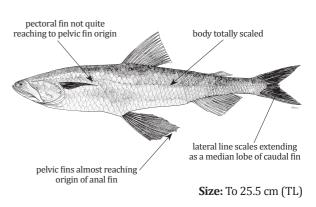
Habitat: Muddy bottoms from 77-280 m depth.

### Fisheries: Bottom trawls, gillnets.

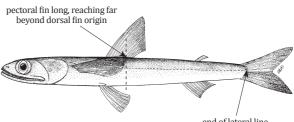
Distinctive Characters: Body cylindrical; several rows of teeth visible in both jaws even when mouth is closed; 9 pelvic fin rays subequal in length; lateral line extending to caudal fin base (true of all Saurida species); 11–12 dorsal fin rays; 14 pectoral fin rays. Colour: Brownish above, silvery white below; upper half of pectoral fin and distal parts of dorsal fin and lower caudal lobe, dusky.

Remarks: A S. longimaus-like form with shorter pectoral fins was also collected during experimental trawl surveys off Myanmar. The specimen is being presently studied by B. Russell.





FAO names: Longfin lizardfish (En) Anoli aile longue (Fr)



end of lateral line

# Saurida tumbil (Bloch, 1795)

Local name(s): Nga Pulway.

Habitat: Muddy bottoms from 20 m to 89 m depth. Fisheries: Bottom trawls, gillnets.

Distinctive Characters: Body cylindrical; head and caudal peduncle somewhat depressed; several rows of teeth visible in both jaws even when mouth is closed; 12 (rarely 11-13) dorsal fin rays; 14-15 pectoral fin rays.

Colour: Back and sides brown, belly pale or silvery; distal parts of dorsal, paired fins and particularly caudal fin, dusky; otherwise, no markings.

Remarks: This species has previously been misidentified in the Indo-West Pacific as Saurida tumbil (Bloch, 1795).

Saurida lessepsianus Russell, Golani & Tikochinski, 2015

FAO names: Lessespian lizardfish (En)

Size: To 60 cm (FL)

Local name(s): Nga Pulway.

Habitat: Muddy bottoms from 20 m to 350 m depth.

Fisheries: Bottom trawls, gillnets.

Distinctive Characters: Cigar-shaped, rounded or slightly compressed; the head pointed and depressed; snout rounded; several rows of teeth visible in both jaws even when mouth is closed; 11–12 dorsal fin rays; 14–15 pectoral fin rays.

Colour: Back and sides brown, belly pale or silvery; 8-10 elongate spots often visible along lateral line; upper caudal ray with dark spots, faint spots sometimes present on 2nd dorsal fin ray.

Remarks: Previously recorded as Saurida undosquamis (Richardson, 1848), but now identified as a distinct species. The latter was recently described from the Red Sea, but appears to be widespread in the Indian Ocean (B. Russell, pers. com., 2017).

### Synodus dermatogenys Fowler, 1912

Local name(s): Nga Pulway.

Habitat: Occurs on sandy bottoms adjacent to rocks or coral in depths of 1 to 91 m.

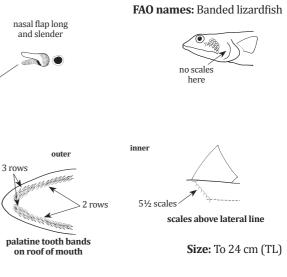
Fisheries: Bottom trawls, gillnets.

Distinctive Characters: Eight pelvic fin rays, inner rays about 2 to 3 times longer than outermost rays (true of all Synodus species); anterior palatine teeth longer than more posterior teeth, forming a discrete group; 5½ scales above lateral line; nasal flap on anterior nostrils long and slender; posterior portion of cheeks naked; >62 lateral line scales; pectoral fins not reaching a line connecting origins of dorsal and pelvic fins.

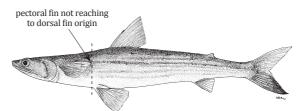
Colour: Body brownish above, with 7 irregular darker bars, and a pale mauve band above lateral line.

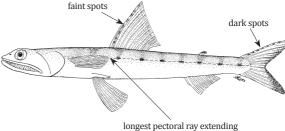
to about dorsal fin origin

Size: To 30 cm (TL)



277





FAO names: Blackear lizardfish

### Synodus hoshinonis Tanaka, 1917

### Local name(s): Nga Pulway.

**Habitat:** Benthic in moderrate deep waters between 60 to 96 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Anterior palatine teeth longer than more posterior teeth, forming a discrete group;  $3\frac{1}{2}$  scales above lateral line; posterior portion of cheeks scaly; postpelvic process wide.

**Colour:** Body with alternating pale and dark saddle blotches above; a conspicuous black blotch on upper distal corner of operculum; fins pale; peritoneum pale; peritoneal spots 12 or 13

# postpelvic process wide head and pelvic (ventral view

# Synodus indicus (Day, 1873)

Local name(s): Nga Pulway.

Habitat: Coastal waters from 20 m to 100 m depth. Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Anterior palatine teeth not longer than others, not forming a discrete group; 3½ scales above lateral line; posterior portion of cheeks scaly; posterior pelvic process wide.

**Colour:** Body dusky pink above, with pale bluegrey blotches and stripes; two small pigmented spots at upper distal corner of operculum; peritoneum pale; 9–11 peritoneal spots.

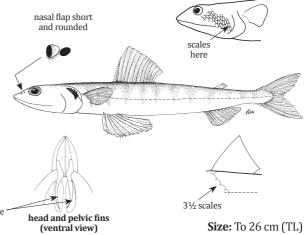


### Local name(s): Nga Pulway.

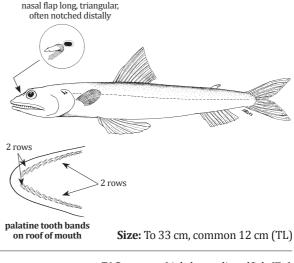
**Habitat:** A benthic species, frequently found swimming high above the substrate on mixed sand and coral rubble bottoms in depths of 10 to 100 m. **Fisheries:** Bottom trawls, gillnets.

**Distinctive Characters:** Anterior palatine teeth longer than more posterior teeth, forming a discrete group;  $5\frac{1}{2}$  scales above lateral line; posterior portion of cheeks naked; postpelvic process wide.

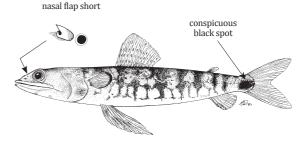
**Colour:** Body with a series of 8 or 9 dark brown, saddlelike bars, widest dorsally; a conspicuous black spot on caudal peduncle; peritoneum pale; peritoneal spots 11 to 13.



### FAO names: Indian lizardfish (En) Anoli indien (Fr)



FAO names: Lighthouse lizardfish (En) Anoli phare (Fr)



# Synodus macrops (Tanaka, 1917)

Local name(s): Nga Pulway.

Habitat: Coastal waters from 35 m to 200 m depth. Fisheries: Bottom trawls, gillnets.

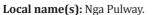
Distinctive Characters: Anterior palatine teeth not longer than others, not forming a discrete group; 3½ scales above lateral line; posterior portion of cheeks scaly; posterior pelvic process narrow.

**Colour:** Body tan, darker on back than on belly: 3 X-shaped spots on sides; peritoneum grey to black; peritoneal spots 5 or 6.

> postpelvic process narrow

FAO names: Blunt nose lizardfish (En)

### Trachinocephalus trachinus (Temminck & Schlegel, 1846)



Habitat: Sand, shell, rock or mud bottoms from the shoreline down to 400 m depth.

Fisheries: Bottom trawls, gillnets.

Distinctive Characters: Snout very short; mouth oblique with a single row of teeth on upper jaw visible even when mouth is closed; 13-18 anal fin rays.

Colour: A series of longitudinal blue and yellow stripes cover back and sides; belly pale yellow or gold; a large, dark, oblique black spot at upper corner of gill cover.

Remarks: Previously recorded as Trachinocephalus myops (Forster, 1801), but that species is now considered to occur only in the Atlantic Ocean, and the name *T. trachinus* has been applied to the species in the Indo-W. Pacific (Polanco et al., 2016).

### Synodus randalli Cressey, 1981

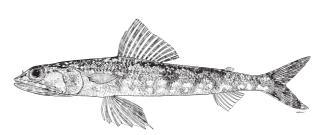
### Local name(s): Nga Pulway.

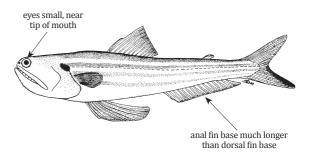
Habitat: Benthic in depths of 146-250 m.

Distinctive Characters: Anterior palatine teeth longer than more posterior teeth, forming a discrete group; nasal flap of anterior nostrils long and triangular; 3<sup>1</sup>/<sub>2</sub> scales above lateral line; posterior portion of cheeks scaly; posterior pelvic process wide.

Colour: A series of reddish brown saddle-like bands; dorsal fin with 3-4 similarly colored bars; a conspicuous spot on the adipose fin; peritoneum pale; 14 peritoneal spots.

Remarks: This species, previously known only from the Red Sea, requires further study.

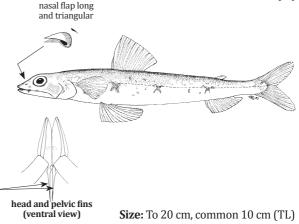




Size: To 40 cm, common 20 cm (TL)

FAO names: Randall's lizardfish (En)

### FAO names: Triplecross lizardfish (En) Anoli croix (Fr)



# *Synodus variegatus* (Lacepède, 1803)

Local name(s): Nga Pulway.

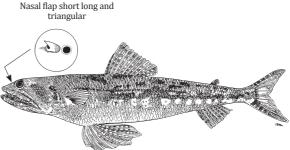
**Habitat:** A benthic species, frequently found on or close to rock and coral bottoms in depths of 5 to 60 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Anterior palatine teeth longer than more posterior teeth, forming a discrete group; 5½ scales above lateral line; posterior portion of cheeks scaly; postpelvic process wide.

**Colour:** Body with a series of 8 or 9 dark brown, saddlelike bars, widest dorsally; peritoneum pale; peritoneal spots 10 to 11.





Size: To 40 cm (TL)

FAO names: ?? (En)

# NEOSCOPELIDAE

### Neoscopelids

*Neoscopelus 'microchir'* Matsubara, 1943

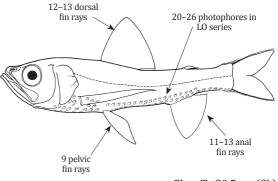
Local name(s): Nga Mee Eain.

Habitat: Bathypelagic. Depth range 250–700 m. Fisheries: Pelagic trawls.

**Distinctive Characters:** Photophores of lateral series (LO)continuous from pectoral fin base to the end of anal fin base; 14–18 (usually 16) gill rakers on 1st gill arch; 15–16 pectoral fin rays.

**Colour:** Head and sides of body dark red, silvery white below; fins pink.

**Remarks:** Non-Pacific Ocean specimens of *Neoscopelus 'microchir'* most likely belong to a new species (see Nafpaktitis, 1977). Quotation marks on the specific name indicate its provisional taxonomic position.



Size: To 30.5 cm (SL)

# **MYCTOPHIDAE**

Lanternfishes

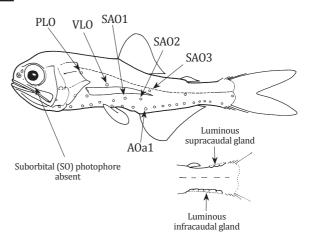
Benthosema fibulatum (Gilbert & Cramer, 1897)

### Local name(s): Nga Mee Eain.

**Habitat:** Benthopelagic and mesopelagic in slope waters and oceanic waters, but usually not high oceanic.

Fisheries: Pelagic trawls.

**Distinctive Characters:** Mouth terminal, snout not projecting; SO photophore absent; SAO3 on or behind vertical through AOa1; 1<sup>st</sup> gill arch with 6–9 gill rakers on upper limb, 13–20 on lower limb; SAO1 well below line connecting VLO and SAO2; PLO closer to lateral line than base of pectoral fins; both supra- and infracaudal organs well developed and present in males and females over 3 cm long. **Colour:** silvery with metallic green or blue scales. FAO names: Spinycheek lanternfish (En)



Size: To 10 cm (TL)

# Benthosema pterotum (Alcock, 1890)

### Local name(s): Nga Mee Eain

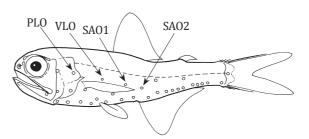
**Habitat:** Benthopelagic and mesopelagic in slope and near continental/island waters; one of the shallowest dwelling species in the family, with day captures as shallow as 100 m.

### Fisheries: Pelagic trawls.

**Distinctive Characters:** Similar to *Benthosema fibulatum* but SAO1 on line connecting VLO and SAO2; PLO at or below midway point between base of pectoral fins and lateral line; caudal luminous organs poorly developed, supracaudal in males, infracaudal in females, or absent

**Colour:** silvery with metallic green or blue scales.

### FAO names: Skinnycheek lanternfish (En)



Size: To about 7 cm (TL)

# TRACHIPTERIDAE

Ribbonfishes

# Trachipterus cf. trachypterus (Gmelin, 1789)

Local name(s): Nga Dagon.

Habitat: Epi- and mesopelagic species.

Fisheries: Pelagic trawls.

**Distinctive Characters:** Body elongate, ribbonlike, compressed; ventral body margin gently tapering to tail; small teeth in jaws, vomer and sometimes on palatines; posterior portion of lateral line well above the ventral edge of tail; lateral line with small forwardly-projecting spines; dorsal fin with 145–184 elements.

**Colour:** Head and body silvery with polka-dotted or a few large dark spots or longitudinal lines on sides; front of head, interorbital area, dorsal part of upper jaw, and tip of lower jaw black.

Remarks: Inclusion based on photographic record.

9-11 pectoral fin rays

FAO names: Mediterranean dealfish (En)

Size: To 300 cm (TL)

# POLYMIXIIDAE

Beardfishes

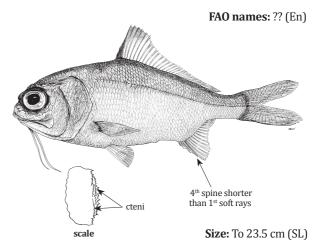
### Polymixia fusca Kotthaus, 1970

Local name(s): Nga Moke Seik.

Habitat: Bathydemersal in depths of 19–455 m. Fisheries: Bottom trawls.

**Distinctive Characters:** Two long barbels inserted well behind tip of lower jaw; snout not protruding over upper jaw; dorsal fin with 5–6 spines and 30–34 soft rays; anal fin with 3–5 spines and 13–15 soft rays; scales with ctenii distributed in vertical rows of uneven shape; length of 4<sup>th</sup> dorsal fin spine less than eye diameter.

**Colour:** Dusky above, silvery below; tips of dorsal, caudal and pectoral (sometimes) fins blackish; anal and pelvic fins withish.



# BREGMACEROTIDAE

Codlets

### Bregmaceros mcclellandi Thompson, 1840

Local name(s): Moke Seik Phyu Pyauk.

**Habitat:** Pelagic in coastal waters, in estuaries; also in the open ocean.

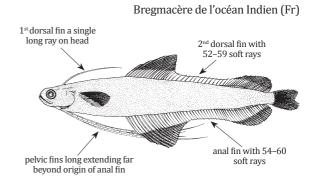
Fisheries: Bottom trawls.

**Distinctive Characters:** Caudal fin slightly forked; no scales on cheek; 18–20 pectoral rays; 14–15 transverse scales on body; 52–55 vertebrae.

**Colour:** Upper part of pectoral fins black or rather dark; dark pigment usually present on caudal fin, anterior and posterior lobes of 2<sup>nd</sup> dorsal fin, and sometimes anterior and posterior lobes of anal fin (pigments often faint or absent, especially in young); body cromatophores present mainly at the dorsal part.

### Bregmaceros sp.

Local name(s): Moke Seik Phyu. Habitat: Fisheries: Bottom trawls. Distinctive Characters: Colour:



Size: To 10 cm, common 7 cm (SL)

FAO names: Unicorn cod (En)

FAO names: ?? (En)

Size: To ?? cm (TL)

# MACROURIDAE

Grenadiers

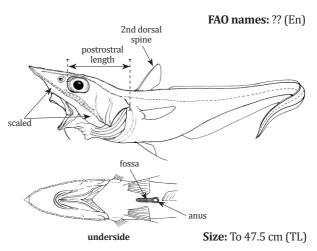
### Coelorinchus flabellispinnis (Alcock, 1894)

Local name(s): Nga Kywet.

Habitat: Benthopelagic in depths of 767–1 300 m. Fisheries: Deep bottom trawls.

**Distinctive Characters:** A distinct blackish fossa (light organ) between anal fin origin and pelvic fin insertion and closer to latter; snout long, 2.4–2.6 times in HL; scales on body with sharp and keel-like spinules, usually in 3–6 radiating rows (median row enlarged); outer series of upper jaw teeth enlarged; spinous 2<sup>nd</sup> dorsal fin spine smooth and shorter than postrostral length; underside of head completely scaled; 7 pelvic fin rays.

**Colour:** Body dark stone-gray except bluish over abdomen; fins blue-black.



### Coelorinchus cf. mycterismus McMillan & Paulin, 1993

Local name(s): Nga Kywet.

**Habitat:** Benthopelagic in depths of 833–1 150 m. **Fisheries:** Deep bottom trawls.

**Distinctive characters:** No external evidence of blackish fossa (light organ) on belly; snout long, slender, sharply pointed and upturned, 44–51% of HL; body scales with 4–9 parallel rows of spinules, the median row larger, lateral rows often incomplete; underside of head completely scaled; 7 pelvic fin rays.

**Colour:** Body uniformly grayish brown, abdomen with bluish tinge; paired fins and anal fin light dusky; anal fin pale posteriorly; juveniles with vertical bands on body and tail.

**Remarks:** A single specimen collected off the Myanmar coast apparently conforming to this species. Additional specimens are required to determine whether these two forms are conspecific.

### Coryphaenoides macrolophus (Alcock, 1889)

Local name(s): Nga Kywet.

**Habitat:** Benthopelagic in depths of 522–1 322 m. **Fisheries:** Deep bottom trawls.

**Distinctive characters:** Snout bluntly angled extending beyond mouth; upper jaw not reaching below posterior 1/3 of eye; teeth villiform in broad bands in each jaw (an outer row of sligthly enlarged teeth in upper jaw); barbel less than half the length of eye; underside of head completely scaled; 8 (rarely 9) pelvic fin rays; 2nd dorsal fin ray serrated and extremely long, nearly twice the length of the head; outer pelvic ray with a filamentous at tip; anus immediately before anal fin opening.

**Colour:** Body overall dark; fins and gill cavity black; mouth dark gray, lips and gums pale.

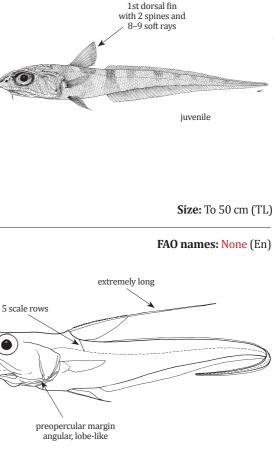
### Malacocephalus laevis (Lowe, 1843)

### Local name(s): Nga Kywet.

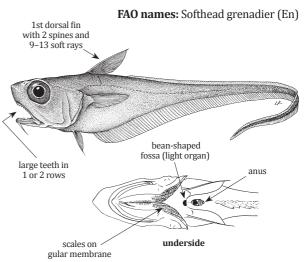
Habitat: Benthopelagic in depths of 200–1 000 m. Fisheries: Deep bottom trawls.

**Distinctive characters:** Snout rounded, 26–31% of HL; 2 distinct rows of teeth in upper jaw, 1 wide-spaced row of canines in lower jaw; usually a patch of scales on gular membrane; interorbital width (usually 30–33% of HL) equal to or shorter than eye diameter; dorsal fin spine smooth; pectoral fins with 16–22 rays; 9 pelvic fin rays; anus at a distance from anal fin origin situated at posterior end of a oval patch of black skin.

**Colour:** Body uniformly grayish brown, abdomen with bluish tinge; fins and gill cavity black.



Size: To about 32 cm (TL)



283

Size: To 60 cm, common 40 cm (TL)

# Sphagemacrurus richardi (Weber, 1913)

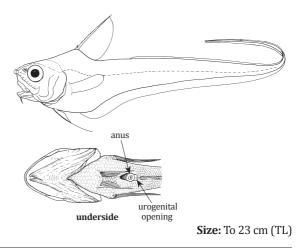
Local name(s): Nga Kywet.

Habitat: Benthopelagic in depths of 538–1 260 m. Fisheries: Deep bottom trawls.

**Distinctive characters:** Snout short (its length 30–37% of HL), high, scarcely protruding beyond steeply oblique mouth; underside of head naked; jaw teeth small in narrow bands; barbel about half or less of greatest orbit diameter; pelvic fins anteriorly placed, about under preopercle; anal fin origin about under 1st dorsal fin origin; anus and urogenital opening large, immediately before anal fin origin, the naked surrounding extending to about half distance to pelvic fin insertion; 8–11 pelvic fin rays.

**Colour:** Body overall dark (head pale along sides); abdomen and chest with violet tinge; dorsal, pectoral and anal fins dusky; pelvic fins black.

### FAO names: Richard's whiptail (En)



# **MORIDAE** Deepsea cods

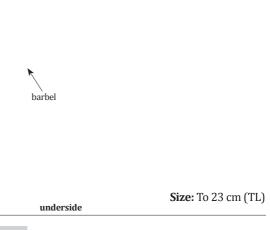
Physiculus roseus Alcock, 1891

Local name(s): None.

Habitat: Bathypelagic; depth range 274 –549 m. Fisheries: Deep bottom trawls.

**Distinctive characters:** Teeth villiform, equal sized; vomer without teeth; light organ placed slightly closer to the level of pelvic fin insertion than anus, distance between rear margin of light organ and anus slightly more than one and a half times diameter of light organ; 3+10–11 gillrakers on 1st gill arch; 8 scales between origin of 1st dorsal fin and lateral line; 46-49 vertebrae.

**Colour:** Head and body pale pinkish tan, abdomen bluish; branchiostegal membranes, snout, orbit rim and remaining scale pockets brown; vertical fins dusky near tips, axil of pectoral fin dark brown; light organ and anus black.



# **OPHIDIIDAE**

Cusk eels



**Local name(s):** Mote Seik Shae Mway Nga Shint. **Habitat:** Benthic on continental shelf and slope in deeper waters. Maximum depth 650 m.

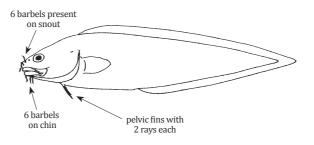
### Fisheries: Bottom trawls.

**Distinctive characters:** Body elongate with a tapering caudal fin; fine teeth present on jaws and on palate; dorsal and anal fins long, continuous with caudal fin; body completely covered with small, cycloid (smooth) scales.

**Colour:** Dark brown with a submarginal black band; narrow white border on the dorsal and anal fins.

FAO names: Goatsbeard brotula (En) Brotula barbe-de-boue (Fr)

FAO names: Rosy cod (En)



Size: To 100 cm, common 30 cm (SL)

# Dicrolene aff. mesogramma Shcherbachev, 1980

FAO names: None (En)

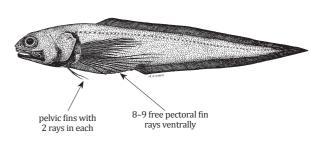
Local name(s): Mway Nga Shint.

Habitat: Benthopelagic in depths of 767–777 m. Fisheries: Deep bottom trawls.

**Distinctive characters:** Snout somewhat acute; hind margin of preopercle with 2–3 rather flat spines; villiform teeth in jaws and basibranchial tooth patches; 1 median and a pair of basibranchial tooth patches; pectoral fin with 8–9 free rays ventrally of which the lower 2–3 short, and 14–15 rays dorsally joined by membrane in their proximal half.

**Colour:** Body overall dark; opercle with bluish tinge; dorsal, anal and pectoral fins black.

**Remarks:** The Myanmar specimens differ from *D. mesogramma* by the pattern of basibranchial tooth patches and length and number of free ventral pectoral fin (J. Nielsen pers. com., 2017).



Size: To at least 21 cm (SL)

FAO names: None(En)



Local name(s): Mway Nga Shint.

Habitat: Benthopelagic in depths of 506–523 m. Fisheries: Deep bottom trawls.

**Distinctive characters:** Similar to *D.* aff. *mesogramma* but with a more broad and rounded snout, 2 median and a pair of basibranchial tooth patches and no free pectoral fin rays ventrally.

**Colour:** Body overall dark; opercle with bluish tinge.

**Remarks:** The Myanmar specimen keys out as *Dicrolene* sp. (from the eastern Indian Ocean) rather close to *D. nigricaudis*. Generic revision needed to establish the specific identity of *Dicrolene* specimens collected in Myanmar (J. Nielsen pers. com., 2017).

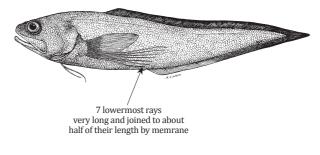
### Glyptophidium argenteum Alcock, 1889

Local name(s): Mway Nga Shint.

Habitat: Benthopelagic in depths of 295–815 m. Fisheries: Deep bottom trawls.

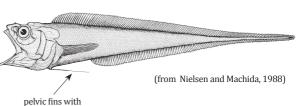
**Distinctive characters:** Prominent head and body with an attenuate caudal part; head bones with large, thin crests; horizontal diameter of orbit 21.5–28.5% of HL; opercular spine broad, flat and weak; basibranchial with 1 median and a pair of tooth patches; 14–23 long gill rakers on 1st gill arch; 7–12 pseudobranchial filaments; 20–24 pectoral fin rays.

**Colour:** Head, body and median fins dark gray blackish.

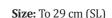


Size: To at least 23 cm (SL)

FAO names: None(En)



a single ray in each



### FAO names: None (En)

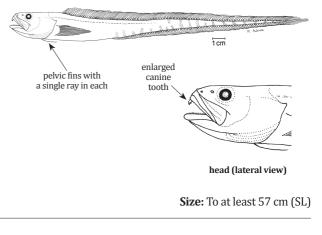
# Hypopleuron caninum Smith & Radcliffe, 1913

Local name(s): Mway Nga Shint.

Habitat: Benthopelagic in depths of 300-575 m. Fisheries: Deep bottom trawls.

Distinctive characters: Jaws equal in length or lower jaw slightly protruding; no spines on opercle or subopercle; a canine tooth at the front of each upper jaw bone; 1 median basibranchial tooth patch; 8 branchiostegal rays; lateral line with small scales that overlie an inner series of larger scales that bear neuromasts; 26 pectoral fin rays.

Colour: Overall gravish brown (upper parts of head and body darker), abdomen and underside of head withish; median and pectoral fins blackish.



### Lamprogrammus fragilis Alcock, 1892

Local name(s): Mway Nga Shint.

Habitat: Benthopelagic in depths of 745–1 240 m. Fisheries: Deep bottom trawls.

Distinctive characters: Body short, depth at anus 5.2-6.3 in SL; snout broad and rounded; mouth terminal; body and head covered with decidous (easily shed) cycloid scales of moderate size; lateral line scales distinctly larger than other scales; 14-17 developed gill rakers on lower arm of 1st arch; 8 branchiostegal rays; 17 pectoral fin rays; 1 median basibranchial tooth patch; teeth granular, none enlarged; posterior margin of opercle smooth; 8-9 caudal fin rays; anal fin origin below dorsal fin ray no. 20.

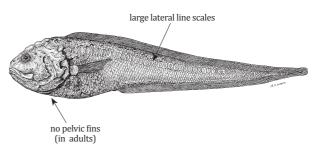
Colour: Head, body and fins jet-black.



Local name(s): Mway Nga Shint.

Habitat: Benthopelagic in depths of 767-777 m. Fisheries: Deep bottom trawls.

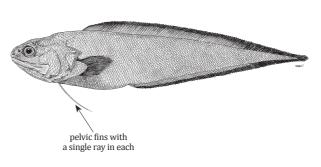
Distinctive characters: Head small, scaly, lower that the body; eye diameter almost equal to snout; opercular spine strong; preopercle with 1 weak spine on lower angle; 1 median basibranchial tooth patch; 24 developped rakers of 1st gill arch. Colour: Body overall dark: opercle and abdomen with bluish tinge; vertical fins with black margin. **Remarks:** This genus is much in need of a revision (J. Nielsen pers. com., 2017).



Size: To at least 57 cm (SL)

FAO names: None (En)

FAO names: None (En)



#### Neobythites steatiticus Alcock, 1894

Local name(s): Mway Nga Shint.

Habitat: Benthopelagic in depths of 193–450 m. Fisheries: Deep bottom trawls.

**Distinctive characters:** Snout blunt; mouth subterminal; horizontal eye diameter about equal to snout; opercular spine strong and straight; no spine on hind margin of preopercle; 2 median basibranchial tooth patches; 2–3 pseudobranchial filaments; 11–14 developed rakers on anterior gill arch; 88–94 dorsal fin rays; 73–77 anal fin rays; 24–27 pectoral fin rays; teeth mostly granular (sometimes needle-like teeth on premaxilla); vomer boomerang shaped.

**Colour:** Distinct ocellus on dorsal fin well behind vertical through anus; black part of ocellus covers 7–10 dorsal fin rays; middle part of anal fin black with a pale band both proximally and distally.

Neobythites aff. pallidus Nielsen, 1997

Local name(s): Mway Nga Shint.

Habitat: Benthopelagic in depths of 374–376 m. Fisheries: Deep bottom trawls.

**Distinctive characters:** Snout blunt, shorter than horizontal diameter of eye window; 2 median basibranchial tooth patches; 28 pectoral fin rays; 13–15 developed rakers on 1st gill arch; 4–6 pseudobranchial filaments; 102 dorsal fin rays; 83 anal fin rays; anal fin origin below dorsal fin ray no. 20; teeth granular; vomer boomerang shaped.

**Colour:** Head, body and vertical fins mottled dark brown; pectoral fins dark brown; pelvic fin dirty white.

**Remarks:** The Myanmar specimen differs from *N. pallidus* mainly by the intense body pigmentation and by having a larger size (28.5 vs. 8.8–14.8 cm SL) (J. Nielsen & F. Uiblein pers. com., 2018).

## Pycnocraspedum aff. squamipinne Alcock, 1889

#### Local name(s): Mway Nga Shint.

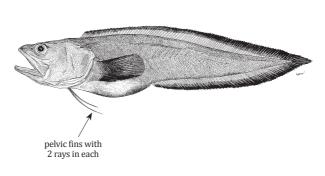
Habitat: Benthopelagic in depths of 280–469 m. Fisheries: Deep bottom trawls.

**Distinctive characters:** Body short with large head; upper jaw ending behind eye; opercular spine strong but not always visible; hind margin of opercle with 2–3 spines; eye slightly shorter than snout; 2 median basibranchial tooth patches; 4 developed rakers on 1st gill arch; 0–2 pseudobranchial filaments; 90–91 dorsal fin rays; 57–62 anal fin rays; anal fin origin below dorsal fin ray no. 25–31; 27–30 pectoral fin rays.

**Colour:** Head greenish gray; body uniform dirty green-chocolate; vertical fins with black margin.

**Remarks:** The Myanmar specimens differ from *P. squamipinne* mainly in having fewer rays in dorsal and anal fins (J. Nielsen pers. com., 2017).

Size: To at least 23 cm (SL)

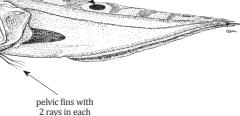


Size: To at least 28.5 cm (SL)

FAO names: None (En)

Size: To 16 cm (SL)

FAO names: None (En)



distinct

ocellus

pelvic fins with

2 rays in each

FAO names: Barred cusk eel (En)

#### FAO names: None (En)

## **Ophidion** sp.

#### Local name(s): Mway Nga Shint.

**Habitat:** Benthic on soft bottoms in depths of 97–129 m.

Fisheries: Deep bottom trawls.

**Distinctive characters:** Body elongate; elliptical scales arranged at oblique angles to each other, scales absent on head; 159–163 dorsal fin rays; 130–131 anal fin rays; basis of pelvic fins below orbit; anal fin origin below dorsal fin ray no. 29–30. **Colour:** Head and body pale brown; tip of caudal region yellow; dorsal and anal fins with a thin black margin; pelvic fins milky white.

**Remarks:** This species-rich genus is much in need of a revision (J. Nielsen pers. com., 2017).

## Sirembo jerdoni (Day, 1888)

#### Local name(s): Mway Nga Shint.

**Habitat:** Benthic or benthopelagic in continental shelf waters.

Fisheries: Deep bottom trawls.

**Distinctive characters:** Deepest part of fish well behind head; horizontal diameter of eye slightly longer than snout; no spine on preopercle; spine on opercle short, not reaching rear margin of head; eyes well developed; prepelvic length 9.1–12.5% SL; anal fin origin below dorsal fin rays 27–34; 5–7 scale rows between origin of dorsal fin and lateral line; 3–4 developed gill rakers on 1st arch; pseudobranch large, with 18–27 filaments; single median basibranchial tooth patch.

**Colour:** Three or 4 broad, black oblique bands on head and anterior body, which connect over the predorsal and head to the other side; 3–4 black spots on dorsal fin.

## Spottobrotula mahodadi Cohen & Nielsen, 1978

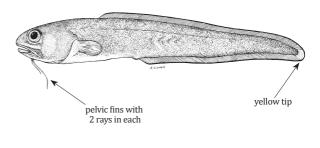
#### Local name(s): Mway Nga Shint.

**Habitat:** Benthopelagic in depth of 40–129 m.

Fisheries: Deep bottom trawls.

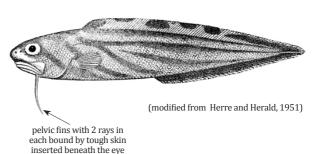
**Distinctive characters:** Body depth at anus about 5 times in SL; preanal about 2 times or more in SL; head about 2 times or more in preanal length; a prominent skin flap above base of pectoral fins; opercle with a strong pointed spine; 35 or more pseudobranchial filaments; teeth granular; 11 developed gill rakers on 1st arch; a single median basibranchial tooth patch; 104–105 dorsal fin rays; 78–79 anal fin rays; pelvic fins fleshy, with 2 rays in each, bound together with tough skin, equal to or somewhat shorter than head and extending beyond rear margin of pectoral fins but falling short of anus.

**Colour:** Dark stone-gray with dark brown spots on head and body; fins jet-black.



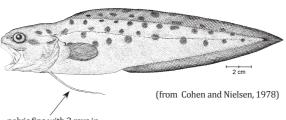
Size: To at least 15 cm (SL)

FAO names: Brown banded cusk eel (En)



Size: To 43 cm (SL)

FAO names: None (En)



pelvic fins with 2 rays in each bound by tough skin

# BATRACHOIDIDAE

Toadfishes

## Allenbatrachus grunniens (Linnaeus, 1758)

Local name(s): Nga Oat Pharr.

**Habitat:** Inhabits coastal waters and estuaries over sandy and muddy bottoms.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Lower jaw terminal, projecting beyond upper jaw; eyes not raised above profile and diameter less than snout length; interorbital width greater than eye diameter; no pore present in pectoral fin axil; teeth on jaws, vomer, and palatines all pointed; anterior orbital cirrus simple, tip pointed; gill slit extending from upper 3/4 to 4/5 of pectoral fin base.

**Colour:** Head, body and fins grayish to brownish or blackish, mottled with pale or dark irregular

Allenbatrachus reticulatus (Steindachner, 1870)

#### Local name(s): Nga Oat Pharr.

**Habitat:** Inhabits coastal waters and estuaries over sandy and muddy bottoms.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Similar to *Allenbatrachus grunniens* but teeth on jaws, vomer, and palatines all blunt and rounded; anterior orbital cirrus with 4 or more rounded tips.

**Colour:** Head and body light brown, crossed by four irregular dark blotches; all fins with dark brown bands (yellowish color between bars).

## Perulibatrachus cf. aquilonarius Greenfield, 2005

Local name(s): Nga Oat Pharr.

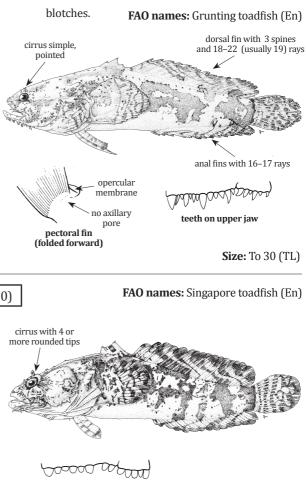
**Habitat:** Benthic on continental slope; depth range 10–40 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Head large and wide, moderately depressed, its width 31–43.6% of SL; a shallow, funnel-shaped pocket in pectoral fin axil; teeth on jaw biserial anteriorly and uniserial posteriorly; a single row of curved teeth on vomer and palatine; 21–23 pectoral fin rays.

**Colour:** Body and fins light brown with large irregular dark brown spots, those on head fused partly; ventral surface pale.

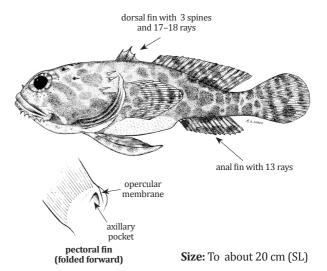
**Remarks:** The Myanmar specimen has a narrower head and different spotting pattern compared to the two previously known specimens (southwestern India). However, it is a much smaller individual and these differences may relate to growth.



teeth on upper jaw

FAO names: None (En)

Size: To 15 cm (SL)



# LOPHIIDAE

Goosefishes

## Lophiodes mutilus (Alcock, 1894)

#### Local name(s): Nga Kyauk Pha.

Habitat: Benthic on continental slope; depth range 300–495 m.

Fisheries: Bottom trawls.

**Distinctive Characters:** Head and body depressed; 1<sup>st</sup> dorsal fin consisting of III isolated spines on head (cephalic spines), and I or II very short slender spines behind head (postcephalic spines); frontal ridges smooth; gill opening extending well in front of pectoral fin base.

**Colour:** Dorsal surface uniform light to dark brown, fleshy tendrils darker brown or black; ventral surface lighter brown or tan; pectoral fins darker brown distally, but tips of rays pale; peritoneum black.

## Lophiodes triradiatus (Lloyd, 1909)

Local name(s): Nga Kyauk Pha.

**Habitat:** Benthic on continental slope; depth range 494–1 560 m.

Fisheries: Bottom trawls.

**Distinctive Characters:** Similar to *Lophiodes mutilus* but no post-cephalic dorsal fin spines, a leaf-like esca (lure); all 3 dorsal fin spines (including illicium) relatively short.

**Colour:** Dorsal surface uniform medium to dark brown, fleshy tendrils absent from body and fins; ventral surface lighter brown or tan, but darker in some specimens; peritoneum pale.

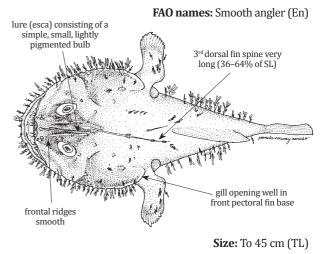
## Lophiomus setigerus (Vahl, 1797)

#### Local name(s): Nga Kyauk Pha.

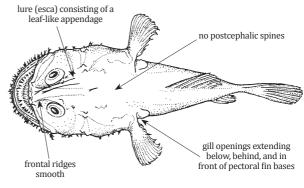
**Habitat:** Benthic on outer continental shelf and upper continental slope; depth range 72–238 m. **Fisheries:** Bottom trawls.

**Distinctive Characters:** Head and body depressed; 1st dorsal fin consisting of III isolated spines on head (cephalic spines), and a group of 3 short slender spines behind head (postcephalic spines); lure (esca) consisting of a pennant-like flap, long cirri, and usually II small, dark, stalked shrimp-like "eyes".

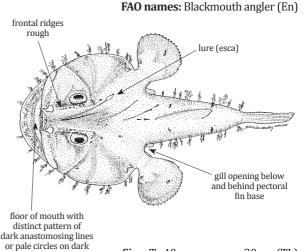
**Colour:** Light to dark brown above, lighter below; dorsal surface frequently mottled; all fin rays with pale tips; pigmentation of peritoneum variable, usually dusky, light and dark extremes rare.



FAO names: Shortspine monkfish (En)



Size: To 45 cm (TL)



background

## ANTENNARIIDAE

Frogfishes

## Antennarius hispidus (Bloch & Schneider, 1801)

Local name(s): Nga Tan Nga, Nga Ga Lone.

**Habitat:** Inhabits still muddy habitats that are either deep or offshore or shallow rocky and coral reefs.

Fisheries: Bottom trawls.

Guide to Species

**Distinctive Characters:** Body short and globose; mouth large with many small, villiform teeth; skin rough; illicium (rod) banded, equal to or slightly longer than 2<sup>nd</sup> dorsal spine; esca (lure, bait) with large oval-shaped tuft with slender filaments.

**Colour:** Ground color of head and body lighttan with narrow blackish brown streaks, some radiating from eye; all fins with blackish brown spots; belly without stripes.

## Antennarius nummifer (Cuvier, 1817)

Local name(s): Nga Tan Nga, Nga Ga Lone.

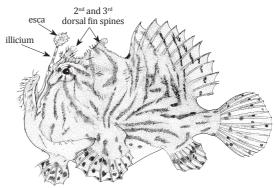
**Habitat:** Inhabits intertidal zone to depths of at least 25 m on both lagoon and seaward reefs.

Fisheries: Bottom trawls.

**Distinctive Characters:** Body short and globose; mouth large with many small, villiform teeth; skin rough; illicium (rod) about equal to length of 2<sup>nd</sup> dorsal spine; esca (lure, bait) large and variable, but often resembling a small shrimp; posterior end of dorsal and anal fin not broadly connected to caudal peduncle.

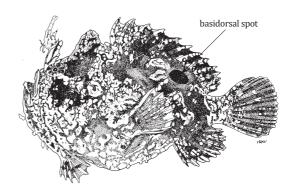
**Colour:** Ground colour may be yellow, orange, pink, red, olive, brown, or brown mixed with another colour; a prominent ocellated black spot usually present at base of soft dorsal fin.

FAO names: Shaggy angler (En)



Size: To about 20 cm (TL)

FAO names: Spotfin frogfish (En)



Size: To 13 cm (TL)

FAO names: Striated frogfish (En)

## Antennarius striatus (Shaw, 1794)

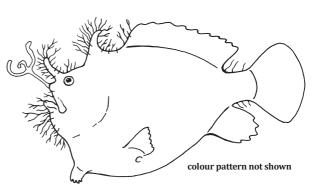
Local name(s): Nga Tan Nga, Nga Ga Lone.

**Habitat:** Inhabit rocky and coral reefs, on rocks, sand or rubble down to depths of 219 m.

#### Fisheries: Bottom trawls.

**Distinctive Characters:** Body short and globose; mouth large with many small, villiform teeth; skin rough; illicium (rod) about equal to length of 2<sup>nd</sup> dorsal spine; esca (lure, bait) with 2–7 thick wormlike appendages.

**Colour:** Head, body and fins entirely covered with rough, parallel, dark streaks



## CHAUNACIDAE

Sea toads

illicium short

and stout

 13 pectoral fin rays

## Chaunax apus Lloyd, 1909

Local name(s): Pin Lei Nga Oat Pharr.

**Habitat:** Benthic on continental shelf to continental slope; depth range ca. 200–969 m.

Fisheries: Bottom trawls.

**Distinctive Characters:** Head and body globular, tail short and conical; body covered by loose skin; dermal spinules slender and simple, slightly curved; no cirri on head and dorsal surface; 37–40 lateral line neusomasts on body, including 4–5 on caudal fin; 12–13 pectoral fin rays.

**Colour:** Body and esca uniformly pinkish with ventral surface paler when fresh; gill chamber and mouth cavity white.

## Chaunax multilepis Ho, Meleppura & Bineesh, 2016

Local name(s): Pin Lei Nga Oat Pharr.

**Habitat:** Benthic on continental shelf to continental slope; depth range ca. 200–350 m.

Fisheries: Bottom trawls.

**Distinctive Characters:** Similar to *Chaunax apus* but dermal spinules stout, straight and simple; 33–36 lateral line neuromasts on body, including 3–5 on caudal fin; 4–5 neuromasts on lower preopercular series; vomerine teeth forming a continue narrow patch; spots on body.

**Colour:** Dorsal surface reddish with large green or deep red spots when fresh; cirri on esca deep brown; gill chamber, gill arches, mouth cavity white; peritoneum black.



Local name(s): Pin Lei Nga Oat Pharr.

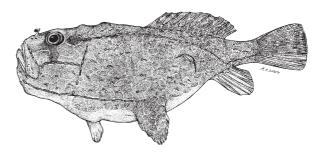
Habitat: Benthic on continental shelf to continental slope; depth range 218–380 m.

#### Fisheries: Bottom trawls.

**Distinctive Characters:** Head and body globular, tail short and conical; body covered by loose skin; cirri on head and dorsal surface.

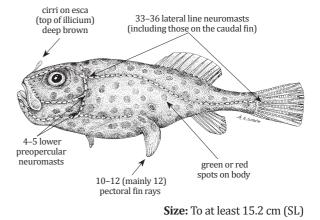
**Colour:** Body pinkish with large irregular green patches, forming pale reticulate patterns; cirri on esca deep brown; a large oval brown spot behind the eye.

**Remarks:** Based on photo only. The specimen is clearly a member of *C. fimbriatus*-group and similar to *C. nebulosus*, however, it has only one large brown spot behind eye (vs. 5 similar marks on body) and may represent an undescribed species (H.-C. Ho pers. com., 2017).



FAO names: None

Size: To at least 17 cm (TL)



#### FAO names: None

Size: To at least 21 cm (SL)



37-40 lateral line neuromasts

(including those on the caudal fin)

## OGCOCEPHALIDAE

Batfishes

## Coelophrys micropus (Alcock, 1891)

**Local name(s):** Nga Lin Noah, Nga Oat Phar. **Habitat:** Bathypelagic around continental slope; depth range 395–1 880m.

Fisheries: Deep bottom trawls.

**Distinctive Characters:** Head box-like, flattened on ventral side; tail slender, longer than pectoral fin; pelvic fins minute; interorbital space very wide, slightly more than twice of eye diameter; illicial trough (cavity at front of snout) deep and broad; esca (bait) with two rounded ventral lobes and a dorsal flap, housing in the illicial trough.

**Colour:** Head and body grayish; tail paler; paired fins black and vertical fins pale with dark margin.

## Halieutaea coccinea Alcock, 1889

**Local name(s):** Nga Lin Noah, Nga Oat Phar. **Habitat:** Benthic on continental shelf to continental slope; depth range 300–1 125 m.

Fisheries: Deep bottom trawls.

**Distinctive Characters:** Disc oval, not markedly rounded; body thicker than in *H. fumosa*; tail much shorter than disc; head elevated, higher than rest of body; illicial trough broad, esca very wide; dorsal surface covered by large granular tubercles, each with 4–5 facets, interspaces covered by tiny tubercles or not; ventral surface densely covered by pyramid-like tubercles, each with 3–4 facets.

**Colour:** Body uniformly pinkish or reddish when fresh; dorsal surface covered by scattered vermicular pattern.

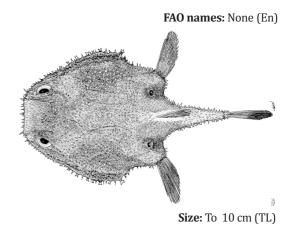
## Halieutaea fumosa Alcock, 1894

**Local name(s):** Nga Lin Noah, Nga Oat Phar. **Habitat:** Benthic on continental shelf to continental slope; depth range 70–457 m.

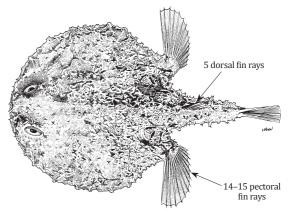
#### Fisheries: Deep bottom trawls.

**Distinctive Characters:** Disc rounded, slightly wider than long; body more flattened than in *H. coccinea*; dorsal surface covered by low and small tubercles, each with 3–4 facets, interspaces naked; ventral surface usually naked or at most covered by few scattered small tubercles on belly; 6 pairs of slightly enlarge, equal sized tubercles on lateral side of caudal peduncle, each with 3 posterior-directed spinules.

**Colour:** Body reddish to brownish when fresh, few spots or short vermiculates on dorsal surface; eyes circled by thin black line; broad black bands on pectoral fin.

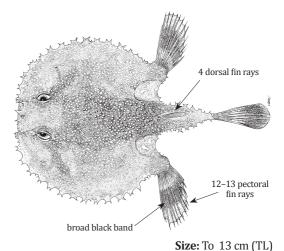


#### FAO names: Scarlet seabat (En)



Size: To 28 cm (TL)

#### FAO names: Smoky seabat (En)



#### FAO names: (En)

## Halieutaea sp.

Local name(s): Nga Lin Noah, Nga Oat Phar. Habitat: Benthic on continental shelf; depth range ca. 50–150 m.

Fisheries: Bottom trawls.

**Distinctive Characters:** Disk markedly rounded; body flattened; dorsal surface covered by large, point tubercles, each with 4–5 facets, interspace naked or with small forked tubercles; ventral surface covered by small simple or forked tubercles; lateral side of caudal peduncle with 2 pairs of enlarged tubercles, each with broad base and 3 strong spines distally.

**Colour:** Body reddish when fresh; irregular dark brown patch with many black dots on them on dorsal surface; ventral surface paler; all fins with broad black margin.

**Remarks:** This is a new species being presently described by H.-C. Ho (H.-C. Ho pers. com., 2017).

## Malthopsis cf. annulifera Tanaka, 1908

Local name(s): Nga Lin Noah, Nga Oat Phar.

**Habitat:** Benthic on continental shelf to continental slope; depth range 200–944 m.

Fisheries: Bottom trawls.

**Distinctive Characters:** Body markedly triangular; tail stout, about as long as the body; illicial trough a small triangular cavity, with a simple bulb-like esca inside; dorsal surface and tail covered by low and small bucklers; ventral surface of body covered by scattered, small flattened bucklers, interspaces naked; 1 enlarged buckler on margin of each subopercle, bearing 2 spines, one directed forward and one directed upward;

**Colour:** Yellowish to brownish when fresh; ventral surface grayish.

**Remarks:** The only specimen lacks ocellate spots on dorsal surface and has an upturned rostrum, which may represent a different species.

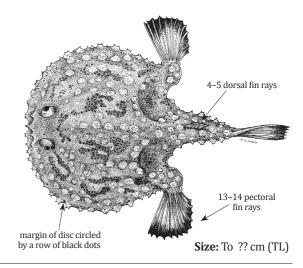
## Malthopsis gigas Ho & Shao, 2010

**Local name(s):** Nga Lin Noah, Nga Oat Phar. **Habitat:** Benthic on continental shelf to continental slope; depth range ca. 200 m.

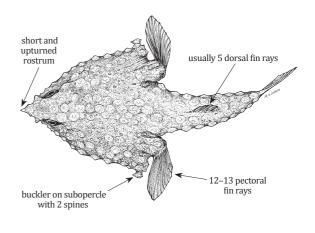
#### Fisheries: Bottom trawls.

**Distinctive Characters:** Body markedly triangular; tail stout, about as long as the body; illicial trough a small triangular cavity, with a simple bulb-like esca inside; dorsal surface and tail covered by strong, conical bucklers; ventral surface of body densely covered small flattened bucklers, no prickles; 1 enlarged buckler on margin of each subopercle, bearing 3 spines, each directed forward, outward (or upward) and upward.

**Colour:** Body uniformly yellowish brown to dark gray, sometimes ventral surface whitish.

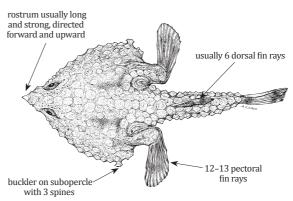


FAO names: None (En)



Size: To 9 cm (SL)

## FAO names: Giant triangular batfish (En)



Size: To 13.6 cm (SL)

## Malthopsis lutea Alcock, 1891

**Local name(s):** Nga Lin Noah, Nga Oat Phar. **Habitat:** Benthic on continental shelf to continental slope; depth range ca. 200 m.

Fisheries: Bottom trawls.

**Distinctive Characters:** Body markedly triangular; tail stout, about as long as the body; rostrum short and small, directed upward and forward; iIllicial trough a small triangular cavity, with a simple bulb-like esca inside; dorsal surface covered by low, flat bucklers; ventral surface loosely covered by small bucklers, interspaces completely naked; subopercle buckler dull, without any enlarged spines.

#### Colour: Body brownish gray.

**Remarks:** Ho & Shao (2010) redescribed this species and selected a lectotype. Lloyd (1909) reported that the type series of *M. lutea* comprises three forms, one of them, with photos taken from Myanmar, may not have a name.



Local name(s): Nga Phaung Yoe.

**Habitat:** Pelagic, inhabiting offshore surface waters, abundant around islands.

Fisheries: Gillnets.

**Distinctive Character:** Body strongly laterally compressed; dorsal fin with 23–26 (usually 24–25 rays); anal fin with 24–28 (usually 26–27 rays); gill rakers absent; pectoral fins falcate with 13–15 rays; anterior part of dorsal and anal fins with high falcate lobes; caudal peduncle without lateral keels. **Colour:** Bluish green above, silvery white below; 12–14 prominent dark vertical bars on body.

## Platybelone argalus (Lesueur, 1821)

Local name(s):Nga Phaung Yoe. Habitat: Pelagic in offshore waters.

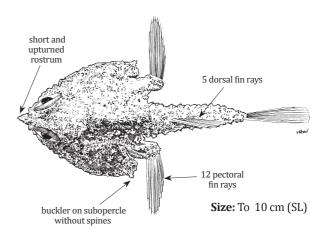
Fisheries: Gillnets.

**Distinctive Character:** Body rounded in crosssection; dorsal fin with 12–15 rays; anal fin with 15–20 rays; gill rakers present; pectoral fins not falcate; caudal fin forked, upper and lower lobes of about equal length.

**Colour:** Bluish green above, silvery below; a dark blue stripe along sides; fins unpigmented; scales and bones green.

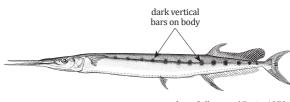
**Remarks:** Circumglobal in tropical seas; divisible into five subspecies according to some authors. *P. argalus platyura* extends throughout the Indo-Pacific (with the exception of the Red Sea).

#### FAO names: Longnose seabat (En)



**BELONIDAE** Needlefishes

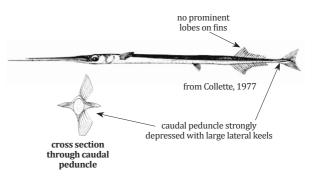
> FAO names: Flat needlefish (En) Orphie plate (Fr)



from Collette and Parin, 1970

Size: To 140 cm (TL)

## FAO names: Keeltail needlefish (En) Orphie carénée (Fr)



## Strongylura leiura (Bleeker, 1850)

Local name(s): Nga Phaung Yoe.

Habitat: In coastal areas, also in estuaries. Fisheries: Gillnets.

**Distinctive Character:** Body elongate, laterally compressed, almost rectangular in cross section; origin of dorsal fin over 7<sup>th</sup> to 10<sup>th</sup> ray of anal fin; predorsal scales moderately small, 130 to 180; caudal fin emarginate (not deeply forked); gill rakers absent.

**Colour:** Back greenish, sides silvery, white ventrally; a black bar on cheek between opercle and preopercle; pectoral fins dark distally, the tip yellow.

## Strongylura strongylura (van Hasselt, 1823)

Local name(s): Nga Phaung Yoe.

**Habitat:** In coastal areas and estuaries, also enters fresh water.

Fisheries: Gillnets, seines.

**Distinctive Character:** Body rounded in cross section; caudal peduncle without lateral keels; caudal fin rounded or truncate; gill rakers absent.

**Colour:** Back greenish, sides silvery, white ventrally; pectoral, pelvic and anal fins light; dorsal fin lobe and distal margin of caudal fin yellow in live adults; caudal fin with a prominent round black spot near its base; anterior margin of anal fin orange.

## Tylosurus acus (Lacepède, 1803)

Local name(s): Nga Phaung Yoe.

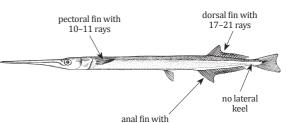
**Habitat:** Pelagic in offshore waters, also found in coastal waters.

#### Fisheries: Gillnets.

**Distinctive Characters:** Body rounded in crosssection; caudal fin deeply forked, lower lobe much longer than upper; upper jaw curved producing a gap between upper and lower jaws; teeth straight at all sizes; anal fin with 22–24 (usually 23) rays; gill rakers absent; left gonad absent or greatly reduced.

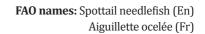
**Colour:** Dark bluish above, silvery white below; juveniles with elevated black lobe in posterior part of dorsal fin which is lost with growth.

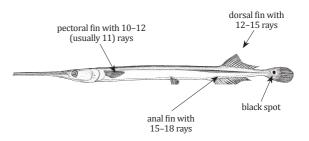
**Remarks:** Circumglobal in tropical seas and divisible into four subspecies: *T. acus melanotus* extends from South Africa through the Central and South Pacific.



23-25 rays

Size: To 100 cm (TL)

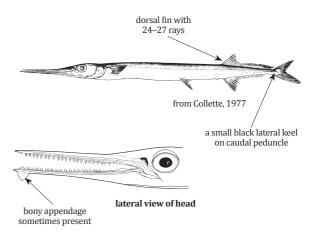




Size: To 40 cm (SL)

FAO names: Agujon needlefish (En)

Aiguille voyeuse (Fr)



## Tylosurus crocodilus (Péron & Lesueur, 1821)

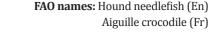
Local name(s): Nga Phaung Yoe.

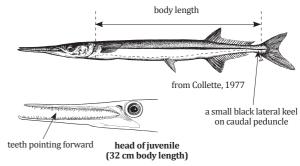
Habitat: Pelagic in coastal waters, but also offshore. Fisheries: Gillnets.

**Distinctive Character:** Similar to *Tylosurus acus* but upper jaw straight (so there is no appreciable gap between jaws); teeth pointing anteriorly in juveniles (to 40 cm body length); dorsal fin with 21–24 (usually 22 or 23) rays; anal fin with 19–22 (usually 21 or 22) rays; both gonads are present.

**Colour:** Dark bluish green above, silvery below; a dark blue stripe along sides; juveniles (to 20 cm body length) with elevated black lobe in posterior part of dorsal fin which is lost with growth.

**Remarks:** Circumglobal in tropical seas and divisible in two subspecies: *T. crocodilus crocodilus* ranges in the Atlantic and Indo-West Pacific.





Size: To 124 cm, common 90 (SL)

FAO names: Longfinned halfbeak (En)

## HEMIRAMPHIDAE

## Halfbeaks

Euleptorhamphus viridis (van Hasselt, 1823)

**Local name(s):** Nga Phaung Yoe Hnote Thee To. **Habitat:** Oceanic species occurring in superficial waters.

**Fisheries:** Mostly taken with seines and pelagic trawls.

**Distinctive Characters:** Lower jaw very prolonged; upper jaw short, triangular and scaly; body very elongated, compressed and ribbon-shaped; teeth present on vomer and tongue; 20–25 dorsal fin rays; 20–25 anal fin rays; pectoral fins long, 25–28% of SL; usually 7–9 pectoral fin rays.

**Colour:** Back iridescent blue green; belly silvery; fins unpigmented; juveniles with black blotches on fleshy folds on each side of beak.

Hemiramphus archipelagicus Collette & Parin, 1978

Local name(s): Nga Phaung Yoe Hnote Thee To. Habitat: Inhabits the immediate vicinity of coasts, but juveniles sometimes found in offshore waters. Fisheries: Gillnets, cast nets, bagnets, seines.

**Distinctive Characters:** Lower jaw very prolonged; upper jaw short triangular and scaleless; preorbital ridge (bony ridge behind nostril) absent (true of all *Hemiramphus* species); pectoral fins short, not reaching past nasal pit when folded forward; predorsal scales 32–37 (usually fewer than 37) caudal fin deeply forked.

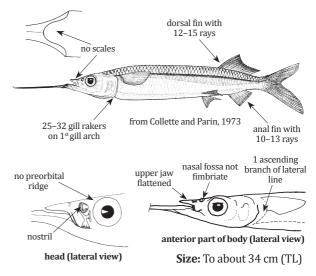
**Colour:** Dark bluish on back; a midlateral silvery stripe edged dorsally in dark green; silvery white on ventral side of body; beak dark, with a bright red fleshy tip; margin of caudal fin blackish as well as outer part of median fins.

**Remarks:** An Indo-West Pacific species recorded off the east coast of Thailand. Most likely occurring also in Myanmar.

long dorsal fin with 20-25 rays juvenile pectoral fin long long anal fin with 20-25 rays

Size: To 53 cm (TL)

FAO names: Jumping halfbeak (En) Demi-bec saltou (Fr)



## Hemiramphus far (Forsskål, 1775)

Local name(s): Nga Phaung Yoe Hnote Thee To.

**Habitat:** Found in proximity of continental coasts and islands, chiefly in areas of rich submerged vegetation.

**Fisheries:** Gillnets, cast nets, bagnets, beach seine. **Distinctive Characters:** Lower jaw very prolonged; upper jaw short triangular and scaleless; preorbital ridge (bony ridge behind nostril) absent (true of all *Hemiramphus* species); pectoral fins short, not reaching past nasal pit when folded forward; predorsal scales 32–39 (usually fewer than 37) caudal fin deeply forked.

**Colour:** Dark bluish above, silvery white below, with 3–9 (usually 4–6) vertical bars on sides; beak dark, with a bright red fleshy tip.

## Hemiramphus lutkei Valenciennes, 1847

**Local name(s):** Nga Phaung Yoe Hnote Thee To. **Habitat:** Found more offshore than other species of *Hemiramphus* in the area.

**Fisheries:** Mostly taken with seines and pelagic trawls.

**Distinctive Characters:** Lower jaw very prolonged; upper jaw short, triangular and scaleless; preorbital ridge (bony ridge behind nostril) absent (true of all *Hemiramphus* species); pectoral fins long, reaching beyond anterior margin of nasal pit when folded forward; predorsal scales 35–43 (usually more than 37); caudal fin deeply forked.

**Colour:** Dark bluish above, silvery white below, with no spots or vertical bars on sides; beak dark with a bright red fleshy tip; upper lobe of caudal fin bluish.



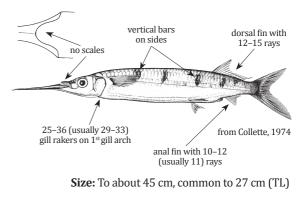
**Local name(s):** Nga Phaung Yoe Hnote Thee To. **Habitat:** Found chiefly around coral reefs and islands.

Fisheries: Mostly taken with gillnets and seines.

**Distinctive Characters:** Lower jaw very prolonged; upper jaw short, triangular and scaly; preorbital ridge (bony ridge behind nostril) present (true of all *Hyporhamphus* species); pectoral fin small, its length 7.7–10 times in SL; preorbital canal T-shaped, with posterior branch; preorbital length 1.35–1.9 times in orbit diameter; number of gill rakers on 1<sup>st</sup> gill arch ??–??; caudal fin distinctly forked.

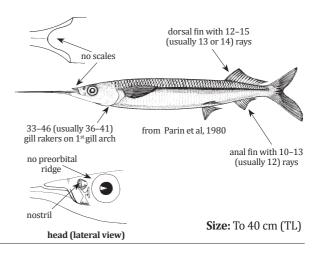
**Colour:** Body deep blue above, silvery stripe on side, silvery white below; caudal fin bluish, other fins unpigmented; tip and distal half of underside of lower jaw bright carmine red.

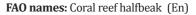
**Remarks:** An Indo-West Pacific species recorded off the east coast of Thailand. Most likely occurring also in Myanmar.

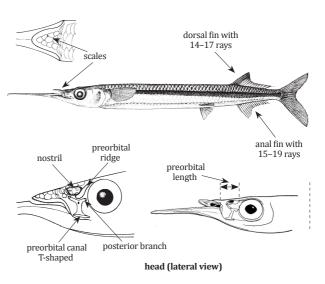




FAO names: Black-barred halfbeak (En)







Size: To 38 cm (SL)

## Hyporhamphus balinensis (Bleeker, 1858)

Local name(s): Nga Phaung Yoe Hnote Thee To. Habitat: ???

#### Fisheries:

**Distinctive Characters:** Similar to *H. affinis* but preorbital length 1–1.2 times in orbit diameter; lower jaw (LJ) long, its length 0.7–0.9 times in head length (HL).

**Colour:** Greenish above, silvery white below, fleshy tip of beak red.

## FAO names: Balinese garfish (En)

LJ HL SL from Parin et al, 1980

Size: To 16.5 cm (SL)

FAO names: Dussumier's halfbeak (En)

#### Hyporhamphus dussumieri (Valenciennes, 1847)

**Local name(s):** Nga Phaung Yoe Hnote Thee To. **Habitat:** Most common around islands and coral reefs.

Fisheries: Mostly taken with gillnets and seines.

**Distinctive Characters:** Lower jaw very prolonged; upper jaw short, triangular and scaly; preorbital ridge (bony ridge behind nostril) present (true of all *Hyporhamphus* species); pectoral fins small, not reaching past nasal pit when folded forward; preorbital canal T-shaped, with posterior branch; preorbital length 1.7–2.2 times in orbit diameter; distance from pelvic fin origin to caudal fin base contained 1–1.3 times in distance from pectoral fin origin to pelvic fin origin; lower jaw length moderate, in large fishes up to 1.4 times in head length caudal fin distinctly forked.

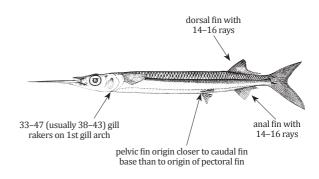
**Colour:** Greenish above, silvery white below; fleshy tip of beak red.

## Hyporhamphus limbatus (Valenciennes, 1847)

**Local name(s):** Nga Phaung Yoe Hnote Thee To. **Habitat:** In coastal areas and estuaries, also enters fresh water.

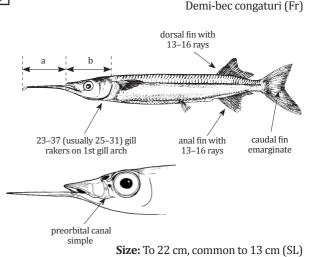
**Fisheries:** Gillnets, cast nets, bagnets, beach seine. **Distinctive Characters:** Lower jaw very prolonged; upper jaw short, triangular and scaly; preorbital ridge (bony ridge behind nostril) present (true of all *Hyporhamphus* species); lower jaw (a) long, its length 0.7–1.3 times in head length (b); preorbital canal simple, without posterior branch; preorbital length 1.3–2.1 times in orbit diameter; caudal fin emarginate, not strongly forked.

**Colour:** Greenish above, the silvery lateral stripe widening posteriorly, white ventrally; fleshy tip of beak reddish.



Size: To 38 cm (SL)

FAO names: Congaturi halfbeak (En)



FAO names: Quoy's halfbeak (En)

## Hyporhamphus quoyi (Valenciennes, 1847)

**Local name(s):** Nga Phaung Yoe Hnote Thee To. **Habitat:** Inhabits more turbid and estuarine situations than does *H. dussumieri* and is not found around oceanic islands.

**Fisheries:** Gillnets, cast nets, bagnets, beach seine. **Distinctive Characters:** Similar to *H. dussumieri* but upper jaw tip blunt and rounded (vs pointed in *H. dussumieri*); gill rakers on 1st gill arch 26–34 (up to 39 in Australian populations); distance from pelvic fin origin to caudal fin base 0.9–1.05 times in distance from pectoral fin origin to pelvic fin origin; lower jaw short, in large fishes contained up to 2 times in head length.

**Colour:** Greenish above, silvery white below; fleshy tip of beak red.

## *Hemiramphus convexus* Weber & de Beaufort, 1922

Local name(s): Nga Phaung Yoe Hnote Thee To.

**Habitat:** A coastal species frequently found near islands.

**Fisheries:** Mostly taken with seines and pelagic trawls??.

**Distinctive Characters:** Adults without the prolonged lower jaw characteristic of most halfbeaks, but lower jaw up to 4 times in SL in young (specimens between 3.5 and 4.5 cm SL); pectoral fins elongate, 2.8–3.3 times in SL, barely reaching origin of pelvic fins, with 11–13 rays; distance from pelvic fin origin to caudal fin base 1.05–1.35 times in distance from pectoral fin origin to pelvic fin origin.

**Colour:** Pelvic? fins intensively pigmented, with exception of innermost ray; pelvic fins always intensively pigmented distally in young at 2.5–3 cm SL and larger; skin folds along sides of lower jaw black in juveniles, with expanded lobes anteriorly (noticeably only in undamaged fish).

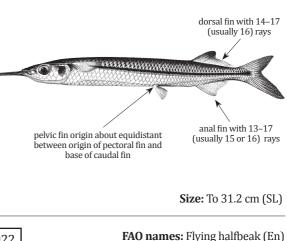
## Rhynchorhamphus georgii (Valenciennes, 1847)

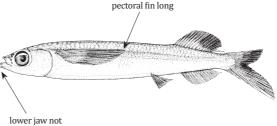
Local name(s): Nga Phaung Yoe Hnote Thee To. Habitat: Mostly inshore.

Fisheries: Seines, cast nets.

**Distinctive Characters:** Lower jaw very prolonged; upper jaw moderately long, arched, and scaly; preorbital ridge (bony ridge behind nostril) present; nasal papillae fimbriate; 13–16 anal fin rays; lateral line with 2 branches ascending behind opercle and pectoral fin origin; caudal fin distinctly forked.

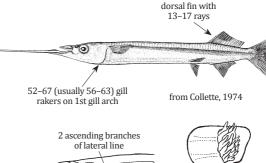
Colour: Greenish above, silvery below.





prolonged in adults

FAO names: George's halfbeak (En)



nasal papilla fimbriate

anterior part of body (lateral view)

Size: To 23.1 cm (SL)

Size: To 17.6 cm (SL)

# EXOCOETIDAE

Flyingfishes

## Cheilopogon abei Parin, 1996

Local name(s): Nga Pyan.

Habitat: Pelagic in neritic and oceanic surface waters.

#### Fisheries: Gillnets.

**Distinctive Characters:** Head shorter than distance between dorsal fin origin and origin of upper caudal fin lobe; upper jaw not protrusible; lower jaw slightly projecting; palatine teeth present; 22–29 predorsal scales; pelvic fins insertion closer to hind margin of head than to origin of lower caudal fin lobe; juveniles with a pair of short to medium chin barbels with lateral flap.

**Colour:** Dorsal and pelvic fins with a bright black spot; anal fin without pigmentation; pectoral fins black with an oblique light stripe (usually bright yellow in life, sometimes grayish); caudal fin evenly dark gray.

Cheilopogon cyanopterus (Valenciennes, 1846)

## Local name(s): Nga Pyan.

Habitat: Pelagic in open ocean and neritic surface waters.

Fisheries: Gillnets.

**Distinctive Characters:** Head about equal to distance between dorsal fin origin and origin of upper caudal fin lobe; upper jaw not protrusible; jaws of equal length; palatine teeth usually present; 33–41 predorsal scales; pelvic fins insertion closer to hind margin of head than to origin of lower caudal fin lobe; Juveniles with a pair of long chin barbels without lateral flaps.

**Colour:** Dorsal fin with a prominent black spot; pectoral fins dark (blue in life) without a pale transverse stripe or dark spots; pelvic fins without spots (with a dark spot in juveniles)

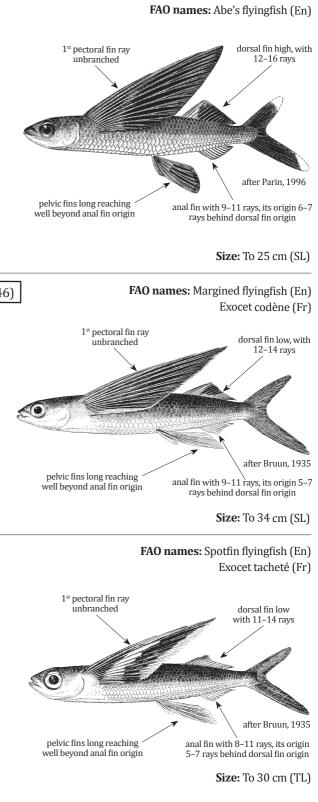
## Cheilopogon furcatus (Mitchill, 1815)

Local name(s): Nga Pyan.

Habitat: Pelagic in oceanic surface waters. Fisheries: Gillnets.

**Distinctive Characters:** Head shorter than distance between dorsal fin origin and origin of upper caudal fin lobe; upper jaw not protrusible; lower jaw slightly projecting; palatine teeth absent; 25–34 predorsal scales; pelvic fins insertion closer to hind margin of head than to origin of lower caudal fin lobe; juveniles with a pair of rather long (up to 50% SL) chin barbels, without lateral flaps.

**Colour:** Pectoral fins light or dark grey with a pale margin, the central portion crossed by a pale stripe becoming narrower toward anterior fin margin; pelvic fins pale.



## Cheilopogon intermedius Parin, 1961

#### Local name(s): Nga Pyan

Habitat: Pelagic in open ocean and neritic surface waters.

## Fisheries: Gillnets.

**Distinctive Characters:** Head shorter than distance between dorsal fin origin and origin of upper caudal fin lobe; upper jaw not protrusible; palatine teeth present or absent; jaws subequal; 25–30 predorsal scales; pelvic fins inserted about midway between head and origin of lower caudal fin lobe; juveniles with a pair of short barbels.

**Colour:** Pectoral fins dark gray with pale basal triangle and pale posterior margin; pelvic fins pale with traces of dark pigmentation along fin rays, sometimes entirely pale (in larger fishes); dorsal fin gray.

## *Cheilopogon spilonotopterus* (Bleeker, 1865)

#### Local name(s): Nga Pyan

Habitat: Pelagic in open ocean and neritic surface waters.

## Fisheries: Gillnets.

**Distinctive Characters:** Head shorter than distance between dorsal fin origin and origin of upper caudal fin lobe; upper jaw not protrusible; jaws of equal length or lower jaw is longer; 28–35 predorsal scales; pelvic fins insertion closer to hind margin of head than to origin of lower caudal fin lobe; juveniles with a pair of very long tapering chin barbels.

**Colour:** Pectoral fins dark brown; dorsal fin with a large black spot, pelvic fins pale (dark in juveniles); dorsal fin gray.

## Cheilopogon spilopterus (Valenciennes, 1847)

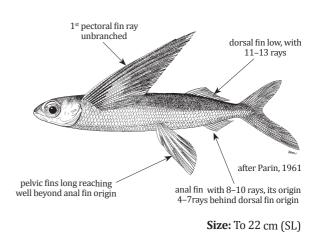
#### Local name(s): Nga Pyan

Habitat: Pelagic in open ocean and neritic surface waters.

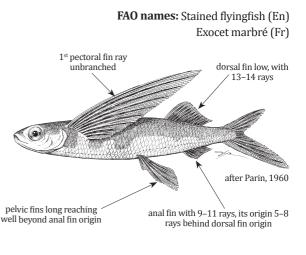
#### Fisheries: Gillnets.

**Distinctive Characters:** Head shorter than distance between dorsal fin origin and origin of upper caudal fin lobe; upper jaw not protrusible; lower jaw projecting; palatine teeth sparse or (rarely) absent; 28–34 predorsal scales; pelvic fins insertion closer to hind margin of head than to origin of lower caudal fin lobe; juveniles with a pair of elongated and flattened barbels connecting at their base.

**Colour:** Pectoral fins with varying number of small dark spots, usually not arranged in regular transverse bands; dorsal and pelvic fins pale.

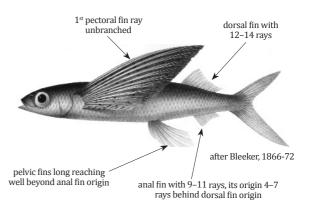


FAO names: Intermediate flyingfish (En)



Size: To 38 cm (SL)

FAO names: Manyspotted flyingfish (En)



## Cheilopogon suttoni (Whitley & Colefax, 1938)

#### Local name(s): Nga Pyan.

Habitat: Pelagic in open ocean and neritic surface waters.

## Fisheries: Gillnets.

**Distinctive Characters:** Head subequal to distance from dorsal fin origin to origin of upper caudal fin lobe; upper jaw not protrusible; jaws of equal length or lower jaw is longer; palatine teeth present; 34–42 predorsal scales; pelvic fins inserted about midway between head and origin of lower caudal fin lobe; juveniles with 2 flattened chin barbels connecting at their base.

**Colour:** Dorsal fin usually with a black spot; pectoral fins grey or brownish with numerous scattered dark spots (spots may vary in number and size); pelvic fins usually without spots (spotted in juveniles).

## Cypselurus naresii (Günther, 1889)

#### Local name(s): Nga Pyan.

Habitat: Pelagic in open ocean and neritic surface waters.

#### Fisheries: Gillnets.

**Distinctive Characters:** Head approximately equal distance to between dorsal fin origin and origin of upper caudal fin lobe; upper jaw not protrusible; lower jaw usually a little shorter than the upper; palatine teeth present; 28–32 predorsal scales; pelvic fins inserted about midway between head and origin of lower caudal fin lobe or slightly closer to the latter; juveniles with a single long barbel, its basal portion 3-edged in cross-section.

**Colour:** Dorsal fin greyish; pectoral fins brownish, unpigmented below the 9<sup>th</sup> ray; pelvic fins usually with a dark spot (entirely dark in juveniles).

## Cypselurus oligolepis (Bleeker, 1865)

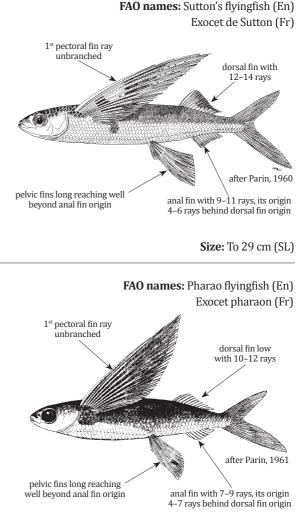
#### Local name(s): Nga Pyan.

**Habitat:** Pelagic in nearshore surface waters, never spread to open sea.

#### Fisheries: Gillnets.

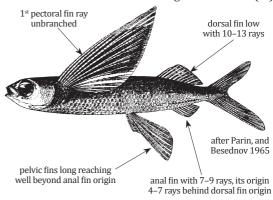
**Distinctive Characters:** Head much shorter than distance between dorsal fin origin and origin of upper caudal fin lobe; upper jaw not protrusible; lower jaw a little shorter than the upper; palatine teeth present; 22–28 predorsal scales; pelvic fins inserted nearer to hind margin of head than to origin of lower caudal fin lobe; juveniles without barbels on chin.

**Colour:** dorsal fin greyish; pectoral fins greyishbrown, their lower portion and hinder tip colourless; pelvic fins without spots (dark in juveniles).



Size: To 21 cm (SL)

FAO names: Largescale flyingfish (En) Exocet à grandes écailles (Fr)



## Cypselurus opisthopus (Bleeker, 1865)

#### Local name(s): Nga Pyan.

**Habitat:** Pelagic in open ocean and neritic surface waters.

#### Fisheries: Gillnets.

**Distinctive Characters:** Head approximately equal to distance between dorsal fin origin and origin of upper caudal fin lobe; upper jaw not protrusible; lower jaw a little shorter than the upper; palatine teeth present; 25–33 predorsal scales; pelvic fins inserted much nearer origin of lower caudal fin lobe than head; juveniles with a single short barbel.

**Colour:** Dorsal fin gray, pectoral fins brown with lower portion transparent; pelvic fins usually without spots (dark in juveniles).

## Cypselurus poecilopterus (Valenciennes, 1847)

#### Local name(s): Nga Pyan.

Habitat: Pelagic, mostly in neritic surface waters. Fisheries: Gillnets.

**Distinctive Characters:** Head shorter than distance between dorsal fin origin and origin of upper caudal fin lobe; upper jaw not protrusible; lower jaw a little shorter than the upper; palatine teeth present 23–29 predorsal scales; pelvic fins inserted nearer to hind margin of head than to origin of lower caudal fin lobe; juveniles without barbels on chin.

**Colour:** Dorsal fin greyish, sometimes with small dark spots (yellow with reddish spots in life); pectoral fins brownish-grey with numerous dark spots (yellowish-brown with black or brown spots in life) arranged in nearly regular transverse bands; pelvic fins greyish-brown, sometimes with numerous small dark spots (yellow with brown spots in life).

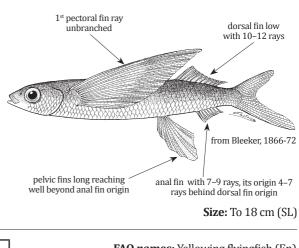
## Exocoetus monocirrhus Richardson, 1846

#### Local name(s): Nga Pyan.

Habitat: Pelagic mostly in oceanic surface waters. Fisheries: Gillnets.

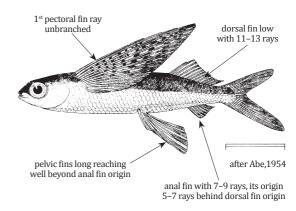
**Distinctive Characters:** Upper jaw protrusible; 21–29 gill rakers on  $1^{st}$  gill arch; usually 7– 7½ transverse rows of scales between dorsal fin origin and lateral line; juveniles hump-backed, with a single chin barbel and with black pelvic fins.

**Colour:** Body dark iridescent blue above, silvery white below; pectoral fins brown or dark brown and caudal fin greyish or brownish, other fins unpigmented.



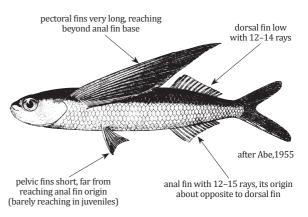
FAO names: Yellowing flyingfish (En) Exocet aile jaune; (Fr)

FAO names: Rearfin flyingfish (En)



Size: To 20 cm (SL)

FAO names: Barbel flyingfish (En) Exocet boue (Fr)



Size: To 20 cm (SL)

## Exocoetus volitans Linnaeus, 1758

Local name(s): Nga Pyan.

Habitat: Pelagic, both near and far from the coast. Fisheries: Gillnets.

Distinctive Characters: Upper jaw protrusible; 29-37 (usually 32-34) gill rakers on 1<sup>st</sup> gill arch; usually  $6-6\frac{1}{2}$  transverse rows of scales between dorsal fin origin and lateral line; juveniles elongated, without chin barbel and with unpigmented pelvic fins.

Colour: Dark above, pale below (dark colour usually iridiscent blue in life); dorsal fin grevish: pectoral fins grey.

## Hirundichthys oxycephalus (Bleeker, 1853)

#### Local name(s): Nga Pyan.

Habitat: Pelagic in nearshore and neritic surface waters.

#### Fisheries: Gillnets.

Distinctive Characters: Upper jaw not protrusible; jaws of equal length or lower jaw is larger; 25-38 (usually 27-34); gill rakers on first gill arch; pectoral fins with 14-18 rays; palatine teeth usually absent; juveniles without chin barbels.

**Colour:** Dorsal fin unpigmented or grevish: pectoral fins dark with a small non contrast pale basal triangle and narrow pale margin.

#### Hirundichthys speculiger (Valenciennes, 1846)

#### Local name(s): Nga Pyan.

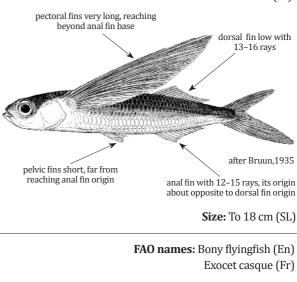
Habitat: Pelagic in oceanic surface waters.

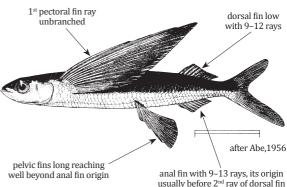
Fisheries: Gillnets.

Distinctive Characters: Upper jaw not protrusible; jaws of equal length or lower jaw is longer; 22-30 (usually 24–28) gill rakers on 1st gill arch; pectoral fins with 16-19 rays; palatine teeth usually present; juveniles without chin barbels.

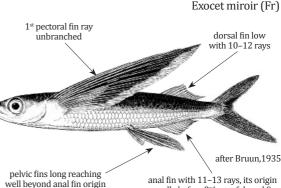
**Colour:** Dorsal fin unpigmented or greyish; pectoral fins dark with a contrast pale triangle "mirror" reaching up to 4<sup>th</sup> to 7<sup>th</sup> ray and wide pale margin.

## **FAO names:** Tropical two-wing flyingfish (En) Exocet volant (Fr)





Size: To 23 cm (SL)



usually before 2<sup>nd</sup> ray of dorsal fin

FAO names: Mirrorwing flyingfish (En)

305

FAO names: Sailfin flyingfish (En)

## Parexocoetus brachypterus (Richardson, 1846)

#### Local name(s): Nga Pyan.

**Habitat:** Pelagic in neritic surface waters, rare in the open ocean.

#### Fisheries: Gillnets.

**Distinctive Characters:** Upper jaw protrusible; predorsal scales 19–25; longest dorsal fin rays reaching far beyond origin of upper caudal fin lobe; juveniles with a pair of short chin barbels, which often remain even in adults.

**Colour:** Dark above, pale below, the dark colour usually iridescent greenish blue in life; dorsal fin with much black pigment in upper part; pectoral fins transparent.

## Parexocoetus mento (Valenciennes, 1847)

#### Local name(s): Nga Pyan.

**Habitat:** Pelagic in neritic surface waters, never spread to the open sea.

#### Fisheries: Gillnets.

**Distinctive Characters:** Upper jaw protrusible; predorsal scales 16–21; longest dorsal fin rays scarcely reaching origin of upper caudal fin lobe; juveniles without chin barbels.

**Colour:** Dark above, pale below, the dark colour usually iridescent greenish blue in life; dorsal fin with much black pigment; pectoral fins greyish with pale tips.

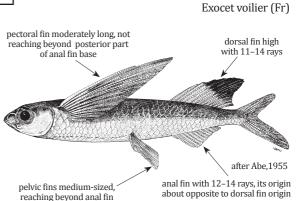
## Prognichthys brevipinnis (Valenciennes, 1847)

#### Local name(s): Nga Pyan.

Habitat: Usually in neritic surface waters. Fisheries: Gillnets.

**Distinctive Characters:** Head shorter than distance between dorsal fin origin and origin of upper caudal fin lobe; lower jaw usually a little shorter than the upper; upper jaw not protrusible; palatine teeth absent; juveniles without chin barbels.

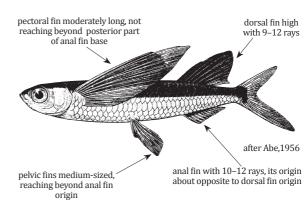
**Colour:** Dark above, pale below, the dark colour usually iridescent blue in life; dorsal fin greyish; pectoral fins grey above, lower part and tip transparent; pelvic fins unpigmented or with dark pigment between 2<sup>th</sup> to 5<sup>th</sup> rays (in juveniles both pectoral and pelvic fins black).



origin

Size: To 14 cm (SL)

#### FAO names: African sailfin flyingfish (En) Exocet voilier africain (Fr)



Size: To 11 cm (SL)

FAO names: Shortfin flyingfish (En) Exocet alle courte (Fr)

## MONOCENTRIDAE

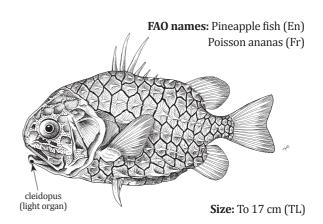
Pineapple fishes

## *Monocentris japonica* (Houttuyn, 1782)

Local name(s): Nga Su Pyan, Nga Nar Nat. Habitat: Demersal from 3 m to about 300 m. Fisheries: Bottom trawls.

**Distinctive Characters:** Body covered with enlarged scales rigidly united to form rough armour; 1<sup>st</sup> dorsal fin with 5–6 free spines ; 2<sup>nd</sup> dorsal fin with 11–12 rays; anal fin with 9–11 rays; pelvic fins with 1 large spine and 2–3 very small rays; a pair of light organs on each side of chin.

**Colour:** Yellow with black between scale plates, lateral light organ (cleidopus) red.



# **TRACHICHTHYIDAE**

Slimeheads (roughies)

Aulotrachichthys sp.

Local name(s): Pin Le' Nga Gaung Pwa. Habitat: Depth range:121–129 m. Fisheries: Deep bottom trawls.

**Distinctive Characters:** Body depth 42–43% of SL; eye diameter 29–33% of HL; anus positioned between pelvic fin bases, circled by black membrane; bioluminescent tissue before pectoral fin base and in a narrow striated strip along ventral profile of body; 13 pectoral fin rays; 27 small, spineless lateral line scales.

**Colour:** Dorsal surface of head and body olivaceous; sides violet silvery; bioluminescent tissue silvery; fins, snout, tip of lips reddish orange; iris yellow.

**Remarks:** Generic revision needed (M. Gomon pers. comm., 2018).

## Gephyroberyx sp.

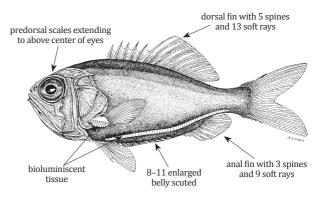
Local name(s): Pin Le' Nga Gaung Pwa. Habitat: Depth range: 288–291 m. Fisheries: Deep bottom trawls.

**Distinctive Characters:** Body depth 50 % of SL;

eye diameter 29 % of HL; nasal bone with forward directed spine; anus positioned immediately in advance of anal fin; dorsal fin spines robust, middle spines longest, last spine distinctly shorter than middle spines and soft rays; 15 pectoral fin rays; 27 small, spiny lateral line scales; no obvious luminous tissue.

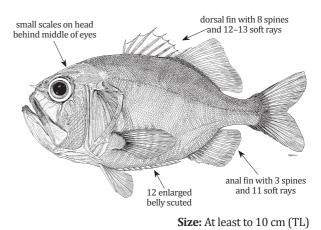
**Colour:** Dorsal surface of head and body dark rosy; sides silvery; fins, snout, tips of lips reddish orange. **Remarks:** Generic revision needed (M. Gomon pers. comm., 2018).

FAO names: Andaman luminous roughy (En)



Size: At least to 9 cm (TL)

FAO names: Finescale roughy (En)



FAO names: Arabian roughy (En)

dorsal fin with 6 spines

and 13 soft rays

## Hoplostethus druzhinini Kotlyar, 1986

Local name(s): Pin Le' Nga Gaung Pwa. Habitat: Bathypelagic from 288 to 498 m. Fisheries: Deep bottom trawls.

**Distinctive Characters:** Body depth 44–48% of SL; eye diameter 28–30% of HL; 26–27 enlarged diamond-shaped lateral line scales; 20–22 predorsal scales; 7+1+13–14 gillrakers on 1<sup>st</sup> gill arch; 17–21 pyloric caeca; pectoral fins extending well beyond anal fin origin with 18–19 rays; no obvious luminous tissue; scales easily shed.

**Colour:** Dorsal surface of head and body pinkish purple; sides violet; belly silvery; fins, snout, tip of lips reddish orange; caudal fin lobes dark.

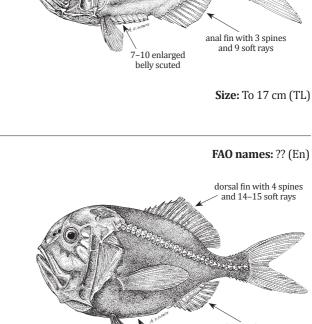
**Remarks:** Previously known only from the southern shores of the Arabian peninsula. The Myanmar records extend the species range to the Bay of Bengal (Eastern Indian Ocean).

## Hoplostethus shubnikovi Kotlyar, 1980

Local name(s): Pin Le' Nga Gaung Pwa. Habitat: Bathypelagic from 800 to 875 m. Fisheries: Deep bottom trawls.

**Distinctive Characters:** Body depth 42–48% of SL; eye diameter 21–26% of HL; 26–27 enlarged lateral line scales; 23–25 predorsal scales; 7+1+13–14 gillrakers on 1<sup>st</sup> gill arch; pectoral fins extending well beyond anal fin origin with 19 rays; no obvious luminous tissue.

**Colour:** Head and body overall black; sides silvery; fins jet-black except caudal which is hyalin.



no enlarged scutes on belly anal fin with 3 spines and 9 soft rays

Size: To 20.3 cm (SL)

## DIRETMIDAE Spinyfins

head convex

## Diretmichthys parini (Post & Quéro, 1981)

Local name(s): Pin Le' Nga Gaung Pwa.

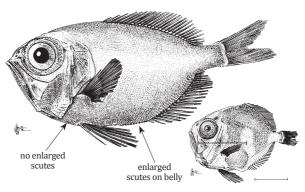
**Habitat:** Bathypelagic from the surface down to 2100 m.

## Fisheries: Deep bottom trawls.

**Distinctive Characters:** Body shape elliptic in adults; anus distinctly separated from 1<sup>st</sup> anal fin ray by a series of more than 5 scutes; no scutes anteriorly to pelvic fins; no true fin spines; pelvic fins extending to or beyond 1st anal fin ray; 26–29 dorsal fin rays; 20–23 anal fin rays; 16–20 gillrakers on 1st gill arch in adults (>25 cm SL).

**Colour:** Adults overall black; juveniles silvery with horseshoe-shaped dark band on sides.

FAO names: Parin's spinyfish (En)



Size: To 40 cm (TL)

# BERYCIDAE

## Alfonsinos

## Beryx splendens Lowe, 1834

Local name(s): Ye Net Nga Ni.

Habitat: Benthopelagic of outer shelf and slope to at least 1 300 m.

Fisheries: Deep bottom trawls.

Distinctive Characters: Body moderately deep, its depth about equal to head length and 2.4-2.8 in SL; head with only 1 spine on snout, most pronounced in juveniles; pelvic fins with 1 spine and 9–13 rays; 69-82 lateral line scales, extending onto caudal fin; 23-34 pyloric caecae; anterior rays of dorsal and pelvic fins may be elongate in smaller specimens. Colour: Upper head and body, all fins and iris of eve bright red, becoming silvery pink below.

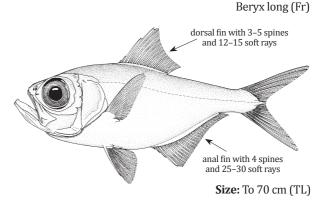
## Centroberyx druzhinini (Busakhin, 1981)

Local name(s): Ye Net Nga Ni.

Habitat: Benthopelagic from 100 to 300 m. Fisheries: Deep bottom trawls.

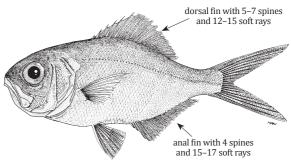
Distinctive Characters: Cheek with 5 rows of scales; pelvic fin origin under dorsal fin origin; pelvic fins with 1 spine and 7 soft rays; 13 pectoral fins rays; 53-62 lateral line scales, not extending onto caudal fin.

Colour: Head and upper body and all fins except pectoral fins bright red, becoming silvery white below; pectoral fins pink; iris of eye yellow.



#### FAO names: Druzhinin's alfonsino (En)

FAO names: Slender alfonsino (En)



Size: To 28.5 cm (TL)

# HOLOCENTRIDAE

Squirrelfishes - Soldierfishes

## Myripristis adusta Bleeker, 1853

## Local name(s): Nga Gyee Mar.

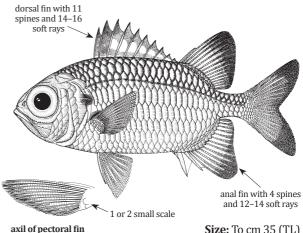
Habitat: Occurs on coral reefs and rocky areas in relatively shallow water.

Fisheries: Gillnets, bottom trawls.

Distinctive Characters: A single pair of tooth patches at front of lower jaw outside mouth (rarely a smaller 2nd pair below); no sharp spine at corner of preopercle (true of all Myripristis species); 27-29 (usually 28) lateral line scales; a single scale (occasionally 2) on lower part of pectoral fin axil; 35–40 gillrakers on 1st gill arch.

Colour: Pale salmon pink; scales rimmed with black dorsally on body; a large blackish spot posteriorly on gill cover; distal third of soft dorsal fin, anal fin, and caudal fin lobes black; spinous dorsal fin reddish black with a median whitish band.

FAO names: Shadowfin soldierfish (En) Marignan ombré (Fr)



Size: To cm 35 (TL)

## Myripristis botche Cuvier, 1829

#### Local name(s): Nga Gyee Mar.

**Habitat:** Inhabits protected waters at depths greater than 25 m, often in silty reef areas.

#### Fisheries: Gillnets, bottom trawls.

**Distinctive Characters:** Two pairs of tooth patches at front of lower jaw outside mouth; interorbital width width 4.5–5.65 in head length; 27–29 (modally 28) lateral line scales; no small scales in pectoral fin axil; 32–38 gillrakers on 1st gill arch.

**Colour:** Light red; opercular margin black to or below level of lower edge of eye; median fins red, the leading edges white, the elevated part of soft dorsal, anal and caudal fins lobes tipped with black.

**Remarks:** Presence of this species in Myanmar needs confirmation.

## Myripristis hexagona (Lacepède, 1802)

#### Local name(s): Nga Gyee Mar.

**Habitat:** Occurs on coral reefs and rocky areas in relatively shallow water.

Fisheries: Gillnets, bottom trawls.

**Distinctive Characters:** Two pairs of tooth patches at front of lower jaw outside mouth; interorbital width 4.4–5.2 in head length; 25–29 (modally 27) lateral line scales; small scales in pectoral fin axil; 36–50 gillrakers on 1st gill arch.

**Colour:** Body light red; spinous dorsal fin light red and whitish basally, broadly bright red distally; soft dorsal, anal and caudal fins pale red; pelvic fins with withish rays, tinged basally with light red and clear membranes.

**Remarks:** Presence of this species in Myanmar needs confirmation.

## Neoniphon opercularis (Valenciennes, 1831)

#### Local name(s): Nga Gyee Mar.

**Habitat:** A reef species which may be found in shallow to moderate depths.

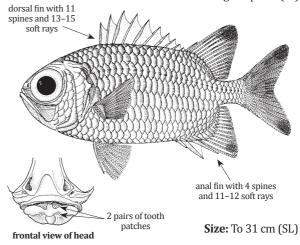
## Fisheries: Gillnets.

**Distinctive Characters:** Corner of preopercle with a sharp stout spine; lower jaw strongly projecting when mouth closed; last dorsal fin spine longer than penultimate spine, much closer to first soft ray than to penultimate spine (true of all *Neoniphon* species); 38–40 lateral line scales.

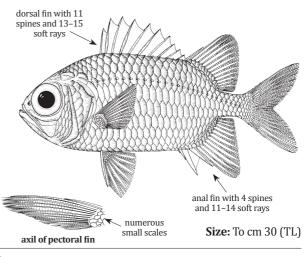
**Colour:** Silvery pink (scale centres light red, the edges broadly silver); snout and top of head light red; spinous dorsal fin black, the membranes tipped with white, with a diagonal white spot near base of each membrane.

**Remarks:** Presence of this species in Myanmar needs confirmation.

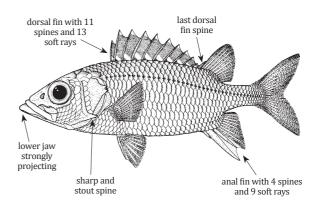




FAO names: Doubletooth soldierfish (En)



FAO names: Blackfin squirrelfish (En) Marignan aile noire (Fr)



## Neoniphon sammara (Forsskål, 1775)

#### Local name(s): Nga Gyee Mar.

**Habitat:** Associated with coral reefs; most often seen in shallow water of protected bays and lagoons.

#### Fisheries: Gillnets.

**Distinctive Characters:** Corner of preopercle with a sharp stout spine; lower jaw projecting when mouth closed; last dorsal fin spine longer than penultimate spine, much closer to first soft ray than to penultimate spine; 39–43 lateral line scales.

**Colour:** Silvery, each scale with a horizontally elongate dark reddish brown spot, thus forming longitudinal dark lines on body; snout and top of head light red; spinous portion of dorsal fin with a large black spot tinged with red on membranes between first and fourth spines.

**Remarks:** Presence of this species in Myanmar needs confirmation.

## Ostichthys acanthorhinus Randall, Shimizu & Yamakawa, 1982

Local name(s): Nga Gyee Mar.

**Habitat:** A benthic species at depths from 272 m to 600 m.

Fisheries: Gillnets, bottom trawls.

**Distinctive Characters:** Anterior end of each nasal bone with a sharp forward-directed spine projecting to or beyond median part of upper of upper lip; 3½ scale rows above lateral line to middle of spinous portion of dorsal fin; short stout spine at corner of preopercle; 29 lateral line scales; 16–17 (usually 16) pectoral fin rays; gill rakers on 1<sup>st</sup> gill arch 10–12 on upper limb and 16–18 on lower limb.

**Colour:** Color uniformly red, with no white markings.

## Ostichthys convexus Greenfield, Randall & Psomadakis, 2017

## Local name(s): Nga Gyee Mar.

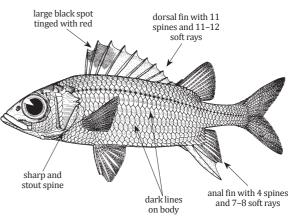
**Habitat:** Depth range:116–129 m. **Fisheries:** Bottom trawls.

**Distinctive Characters:** Profile of head convex; no spine at corner of preopercle; lower margin of maxilla to top of eye 1.6–2.0 in HL; caudal peduncle length 10.5–12.1% SL; 3½ scale rows above lateral line to middle of spinous portion of dorsal fin; 28–29 lateral line scales; height of suborbital bone below center of eye about 1/4–1/3 of eye diameter; last dorsal fin spine shorter than penultimate spine; 16–17 pectoral fin rays; 13 (including rudiments) gillrakers on lower limb of 1st gill arch.

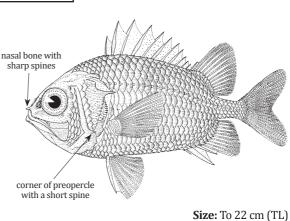
**Colour:** Body pinkish red on dorsal half of head and body, ventral half silvery.

**Remarks:** A newly described species obtained from the 2015 Nansen Myanmar cruise.

#### FAO names: Sammara squirrelfish (En) Marignan tacheté (Fr)

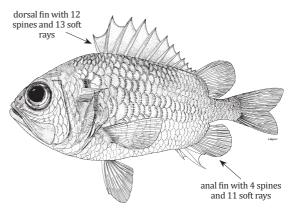


Size: To 32 cm (TL)



FAO names: Roundhead soldierfish (En)

FAO names: Spinysnout squirrelfish (En)



Size: At least to 16.4 cm (SL)

## Ostichthys daniela Greenfield, Randall & Psomadakis, 2017

Local name(s): Nga Gyee Mar. Habitat: Depth range: 116–129 m. Fisheries: Bottom trawls.

**Distinctive Characters:** Similar to *O. convexus* but head slopes more steeply; lower margin of maxilla to top of eye 2.2 in HL; caudal peduncle length 8.3% SL; 28 lateral line scales; height of suborbital bone below center of eye 1/3 of eye diameter; 16 pectoral fin rays; 5 opercular scale rows (vs. 4 in *O. convexus*).

**Colour:** Body carmine red with white lines running along centers of scales along length of body.

**Remarks:** A newly described species obtained from the 2015 Nansen Myanmar cruise.



Local name(s): Nga Gyee Mar. Habitat: Depth range: 90–240 m. Fisheries: Bottom trawls.

**Distinctive Characters:** Profile of head convex; no spine at corner of preopercle;  $3\frac{1}{2}$  scale rows above lateral line to middle of spinous portion of dorsal fin; 28–30 (usually 28) lateral line scales; height of suborbital bone below center of eye 1/2 of eye diameter; last dorsal fin spine distinctly longer than penultimate spine; 15–17 (usually 17) pectoral fin rays; gillrakers on  $1^{st}$  gill arch 7–10 on upper limb and 12–14 on lower limb.

**Colour:** Body overall reddish, edges of scales red, the centers silvery pink.

**Remarks:** A specimen with slight differences in the relative lengths of the dorsal fin spines and thickness of 2nd anal fin spine was documented in Myanmar (see Greenfield et al. 2017).

#### Sargocentron caudimaculatum (Rüppell, 1838)

Local name(s): Nga Gyee Mar.

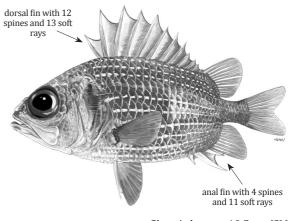
Habitat: A reef-associated species.

Fisheries: Gillnets, hook and line.

**Distinctive Characters:** Corner of preopercle with a sharp long spine; last dorsal fin spine shortest, equidistant between penultimate spine and first soft ray (true of all *Sargocentron* species); body depth 2.3–2.7 in SL; nasal fossa with 1 (rarely 2) spinules on anterior margin; 38–43 lateral line scales.

**Colour:** Head and body red without stripes, the scales rimmed posteriorly with silvery white; a saddle-like silvery white spot dorsally on caudal peduncle; in life, posterior third of body may be silvery white.

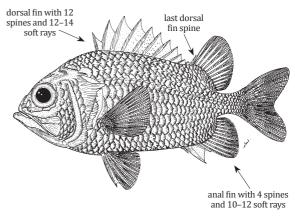
**Remarks:** Presence of this species in Myanmar needs confirmation.



Size: At least to 10.5 cm (SL)

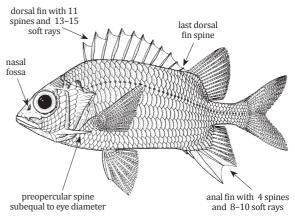
FAO names: Japanese soldierfish (En)

FAO names: Daniela's soldierfish (En)



Size: To 45 cm (TL)

FAO names: Silverspot squirrelfish (En) Marignan rouge et argent (Fr)



Size: To 24 cm (TL)

## Sargocentron diadema (Lacepède, 1802)

Local name(s): Nga Gyee Mar.

Habitat: A reef-associated species.

Fisheries: Gillnets, hook and line.

**Distinctive Characters:** Corner of preopercle with a sharp spine; body depth 2.75–3.25 in SL; nasal fossa without spinules; 44–49 lateral line scales; usually 14 pectoral fin rays.

**Colour:** Body with alternating broad red and narrower silvery white stripes; head read with 2 vertical white streaks on the opercle, 1 on its edge and an oblique one below the eye; distinctive reddish black to black dorsal fin with a disjunct longitudinal whitish band (lower in anterior part of fin and higher in posterior part) and whitish tips. **Remarks:** Presence of this species in Myanmar needs confirmation.

## Sargocentron rubrum (Forsskål, 1775)

#### Local name(s): Nga Gyee Mar.

**Habitat:** A shallow-water species usually found in protected habitats such as bays and lagoons, but less often around coral reefs.

Fisheries: Bottom trawls, gillnets, hook and line.

**Distinctive Characters:** Corner of preopercle with a sharp spine; body depth 2.5–2.8 in SL; membranes of spinous portion of dorsal fin deeply incised; nasal fossa without spinules; 34–38 (usually 35) lateral line scales.

**Colour:** Body with alternate stripes of brownish red and silvery white; a triangular streak of brownish red on cheek from eye to corner of preopercle; often a concentration of pigment forming an elongate brown spot beneath soft portion of dorsal fin and a roundish blotch above base of soft portion of anal fin.

preopercular spine 2-3 in eye diameter anal fin with 4 spines and 8-9 (rarely 8) soft rays Size: To 17 cm (TL) FAO names: Redcoat (En) Marignan rouget (Fr) gines and 12-14 (usually 13) soft rays

anal fin with 4 spines and

8-10 (rarely 10) soft rays

Size: To 32 cm (TL)

PARAZENIDAE

preopercular spine

2/3 in eye diameter

(equal to eye diameter

in large adults)

dorsal fin with 11 spines and 12–14

soft rays

Smooth dories

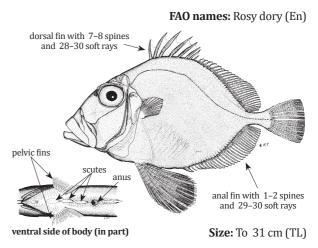
## *Cyttopsis rosea* (Lowe, 1843)

#### Local name(s):

Habitat: Bathypelagic; depth range 150 –730 m. Fisheries:

**Distinctive Characters:** Body oval, stronqly compressed, covered with small, thin, deciduous, cycloid scales; chest flattened and broad; 2 large keeled scutes, each ending in a spine, between pelvic fins and rays, and another scute midway between pelvics; a row of low bony ridges or bumps along bases of soft dorsal and anal fins; pelvic fins with 9–10 soft segmented, branched rays and no spine.

**Colour:** Rosy pink and silvery in life; pelvic fins reddish, the membranes black.



## FAO names: Crown squirrelfish (En)

## Zenopsis nebulosa (Temminck & Schlegel, 1845)

Local name(s): Dori Nga.

Habitat: Benthopelagic in depths of 30 to 800 m. Fisheries: Bottom trawls.

Distinctive Characters: Body oval, strongly compressed, without scales; 7 pairs of keeled bony scutes between pelvic fins and first anal spine; 1 to 3 bony plates at base of first dorsal fin, 4 or 5 along base of soft dorsal, and 5 to 7 along base of anal fin; pelvic fins with 6 or 7 rays, their origin in front of vertical through front edge of eye; caudal peduncle length about 3 times its least depth.

Colour: Adults silvery grey, with a faint dusky midlateral blotch just behind head; first dorsal and pelvic fins blackish: juveniles silvery, with several dark blotches.

# FAO names: Silvery John dory (En) Saint Pierre argenté (Fr) dorsal fin with 9-10 spines and 24-27 soft rays anal fin with 3 spines and 24-26 soft rays Size: To 70 cm (TL)

## PEGASIDAE Seamoths

#### Pegasus volitans Linnaeus, 1758

Local name(s): Poe Pha Lan Nga.

Habitat: Benthic in marine and brackish waters. Fisheries: Bottom trawls.

Distinctive **Characters:** Body depressed. completely encased in fused dermal plates; rostrum sword-like; 4 pairs of dorsolateral body plates; 5 pairs of ventrolateral body plates; 12 tail rings, anteriormost 9 mobile, last 3 fused; a lateral pair of posteriorly directed spines on terminal tail rings; suborbital shelf convex obscuring eye from ventral view.

Colour: Brownish, sometimes banded or spotted, fins with darker spots, lighter ventrally.

> AULOSTOMIDAE Trumpetfishes

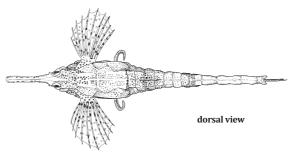
#### Aulostomus chinensis (Linnaeus, 1766)

Local name(s): None.

Habitat: Reef-associated; depth range: 3-122 m. Fisheries: Gillnets.

Distinctive Characters: Body elongate and compressed; mouth located at tip of elongate snout; single barbel on chin; 2nd dorsal fin and anal fin opposite to each other and similarly shaped.

Colour: Overall colour variable; body most commonly brownish with irregular light vertical bar, or with several white horizontal stripes, or uniform yellow colour; a black maxillary stripe usually present, but may be reduced; dorsal and anal fins light, but with a dark basal bar; caudal fin usually with 2 round black spots; a black spot at base of each pelvic fin.

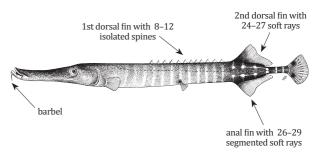


Size: To 20 cm (TL)



FAO names: Chinese trumpetfish (En) Trompette chinoise (Fr)

FAO names: Longtail seamouth (En)



Size: To 80 cm (TL)

# FISTULARIIDAE

**Cornetfishes – Flutemouths** 

## Fistularia commersonii Rüppell, 1838

Local name(s): Nga Phaung Yoe.

Habitat: Seagrass beds and coral reefs in shallow waters.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Dorsal and anal fins short-based and opposite, with 15–17 and 14–16 segmented soft rays, respectively; pectoral fins with 13–15 rays; pelvic fins small and abdominal, with 6 rays.

**Colour:** Brownish to olive above, lighter to silvery below; a pair of blue stripes or a row of blue spots along back; dorsal and anal fins with an orange cast becoming transparent at base; caudal filament white.



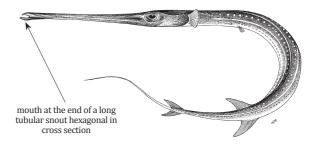
Local name(s): Nga Phaung Yoe.

**Habitat:** In coastal areas over soft beds down to more than 10 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Similar to *Fistularia commersonii* but with a row of elongate bony plates embedded in skin along midline of back anterior to dorsal fin; posterior lateral line ossifications ending in a sharp spine.

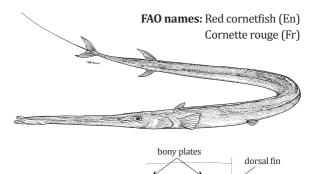
**Colour:** Background colour red to orange-brown above, silvery below; vertical fins also have an orange cast.



Size: To 160 cm, common 100 cm (TL)

FAO names: Bluespotted cornetfish (En)

Cornette à taches bleues (Fr)





Size: To 200 cm, common 100 cm (TL)

**CENTRISCIDAE** Shrimpfishes (Razorfishes)

## Centriscus scutatus Linnaeus, 1758

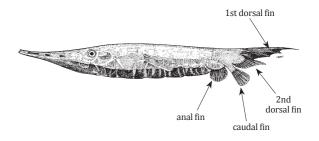
**Local name(s):** Mi Kyaung Thwar Kyar Htoe Nga. **Habitat:** On muddy bottoms near mangroves to inshore coral reefs.

Fisheries: Bottom trawls.

**Distinctive Characters:** First dorsal fin spine fused with body armour plate, without a movable spinous ray at its end; interorbital space with a groove continued to crown of head; sutures of lateral plates serrated; postorbital part of head 1/2 or more than 1/2 distance of operculum from base of pectoral fins.

**Colour:** Silvery, with a dusky lateral streak running length of body; 7–8 silvery crossbars on ventral plates.

FAO names: Serrate razorfish (En)



## **SYNGNATHIDAE**

## Pipefishes – Seahorses

## Hippocampus kuda Bleeker, 1852

Local name(s): Ye Na gar, Ye Myin.

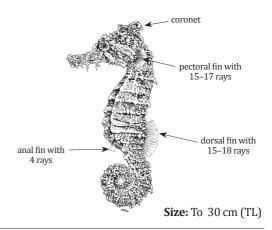
**Habitat:** In coastal areas on seagrass, also in sandy and coral areas, to a depth of about 30 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Body encased in 11 trunk and 34–37 tail bony rings; caudal fin absent; tail usually coiled distally, clearly prehensile; snout length variable, about equal to postorbital length; coronet low, distally bifid; 3 prominent tubercles below dorsal fin base.

**Colour:** Ranges from dirty yellow over reddish brown to black, and may be blotched or banded.

FAO names: Yellow seahorse (En)



# SETARCHIDAE

Deepsea bristly scorpionfishes

## Setarches guentheri Johnson, 1862

Local name(s): Nga Su Khet.

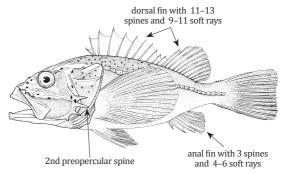
**Habitat:** Found on or near the bottom between 150–780 m depth; feeds in the water column.

Fisheries: Deep bottom trawls.

**Distinctive Characters:** Head cavernous, with weak ossification; top of head scaleless; interorbital width 7–9 % of SL; 2nd preopercular spine subequal to, or longer than 1st and 3rd preopercular spines; body covered with tiny cycloid scales; lateral line a continuous trough covered by thin membranous scales which lack distinct tubes (often lost during capture).

**Colour:** Body greyish or pinkish.

FAO names: Deepwater scorpionfish (En) Rascasse serran (Fr)



Size: To 31.4 cm (TL)

FAO names: Redsmooth scorpionfish (En)

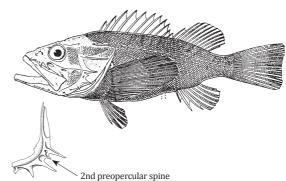
Local name(s): Nga Su Khet.

**Habitat:** Found on the continental shelf and continental slope between 180 and 704 m depth. **Fisheries:** Deep bottom trawls.

Setarches longimanus (Alcock, 1894)

**Distinctive Characters:** Similar to *S. guentheri* but interorbital width 8–12 % of SL; 2nd preopercular spine reduced or absent, much shorter than 1st and 3rd preopercular spines.

**Colour:** Body bright crimson-red.



preopercular spines

## SCORPAENIDAE

Scorpionfishes

## Brachypterois serrulifer Fowler, 1938

**Local name(s):** Nga Kein Ta Yar, Ye Nat Tha Mee Gyo Taung.

Habitat: Benthic on muddy bottoms down to 82 m. Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Dorsal fin spines short, nearly equal to length of dorsal fin soft rays; dorsal fin membrane moderately incised; dorsal fin with 13 spines and 10–11 soft rays; anal fin with 3 spines and 5–6 soft rays; usually 16 pectoral fin rays; posterior lacrimal spine usually directed downward.

**Colour:** Reddish with five dark bars on body; a blackish blotch on opercle; pectoral fin membranes black; soft dorsal, anal, caudal and pelvic fins with orange-red to brownish spots.

## Dendrochirus zebra (Cuvier, 1829)

Local name(s): Nga Kein Ta Yar, Ye Nat Tha Mee. Habitat: Reef-accociated to depths of about 73 m. Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Dorsal fin spines elongate with deeply incised membrane; membrane between upper pectoral fin rays only slightly incised; dorsal fin with 13 spines and 10–11 soft rays (usually 10); anal fin with 3 spines and 6–7 soft rays; supraoccular tentacles usually well developed and typically longer than orbit diameter. **Colour:** Body with broad red vertical bars that alternate with thinner red or reddish brown bars; median fins with small dark spots; dark spot on cheek.

## Ebosia falcata Eschmeyer & Rama-Rao, 1978

Local name(s): Nga Kein Ta Yar, Ye Nat Tha Mee. Habitat: Benthic at depths from 47 to 243 m. Fisheries: Bottom trawls, gillnets.

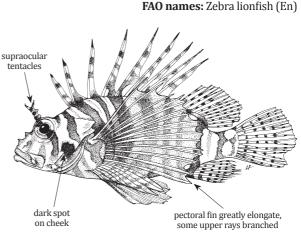
**Distinctive Characters:** Dorsal fin spines elongate with deeply incised membrane; membrane between upper pectoral fin rays only slightly incised; dorsal fin with 12–13 spines and 9–11 soft rays; anal fin with 3 spines and 7–9 (usually 8) soft rays; 17–18 pectoral fin rays; scales ctenoid.

**Colour:** Two prominent bars radiate from eye ventrally; one oblique bar posterior to eye; five broad vertical bands on body below dorsal fin; a dark patch above base of pectoral fin; soft dorsal, caudal and anal fins with small dark spots; pectoral fins with large spots.

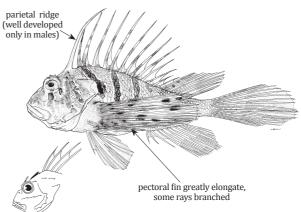
maxilla with serrated median lateral ridges

FAO names: Sawmaxilla scorpionfish (En)

Size: To 13 cm (TL)



Size: To 20 cm (SL)



head of female

FAO names: Falcate lionfish (En)

FAO names: Round scorpionfish (En)

## *Neomerinthe erostris* (Alcock, 1896)

**Local name(s):** Nga Kein Ta Yar, Ye Nat Tha Mee. **Habitat:** Benthic on soft bottoms between 52–505 m depth.

Fisheries: Bottom trawls.

**Distinctive Characters:** Occipital pit flat or nearly so (true of all *Neomerinthe* species); dorsal profile of head strongly rounded; orbit diameter greater than snout length; distinct longitudinal ridge on the lateral surface of the maxilla; dorsal fin with 12 spines and 8–9 soft rays; anal fin with 3 spines and 4–6 soft rays; 17–18 pectoral fin rays; 33–41 (mode 37) scale rows in longitudinal series; lateral lacrimal spine absent; 3 suborbital spines; distinct 2nd preopercular spine present.

**Colour:** Body strongly variegated, mainly brownish red, suffused with irregular gray, dark red, and reddish white blotches; spinous portion of dorsal fin with indistinct, broad, longitudinal, gray band, with poorly defined black blotch posteriorly.

## Parapterois heterura (Bleeker, 1856)

**Local name(s):** Nga Kein Ta Yar, Ye Nat Tha Mee. **Habitat:** Benthic on sandy and muddy bottoms down to 300 m.

Fisheries: Bottom trawls.

**Distinctive Characters:** Dorsal fin spines elongate with deeply incised membrane; membrane between upper pectoral fin rays only slightly incised; dorsal fin with 13 spines and 9 soft rays; anal fin with 2 spines and 7 soft rays; head length 34.9–39.7% of SL; midline of interorbital space with scales; 45–51 scales in logitudinal series; tip of lacrimal bone tentacle usually extending beyond level of posterior margin of maxilla

**Colour:** Head and body reddish brown with narrow vertical dark bands beneath eye and on sides.

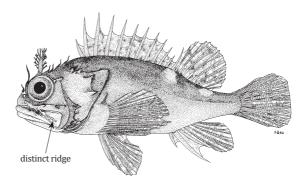
#### Parascorpaena picta (Cuvier, 1829)

**Local name(s):** Nga Kein Ta Yar, Ye Nat Tha Mee. **Habitat:** Quite common in nearshore waters on reefs and over rocky bottoms.

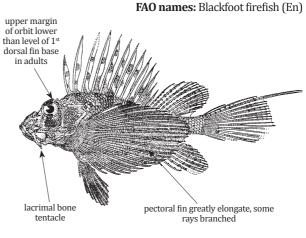
Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Posterior lacrimal spine hooked forward in adults (true of all species of *Parascorpaena*); dorsal fin with 12 spines and 9 soft rays; anal fin with 3 spines and 5 soft rays; 1st and 2nd suborbital ridges fused, forming a single ridge with 2 spines behind level of orbit and no spines below orbit; occipital pit nearly flat; scales mostly cycloid (smooth).

**Colour:** Body usually brownish, mottled with blackish poorly defined blotches.

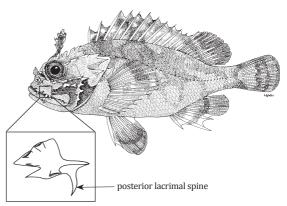


Size: To 11.6 cm (SL)



Size: To 38 cm (TL)

FAO names: Painted scorpionfish (En)



Size: To 16 cm (TL)

## Pterois antennata (Bloch, 1787)

Local name(s): Nga Kein Ta Yar, Ye Nat Tha Mee. Habitat: Found in lagoons and on outer reef slope habitats down to depths of 76 m.

Fisheries: Bottom trawls, gillnets.

Distinctive Characters: Dorsal fin spines elongate with deeply incised membrane; membrane between upper pectoral fin rays incised to about 1/2-3/4 of their length; supraocular tentacles well developed; dorsal fin with 12 spines and 11-12 soft rays; anal fin with 3 spines and 6 soft rays; pectoral fins with 16-18 soft rays.

Colour: Numerous dark bars on body; thin diagonal bars on caudal peduncle; soft-rayed portion of dorsal and anal fins as well as caudal fin translucent with small brownish red spots scattered on rays; supraocular tentacles with alternating light and dark bands.

#### Pterois russelii Bennett, 1831

Local name(s): Nga Kein Ta Yar, Ye Nat Tha Mee. Habitat: Benthic on soft bottoms down to 60 m. Fisheries: Bottom trawls, gillnets.

Distinctive Characters: Dorsal fin spines elongate with deeply incised membrane; membrane between upper pectoral fin rays incised nearly to base of ray; dorsal fin with 13 spines and 10-11 soft rays; anal fin with 3 spines and 7–8 soft rays; pectoral fins with 12-14 soft rays; caudal fin rounded; scales small and cycloid.

**Colour:** Body with about 12 dark reddish bars; pectoral fin membrane usually covered with dark spots; pelvic fins mostly dusky, with light round spots on proximal half.

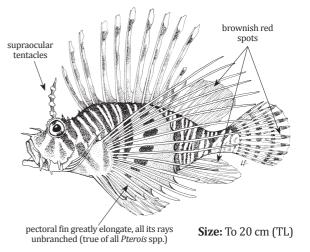
## Pterois miles (Bennett, 1828)

Local name(s): Nga Kein Ta Yar, Ye Nat Tha Mee. Habitat: Benthic on soft bottoms and reefs at depths between 25 and 85 m.

Fisheries: Bottom trawls, gillnets.

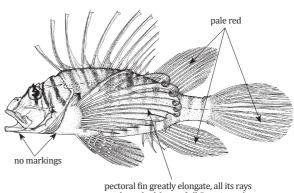
Distinctive Characters: Dorsal fin spines elongate with deeply incised membrane; membrane between upper pectoral fin rays incised nearly to base of ray; dorsal fin with 12-13 spines and 9-11 soft rays; anal fin with 3 spines and 5-6 soft rays; pectoral fins with 13-14 soft rays.

Colour: Numerous dark brown to reddish brown of variable width bars on body; ventral surface of mandible and chest with numerous longitudinal dark brown stripes; soft rayed portion of dorsal and anal fins as well as caudal fin translucent with small brownish red spots scattered on rays; tentacle above eye may be faintly banded.



FAO names: Plaintail turkeyfish (En)

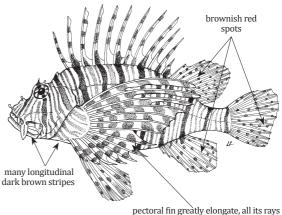
FAO names: Broadbared lionfish (En)



unbranched (true of all *Pterois* spp.)

Size: To 30 cm (SL)

#### FAO names: Devil firefish (En)



unbranched (true of all Pterois spp.)

Size: To 35 cm (SL)

#### FAO names: Yellowfin scorpionfish (En)

#### Scorpaenopsis neglecta Heckel, 1837

**Local name(s):** Nga Kein Ta Yar, Ye Nat Tha Mee. **Habitat:** Occurs in areas with mixed rock, coral and soft substrates down to 80 m depth.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Nape and anterior body highly arched, giving a humpback appearence; dorsal fin with 12 spines and 9 soft rays; anal fin with 3 spines and 5 soft rays (true of all species of *Scorpaenopsis*); interorbital space 3.8–4.4 in HL; orbit diameter 1.7–2.0 in snout length; supraorbital and suborbital ridges serrated; upper opercular spine double (divided to 2 spinous points).

**Colour:** Usually strongly mottled with yellowish to reddish and greyish blotches; axil of pectoral fins pale with small black spots inwardly, then yellow in the middle and a broad black band marginally; pelvic fins black; caudal fin reddish with two dark brown bars: one at base and a broader one submarginally.

Scorpaenopsis obtusa Randall & Eschmeyer, 2001

**Local name(s):** Nga Kein Ta Yar, Ye Nat Tha Mee. **Habitat:** Occurs in areas with mixed rock, coral and soft substrates down to 40 m depth.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Nape and anterior body highly arched, giving a humpback appearence; snout very short, about equal to orbit diameter; body depth of adults 2.0–2.2 in SL; longitudinal scale series 37–41; interorbital space 3.9–4.5 in HL; ascending process of premaxilla extending into interorbital space; suborbital ridge with 4 spines; upper opercular spine double.

**Colour:** Mottled brown to reddish brown with a broad irregular black blotch on basal spinous portion of dorsal fin; pelvic fins black; caudal fin pinkish with two dark red bars: one at base and a broader one submarginally.

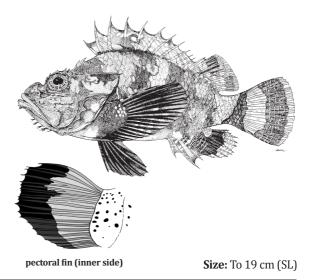
## Scorpaenopsis oxycephala (Bleeker, 1849)

**Local name(s):**Nga Kein Ta Yar, Ye Nat Tha Mee. **Habitat:** Benthic on coral, rocky and mixed bottoms down to 400 m depth.

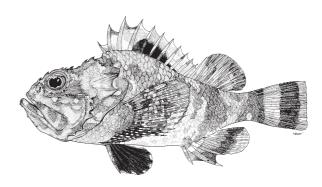
Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Nape and anterior body not highly arched; snout very long, 2.7–3.0 in HL interorbital space 5.7–7.0 in HL; 18–20 (usually 20) pectoral fin rays; occipital pit absent or very shallow; 3rd dorsal fin spine longest, 2.1–2.5 in HL; suborbital ridge with 3 spines; upper opercular spine single.

**Colour:** Mottled dark reddish brown to brownish red blotches; a triangular bar often present below lower edge of orbit expanding ventrally on cheek.

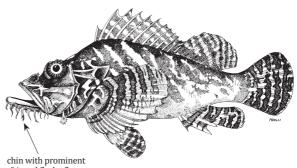


FAO names: Shortsnout scorpionfish (En)



Size: To 10 cm (TL)

FAO names: Smallscale scorpionfish (En)



fringed fleshy flaps

Size: To 36 cm (TL)

## Scorpaenopsis possi Randall & Eschmeyer, 2001

**Local name(s):** Nga Kein Ta Yar, Ye Nat Tha Mee. **Habitat:** Benthic on rock or coral bottoms down to 40 m depth.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Nape and anterior body not highly arched; snout length 3.05–3.2 in HL interorbital space 5.8–7.1 in HL; 17–18 (rarely 18) pectoral fin rays; occipital pit shallow; pre-tympanic spines present; 43–50 scales in longitudinal series; upper opercular spine single; supraocular tentacles of adults absent or very small.

**Colour:** Red mottled with dark brown, with dark-edged blue dots.

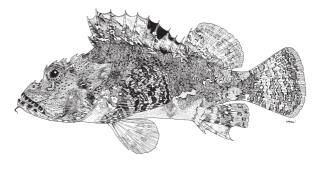
Scorpaenopsis ramaroi Randall & Eschmeyer, 2001

**Local name(s):** Nga Kein Ta Yar, Ye Nat Tha Mee. **Habitat:** Benthic on silty sand and rocky bottom down to 60 m depth.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Nape and anterior body not highly arched; snout length 3.2–3.45 in HL interorbital space 6.4–7.9 in HL; 17–19 (usually 18) pectoral fin rays; occipital pit shallow; interorbital ridges prominent; a well developped depression below front of eye; 45–49 scales in longitudinal series; ridge above lacrimal spine sharp-edged with a pointed tip; upper opercular spine single

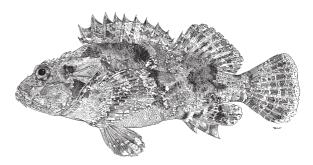
**Colour:** Dark reddish to brownish grey, strongly mottled with dark brown.



Size: To 19.4 cm (TL)

FAO names: Rama Rao's scorpionfish

FAO names: Poss's scorpionfish (En)



Size: To 20.8 cm (TL)

FAO names: Ocellated waspfish (En)

## **APISTIDAE** Wasp scorpionfishes

## Apistus carinatus (Bloch & Schneider, 1801)

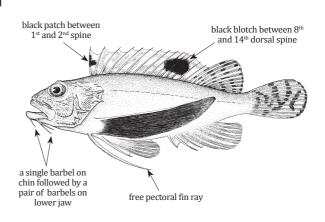
#### Local name(s):

**Habitat:** Benthic on soft bottoms down to a depth of 60 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Preopercle with a strong spine and 2–3 shorter spines below; dorsal fin with 14–15 spines and 8–10 soft rays; anal fin with 3 spines and 7–8 soft rays; pectoral fins elongate, longest rays reaching to or beyond posterior end of anal fin; ventralmost pectoral fin ray free from remainder of fin; scales on body.

**Colour:** Body greyish dorsally and rosy ventrally; spiny part of dorsal fin grey, darker grey distally, with a black patch between; pectoral fins black, uppermost pectoral fin ray white; inner side of pectoral fin yellow.



Size: To 20 cm (TL)

## TETRAROGIDAE

Waspfishes

#### Ablabys macracanthus (Bleeker, 1852)

Local name(s): Na Gyee Nga.

Habitat: Demersal; depth range 60–90 m. Fisheries: Bottom trawls.

**Distinctive Characters:** Body strongly compressed; dorsal fin with 15–16 spines and 8–9 soft rays; pelvic fin with 1 spine and 5 soft rays; 2nd dorsal fin spine markedly longer than 3rd; body with small embedded cycloid scales.

**Colour:** Head and body uniformly dark brown; all fins dark brown with the tips of rays white.

origin of dorsal fin anterior to eve FAO names: Spiny waspfish (En)

anal fin with 3 spines an 7 soft rays

FAO names: Cockatoo waspfish (En)

Size: To 20 cm (TL)

## Ablabys taenianotus (Cuvier, 1829)

Local name(s): Na Gyee Nga.

**Habitat:** Among seaweeds in rocky intertidal or littoral habitats to depths of nearly 40 m.

Fisheries: Bottom trawls.

**Distinctive Characters:** Body strongly compressed; dorsal fin with 17–18 spines and 6–7 soft rays; pectoral fins with 11–12 (rarely 12) rays; 2nd and 3rd dorsal fin spines subequal in length; body with small embedded cycloid scales.

**Colour:** Uniformly light brown with poorly defined irregular dark spots on upper lateral surface of body; all fins darker than body with a thin white border.

**Remarks:** Slight variations in the relative lengths of the dorsal fin spines and colour pattern observed in one Myanmar specimen may represent geographic variation or species–level differences.

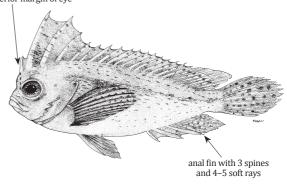
## Neocentropogon affinis (Lloyd, 1909)

Local name(s): Na Gyee Nga. Habitat: Demersal; depth range 84–172 m. Fisheries: Bottom trawls.

**Distinctive Characters:** Body robust not strongly compressed, its depth 29–33% SL; scales about 85–95 vertical rows on body; dorsal fin with 13–14 spines and 7–8 (rarely 8) soft rays; pelvic fin with 1 spine and 5 soft rays; 15 pectoral fin rays; dorsal fin membrane strongly incised; minute villiform teeth in jaws, vomer and palatine; body with small embedded cycloid scales.

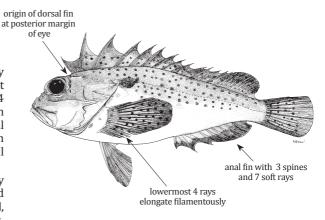
**Colour:** Body greyish brown dorsally and dirty white ventrally; a large dark blotch behind head above pectoral fins; small dark spots on dorsal, pectoral and caudal fins and on upper half of body.

origin of dorsal fin at level of anterior margin of eye



Size: To 15 cm (TL)

FAO names: Andaman waspfish (En)



# Snyderina guentheri (Boulenger, 1889)

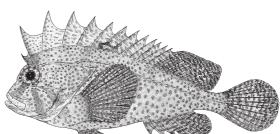
Local name(s): Na Gyee Nga.

Habitat: Demersal; depth range 90–129 m. Fisheries: Bottom trawls.

**Distinctive Characters:** Body compressed, its depth 34–42% of SL; origin of dorsal fin above middle of eye; dorsal fin with 13 spines and 10–11 soft rays; anal fin with 3 spines and 5–6 soft rays; pectoral fins with 13–14 rays; pectoral fin extending to 1st soft anal fin ray; body with small embedded cycloid scales; palatine teeth absent; caudal peduncle slender; caudal fin long and broadly rouded.

**Colour:** Mottled dark reddish brown with small dark brown to red spots on fins.

**Remarks:** Generic revision needed (H. Motomura pers. com., 2017).



FAO names: Günther's waspfish (En)

Size: To 24 cm (TL)

FAO names: Longsnout stinger (En)

# SYNANCEIIDAE Stonefishes

Inimicus cuvieri (Gray, 1835)

Local name(s): Nga Kyauk Tone.

**Habitat:** Benthic on sandy or mud–sand bottoms down to a depth of 81 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Snout length usually equal to or longer than postorbital length; dorsal fin membrane from 4th spine backwards less than one fourth spine height; dorsal fin with 15–18 spines and 5–9 soft rays; anal fin with 2 spines and 10–13 soft rays; lowermost 2 pectoral fin rays free (true of all species of *Inimicus*); body scaleless.

**Colour:** Body brown or grayish brown dorsally, paler ventrally; inner surface of pectoral fin plain brown (sometimes a few scattered dark spots).

Inimicus sinensis (Valenciennes, 1833)

Local name(s): Nga Kyauk Tone.

**Habitat:** Benthic on coral, rocky and mixed bottoms down to a depth of 90 m.

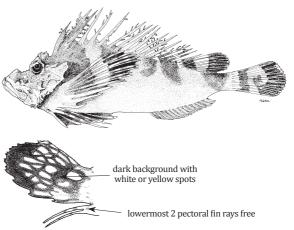
Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Snout length equal to or longer than postorbital length; dorsal fin membrane from 4th spine backwards less than one fourth spine height; dorsal fin with 16–18 spines and 6–9 soft rays; anal fin with 2 spines and 10–13 soft rays; body scaleless.

**Colour:** Body brown or grayish brown dorsally, paler ventrally; inner surface of pectoral fin dark grey with various sized white or yellow spots.

Size: To 24 cm (TL)

FAO names: Spotted stinger(En)



Size: To 26 cm (TL)

#### Minous coccineus Alcock, 1890

Local name(s): Nga Kyauk Tone.

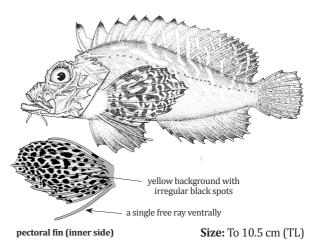
Habitat: Found on mud or silty sand from near shore between 20 and 80 m depth.

Fisheries: Bottom trawls, gillnets.

Distinctive Characters: First dorsal fin spine notably shorter than second dorsal fin spine, close to base of the second; dorsal fin with 10–12 spines and 11-12 soft rays; anal fin with 2 spines and 9-11 soft rays; 11-15 gill rakers on 1<sup>st</sup> gill arch; pectoral fin with a single free ray ventrally (true of all species of Minous); body scaleless.

Colour: Body with numerous irregular bands dorsally, no markings ventrally; inner surface of pectoral fins yellowish with irregular black spots; caudal fin pale without markings.

FAO names: Onestick stingfish (En)



### FAO names: Grey stingfish (En) Poisson pierre gris (Fr)

#### Local name(s): Nga Kyauk Tone.

Habitat: Found on mud or silty sand from near shore to at least 57 m.

Minous monodactylus (Bloch & Schneider, 1801)

Fisheries: Bottom trawls, gillnets.

Distinctive Characters: First dorsal fin spine equal to or longer than the 2<sup>nd</sup>, well separated from the second; dorsal fin with 9-11 spines and 9-13 soft rays; anal fin with 2 spines and 8–11 soft rays; 15–19 gill rakers on 1<sup>st</sup> gill arch; body scaleless.

**Colour:** Mottled ligth grey, pale ventrally; a large black spot distally on anterior part of soft rayed portion of dorsal fin; anal and paired fins dark brown distally; inner surface of pectoral fins pale, without distinctive markins; caudal fin usually with two broad dark bars.

### Minous radiatus Matsunuma & Motomura, 2018

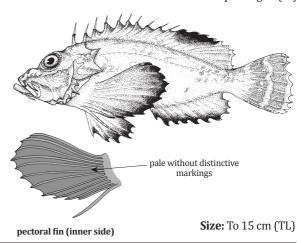
#### Local name(s): Nga Kyauk Tone.

Habitat: Found in estuaries to offshore mud-sand habitats between 34 and 116 m.

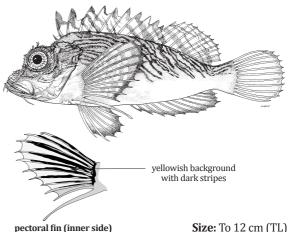
Fisheries: Bottom trawls, gillnets.

Distinctive Characters: First dorsal fin spine notably shorter than second dorsal fin spine. close to base of the second; dorsal fin with 10–12 spines and 11-13 soft rays; anal fin with 2 spines and 8-11 soft rays; 11-17 gill rakers on 1<sup>st</sup> gill arch; body scaleless.

**Colour:** Body reddish brown with numerous irregular bands dorsally, no markings ventrally; inner surface of pectoral fins yellowish with black to dark brown stripes radiating distally along the course of fin rays; caudal fin pale without markings.



FAO names: Radial stinger (En)



# APLOACTINIDAE

Velvetfishes

#### Erisphex sp.

Local name(s): Nga Gati Par, Nga Kutt Pali.

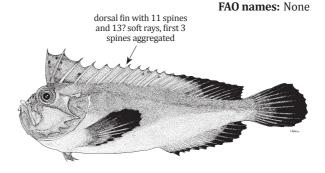
Habitat: Collected at 104 m depth.

Fisheries: Deep bottom trawls.

**Distinctive Characters:** Body compressed; head and body covered with prickly scales; both lacrymal spines sharp directed downwards; 4 spines on preopercular margin; upper and lower jaws with small conical teeth; dorsal fin origin above eye, 1st spine longest; pelvic fins origin before pectoral fin base; all fin rays unbranched.

**Colour:** Body uniform dark brown; fins darker distally and posteriorly.

Remarks: Inclusion based on photographic record.



Size: To 8.5 cm (TL)

# DACTYLOPTERIDAE

Flying gurnards

#### Dactyloptena macracantha (Bleeker, 1855)

Local name(s): None.

**Habitat:** Benthic on sandy bottoms in coastal waters. from depths of 45 to 177 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Interorbital width 12 to 15% of SL; interorbit weakly concave, with depth 6 to 8% of HL; lateral line present, extending to caudal fin.

**Colour:** Dusky violet above and pinkish below; an oblong black blotch over middle of pectoral fins.

**Remarks:** Recorded from at the border with Thailand (its presence in Myanmar needs confirmation).

### Dactyloptena orientalis (Cuvier, 1829)

Local name(s): Kywe Pa Donn / Nga Pyan.

Habitat: Benthic on sandy bottoms in coastal waters.

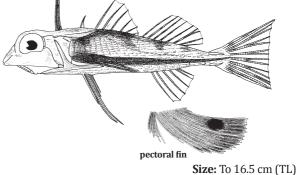
Fisheries: Bottom trawls, gillnets.

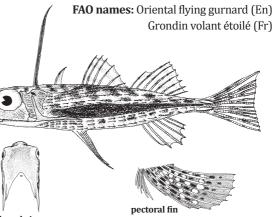
**Distinctive Characters:** Interorbital width 13 to 15% of SL; interorbit moderately concave, with depth 8 to 11% of HL; lateral line absent or greatly obscured.

**Colour:** Usually yellowish brown above, light brown below, with small orange spots over top of head and back; dusky, golden spots on pectoral fins (larger distally).

Grondin volant cocarde (Fr)

FAO names: Spotwing helmet gurnard (En)





dorsal view of head

Size: To 40 cm, common 20 cm (TL)

# PLECTROGENIIDAE

Stinger flatheads

#### Plectrogenium nanum Gilbert, 1905

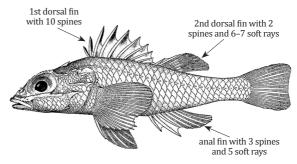
**Local name(s):** Ye Net Suu Nga Gaung Pyar. **Habitat:** Deep-water species occurring between 250–650 m depth.

Fisheries: Bottom trawls.

**Distinctive Characters:** Dorsal fin divided into two fins, 2<sup>nd</sup> fin headed by 2 spines; dorsal fin with 12 spines and 6–7 soft rays; anal fin with 3 spines and 5 soft rays; pectoral fins with 20–24 rays; scales ctenoid; about 30–35 vertical scales rows on body; suborbital ridge with very well developed flat spines; a number of extra spines on lachrymal bone and above orbits.

**Colour:** Overall red-orange with a black or dark red blotch on  $2^{nd}$  dorsal fin.

FAO names: Dwarf thronyhead (En)



from Eschmeyer and Randall (1975)

Size: To 7.7 cm (SL)

## BEMBRIDAE

Deepwater flatheads

Bembradium sp.

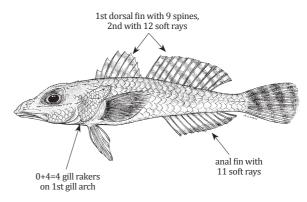
**Local name(s):** Ye Net Suu Nga Gaung Pyar. **Habitat:** Known from a single specimen captured at 374–376 m depth.

Fisheries: Bottom trawls.

**Distinctive Characters:** Head length 47.1% in SL; orbit diameter 32.7% of SL; 25 pectoral fin rays; pelvic fin rays with 1 spine and 5 soft rays; 28 lateral line scales, anterior 4 scales with a distinct ridge; body mostly covered with ctenoid scales; villiform teeth present on jaws, vomer and palatine. **Colour:** Head, body and fins except for pelvic fin reddish; dorsal and caudal fins with reddish oblique bands.

**Remarks:** An undescribed species presently being described by Psomadakis et al.

FAO names: Indian Ocean deepwater flathead



Size: At least to 12 cm (SL)

FAO names: Andaman Sea

deepwater flathead

Bembras andamanensis Imamura, Psomadakis and Htun Thein, 2018

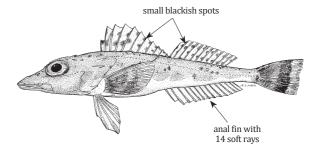
Local name(s): Ye Net Suu Nga Gaung Pyar.

**Habitat:** Known from a single specimen captured at 116 m depth.

Fisheries: Bottom trawls.

**Distinctive Characters:** Dorsal fin divided into two fins, 2<sup>nd</sup> fin headed by 1 spine; anal fin lacking spines (true of all *Bembras* species); head length 42.1% of SL; snout length 13.8% of SL; orbit diameter 10.9% of SL; 20–21 pectoral fin rays; 74 forward slanting body scale rows above lateral line; 4 upper limb gill rakers.

**Colour:** Dorsal and lateral surfaces of head and body orange, with small scattered blackish spots; ventral surface white; 1<sup>st</sup> and 2<sup>nd</sup> dorsal fins pale with many small scattered blackish spots.



326

### Bembras leslieknappi Imamura, Psomadakis and Htun Thein, 2018

Local name(s): Ye Net Suu Nga Gaung Pyar.

**Habitat:** Known from a single specimen captured at 181–184 m depth.

Fisheries: Bottom trawls.

**Distinctive Characters:** Head length 41.5% of SL; snout length 14.3% of SL; orbit diameter 10.4% of SL; 20–21 pectoral fin rays; 80 forward slanting body scale rows above lateral line; 3 upper limb gill rakers.

**Colour:** Dorsal and lateral surfaces of head and body red, with small scattered blackish spots; ventral surface white; small scattered blackish spots only on  $1^{st}$  dorsal fin;  $2^{nd}$  dorsal fin, except for basal area and tips of rays, dusky; pectoral fin with a large black blotch posterodorsally.

deepwater flathead small blackish spots only on 1st dorsal fin

Size: At least to 19.5 cm (SL)

FAO names: Leslie Knapp's

# TRIGLIDAE

Gurnards – Searobins

Lepidotrigla longipinnis Alcock, 1890

Local name(s): Ye Net Kywe Pa Done.

**Habitat:** Bottom dweller that occurs at depths between 9 and 115 m.

Fisheries: Bottom trawls.

**Distinctive Characters:** Bony plates with sharp spines posteriorly along entire length of both dorsal fins (true of all *Lepidotrigla* species); lateral profile of body with gradual convexly curved taper to caudal peduncle; corner of mouth anterior to front edge of orbit; rostral process with broad obtuse angle or straight, with prominent forward directed blade-like spine at each corner; anal fin with 14–16 rays; 56–61 lateral line scales; 13–15 scale rows below lateral line.

**Colour:** Mostly pinkish orange with belly and lower flanks white; inner surface of pectoral fin dark with scattered pale blue spots.

### Lepidotrigla omanensis Regan, 1905

Local name(s): Ye Net Kywe Pa Done.

**Habitat:** Bottom dweller that occurs in rather deep waters from 56 m to 220 m.

#### Fisheries: Bottom trawls.

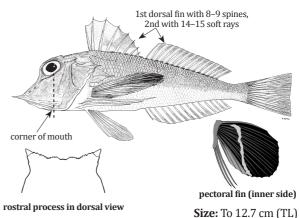
**Distinctive Characters:** Lateral profile of body with gradual convexly curved taper to caudal peduncle; corner of mouth posterior to front edge of orbit; rostral process with broad obtuse angle or straight and with moderately sized divergent blade-like spine at each corner; anal fin with 14–15 rays; 55–58 lateral line scales; 12–13 scale rows below lateral line.

**Colour:** Mostly pinkish orange with belly and lower flanks white; inner surface of pectoral fin dark with a diagonal narrow pale blue band.

FAO names: Stellar gurnard (En)

Size: To 12.5 cm (SL)

#### FAO names: Oman gurnard (En) Grondin d'Oman (Fr)



### Lepidotrigla psolokerkos Gomon and Psomadakis, 2018

#### Local name(s): Ye Net Kywe Pa Done.

**Habitat:** Bottom dweller that occurs at depths between 151 and 255 m.

Fisheries: Bottom trawls.

**Distinctive Characters:** Lateral profile of body with straight taper to caudal peduncle; corner of mouth anterior to front edge of orbit; rostral process with broad medial notch edged with small spines; anal fin with 15–17 rays; 61–62 lateral line scales; 15–16 scale rows below lateral line.

**Colour:** Mostly red with belly and lower flanks white; inner surface of pectoral fin blackish overall; upper 2/3 of caudal fin broadly grey distally, red below.

### Pterygotrigla arabica (Boulenger, 1888)

Local name(s): Ye Net Kywe Pa Done.

**Habitat:** Inhabits mud bottoms at depths between 26 and 280 m.

Fisheries: Bottom trawls.

**Distinctive Characters:** Bony plates only along base of 1st dorsal fin (true of all *Pterygotrigla* species); opercular spine long, extending well past cleithrum; pectoral fin with 12 connected rays; nasal spine absent; rostral process with a single pair of prominent, blade-like spines; snout length, 15–19% of SL.

**Colour:** Head and upper half of body ligth orange red with small dark spots; lower half of body silvery white; 1st dorsal fin with a large black blotch; 2nd dorsal fin with a series of small black spots.

**Remarks:** Not found below 88 m depth in Myanmar.

### Pterygotrigla hemisticta (Temminck & Schlegel, 1843)

Local name(s): Ye Net Kywe Pa Done.

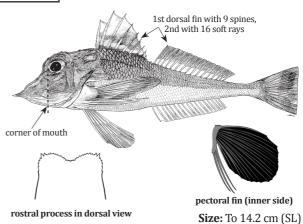
**Habitat:** Inhabits mud bottoms at depths between 10 and 420 m.

Fisheries: Bottom trawls.

**Distinctive Characters:** Similar to *Pterygotrigla arabica* but with shorter snout 13–15% of SL and a diagonal band of white spots on inner surface of pectoral fin.

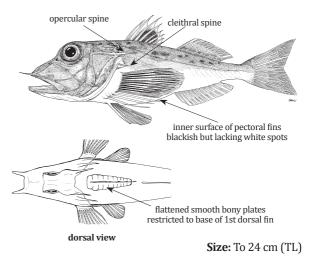
**Colour:** Mostly red with prominent black spots and large black spot in first dorsal fin; inner surface of pectoral fins with large dark area and diagonal band of separate white spots.

**Remarks:** Not found below 101 m depth in Myanmar.

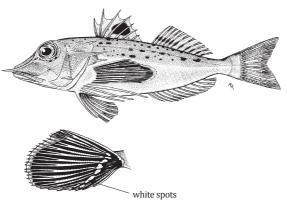


#### FAO names: Arabian gurnard (En)

FAO names: Skinny gurnard (En)



FAO names: Blackspotted gurnard (En) Grondin encré (Fr)



pectoral fin (inner side)

Size: To 30 cm (TL)

### Pterygotrigla macrorhynchus Kamohara, 1936

#### FAO names: Longnose gurnard (En)

Local name(s): Ye Net Kywe Pa Done.

**Habitat:** Inhabits mud bottoms at depths between 250 and 500 m.

Fisheries: Bottom trawls.

**Distinctive Characters:** Bony plates only along base of 1st dorsal fin (true of all *Pterygotrigla* species); rostral spines very long and flattened, snout long, 17 to 22% of SL; opercular spine short barely extending to cleithrum; nasal spine present; nuchal spine long; cleithral spine long; base of first dorsal fin with 10 flat plates; breast and nape scaleless.

**Colour:** Mostly ligth orange red with belly and lower flanks silvery white; 1st dorsal fin membrane with a thin black margin; distal third of 2nd dorsal fin red and a row of small dark brown spots on rays basally; pectoral fins black.



Size: To 20 cm (TL)

# PERISTEDIIDAE

Armored gurnards

Scalicus investigatoris (Alcock, 1898)

Local name(s): Than Ma Ni Kywe Pa Done.

**Habitat:** Inhabits mud bottoms at depths between 200 and 658 m.

Fisheries: Deep bottom trawls.

**Distinctive Characters:** Upper jaw teeth absent; lateral margin of head smooth; equilateral triangular rostral projections; 6 barbels on lip, 5 unbranced and 1 posteriormost longest and branched, reaching to anal fin origin; 3 unbranched barbels on chin; preopercular spine long; dorsal fin with 7 spines and 20–23 soft rays; anal fin with no spines and 20–22 soft rays.

**Colour:** Head and body red; pectorals, first dorsal, and distal half of longest barbel blackish; dorsal fin rays with black edge, pelvic black.

### Scalicus serrulatus (Alcock, 1898)

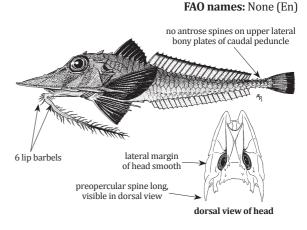
Local name(s): Than Ma Ni Kywe Pa Done.

**Habitat:** Inhabits mud bottoms at depths between 300 and 376 m.

Fisheries: Deep bottom trawls.

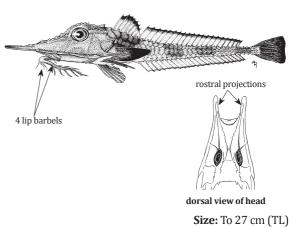
**Distinctive Characters:** Similar to *Scalicus investigatoris* but rostral projections long and parallel to each other; 4 lip and 1 chin barbel; posteriormost lip barbel not reaching to anal fin origin; antrose spines present on upper lateral bony plates of caudal peduncle; all bony edges of head finely serrulate.

**Colour:** Head and body red with small greenish markings; all fins deep red including detached lowermost pectoral rays; edges of dorsal fins and distal part of pectoral and caudal fins black.



Size: To 23 cm (TL)

#### FAO names: None (En)



FAO names: None (En)

### Satyrichthys laticeps (Schlegel, 1852)

#### Local name(s): Than Ma Ni Kywe Pa Done.

**Habitat:** Inhabits mud bottoms at depths between 58 and 325 m.

Fisheries: Deep bottom trawls.

**Distinctive Characters:** Upper jaw teeth absent; lateral margin of head smooth; rostral projections long and inwardly directed; 4 (rarely 3 or 5) barbels on lip, 3 unbranched and 1 posteriormost longest and branched, reaching beyond level of orbit; 2–5 unbranched barbels on chin; parietal bones unequal in size on midline; upper lateral bony plates of caudal peduncle with forwardly directed (antrose) spines; preopercular spine long; dorsal fin with 6–8 spines and 13–17 soft rays; anal fin with no spines and 14–17 soft rays.

**Colour:** Head and body red, ventral surface paler; fins and barbels reddish; no dusky spots on dorsal fin.

#### Satyrichthys milleri Kawai, 2013

Local name(s): Than Ma Ni Kywe Pa Done.

**Habitat:** Inhabits mud bottoms at depths between 259 and 860 m.

Fisheries: Deep bottom trawls.

**Distinctive Characters:** Upper jaw teeth absent; lateral margin of head smooth; equilateral triangular rostral projections; 4 (rarely 5) barbels on lip, 3 unbranched and 1 posteriormost longest and branched, reaching beyond level of orbit; 4 unbranched barbels on chin; preopercular spine long; dorsal fin with 7–8 spines and 15–17 soft rays; anal fin with no spines and 15–17 soft rays.

**Colour:** Head and body dark brown; dorsal and pectoral fins, except for free rays, and posterior half of longest barbel blackish; anal, pelvic and caudal fins dark brown; 2 free pectoral fin rays brown.

#### Peristedion liorhynchus (Günther, 1872)

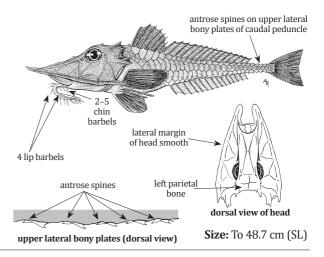
**Local name(s):** Than Ma Ni Kywe Pa Done. **Habitat:** Inhabits mud bottoms at depths between 140 and 380 m.

#### Fisheries: Deep bottom trawls.

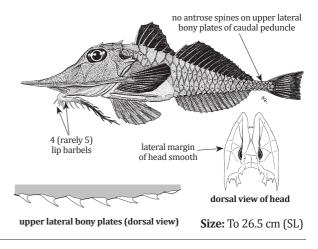
**Distinctive Characters:** Upper jaw teeth absent; lateral margin of head smooth; posterior pairs of bony plates in lower lateral rows contralaterally sutured; preopercular spine small, not visible in dorsal view (true of all *Peristedion* species); rostral projections short and parallel to each other; dorsal fin with 8 spines and 21 soft rays; anal fin with no spines and 20 soft rays.

**Colour:** Mostly brownish red with dark margin on dorsal fins and banded pectoral fins.

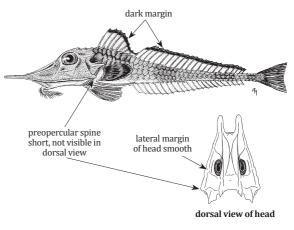
**Remarks:** *Peristedion riversandersoni* (Alcock, 1894) may also occur in Myanmar.



#### FAO names: Miller's armored gurnard (En)



FAO names: None (En)



Size: To 40 cm (TL)

# HOPLICHTHYIDAE

Spiny flatheads

### Hoplichthys gregoryi (Fowler 1938)

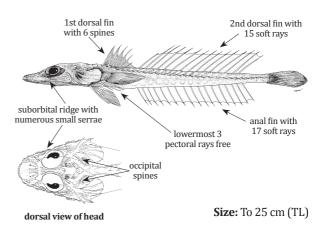
Local name(s): Nga Sin Ninn.

Habitat: Inhabits mud bottoms at depths between 329 and 332 m.

Fisheries: Deep bottom trawls.

Distinctive Characters: Head and body extremely depressed; bones of head finely serrate; lowermost 3 pectoral fin rays free; 1 spine present immediately behind each eye and a small pair of spines on occiput; lateral line scutes with 1 large spine directed up and back (sometimes auxillary small spines in interspaces between scutes); interorbital width less than 1/2 eye length.

**Colour:** Mostly ligth orange red with an horizontal row of yellowish oval spots along ventral side of body; lateral line scutes yellowish.



## **PLATYCEPHALIDAE**

Spiny flatheads

Cociella punctata (Cuvier, 1829)

Local name(s): Nga Sin Ninn.

Habitat: Benthic in depths of 10 m or less.

Fisheries: Bottom trawls, gillnets.

Distinctive Characters: Body elongate, head moderately depressed; uppermost preopercular spine longest, reaching only about half-way to opercular margin; iris lappet simple; lateral line scales with a single opening to exterior; teeth on vomer in 2 separate patches.

Colour: Numerous small dark spots on back reaching to below lateral line: caudal fin usually with a broad dark marginal band or series of dark spots; 1st dorsal fin with a submarginal dark band. Remarks: The presence of this species in Myanmar needs confirmation).

#### Cociella sp.

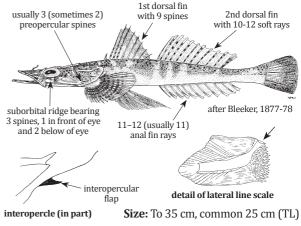
Local name(s): Nga Sin Ninn. Habitat: Mud bottoms at 116 m depth.

Fisheries: Bottom trawls.

Distinctive Characters: Similar to Cocciella *punctata* but head larger, 36.8% of SL (32.6–36.3%) of SL in C. punctata); 7 spines (including 1 preorbital spine) on the suborbital ridge (usually 3 spines in C. punctata); no interopercular flap (usually present in C. punctata).

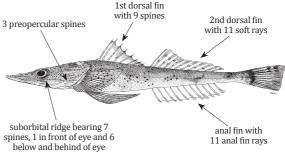
#### Colour: See Cociella punctata.

Remarks: An undescribed species presently being described by Imamura et al.



FAO names: Largehead flathead (En)

FAO names: Spotted flathead (En)



FAO names: None (En)

FAO names: Dwarf flathead (En)

### *Elates ransonnettii* (Steindachner, 1876)

Local name(s): Nga Sin Ninn.

**Habitat:** Benthic, over mud and sand bottoms at depths to about 57 m.

Fisheries: Bottom trawls.

**Distinctive Characters:** Body extremely slender; head moderately depressed; preopercular spine long, extending beyond the margin of the opercle; caudal fin emarginate, upper lobe longest, a single upper caudal fin ray ending in an elongate filament. **Colour:** Head and body pale brown dorsally with some small brown spots but no distinct bands, paler ventrally; a series of brown to gray spots arranged in a single row laterally; all fins with dark brown spots.

**Remarks:** This represents the first record of the species from the Andaman Sea, Indian Ocean.

### Inegocia japonica (Cuvier, 1829)

Local name(s): Nga Sin Ninn.

**Habitat:** Benthic, over mud and sand bottoms at depths to about 85 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Body elongate, head moderately depressed; upper preopercular spine short, subequal with next, small accessory spine usually present; lateral line scales with 2 openings to exterior; teeth on vomer in 2 separate patches; interopercular flap present.

**Colour:** Head and body brown or grey above, whitish below, back crossed by about 6 obscure dark bands; dorsal fins clear, with small brown spots on rays; caudal fin pale, with large dark spots, some elongated.

**Remarks:** The presence of this species in Myanmar needs confirmation).

### Grammoplites scaber (Linnaeus, 1758)

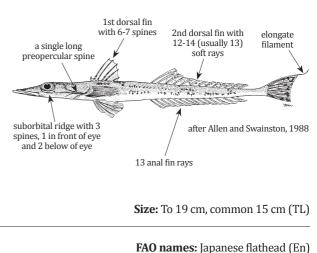
#### Local name(s): Nga Sin Ninn.

**Habitat:** Benthic, over mud and sand bottoms at depths to about 55 m.

Fisheries: Bottom trawls, gillnets.

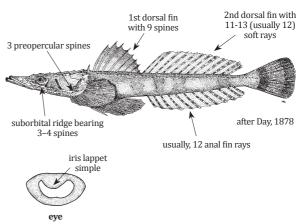
**Distinctive Characters:** Body elongate, head moderately depressed; upper preopercular spine longest, not reaching to opercular margin, bearing a small accessory spine on base; lateral line scales with a single opening to exterior, each with a backward directed spine that extends beyond rear margin of scale (especially noticeable along caudal peduncle); interorbital width 9% or more of head length; teeth on vomer in 2 separate patches; interopercular flap absent.

**Colour:** Head and body brownish above, whitish below; back crossed by about 6 dark bands (sometimes obscure or absent).



#### 1st dorsal fin 2nd dorsal fin with with 9 spines 11-13 (usually 12) usually 3 preopercular soft rays spines suborbital ridge smooth 11-13 (usually 12) anal except for 2 spines fin rays 19-21 pectoral fin rays below of eye iris lappet cirrose detail of lateral line scale eye Size: To 35 cm, common 20 cm (TL)

#### FAO names: Rough flathead (En)





### Grammoplites knappi Imamura & Amaoka, 1994

#### Local name(s): Nga Sin Ninn.

**Habitat:** Benthic, over mud and sand bottoms to depths of about 32 m.

Fisheries: Bottom trawls, gillnets, beach seine.

**Distinctive Characters:** Similar to *Grammoplites scaber* (Linnaeus, 1758) but lateral line scale spines weak, not extending beyond rear margin of scale on posterior part of the body; interorbital width less than 9% of head length.

**Colour:** Head and body brown, with about 4 dark bands crossing back; spinous dorsal fin dusky or with a broad dark marginal band; caudal fin frequently with 2 dark bands posteriorly.

**Remarks:** Recorded from Ranong, Thailand (most probably occurring also in Myanmar).

Kumococius rodericensis (Cuvier, 1829)

Local name(s): Nga Sin Ninn.

**Habitat:** Benthic, over sand and mud bottoms at depths from 18 to 130 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Body elongate, head moderately depressed; 3 preopercular spines, uppermost longest, reaching nearly to or just past opercular margin; pectoral fins slightly falcate (posterior margin concave); suborbital ridge bearing numerous strong spines and serrations; iris lappet simple or slightly bilobed; lateral line scales with a single opening to exterior; teeth on vomer in 2 separate patches; interopercular flap present.

**Colour:** Brown with 4–5 faint dark bars on back; pectoral fins dark brown, with a clear or whitish central area; pelvic fins dark brown with a light edge; caudal fin dusky on posterior half.

### Onigocia macrolepis (Bleeker, 1854)

#### Local name(s): Nga Sin Ninn.

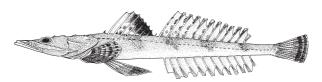
**Habitat:** Benthic, over sand and mud bottoms to depths of 130 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Body elongate, head moderately depressed; 3 preopercular spines, uppermost longest with an accessory spine on base; lateral line scales with 2 openings to exterior; teeth on vomer in 2 separate patches; interopercular flap absent; eye with a short, branched cirrus; lower side of head unicarinate.

**Colour:** Body light brown above, pale below; back crossed by about 4 dark bands; anal fin pale, other fins mostly with brown spots or blotches forming bands.

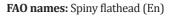
**Remarks:** The presence of this species in Myanmar needs confirmation.

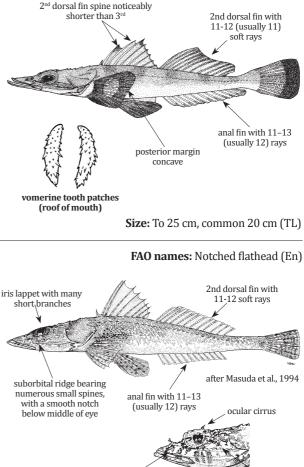


after Imamura and Amaoka, 1994

Size: To 30 cm, common 25 cm (TL)

FAO names: Smallspined flathead (En)





lacrimal bone with 2 antrose spines lateral view of head

Size: To 15 cm, common 12 cm (TL)

### *Platycephalus indicus* (Linnaeus, 1758)

#### Local name(s):Nga Sin Ninn.

**Habitat:** Benthic on sandy bottoms in shallow areas, also in estuaries. Maximum depth 25 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Body elongate with head stongly depressed; head with smooth bony ridges; iris lappet a simple elongated lobe; 2 preopercular spines, the upper a little shorter than the lower; 7–10 (usually 8 or 9) total gillrakers on 1st gill arch; lateral line scales with a single opening to exterior; vomerine teeth in one transverse patch (true of all *Platycephalus* species).

**Colour:** Brownish or greyish above, whitish below; small dark blotches on back and head; pectoral and pelvic fins with numerous brown blotches; caudal fin centrally yellow with black stripes on upper and lower margins.

### Rogadius pristiger (Cuvier, 1829)

Local name(s): Nga Sin Ninn.

**Habitat:** Benthic, over mud and sand bottoms from depths of 15 to 95 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Body elongate, head moderately depressed; 3–6 (usually 4–5) preopercular spines, uppermost longest, with an accessory spine on base; lateral line scales with 2 openings to exterior; suborbital ridges bearing many fine serrations; teeth on vomer in 2 separate patches; 5–8 (usually 7) total gillrakers on 1st gill arch; interopercular flap absent; iris lappet bilobed; lower side of head unicarinate (single ridge on side of head).

**Colour:** Body brown above, pale below, 3–4 dusky bands crossing back; lower lip dusky, with 4–6 dark bands; caudal fin with a white basal band, a broad dusky submarginal band and a narrow white edge.

#### Rogadius melanopterus (Knapp & Wongratana, 1987)

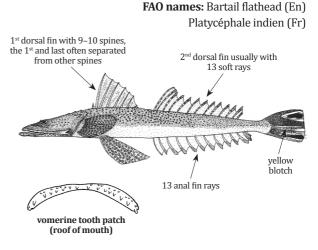
Local name(s): Nga Sin Ninn.

**Habitat:** Benthic over sand or mud bottoms from depths of 15 to 117 m.

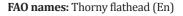
Fisheries: Bottom trawls, gillnets.

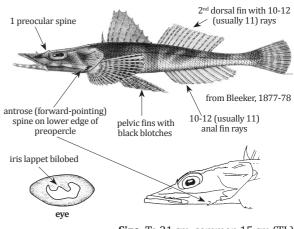
**Distinctive Characters:** Body elongate, head moderately depressed; 3 preopercular spines; lateral line scales with 2 exterior openings; suborbital ridge with fine serrations; teeth on vomer in 2 separate patches; 10–11 total gillrakers on 1st gill arch; interopercular flap absent; iris lappet slightly bilobed; lower side of head unicarinate (single ridge on side of head).

**Colour:** Brown shading to paler ventrally; pelvic, 1<sup>st</sup> dorsal and caudal fin uniformely dusky; 2<sup>nd</sup> dorsal fin rays with dark blotches; humeral area under opercle pale.



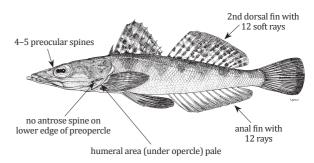
Size: To 50 cm, common 35 cm (TL)





Size: To 21 cm, common 15 cm (TL)

FAO names: Obscure flathead (En)



### Rogadius tuberculatus (Cuvier, 1829)

Local name(s): Nga Sin Ninn.

**Habitat:** Benthic, over sand and mud bottoms to a depth of about 80 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Body elongate, head moderately depressed; 4–9 preopercular spines, decreasing in size ventrally, accessory spine on base of upper; lateral line scales with 2 exterior openings; suborbital ridge with fine serrations; iris lappet crenate; teeth on vomer in 2 separate patches; 7–9 (usually 8) total gillrakers on 1st gill arch; interopercular flap absent; lower side of head unicarinate (single ridge on side of head).

**Colour:** Body light olive or tan above, whitish below, with 3 or 4 dark bands crossing back.

**Remarks:** Recorded from Ranong, Thailand (most probably occurring also in Myanmar).

### Suggrundus macracanthus (Bleeker, 1869)

#### Local name(s): Nga Sin Ninn.

**Habitat:** Benthic, over sand and mud bottoms to a depth of 132 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Body elongate, head moderately depressed; 3 preopercular spines, uppermost long, bayonet-like, reaching to or past opercular margin, with an accessory spine on base; lateral line scales with 2 exterior openings; iris lappet bilobed in adults, crenate in juveniles; finger-like interopercular flap present; teeth on vomer in 2 separate patches; 7–9 (usually 8) total gillrakers on 1st gill arch.

**Colour:** Brown above, whitish below, with about 7 vague dark bands crossing back in some specimens.

*Sunagocia carbunculus* (Valenciennes, 1833)

Local name(s): Nga Sin Ninn.

**Habitat:** May be associated with aquatic vegetation at shallow depths.

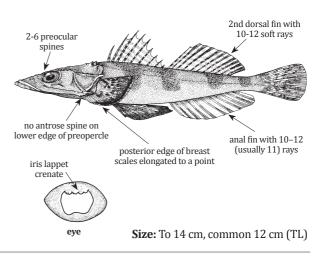
Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Body elongate, head moderately depressed; 2–3 preopercular spines, uppermost longest, not reaching to opercular margin, accessory spine present in most; lateral line scales with 2 exterior openings; iris lappet crenate; interopercular flap absent; teeth on vomer in 2 separate patches; 6 total gillrakers on 1st gill arch.

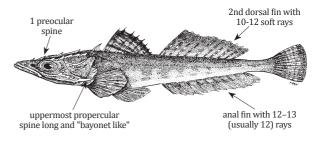
**Colour:** Body greenish above, whitish below, back crossed by 4 or 5 dark bands, a series of small dark blotches along lower side; spinous dorsal fin with a broad submarginal dark band.

**Remarks:** The presence of this species in Myanmar needs confirmation.

335

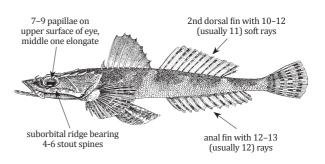


FAO names: Largespined flathead (En)



Size: To 26 cm, common 18 cm (TL)

FAO names: Papillose flathead (En)



FAO names: Fringelip flathead (En)

#### Sunagocia otaitensis (Cuvier, 1829)

Local name(s): Nga Sin Ninn.

336

**Habitat:** Benthic, over sand and mud bottoms to a depth of about 40 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Body elongate, head moderately depressed; 2–3 preopercular spines, uppermost longest, extending about half-way to opercular margin, accessory spine absent; lateral line scales with 2 exterior openings; iris lappet bearing short branches with bifurcate tips; interopercular flap absent; teeth on vomer in 2 separate patches; 5–7 (usually 6) total gillrakers on 1st gill arch.

**Colour:** Back tan, mottled with white flecks or spots, 4 or 5 vague cross bands crossing back, undersides whitish.

**Remarks:** Recorded from the Andaman Sea of Thailand (most probably occurring also in Myanmar).

Thysanophrys celebica (Bleeker, 1855)

#### Local name(s): Nga Sin Ninn.

**Habitat:** Benthic over sand or mud bottoms from depths of 10 to 45 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Body elongate, head moderately depressed; 3 preopercular spines, uppermost longest, not reaching half-way to opercular margin, accessory spine present on base; lateral line scales with 2 exterior openings; iris lappet with very short branches; interopercular flap absent; teeth on vomer in 2 separate patches; 5–7 (usually 5 or 6) total gillrakers on 1st gill arch. **Colour:** Body brownish or greenish above, whitish below, back crossed by 4 or 5 dark bands.

**Remarks:** Recorded from the Andaman Sea of Thailand (most probably occurring also in Myanmar).

#### Thysanophrys chiltonae (Schultz, 1966)

#### Local name(s): Nga Sin Ninn.

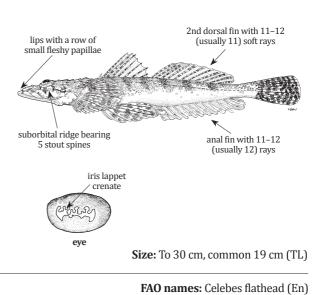
**Habitat:** Inhabits sand areas adjacent to coral reefs to a depth of about 38 m.

#### Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Similar to *Thysanophrys celebica* (Bleeker, 1855) but no papilla on upper surface of eye; usually 11 soft dorsal fin rays; usually 12 anal fin rays; 6–7 spines on suborbital ridge; bifurcate tips on iris lappet short branches.

**Colour:** Body light tan mottled with numerous white spots, white below, with about 5 to 7 brown bands crossing back.

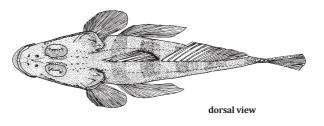
**Remarks:** Recorded from the Andaman Sea of Thailand (most probably occurring also in Myanmar).



1 small papilla on upper surface of eye suborbital ridge with 8–10 spines 2nd dorsal fin with 2 soft rays anal fin with 12–13 (usually 13) rays

Size: To 20 cm, common 10 cm (TL)

FAO names: Longsnout flathead (En)



# HOWELLIDAE

Oceanic basslets

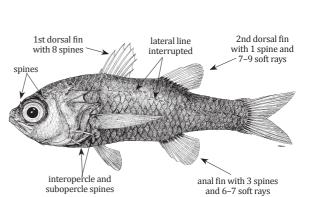
### Howella cf. brodiei Ogilby, 1899

Local name(s): ???

Habitat: Depth range: 520–522. Fisheries: Midwater trawls.

**Distinctive Characters:** Body depth 28.2–32.6% of SL; head length 34.7–40.9% of SL; eye diameter 11.65–12.1% of SL; 1<sup>st</sup> and 2<sup>nd</sup> dorsal spines 1.6–2.0% and 11.3–14.8% of SL, respectively; opercle with 2 well-separated simple spines; subopercle and interopercle each with a single spine; posterior preopercle edge with 5–10 short spines; jaws with single series of small conical teeth; vomer with few small teeth; palatines with few teeth or naked.

**Colour:** Head and body, including caudal fin uniformly black, lower parts of head and fins paler. **Remarks:** This is a complex of species that requires further research.



Size: To 7.1 cm (SL)

**LATIDAE** Sea perches

### Lates calcarifer (Bloch, 1790)

#### Local name(s): Ka Ka Dit.

**Habitat:** Found in coastal waters, estuaries and lagoons, usually at depths between 10 and 40 m. **Fisheries:** Bottom trawls, gillnets.

**Distinctive Characters:** Dorsal profile concave anteriorly; jaws reaching to behind eye; teeth villiform, no canines; tongue smooth; dorsal fin with 7–9 spines and 10–11 soft rays; anal fin with 3 spines and 7–8 soft rays; lower edge of preopercle with 3–4 large flat triangular spines.

**Colour:** Two phases, either olive brown above with silver sides and belly (usually juveniles) or green blue above and silver below; eyes bright pink, glowing at night.

### Psammoperca waigiensis (Cuvier, 1828)

#### Local name(s): Ka Ka Dit.

**Habitat:** Coastal, marine, found on shallow rocky or coral reefs especially near algal beds.

Fisheries: Bottom trawls, gillnets.

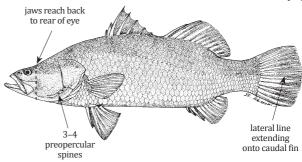
**Distinctive Characters:** Dorsal profile concave anteriorly; lower edge of preopercle smooth, 1 large flat spine at rear angle of preopercle; jaws reaching to below middle of eyes; dorsal fin with 7–8 spines and 12–14 soft rays; anal fin with 3 spines and 8–9 soft rays.

**Colour:** Light silvery grey to dark brown, usually coppery brown, paler ventrally, darker brown lines may follow scale rows along length of body; eyes golden-brown with distinct red reflection.

FAO names: Barramundi (En)

**FAO names:** Pelagic basslet (En)

Barramundi (Fr)



Size: To 200 cm, common 25-100 cm (TL)

FAO names: Waigieu seaperch (En) Brochete de mer (Fr)

Size: To 47 cm, common 20-30 cm (TL)

### ACROPOMATIDAE

Lanternbellies

#### Acropoma argentistigma Okamoto & Ida, 2002

Local name(s): Mee Eain Wun Bike Nga, Nga Mee Eain.

Habitat: Depth range: 77–93 m.

Fisheries: Bottom trawls.

**Distinctive Characters:** Body depth 26.3–30.7% of SL; interorbital width 6.6–7.5% of SL; both jaws with a single row of well-developed conical teeth and a pair of canine teeth near symphysis; bands of villiform teeth on inner part of upper jaw only; a short U-shaped light organ embedded in muscles between pelvic fins, its anterior edge not reaching level of pelvic fin insertion; pelvic fin spine smooth. **Colour:** Upper parts of head and back, pinkish red; opercle and lower half of head and body silvery white; small black dots on ventral surface.

Acropoma lacrima Okamoto & Golani, 2017

Local name(s): Mee Eain Wun Bike Nga, Nga Mee Eain.

Habitat: Depth range: 45–93 m.

Fisheries: Bottom trawls.

**Distinctive Characters:** Similar to *Acropoma argentistigma*, Okamoto and Ida, 2002 but deeper body, its depth 33.7–40.6% of SL; interorbital width 8.1–8.2% of SL; 20–24 gill rakers on 1st gill arch; a dark stripe under wider posterior end of the maxilla; scales on side of the body cycloid or weekly ctenoid.

**Colour:** Body and fins pink, ventral surface abruptly silver and covered with dark dots.

**Remarks:** This species is now considered a synonym of *Acropoma splendens* (Lloyd, 1909) (Prokofiev pers. com.).

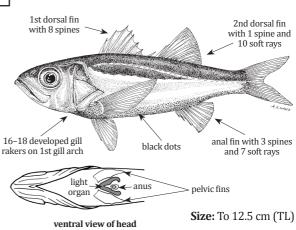
#### Parascombrops glossodon Schwarzhans & Prokofiev, 2017

Local name(s): Mee Eain Wun Bike Nga. Habitat: Depth range: 156–320 m.

Fisheries: Bottom trawls.

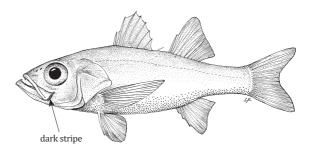
**Distinctive Characters:** No light organ; body depth 30.1–32.2% of SL; orbit diameter 11.7–13.8% of SL; jaws with canine teeth at symphyses, but also laterally on mandible; dense, elongate tooth patch on tongue; large diamond-shaped vomerine tooth patch with granular teeth only; anal fin with 2 spines and 7 soft rays; pelvic fin spine serrated.

**Colour:** Head and body, including caudal fin brownish black, belly paler; lower parts of head with a golden yellow sheen when fresh; pectoral fin dusky basally, yellowish distally. Body scales easily shed, trawled fishes usually appearing pinkish white with a darker mid-lateral stripe.



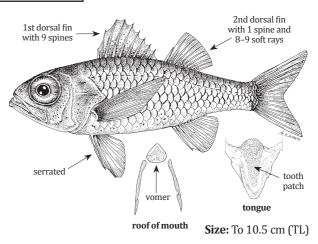
FAO names: Cheek-bar lanternbelly (En)

FAO names: Silver-spotted lanternbelly (En)



Size: To 9.5 cm (TL)

FAO names: Rasp-tongue splitfin (En)



#### Parascombrops sp.

Local name(s): Mee Eain Wun Bike Nga. Habitat: Depth range: 121–125 m. Fisheries: Bottom trawls.

**Distinctive Characters:** Similar to *P. glossodon* but body more slender, its depth 27.4% of SL; 8 soft anal fin rays; orbit diameter 11.2% of SL; tongue toothless; vomerine tooth patch V-shaped; 12 developed gill rakers on 1st gill arch (vs 18–19 in *P. glossodon*); 17 pectoral fin rays (vs 16 in *P. glossodon*).

**Colour:** Similar to *P. glossodon* but no golden yellow sheen on lower parts of head and yellowish pectoral fin.

**Remarks:** Most probably an undescribed species, presently being studied by Gor et al.

Synagrops cf. japonicus (Döderlein, 1883)

Local name(s): Mee Eain Wun Bike Nga, Nga Mee Eain.

Habitat: Depth range: 265–272 m.

Fisheries: Bottom trawls.

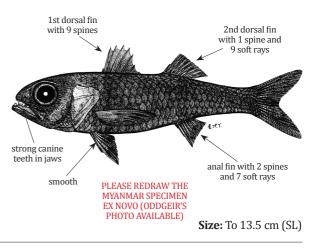
**Distinctive Characters:** No light organ; scales cycloid; 15 developed gillrakers on 1st gill arch; band of villiform teeth in upper jaw, separated by a gap at symphysis, with a large canine on each side of gap; lower jaw with a narrow band of small teeth anteriorly, 3–5 canines laterally, and a large pair of backward-pointing canines at symphysis; no spines on preopercular ridge; anus closer to anal fin than to pelvic fin origin.

Colour: Head, body and fins blackish brown.

**Remarks:** Myanmar specimens with scales on top of head and on proximal part of dorsal, anal and caudal fins.

serrated vomer roof of mouth FAO names: Japanese splitfin (En)

1st dorsal fin with 9 spines



# SERRANIDAE

Groupers - Seabasses - Rockcods - Hinds - Combers - Coral trouts - Lyretails

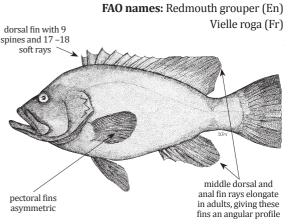
Aethaloperca rogaa (Forsskål, 1775)

Local name(s): Pasat Ni Kyauk Nga.

**Habitat:** Well-developed coral reefs in depths of 3 to at least 60 m.

Fisheries: Gillnets, line gears.

**Distinctive Characters:** Body deep and compressed, its depth greater than head length and 2.1–2.4 times in SL; caudal fin truncate, with 8 branched rays in upper lobe and 7 in lower lobe. **Colour:** Dark brown to black, occasionally with an orange cast, usually with a pale vertical bar on side of abdomen; inside of mouth, gill cavity and upper jaw membranes reddish orange; juveniles with a broad white posterior margin on caudal fin and a narrow white margin on soft dorsal fin.



Size: To 60 cm (TL)

2nd dorsal fin

with 1 spine and

9 soft ravs

339

FAO names: Slender grouper (En)

### Anyperodon leucogrammicus (Valenciennes, 1828)

Local name(s): Kyauk Nga Ko Lone Thwe

**Habitat:** A coral-reef species usually found on protected reefs in depths of 5 to 80 m.

Fisheries: Gillnets, line gears.

**Distinctive Characters:** Body and head elongate and markedly compressed, its depth distinctly less than head length, 3.1–3.7 in SL; body width 2.3–2.8 in body depth; head pointed; dorsal head profile almost straight; no teeth on palatines; anal fin with 3 spines and 8–9 soft rays.

**Colour:** Adults greenish to brownish grey with numerous orange-red spots on head (becoming smaller anteriorly), body, dorsal fin, and basally on caudal fin; juveniles with longitudinal pale bluish grey stripes on a gold background; a blue-edged black spot (or double spot) at base of caudal fin and another at base of soft dorsal fin.

## Cephalopholis argus Schneider, 1801

Local name(s): Kyauk Nga Kyet Pha.

**Habitat:** Found in a variety of coral reef habitats from tide pools to depths of at least 40 m.

Fisheries: Gillnets, line gears.

**Distinctive Characters:** Body depth distinctly less than head length, 2.7–3.2 in SL (for specimens 10–40 cm SL); 16–18 pectoral fin rays; lateral line scales 46–51; lateral scale series 95–110.

**Colour:** Dark brown, covered with small blackedged blue ocelli; often with 5–6 pale bars on rear part of body and a large pale area over the chest; distal part of pectoral fins sometimes maroon brown; triangular membranes at tips of dorsal fin spines orange-gold.



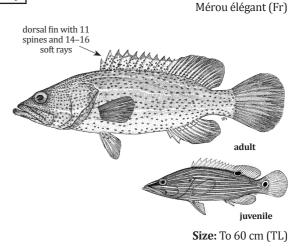
Local name(s): Kyauk Nga A Nyo Yint.

Habitat: Reef-associated species down to 64 m depth.

Fisheries: Gillnets, line gears.

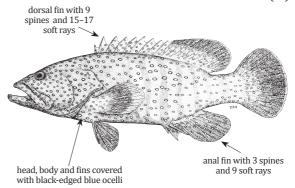
**Distinctive Characters:** Body depth 2.6–3.0 in SL, less than head length; pectoral fins 1.3–1.6 in head length with 15–17 rays; lateral line scales 46–51; lateral scale series 86–100.

**Colour:** Head, body and fins dark brown; body with indications of slightly irregular blackishbrown bars; head with irregular, broad dark bands radiating from eye and a blackish spot between upper 2 opercular spines; soft portions of median fins with a narrow bluish-white margin (except centrally on caudal fin); no blue spots.



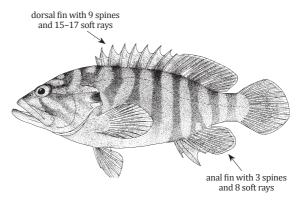
### FAO names: Peacock hind (En)





Size: To 55 cm (TL)

FAO names: Chocolate hind (En) Vielle chocolat (Fr)



# Cephalopholis formosa (Shaw, 1812)

Local name(s): Kyauk Nga Pyar Sin.

Habitat: Reef-associated species down to 30 m depth.

Fisheries: Gillnets, line gears.

**Distinctive Characters:** Body depth 2.5–2.9 in SL (for specimens 10–26 cm SL); anal fin with III spines and 8 (rarely 7) soft rays; 16–18 pectoral fin rays; lateral line scales 47–51; lateral scale series 91–109.

**Colour:** Dark brown to yellowish brown, with slightly irregular dark blue lines on head, body and fins (those on body and fins sometimes absent); snout, lips, and ventral part of head and chest with small dark blue spots (blue markings become black in preservative, and may be lost on some specimens, especially older museum material).

# Cephalopholis microprion (Bleeker, 1852)

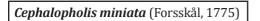
Local name(s): Kyauk Nga Set Pyauk.

Habitat: Reef-associated species down to 52 m depth.

Fisheries: Gillnets, line gears.

**Distinctive Characters:** Body depth 2.5–2.8 in SL; pectoral fins 1.4–1.6 in head length with 14–16 rays; lateral line scales 45–51; lateral scale series 84–98.

**Colour:** Dark brown with indistinct dark bars on the body; head and anterior part of the body with numerous small dark-edged blue ocelli; soft dorsal, anal and caudal fins usually with a greyish blue margin.



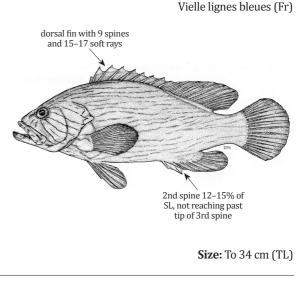
### Local name(s): ?????

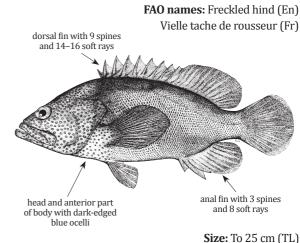
**Habitat:** Well-developed exposed coral reefs in clear water at depths of 2 to 150 m.

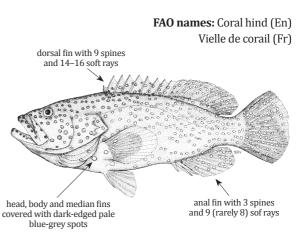
### Fisheries: Gillnets, line gears.

**Distinctive Characters:** Body depth 2.6–3.0 in SL; pectoral fins 1.4–1.7 in head length with 17–18 rays; lateral line scales 47–56; lateral scale series 94–114.

**Colour:** Orange-red to reddish brown, covered with small (usually dark-edged) pale blue-grey spots; pectoral fins orange-yellow distally; soft dorsal, caudal, and anal fins often with a narrow blue margin and blackish submarginal line; pelvic fins orange-red, the distal edge dark bluish grey; juveniles more yellowish.







FAO names: Bluelined hind (En)

FAO names: Andaman hind (En)

### Cephalopholis polyspila Randall & Satapoomin, 2000

#### Local name(s): ?????

**Habitat:** Well-developed exposed coral reefs in clear water at depths of 3 to 20 m.

Fisheries: Gillnets, line gears.

**Distinctive Characters:** Body compressed, its depth 2.7–3.0 in SL; dorsal profile of head convex with slight indentation above posterior edge of orbit; pectoral fins with 16–17 rays; lateral line scales 47–50; lateral line scales 47–50 (plus 3–4 scales on caudal fin base); lateral scale series 91–109.

**Colour:** Brown with numerous small black-edged blue spots on the head, body and finsmargin of the soft portions of dorsal and anal fins and posterior margin of caudal fin pale bluish grey with a broad dark brown submarginal band free of blue spots.

### Cephalopholis sonnerati (Valenciennes, 1828)

Local name(s): Kyauk Nga Ni.

Habitat: Reef-associated species down to 100 m depth.

Fisheries: Gillnets, line gears.

**Distinctive Characters:** Body depth greater than or subequal to head length, 2.3–2.8 in SL; pectoral fins subequal to pelvic fins, with 18–20 rays; lateral line scales 66–80; lateral scale series 115–134.

**Colour:** Adults from Indian Ocean with orange-red to reddish brown body, often with scattered small whitish or purple spots; purple network on head, maxilla, and lips; pectoral fins orange distally; membranes of soft dorsal, caudal, anal, and pelvic fins dusky; dorsal fin rays orange distally.

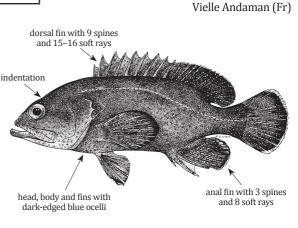
### Chelidoperca cf. investigatoris (Alcock, 1890)

#### Local name(s): Kyauk Nga.

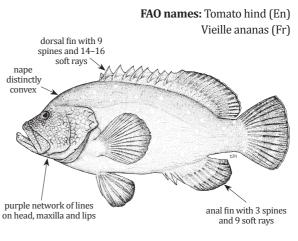
Habitat: Usually found on continental shelf and slope muddy bottoms from 140 to 340 m depth. Fisheries: Deep bottom trawls.

**Distinctive Characters:** Body moderately elongate, cylindrical, its depth 3.69–3.81 in SL; 3 scale rows above lateral line to dorsal fin origin; 42–43 lateral line scales; 25–37 serrae on margin of preopercle; both caudal fin lobes slightly elongate and pointed. **Colour:** Head and body light red, belly and throat white; a yellow band passing from tip of snout to caudal fin; 2 longitudinal rows of dark blotches on dorsal half of body; anal fin white with a thin red margin, other fins red-yellowish.

**Remarks:** The Myanmar specimens differ in having larger head, fewer gill rakers, and lower number or absence of serrations on sub- and interopercle, and posttemporal.

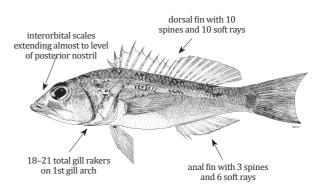


Size: To 18 cm (SL)



Size: To 57 cm (TL)

FAO names: Redblotched Perchlet (En)



Size: To 17.8 cm (TL)

### *Chelidoperca* cf. *pleurospilus* (Günther, 1880)

#### Local name(s): Kyauk Nga.

**Habitat:** Found on continental shelf muddy bottoms from 121 to 129 m depth.

Fisheries: Deep bottom trawls.

**Distinctive Characters:** Body moderately elongate, cylindrical, its depth ?.?–?.? in SL; 4 scale rows above lateral line to dorsal fin origin; 42–44 lateral line scales; 27–36 serrae on margin of preopercle; caudal fin truncate; 16–20 gill rakers on 1st gill arch.

**Colour:** Head and body red with white irrugular bands arising from ventral profile; a longitudinal dashed dark stripe on body; dorsal, pectoral, anal and pelvic fins mostly yellowish; base of dorsal fin spines with small reddish spots.

**Remarks:** This is probably a species complex that has not yet been sorted out.

### Chelidoperca stella Matsunuma & Motomura, 2016

#### Local name(s): Kyauk Nga.

**Habitat:** Found on continental shelf muddy bottoms from 58 to 94 m depth.

Fisheries: Bottom trawls.

**Distinctive Characters:** Body moderately elongate, cylindrical, its depth 3.8–4.5 in SL; 3 scale rows above lateral line to dorsal fin origin; 34–36 lateral line scales; 24–52 serrae on margin of preopercle; only upper caudal fin lobe slightly elongate and pointed; 16–23 gill rakers on 1st gill arch; 1st and 2nd pelvic fin soft rays elongate.

**Colour:** Head and body pinkish orange with 3 longitudinal rows of small whitish blue spots on the flanks; dorsal, pelvic and caudal fin with several rows of small yellow spots or streaks; distal third of anal fin yellow.

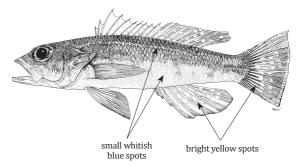
#### Chelidoperca sp.

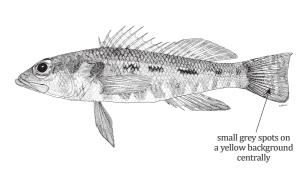
Local name(s): Kyauk Nga.

Habitat: Collected between 113–115 m depth. Fisheries: Deep bottom trawls.

**Distinctive Characters:** Similar to *Chelidoperca stella* Matsunuma and Motomura, 2016 but only two faded rows of small whitish blue spots on flanks, one running along curved part of lateral line and one along ventral half of body; pelvic fins without yellow streaks or spots; anal fin with bright yellow spots basally and a reddish yellow margin distally.

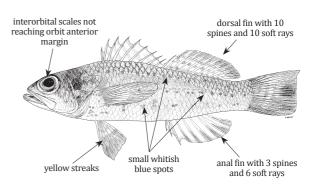
**Remarks:** This is most likely an undescribed species. Inclusion in the guide based only on photographic record.

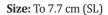




#### Size: To 15 cm (TL)







FAO names: None (En)

### FAO names: Blackspotted Perchlet (En)

### Cromileptes altivelis (Valenciennes, 1828)

#### Local name(s): Nga Kywet.

**Habitat:** Well-developed coral reefs as well as dead or silty reef areas down to depths of 40 m.

### Fisheries: Gillnets, line gears.

**Distinctive Characters:** Body compressed, its depth 2.5–2.8 times in SL; head depressed anteriorly, the dorsal profile distinctly concave, rising steeply at the nape; lateral line scales 54–62; lateral scale series 84–98; anal fin with 3 spines and 106–122 soft rays.

**Colour:** Pale greenish brown, with widely spaced small black spots on head, body, and fins; some spots on body and base of median fins overlain by a large dusky blotch.

### Diploprion bifasciatum Cuvier, 1828

#### Local name(s): ??????

**Habitat:** Found in coral reefs and adjacent habitats in depths between 5 and 50 m.

Fisheries: Gillnets, line gears.

**Distinctive Characters:** Body deep and compressed; body depth greater than head length, depth 2.0–2.4 times in SL; tip of pelvic fin extending beyond anal fin origin; lateral line scales 71–76; dorsal fin with 8 spines and 13–16 soft rays; anal fin with 2 spines and 12–13 soft rays.

**Colour:** Body yellow with a black bar through eye and a broad one in middle of body continuing onto posterior 2/3 of spnious portion of dorsal fin.

*Epinephelus amblycephalus* (Bleeker, 1857)

Local name(s): Kyauk Nga Sinn Kyar.

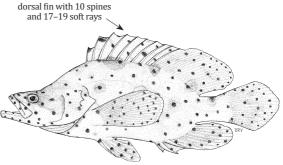
**Habitat:** Usually found on offshore coral and rocky reefs in depths of 80 to 130 m.

#### Fisheries: Line gears, gillnets.

**Distinctive Characters:** Body depth less than head length, 2.5–3.0 in SL (for specimens 12–35 cm SL); preopercle serrate with 3–6 large serrae at the angle; anal fin with 3 spines and 8 soft rays; 18–19 pectoral fin rays; caudal fin rounded; lateral body scales ctenoid, with a few auxiliary scales in adults. **Colour:** Body with 4 broad dark brown bars, the

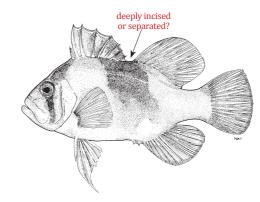
first 2 extending into spinous part of dorsal fin, the third and fourth bars extending into soft dorsal and anal fins; a fifth dark bar at base of caudal fin; small black spots on dorsal parts of body bars (mainly along the edges of the bars); dark brown saddle blotch on nape, with small black spots mainly along edge of this blotch.





Size: To 70 cm (TL)

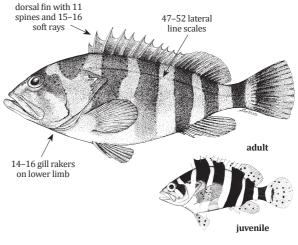
#### FAO names: Barred soapfish (En)



Size: To 25 cm (TL)

FAO names: Banded grouper (En)

Mérou bande (Fr)



Size: To 50 cm (TL)

# Epinephelus areolatus (Forsskål, 1775)

Local name(s): Kyauk Nga A War Set.

**Habitat:** Usually in sea grass beds near rocky reefs from 6 m to 200 m.

Fisheries: Line gears, gillnets.

**Distinctive Characters:** Body depth less than head length, 2.8–3.3 in SL (for specimens 14–31 cm SL); preopercle serrate with 2–7 large serrae at the angle; anal fin with 3 spines and 7–8 soft rays; 17–19 pectoral fin rays; caudal fin slightly convex in juveniles, truncate or slightly emarginate in adults; 49–53 lateral line scales; lateral body scales rough; adults with auxiliary scales.

**Colour:** Head, body and fins pale, covered with numerous brown to yellowish brown spots, the largest about the size of pupil; caudal fin with a white posterior margin.

Epinephelus awoara (Temminck & Schlegel, 1842)

Local name(s): Kyauk Nga War.

Habitat: Occurs in rocky areas as well as on sandymud bottoms.

Fisheries: Line gears, gillnets.

**Distinctive Characters:** Body depth 2.7–3.3 in SL (for specimens 13 to 31 cm SL); preopercle subangular with 2–5 large strong spines at the angle; 17–19 pectoral fin rays; caudal fin slightly convex in juveniles, truncate or slightly emarginate in adults; 49–53 lateral line scales; lateral body scales distinctly rough, with auxiliary scales in specimens larger than 30 cm SL.

**Colour:** Four broad dark bars on dorsal part of body, 1 on caudal peduncle and another often visible on nape; head and body with numerous small yellow spots; body and median fins also with small greyish white spots; soft dorsal, caudal, and sometimes the anal fin with prominent yellow margin; paired fins dusky yellow.

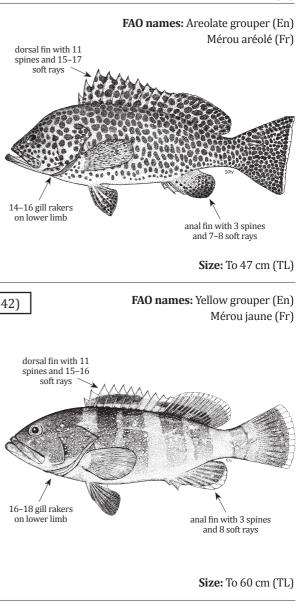
### Epinephelus bleekeri (Vaillant, 1878)

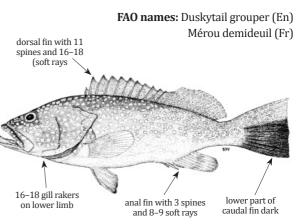
**Local name(s):** Kyauk Nga A Hmee Kywet. **Habitat:** Benthic on shallow banks and adjacent soft substrate in depths of 30–105 m.

Fisheries: Bottom trawls, line gears, gillnets.

**Distinctive Characters:** Body depth 3.0–3.5 in SL; preopercle serrate with 2–9 enlarged serrae at the angle; adults with a notch above preopercle angle; 17–19 pectoral fin rays; caudal fin margin truncate to slightly rounded; 49–53 lateral line scales; lateral body scales rough; adults with a few small auxiliary scales.

**Colour:** Brownish to purplish grey with numerous orange-yellow spots (about half pupil diameter in adults) on head, body, dorsal fin and upper third of caudal fin.





Size: To 76 cm (TL)

Mérou pintade (Fr)

### Epinephelus chlorostigma (Valenciennes, 1828)

#### 346

#### Local name(s): Kyauk Nga Nyo Set.

**Habitat:** Coral reefs and also on mud bottoms; depth range 4 to 300 m.

Fisheries: Bottom trawls, line gears, gillnets.

**Distinctive Characters:** Body depth 2.8–3.3 in SL (for specimens 12 to 51 cm SL); preopercle angular with 4–7 enlarged serrae at the angle; upper edge of operculum straight; caudal peduncle depth 3.0–3.6 in head length; 17–19 pectoral fin rays; caudal fin slightly convex in juveniles, truncate or slightly emarginate in adults; 48–53 lateral line scales; lateral body scales rough, with auxiliary scales.

**Colour:** Head, body, and fins with small, irregular, close-set dark brown spots, the ground colour forming a pale network; caudal fin usually with white line along rear margin; spots on pectoral fins mainly confined to rays.

Epinephelus coeruleopunctatus (Bloch, 1790)

Local name(s): Kyauk Nga Phyu Set.

**Habitat:** Coral reefs, usually in or near caves; juveniles found in tidepools.

Fisheries: Bottom trawls, line gears, gillnets.

**Distinctive Characters:** Body depth distinctly less than head length, 2.9–3.4 in SL (for specimens 11 –47 cm SL); head pointed and the dorsal profile almost straight; preopercle rounded, finely serrate; opercular spines inconspicuous; anal fin with 3 spines and 8 soft rays; pectoral fins large and fleshy, with 17–19 rays; caudal fin rounded; lateral body scales usually rough with auxiliary scales.

**Colour:** Adults brownish grey, the body covered with small pale spots overlain with large pale blotches; prominent black streak on maxillary groove; juveniles (less than 25 cm) dark grey to black, covered with prominent pupil-size white spots and smaller white dots.

*Epinephelus coioides* (Hamilton, 1822)

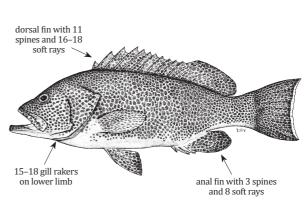
Local name(s): Kyauk Nga Lein Maw Set.

**Habitat:** Continental and island shores, also in estuaries; offshore down to 100 m.

Fisheries: Bottom trawls; line gears, gillnets.

**Distinctive Characters:** Body depth 2.9–3.7 in SL (for specimens 10–78 cm SL); interorbital width 5.0–6.2 in head length; preopercle with enlarged serrae at the angle and a broad shallow notch just above angle; upper jaw length 17–20% of SL; lateral line tubes of anterior scales branched in adults; pectoral fins with 18–20 rays; caudal fin rounded; 58–65 lateral line scales; lateral body scales rough, with minute auxiliary scales.

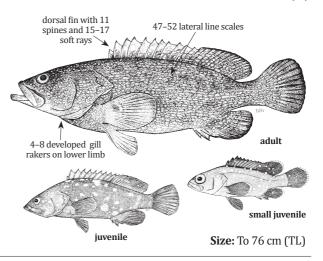
**Colour:** Head, body and usually median fins with numerous orange, brownish orange or reddish brown spots; body with 5 faint irregular greyish bars which bifurcate ventrally.



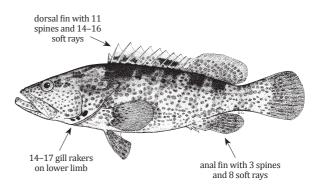
Size: To 80 cm (TL)

FAO names: Whitespotted grouper (En) Vielle taches blanches (Fr)

FAO names: Brownspotted grouper (En)



FAO names: Orange-spotted grouper (En) Mérou taches oranges (Fr)



### Epinephelus diacanthus (Valenciennes, 1828)

Local name(s): Suu Mae Kyauk Nga.

**Habitat:** Occurs on mud or muddy sand bottoms in depths of 10 to 300 m.

Fisheries: Line gears, gillnets, bottom trawls.

**Distinctive Characters:** Body depth 2.8–3.5 in SL (for specimens 10–34 cm SL); preopercle with 1–5 prominent spines at the angle; pectoral fins with 17–20 rays; caudal fin rounded; 52–60 lateral line scales; lateral body scales rough, with auxiliary scales in adults.

**Colour:** Body pale greyish brown, usually with 5 dark vertical bars broader than interspaces; ventral part of the head and body often pink or reddish; fins dusky grey without spots.

### Epinephelus epistictus (Temminck & Schlegel, 1842)

**Local name(s):** Kyauk Nga A Nyo Kyaw Sett. **Habitat:** Rocky and trawlable bottoms in depths of 71 to 290 m.

Fisheries: Line gears, gillnets.

**Distinctive Characters:** Body depth 3.0–3.3 in SL (for specimens 12–50 cm SL); preopercle angle produced, with 3–5 distinctly enlarged serrae; upper edge of operculum straight or slightly convex; pectoral fins with 16–19 rays; caudal fin slightly to moderately rounded; 57–70 lateral line scales; lateral body scales rough, with a few auxiliary scales in adults.

**Colour:** Background colour pale brownish to greyish; faint brownish black dots usually visible on dorso-lateral part of body and sometimes on postorbital part of head; faint dark band from eye to end of operculum.

### Epinephelus erythrurus (Valenciennes, 1828)

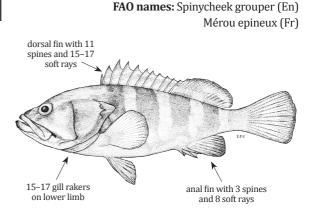
#### Local name(s): ????

**Habitat:** Inhabits areas with muddy or silty-sand bottoms; also found in harbours and estuaries.

Fisheries: Bottom trawls, line gears, gillnets.

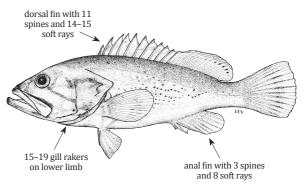
**Distinctive Characters:** Body depth 2.8–3.2 in SL; membranes of spinous dorsal fin usually not (or slightly incised); preopercle rounded, finely serrate, the lower serrae slightly enlarged; 17–19 pectoral fin rays; caudal fin well rounded; 53–62 lateral line scales; lateral body scales rough, with auxiliary scales.

**Colour:** Head and body dark brown or greenish brown, marbled with irregular pale spots and blotches; 1 or 2 faint dark streaks running posteriorly from eye.



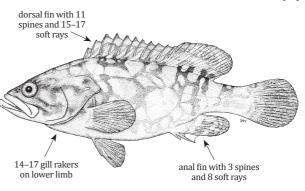
Size: To 55 cm (TL)





Size: To 80 cm (TL)

#### FAO names: Cloudy grouper (En) Mérou nébuleux (Fr)



Size: To 45 cm (TL)

### Epinephelus fasciatus (Forsskål, 1775)

#### Local name(s): Kyauk Nga Anet Zin.

**Habitat:** Coral reefs and rocky bottom from shore to depths of 160 m.

Fisheries: Line gears, gillnets.

**Distinctive Characters:** Body depth 2.8–3.3 in SL (for specimens 10–26 cm SL); preopercle rounded, rear edge finely serrate, with lowermost serrae slightly enlarged; 18–20 pectoral fin rays; caudal fin slightly to moderately rounded; 49–75 lateral line scales; lateral body scales rough, with numerous auxiliary scales.

**Colour:** Ground colour pale greenish grey, to pale reddish yellow to scarlet; body often with 5–6 faint dark bars, the last on peduncle; the outer triangular part of interspinous membranes of dorsal fin black with pale yellow or white spot behind tip of each spine.

### Epinephelus faveatus (Valenciennes, 1828)

#### Local name(s): ????

Habitat: Shallow-water coral reefs and rocky areas.

Fisheries: Line gears, gillnets.

**Distinctive Characters:** Body depth 3.0–3.5 in SL (for specimens 9–26 cm SL); preopercle rounded, with shallow indentation just above corner and slightly enlarged serrae at the corner; 17–19 pectoral fin rays; caudal fin rounded; 48–52 lateral line scales; lateral body scales smooth (except for area covered by pectoral fin), with numerous auxiliary scales.

**Colour:** Head, body, and fins pale, covered with close-set roundish brown spots of unequal size, most of those on body larger than pupil; 4 groups of 2–3 spots at base of dorsal fin darker than other spots on body; 2 oblique dark bands on side of chest.

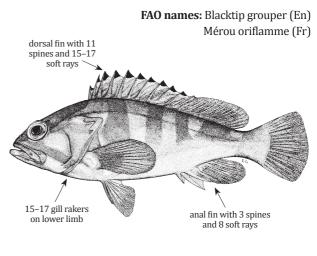
#### Epinephelus fuscoguttatus (Forsskål, 1775)

Local name(s): Kyauk Nga A Nyo Kwet.

Habitat: Coral and rocky bottoms down to 60 m. Fisheries: Line gears, gillnets.

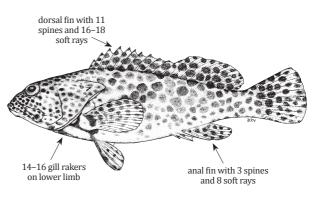
**Distinctive Characters:** Body depth 2.6–2.9 SL (for specimens 11–55 cm SL); preopercle finely serrate, the serrae at the angle not enlarged; dorsal head profile of adults indented at eyes and distinctly convex from there to dorsal fin origin; dorsal fin with 11 spines and 14–15 soft rays; 18–20 pectoral fin rays; caudal fin rounded; 52–58 lateral line scales; lateral body scales smooth, with auxiliary scales.

**Colour:** Generally brownish with many small dark spots on body and fins and large irregular dark blotches on head and body overlying smaller dark spots; a brownish black saddle-blotch on top of caudal peduncle.



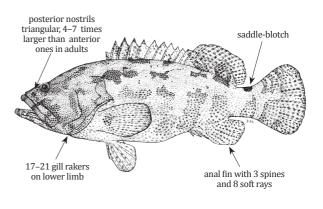
Size: To 40 cm (TL)

FAO names: Barred-chest grouper (En) Mérou écharpe (Fr)



Size: To 40 cm (TL)

FAO names: Brown-marbled grouper (En) Mérou marron (Fr)



### Epinephelus heniochus Fowler, 1904

Local name(s): Kyauk Nga A Parr Sin.

Habitat: Most specimens have been taken with trawls on mud or silty sand bottom in depths of 40 to 235 m.

#### Fisheries: Bottom trawls.

Distinctive Characters: Body depth 2.7-3.2 in SL (for specimens 10-27 cm SL); preopercle angular with 2-4 distinctly enlarged serrae at the angle; lower edge of maxilla with a step-like bend in adults; pectoral fins with 16-18 rays; caudal fin rounded; lateral body scales rough, without auxiliary scales.

Colour: Head and body pale brown dorsally, shading to whitish or pale pink ventrally; faint dark brown stripe from eye to end of operculum, another darker stripe from lower edge of eye to subopercle and a third from edge of preorbital to interopercle; pectoral fins hyaline greyish yellow.

### Epinephelus lanceolatus (Bloch, 1790)

Local name(s): Kyauk Nga Belu Gyi.

Habitat: Shallow and deep waters down to 100 m. Fisheries: Line gears, gillnets.

Distinctive Characters: Body robust, its width 1.5-1.75 in body depth; eye small, its diameter 5.8-14 in head length; preopercle subangular, finely serrate; anal fin with 3 spines and 8 soft rays; 18-20 pectoral fin rays; caudal fin rounded; 54-60 lateral line scales; lateral body scales smooth.

**Colour:** Small juveniles (<12 cm SL) yellow, with irregular broad black bars on body; small adults (20–50 cm SL) with irregular white or vellow spots on the black areas and fins with black spots; adults (80–150 cm SL) dark greyish or brown with pale mottlings, the fins with numerous small black spots; large adults (>160 cm SL) dark brown, the fins darker.

#### Epinephelus latifasciatus (Temminck & Schlegel, 1842)

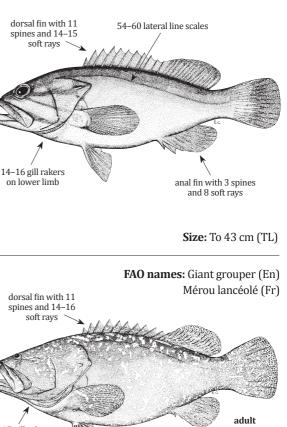
#### Local name(s): Kyauk Nga Bay Zinn.

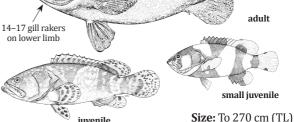
Habitat: Occurs between 20 and 230 m depth: juveniles on muddy or sandy bottoms, adults in rocky areas.

Fisheries: Bottom trawls, line gears, gillnets.

Distinctive Characters: Body depth 2.9-3.4 SL (for specimens 13-62 cm SL); preopercle with 3-7 enlarged serrae at angle; upper edge of operculum distinctly convex; anal fin with 3 spines and 8 soft rays; 17–19 pectoral fin rays; caudal fin truncate in large adults, the rear margin convex in juveniles; lateral body scales smooth.

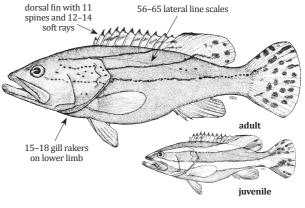
**Colour:** Juveniles (<20 cm standard length) with 2 broad longitudinal, black-edged whitish bands that disappear in adults; head and body of large adults uniformly grey with dark lines, breaking into dashes and spots.





juvenile

FAO names: Striped grouper (En) Mérou à bandes (Fr)



Mérou bride (Fr)

FAO names: Bridled grouper (En)

Size: To 230 cm (TL)

FAO names: Malabar grouper (En)

### Epinephelus malabaricus (Bloch & Schneider, 1801)

Local name(s): Kyauk Nga A Nyo Sett.

**Habitat:** Coral and rocky reefs, tide pools, estuaries, mangrove swamps and sand or mud bottoms from the shore to 150 m.

Fisheries: Bottom trawls, line gears, gillnets.

**Distinctive Characters:** Body elongate, its depth 3.0–3.7 in SL; preopercle with enlarged serrae at the angle; anal fin with 3 spines and 8 soft rays; interorbital width 4.5–6.5 in head length, and 2.1–3.2 in upper jaw length; 18–20 pectoral fin rays; caudal fin rounded; lateral body scales rough, with auxiliary scales.

**Colour:** Head, body and fins brownish covered with small, well separated, blackish brown spots; irregular white or pale spots or blotches usually present on head and body; fins with scattered small black spots; often irregular brown bars visible on body.

### Epinephelus merra Bloch, 1793

Local name(s): Kyauk Nga Pyar Ohnn Kywet

**Habitat:** A coral-reef species typically found around patch reefs in depths less than 20 m, but occasionally seen at 50 m.

Fisheries: Line gears, gillnets.

**Distinctive Characters:** Body depth 2.8–3.3 in SL; preopercle rounded or subangular, the serrae at angle enlarged; caudal peduncle depth 3.2–4.1 in head length; anal fin with 3 spines and 8 soft rays; pectoral fins with 16–18 rays; caudal fin rounded; 48–54 lateral line scales; lateral body scales rough, with auxiliary scales.

**Colour:** Head, body, and fins pale, covered with close-set, dark brown or reddish brown spots, the interspaces forming an irregular pale reticulum; spots on ventral part of body paler, more widely spaced; pectoral fins covered with distinct small black spots, largely confined to the rays.

### Epinephelus multinotatus (Peters, 1876)

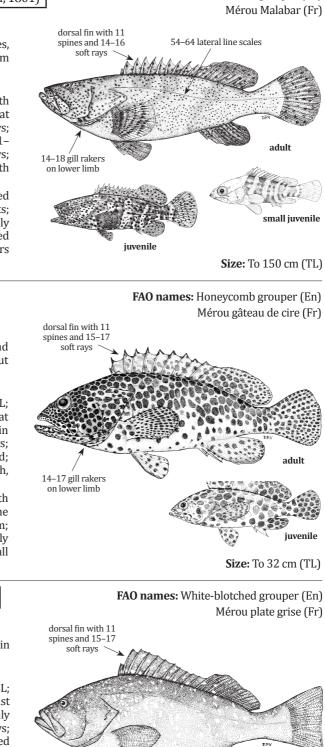
#### Local name(s): ???

**Habitat:** Juveniles on inshore coral reefs; adults in deeper waters down to 90 m.

Fisheries: Line gears, gillnets.

**Distinctive Characters:** Body depth 2.6–2.9 in SL; preopercle finely serrate with a shallow notch just above the angle; the serrae at the angle not or only slightly enlarged; pectoral fins with 18–20 rays; caudal fin truncate to slightly emarginate (rounded in small individuals); 64–81 lateral line scales; lateral body scales rough, with numerous auxiliary scales.

**Colour:** Background colour of head and body purplish grey with whitish spots and blotches; usually dark reddish brown spots ventrally.



15-17 gill rakers

on lower limb

anal fin with 3 spines and 8 soft rays

### Epinephelus ongus (Bloch, 1790)

Local name(s): Kyauk Nga A Phyu Sett Pyauk. Habitat: Occurs on coral reefs and rocky substrata (including brackish water) at depths of 5 to 25 m. Fisheries: Line gears, gillnets.

**Distinctive Characters:** Body depth 2.7–3.3 in SL; preopercle rounded, the serrae small and mostly covered by skin; upper edge of operculum strongly convex, the rear edge almost vertical; anal fin with 3 spines and 8 soft rays; pectoral fins large and fleshy, with 15–17 rays; caudal fin rounded; lateral body scales rough, with auxiliary scales.

**Colour:** Body brown, with numerous small white spots which in adults, tend to form wavy white lines; several round or irregular pale blotches (eyesized or larger) usually superimposed over small white spots; juveniles of about 6 cm SL are brown, covered with small, dark-edged round white spots.

### Epinephelus quoyanus (Valenciennes, 1830)

Local name(s): Kyauk Nga Yea Yet Shae.

**Habitat:** Usually found on inshore silty reefs; no records below 50 m.

Fisheries: line gears, gillnets.

**Distinctive Characters:** Body depth 2.8–3.2 in SL; preopercle rounded or subangular; upper edge of operculum almost straight; midlateral part of lower jaw with 2–3 rows of teeth; lower jaw barely projecting in front of upper jaw; 17–19 pectoral fin rays; caudal fin rounded; 48–52 lateral line scales; lateral body scales rough, with auxiliary scales.

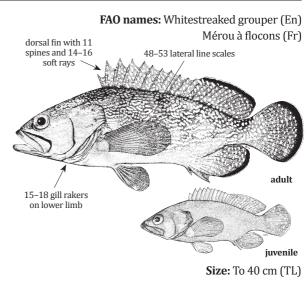
**Colour:** head and body pale, with large, close-set, hexagonal to roundish, dark brown spots (some spots reddish brown or black), dorsally the spots are so close together that the pale interspaces form a reticulum, but ventrally the spots are more separated; chest with 2 dark brown bands joining below pectoral fin bases.

#### Epinephelus radiatus (Day, 1868)

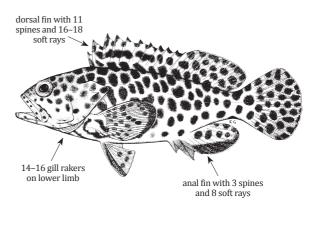
Local name(s): Kyauk Nga A Nyo Zinn.

**Habitat:** Found over hard substrates; adults at depths between 80 to 383 m; juveniles in 18–20 m. **Fisheries:** Bottom trawls, line gears, gillnets.

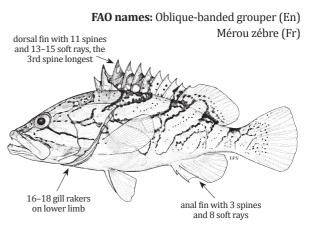
**Distinctive Characters:** Body depth 2.6–3.0 in SL; preopercle angle with 2–5 enlarged serrae; pectoral fins with 17–18 rays; caudal fin convex to moderately rounded; 52–66 lateral line scales; lateral body scales rough, without auxiliary scales. **Colour:** Pale greyish to yellowish brown with five, irregular, oblique, darkedged, brown bands which bifurcate ventrally, the first on nape and extending onto head, the second to fourth extending into dorsal fin, and the last on caudal peduncle.



FAO names: Longfin grouper (En) Mérou longues ailes (Fr)



Size: To 40 cm (TL)



Size: To 70 cm (TL)

### Epinephelus rivulatus (Valenciennes, 1830)

Local name(s): Kyauk Nga La Ta Chan.

**Habitat:** Rocky bottoms or coral reefs in depths of 10 to 150 m.

Fisheries: Line gears, gillnets.

**Distinctive Characters:** Body depth 2.7–3.2 in SL; preopercle angular, with enlarged serrae at angle; upper edge of operculum straight, almost horizontal; pectoral fins fleshy, with 17–19 rays; caudal fin rounded; lateral body scales rough, with auxiliary scales; nape and front of body above lateral line with minute auxiliary scales and numerous pores.

**Colour:** Body generally reddish to greenish brown, with a small white or pale blue spot on each scale; 4 irregular dark bars usually visible on body and extending onto base of dorsal fin, and a fifth dark bar on peduncle; pectoral fins dusky, with a dark red or reddish brown semicircular blotch on base.

### Epinephelus sexfasciatus (Valenciennes, 1828)

Local name(s): Kyauk Nga A Sin Chauk Zinn.

**Habitat:** Usually found on silty sand or muddy bottoms at depths of 10 to 80 m.

Fisheries: Bottom trawls, line gears, gillnets.

**Distinctive Characters:** Body depth 2.7–3.2 in SL; preopercle with 2–4 greatly enlarged serrae at the angle; upper edge of operculum straight; 17–19 pectoral fin rays; caudal fin rounded; lateral body scales rough, with a few auxiliary scales.

**Colour:** Head and body pale greyish brown; 5 dark brown bars on body and 1 on nape (dark bars usually more or less divided vertically by a narrow pale bar); scattered pale spots may be present on body, and some faint small brown spots are often visible on the edges of the dark bars; pectoral fins greyish or dusky orange-red; jaws and ventral parts of head sometimes pale reddish brown.

### Epinephelus tauvina (Forsskål, 1775)

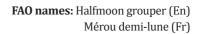
Local name(s): Kyauk Nga Nyo Pyauk Gyi.

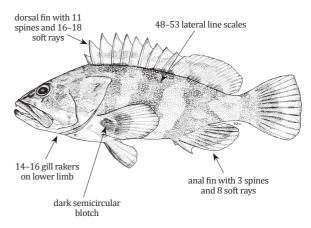
**Habitat:** Clear water areas on coral reefs; juveniles on reef flats and in tidepools, but adults occur down to 50 m.

Fisheries: Line gears, gillnets.

**Distinctive Characters:** Body depth 3.0–3.6 in SL; serrae at corner of preopercle slightly enlarged; greatest width of maxilla about twice suborbital depth (least distance from eye to maxilla); 18–19 pectoral fin rays; caudal fin rounded; lateral body scales rough in juveniles, smooth in adults, except for small patch covered by pectoral fin;

**Colour:** Head and body pale greenish grey or brown, covered with dull orange-red to dark brown spots; spots on head progressively smaller anteriorly.

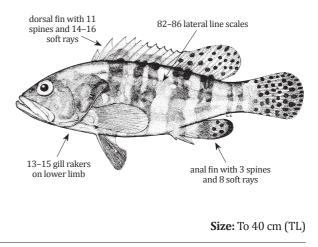


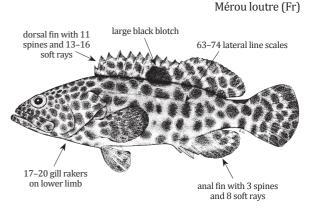


Size: To 45 cm (TL)

FAO names: Sixbar grouper (En) Mérou six raies (Fr)

FAO names: Greasy grouper (En)





352

### Epinephelus undulosus (Quoy & Gaimard, 1824)

#### Local name(s): Kyauk Nga Hline Zin.

Habitat: Usually found on offshore banks (rather than coral reefs) at depths of 24 to 90 m

Fisheries: Bottom trawls, line gears, gillnets.

Distinctive Characters: Body depth 2.7-3.1 in SL; preopercle angular, with a notch above the corner and serrae at the corner enlarged; 18-19 pectoral fin rays; caudal fin truncate to emarginate; 63-76 lateral line scales; lateral body scales distinctly rough, with numerous auxiliary scales.

Colour: Head, body, and fins purplish grey to brownish grey, with brown to golden-brown dots on head and wavy longitudinal lines of the same colour on dorsal part of body (lines faint or absent on large specimens); margin of spinous dorsal fin narrowly blackish.

### Odontanthias rhodopeplus (Günther, 1872)

#### Local name(s): Kyauk Nga.

Habitat: Reef-associated species; depth range 173-176 m.

Fisheries: Deep bottom trawls.

Distinctive Characters: Body depth 2.4-2.7 in SL; caudal fin lunate (2.7-3.5 in SL) with filamentous lobes; 17–19 scale rows below lateral line to origin of anal fin; dorsal fin with 10 spines and 12-13 soft rays; 17-19 pectoral fin rays; 30-33 lateral line scales.

**Colour:** Body light red with a whitish spot on each scale of body; dorsal surface above lateral line (from above the eve to below soft portion of dorsal fin) yellowish; an oblique yellow band from upper lip to lower edge of operculum; fins mostly light red-yellow.

### Plectranchias sp. 1

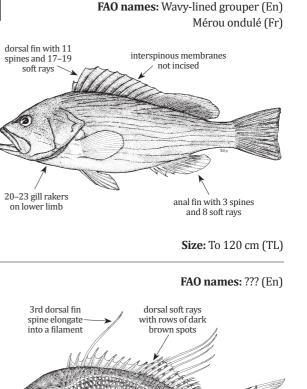
Local name(s): Kyauk Nga.

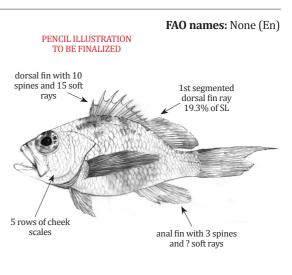
Habitat: Collected between 121–129 m depth. Fisheries: Deep bottom trawls.

Distinctive Characters: Body depth 44.4% of SL; head length 50.2% of SL; predorsal scales extending anteriorly to middle of interorbital area; lateral line complete with 29-30 scales; 14 (mostly unbranched) pectoral fin rays; lower margin of preopercle with two enlarged antrorse spines; no scales on maxilla.

Colour: Mottled light red pinkish mottled; two irregular dark bands on back: one on nape and one at mid-dorsal fin; belly white?; fins translucent light red-yellow.

Remarks: Most likely a new species closely allied to Plectranchias sagamiensis (Katayama, 1964) from which it appears to differ in having fewer segmented dorsal fin rays and fewer rows of cheek scales (Gill and Psomadakis, 2018).





anal fin with 3 spines

and 7 soft rays

yellow-orange

semicircular spot

Size: To 5.5 cm (TL)

black har at base

of caudal fin

Size: To 20 cm (TL)

### Plectranchias sp. 2

PENCIL ILLUSTRATION TO BE FINALIZED

Local name(s): Kyauk Nga. Habitat: Collected at a depth of 182 m.

Fisheries: Deep bottom trawls.

**Distinctive Characters:** Dorsal fin not deeply notched between soft and spinous parts of fin; caudal fin emarginate with upper rays produced; lateral line complete with 29 scales; scales below lateral line to anal fin origin ca 11; 14 (mostly unbranched) pectoral fin rays.

**Colour:** Mostly pinkish white mottled with light red-yellow; belly white; patches of dark pigment on back; fins translucent tinged with yellow; large red spot on spinous portion of dorsal fin.

**Remarks:** Based on photographic record. An undescribed species closely allied to *Plectranchias alcocki* Bineesh, Akhilesh, Gopalakrishnan & Jena, 2014 from which it differs in several live coloration details (Gill and Psomadakis, 2018).

### Plectropomus pessuliferus (Fowler, 1904)

Local name(s): Sett Pyauk Thanda Kyauk Nga. Habitat: Coral reefs at depths of 25 to 147 m. Fisheries: Bottom trawls, line gears, gillnets.

**Distinctive Characters:** Body elongate, robust, its depth 2.9–3.9 times in SL; preopercle broadly rounded, with 3 large, ventrally-directed spines along lower half; gill raker at angle shorter than gill filaments at angle; caudal fin emarginate (truncate in juveniles); 15–16 pectoral fin ray; anal fin spines weak.

**Colour:** Head, body, and fins brown to orangered, with numerous small dark-edged blue spots; some spots on head and sides of body of adults are elongated (those on body usually vertically elongate); spots few or absent on ventral part of body; edge of orbit often blue (may be broken into segments).

Pseudanthias emma Gill & Psomadakis, 2018

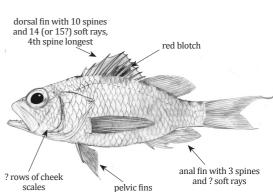
#### Local name(s): Kyauk Nga.

Habitat: Collected at a depth of 105 m.

Fisheries: Deep bottom trawls.

**Distinctive Characters:** Body depth 37.9% of SL; head length 34.3% of SL; subopercle and interopercle indistinctly serrated; caudal peduncle depth 16.4% of SL; 18 pectoral fin rays; 3rd dorsal fin spine longest; no papillae on posterior margin of orbit; 42 lateral line scales; caudal fin weakly concave centrally, with elongate filaments on upper and lower lobes.

**Colour:** Head pink with broad orange bar extending from behind lower half of eye to pectoral fin base; body mostly orange, with bright pink band from dorsal fin origin along dorsal part of body to upper edge of caudal peduncle; anal, pelvic and caudal fins with bright red margins.



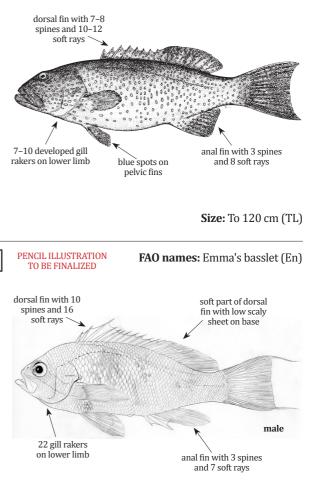
well short

of anus

FAO names: Andaman deep-sea perchlet (En)

Size: To 9 cm (TL)

FAO names: Roving coralgrouper (En) Mérou-loche vagabonde (Fr)



354

### Pseudanthias gibbosus (Klunzinger, 1884)

#### Local name(s): Kyauk Nga.

Habitat: Reef associated between 20–150 m depth. Fisheries: Deep bottom trawls.

**Distinctive Characters:** Body depth equals head length, 2.4–3.1 in SL; subopercle and interopercle indistinctly serrated; 17–18 pectoral fin rays; 3rd dorsal fin spine longest; no papillae on posterior margin of orbit; 39–43 lateral line scales; caudal fin lunate (forked with broad lobes in large males). **Colour:** Females: reddish orange dorsally with a red stripe running horizontally from rear edge of opercle to base of caudal fin; ventral part of body pale. Large males (15-18 cm SL): head and body reddish, paler ventrally; dark red area behind opercle from spinous dorsal fin to pectoral fin (small males similar but dorsal part of body pinkish purple).

#### Pseudanthias rubrizonatus (Randall, 1983)

Local name(s): Kyauk Nga.

Habitat: Reef associated between 10–133 m depth. Fisheries: Deep bottom trawls.

**Distinctive Characters:** Body elongate, its depth 2.7–3.1 in SL; subopercle and interopercle with a few serrae; 18–20 pectoral fin rays; 4th dorsal fin spine longest but not prolonged; no papillae on posterior margin of orbit; 42–47 lateral line scales; caudal fin deeply emarginate to lunate.

**Colour:** Females with light red body dorsally, whitish ventrally; a narrow violet band from below eye to lower pectoral fin base; posterior tips of caudal fin red. Males with a broad red bar below last four dorsal fin spines; body before bar suffused with lavender and behind bar with yellow.

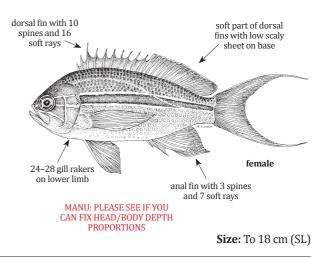
#### Sacura sanguinea Motomura, Yoshida & Vilasri, 2017

Local name(s): Kyauk Nga.

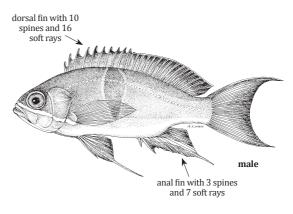
Habitat: Collected at 124 m depth.

Fisheries: Deep bottom trawls.

**Distinctive Characters:** Body depth 42.6–44.7% in SL; lower edge of subopercle smooth; 17 pectoral fin rays; 4rd dorsal fin spine longest; no papillae on posterior margin of orbit; anal fin with 3 spines and 7 soft rays; 34 lateral line scales; 3rd dorsal spine elongate into a filament in specimens ranging from 11.1 to 12.4 cm SL; caudal fin lunate. **Colour:** Head and body reddish with a broad yellow stripe from anterior profile of head, this becoming indistinct and red on the middle of the body and extending to the caudal fin base (stripe less evident in specimens <11 cm SL); belly white; caudal fin yellow with bright red spots on its central portion; females with a large dark red spot on the dorsal fin between the 6th and 10th spines.

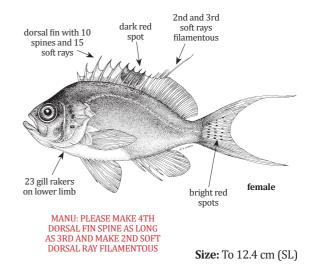


#### FAO names: Red-bar anthias (En)





FAO names: Andaman deep-water anthias (En)



FAO names: One-stripe anthias (En)

# OSTRACOBERYCIDAE

Ostracoberycids

### Ostracoberyx dorygenys Fowler, 1934

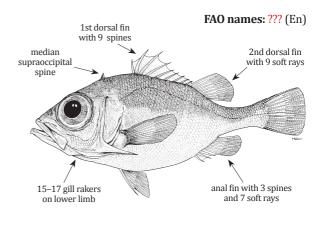
#### Local name(s): ????

**Habitat:** Demersal or near bottom at depths between 250 and 710 m.

Fisheries: Deep bottom trawls.

**Distinctive Characters:** Body ovate, compressed; eye large, longer than snout length; a very strong spine extending back from lower limb of preopercle beyond base of pectoral fins; caudal peduncle rather slender, its length twice as long as the depth; 3rd dorsal spine longest; interorbital space flat; juveniles (up to 10 cm) with median supraoccipital spine that curves slightly posteriorly.

**Colour:** Body greyish-brown, ventrally silverwhite; fins mostly hyaline, the 1st dorsal fin more dusky.



Size: To cm 19 cm (SL)

### SYMPHYSANODONTIDAE

Bunquelovelies -wampeejawed fishes -slopefishes -shelf beauties

dorsal fin with 9

### Symphysanodon cf. S. maunaloae Anderson, 1970

Local name(s): A Hmee Nee War Nga.

Habitat: Occurs in depths of 130 to 705 m.

Fisheries: Deep bottom trawls.

**Distinctive Characters:** Body slender to moderately deep, its depth 20–33% of SL; length of upper caudal fin lobe 28–76% of SL; length of lower caudal fin lobe 29–76% of SL; length of pelvic fins 22 to more than 80% of SL; 42–47 lateral line scales.

**Colour:** Upper body and caudal fin light red; iris pink; dark bar between eyes; dark vertical bar just behind operculum.

**Remarks:** More material needed for confirmation of specific identity (W. D. Anderson Jr pers. com.).

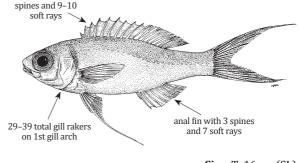
### Symphysanodon cf. S. katayamai Anderson, 1970

Local name(s): A Hmee Nee War Nga. Habitat: Occurs in depths of 91 to 183 m.

Fisheries: Deep bottom trawls.

**Distinctive Characters:** Body oblong, compressed, its depth 26.7–31.1% of SL; length of upper caudal fin lobe >53 to ca. 58% of SL; length of lower caudal fin lobe >46 to ca. 56% of SL; length of pelvic fins 24.7–26.6% of SL; 50–52 lateral line scales.

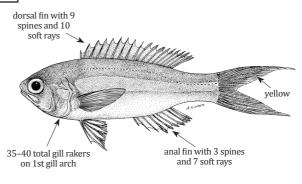
**Colour:** Body reddish dorsally and pinkish white ventrally with a broad longitudinal orange band on side; inner margin of upper caudal fin lobe yellow. **Remarks:** More material needed for confirmation of specific identity (W. D. Anderson Jr pers com.).



Size: To16 cm (SL)

FAO names: Yellowstripe slopefish (En)

FAO names: Beautimous wampeejaw (En)



Size: To 20 cm (SL)

# Symphysanodon cf. S. xanthopterygion Anderson & Bineesh, 2011

Local name(s): A Hmee Nee War Nga. Habitat: Occurs in depths of 150 to 240 m. Fisheries: Deep bottom trawls.

**Distinctive Characters:** Body oblong, its depth 23.8–27.4% of SL; length of upper caudal fin lobe >29.1 to 47.3% of SL; length of lower caudal fin lobe >28.4 to 40.4% of SL; length of pelvic fins 20.5–24.3% of SL; 54–59 lateral line scales.

**Colour:** Body deep red dorsally and white ventrally; a bright yellow spot usually present on posterior part of opercle; lower caudal fin lobe bright yellow. **Remarks:** More material needed for confirmation of specific identity (W.D. Anderson Jr pers com.).

Indian Bunquelovely (En) dorsal fin with 9 spines and 10 soft rays deep red deep red deep red sight anal fin with 3 spines and 7 soft rays Size: To 14.5 cm (SL)

# **CALLANTHIIDAE** Groppos –goldies –plendid perches

### Grammatonotus sp.

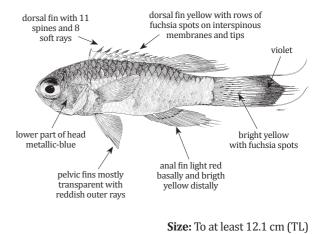
Local name(s): Yaung Sone Ka Ka Tit. Habitat: Collected between 181–184 m depth. Fisheries: Deep bottom trawls.

**Distinctive Characters:** Anal fin with 3 spines and 9 soft rays; pelvic fins with 1 spine and 5 soft rays; 1 opercular spine; ca. 20 lateral line scales; ca. 24 scales in longitudinal series.

**Colour:** Body and head red dorsally and pinkish ventrally; distal third of caudal fin violet (outer filamentous rays yellow), the rest yellow with small fuchsia spots; pectoral fin uniform light red; iris yellow with indigo blue and red edges above and below, respectively.

**Remarks:** Based on photographic record. An undescribed species closely allied to ??? from which it differs in several live coloration details (W.D. Anderson Jr pers com.)

FAO names: Andaman deep-sea splendid perch (En)



OPISTOGNATHIDAE

Jawfishes

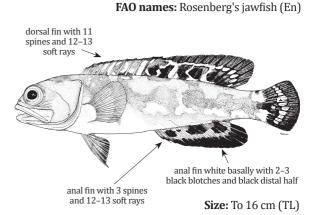
### Opistognathus rosenbergii Bleeker, 1856

Local name(s): ?????

Habitat: Inhabits soft bottoms to 20 m depth. Fisheries: Bottom trawls.

**Distinctive Characters:** Body compressed; mouth large, upper jaw short, 1.5–1.6 in head length; maxilla widest at the end and slightly truncate; scales absent on head, nape, pectoral fin base, breast and anteriorly above lateral line.

**Colour:** Six irregular brown bands on sides of body forming a wavy midlateral stripe; dorsal fin with 5 black blotches separated by white bands posteriorly; caudal fin brownish shading to black ventrally, crescentic white band in middle of fin.



FAO names:

### TERAPONTIDAE

### Grunters

### Pelates quadrilineatus (Bloch, 1790)

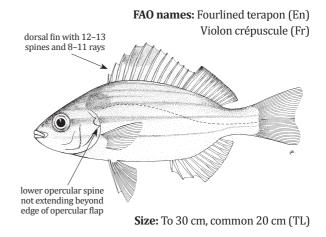
Local name(s): Gone Kyarr.

**Habitat:** Inshore areas, sometimes in brackish waters down to 40 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Anal fin with 3 spines and 9-11 soft rays, the  $2^{nd}$  anal spine subequal to the  $3^{rd}$  and shorter than longest anal rays.

**Colour:** Body silvery grey dorsally, silvery white ventrally; 4–6 narrow, dark brown stripes on body; spiny part of dorsal fin and behind gill opening with blotches; mouth and gill cavity red in life.



Terapon jarbua (Forsskål, 1775)

Local name(s): Gone Kyarr.

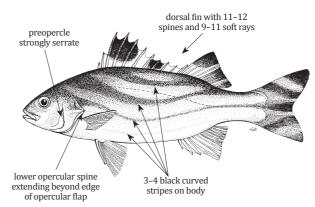
**Habitat:** Inhabits coastal, brackish, and fresh waters, but spawns only in the sea.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Anal fin with 3 spines and 7–10 soft rays; 2<sup>nd</sup> anal spine subequal to 3<sup>rd</sup> spine and shorter than longest anal rays; caudal fin emarginate.

**Colour:** Body silvery dorsally and silvery white ventrally; dorsal fin with black bands on upper portions of fin membranes; caudal fin with median rays pigmented; both caudal lobes with dark tips and transverse bands.

#### FAO names: Jarbua terapon (En)



Size: To 36 cm, common 25 cm (TL)

#### Terapon theraps Cuvier, 1829

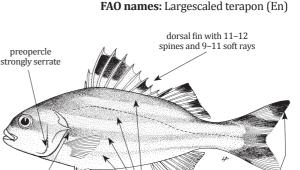
#### Local name(s): Gone Kyarr.

**Habitat:** Found in inshore waters, sometimes entering brackish waters.

Fisheries: Gillnets, bottom trawls.

**Distinctive Characters:** Body oblong compressed; spiny part of dorsal fin strongly arched and deeply notched; 3<sup>rd</sup> to 6<sup>th</sup> dorsal spine longest; anal fin with 3 spines and 7–9 soft rays, 3<sup>rd</sup> spine longest; caudal fin emarginate with rounded lobes.

**Colour:** Body dusky dorsally, silvery white ventrally with 4 horizontal stripes on body; (juveniles with 6–7 vertical bars); dorsal fin with black blotches; soft part of dorsal fin with a dark band along upper portions of anterior rays and a horizontal band on posterior rays.



4 almost straight, tr broad, dark brown up stripes on body

lower opercular spine

extending beyond edge

of opercular flap

caudal fin with / transverse stripes, upper lobe tip black



## PRIACANTHIDAE

Bigeyes

very long

## *Cookeolus japonicus* (Cuvier, 1829)

Local name(s): Myat Lone Gyi Auk Ye Yet Shae. Habitat: Inhabits waters from 60 m to 400 m. Fisheries: Gillnets, bottom trawls.

**Distinctive Characters:** Dorsal fin single with 10 spines and 12–13 soft rays; anal fin with 3 spines and 12–14 soft rays; dorsal spines increase regularly in length from 1<sup>st</sup> to last; 10<sup>th</sup> spine more than twice length of 2<sup>nd</sup> spine; soft portions of dorsal and anal fins long and broadly pointed (except in very large specimens); pelvic fins exceeding head length (except in large adults).

**Colour:** Background colour silvery reddish, paler ventrally; membranes of dorsal and anal fins dark anteriorly; ventral membrane blackish, rays pale.

## Priacanthus blochii Bleeker, 1853

Local name(s): Myat Lone Gyi Ye Yet Toe.

**Habitat:** Coastal in shallow reef and rocky areas at depths of 15 to 30 m.

Fisheries: Gillnets, bottom trawls.

**Distinctive Characters:** Body somewhat slender and compressed, its depth at 6<sup>th</sup> dorsal spine 2.6– 2.9 (usually 2.7) in SL; spine at corner of preopercle short in adults; anal fin with 3 spines and 13–15 soft rays; 47–56 vertical scale rows (counted from dorsal fin origin diagonally to the anus).

**Colour:** Bright red on head, iris of eye, body and fins, or, alternately, silvery white on head and body blotched with red; about 15 dark red spots sometimes along lateral line; pectoral fins clear or pink; pelvic fin membranes light dusky to dark, especially distally, with a black spot basally on dorsal surface.

## Priacanthus hamrur (Forsskål, 1775)

Local name(s): Myat Lone Gyi La Wun A Hmee. Habitat: Coral and rocky bootoms in 5–250 m. Fisheries: Gillnets, bottom trawls.

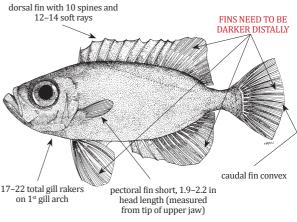
**Distinctive Characters:** Body depth at 6<sup>th</sup> dorsal spine usually less than 3 times in SL; spine at corner of preopercle short in adults, variable in young; anal fin with 3 spines and 13–16 (usually 15) soft rays; 48–57 vertical scale rows (counted from dorsal fin origin diagonally to the anus).

**Colour:** Red with about 15 small dark spots sometimes evident along lateral line; alternately, body may be silvery white with 7 darker red bars; median and pelvic fins red light dusky to nearly black and darkest near margins (dusky spots on dorsal, anal and pelvic fins sometimes present).

pelvic fins

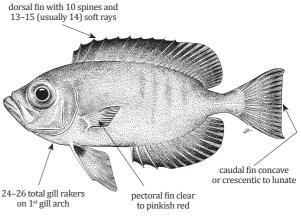
FAO names: Shortfin bigeye (En) Beauclaire aile court (Fr)

Size: To 68 cm (TL)



Size: To 30 cm (TL)

## FAO names: Moontail bullseye (En) Beauclaire miroir (Fr)



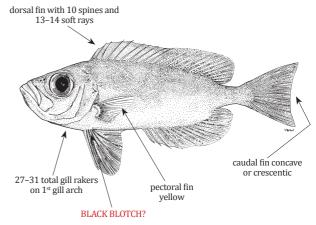
#### Priacanthus prolixus Starnes, 1988

Local name(s): Myat Lone Gyi A Hmee Tunt. Habitat: Open bottoms from 35 m to 250 m. Fisheries: Gillnets, bottom trawls.

**Distinctive Characters:** Body elongate, its depth at 6<sup>th</sup> dorsal spine usually more than 3 times in SL; spine at corner of preopercle short in adults, variable in young; anal fin with 3 spines and 14–15 soft rays 44–51 vertical scale rows (counted from dorsal fin origin diagonally to the anus).

**Colour:** Body, head median and pelvic fins light red with 7 small dark spots along lateral line; black spot at base of pelvic fins; thin black margin on spinous portion of dorsal and anal fins.

#### FAO names: Elongate bulleye (En)



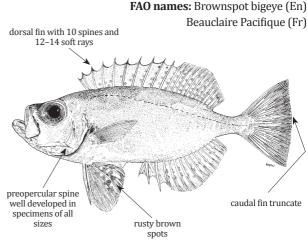
Size: To 25 cm (TL)

#### Priacanthus macracanthus Cuvier, 1829

Local name(s): Myat Lone Gyi A Hmee Tunt. Habitat: Open bottoms from 35 m to 250 m. Fisheries: Gillnets, bottom trawls.

**Distinctive Characters:** Body relatively deep, ovate, and laterally compressed; anal fin with 3 spines and 13–14 soft rays; 23–29 total gill rakers on 1st gill arch; 45–52 vertical scale rows (counted from dorsal fin origin diagonally to the anus).

**Colour:** Body, head, and iris silvery pink to reddish; fins light red to pinkish; dorsal, anal, and pelvic fins with rusty brown spots.



Size: To 35 cm (TL)

FAO names: Arrow bulleye (En)

Beauclaire aile sagitté (Fr)

#### Priacanthus sagittarius Starnes, 1988

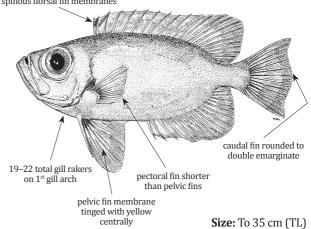
**Local name(s):** Myat Lone Gyi Hmar Hmee. **Habitat:** Occurs in rocky and reef areas and occasionally in more open areas at depths of 60 to 100 m or more.

Fisheries: Gillnets, bottom trawls.

**Distinctive Characters:** Body depth at 6<sup>th</sup> dorsal spine usually less than 3 in SL; spine at corner of preopercle reduced in adults; dorsal fin with 10 spines and 13–14 soft rays; anal fin with 3 spines and13–15 soft rays; 46–53 vertical scale rows (counted from dorsal fin origin diagonally to the anus); long and pointed soft dorsal and anal fins.

**Colour:** The head and body reddish silvery or, alternately, pale yellowish with gray mottling; iris of the eye pink to bright red; dorsal, anal, and caudal fins pink with reddish brown streaks in the membranes, or yellowish with dusky streaks.

black blotches on 1<sup>st</sup> two spinous dorsal fin membranes



## Priacanthus tayenus Richardson, 1846

Local name(s): Myat Lone Gyi Hmar Hmee.

Habitat: Inhabits coastal waters in both rocky reef and, occasionally, more open areas at depths of 20 to 200 m or more.

Fisheries: Gillnets, bottom trawls.

Distinctive Characters: Body moderately deep, moderately elongate, and laterally compressed; anal fin with 3 spines and 12-14 soft rays; 40-50 vertical scale rows (counted from dorsal fin origin diagonally to the anus).

Colour: Body, head, and iris of eve pink to reddish or silvery white with pink tinges; fins pinkish; pelvic fins with characteristic small deep purple to inky black spots in membranes with 1 or 2 larger spots in connective membrane to belly.

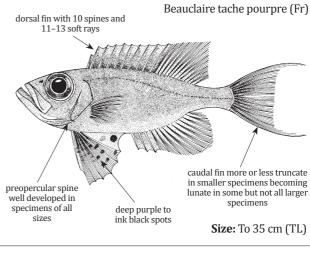
## Pristigenys refulgens (Valenciennes, 1862)

Local name(s): Myat Lone Gyi Myat Pyuu.

Habitat: Reef associated between 80–129 m depth. Fisheries: Gillnets, bottom trawls,

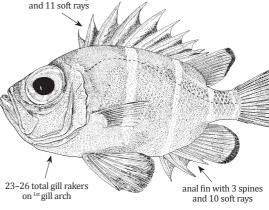
Distinctive Characters: Body considerably deep and compressed; dorsal and ventral portions of 3rd vertical band only slightly wider than mid-lateral portion and nearly vertical; caudal fin rounded.

Colour: Head, body, and fins red to reddish orange except dusky to black tips of pelvic fins and black margins of caudal and soft vertical fins; iris of eye red to silvery; 5 white or pale bars on head and body, about 1/4-2/5 width of pupil (the bar below the 1st dorsal fin spine may not be visible in some specimens); pectoral fin reddish or pinkish hyaline.





FAO names: Purplespot bigeye (En)



dorsal fin with 10 spines

Size: To 35 cm (TL)

## **APOGONIDAE**

Cardinalfishes

#### Apogon sp.

Local name(s): Nga Kyarr Ma. Habitat: Depth range: 121–129.

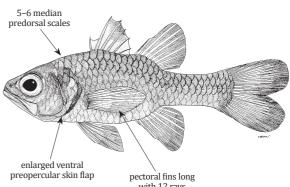
Fisheries: Caught mainly with bottom trawls.

Distinctive Characters: Two separate dorsal fins, the 1<sup>st</sup> with 6 visible spines, the 2<sup>nd</sup> with 1 spine and 9 soft rays; anal fin with 2 spines and 8 soft rays; 11 developed gill rakers on 1st gill arch; caudal fin forked with rounded lobes.

Colour: Head, body and fins orangish red; scales on upper part of body with dark edge; distal 1/3of caudal fin rays dusky to blackish; intestine pale; stomach black.

Remarks: An undescribed species presently being described by Gon et al.

FAO names: None (En)



with 12 rays

Size: To about 6 cm (SL)

#### Apogonichthyoides sialis (Jordan & Thompson, 1914)

#### Local name(s): Nga Kyarr Ma.

**Habitat:** Found in silty coastal reefs around rocks and ledges in 8–15 m.

Fisheries: Caught mainly with bottom trawls.

**Distinctive Characters:** Two separate dorsal fins, the  $1^{st}$  with 7 visible spines ( $3^{rd}$  spine the longest and thickest), the  $2^{nd}$  with 1 spine and 9 soft rays; anal fin with 2 spines and 8 soft rays; 10-12 developed gill rakers on  $1^{st}$  gill arch; caudal fin emarginate; stomach and intestine pale.

**Colour:** Body brownish to greenish grey anteriorly, shading to dark grey posteriorly, the edges of scales pale; two black bars (usually 2 scales wide) below dorsal fins extending ventrally beyond pectoral fin; iris dark: a white ring around pupil; pelvic fins dark brown with white leading edge; distinct dark, small basicaudal spot.

## Jaydia poeciloptera (Cuvier, 1828)

Local name(s):Nga Kyarr Ma.

Habitat: Depth range 19–146 m.

Fisheries: Caught mainly with bottom trawls.

**Distinctive Characters:** Two separate dorsal fins, the  $1^{st}$  with 7 spines ( $4^{th}$  spine the longest), the  $2^{nd}$  with 1 spine and 9 soft rays; anal fin with 2 spines and 8 soft rays; 10-12 (1 on upper limb) developed gill rakers on  $1^{st}$  gill arch; caudal fin truncate.

**Colour:** Head and body gray shading to silvery gray ventrally; scales on upper part of body with dark edge; several faint horizontal wavy lines on side of body; outer part of 1st dorsal fin black; 2–3 irregular dark bands along soft dorsal fin; anal and pelvic fins yellow except basal and distal parts; pectoral fin hyalin; distal half of caudal fin dusky; gill chamber, 1<sup>st</sup> gill arch and its gill rakers, and upper part of lining of inner gill cover black.

## Jaydia queketti (Gilchrist, 1903)

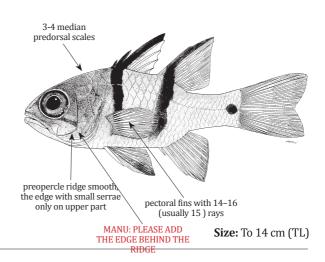
Local name(s): Nga Kyarr Ma.

Habitat: Depth range 50-92 m.

Fisheries: Caught mainly with bottom trawls.

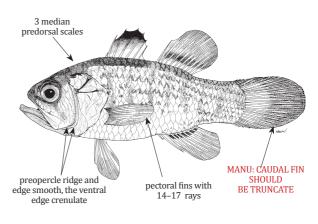
**Distinctive Characters:** Two separate dorsal fins, the 1<sup>st</sup> with 7 spines (4<sup>th</sup> spine the longest), the 2<sup>nd</sup> with 1 spine and 9 soft rays; anal fin with 2 spines and 8 soft rays; 12–14 (2–3 on upper limb) developed gill rakers on 1<sup>st</sup> gill arch; caudal fin moderately rounded.

**Colour:** Light pinkish grey dorsally shading to silvery on sides and ventrally, with a dark brown spot on scales on side of body below lateral line forming longitudinal rows; 1<sup>st</sup> dorsal fin with a large black spot in outer posterior part of fin; anal and caudal fins (and to a lesser extent the 2<sup>nd</sup> dorsal) with a blackish outer margin.



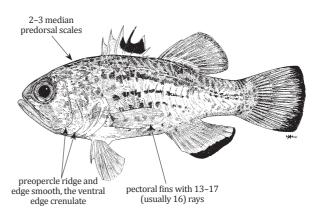
FAO names: Pearly-finned cardinalfish (En)

FAO names: Twinbar cardinalfish (En)



Size: To 14 cm (SL)

FAO names: Spotfin cardinalfish(En)



362

Size: To 10.7 cm (SL)

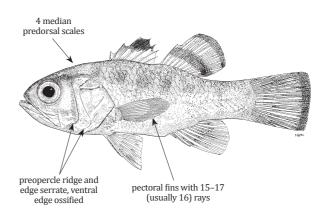
## Jaydia smithi Kotthaus, 1970

Local name(s): Nga Kyarr Ma. Habitat: Depth range 22–230 m. Fisheries: Caught mainly with bottom trawls.

**Distinctive Characters:** Two separate dorsal fins, the 1<sup>st</sup> with 7 spines (4<sup>th</sup> spine the longest), the 2<sup>nd</sup> with 1 spine and 9 soft rays; anal fin with 2 spines and 8 soft rays; 11–12 (1–2 on upper limb) developed gill rakers on 1<sup>st</sup> gill arch; caudal fin moderately rounded.

**Colour:** Body silvery white; scales on upper part of body with dark edge; distal third of 1<sup>st</sup> dorsal fin black; 2 dark bands along soft dorsal fin; pectoral, anal and pelvic fins pale; anal and pelvic fins pale to blackish; caudal fin with a black distal margin.

#### FAO names: Smith's cardinalfish (En)



Size: To 10 cm (SL)

FAO names: Tiger cardinalfish (En)

*Jaydia striata* (Smith & Radcliffe, 1912)

Local name(s): Nga Kyarr Ma.

**Habitat:** Found in lagoon reefs from 10 to 82 m depth.

Fisheries: Caught mainly with bottom trawls.

**Distinctive Characters:** Two separate dorsal fins, the  $1^{st}$  with 7 spines ( $4^{th}$  spine the longest), the  $2^{nd}$  with 1 spine and 9 soft rays; anal fin with 2 spines and 8 soft rays; 11–14 (usually 2 on upper limb) developed gill rakers on  $1^{st}$  gill arch; caudal fin rounded.

**Colour:** Body with 7–11 narrow dark brown bars; scale pockets above lateral line with dark edge; cheek stripe usually present; distal half of 1<sup>st</sup> dorsal fin dusky to dark brown; 2<sup>nd</sup> dorsal and caudal fins usually with dark distal edge; other fins usually pale; peritoneum silvery white with dusky spots.

## Jaydia truncata (Bleeker, 1854)

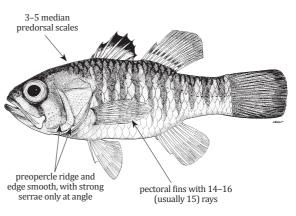
Local name(s): Nga Kyarr Ma.

Habitat: Depth range 15–110 m.

Fisheries: Caught mainly with bottom trawls.

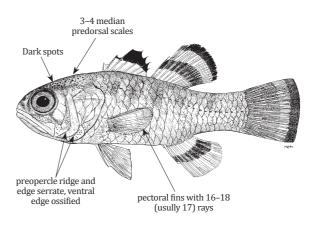
**Distinctive Characters:** Two separate dorsal fins, the  $1^{st}$  with 7 visible spines ( $4^{th}$  spine the longest), the  $2^{nd}$  with 1 spine and 9 soft rays; 10–11 (1 on upper limb) developed gill rakers on  $1^{st}$  gill arch; caudal fin slightly rounded.

**Colour:** Light grey dorsally shading to silvery on side and ventrally, with 4–6 large dusky spots in a longitudinal row above lateral line (sometimes faint or absent); scale pockets above lateral line with dark edge; front of snout and chin blackish; outer half of 1<sup>st</sup> dorsal fin black; 2<sup>nd</sup> dorsal and anal fins with a middle blackish band, the 2<sup>nd</sup> dorsal and caudal with a distal blackish margin.



Size: To 7.6 cm (SL)

FAO names: Flagfin cardinalfish (En)



Size: To 10.1 cm (SL)

## Ostorhinchus apogonoides (Bleeker, 1856)

## Local name(s): Nga Kyarr Ma. Habitat: Depth range 3–60 m.

Fisheries: Caught mainly with bottom trawls.

**Distinctive Characters:** Two separate dorsal fins, the 1<sup>st</sup> with 7 spines (4<sup>th</sup> spine the longest), the 2<sup>nd</sup> with 1 spine and 9 soft rays; anal fin with 2 spines and 8 soft rays; 15 (3 on upper limb) developed gill rakers on 1<sup>st</sup> gill arch; caudal fin emarginate; inner series teeth of lower jaw and upper jaw teeth near symphysis distinctly enlarged, caniniform.

**Colour:** Upper parts of head, back and posterior part of body purplish pink; lower half of head and trunk pale with a golden tinge; snout blackish, edged with faint, bluish broken lines crossing the eye (dusky in preservative) and sometimes continuing onto gill cover and on body as spots between pectoral fin and lateral line; tip of 1<sup>st</sup> dorsal fin black; intestine and stomach black; 1<sup>st</sup> gill arch and its gill rakers partially black.

## Ostorhinchus bryx (Fraser, 1998)

Local name(s): Nga Kyarr Ma.

Habitat: Depth range 14–155 m.

Fisheries: Caught mainly with bottom trawls.

**Distinctive Characters:** Two separate dorsal fins, the 1<sup>st</sup> with 6 spines (3<sup>rd</sup> spine the longest), the 2<sup>nd</sup> with 1 spine and 9 soft rays; anal fin with 2 spines and 7–8 soft rays; 22–23 (5 on upper limb) developed gill rakers on 1<sup>st</sup> gill arch; caudal fin emarginate; inner series teeth posteriorly on lower jaw and upper jaw teeth near symphysis enlarged. **Colour:** Silvery grey with 3 dark stripes on body; mid-lateral stripe as wide as pupil from tip of snout to tip of caudal fin; narrow stripe (not always visible) immediately above mid-lateral stripe; a better defined stripe from above eye running along dorsal surface to upper caudal peduncle; peritoneum with dark spots; intestine dark brown.

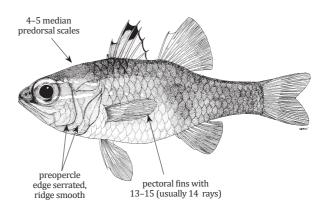
## Ostorhinchus cookii (Macleay, 1881)

**Local name(s):** Nga Kyarr Ma. **Habitat:** Depth range 1–10 m.

Fisheries: Caught mainly with bottom trawls.

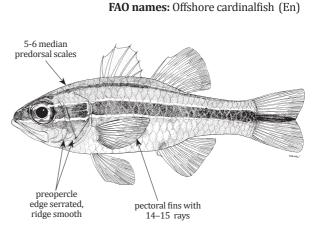
**Distinctive Characters:** Two separate dorsal fins, the 1<sup>st</sup> with 7 spines (3<sup>rd</sup> spine the longest), the 2<sup>nd</sup> with 1 spine and 9 soft rays; anal fin with 2 spines and 8 soft rays; 10–13 (2 on upper limb) developed gill rakers on 1<sup>st</sup> gill arch; caudal fin emarginate;

**Colour:** Head and body with 6 longitudinal dark brown stripes wider than pale interspaces, the lowest stripe continuing onto base of anal fin; pelvic fins reddish with pale leading edge; a dusky rounded spot (larger that pupil) at caudal fin base; peritoneum with scattered small dark spots; intestine dark.

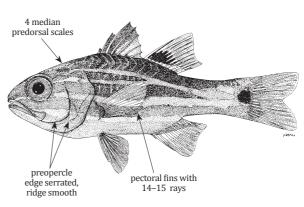


FAO names: Short-tooth cardinalfish (En)

Size: To 10.7 cm (SL)



Size: To about cm 6 (SL)



FAO names: Cook's cardinalfish (En)

## Ostorhinchus cyanosoma (Bleeker, 1853)

**Local name(s):** Nga Kyarr Ma. **Habitat:** Depth range 1–50 m.

Fisheries: Caught mainly with bottom trawls.

**Distinctive Characters:** Two separate dorsal fins, the  $1^{st}$  with 7 spines ( $3^{rd}$  spine the longest), the  $2^{nd}$  with 1 spine and 9 soft rays; anal fin with 2 spines and 8 soft rays; 18-22 (4–6 on upper limb) developed gill rakers on  $1^{st}$  gill arch; caudal fin emarginate.

**Colour:** Head and body pale with 6 longitudinal yellow stripes; another short mid-dorsal stripe from interorbital space to origin of dorsal fin; snout and interorbital space frequently dark; fins with orange tinge; pelvic fins with a narrow pale leading edge; peritoneum with scattered small blackish spots; intestine dark brown.

#### Ostorhinchus fasciatus (White, 1790)

Local name(s): Nga Kyarr Ma.

Habitat: Depth range 2-128 m.

**Fisheries:** Caught mainly with bottom trawls.

**Distinctive Characters:** Two separate dorsal fins, the  $1^{st}$  with 7 visible spines, the  $2^{nd}$  with 1 spine and 9 soft rays; anal fin with 2 spines and 8 soft rays; 14 (3 on upper limb) developed gill rakers on  $1^{st}$  gill arch; caudal fin emarginate.

**Colour:** Two distinct dark brown stripes, dorsal one above lateral line from top of eye to upper caudal peduncle; mid-lateral one from tip of snout to posterior edge of middle caudal fin rays; indistinct stripe made of dark dots between midlateral stripe and pectoral fin, tapering out below second dorsal fin; middle pelvic fin rays dark brown; intestine and stomach dark brown.

#### Ostorhinchus fleurieu Lacepède, 1802

#### Local name(s): Nga Kyarr Ma.

**Habitat:** Common in shallow coastal reefs with moderate currents. Also in tidal channels of estuaries.

Fisheries: Caught mainly with bottom trawls.

**Distinctive Characters:** Two separate dorsal fins, the 1<sup>st</sup> with 7 visible spines, the 2<sup>nd</sup> with 1 spine and 9 soft rays; anal fin with 2 spines and 8 soft rays; 18–19 (3–4 on upper limb) developed gill rakers on 1<sup>st</sup> gill arch; caudal fin slightly emarginate.

**Colour:** Coppery with iridescence; juveniles with peduncular spot, expanding to a broad blackish bar in adults; broad blackish stripe from front of snout to orbit, continuing diffusely behind eye; maxilla with a narrow blue streak; intestine dark brown to black.



pectoral fins with

13-15 rays

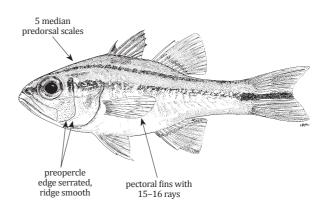
MANU: PLEASE ADD

THE EDGE BEHIND THE

RIDGE

FAO names: Broadbanded cardinalfish (En)

Size: To cm 8 (SL)

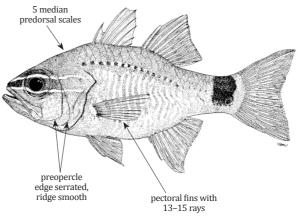


preopercle

edge serrated,

ridge smooth

FAO names: Cardinalfish (En)



Size: To 12.5 cm (SL)

#### FAO names: Yellowstriped cardinalfish (En)

Size: To about cm 9 (SL)

## Ostorhinchus fukuii (Hayashi, 1990)

#### FAO names: ?? cardinalfish (En)

Local name(s): Nga Kyarr Ma.

Habitat: Depth range 35–60 m.

Fisheries: Caught mainly with bottom trawls.

**Distinctive Characters:** Two separate dorsal fins, the 1<sup>st</sup> with 7 visible spines, the 2<sup>nd</sup> with 1 spine and 9 soft rays; anal fin with 2 spines and 8 soft rays; 12 (3 on upper limb) developed gill rakers on 1<sup>st</sup> gill arch; caudal fin emarginate.

**Colour:** Two dark stripes on body; mid-lateral stripe, somewhat narrower than pupil, from tip of snout posteriorly, tapering out on caudal peduncle in front of large dark spot (larger that pupil) at caudal fin base; slightly narrower stripe from above eye along upper edge of lateral line canal, fading out below 2<sup>nd</sup> dorsal fin; anal opening black.

## Ostorhinchus gularis (Fraser & Lachner, 1984)

#### Local name(s):Nga Kyarr Ma.

**Habitat:** Silt or sand bottoms at depths between 30–290 m.

Fisheries: Caught mainly with bottom trawls.

**Distinctive Characters:** Two separate dorsal fins, the 1<sup>st</sup> with 6 visible spines, the 2<sup>nd</sup> with 1 spine and 9 soft rays; anal fin with 2 spines and 8 soft rays; 21–24 (4–5 on upper limb) developed gill rakers on 1<sup>st</sup> gill arch; caudal fin emarginate; anus is in a forward position near base of pelvic fins.

**Colour:** Body pale, with a narrow blackish stripe from front of snout to eye, sometimes continuing across operculum and onto body as a double line; another dusky narrow stripe below 1<sup>st</sup> dorsal fin base sometimes present; fins pale; digestive tract and anus black.

## Ostorhinchus nigrocincta (Smith & Radcliffe, 1912)

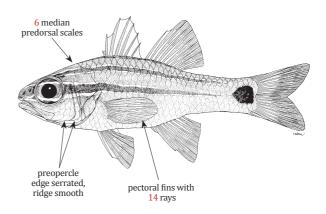
#### Local name(s): Nga Kyarr Ma.

Habitat: Depth range 20-40 m.

Fisheries: Caught mainly with bottom trawls.

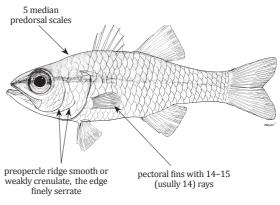
**Distinctive Characters:** Two separate dorsal fins, the 1<sup>st</sup> with 6 visible spines, the 2<sup>nd</sup> with 1 spine and 9 soft rays; anal fin with 2 spines and 8 soft rays; 18–19 (3–4 on upper limb) developed gill rakers on 1<sup>st</sup> gill arch; caudal fin emarginate.

**Colour:** Dark brown stripe from tip of lower jaw to eye; narrow dark brown bar across caudal peduncle at caudal fin base; dark brown stripe slightly above base of second dorsal fin, and similar, less distinct stripe along and next to anal-fin base; upper gill rakers of 1<sup>st</sup> gill arch dark; stomach and intestine with dark dots of various sizes.



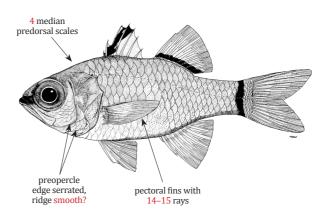
Size: To about cm 10 (SL)

#### FAO names: Gular cardinalfish (En)



Size: To 6.6 cm (TL)

FAO names: Blackbelt cardinalfish (En)



## Ostorhinchus pleuron (Fraser, 2005)

Local name(s): Nga Kyarr Ma. Habitat: Depth range 3–91 m.

Fisheries: Caught mainly with bottom trawls.

**Distinctive Characters:** Two separate dorsal fins, the  $1^{st}$  with 6 visible spines, the  $2^{nd}$  with 1 spine and 9 soft rays; anal fin with 2 spines and 8 soft rays; 18–19 (3–4 on upper limb) developed gill rakers on  $1^{st}$  gill arch; caudal fin emarginate.

**Colour:** Body pale with 2 dark stripes on body: the upper stripe extending from snout to upper caudal fin base, the lower (mid-lateral) stripe from snout and across eye to caudal fin margin; 8 narrow dusky bars on anterior part of body extending ventrally from mid-lateral stripe; upper part of 1<sup>st</sup> gill arch and proximal part of its gill rakers blackish; digestive tract and anus black.

#### Pristiapogon fraenatus (Valenciennes, 1832)

**Local name(s):** Nga Kyarr Ma. **Habitat:** Depth range 3–50 m.

Fisheries: Caught mainly with bottom trawls.

**Distinctive Characters:** Two separate dorsal fins, the 1<sup>st</sup> with 7 visible spines, the 2<sup>nd</sup> with 1 spine and 9 soft rays; anal fin with 2 spines and 8 soft rays; ?-? (? on upper limb) developed gill rakers on 1<sup>st</sup> gill arch; caudal fin emarginate.

**Colour:** Body pale with a dark stripe extending from snout and across eye to caudal peduncle just in front of large dark spot (not always present) at level of caudal fin base; dorsal and ventral margins of caudal fin dark; digestive tract and anus?

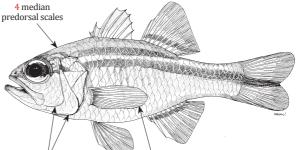
## Rhabdamia gracilis (Bleeker, 1856)

**Local name(s):** Nga Kyarr Ma. **Habitat:** Depth range 3–91 m.

Fisheries: Caught mainly with bottom trawls.

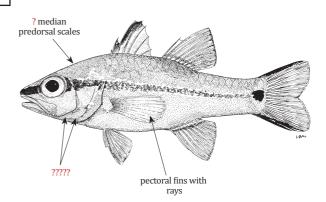
**Distinctive Characters:** Two separate dorsal fins, the  $1^{st}$  with 6 visible spines, the  $2^{nd}$  with 1 spine and 9 soft rays; anal fin with 2 spines and 12–13 soft rays; 23–26 (5 on upper limb) developed gill rakers on  $1^{st}$  gill arch; caudal fin forked.

**Colour:** Body translucent pink with narrow, dark brown stripe above anal fin base, continuing along middle of ventral surface of caudal peduncle; similar stripe on dorsal surface of caudal peduncle; a narrow dark brown bar across caudal peduncle at caudal fin base; tips of snout, lower jaw and caudal fin lobes dark; digestive tract and anus?.



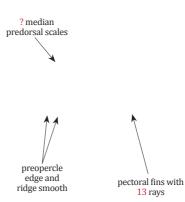
preopercle edge serrated and ossified, ridge smooth 15–16 rays

FAO names: Bridled cardinalfish (En)



Size: To cm 10.4 (SL)

#### FAO names: Luminous cardinalfish (En)



FAO names: Rib-bar cardinalfish (En)

Size: To cm 10.4 (SL)

#### Taeniamia fucata (Cantor, 1849)

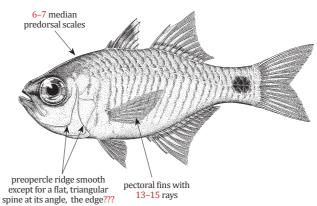
#### FAO names: Orangelined cardinalfish (En)

Local name(s): Nga Kyarr Ma. Habitat: Depth range 2–60 m.

Fisheries: Caught mainly with bottom trawls.

**Distinctive Characters:** Two separate dorsal fins, the 1<sup>st</sup> with 6 visible spines, the 2<sup>nd</sup> with 1 spine and 9 soft rays; anal fin with 2 spines and 15–17 soft rays; 18–21 (3–4 on upper limb) developed gill rakers on 1<sup>st</sup> gill arch; caudal fin emarginate.

**Colour:** Body translucent gray with a large black spot (about eye size) at caudal fin base; 20–30 narrow, curved oblique orange lines on sides; fins mostly transparent; digestive tract and anus?.



Size: To cm 7 (SL)

## SILLAGINIDAE

Sillagos

#### Sillaginopsis domina (Cuvier, 1816)

Local name(s): Nga Palway Thae Htoe.

**Habitat:** Found in shallow, open muddy bays and estuaries.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Body elongate; head greatly flattened; eyes small, covered by adipose tissue; mouth small, terminal; 1<sup>st</sup> dorsal fin with 10 spines; 2<sup>nd</sup> dorsal fin with 1 spine and 25–27 rays; anal fin with 2 spines and 24–27 rays; swimbladder vestigal or absent.

**Colour:** Back light brown, lower flanks and belly pale brown to white; fins pale brownish, with a light dusting of fine black spots (Myanmar specimens with yellowish lower flanks and belly).

## Sillago aeolus Jordan & Evermann, 1902

Local name(s): Nga Palway Thae Htoe.

**Habitat:** Coastal inshore waters, most common in embayments on silty bottom.

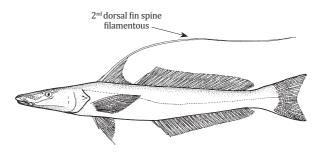
#### Juveniles burrow in the sand.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Body elongate; anal fin with 2 spines and 17–19 (usually 18) soft rays; swimbladder with 3 rudimentary anterolateral extensions and a single posterior extension below vertebral column and entering the tail section.

**Colour:** Back light brown; lower ventral flanks and belly whitish or silvery with scattered dark brown elongate blotches on back and sides, the most posterior midlateral dark brown blotch elongate and reaching caudal flexure.

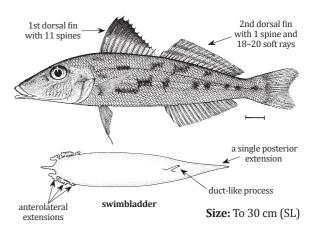
FAO names: Flathead sillago (En) Pêche-madame camus (Fr)



Size: To 44 cm, common 25 cm (TL)

## FAO names: Oriental sillago (En)

Pêche-madame oriental (Fr)



## Sillago ingenuua McKay, 1985

Local name(s): Nga Palway Thae Htoe.

**Habitat:** Inshore coastal waters. Known from depths between 20 and 50 m.

#### Fisheries: Bottom trawls.

**Distinctive Characters:** Body elongate; 66–70 lateral lie scales; eye diameter 19–25.6% of head length; all cheek scales ctenoid; swimbladder with a short median anterior extension and about 5 small, pointed anterolateral projections;

**Colour:** No conspicuous black spot on pectoral base; no wide distinct silvery lateral band; peritoneum black-brown.

Sillaginopodys chondropus (Bleeker, 1849)

Local name(s): Nga Palway Thae Htoe.

**Habitat:** Shallow coastal waters and bays; also in estuaries.

**Fisheries:** Bottom trawls, gillnets, bagnets, cast nets.

**Distinctive Characters:** Body elongate; 66–73 lateral line scales; anal fin with 2 spines and 22–23 soft rays; 1st pelvic fin ray modified into a laterally compressed thickened club-like structure; swimbladder reduced in size, no duct-like process from the ventral surface to the urogenital aperture. **Colour:** Back pale brown; lower ventral flanks and belly paler; adult silver-grey; fins pale, the 1<sup>st</sup> dorsal fin with dusky tip.

#### Sillago sihama (Forsskål, 1775)

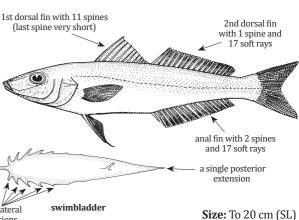
Local name(s): Nga Palway Thae Htoe.

**Habitat:** Common along beaches, sandbars, mangrove creeks and estuaries; recorded from freshwater. Maximum depth 60 m.

Fisheries: Bottom trawls, gillnets, bagnets, cast nets.

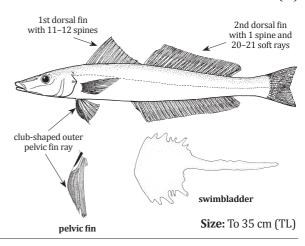
**Distinctive Characters:** Body elongate; anal fin with 2 spines and 21–23 soft rays; swimbladder with 2 short anterior extensions, 2 lateral extensions, each sending a blind tubule anterolaterally and then extending backwards along the abdominal wall, 2 posterior tapering extensions projecting into caudal region.

**Colour:** Back light brown; lower ventral flanks and belly whitish or silvery, without dark blotches.



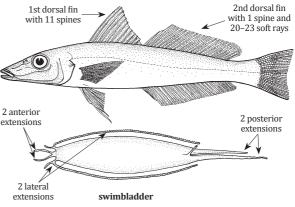
anterolateral extensions

FAO names: Clubfoot sillago (En) Pêche-madame diablotin (Fr)



FAO names: Silver sillago (En)

Pêche-madame argenté (Fr)



FAO names: Bay sillago (En)

Pêche-madame halanda (Fr)

Size: To 30 cm, common 15 cm (TL)

## MALACANTHIDAE

Tilefishes

#### Branchiostegus sawakinensis Amirthalingam, 1969

Local name(s): A Kyee Kywet Nga.

**Habitat:** Found over muddy bottoms between 45 and 180 m depth.

Fisheries: Bottom trawls.

**Distinctive Characters:** Predorsal ridge present; jaws extending posteriorly to under middle of pupil; dorsal fin low, its height about 7% SL; caudal fin margin double emarginate

**Colour:** Body with varied reddish and yellow pastel shades and 5–7 rows of dark spots between lateral line and pectoral fin base (spots may be faint); a dark spot on each dorsal fin membrane along base of dorsal fin; lower half of caudal fin grey with yellow spots, and usually with 2 thin yellow stripes in central part of caudal fin.

Malacanthus brevirostris Guichenot, 1848

Local name(s): A Kyee Kywet Nga.

**Habitat:** Lives in self-constructed burrows in pairs at depths between 5 and 33 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Body elongate, its depth 12–16% SL; preopercle edge smooth; opercle with a single sharp spine, size about equal to pupil diameter; jaws extending posteriorly to anterior rim of orbit.

**Colour:** Dorsal portions of body light olive green, belly silver-white; dorsal fin faint pink with a narrow yellow upper margin; upper and lower lobes of caudal fin yellow, separated by a central white band and with characteristic 2 dark parallel bands.

**Remarks:** Confirmation needed for Myanmar waters.

#### *Malacanthus latovittatus* (Lacepède, 1801)

Local name(s): A Kyee Kywet Nga.

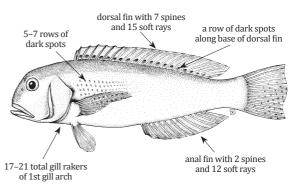
**Habitat:** Lives in self-constructed burrows near edges of reefs at depths between 6 and 10 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Body elongate, its depth 15–20% SL; snout long, its length 37–47% of head length; jaws extending posteriorly only to below anterior nostril, well in front of eye.

**Colour:** Head blue, iris yellow; body olive-grey to violet-blue above, bluish white on belly; a broad midbody longitudinal band running from operculum to tip of caudal fin, widening on tail to include most of middle and lower portion.

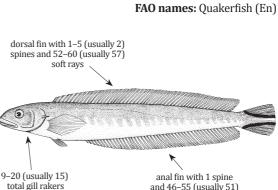
**Remarks:** Confirmation needed for Myanmar waters.



Size: To 60 cm, common 25 cm (TL)

**FAO names:** Freckled tilefish (En)

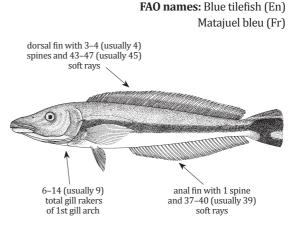
Tile taches de son (Fr)



of 1st gill arch

and 46–55 (usually 51) soft rays

Size: To 32 cm, common 26 cm (TL)



Size: To 45 cm, common 35 cm (TL)

# LACTARIIDAE

False trevally

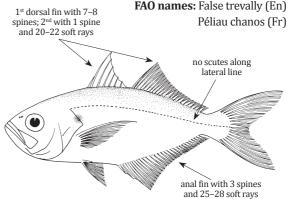
## Lactarius lactarius (Bloch & Schneider, 1801)

Local name(s): Nga Tee.

Habitat: Coastal deeper waters down to 100 m. Fisheries: Bottom trawls, gillnets.

Distinctive Characters: Maxilla reaching to posterior 1/3 of eye; mouth large and oblique, with a prominent lower jaw; caudal fin forked.

**Colour:** Silvery grey with blue iridescence above; silvery white below; a dusky spot on upper part of gill cover; fins all pale yellow; dorsal and caudal fins sometimes with dusky margins; the blue iridescence and sometimes the yellow of the fins are lost some hours after death.



Size: To 40 cm, common 20 cm (TL)

## **POMATOMIDAE**

Bluefish

#### Pomatomus saltatrix (Linnaeus, 1766)

Local name(s): ???

Habitat: Occurs in oceanic and coastal waters. Fisheries: Gillnets.

Distinctive Characters: Body compressed; mouth large and terminal, lower jaw sometimes slightly projecting; jaw teeth prominent, sharp, compressed, in a single series.

**Colour:** Back greenish blue, sides and belly silvery; dorsal and anal fins pale green tinged with yellow; pectoral fins bluish at base; caudal fin dull greenish tinged with yellow.

Remarks: Confirmation needed for Myanmar waters.

FAO names: Bluefish (En) Tassergal (Fr) 1st dorsal fin short and low 2nd dorsal fin with 7-8 feeble spines with 1 spine and 23-28 soft rays anal fin with 2-3 spines and 23–27 soft rays

Size: To 130 cm, common 60 cm (TL)

## RACHYCENTRIDAE

Cobia

#### Rachycentron canadum (Linnaeus, 1766)

Local name(s): Pin Lae Nga Yant.

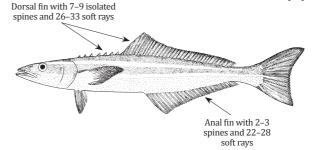
Habitat: Pelagic, but also over shallow coral reefs, occasionally in estuaries.

Fisheries: Bottom trawls, gillnets, line gears.

Distinctive Characters: Head broad and depressed; mouth large, terminal, with projecting lower jaw; pectoral fins pointed; caudal fin lunate in adults, upper lobe longer than lower.

Colour: Back and sides dark brown, with 2 sharply defined narrow light bands; belly vellowish.

FAO names: Cobia (En) Mafou (Fr)



FAO names: False trevally (En)

## **ECHENEIDAE**

## Remoras - Sharksuckers

#### *Echeneis naucrates* Linnaeus, 1758

FAO names: Live sharksucker (En) Rémora commun (Fr)

#### Local name(s): Nga Kutt / Nga Pyin.

Habitat: Coastal and oceanic waters.

**Fisheries:** Gillnets, driftnets (captured attached to the body of its host).

**Distinctive Characters:** Body very elongate, its depth contained 8–14 in SL; pectoral fins pointed; caudal fin lanceolate in young, the middle rays elongate and filamentous, almost truncate in adults.

**Colour:** Usually a dark longitudinal band on sides bordered with white; juveniles with upper and lower margins of fins white.

## Remora remora (Linnaeus, 1758)

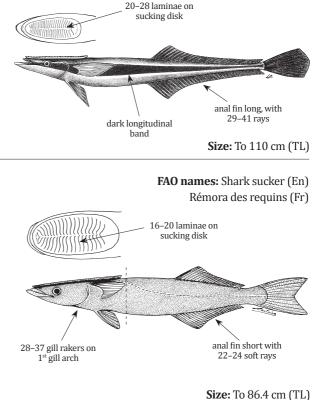
Local name(s):Nga Kutt / Nga Pyin.

Habitat: Coastal and oceanic waters.

**Fisheries:** Gillnets, driftnets (captured attached to the body of its host). Usually associated with sharks but also attaches itself to other large fishes, sea turtles and even ships.

**Distinctive Characters:** Body not elongate, its depth contained 5–8 in SL; 21–27 soft dorsal fin rays; pectoral fins rounded; pelvic fins broadly attached to abdomen; posterior border of sucking disc located anterior to tips of adpressed pectoral fins; caudal fin forked in young, becoming emarginate in adults.

Colour: Dark brownish grey.



## CARANGIDAE

Jacks - Trevallies - Scads - Queen-fishes - Runners - Pompanos

## Alectis ciliaris (Bloch, 1787)

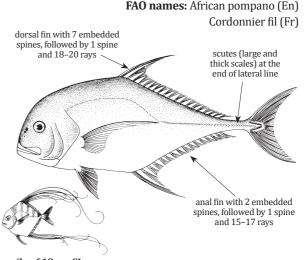
#### Local name(s):

**Habitat:** Adults in shallow coastal waters; young are pelagic. Maximum depth 100 m.

Fisheries: Gillnets, bottom trawls, line gears.

**Distinctive Characters:** Body deep becoming more elongate with growth, and very compressed; profile of nape and head broadly rounded; pectoral fins falcate, longer than head; pelvic fins elongate in young; 12–17 lower gill rakers; sometimes anal fin rays are filamentous also in adults.

**Colour:** Mostly silvery with a light metallic bluish tinge on upper 1/3 of body and head; juveniles with 5 chevron-shaped dark bars on body, and a black blotch at base of  $3^{rd}$  to  $6^{th}$  soft dorsal fin ray; filaments black distally.



juvenile of 13 cm SL Size: To 150 cm; common 70–80 cm (FL)

## Alectis indica (Rüppell, 1830)

Local name(s): Byar San Wike Gaung Lone.

Habitat: Adults in coastal waters; juveniles often enter estuaries. Maximum depth more than 60 m. Fisheries: Gillnets, bottom trawls, line gears.

**Distinctive Characters:** Body deep, becoming more elongate with growth, and very compressed; profile of head and nape somewhat angular; pectoral fins falcate, longer than head; 21–26 lower gill rakers; sometimes anal fin rays are filamentous also in adults.

**Colour:** Mostly silvery with a dusky green tinge dorsally; juveniles with dark bars on body; dorsal fin pale with leading edges at tips of rays dusky; anal fin pale yellow and caudal fin dusky green.

# FAO names: Indian threadfish (En) dorsal fin with 6 embedded and 18-20 rays and 18-20 rays Scutes (large and thick scales) at the end of lateral line Anal fin with 2 embedded spines, followed by 1 spine and 15-17 rays

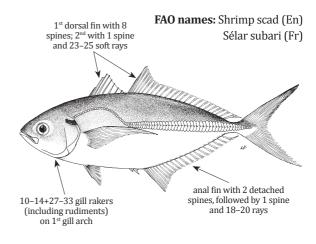
## Alepes djedaba (Forsskål, 1775)

Local name(s): Byar San Wike Daunt Gyoe Gaung. Habitat: Common in near inshore reefs.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Body oblong, compressed; snout pointed; adipose eyelid well-developed only on posterior half of eye; straight part of lateral line with 0–2 scales and 39–51 scutes.

**Colour:** Greyish green above, silvery to white below; a distinct black blotch on margin of opercle, bordered above by a smaller white spot; interradial membranes of spinous dorsal fin pale to dark dusky; caudal fin yellowish, except upper lobe often dusky to black distally; other fins pale.



Size: To 40 cm, common 20 cm (FL)

## Alepes kleini (Bloch, 1793)

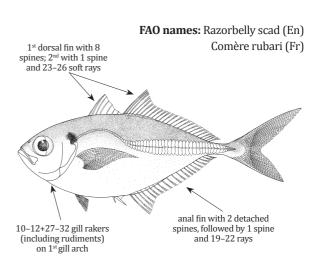
Local name(s): Pann Zin A Me' Hmat.

**Habitat:** Pelagic species occurring in coastal waters throughout its range.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Body oval, strongly compressed, with ventral profile distinctly more convex than dorsal profile; snout pointed; upper lobe of caudal fin longer than lower lobe in large adults; adipose eyelid well-developed only on posterior half of eye; straight part of lateral line with 0–2 scales and 35–45 scutes.

**Colour:** Silvery, sometimes with dark bars on upper half of body; a large black spot at upper end of gill opening; caudal fin yellowish, more so on upper lobe which has a narrow dusky edge; tongue dark except tip which is pale.



## Alepes melanoptera (Swainson, 1839)

#### Local name(s): Pann Zin Kyaw Taung Me'

**Habitat:** Pelagic species occurring in coastal waters throughout its range.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Body oblong, compressed, with dorsal and ventral profiles almost evenly convex; snout bluntly rounded; eyelid well developed only on posterior half of eye; straight part of lateral line with 0–4 scales and 49–69 scutes.

**Colour:** In life, grey-blue above, silvery to white below; a diffuse dusky blotch on margin of opercle; interradial membranes of spinous dorsal fin black; second dorsal fin greyish, lobe pale distally; caudal fin dusky yellow, with darker trailing edges, other fins pale.

## Alepes vari (Cuvier, 1833)

#### Local name(s): Pann Zin.

**Habitat:** Common in shallow coastal waters where it oftens swims near the surface

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Body oblong, compressed, with dorsal and ventral profiles almost evenly convex; snout pointed; eyelid well-developed only on posterior half of eye; straight part of lateral line with 0–7 scales and 48–69 scutes.

**Colour:** In life, ash blue above, silvery to white below; a diffuse dusky blotch on margin of opercle; interradial membranes of spinous dorsal fin pale to dark dusky; second dorsal fin, anal, and caudal fins dusky; mature males develop black pigmentation in spinous dorsal fin, lobes of soft dorsal and anal fins, and in pelvlc fins that is lacking in females.

## Atropus atropos (Bloch & Schneider, 1801)

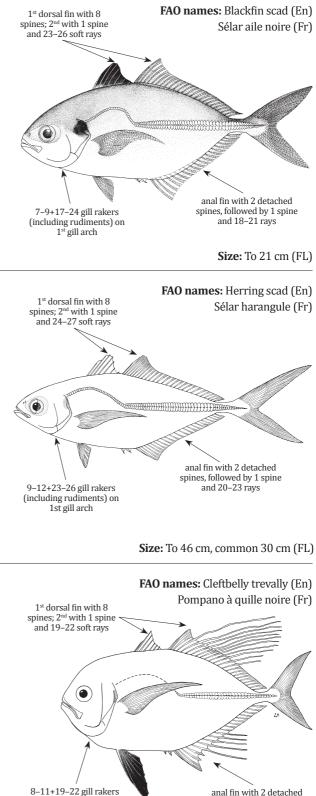
Local name(s): Nga Dama Bike Ye Yet Me'.

**Habitat:** Common, in shallow coastal waters where it oftens swims near the surface.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Body strongly compressed, almost ovate; nape strongly convex; belly with a deep median groove, accommodating pelvic fins, anus, and anal fin spines; dorsal fin sexually dimorphic, in mature males (only) 6 to 12 of the central rays produced into filaments of greatly varying lengths; pelvic fins conspicuously long, tip of appressed fin extending almost to anal fin origin.

**Colour:** In life, head and body bluish green above, silvery below; membranes of pelvic fins black, with the rays white basally; other fins pale; young with indistinct dark bands and opercular spot, the latter prominent in adults.



(including rudiments) on

1st gill arch

spines, followed by 1 spine and 17–18 rays

## Atule mate (Cuvier, 1833)

Local name(s): Nga Kyi Kann.

Habitat: Pelagic species occurring down to 50 m. Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Terminal dorsal and anal fin rays finlet-like in adults, about twice length of adjacent rays and a little more separated but joined by interradial membranes; pectoral fins long and falcate; lateral line gently arched anteriorly, its straight part with 0–10 scales and 36–49 scutes.

**Colour:** Bright olive-green dorsally, yellowish green laterally and whitish ventrally; dorso-laterally, 9 or 10 faint grey bars; a black spot, slightly smaller than eye, on upper margin of opercle and adjacent area of shoulder.

#### Carangoides armatus (Rüppell, 1830)

Local name(s): Zar Gyan A Hmyin Shae.

**Habitat:** Adults are found in coastal waters near corals and rocks, also in shallow lagoons; juveniles may enter estuaries.

Fisheries: Caught mainly with gillnets

**Distinctive Characters:** Body strongly compressed and deep; head profile very steep in adults but relatively straight from snout to nape; chord of curved part of lateral line longer than straight part; adult males with 3–12 central dorsal filamentous rays.

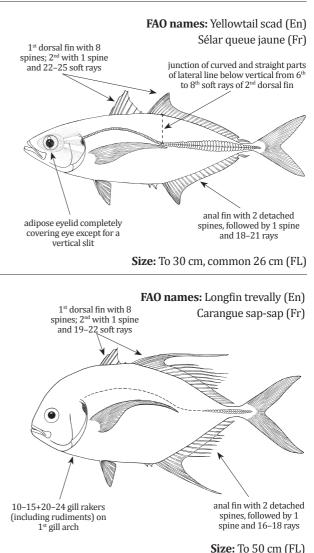
**Colour:** Bluish grey above, silvery below; blackish blotch on upper margin of opercle; spinous dorsal fin blackish; 2<sup>nd</sup> dorsal and anal fins pale to dusky, leading edge of lobes dusky to blackish; caudal fin grey with leading and trailing edges black.

## Carangoides bajad (Forsskål, 1775)

Local name(s): Zar Gyan Lein Maw Pyauk. Habitat: Adults are common along coastal reef slopes or around large coral heads in lagoons Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Lobe of 2<sup>nd</sup> dorsal fin shorter than head length; lateral line anteriorly with moderately regular arch, with junction of curved and straight parts below 11<sup>th</sup> to 15<sup>th</sup> soft ray of 2<sup>nd</sup> dorsal fin; straight part of lateral line with 20–30 scutes and 34–56 total elements (including anterior scales).

**Colour:** Brassy dorsally, shading to silvery white on sides, with numerous conspicuous orange-yellow spots; no dark opercular spot; capable of rapidly changing colour to almost entirely orange.



FAO names: Orangespotted trevally (En) 1<sup>st</sup> dorsal fin with 8 spines; 2<sup>nd</sup> with 1 spine and 24-26 soft rays orange-yellow spots orange-yellow spots orange-yellow spots and fin with 2 detached spines, followed by 1 spine and 21-24 rays

Size: To 85 cm (TL)

## *Carangoides chrysophrys* (Cuvier, 1833)

Local name(s): Zar Gyan Hnar Shae.

Habitat: Open waters of coastal reefs down to 60 m. Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Lobe of 2<sup>nd</sup> dorsal fin falcate, becoming shorter with age; lateral line anteriorly with moderately regular arch, with junction of curved and straight parts below 12<sup>th</sup> to 14<sup>th</sup> soft ray of 2<sup>nd</sup> dorsal fin; straight part of lateral line with 20 to 37 weak scutes and 32 to 42 total elements (including anterior scales).

**Colour:** Silvery with head and body greenish above; silvery with yellow-green reflections below; a small black blotch on upper edge of opercle; large adults sometimes very dark; head and fins blackish.

## Carangoides coeruleopinnatus (Rüppell, 1830)

**Local name(s):** Kan Yoe Tann Byar San Wike. **Habitat:** Deeper coastal reefs and rarely close to shore. Maximum depth 60 m.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Lobe of 2<sup>nd</sup> dorsal fin filamentous in young, becoming shorter with age; lateral line anteriorly with moderately regular arch, with junction of curved and straight parts below 12<sup>th</sup> to 14<sup>th</sup> soft ray of 2<sup>nd</sup> dorsal fin; straight part of lateral line with 16 to 20 scutes, and 31 to 50 total elements (including anterior scales).

**Colour:** Bluish green above, silvery grey below; sides with numerous, small yellow spots; small black blotch on upper margin of opercle; 2<sup>nd</sup> dorsal, anal and caudal fins dusky, the latter sometimes yellowish; pectoral fins pale yellow; pelvic fins hyaline to pale grey.

#### Carangoides dinema Bleeker, 1851

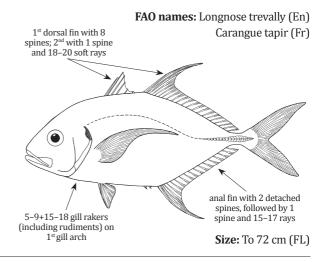
Local name(s): Zar Gyan A Yeik Kalay.

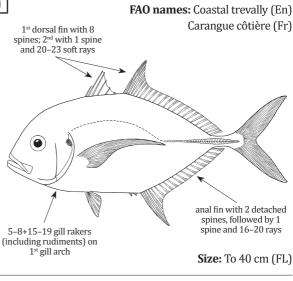
Habitat: Inhabitats coastal waters.

Fisheries: Bottom trawls, gillnets, line gears.

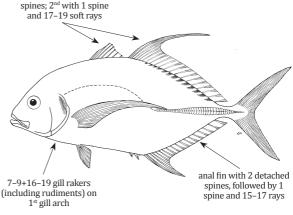
**Distinctive Characters:** Lateral line anteriorly with a moderate regular arch, with junction of curved and straight parts below vertical from between 10th or 12th soft rays of second dorsal fin; chord of curved part of lateral line slightly longer than straight part of lateral line; straight part of lateral line with 0–6 scales followed by 23–30 scutes.

**Colour:** Bluish green above, silvery white below; small brown blotches (becoming larger posteriorly) on back between bases of 2nd dorsal fin rays; caudal fin with upper lobe yellowish, and with trailing edges and tip of lower lobe pale; pectoral fins hyaline and pelvic fins whitish to dusky.





FAO names: Shadow trevally (En) Carangue crépuscule (Fr)



1st dorsal fin with 8

Size: To 53 cm (FL)

## Carangoides equula (Temminck and Schlegel, 1844)

Local name(s): Zar Gyan Kyaw Taung Phyu.

**Habitat:** Mainly on shelf slope in depths of 100 to 200 m.

Fisheries: Caught mainly with bottom trawls.

**Distinctive Characters:** Lateral line anteriorly with a moderate regular arch, with junction of curved and straight parts below vertical from between 12th and 15th soft rays of second dorsal fin; chord of curved part of lateral line longer than straight part of lateral line; straight part of lateral line with 0–6 scales followed by 22–32 scutes.

**Colour:** Head and body bluish grey to green dorsally, silvery white below; juveniles with 5–7 dark bands on sides; second dorsal and anal fins with a submarginal brown to blackish band, white distally; caudal fin dusky yellow; pectoral and pelvic fins pale yellowish to white.

## Carangoides ferdau (Forsskål, 1775)

Local name(s): Zar Gyan A Pyar Yaung.

**Habitat:** Coastal waters adjacent to sandy beaches down to 200 m.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Lobe of 2<sup>nd</sup> dorsal fin falcate, especially in small adults, but usually shorter than head length; snout bluntly rounded; lips of large adults not noticeably fleshy.

**Colour:** Adults typically with 5–6 dusky bands on sides that usually persist in marketed specimens; in life head and body generally silvery, blue-green above, paler below; caudal fin yellow-green with trailing edge and lobe tips dark; pelvic fins hyaline whitish.



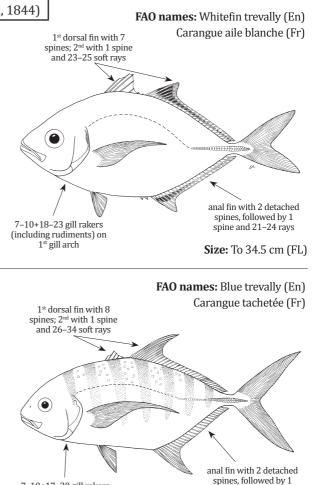
Local name(s): Waing Phyu Gyi A War Set.

**Habitat:** Schools along outer reef slopes, rocky coasts and offshore banks.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Lateral line anteriorly with a low regular arch, with junction of curved and straight parts below 13<sup>th</sup> to 16<sup>th</sup> soft ray of 2<sup>nd</sup> dorsal fin; straight part of lateral line with 15-21 small scutes; chord of curved part of lateral line longer than straight part.

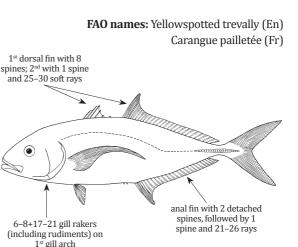
**Colour:** Adults iridescent blue-green dorsally, shading to silvery on sides, with many small golden or brassy spots mainly above midline; large individuals often with 3 irregular black blotches (sometimes very indistinct or absent) on flanks, the 1<sup>st</sup> below dorsal fin lobe.



7-10+17-20 gill rakers (including rudiments) on  $1^{st}$ gill arch

Size: To 70 cm (FL)

spine and 21-26 rays



Size: To 120 cm (FL)

## Carangoides gymnostethus (Cuvier, 1833)

Local name(s): Waing Phyu Gyi Shwe Kyaw Set. Habitat: Common over deeper offshore reefs. Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Lateral line anteriorly with a low regular arch, with junction of curved and straight parts below 16<sup>th</sup> to 20<sup>th</sup> soft ray of 2<sup>nd</sup> dorsal fin; straight part of lateral line with 20–31 small scutes; chord of curved part of lateral line longer than straight part.

**Colour:** Adults olive-green above, silvery-white below with a few brown or golden spots sometimes present midlaterally; opercular spot dusky and inconspicuous; dorsal, anal and caudal fins pale olive-green to greenish-grey; leading edge and distal margin of anal fin white; pelvic and pectoral fins pale green to hyaline.

## Carangoides hedlandensis (Whitley, 1934)

Local name(s): Zar Gyan Hnar To.

Habitat: Adults inhabit coastal waters of the continental shelf

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Head profile extremely steep in adults with a distinct "bump" in the interorbital region; chord of curved part of lateral line longer than straight part; adult males with 3–8 central dorsal and anal filamentous rays.

**Colour:** Greenish blue above, silvery grey below; blackish blotch on upper opercular margin; Spinous dorsal fin, elongated dorsal rays and edges of caudal fin blackish; interradial of soft anal fin rays often with a white spot basally.

#### Carangoides malabaricus (Bloch & Schneider, 1801)

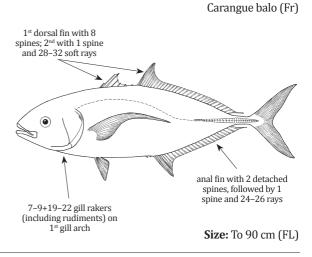
#### Local name(s): Waing Phyu Gyi.

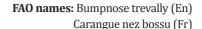
**Habitat:** A benthopelagic species occurring over corals and rocky reefs but also found in shallow sandy bays.

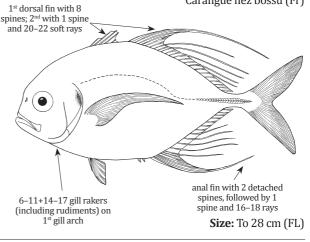
Fisheries: Bottom trawls, gillnets, line gears.

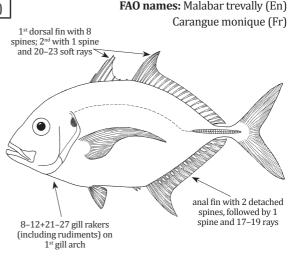
**Distinctive Characters:** Lateral line anteriorly with a moderate regular arch, with junction of curved and straight parts below  $12^{th}$  to  $14^{th}$  soft ray of  $2^{nd}$  dorsal fin; chord of curved part of lateral line longer than straight part.

**Colour:** Generally silvery with bluish grey above, silvery white below; caudal, soft dorsal and anal fins pale greenish yellow to dusky; interradial of soft anal fin rays often with a white spot basally; tongue greyish brown to brown.









## *Carangoides oblongus* (Cuvier, 1833)

Local name(s): Ka la Ngu Kyar Put.

**Habitat:** Mainly on shelf slope in depths of 100 to 200 m.

Fisheries: Caught mainly with bottom trawls.

**Distinctive Characters:** Lateral line anteriorly with a moderate regular arch, with junction of curved and straight parts below vertical from between eighth or ninth soft rays of second dorsal fin; chord of curved part of lateral line slightly shorter than straight part of lateral line; straight part of lateral line with 0–2 scales followed by 37–45 scutes

**Colour:** Head and body bluish green above, silvery below, small blue to black blotches on dorsum between bases of second dorsal-fin rays; opercular spot diffuse or absent.

#### Carangoides orthogrammus Jordan and Gilbert, 1881

Local name(s): Ka la Ngu Kyun Thar.

**Habitat:** Oceanic islands, in lagoons and seaward reefs to depths greater than 50 m.

Fisheries: Bottom trawls, gillnets, line gears.

**Distinctive Characters:** Lateral line anteriorly with a very slight arch with junction, of curved and straight parts below second dorsal fin between 15th to19th soft rays; chord of curved part of lateral line slightly longer to about equal straight part of lateral line; straight part of lateral line with 21–34 scales followed by 19–31 small scutes.

**Colour:** Head and body generally silvery, brassy to greenish blue above, paler below; adults with several relatively large, elliptical yellow spots, often with dusky centres, present on sides; dusky bands usually not present on sides.



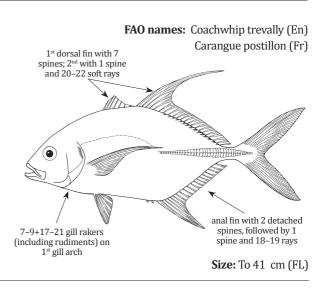
Local name(s): Ka la Ngu Ouk Mae Shae.

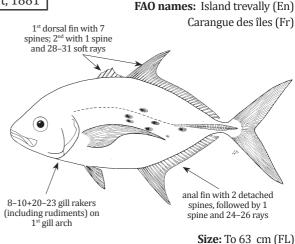
**Habitat:** Generally along the edges of lagoons and seaward reef slopes.

Fisheries: Caught mainly with gillnets.

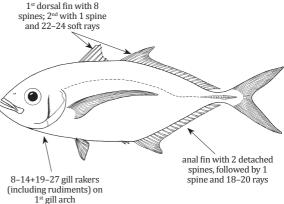
**Distinctive Characters:** Lower jaw somewhat enlarged and projecting beyond upper jaw; lateral line anteriorly with a relatively low arch, with junction of curved and straight parts below 13<sup>th</sup> to 15<sup>th</sup> soft ray of 2<sup>nd</sup> dorsal fin; straight part of lateral line with 20-26 scales followed by 11-18 relatively small scutes.

**Colour:** Generally silvery, greyish above, paler below; no opercular spot but adults with opercule posterior vertical margin distinctly dark to black; sides sometimes with 6 or 7 dusky oblique bands.









Size: To 39 cm (FL)

## Carangoides praeustus (Anonymous [Bennett], 1830)

#### Local name(s): ?????

Habitat: Inhabits coastal waters throughout its range.

Fisheries: Caught mainly with gillnets.

Distinctive Characters: Spinous dorsal fin moderately high, longest spine nearly equal height of soft dorsal fin lobe; lateral line anteriorly with a moderate regular arch, with junction of curved and straight parts below 7<sup>th</sup> to 11<sup>th</sup> soft ray of 2<sup>nd</sup> dorsal fin; straight part of lateral line with 4-12 scales followed by 23-34 scutes.

Colour: In life, bluish grey above, silvery white below; no dark opercular spot; distal half of second dorsal fin lobe abruptly black, sometimes with a white margin, widest anteriorly; remainder of fin pale dusky; caudal fin pale yellowish, other fins hvaline to whitish.

## Carangoides talamparoides Bleeker, 1852

Local name(s): Ka la Ngu Gyi.

Habitat: Inhabits coastal waters throughout its range.

Fisheries: Caught mainly with gillnets.

Distinctive Characters: Lateral line anteriorly with a moderate regular arch, with junction of curved and straight parts below 12th to 14th soft ray of 2nd dorsal fin; straight part of lateral line with 20 to 32 weak scutes.

**Colour:** In life, generally silvery, bluish grey above, silvery white below; opercle with a small black spot on upper margin; tongue white to pale grey; soft dorsal and anal fins dusky; caudal fin with central rays dusky yellow with black distal margin.

#### Caranx heberi (Bennett, 1830)

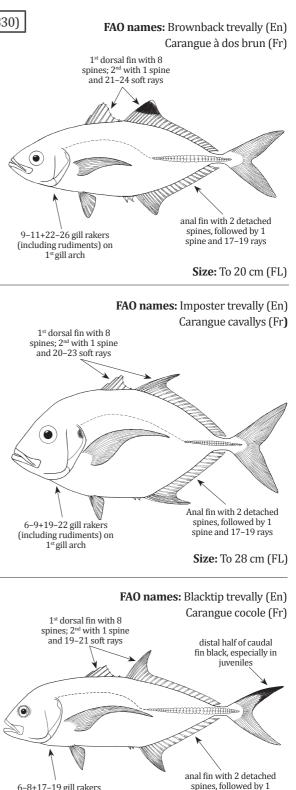
Local name(s): Ka la Ngu A Hmee Hteik Me'.

Habitat: Prefers clean, open coastal waters: adults are particularly common in small aggregations over rocky reefs.

Fisheries: Caught mainly with gillnets.

Distinctive Characters: Adipose evelid moderately developed, small anteriorly, posterior adipose evelid extends onto eye to rear border of pupil; straight part of lateral line with 0-4 anterior scales followed by 30-40 strong scutes.

Colour: Dark bronze to yellow-green above, silvery bronze to yellowish below; identified by its blacktipped caudal fin.



6-8+17-19 gill rakers

(including rudiments) on

1st gill arch

Size: To 85 cm (FL)

spine and 15-17 rays

## Caranx ignobilis (Forsskål, 1775)

Local name(s): Zar Gyan Gyi.

Habitat: Pelagic over sand and rock; adults occur singly and inhabit clear lagoon and seaward reefs Fisheries: Caught mainly with gillnets.

Distinctive Characters: Adipose evelid moderately developed, small anteriorly; posterior eyelid extends onto eye rear border of pupil; straight part of lateral line with 0-4 anterior scales followed by 30-40 strong scutes.

Colour: Adults with body silvery grey to black above, usually paler below; fins uniformly pigmented grey to black, except for leading edges and tips of dorsal and anal fin lobes which are paler; mature males usually darker than females, sometimes head and fins completely black.

#### Caranx lugubris Poey, 1860

Local name(s): Zar Gyan A Pyar Yaung.

Habitat: Pelagic over sand and rock; adults occur singly and inhabit clear lagoon and seaward reefs Fisheries: Caught mainly with gillnets.

Distinctive Characters: Dorsal fin lobe contained 2.3–5.3 in FL in specimens larger than 15 cm FL; profile of head relatively steep and angular; adipose eyelid moderately developed, weak anteriorly, posterior eyelid extends onto eye to rear half of pupil; straight part of lateral line with 26–32 strong scutes

Colour: In life, head, body, and fins essentially uniform grey to brown, median fins and lateral line scutes usually dark brown to black; upper end of opercle frequently with a dark spot, much smaller than pupil diameter.

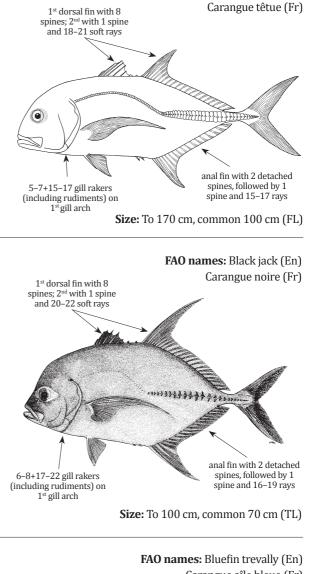
## Caranx melampygus Cuvier, 1833

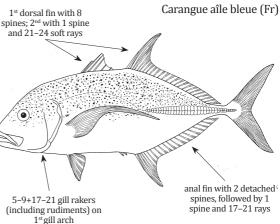
Local name(s): Nga Kyee Kann Su Taung Pyar. Habitat: Associated to reef habitats, lagoons and seaward reefs. Maximum depth 190 m.

Fisheries: Caught mainly with gillnets.

Distinctive **Characters:** Evelid moderately developed, weak anteriorly, posterior eyelid, extends onto eye to rear border of pupil in large adults; straight part of lateral line with 27-42 strong scutes.

Colour: Adults with head and dorsal half of body brassy, suffused with blue, and covered with small blue-black spots; ventrally, body generally silvery white; 2<sup>nd</sup> dorsal, anal and caudal fins electric blue; pectoral fins mostly pale yellow; juveniles and young adults head and body silvery grey and fins pale to dark dusky, except for yellow pectoral fins.





381

Size: To 100 cm (FL)

## Caranx sexfasciatus Quoy & Gaimard, 1825

#### Local name(s):Zar Gyan Myet Pyuu.

**Habitat:** Inhabit coastal and oceanic waters associated with reefs; often seen in large daytime schools; juveniles may be encountered in estuaries. **Fisheries:** Caught mainly with gillnets.

**Distinctive characters:** Dorsal profile moderately convex anteriorly; 6-8+15-19 gill rakers (including rudiments) on 1<sup>st</sup> gill arch; straight part of lateral line with 27–36 strong scutes.

**Colour:** Adults with head and body silvery-olive to iridescent blue-green above, silvery olive whitish below; small blackish spot, much smaller than pupil diameter, at upper margin of opercle; 2<sup>nd</sup> dorsal fin olive to blackish; caudal fin yellowish to black; lateral line scutes dark to black.

#### Caranx tille Cuvier, 1833

#### Local name(s): ?????

**Habitat:** A coastal species with a preference for inshore neritic waters, mainly around rocky and coral reefs.

Fisheries: Caught mainly with gillnets.

**Distinctive characters:** Dorsal profile strongly convex anteriorly; 6-8+15-17 gill rakers (including rudiments) on 1<sup>st</sup> gill arch; straight part of lateral line with 33–42 strong scutes.

**Colour:** Adults with head and body dark olive green to bluish grey above, shading to silvery white below; blackish spot, at least 1/2 diameter of pupil, at upper margin of opercle;  $2^{nd}$  dorsal fin olive-grey to blackish; anal and caudal fins yellow-olive to blackish; lateral-line scutes grey, except dark in caudal peduncle region.

#### Decapterus macarellus (Cuvier, 1833)

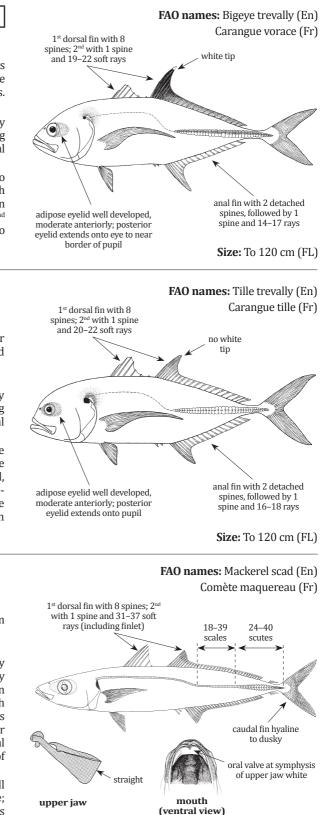
#### Local name(s): Pann Zin Nga Kun Shut.

**Habitat:** A schooling species occurring from 40 m to 200 m.

Fisheries: Seines, gillnets, bottom trawls.

**Distinctive Characters:** Body elongate, nearly round in cross-section; adipose eyelid completely covering eye except for a vertical slit centred on pupil; terminal dorsal and anal soft rays each consisting of a detached finlet (above characters true of all *Decapterus*); posterior end of upper jaw noticeably slanted anteroventrally; pectoral fins short, 58–72% of head length; straight part of lateral line with 18–39 scales and 24–40 scutes.

**Colour:** Metallic blue above, silvery below; small black blotch on margin of opercle near upper edge; dorsal fin lobe sometimes dark distally; other fins mostly pale.



Size: To 30 cm (FL)

## Decapterus macrosoma Bleeker, 1851

#### Local name(s): Pann Zin Ye Yet to.

Habitat: A schooling species occurring from 30 m to 170 m.

Fisheries: Purse seines, gillnets, bottom trawls.

Distinctive Characters: Posterior end of upper jaw concave above, rounded and produced below; pectoral fins short, 61-75% of head length, tip of appressed fins falling considerably short of a vertical line from 2<sup>nd</sup> dorsal fin origin; straight part of lateral line with 14-29 scales and 24-40 scutes; oral valve (membrane) at symphysis of upper jaw dusky or transparent.

Colour: Metallic blue above, silvery below; small black blotch on margin of opercle near upper edge; dorsal fin lobe sometimes dark distally; other fins mostly pale.

## Decapterus russelli (Rüppell, 1830)

Local name(s): Pann Zin Ka Lar.

Habitat: Coastal waters and on open banks in deeper waters down to 100 m.

Fisheries: Seines, gillnets, bottom trawls.

Distinctive Characters: Posterior end of upper jaw straight above, slightly concave and not noticeably slanted anteroventrally; pectoral fins short, 76.5-97% of head length, tip of appressed fins falling short of to slightly beyond a vertical line from 2<sup>nd</sup> dorsal fin origin; 10–14+30–39 gill rakers on 1st gill arch; straight part of lateral line with 0-4 scales and 30-40 relatively large scutes.

Colour: Bluish green above, silvery below; small black blotch or margin of opercle near upper edge; 2<sup>nd</sup> dorsal fin hyaline basally; other fins mostly hyaline (pelvic fins of adult males slightly dark).

#### Decapterus smithvanizi Kimura, Katahira & Kuriiwa, 2013

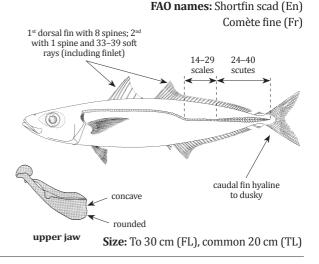
#### Local name(s): Pann Zin.

Habitat: A deep water schooling species.

#### Fisheries: Bottom trawls.

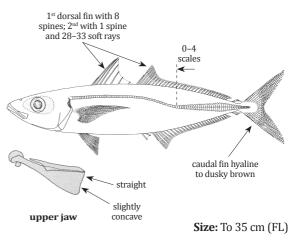
Distinctive Characters: Posterior margin of upper jaw straight or slightly concave; body depth 19.4-22.5% of SL; pectoral fins long, 25.7-30.6% of SL, tip of appressed fins usually extending beyond a vertical line through 2<sup>nd</sup> dorsal fin origin; opercular membrane without serrations; tip of upper jaw not hooked; curved part of lateral line with 54-62 cycloid scales; straight part of lateral line with 0-8 scales and 28-33 relatively large scutes.

Colour: Bluish pale black above, silvery white below; small black blotch or margin of opercle near upper edge; margins of both dorsal and pectoral fins, and dorsal finlet red; anal, pelvic fins, and ventral finlet pale white.

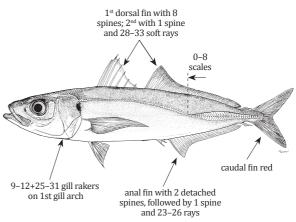


FAO names: Indian scad (En)

Comète indienne (Fr)



FAO names: Slender red scad (En)



## Elagatis bipinnulata (Quoy & Gaimard, 1825)

Local name(s): Nga Thet Tant.

**Habitat:** A pelagic species usually found at or near the surface, sometimes far offshore.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Upper jaw ending distinctly before eye; pectoral fins short, about 2 times in head length and about as long as pelvic fins; caudal fin deeply forked; lateral line with a slight anterior arch; no scutes; caudal peduncle grooves present.

**Colour:** Dark olive-blue or green above and white below; 2 narrow light blue or bluish white stripes along sides, with a broader olive or 1 yellowish stripe between them; fins dark white on olive-yellow tinge.

## Gnathanodon speciosus (Forsskål, 1775)

Local name(s): Ka la Ngu Shwe Zinn Kyar.

**Habitat:** Inshore, including rocky reefs, deep lagoons and seaward reefs.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Lip noticeably papillose and upper jaw strongly protractile; lobe of 2<sup>nd</sup> dorsal fin shorter.

**Colour:** Juveniles and young adults silvery to yellow with 7–11 black bands, usually alternating broad and narrow, the 1<sup>st</sup> band oblique through eye; upper margin of opercle black; all fins yellow; tips of caudal fin lobes black; bands fade in large adults and are replaced by a few patches or spots on sides; dark opercular spot also fades with age and body becomes yellow-green dorsally, pale yellow below.

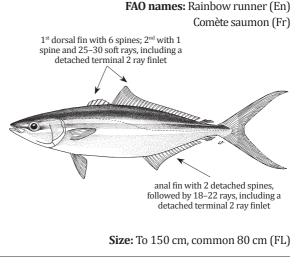
## Megalaspis cordyla (Linnaeus, 1758)

**Local name(s):**Pyi taw Thar, Da Ma Naing. **Habitat:** A pelagic coastal schooling species, usually near the surface; intolerant of turbid waters.

Fisheries: Gillnets, seines, bottom trawls.

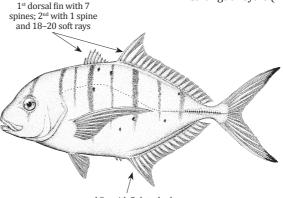
**Distinctive Characters:** Caudal peduncle strongly compressed with a marked medial keel; posterior part of dorsal and anal fins with 8–10 rays consisting of detached finlets; spiny dorsal fin moderately high, longest spine height about equal to length of soft dorsal fin lobe.

**Colour:** Head and body bluish grey to green dorsally, sides and belly silvery; large black opercular spot; dorsal and anal fins with upper half dusky; caudal fin dark, especially leading and trailing edges of fins.



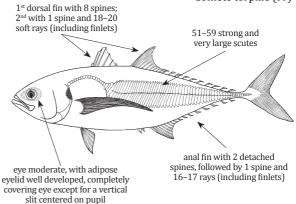
FAO names: Golden trevally (En)

Carangue royale (Fr)



anal fin with 2 detached spines, followed by 1 spine and 15–17 rays

#### FAO names: Torpedo scad (En) Comète torpille (Fr)



Size: To 120 cm (FL)

## Naucrates ductor (Linnaeus, 1758)

#### Local name(s): Hin Cho Khat.

Habitat: Pelagic in oceanic waters, often associated with sharks, rays, other large fishes and turtles. Fisheries: Gillnets.

Distinctive Characters: No scutes on caudal peduncle; a well developed lateral line; fleshy keel on each side of dorsal and ventral peduncle grooves.

**Colour:** Head dark: 5–6 dark broad bars on body and a similar bar at end of caudal peduncle; 3-6 bars extending through soft dorsal and anal fin membranes, and the bars persistent at all sizes; rest of body bluish, or light or dusky; white tips prominent on upper and lower caudal fin lobes and smaller white tips on 2<sup>nd</sup> dorsal and anal fin lobes; most fins dusky to dark.

## Parastromateus niger (Bloch, 1795)

#### Local name(s):Nga Moke Mae.

Habitat: Pelagic on the continental shelf from 15 m to 40 m, generally over muddy bottoms.

Fisheries: Gillnets, line gears, bottom trawls.

Distinctive Characters: Mouth terminal; pectoral fins long and falcate; lateral line very weakly arched anteriorly with junction of straight and curved parts below posterior 1/3 of dorsal fin; straight part of lateral line with 8-19 weak scutes, forming a slight keel on caudal peduncle.

Colour: Adults uniformly silvery grey to bluish brown (yellowish brown when deciduous scales are missing); fins with dark edges; young with dark vertical bars and long black jugular pelvic fins.

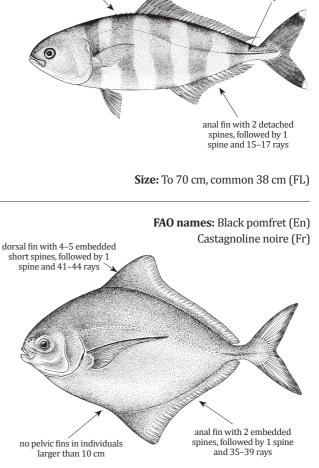
#### Scomberoides commersonnianus Lacepède, 1801

Local name(s): Nga Lett War Chauk Kywet Me'. Habitat: Reefs and offshore islands, usually in small groups.

Fisheries: Gillnets, line gears, bottom trawls.

Distinctive Characters: Body strongly compressed; no scutes; no caudal peduncle grooves; 8-15 (excluding rudiments) gill rakers on 1st gill arch.

Colour: Head and body dusky green to bluish dorsally, grey to silvery below; large individuals often golden especially ventrally; sides of adults with 5-8 large, plumbeous blotches above or touching lateral line, 1st two may intersect lateral line; dorsal and anal fins dusky to dark.



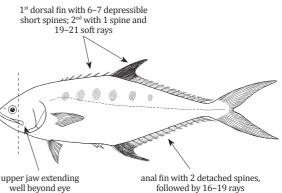
1st dorsal fin with 4-5 short spines; 2nd with 1

spine and 25-29 soft rays

Size: To 75 cm, common 20 cm (FL)

# FAO names: Talang queenfish (En)





fleshy keel

FAO names: Pilotfish (En) Poisson pilote (Fr)

followed by 16-19 rays

## Scomberoides lysan (Forsskål, 1775)

Local name(s):Nga Lett War Set Hnit Kywet Me'. Habitat: Shallow lagoons to offshore areas, from 2 m to 100 m.

Fisheries: Gillnets, line gears.

**Distinctive Characters:** Body strongly compressed; no scutes; no caudal peduncle grooves; 21–27 (excluding rudiments) gill rakers on 1<sup>st</sup> gill arch; scales on midbody below lateral line partially embedded and sharply lanceolate.

**Colour:** Adults with a double series of 6–8 dusky roundish blotches above and below lateral line; distal half of dorsal fin lobe heavily pigmented; anal fin lobe white or pale yellow; often interradial membrane of several anterior rays, black, especially in large individuals.

## Scomberoides tala (Cuvier, 1832)

**Local name(s):** Nga Lett War Shit Sin Kywet. **Habitat:** Usually in small schools near the surface in coastal waters.

Fisheries: Gillnets, line gears.

**Distinctive Characters:** Body strongly compressed; upper jaw extends slightly beyond margin of eye in adults; no scutes; no caudal peduncle grooves; 11–15 (excluding rudiments) gill rakers on 1<sup>st</sup> gill arch; scales on midbody below lateral line partially embedded and bluntly lanceolate.

**Colour:** Greenish grey dorsally, grey to silvery below; dorsal and anal fins dusky to dark and uniformly pigmented; pectoral fins yellow and pelvic fins white in adults.

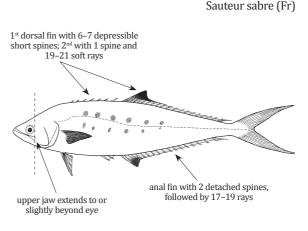
#### Scomberoides tol (Cuvier, 1832)

**Local name(s):** Nga Lett War Khun Hnit Kywet. **Habitat:** Usually in small schools near the surface in coastal waters.

Fisheries: Gillnets, line gears.

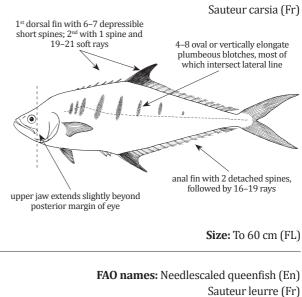
**Distinctive Characters:** Body strongly compressed; upper jaw not extending beyond posterior margin of pupil in adults; no scutes; no caudal peduncle grooves; 21–26 (excluding rudiments) total gill rakers on 1<sup>st</sup> gill arch; scales on midbody below lateral line partially embedded slender and needle-like.

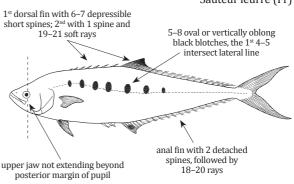
**Colour:** Body bluish dorsally, white ventrally; blotches faint or absent in juveniles; distal half dorsal fin lobe abruptly and heavily pigmented; anal fin lobe usually immaculate, white in life.



FAO names: Doublespotted queenfish (En)

FAO names: Barred queenfish (En)





Size: To 110 cm (FL)

## Selar boops (Cuvier, 1833)

**Local name(s):** Nga Kye Kann Myet Pyuu Gyi. **Habitat:** Continental shelf waters, common between 20 and 100 m

Fisheries: Gillnets, line gears.

**Distinctive Characters:** Like other species of *Selar*, eye very large, shorter than snout length and with a well-developed adipose eyelid completely covering eye except for a vertical slit centred on pupil; curved part of lateral line with 21–24 scales and 0–4 scutes; straight part with no anterior scales and 37–46 relatively large scutes.

**Colour:** Upper third of body and top of head bluish green to green; lower 2/3 of body and head silvery or whitish; a small elongated, blackish opercular spot on edge near upper margin; a narrow, yellowish stripe may be present from edge of opercle to upper part of caudal peduncle.



Local name(s):Nga Kye Kann Myet Pyuu.

Habitat: Inshore or shallow waters, but sometimes in deeper waters down to 170 m.

Fisheries: Gillnets, seines, bottom trawls.

**Distinctive Characters:** Adipose eyelid completely covering eye except for a vertical slit centered on pupil; scutes maximum height contained 2.1–2.9 in eye diameter; curved part of lateral line with 48–56 scales; no finlets.

**Colour:** Body and top of head metallic blue or bluish green; lower 2/3 of body and head silvery or whitish; small, elongated blackish opercular spot on edge near upper margin; a narrow yellowish stripe may be present from edge of opercle to upper part of caudal peduncle.

Selaroides leptolepis (Cuvier, 1833)

Local name(s): Myat San Kje A War Zin.

Fisheries: Gillnets, seines, bottom trawls.

m.

Habitat: Adults form large demersal schools over

soft bottom habitats at depths shallower than 50

**Distinctive Characters:** Adipose eyelid moderately developed on posterior half of eye; upper jaw strongly protractile with posterior end of jaw concave above, concave and produced below; edge of gill chamber smooth, without papillae; no finlets. **Colour:** Metallic blue above, silvery white below,

with a broad yellow stripe from upper margin of

eye to caudal peduncle; dorsal, anal, and caudal

fins pale to dusky yellow; pelvic fins white.

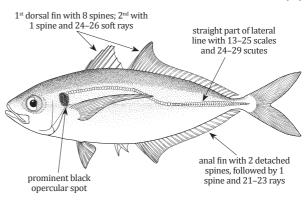
# at origin of 2nd dorsal fin 1111100 anal fin with 2 detached spines, followed by 1 spine and 19-21 rays large papilla lateral view of head (with gill chamber exposed) Size: To 24 cm (FL) FAO names: Bigeye scad (En) Sélar coulisou (Fr) 1st dorsal fin with 8 spines; 2nd with 1 spine and 24-27 soft rays iunction of curved and straight portions of lateral line positioned behind origin of 2<sup>nd</sup> dorsal fin anal fin with 2 detached spines, followed by 1 large spine and 21-23 rays papilla

1<sup>st</sup> dorsal fin with 8 spines; 2<sup>nd</sup> with 1 spine and 23–25 soft rays

lateral view of head (with gill chamber exposed)

Size: To 30 cm, common 25 cm (FL)

#### FAO names: Yellowstripe scad (En) Sélar à bande dorée (Fr)



#### Size: To 22 cm, common 15 cm (FL)

FAO names: Oxeye scad (En)

Sélar oeil de boeuf (Fr)

junction of curved and straight portions of lateral line positioned

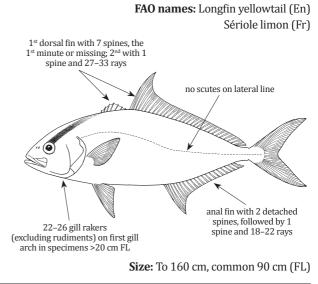
#### Seriola rivoliana Valenciennes, 1833

**Local name(s):** Nga Htaw Butt Myet Taung Zin. **Habitat:** Adults are pelagic and epipelagic, oceanic, rarely found in inshore waters.

Fisheries: Gillnets, line gears.

**Distinctive Characters:** In adults, length of dorsal fin lobe about 1.3–1.6 times longer than pectoral fins; upper jaw very broad posteriorly (with very broad supramaxiila), extending to below posterior midpoint of pupil no scutes; caudal peduncle grooves present.

**Colour:** Silvery blue-green to silvery olive dorsally, shading to silvery ventrally; a midlateral yellowish stripe usually present on body; an oblique, dark yellowish brown band from nape through eye to edge of upper lip; fins yellowish grey; juveniles with a dark nuchal bar and 6 dark body bars.



## Seriolina nigrofasciata (Rüppell, 1829)

**Local name(s):** Nga Htaw Butt Kyaw Me' Zin. **Habitat:** Solitary, mainly in offshore reefs on the continental shelf from 20 m to 150 m.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Upper jaw broadly rounded posteriorly (with moderately slender supramaxilla), usually extending to below posterior margin of eye; no scutes; caudal peduncle grooves present.

**Colour:** Head and body bluish grey to black dorsally, white to dusky below; young with 5–7 dark oblique bands and blotches on upper body that fade with age; spiny dorsal fin black; caudal and pelvic fins yellowish brown to black.

#### Trachinotus africanus Smith, 1967

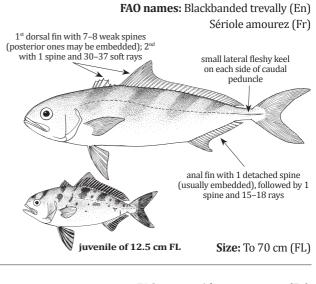
#### Local name(s): ?????

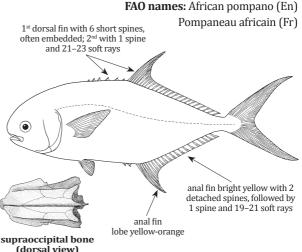
**Habitat:** Adults inhabit coastal areas with reefs or rocky outcrops; juveniles in sheltered bays.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Profile of snout broadly rounded; tongue with a narrow patch of teeth, persisting to about 50 cm FL; supraoccipital bone of skull thin and blade-like in adults; no scutes or caudal peduncle grooves (true of all *Trachinotus* species).

**Colour:** Adults bluish dorsally, ventral half of body silvery, the 2 areas separated by an indistinct orange-pink stripe; 2<sup>nd</sup> dorsal fin base and fin lobe dusky, distal half of fin yellow; caudal fin, pectoral, and pelvic fins yellowish; juveniles silvery with yellow hues, dorsal and anal fin lobes dusky.





Size: To 83 cm (FL)

## Trachinotus baillonii (Lacepède, 1801)

Local name(s): Nga Htaw Butt Ngar Kywet.

Habitat: Surge zone along sandy beaches and near surface waters of clear lagoon and seaward reefs. **Fisheries:** Gillnets, line gears.

**Distinctive Characters:** Dorsal fin lobe shorter than anal fin lobe in specimens larger than about 25 cm FL; pelvic fins relatively short;

**Colour:** Sides with 1–5 small black spots (absent on fish smaller than about 10–15 cm FL); all spots typically equal to or smaller than eye diameter and with half of spot below lateral line; caudal, 2<sup>nd</sup> dorsal and anal fins grey to black, lobes usually darker; pectoral fins pale to dusky yellow; pelvic fins pale yellow to orange-yellow.

Trachinotus blochii (Lacepède, 1801)

**Local name(s):** Nga Htaw Butt Hnar To. **Habitat:** Juveniles in sandy inshore and estuarine areas; large adults off seaward reefs.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Profile of snout broadly rounded; tongue toothless (except 2–3 slender teeth rarely on small specimens); supraoccipital bone of skull thin and blade-like in adults (easily observed by simple dissection along midline of nape).

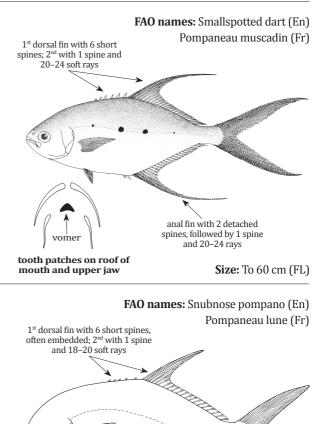
**Colour:** Head and body generally blue-grey above, paler below; large adults sometimes with most of body golden-orange, especially snout and lower half of body; 2<sup>nd</sup> dorsal fin dark, lobe of fin dusky orange; caudal fin dark to dirty orange, leading edges darkest; juveniles silvery with pale fins except lobes of median fins and anterior half of pelvic fins brownish to dirty orange.

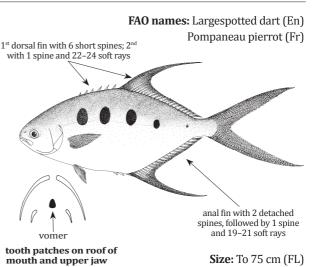
## Trachinotus botla (Shaw, 1803)

Local name(s): Nga Htaw Butt. Fisheries: Gillnets, line gears.

**Distinctive Characters:** Dorsal fin lobe usually longer than anal fin lobe in specimens larger than about 25 cm FL; pelvic fins relatively long, their length contained 1.5–1.7 in pectoral fin length in specimens larger than about 25 cm FL.

**Colour:** Sides with 1–5 large plumbeus spots (absent on fish smaller than about 10–13 cm FL) on a longitudinal row near lateral line;  $2^{nd}$  dorsal and anal fins black to blue-black, the lobes usually darker; caudal fin dusky with leading edges and most of lobes blue-black; pectoral fins pale; upper 2/3 of body sometimes dark.





anal fin lobe yellow

with a brownish

anterior margin

sopraoccipital bone

(dorsal view)

anal fin dusky to dirty

orange with 2 detached

spines, followed by 1 spine

and 16-18 rays

Size: To 70 cm (FL)

FAO names: Longrakered trevally (En)

## Ulua mentalis (Cuvier, 1833)

390

Local name(s): Zar Gyan Hlar Phyu.

Habitat: Inhabits shallow coastal waters. Fisheries: Gillnets, line gears.

**Distinctive Characters:** Body strongly compressed; dorsal profile more strongly convex than ventral, lower jaw becoming prominent in large adults, with the angle of "chin" projecting beyond upper jaw; straight part of lateral line with 0–5 scales followed by 26–38 scutes; breast naked ventrally to behind pelvic fins; laterally, naked area of breast extends diagonally to naked base of pectoral fins.

**Colour:** Head and body blue-green dorsally, silvery below; dark blotch on upper margin of opercle in large specimens; spinous dorsal and caudal fins dusky to black; second dorsal and anal fins pale green; juveniles with 7–8 dark bands on body.

## Uraspis helvola (Forster, 1801)

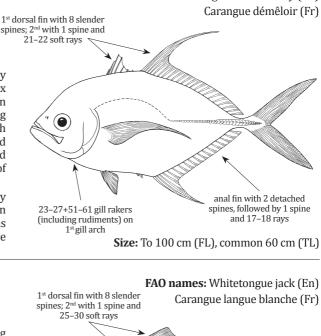
Local name(s): Zar Gyan Kyaw Kywet Gyi.

**Habitat:** A benthic-pelagic species inhabiting shelf waters along continental coasts and around islands.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Tongue, roof and floor of mouth white or cream-coloured, the rest blue-black; curved part of lateral line with 48–66 scales.

**Colour:** Body and head dark (leaden blue–black or dusky) in fish of 30 cm and larger (FL); juveniles with 6–7 very wide dark bars with narrow pale interspaces; traces of nuchal and opercular bands persisting to about 30 cm (FL); caudal fin pale yellowish dusky with trailing edges and tips of lobes blackish



anal fin with 2 detached scaleless area head (frontal view)

Size: To 46 cm (FL), common 20 cm (TL)

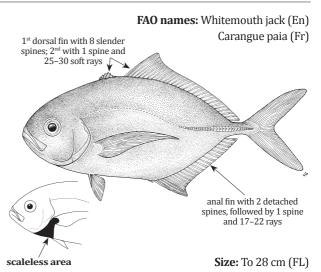
## Uraspis uraspis (Günther, 1860)

Local name(s): Zar Gyan Pa Sat Phyu.

**Habitat:** Adults occur in the continental shelf; forms schools in depths from 50 to at least 130 m. **Fisheries:** Caught mainly with gillnets.

**Distinctive Characters:** Tongue, roof and floor of mouth white or cream-coloured, the rest blue-black; curved part of lateral line with 61–82 scales.

**Colour:** Body and head dusky to black dorsally, shading to dusky or pale grey ventrally; juveniles and occasionally adults with 6 dusky or blue-black bars (bars evident on specimens as large as 22.5 cm fork length and absent on specimens as small as 12 cm) caudal fin pale to dusky with trailing edges dusky.



## CORYPHAENIDAE

Dolphinfishes

## Coryphaena equiselis Linnaeus, 1758

## Local name(s): A Mouk Shae Nga.

**Habitat:** Pelagic, inhabiting open waters but also approaching the coast.

Fisheries: Line gears, driftnets.

**Distinctive Characters:** A single dorsal fin extending from just behind eye almost to caudal fin, with 52-59 soft rays; pectoral fins about 1/2 of head length; caudal fin deeply forked.

**Colour:** Back brilliant metallic blue-green in life, fading rapidly after death to green tinge; sides silvery with a golden sheen and numerous black spots; dorsal fin dark; juveniles have entire margin of caudal fin white; pelvic fins not pigmented.

Coryphaena hippurus Linnaeus, 1758

Habitat: Pelagic, inhabiting open waters but also

**Distinctive Characters:** A single dorsal fin extending from above eye almost to caudal fin with 58–66 rays; pectoral fins more than 1/2 of head

Colour: Back brilliant metallic blue-green in life,

fading after death to grey with a green tinge; sides

silvery with a golden sheen and rows of dark spots or golden blotches; dorsal and anal fins black, the

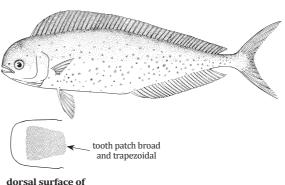
Local name(s): A Mouk Shae Nga.

Fisheries: Line gears, driftnets.

length; caudal fin deeply forked.

approaching the coast.

latter with a white edge.



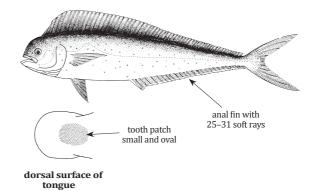
#### lorsal surface tongue

Size: To 127 cm, common 50 cm (TL)

FAO names: Pompano dolphinfish (En)

FAO names: Common dolphinfish (En)

Coryphène commune (Fr)



Size: To 210 cm, common 100 cm (TL)

# MENIDAE

## Moonfishes

## Mene maculata (Bloch & Schneider, 1801)

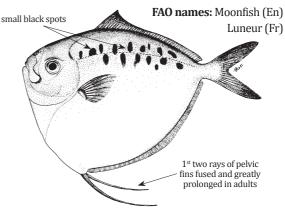
Local name(s): Ta Yoke Dah; Nga Dhama.

**Habitat:** Deeper coastal waters, around coral reefs, sometimes in estuaries.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Upper jaw protrusible; dorsal fin long and low; anal fin very long and low, with very short rays and overgrown with skin in adults, so that only their widely branched tips are visible; pectoral fins shorter than head, with 15 soft rays; caudal fin forked.

Colour: Dark blue dorsally and silvery white below.



#### Size: To 30 cm, common 20 cm (TL)

## LEIOGNATHIDAE

Ponyfishes - Slipmouths - Tooth-ponies

#### Aurigequula fasciata (Lacepède, 1803)

Local name(s): Waing Ni Pauk; Nga Dinga Kyaw Zin. Habitat: Coastal shallow waters near bottom down to 40 m.

Fisheries: Gillnets, cast nets, bottom trawls, seines. Distinctive Characters: Body deep and compressed, the back more strongly arched than anterior part of belly; body depth 1.7-2 in SL; head and breast scaleless; teeth small and weak; 2nd dorsal spine very long and filamentous.

Colour: Body silvery; about 11 widely spaced, dark vertical lines on back superimposed by a few vellow blotches and fading gradually towards lower sides; axil of pectoral fins yellow.

Aurigequula longispina (Valenciennes, 1835)

Local name(s): Waing Ni Pauk; Nga Dinga Su Taung Shae.

Habitat: Coastal shallow waters near bottom down to 40 m.

Fisheries: Gillnets, cast nets, bottom trawls, seines. Distinctive Characters: Body oval, compressed and deep, its depth 1.7-2 in SL; head and breast scaleless; teeth small and weak; 2<sup>nd</sup> dorsal and anal fin spines very long and filamentous.

Colour: Belly more silvery than back which shows a few faint, unevenly spaced and horizontally elongate blotches, a few blotches below lateral line; tip of snout grey; dorsal and anal fins variably vellow, particularly on margins; caudal fin faint yellow with a more intense yellow blotch on lower lobe.

#### Deveximentum hanedai (Mochizuki & Hayashi, 1989)

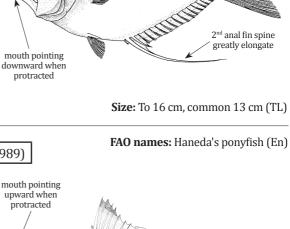
Local name(s): Waing Ni Pauk; Nga Dinga.

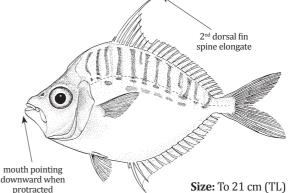
Habitat: Coastal waters above muddy sand bottoms to depths of 40 m.

Fisheries: Caught mainly in bottom trawls

Distinctive Characters: Body oval, deep and compressed, its depth 1.9–2.2 in SL; head strongly concave above eve; body scales small, 33-42 rows between bases of pectoral and pelvic fins; 22-26 total gill rakers on 1st gill arch; lateral line terminating below end of dorsal fin.

Colour: Belly silvery, back greenish to brownish, with a series of about 9 columns of dark blotches, spots, and horizontal bars extending to midline of sides; a black, curved band from lower margin of eye to posterior angle of lower jaw; dorsal fin membrane black at tip of leading spines.

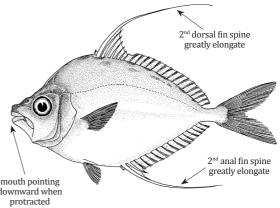


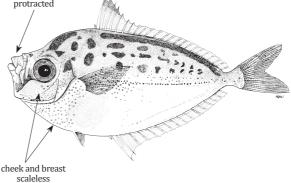


Size: To 21 cm (TL)

FAO names: Longspine ponyfish (En)

FAO names: Striped ponyfish (En)





## Deveximentum insidiator (Bloch, 1787)

Local name(s): Waing Ni Pauk; Nga Dinga.

Habitat: Demersal in coastal shallow waters down to 50 m.

Fisheries: Caught mainly in bottoms trawls.

Distinctive **Characters:** Body oval and compressed, its depth 1.6-2.5 in SL: head strongly concave above eye; body scales small, 22-28 rows between bases of pectoral and pelvic fins; cheeks scaleless; breast, including isthmus, without scales ventrally; 24-29 total gill rakers on 1st gill arch; lateral line terminating below end of dorsal fin.

**Colour:** Back greenish to brownish, with 11–15 dark broken vertical bars and spots extending to little below lateral line; a black, curved band from lower margin of eye to posterior angle of lower jaw; caudal fin partly yellow; dorsal fin membrane black at tip of leading spines.

#### Deveximentum megalolepis (Mochizuki & Hayashi, 1989)

Local name(s): Waing Ni Pauk; Nga Dinga. Habitat: Demersal in coastal shallow waters down to 50 m.

Fisheries: Caught mainly in bottoms trawls.

Distinctive Characters: Body oval and compressed, its depth 1.6-1.5 in SL; head strongly concave above eye; body scales comparatively much larger than in other species in the genus, 9-11 rows between bases of pectoral and pelvic fins; 21-25 total gill rakers on 1st gill arch; lateral line terminating below last few rays of soft dorsal fin.

**Colour:** Silvery, with dark markings forming about 10 irregular "bars" on upper half sides, anteriorly these consist of columns of short bars and spots; prominent curved black band running from lower margin of eve to posterior angle of lower jaw; dorsal fin membrane black at tip of leading spines.

#### Equulites elongatus (Günther, 1874)

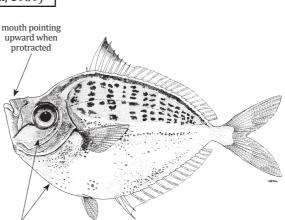
Local name(s): Waing Ni Pauk; Nga Dinga Su Taung Shae.

Habitat: Coastal inshore waters at depths of 30-130 m.

Fisheries: Caught mainly with bottom trawls.

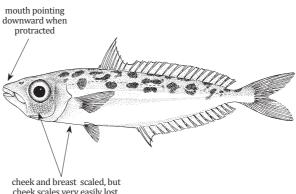
Distinctive Characters: Body less compressed. elongate, very slender, not deeper than head length, its depth more than 3.3 in SL; ventral profile more convex than dorsal profile.

Colour: Body silvery, back with irregular green and dark marbling; horizontal yellow band at midheight of spinous part of dorsal fin, most of margin of soft part orange; underside of pectoralfin base with minute, dark dots; anal fin between second and third spines yellow, as also margin of anterior part of fin; males with bluish longitudinal stripe along side of belly.



cheek and breast, including isthmus, Size: To 7 cm, common 5 cm (TL) fully scaled

FAO names: Elongate ponyfish (En)



cheek scales very easily lost, leaving no trace of scale pockets

393

FAO names: Pugnose ponyfish (En) Sapsap boxeur (Fr)

Size: To 11.5 cm, common 8 cm (TL)

FAO names: Bigscaled ponyfish (En)

mouth pointing

upward when

protracted

cheek and breast scaleless

## *Equulites leuciscus* (Günther, 1860)

Local name(s): Waing Ni Pauk / Nga Dinga Lone Thwe'.

**Habitat:** Coastal shallow waters near bottom down to 40 m.

Fisheries: Gillnets, cast nets, bottom trawls.

**Distinctive Characters:** Body only moderately deep, compressed, its depth 2–3 in SL; head scaleless; breast scaled; teeth small and weak; 2<sup>nd</sup> dorsal fin spine (sometimes also 2<sup>nd</sup> anal fin spine) very long and filamentous.

**Colour:** Belly silvery, back with irregular, partly semi-circular, greyish green vermiculations; membrane between dorsal fin spines yellow and mid-height edge of soft part of dorsal fin also yellow, superimposed with light grey; anal fin of similar colour to dorsal; posterior margin of caudal fin yellowish.

*Equulites oblongus* (Valenciennes, 1835)

Local name(s): Waing Ni Pauk / Nga Dinga.

**Habitat:** Coastal shallow waters down to at least 20 m.

Fisheries: Gillnets, cast nets, bottom trawls.

**Distinctive Characters:** Body moderately elongate and compressed, its depth 2.5–2.9 in SL; snout pointed; head scaleless, but scales present on breast; teeth small and weak.

**Colour:** Silvery grey dorsally with numerous, short, dark vermiculations extending a short distance below lateral line; anterior edge of snout blackish; borders of dorsal and anal fins yellow; caudal fin yellowish grey; axil of pectoral fins blackish.

#### Eubleekeria jonesi (James, 19710)

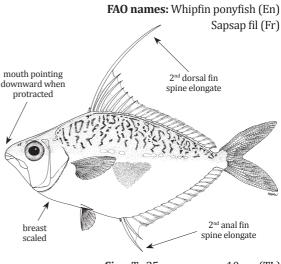
Local name(s): Waing Ni Pauk / Nga Dinga.

**Habitat:** Usually found on muddy bottoms in coastal waters.

Fisheries: Gillnets, cast nets, bottom trawls.

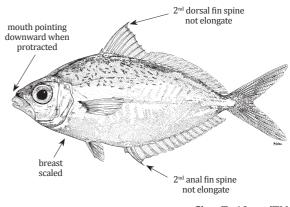
**Distinctive Characters:** Body deep, ovate, strongly compressed; mouth with small slender teeth on both jaws; ventral profile of lower jaw almost straight; lower margin of eye located above level of mouth gape; cheek naked; breast almost completely scaled; semicircular naked area on nape.

**Colour:** Head and body almost uniformly silverywhite; tip of snout dark; lateral line scales prominent yellow but easily fade out; distal half of fin membranes between 2nd and 5th spines of dorsal fin with a somewhat pale black blotch.



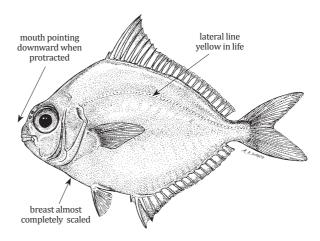
Size: To 25 cm, common 10 cm (TL)

FAO names: Oblong ponyfish (En)



Size: To 10 cm (TL)

FAO names: Yellow line ponyfish (En)

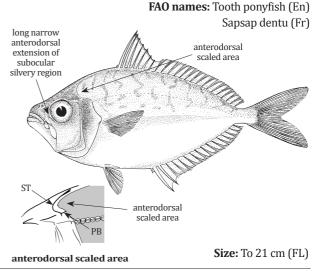


#### Gazza minuta (Bloch, 1795)

**Local name(s):** Waing Ni Pauk; Nga Dinga. **Habitat:** Coastal waters down to 40 m.

Fisheries: Gillnets, cast nets, bottom trawls.

**Distinctive Characters:** Body oval and somewhat compressed, its depth 28.3–46.5% of SL; dorsal and ventral profiles equally convex; mouth pointing forward when protracted; head and breast scaleless; distinct caniniform teeth in both jaws; anterodorsal scaled area reaching to tip of posterior branch (PB) of supratemporal canal (ST). **Colour:** Silvery, back greyish, with dark yellow irregular marks extending to below lateral line; soft part of dorsal, pectoral and pelvic fins colourless; anterior part of anal yellow; underside of pectoral fin bases and snout with black dots; spiny dorsal fin black-edged.



Gazza rhombea Kimura, Yamashita & Iwatsuki, 2000

FAO names: Rhomboid toothpony (En)

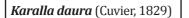
Local Name(s): Waing Ni Pauk; Nga Dinga.

**Habitat:** Occurs over sandy or muddy bottoms in brackish or coastal waters of less than ca. 50 m depth

Fisheries: Gillnets, cast nets, bottom trawls.

**Distinctive Characters:** Similar to *Gazza minuta* but body rhomboid in adults, its depth 34.2–51.8% of SL; anterodorsal scaled area not reaching to a vertical through tip of posterior branch (PB) of supratemporal canal (ST).

**Colour:** Head and body bluish dorsally, brilliant silvery white ventrally; snout dusky; anal fin base yellow; pectoral fin pale yellow with faintly bluish base; caudal fin pale yellow with faintly dark margin; pelvic fins colourless.



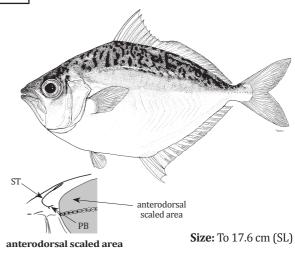
Local Name(s): Waing Ni Pauk; Nga Dinga.

**Habitat:** Coastal shallow waters in schools near bottom up to 40 m.

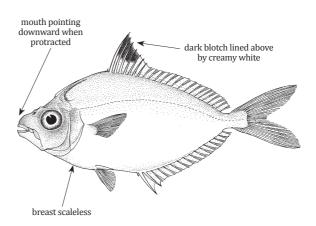
Fisheries: Shore seines, bottom trawls.

**Distinctive Characters:** Body rhomboid and compressed, its depth 2–2.5 in SL; dorsal and ventral profiles equally convex; head and breast scaleless; teeth small and weak.

**Colour:** Back grey-greenish, belly silvery; black dots all over ventral half of body; a golden hue on dorsal half of body and on head; very faint vertical lines above lateral line which disappear completely with increasing age; tip of snout black; distal half of anal fin golden yellow from 2<sup>nd</sup> spine onwards; broad yellow band over the lateral line, which disappears gradually on preservation.



FAO names: Goldenstripe ponyfish (En)



#### Karalla dusssumieri (Valenciennes, 1835)

Local Name(s): Waing Ni Pauk; Nga Dinga.

**Habitat:** Coastal shallow waters near bottom in 10-40 m depth.

Fisheries: Caught mostly with bottom trawls.

**Distinctive Characters:** Body moderately slender and compressed, its depth 2–2.3 in SL; snout pointed slightly longer than eye diameter dorsal profile more strongly arched than ventral; head scaleless but conspicuous scales on breast scaleless, pelvic fins long, reaching to 1st anal spine.

**Colour:** Back back greenish to brownish, belly silvery, fins yellowish; sides of body with grey, wavy, vertical lines descending from back to a little below lateral line; an elongate yellow spot on abdomen half-way between bases of pectoral fins and spinous anal fin.

#### Leiognathus equula (Forsskål, 1775)

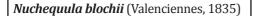
Local name(s): Waing Ni Pauk; Nga Dinga.

**Habitat:** Coastal shallow waters near bottom down to 40 m.

Fisheries: Gillnets, cast nets, bottom trawls.

**Distinctive Characters:** Body very deep, compressed, with a strongly humped back; body depth 1.7–1.9 in SL; head and breast scaleless.

**Colour:** Adults, back greyish, belly silvery, and close-set faint bars on back and sides; a dark brown saddle on caudal peduncle; axil of pectoral fins grey to black; margin of soft dorsal fin black. In juveniles (5–7 cm TL), thin, closely arranged, grey vertical lines descending from back to about midheight; membrane between anal fin spines conspicuously yellow.



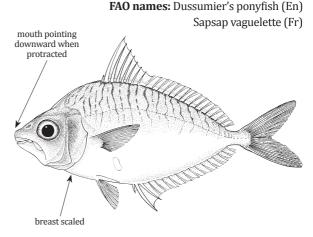
Local name(s): Waing Ni Pauk; Nga Dinga.

**Habitat:** Inhabits coastal inshore waters on bottoms of muddy sand at depths of 10 to 90 m; enters estuaries.

Fisheries: Gillnets, cast nets, bottom trawls.

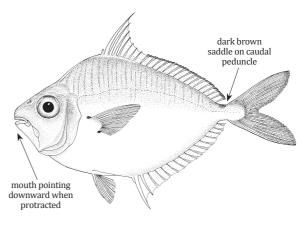
**Distinctive Characters:** Body somewhat elongate and compressed, its depth 35–45% of SL; snout rounded; breast scaled; cheek naked; anteroventral profile of the lower jaw almost straight; 2<sup>nd</sup> dorsal and anal fin spines not elongated; small villiform teeth in both jaws, the ones on upper jaw strongly recurved (true of all *Nuchequula* species).

**Colour:** Head and body almost uniformly silver; snout dusky; four horizontal rows of dark blotches or broken lines dorsolaterally on body, the uppermost row along dorsal fin base, the third on lateral line; dorsal, anal, caudal, and pectoral fins yellowish.



Size: To 14 cm, common 11 cm (TL)

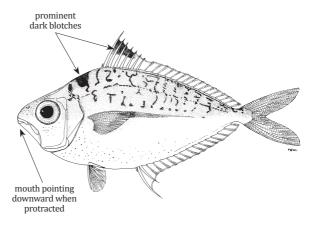
FAO names: Common ponyfish (En)



Size: To 28 cm, common 20 cm (TL)

FAO names: Twoblotch ponyfish (En)

Sapsap à deux taches (Fr)



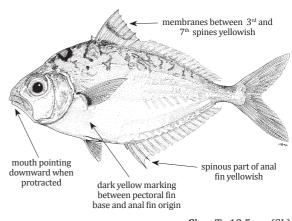
#### Nuchequula gerreoides (Bleeker, 1851)

#### FAO names: Decorated ponyfish (En)

Local name(s): Waing Ni Pauk; Nga Dinga.

Habitat: Found in coastal waters. Enters estuaries. Fisheries: Gillnets, cast nets, bottom trawls.

**Distinctive Characters:** Body deep, oval and compressed, its depth 40–53% of SL; snout pointed; cheek and breast scaleless; anterior dorsolateral surface of the body almost completely scaled; anteroventral profile of the lower jaw strongly concave; 2<sup>nd</sup> dorsal and anal fin spines not elongated. **Colour:** Head and body almost uniformly silver, sometimes many tiny black spots scattered ventrolaterally on body; a black blotch distally on the spinous dorsal fin membrane; pectoral fin axil light brown; distal part of soft anal fin yellowish.



Size: To 12.5 cm (SL)

#### *Nuchequula longicornis* Kimura, Kimura & Ikejima 2008

Local name(s): Waing Ni Pauk; Nga Dinga. Habitat: Found in coastal waters.

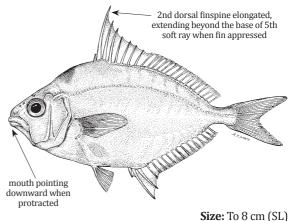
Fisheries: Gillnets, cast nets, bottom trawls.

**Distinctive Characters:** Body deep, oval, compressed; dorsal and ventral profiles equally convex; mouth protruding downward; a narrow band of small, slender, villiform teeth in both jaws; minute, sparse, slender projections on the upper oral valve; cheek naked; no naked area on nape; breast naked; 2nd dorsal fin spine elongated; 2nd anal fin spine not elongated.

**Colour:** Body almost uniformly silver; a distinct dark blotch on the nape; a yellow marking on the abdomen between base of pectoral fin and origin of anal fin.

#### Photolateralis stercorarius (Evermann and Seale, 1907)

FAO names: Longspine ponyfish (En)



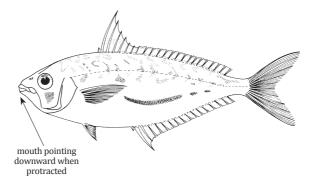
FAO names: Slender ponyfish (En)

#### Local name(s): Waing Ni Pauk; Nga Dinga.

**Habitat:** Coastal inshore waters over muddy bottoms especially around mangrove areas to depths of 50 m; juveniles at depths of 1-10 m.

**Fisheries:** Bottom trawls, gillnets, beach seines. **Distinctive Characters:** Body elongate, moderately compressed, its depth 2.8–3.6 in SL; dorsal and ventral profiles smoothly convex, slender but deeper than head length; cheeks scaly below eye (scales deciduous but their pockets visible); breast scaly.

**Colour:** Body silvery; back with irregular green and dark marbling; front of dorsal fin with a horizontal yellow band, most of margin of hind part orange; axil of pectoral fin with minute dark dots or dusky (covered by fin); anal fin between 2<sup>nd</sup> and 3<sup>rd</sup> spines yellow, as also margin of anterior part of fin; males with a bluish longitudinal stripe along sides just below midline.



#### FAO names: Golden ponyfish (En)

#### Photopectoralis aureus (Abe & Haneda, 1972)

Local name(s): Waing Ni Pauk; Nga Dinga.

**Habitat:** Lives in deeper offshore coastal waters at depths greater than 70 m and down to 140 m.

Fisheries: Bottom trawls, seines.

**Distinctive Characters:** Body only moderately deep and compressed, its depth 2.3–2.9 in SL; ventral profile much more convex than dorsal profile; single row of uniform uniform teeth in each jaw, no canines.

**Colour:** Silvery upper half with irregular greybrown blotches and marbling; in fresh specimens large gold luminous organ around esophagus; outer half or peak of spinous part of dorsal fin pale yellow, margin of spinous part edged in black; other fins colourless.

#### Photopectoralis bindus (Valenciennes, 1835)

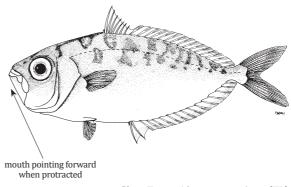
Local name(s): Tiklo, Kandairi, Paychari (Sin); Mit, Chiragho, Gar-chum (Bal).

**Habitat:** Inhabits coastal inshore waters on bottoms of muddy sand at depths of 10 to 160 m.

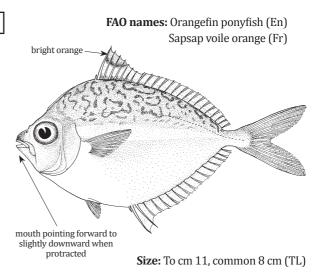
**Fisheries:** Gillnets, cast nets, bottom trawls, seines. **Distinctive Characters:** Body deep and strongly

compressed, its depth 1.8–1.9 in SL; ventral profile at least as equally convex as dorsal profile; single row of uniform conical teeth in each jaw.

**Colour:** Body silvery, with short dark vermiculations on back; tip of snout, head, and ventral half of body with grey dots; spinous part of dorsal fin black at 1/2 height, above which the membrane between second and fifth spines bears a bright orange blotch which turns yellow on preservation in formalin.



Size: To cm 10, common 6 cm (TL)



#### **BRAMIDAE** Pomfrets – Ocean breams

#### Brama dussumieri Cuvier, 1831

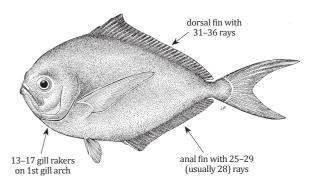
**Local name(s):** Myet Lone Sein Ye Net Nga Moke. **Habitat:** Pelagic in upper oceanic waters and common throughout range.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Body very deep, very compressed; forehead slightly arched; distance from pectoral fin base to pelvic fin base less than 12.5% in SL; 60–68 scales in longitudinal series; lateral line absent or scarcely visible.

**Colour:** Uniform silvery blue, slightly darker dorsally; underside of pectoral fin base pale or dusky; vertical fins dark; pectoral and pelvic fins translucent.

FAO names: Lesser bream (En) Castagnole mignonne (Fr)



398

#### Brama orcini Cuvier, 1831

Local name(s): Ye Net Nga Moke.

**Habitat:** Shallow, epipelagic pomfret occurring primarily in the vicinity of land masses.

**Fisheries:** Taken incidentally as bycatch of small-scale, traditional line fisheries.

**Distinctive Characters:** Body very deep, very compressed, its depth 49–68% of SL; forehead slightly arched; distance from pectoral fin base to pelvic fin base 13.3–16.6% of SL; 48–57 scales in longitudinal series; lateral line complete.

**Colour:** Uniform brownish or silvery, slightly darker dorsally; underside of pectoral fin base black; vertical fins dark; pectoral and pelvic fins translucent.

**Remarks:** Needs to be confirmed in Myanmar waters.

#### Brama sp.

Local name(s): Ye Net Nga Moke.

Habitat: Known from 379 m depth.

Fisheries: Collected with bottom trawl.

**Distinctive Characters:** Body depth 39.4–39.8 % of SL; forehead slightly arched; distance from pectoral fin base to pelvic fin base 10.7–11% of SL; ?? scales in longitudinal series; lateral line complete with 54 scales.

**Colour:** Uniform silvery grey darker dorsally; pectoral fin base blackish; a blackish blotch at upper edge of opercle; vertical fins dark; pectoral and pelvic fins translucent.

**Remarks:** An undescribed species closely allied to *Brama pauciradiata* Moteki, Fujita and Last, 1995, which is presently being described by Last and Psomadakis.

#### Taractichthys steindachneri (Döderlein, 1883)

#### Local name(s): Ye Net Nga Moke.

Habitat: Occurs along the shelf edge.

Fisheries: Caught mainly with gillnets.

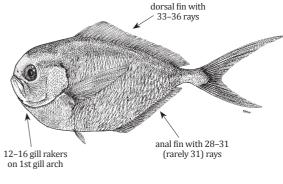
**Distinctive Characters:** Anterior lobes of dorsal and anal fins high, but changing in shape and height with growth; adults without lateral line; interpelvic space distinctly convex, deep transverse grooves at origins of caudal fin lobes; upper lip free, not connected to snout near anterior nostril; 34–40 scales in longitudinal series; 21–29 predorsal scales.

**Colour:** Body uniform dark grey; caudal fin with a posterior white margin

**Remarks:** Needs to be confirmed in Myanmar waters.

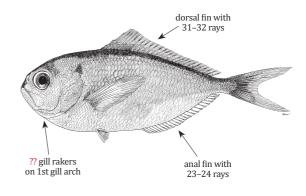
1 10 ...

FAO names: Bigbelly pomfret (En)

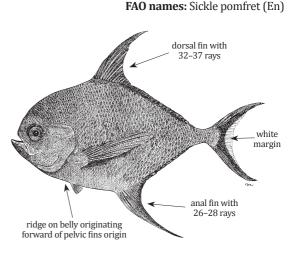


Size: To about 30 cm (SL)

FAO names: Andaman pomfret (En)



Size: To about 11 cm (SL)



Size: To 60 cm (TL)

#### EMMELICHTHYDAE

Rovers – Rubyfishes

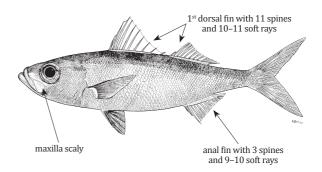
#### Erythrocles schlegelii (Richardson, 1846)

Local name(s): Nga Ni Lay.

Habitat: Inhabits the continental shelf area. Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Dorsal fin divided to base, but no distinct gap between spiny and soft-rayed fins; upper jaw very protrusible with poorly developed teeth; dorsal and anal fins with a basal scaly sheath; fleshy protuberance on rear margin of gill cavity; adults with low keel on mid-lateral region of caudal peduncle.

**Colour:** Reddish brown dorsally, silvery pink on sides and ventrally; lips and caudal fin red; remaining fins with red rays and translucent membranes; juveniles with 4–6 dark bars on body. FAO names: Japanese rubyfish (En)



Size: To 72 cm (TL)

#### LUTJANIDAE

Snappers - Jobfishes

#### Aphareus furca (Lacepède, 1801)

Local name(s): Nga Parr Ni Thwar Thaye.

Habitat: Solitary or in groups in inshore coral reefs of clear lagoons and seaward reefs, down to 122 m. Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Lower jaw protruding; anal fin with 3 spines and 8 soft rays; maxilla without scales; interorbital region flat; teeth in jaws minute; roof of mouth toothless; membranes of dorsal and anal fins without scales; 71–74 tubed lateral line scales.

**Colour:** Silvery purplish brown dorsally, light silvery bluish grey ventrally; lower jaw silvery; vertical edge of opercle and preopercle blackish; median fins yellow to yellowish brown.

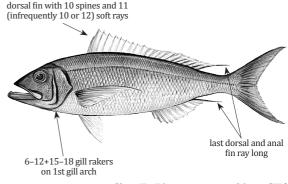
#### Aphareus rutilans Cuvier, 1830

Local name(s): Nga Parr Ni Lein Maw Yaung. Habitat: Reef areas from 10 m to 250 m. Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Lower jaw protruding; anal fin with 3 spines and 8 soft rays; maxilla without scales; interorbital region flat; teeth in jaws minute (disappearing with age); roof of mouth toothless; membranes of dorsal and anal fins without scales; 69–75 tubed lateral line scales. **Colour:** Blue-grey or mauve to overall reddish; margin of maxilla black; in some specimens, at least, inside of mouth, gill chamber, and gills shining silver; fins yellowish to reddish except pelvic and anal fins sometimes whitish.

FAO names: Small toothed jobfish (En)

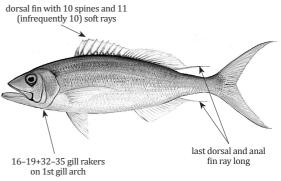
Vivaneau tidents (Fr)



Size: To 70 cm, common 30 cm (TL)

#### FAO names: Rusty jobfish (En)

Vivaneau rouillé (Fr)



400

#### Aprion virescens Valenciennes, 1830

#### Local name(s): Nga Parr Ni Sein Yaung.

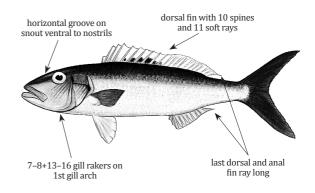
**Habitat:** Shore reef areas, open waters, deep lagoons channels, down to 180 m.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Mouth terminal; jaws about equal; pectoral fins short; maxilla without scales; interorbital region flat; teeth in both jaws in bands, with strong canines anteriorly; membranes of dorsal and anal fins without scales; anal fin with 3 spines and 8 soft rays; 48–50 lateral line scales.

**Colour:** Dark green to blue or green; a black area often present at base of last 5 interspiny membranes of dorsal fin.

#### FAO names: Green jobfish (En) Vivaneau job (Fr)



Size: To 110 cm, common 90 cm (TL)

#### Etelis carbunculus Cuvier, 1828

Local name(s): Nga Parr Ni Pada Mya Yaung. Habitat: Rocky bottoms from 90 m to 400 m. Fisheries: Gillnets, line gears.

**Distinctive Characters:** Upper and lower jaws with conical teeth; 1 to several enlarged canines on each side of both jaws; vomer and palatines with teeth; dorsal deeply notched between spinous and soft portions; maxilla with scales; interorbital region flattened; caudal fin forked, the lobes relatively short (25–30% of SL) compared to other *Etelis*; membranes of dorsal and anal fins without scales; anal fin with 3 spines and 8 soft rays; 48–50 lateral line scales.

**Colour:** Mainly pink to red, becoming white on lower sides and belly.

#### Etelis coruscans Valenciennes, 1862

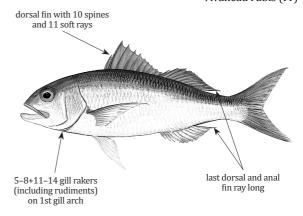
**Local name(s):** Nga Parr Ni Mee Tauk. **Habitat:** Rocky bottoms from 100 m to 300 m.

Fisheries: Gillnets, line gears.

**Distinctive Characters:** Usually one to a few canine or canine-like teeth on each side of both jaws anteriorly, followed by a series of conical teeth; vomer and palatines with teeth; dorsal deeply notched between spinous and soft portions; maxilla with scales; interorbital region flattened; upper caudal fin lobe becoming greatly elongate with increased growth; membranes of dorsal and anal fins without scales; anal fin with 3 spines and 8 soft rays; 48–50 tubed lateral line scales.

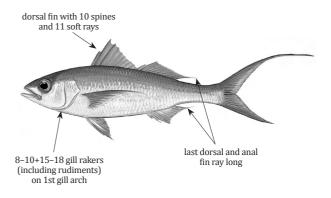
**Colour:** Back and upper sides deep pink to red; lower sides and belly pink to white; fins pink to red.

FAO names: Deep-water red snapper (En) Vivaneau rubis (Fr)



Size: To 127 cm, common 65 cm (TL)

FAO names: Deepwater longtail red snapper (En) Vivaneau flamme (Fr)



Size: To 120 cm, common 50 cm (TL)

FAO names: Scarlet snapper (En)

Vivaneau écarlate (Fr)

#### Etelis radiosus Anderson, 1981

Local name(s): Nga Parr Ni Sin Lone Chaw.

**Habitat:** Rocky bottoms at depths between about 90–360 m.

Fisheries: Caught mainly with deep handlines.

**Distinctive Characters:** Small conical teeth in jaws with a few anterior ones in each jaw enlarged, sometimes into canine-like teeth; maxilla with scales, but without longitudinal ridges; interorbital region flattened; last soft ray of both dorsal and anal fins produced, longer than next to last ray; caudal fin lunate, with a notch at the middle of the distal margin of the fin; anal fin with 3 spines and 8 soft rays; 50–51 lateral line scales.

**Colour:** Mainly red, lighter on lower sides and belly.

#### Lipocheilus carnolabrum (Chan, 1970)

Local name(s): Nga Parr Ni War Nyo Yaung. Habitat: Occurs over rocky bottoms of the continental shelf at depths between 90–300 m. Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Mouth large, the upper jaw protruding when mouth is closed; adults with a thick, fleshy protrusion at anterior end of upper lip; maxilla without scales; interorbital region somewhat flattened to slightly convex; 5–7+11–14 gill rakers on 1<sup>st</sup> gill arch; vomerine teeth (on roof of mouth) in a chevron-shaped patch, without a medial posterior extension; no teeth on tongue; 49–54 scales in lateral line.

**Colour:** Back and upper part of head brown; yellowish or pinkish on sides; a silvery sheen on ventral portion of body.

#### Lutjanus argentimaculatus (Forsskål, 1775)

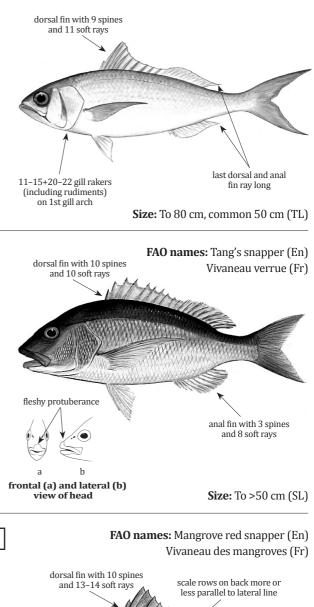
#### Local name(s): Nga Parr Ni.

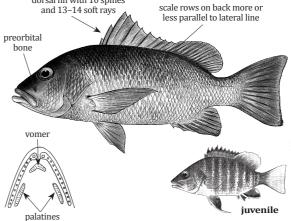
**Habitat:** Juveniles and young adults in mangrove estuaries and lower reaches of freshwater streams; adults in deeper reef areas down to 120 m.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Preorbital bone relatively broad, wider than eye diameter; jaw teeth conical with upper canines notably enlarged (true of all *Lutjanus* species); preopercular notch and knob poorly developed; vomerine teeth in a V-shaped patch, without a medial posterior extension; tongue with a patch of granular teeth; 16–20 gill rakers on 1<sup>st</sup> gill arch.

**Colour:** Back and sides greenish brown to reddish; belly silvery or whitish; specimens from deep water frequently overall reddish; juveniles with a series of about 8 whitish bars crossing sides, and 1 or 2 blue lines across cheek.





roof of mouth

Size: To 150 cm, common 80 cm (TL)

#### Lutjanus bengalensis (Bloch, 1790)

Local name(s): Nga Parr Ni A Pyar Lay Zin. Habitat: Coral and rocky reefs from 10 m to 30 m. Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Preorbital bone relatively narrow; its width usually less than eye diameter; vomerine teeth in a V-shaped patch, without a medial posterior extension; tongue toothless; scale rows on back rising obliquely above lateral line; 26–28 gill rakers on 1<sup>st</sup> gill arch.

**Colour:** Back and sides yellowish; belly whitish; sides with a series of 4 bright blue stripes; no black spot on back below middle of dorsal fin; the medial fins are yellow, the pectoral and pelvic fins whitish.

#### *Lutjanus biguttatus* (Valenciennes, 1830)

Local name(s): Nga Parr Ni A Pyar Lay Zin.

**Habitat:** Coral and rocky reefs from 5-25 m; sometimes in large schools of more than 100 individuals.

Fisheries: Caught mainly with gillnets.

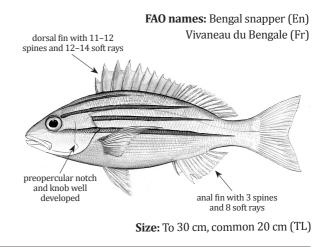
**Distinctive Characters:** Preorbital bone narrow, its width less than 1/2 of eye diameter; vomerine tooth patch triangular, with a medial posterior extension, or diamond-shaped; tongue smooth, toothless; scale rows on back rising obliquely above lateral line; 23–25 gill rakers on 1<sup>st</sup> gill arch. **Colour:** Back and upper sides dark brown; lower sides and belly golden-brown to yellowish; a broad pearly white stripe from below eye to base of caudal fin; 2 small white spots on upper back, 1 below base of seventh dorsal fin spine and 1 below middle of soft part of dorsal fin

#### Lutjanus bohar (Forsskål, 1775)

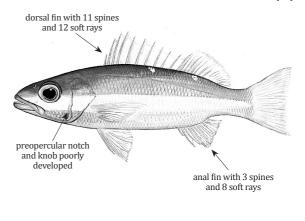
Local name(s): Nga Parr Ni Kyaw Phyu Hnit Set. Habitat: Channel and seaward reefs down to 180 m. Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Preorbital bone relatively broad; its width usually greater than eye diameter; head profile slightly convex; preopercular notch and knob moderately developed; vomerine teeth in a V-shaped patch, without a medial posterior extension; tongue with a patch of granular teeth; 22–23 gill rakers on 1<sup>st</sup> gill arch.

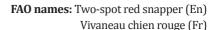
**Colour:** Dark reddish brown on back, shading to red on sides, the scales with a whitish spot, thus forming a linear pattern; juveniles and some adults with 2 distinct silvery spots on body between lateral line and dorsal fin; usually centre of each scale silvery.

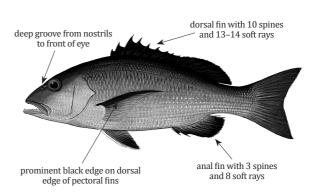


FAO names: Twospot banded snapper (En) Vivaneau du à bande blanche (Fr)



Size: To 20 cm, common 15 cm (TL)





#### Lutjanus carponotatus (Richardson, 1842)

Local name(s): Nga Parr Ni Pyar Nyo Zin.

Habitat: Coral reefs in both sheltered lagoons and on outer reef slopes in depths between about 2–80 m; often in schools of up to 20 to 30 individuals. Fisheries: Mainly bottom trawled.

**Distinctive Characters:** Preorbital bone about equal to eye diameter, or slightly wider; dorsal profile of head steeply sloped; vomerine tooth patch triangular, with a medial posterior extension, or diamond-shaped; tongue with a patch of granular teeth. 15–18 gill rakers on first gill arch. **Colour:** Back and upper sides blue-grey or brownish; lower sides and belly white or yellowwhite; a series of 8–9 yellow, or golden-brown stripes on sides; fins yellowish; pectoral fin with a

distinct black spot at base of uppermost rays and

#### Lutjanus decussatus (Cuvier, 1828)

**Local name(s):** Nga Parr Ni Kyaw Nyo Zin. **Habitat:** Coral reefs usually at depths between about 5-30 m.

Fisheries: Hand-line and occasionally bottom trawl.

**Distinctive Characters:** Preorbital bone usually about equal to eye diameter or slightly narrower; dorsal profile of head moderately sloped; preopercular notch and knob poorly developed; vomerine tooth patch crescentic, without a medial posterior extension; tongue with a patch of granular teeth; 14–16 gill rakers on first gill arch. **Colour:** Generally whitish with a "checker-board" pattern on upper half of sides, consisting of dark brown bars and stripes surrounding rectangular, whitish "windows"; lower half of sides with 2 dark brown stripes; a large black spot covering most of caudal fin base.

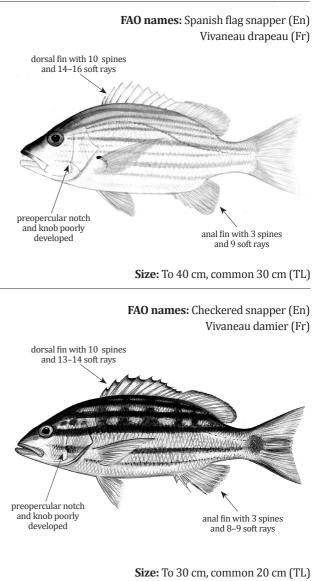
#### Lutjanus ehrenbergii (Peters, 1869)

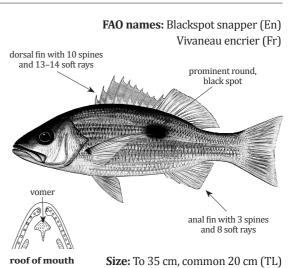
**Local name(s):** ): Nga Parr Ni Kyaw Nyo Kwet. **Habitat:** Occurs in coastal lagoon and seaward reefs from 5 m to 20 m.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Preorbital bone very narrow, about 1/2 of eye diameter; scale rows on back parallel to lateral line; preopercular notch and knob poorly developed; vomerine teeth (on roof of mouth) in a triangular patch with a short, median posterior projection; tongue with a patch of granular teeth; 16–21 gill rakers on 1<sup>st</sup> gill.

**Colour:** Body grey-brown dorsally, the edges of the scales darker than centres, shading to silvery grey on sides and ventrally, with 4–5 narrow yellow stripes on body below lateral line; fins yellow.





in axil.

404

#### Lutjanus erythropterus Bloch, 1790

Local name(s): Nga Parr Ni Pan Nu Yaung.

**Habitat:** Inhabits trawling grounds and reefs to depths of at least 100 m.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Mouth relatively small, length of upper jaw smaller than distance between base of last dorsal and anal fin rays; vomerine teeth (on roof of mouth) in a V-shaped or triangular patch, without a medial posterior extension; no teeth on tongue; scale rows on back rising obliquely above lateral line; anal fin with 3 spines and 8 soft rays; 18–19 gill rakers on 1<sup>st</sup> gill arch.

**Colour:** Overall pink or red, including fins; juveniles with a broad, oblique, black band extending from mouth to beginning of dorsal fin and a large black spot at base of caudal fin; frequently with narrow red stripes.

#### Lutjanus fulviflamma (Forsskål, 1775)

Local name(s): Nga Parr Ni Kyaw Mee Kywet. Habitat: Coral reefs from 3 m to 35 m.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Preorbital bone about equal in width to eye diameter or slightly less; vomerine tooth patch (on roof of mouth) triangular, with a medial posterior extension; tongue with a patch of granular teeth; scale rows on back rising obliquely above lateral line; 16–19 gill rakers on 1<sup>st</sup> gill arch.

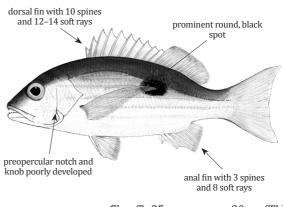
**Colour:** Back and upper sides brown; lower sides whitish or light brown; a series of 6–7 yellow stripes on sides; fins yellowish.

# dorsal fin with 10 spines and 12-14 soft rays

#### FAO names: Dory snapper (En)

FAO names: Crimson snapper (En)

Vivaneau cramoisi (Fr)



Size: To 35 cm, common 30 cm (TL)

#### Lutjanus fulvus (Forster, 1801)

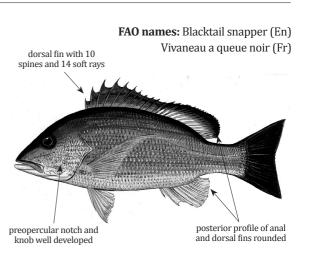
#### Local name(s): Nga Parr Ni A Mee Me'.

**Habitat:** Coral reefs, lagoons and outer reef slopes from 1 m to 75 m.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Preorbital bone about equal in width to eye diameter; vomerine teeth (on roof of mouth) in a V-shaped patch, without a medial posterior extension; tongue toothless; scale rows on back rising obliquely above lateral line; anal fin with 3 spines and 8 soft rays; 16–20 gill rakers on 1<sup>st</sup> gill arch.

**Colour:** Back and sides grey to brown; often with a series of narrow yellow of golden-brown stripes; belly and underside of head whitish; caudal fin blackish, dorsal and caudal fins with a narrow white border; pelvic and anal fins yellowish.



Size: To 81.6 cm (FL)

#### Lutjanus gibbus (Forsskål, 1775)

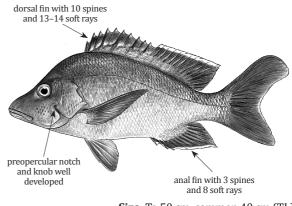
Local name(s): Nga Parr Ni Kharr Kone.

Habitat: Lagoons and coral reefs from 1 m to 150 m. Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Dorsal profile of head steeply sloped; preorbital bone broad, much wider than eye diameter; preopercular notch and knob well developed; vomerine teeth in a V-shaped patch, without a medial posterior extension; tongue toothless; caudal fin distinctly forked with rounded lobes; scale rows on back rising obliquely above lateral line; 25–30 gill rakers on 1<sup>st</sup> gill arch. **Colour:** Red or grey, darker on back and upper portion of head; an orange hue on lower part of opercle and in pectoral fin axil; fins red or frequently dark brown to blackish; juveniles with a large round black spot at base of caudal fin.

#### Lutjanus indicus Allen, White & Erdmann, 2013

#### FAO names: Humpback red snapper (En) Vivaneau pagaie (Fr)



Size: To 50 cm, common 40 cm (TL)

#### FAO names: Indian snapper (En)

#### Local name(s): Nga Parr Ni.

**Habitat:** Inhabits offshore coral reefs and also inshore rock and coral reefs; juveniles found in brackish mangrove estuaries and lower reaches of freshwater streams.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Preorbital width about equal to, or slightly less than eye diameter; vomerine tooth patch triangular, with a median posterior extension or diamond-shaped; tongue with a patch of granular teeth; scale rows on back rising obliquely above lateral line; 13–18 gill rakers on 1<sup>st</sup> gill arch.

**Colour:** Back and upper side brownish; lower sides and belly pink to whitish with a silvery sheen; adults; 7 narrow yellow to brown stripes on sides, obliquely rising (except lower 2) dorsally and posteriorly which are present on both juveniles and adults.

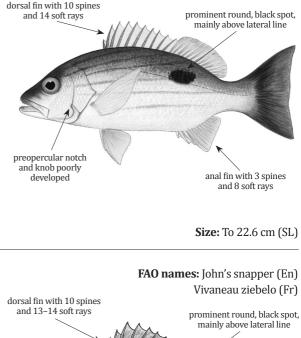
#### Lutjanus johnii (Bloch, 1792)

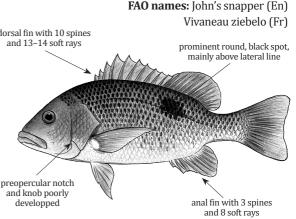
Local name(s): Nga Parr Ni.

Habitat: Juveniles occur in brackish mangrove estuaries, adults on coral reefs down to 80 m. Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Preorbital width equal to eye diameter or larger; vomerine teeth in a V-shaped patch, without a medial posterior extension; tongue with a patch of fine granular teeth; scale rows on back parallel to lateral line; 17–18 gill rakers on 1<sup>st</sup> gill arch.

**Colour:** Generally yellow with a bronze to silvery sheen, grading to silvery white on belly and underside of head; centre of each scale on side with a reddish brown spot forming longitudinal rows on side of body.





#### Lutjanus kasmira (Forsskål, 1775)

Local name(s): Nga Parr Ni A Pyar Zinn.

**Habitat:** Shallow sheltered reefs to exposed seaward reefs, below surge zone down to 265 m. **Fisheries:** Caught mainly with gillnets.

**Distinctive Characters:** Preorbital width usually greater than eye diameter; vomerine teeth in a V-shaped patch, without a medial posterior extension; tongue toothless; scale rows on back rising obliquely above lateral line; 20–22 gill rakers on 1<sup>st</sup> gill arch.

**Colour:** Yellow with abrupt transition to white on lower one-third; a series of 4 blue stripes on yellow portion of body; several faint greyish stripes on lowermost part of sides; fins yellow.

#### Lutjanus lemniscatus (Valenciennes, 1828)

**Local name(s):** Nga Parr Ni Than Lwin yaung. **Habitat:** Inhabits offshore reefs to depths of 70 to 80 m.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Snout profile slightly concave; preorbital bone usually much greater than eye diameter (at least in larger specimens); vomerine teeth in a crescentic band, without a medial posterior extension; tongue with a patch of granular teeth; scale rows on back rising obliquely above lateral line extension; anal fin with 3 spines and 8 soft rays; 18–21 gill rakers on 1<sup>st</sup> gill arch.

**Colour:** Back and upper sides grey-brown or olive; belly and underside of head whitish; dorsal and caudal fins brownish, remaining fins pink or reddish; juveniles with a broad black horizontal band from snout tip to caudal fin base.

#### *Lutjanus lunulatus* (Park, 1797)

Local name(s): Nga Parr Ni A Mee Mae Zin.

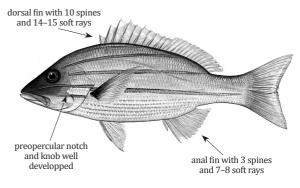
**Habitat:** Inhabits coral reefs at depths between about 10 and 30 m; usually seen solitarily or in small groups.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Preorbital width about equal to eye diameter; vomerine teeth (on roof of mouth) in a V-shaped patch, without a medial posterior extension; tongue with a patch of granular teeth; scale rows on back rising obliquely above lateral line; anal fin with 3 spines and 8 soft rays; 15–18 gill rakers on 1<sup>st</sup> gill arch.

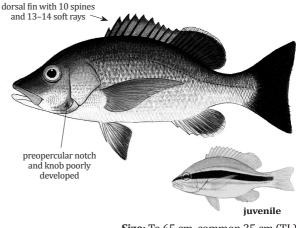
**Colour:** Back and upper side brown to reddish pink; rear half of maxilla, lower part of preopercle, breast and abdomen creamy yellow; dorsal fin reddish pink to clear; caudal fin with broad, black crescent; pectoral, anal, and pelvic fins yellow.





Size: To 40 cm, common 25 cm (TL)

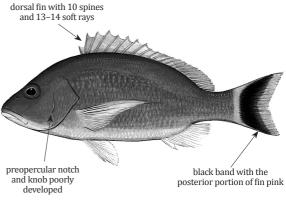
#### FAO names: Yellowstreaked snapper (En) Vivaneau à raies jaunes (Fr)



Size: To 65 cm, common 35 cm (TL)

FAO names: Lunartail snapper (En)

Vivaneau queue (Fr)



#### Lutjanus lutjanus Bloch, 1790

Local name(s): Nga Parr Ni Myet Pyuu. Habitat: Offshore coral reefs down to 90 m. Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Body fusiform and slender, its depth 2.9–3.3 in SL; dorsal fin with 10–12 (usually 11) spines and 12 soft rays; preorbital bone very narrow, much less than eye diameter; vomerine teeth in a triangular patch, with a medial posterior extension; tongue with a patch of granular teeth; scale rows on back rising obliquely above lateral line; 24–26 gill rakers on 1<sup>st</sup> gill arch. **Colour:** Background colour yellowish or pale brown, with a stronger dark yellow stripe along sides from tip of snout, through eye, to caudal fin; fins pale yellow to whitish.

#### *Lutjanus madras* (Valenciennes, 1831)

Local name(s): Nga Parr Ni Ka Lar.

**Habitat:** Coral and rocky reefs at depths of 5–90 m. **Fisheries:** Caught mainly with handlines and gill nets.

**Distinctive Characters:** Body fusiform, somewhat slender, its depth 2.6–3.1 in SL; preorbital width about equal to 2/3 of eye diameter; vomerine tooth patch triangular with a medial posterior extension or diamond-shaped; tongue with a patch of granular teeth; scale rows on back rising obliquely above lateral line; 18-21 gill rakers on first gill arch. **Colour:** Upper back brownish; sides whitish with a series of fine yellow horizontal lines, 1 per scale row, on lower half of body, and similar brownish lines running obliquely above lateral line; fins yellow except pelvic fins frequently white or faintly yellow.

#### *Lutjanus malabaricus* (Bloch & Schneider, 1801)

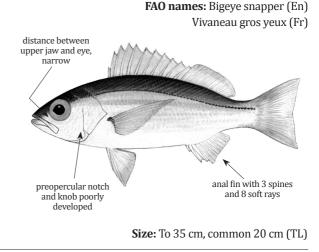
Local name(s): Nga Parr Ni Thway Yaung.

**Habitat:** Inhabits both coastal and offshore reefs from about 12–100 m depth.

Fisheries: Caught mainly with gillnets.

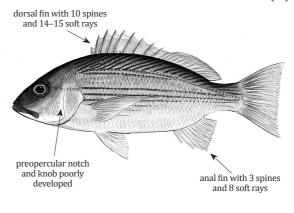
**Distinctive Characters:** Mouth large, maxilla length about equal to distance between bases of last dorsal and anal fin rays; vomerine teeth in a triangular patch, without a medial posterior extension; tongue toothless; scale rows on back rising obliquely above lateral line; anal fin with 3 spines and 8–9 soft rays; 18–20 gill rakers on 1<sup>st</sup> gill arch.

**Colour:** Back and sides red or red-orange, lighter on lower parts; fins reddish; juveniles with a broad, oblique band of brown or black from upper jaw to beginning of dorsal fin, and a prominent black band across caudal peduncle with a pearly white anterior border.



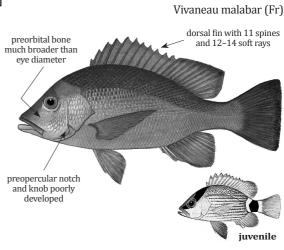
FAO names: Indian snapper (En)

Vivaneau madras (Fr)



Size: To 30 cm, common 20 cm (TL)

FAO names: Malabar blood snapper (En)



Size: To 100 cm, common 50 cm (TL)

#### Lutjanus monostigma (Cuvier, 1828)

**Local name(s):** Nga Parr Ni Suu Taung Warr. **Habitat:** Coral reefs close to shelter, in depths from 5–30 m.

Fisheries: Caught mainly with gillnets

**Distinctive Characters:** reorbital width about equal to eye diameter; vomerine tooth patch crescentic, without a medial posterior extension; tongue toothless; scale rows on back rising obliquely above lateral line; 18–19 gill rakers on 1st gill arch.

**Colour:** Generally yellowish to pinkish with dusky scale margins; grey or brown on upper back and dorsal portion of head; a black spot, sometimes faint or absent, on back below anterior soft dorsal fin rays; fins yellowish.

#### *Lutjanus quinquelineatus* (Bloch, 1790)

Local name(s): Nga Parr Ni Ngar Zinn.

**Habitat:** Inhabits sheltered lagoons and exposed, outer slope coral reefs at depths ranging from 2–40 m; frequently encountered in large aggregations inlcuding 100 or more individuals.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Preorbital width usually less than eye diameter; vomerine teeth (on roof of mouth) in a V-shaped patch, without a medial posterior extension; tongue toothless; scale rows on back rising obliquely above lateral line; 20–23 gill rakers on 1<sup>st</sup> gill arch.

**Colour:** Upper part of head brownish; sides and belly bright yellow; a series of 5 bright blue stripes on sides; fins yellow.

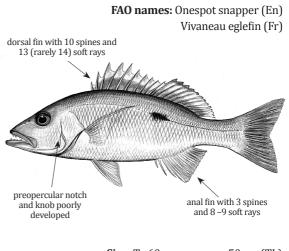
#### Lutjanus rivulatus (Cuvier, 1828)

**Local name(s):** Nga Parr Ni Gaung Pyar Zinn. **Habitat:** Coral reefs from 50 m to 100 m.

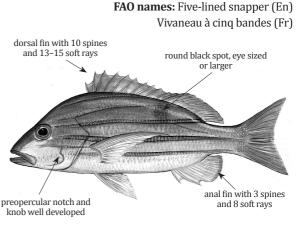
Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Preorbital bone broad, about twice the eye diameter; vomerine teeth (on roof of mouth) in a V-shaped patch without a medial posterior extension; tongue toothless; preorbital bone broad, about twice the eye diameter; scale rows on back rising obliquely above lateral line; lips greatly thickened in adults; 17–18 gill rakers on 1<sup>st</sup> gill arch.

**Colour:** Generally brown with a reddish tinge; each scale on side with a pale brown border and 2–3 small bluish white spots in central portion; juveniles with a series of 3–8 brown bars on sides and a chalky white spot, with a broad blackish margin, present below anterior soft dorsal fin rays.

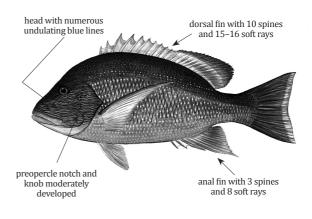


Size: To 60 cm, common 50 cm (TL)



Size: To 38 cm, common 30 cm (TL)

FAO names: Blubberlip snapper (En) Vivaneau maori (Fr)



#### Lutjanus sebae (Cuvier, 1816)

Local name(s): Nga Parr Ni.

**Habitat:** Lagoons and sand flats near coral reefs from 10 m to 100 m.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Preorbital bone much wider than eye diameter; vomerine tooth patch a V-shaped or triangular patch, without a medial posterior extension; tongue toothless; lips in adults thick; scale rows on back rising obliquely above lateral line; anal fin with 3 spines and 10 soft rays; 16–19 gill rakers on 1<sup>st</sup> gill arch.

**Colour:** Generally red or pink in adults; juveniles and smaller adults pink with 3 dark red bands, the  $1^{st}$  from  $1^{st}$  dorsal fin spine through eye to tip of snout; the  $2^{nd}$  from middle of spinous part of dorsal fin to pelvic fins; and the  $3^{rd}$  from base of last dorsal fin spine running obliquely downward to lower edge of caudal fin.

#### Lutjanus timorensis (Quoy and Gaimard, 1824)

Local name(s): Nga Parr Ni.

**Habitat:** Coral and rubble reefs at depths of about 20 m to at least 130 m.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Dorsal profile of head steeply sloped; preorbital width greater than eye diameter; vomerine tooth patch crescentic, without a medial posterior extension; tongue toothless; anal fin with 3 spines and 8 soft rays; 19–20 gill rakers on first gill arch.

**Colour:** Back and upper sides reddish; lower sides and belly red or pinkish to silvery white; fins reddish; axil of pectoral fins black. Juveniles with a broad blackish or brownish band from upper jaw to beginning of dorsal fin and a black saddle preceded by a pearly white border on upper edge of caudal peduncle; sides with a series of fine reddish brown lines.

#### Lutjanus vitta (Quoy & Gaimard, 1824)

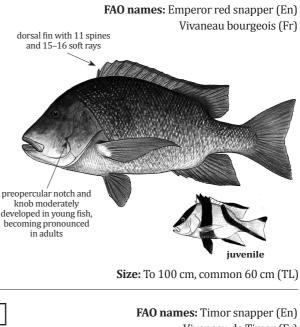
Local name(s): Nga Parr Ni Nyo Sinn.

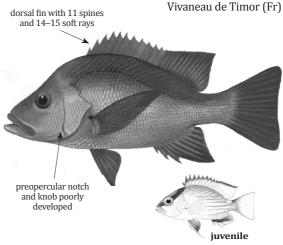
Habitat: Reef-associated between 10 and 72 m depth.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Preorbital width about equal to eye diameter; vomerine tooth patch triangular with a medial posterior extension or diamond-shaped; tongue with a patch of granular teeth; scale rows on back rising obliquely above lateral line; 15–19 gill rakers on 1<sup>st</sup> gill arch.

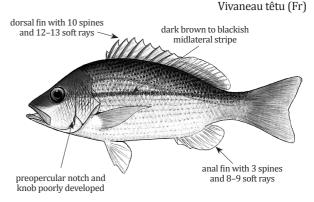
**Colour:** Back and upper sides brown, lower sides and belly whitish or pink; narrow longitudinal brown lines on sides; juveniles also with an oval black spot, lying in the middle of the stripe below last dorsal fin spine.





Size: To 50 cm, common 30 cm (TL)

FAO names: Humphead snapper (En)



#### Macolor niger (Forsskål, 1775)

Local name(s): Nga Parr Ni War Hmainn. Habitat: Coral reefs from 3 m to 90 m. Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Head profile distinctly convex; outer row of jaw teeth conical, enlarged anteriorly; vomerine tooth patch broadly V-shaped; scale rows on back parallel to lateral line; anal fin with 3 spines and 11 (rarely 10) soft rays; 89–107 gill rakers on 1<sup>st</sup> arch arch; pelvic fins short and rounded at all sizes; preopercular notch deep and narrow.

**Colour:** Adults mostly brownish black; individuals less than about 24 cm SL have black-and-white bands on body, about 5 (4 to 7) white spots on upper side, and white at tips of caudal fin lobes.

#### Paracaesio xanthura (Bleeker, 1869)

Local name(s): Nga Parr Ni Pyar War Zinn. Habitat: Rocky bottoms from 20 m to 150 m. Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Mouth terminal, jaws about equal; both upper and lower jaws with an outer row of conical teeth (some of these enlarged into caniniform teeth anteriorly) and with an inner band of very small teeth; vomerine tooth patch broadly V-shaped; anal fin with 3 spines and 8 (rarely 9) soft rays; interorbital space convex; membranes of dorsal and anal fins without scales; 28–35 gill rakers on 1<sup>st</sup> arch; caudal fin deeply forked.

**Colour:** Mainly bluish; broad yellow band on upper side beginning near anterior end of dorsal fin, continuing over most of caudal peduncle and out onto both lobes of caudal fin; dorsal fin grey to yellowish, other fins greyish or whitish.

#### Pinjalo lewisi Randall, Allen & Anderson, 1987

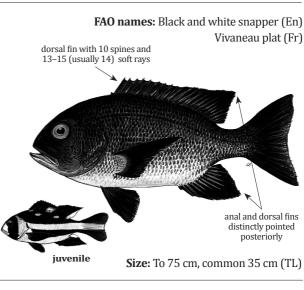
#### Local name(s): ????

**Habitat:** Inhabits reefs and rocky bottoms in depths between about 20 and 150 m.

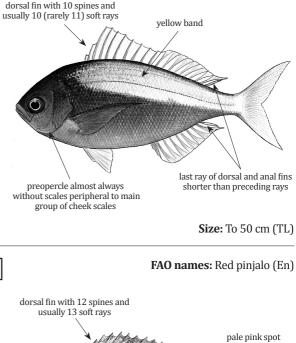
Fisheries: Caught mainly with gillnets.

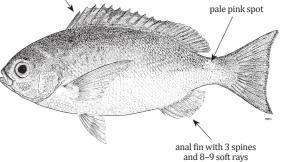
**Distinctive Characters:** Dorsal profile of head convex; mouth small and oblique; no caniniform teeth at anterior ends of jaws; vomerine tooth patch broadly V-shaped; last ray of dorsal and anal fins shorter that preceding rays; dorsal and anal fins with scales basally; 23–25 gill rakers on 1<sup>st</sup> arch; caudal fin slightly emarginate.

**Colour:** Dorsal half of body red, shading ventrally to pinkish white, no diagonal dark lines on nape and body; head red except areas covered with scales are pinkish white; a curved pale pink spot dorsally on caudal peduncle; fins red.









Size: To 50 cm (SL)

#### Pinjalo pinjalo (Bleeker, 1850)

Local name(s): Nga Parr Ni Pann Ni Thway. Habitat: Reefs and rocky bottoms down to 60 m. Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Dorsal profile of head convex; mouth small and oblique; no caniniform teeth at anterior ends of jaws; vomerine tooth patch broadly V-shaped; last ray of dorsal and anal fins shorter that preceding rays; dorsal and anal fins with scales basally; 22–26 gill rakers on 1<sup>st</sup> arch; caudal fin deeply lunate.

**Colour:** Body pink to silvery lavender dorsally, shading to pale pink or silvery white ventrally, with diagonal dark lines following scale rows on nape and dorsal 1/2 to 2/3 of body; dorsal and caudal fins reddish, usually suffused with yellow, the outer margin blackish; anal and pelvic fins light red to yellow; pectoral fins light red.

#### Pristipomoides auricilla (Jordan, Evermann & Tanaka, 1927)

**Local name(s)**: Nga Parr Ni Shwe War Yaung. **Habitat:** Rocky bottoms at depths between about 80–360 m.

Fisheries: Caught mainly with handlines.

**Distinctive Characters:** Upper and lower jaws both with an outer row of conical and canine teeth and an inner band of villiform teeth; maxilla without scales or longitudinal ridges; vomer and palatines with teeth, those on vomer in triangular patch; tongue toothless; interorbital space flat; anal fin with 3 spines and 8 soft rays; bases of dorsal and anal fins scaleless; caudal fin forked; 67–74 lateral line scales.

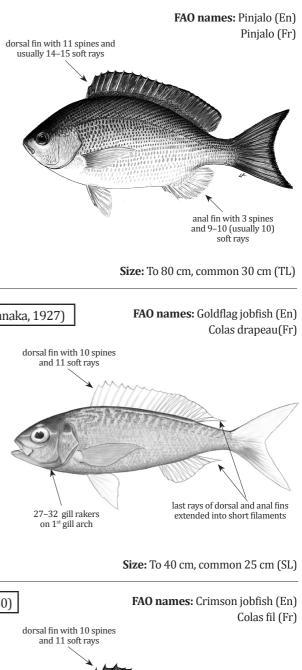
**Colour:** Body purplish or brownish violet; sides with numerous yellow spots or faint yellow chevron-shaped bands; dorsal fin yellowish to yellowish brown; upper lobe of caudal fin yellow.

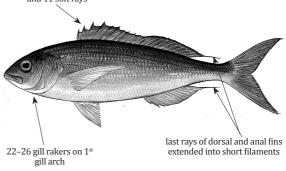
#### Pristipomoides filamentosus (Valenciennes, 1830)

Local name(s): Nga Parr Ni Kyet Thway Yaung. Habitat: Rocky bottoms from 90 m to 360 m. Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Length of upper jaw 2.4–2.7 in head length; caniniform teeth at anterior ends of jaws not appreciably enlarged; maxilla without scales; vomerine teeth in a triangular patch; tongue toothless; interorbital space flat; caudal fin deeply forked; anal fin with 3 spines and 8 (rarely 7 or 9) soft rays; bases of dorsal and anal fins scaleless; caudal fin forked; 57–62 lateral line scales.

**Colour:** Back and sides ranging from brownish to lavender or reddish purple; head with narrow yellow lines and blue spots; dorsal and caudal fins light blue or lavender with reddish orange margins.



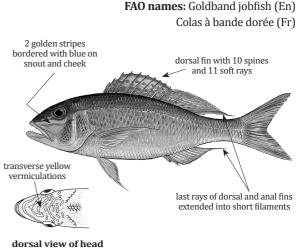


Size: To 80 cm or more, common 50 cm (SL)

#### Pristipomoides multidens (Day, 1871)

Local name(s): Nga Parr Ni Shwe A Zinn. Habitat: Rocky bottoms from 40 m to 350 m. Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Suborbital wide, its width about 4–5 times in head length; anteriormost teeth in jaws enlarged into canines; interorbital space flat; vomerine teeth in chevron-shaped patch; maxilla without scales; no teeth on tongue; anal fin with 3 spines and 8 soft rays; bases of dorsal and anal fins scaleless; 48–50 lateral line scales; caudal fin deeply forked; 20–22 gill rakers on 1<sup>st</sup> gill arch. **Colour:** Yellowish to rosy, with about 6 broken golden stripes on sides; top of head with a series of transverse brownish yellow vermiculations; dorsal fin with yellowish stripes or rows of spots.



Size: To 70 cm, common 40 cm (SL)

FAO names: Lavender jobfish (En)

#### Pristipomoides sieboldii (Bleeker, 1855)

Local name(s): Nga Parr Ni Hteik Kywet.

Habitat: Rocky bottoms from 140 m to 360 m. Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Caniniform teeth at anterior ends of jaws not appreciably enlarged; interorbital space flat; vomerine tooth patch with backward prolongation in midline (patch sometimes diamond-shaped); tongue with a heart-shaped patch of small teeth; anal fin with 3 spines and 8 soft rays; bases of dorsal and anal fins scaleless; caudal fin deeply forked; 69–74 lateral line scales.

**Colour:** Silvery with lavender hue; dark spots on top of head, more conspicuous in young; margin of dorsal fin orange; caudal fin purplish with inner margin of fork pale.

#### Pristipomoides typus Bleeker, 1852

Local name(s): Nga Parr Ni Dhar Basat.

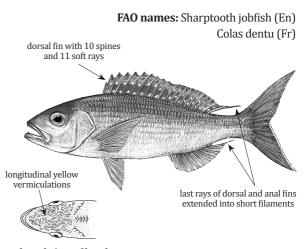
**Habitat:** Rocky bottoms at depths between about 40–100 m.

Fisheries: Caught mainly handlines.

**Distinctive Characters:** Upper and lower jaws both with an outer row of conical teeth, a few of the anteriormost teeth enlarged into canines, and an inner band of villiform teeth; vomer and palatines with teeth, those on vomer in chevron-shaped patch; no teeth on tongue; anal fin with 3 spines and 8 soft rays; bases of dorsal and anal fins scaleless; caudal fin forked; 48-50 lateral line scales; 23–26 gill rakers on 1<sup>st</sup> gill arch.

**Colour:** Body and fins rosy; top of head with brownish yellow longitudinal vermiculations and spots; dorsal fin with wavy yellow lines.

Size: To 50 cm or more, common 40 cm (SL)



dorsal view of head

#### Pristipomoides zonatus (Valenciennes, 1830)

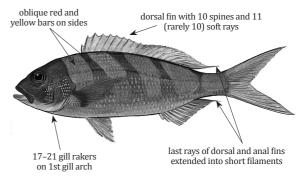
#### Local name(s):

Habitat: Rocky bottoms from 70 m to 300 m. Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Some anteriormost teeth in upper jaw enlarged and caniniform; interorbital space flattened to slightly convex; vomerine teeth in chevron-shaped patch; maxilla without scales; tongue toothless; anal fin with 3 spines and 8 soft rays; bases of dorsal and anal fins scaleless; 63–67 lateral line scales; caudal fin deeply forked.

**Colour:** Overall pink or reddish with alternating oblique red and yellow bars on side of body; dorsal and caudal fins yellow, other fins pink.

#### FAO names: Oblique-banded snapper (En) Colas bagnard (Fr)



Size: To 40 cm, common 25 cm (SL)

#### **CAESIONIDAE** Fusiliers

dorsal fin with 10 spines and

#### Caesio lunaris Cuvier, 1830

Local name(s): Shwe Wun Ni Pyar War Sinn.

**Habitat:** Coastal areas, primarily around coral reefs to depths of about 40 m.

Fisheries: Gillnets, bottom trawls, handlines, traps.

**Distinctive Characters:** A single postmaxillary process (true of all *Caesio* species); small conical teeth in jaws, vomer, and palatines; anal fin with 3 spines and 12 (rarely 13) rays; supratemporal bands of scales often interrupted at dorsal midline by a scaleless zone, always a V-shaped scaleless zone anteriorly at midline intruding between the supratemporal band of scales.

**Colour:** Upper body bluish, lower body white to pale bluish with a single yellow stripe bordered above and below by a white or light blue stripe; caudal fin lobes with a black median streak; axil of pectoral fins with a black triangular patch.

#### *Caesio cuning* (Bloch, 1791)

Local name(s): Shwe Wun Ni Hmee War.

**Habitat:** Coastal areas, usually over rocky and coral reefs to depths of about 60 m.

#### Fisheries: Gillnets, traps.

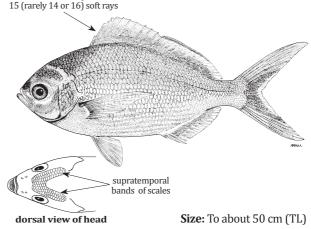
**Distinctive Characters:** Body moderately deep compared with other species of *Caesio*; a single postmaxillary process; small, conical teeth in jaws, vomer, and palatines; anal fin with 3 spines and 11 (rarely 10 or 12) rays; supratemporal band of scales confluent at dorsal midline.

**Colour:** : Caudal fin, upper caudal peduncle and posterior portion of back yellow; upper body, where not yellow, greyish blue; lower sides and belly white or pinkish; axil and upper base of pectoral fins black; dorsal fin yellow posteriorly and greyish blue anteriorly.

FAO names: Blue-and-gold fusilier (En) Caesio azuror (Fr)

FAO names: Redbelly yellowtail fusilier (En)

Caesio ventre rouge (Fr)



#### 414

#### *Caesio lunaris* Cuvier, 1830

Local name(s): Shwe Wun Ni Hmee Kywet. Habitat: Coastal areas, on or near coral reefs. Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** A single postmaxillary process; small conical teeth in jaws, vomer, and palatines; anal fin with 3 spines and 10–11 (rarely 10) soft rays; supratemporal band of scales generally interrupted at dorsal midline by a narrow scaleless zone.

**Colour:** Body bluish, belly paler than upper sides; tips of caudal fin lobes, axil of pectoral fins, and upper base of pectoral fins black; caudal fin blue (except in juveniles where caudal fin and portions of caudal peduncle often yellow); pectoral, pelvic, and anal fins white to pale blue (pink or reddish after death); dorsal fin bluish.

#### Caesio teres Seale, 1906

Local name(s): Shwe Wun Ni Moe Pyar.

Habitat: Coastal areas, on or near coral reefs. Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** A single postmaxillary process; small teeth in jaws, vomer, and palatines; anal fin with 3 spines and 12 (rarely 13) rays; supratemporal band of scales interrupted at dorsal midline by a narrow scaleless zone.

**Colour:** Bright yellow on caudal fin, caudal peduncle, and body above a diagonal from just anterior to dorsal fin origin to ventral origin of caudal peduncle, except in large individuals where the yellow does not extend as far anteriorly; remainder of upper 2/3 of body bright blue, the lower 1/3 silvery white; axil and upper base of pectoral fins black.

#### Caesio xanthonota Bleeker, 1853

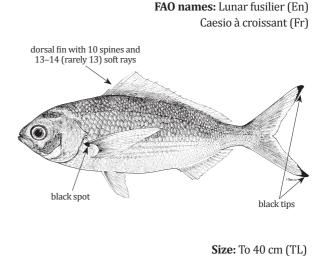
Local name(s): Shwe Wun Ni Kyaw War Zinn.

**Habitat:** Coastal areas, on or near coral reefs and coral lagoons.

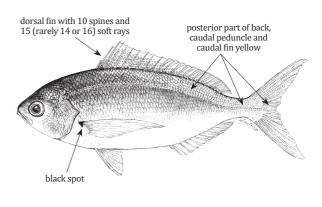
Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** A single postmaxillary process; small conical teeth in jaws, vomer, and palatines; anal fin with 3 spines and 12 (rarely 11) rays; supratemporal band of scales interrupted at dorsal midline by a narrow scaleless zone.

**Colour:** Upper third of body and head, including interorbital region, and caudal fin bright yellow, middle third blue, lower third white; axil and upper base of pectoral fins black; pectoral, pelvic, and anal fins white; dorsal fin yellow.

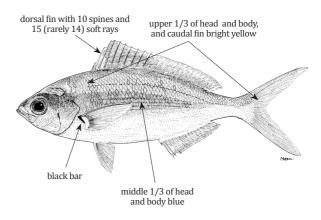


#### FAO names: Yellow-and-blueback fusilier (En) Caesio à dos jaune et bleu (Fr)



Size: To 40 cm (TL)

FAO names: Yellowback fusilier (En) Caesio à dos jaune (Fr)



Size: To about 40 cm (TL)

#### Dipterygonotus balteatus (Valenciennes, 1830)

Local name(s): Nga Set Pyauk.

Habitat: Nearshore pelagic.

**Fisheries:** Caught at night using lights and dip nets; also bottom trawls.

**Distinctive Characters:** Body slender, fusiform, elongate, and moderately compressed; 2 postmaxillary processes; small conical teeth on dentary and vomer; premaxilla and palatines without teeth; supratemporal band of scales indistinct; dorsal and anal fins without scales.

**Colour:** Upper body brownish bronze; a thin, straight, tan stripe about 1 scale wide from orbit to caudal fin; above and parallel to this stripe 2 thin, irregular, and usually interrupted stripes of same colour; lower body silvery white; axil of pectoral fins black.

#### Gymnocaesio gymnoptera (Bleeker, 1856)

Local name(s): Hmee Kwet Pain Nyaun. Habitat: Coastal areas near coral reefs. Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Body slender, fusiform, elongate, and moderately compressed; 2 postmaxillary processes; small conical teeth on dentary and vomer; premaxilla and palatines without teeth; dorsal and anal fins without scales.

**Colour:** Upper body bluish green, the centres of scales lighter, giving a striped appearance; a single yellow or brown stripe about 1 scale wide covering lateral line for most of its length, running dorsal to lateral line on caudal peduncle; often a bright blue longitudinal band directly below lateral line stripe; body silvery white ventrally; axil of pectoral fins black; tips of caudal fin lobes black.

#### Pterocaesio chrysozona (Cuvier, 1830)

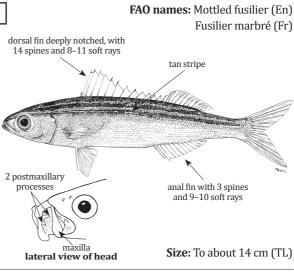
Local name(s): Shwe A Zin Hmee Kwet.

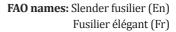
Habitat: Coastal areas near coral reefs.

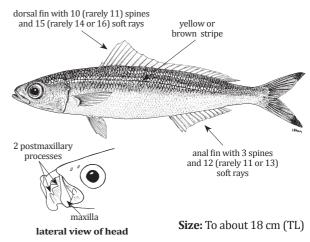
Fisheries: Gillnets, bottom trawls (occasionaly).

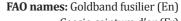
**Distinctive Characters:** Body fusiform, elongate, and moderately compressed; 2 postmaxillary processes (true of all *Pterocaesio* species); small conical teeth in jaws, vomer, and palatines; dorsal and anal fins scaly, the dorsal fin with about ½ of its greatest spinous height covered with scales.

**Colour:** Upper body light blue to brownish, lower body white to pinkish; a bright yellow band directly below lateral line from behind eye to base of caudal fin, 2–3 scales wide anteriorly, tapering to 1 scale in width on caudal peduncle where it is above lateral line; a less conspicuous yellow stripe along dorsal midline; axil of pectoral fins black; tips of caudal fin lobes black.

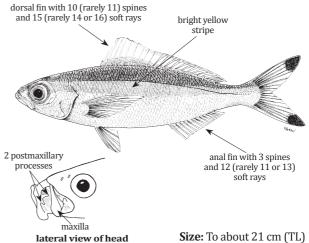








Caesio ceinture d'or (Fr)



#### Pterocaesio marri Schultz, 1953

Local name(s): Shwe Ni Hmee Kwet.

Habitat: Offshore areas near coral reefs. Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Body fusiform, elongate, and moderately compressed; 2 postmaxillary processes; small conical teeth in jaws; vomer and palatines without teeth; dorsal and anal fins scaly, the dorsal fin with about ½ of its greatest spinous height covered with scales.

**Colour:** Two yellow longitudinal stripes laterally, about 1 scale wide each, the lower running from behind supratemporal membrane, covering lateral line to a vertical at about middle of soft portion of dorsal fin where it passes above lateral line for the length of caudal peduncle; upper stripe 1 to 2 scales below dorsal profile for most of length of body, ending dorsally on caudal peduncle; axil of pectoral fins and tips of caudal fin lobes black.

Pterocaesio pisang (Bleeker, 1853)

Local name(s): Shwe Hmee Ni Kwet.

Habitat: Around coral reefs.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Body fusiform, elongate, and moderately compressed; 2 postmaxillary processes; small conical teeth in jaws, vomer, and palatines; dorsal and anal fins scaly, the dorsal fin with about 1/2 of its greatest spinous height covered with scales.

**Colour:** Body coloration variable, dark red to silvery, paler ventrally; lateral line darker than background coloration; no stripes or bands on side; snout often yellowish; axil of pectoral fins black; tips of caudal fin lobes black bordered with red.

#### Pterocaesio randalli Carpenter, 1987

#### Local name(s): Shwe A Sin.

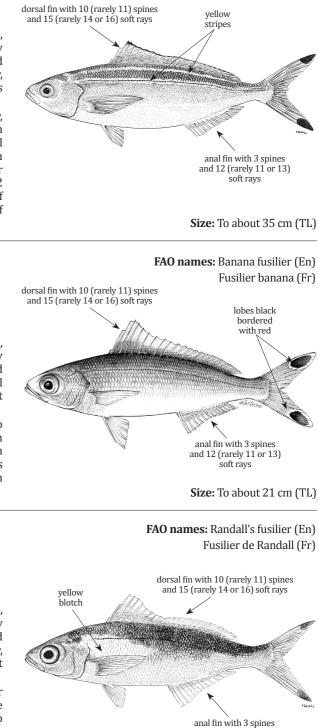
Habitat: Around coral reefs.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Body fusiform, elongate, and moderately compressed; 2 postmaxillary processes; small conical teeth in jaws; vomer and palatines without teeth; dorsal and anal fins scaly, the dorsal fin with about 1/2 of its spinous height covered with scales.

**Colour:** Body blue-green to reddish dorsally, lighter ventrally; a large yellow blotch of variable size above pectoral fins, typically starting posterior to upper rim of orbit, covering the operculum above pectoral base and 2 or 3 scales above lateral line, stretching posteriorly to about a vertical at anal fin origin; axil of pectoral fins and tips of caudal fin lobes black.





anal fin with 3 spines and 12 soft rays

#### Pterocaesio tessellata Carpenter, 1987

Local name(s): Shwe War Zinn.

Habitat: Coastal areas around coral reefs. Fisheries: Caught mainly with gillnets.

Distinctive Characters: Body fusiform, elongate, and moderately compressed; 2 postmaxillary processes; small conical teeth in jaws and vomer; palatines without teeth; dorsal and anal fins scaly, the dorsal fin with about 1/2 of its greatest spinous height covered with scales.

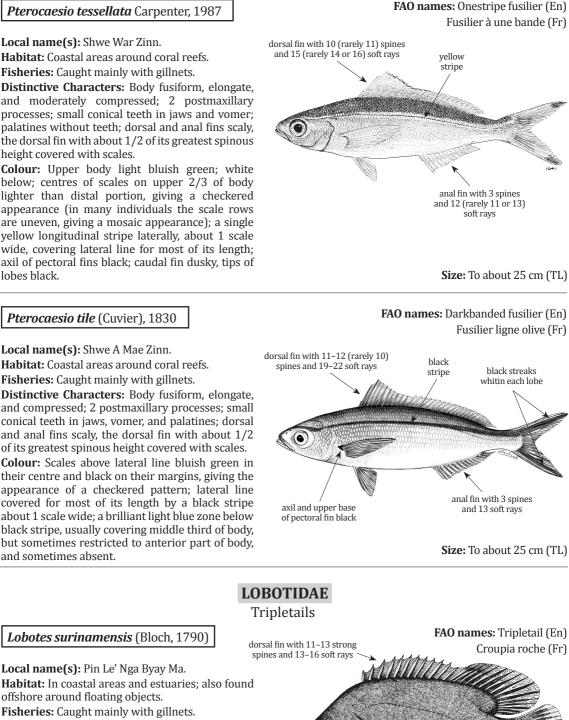
Colour: Upper body light bluish green; white below; centres of scales on upper 2/3 of body lighter than distal portion, giving a checkered appearance (in many individuals the scale rows are uneven, giving a mosaic appearance); a single vellow longitudinal stripe laterally, about 1 scale wide, covering lateral line for most of its length: axil of pectoral fins black; caudal fin dusky, tips of lobes black.

#### Pterocaesio tile (Cuvier), 1830

Local name(s): Shwe A Mae Zinn.

Habitat: Coastal areas around coral reefs. Fisheries: Caught mainly with gillnets.

Distinctive Characters: Body fusiform, elongate, and compressed; 2 postmaxillary processes; small conical teeth in jaws, vomer, and palatines; dorsal and anal fins scaly, the dorsal fin with about 1/2of its greatest spinous height covered with scales. Colour: Scales above lateral line bluish green in their centre and black on their margins, giving the appearance of a checkered pattern; lateral line covered for most of its length by a black stripe about 1 scale wide: a brilliant light blue zone below black stripe, usually covering middle third of body, but sometimes restricted to anterior part of body, and sometimes absent.



Distinctive Characters: Jaws with an outer row of short, close-set canines and an inner band of smaller teeth; no teeth on vomer, palatines, or tongue; soft dorsal and anal fins large and broadly rounded, reaching past base of caudal fin (appearing as 3 tails together with rounded caudal fin).

Lobotes surinamensis (Bloch, 1790)

Local name(s): Pin Le' Nga Byay Ma.

offshore around floating objects. Fisheries: Caught mainly with gillnets.

Colour: Juveniles brownish and often mottled darker; adults uniform dark brown or olive to mottled yellowish.



anal fin with 3 spines and 11-12 soft rays

Size: To 100 cm, common 50 cm (TL)

preopercle coarsely

serrate

#### GERREIDAE

Silverbiddies – Mojarras

#### Gerres erythrourus (Bloch, 1791)

Local name(s): Nga Si Ooe.

Habitat: Coastal waters on sandy bottoms in depths to 40 m.

Fisheries: Caught mainly with gillnets and bottom trawls.

Distinctive Characters: Body deep, its depth 43.4-52.6% of SL; pectoral fin tip reaching to or past level of 1st anal fin spine; typically fewer than 38 lateral line scales to base of caudal fin, and 2-3 more pored scales in scaly sheath on base of fin; 3 1/2-4 scale rows between base of lateral line and 5th dorsal fin spine; caudal fin deeply forked but short.

**Colour:** Silvery, tinged with brown dorsally; indistinct, fine, dark stripes following scale rows in older fish: many specimens, particularly juveniles. with 7-11 slender, dark bars along sides; dorsal fin edged with black; anal and pelvic fins yellowish.

Gerres filamentosus Cuvier, 1829

Local name(s): Nga Si Ooe.

Habitat: Shallow coastal waters down to 50 m.

Fisheries: Gillnets, cast nets, bottom trawls.

Distinctive Characters: Body deep, its depth 41.5-51.4% of SL; pectoral fin tip reaching to level of 1st anal spine; 43–46 lateral line scales to base of caudal fin, plus 2-5 scales on caudal fin base; 41/2-51/2 scale rows between lateral line and 5<sup>th</sup> dorsal fin spine; caudal fin deeply forked with pointed lobes.

Colour: Silvery, with 6-12 vertical bands of pale brown ovoid spots on upper half of sides, coalescing as bars in small specimens; pectoral, pelvic, caudal and anal fins dusky hyaline; tips of pelvic, anal and caudal lobes, white; dorsal fin hyaline except for the end of filamentous spine, which is black.

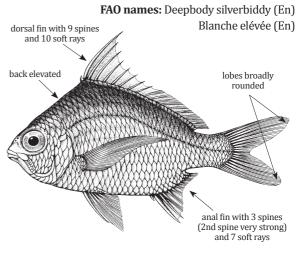
#### Gerres longirostris (Lacepède, 1801)

Local name(s): Nga Si Ooe.

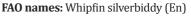
Habitat: Shallow coastal waters down to 50 m. Fisheries: Gillnets, cast nets, bottom trawls.

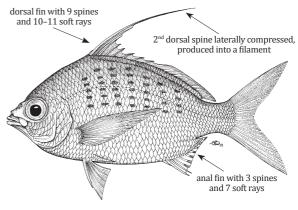
Distinctive Characters: Body deep, its depth 33-37.8% of SL; pectoral fin tip reaching beyond level of 1<sup>st</sup> anal spine; 44–46 lateral line scales to base of caudal fin, plus ?-? scales on caudal fin base;  $5-6\frac{1}{2}$ scale rows between lateral line and 5th dorsal fin spine; caudal fin deeply forked with pointed lobes.

**Colour:** Silvery with dark stripes along scale rows above lateral line; 7-9 columns of ovoid dark spots immediately below lateral line in specimens over 10 cm SL: pelvic fins and spinous part of anal fin yellow; pectoral and anal fins hyaline; caudal fin dusky with broad darker margin posteriorly.



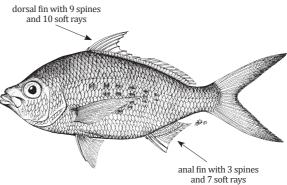
Size: To 37 cm, common 20 cm (TL)





Size: To 35 cm, common 15 cm (TL)

#### FAO names: Strongspine silverbiddy (En)



#### Size: To 44.5 cm, common 20 cm (TL)

#### Gerres macracanthus Bleeker, 1854

#### Local name(s): Nga Si Ooe.

Habitat: Coastal waters to depths of at least 30 m on sandy bottoms; also in estuaries; schooling. **Fisheries:** Gillnets, cast nets, bottom trawls.

**Distinctive Characters:** Body elongate, its depth 35.6-44.9% of SL; 41-44 lateral line scales, plus 2-5 scales on caudal fin base; anal fin with 3 spines and 7 (rarely 8) soft rays; 4-5 scale rows between lateral line and 5<sup>th</sup> dorsal spine; caudal fin deeply forked.

**Colour:** Usually 6–10 (rarely 14) indistinct vertical bands in both fresh and preserved specimens (not forming ovoid spots as in *Gerres filamentosus*); first and second dorsal fin ray tips dusky, pelvic fins hyaline when fresh.

#### Gerres oblongus Cuvier, 1830

#### Local name(s): Nga Si Ooe.

Habitat: Coral reefs, associated with sandy patches. Fisheries: Gillnets, cast nets, bottom trawls.

**Distinctive Characters:** Body compressed, elongate, slender, its depth 2.5-3.4 in SL; pectoral fin tip reaching to level of  $1^{st}$  anal spine; 47-49 lateral line scales to base of caudal fin, plus 2-5 more pored scales in scaly sheath on base of caudal fin; 5-6 scales between lateral line and base of 5th dorsal fin spine; caudal fin very deeply forked with pointed lobes.

**Colour:** Silvery, blue dorsally in life, but lilac brown in some market specimens; up to 5 columns of horizontally elongated spots on sides of trunk appearing as faint bars in some cases; dusky tip to dorsal fin, other fins pale.

#### Gerres oyena (Forsskål, 1775)

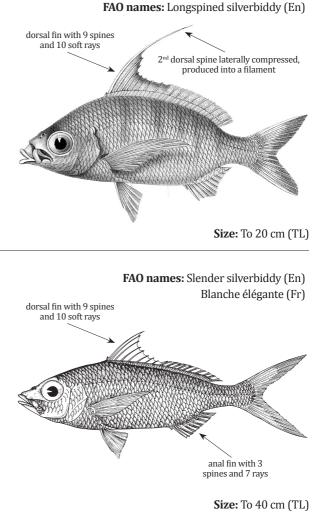
#### Local name(s): Nga Si Ooe.

**Habitat:** Along sandy beaches but also enters estuaries and brackish lagoons.

Fisheries: Gillnets, cast nets, bottom trawls.

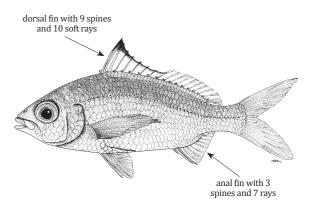
**Distinctive Characters:** Body oblong, its depth 3–3.3 in SL; 35–40 lateral line scales, plus 3–4 scales on caudal fin base; pectoral fins short, not reaching to anal fin origin;  $2^{nd}$  and  $3^{rd}$  anal fin spines slender and short; 3–4 (usually  $3\frac{1}{2}$ ) scale rows between lateral line and  $5^{th}$  dorsal spine.

**Colour:** Silvery, with a trace of pale olive above lateral line; 7–8 faint dusky bars on sides of body in young, absent in older fish; prominent black tip to spinous part of dorsal fin, usually confined to distal part of membrane between second and fifth spines but sometimes continuing as a black margin along whole of dorsal fin.



FAO names: Common silverbiddy (En)

Blanche commune (Fr)



#### Gerres phaiya Iwatsuki & Heemstra, 2001

#### Local name(s):Nga Si Ooe.

Habitat: Shallow coastal waters; also in estuaries and over bottoms of muddy sand; schooling. Fisheries: Gillnets, cast nets, bottom trawls.

**Distinctive Characters:** Body deep, its depth 2.1–2.3 in SL; 36–40 lateral line scales, plus 2–3 scales on caudal fin base; pectoral fin tip reaching slightly beyond level of  $1^{st}$  anal fin spine; anal fin with 3 spines and 7 soft rays;  $2^{nd}$  anal fin spine very robust;  $5\frac{1}{2}$ – $6\frac{1}{2}$  scale rows between lateral line and  $5^{th}$  dorsal spine.

**Colour:** Upper sides of head and trunk tinged with golden brown, grading to silver on lower sides; about 10 diffuse dusky bars spread across sides of trunk in some specimens; dorsal fin mostly hyaline; pelvic and anal fins strong or vivid yellow.

#### Pentaprion longimanus (Cantor, 1849)

Local name(s):Nga Si Ooe.

**Habitat:** Inhabits inshore areas, on muddy-sand bottoms, to depths of 70 m.

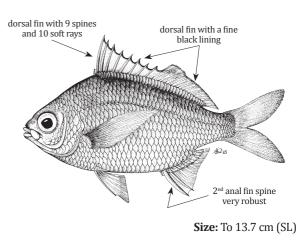
Fisheries: Gillnets, cast nets, bottom trawls.

**Distinctive Characters:** Body moderately deep, its depth 2.5–2.8 in SL; 44–48 lateral line scales to base of caudal fin; pectoral fins tip reaching a level half-way along base of anal fin; anal fin with 5–6 spines and 12–14 soft rays, its base longer than base of soft portion of dorsal fin; caudal fin deeply forked with pointed lobes.

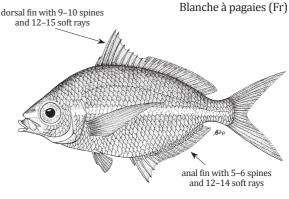
**Colour:** Silvery, with a mirror-like stripe from snout to caudal peduncle; fins dusky yellow; market specimens pale pink or grey.

421

#### FAO names: Strong spine silverbiddy (En)







Size: To 20 cm, common 10 cm (TL)

# HAPALOGENYIDAE

Barbeled grunters

#### Hapalogenys bengalensis Mohapatra, Ray & Kumar, 2013

FAO names: Indian velvetchin (En)

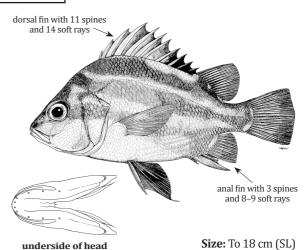
#### Local name(s): ????

Habitat: Coastal waters, on muddy-sand bottoms. Fisheries: Mainly bottom trawls.

**Distinctive Characters:** Fleshy lower lip with dense cluster of short papillae; 10 unobstructed pores on chin; tip of pelvic fin reaching to or beyond the 1st anal fin spine; 7–8 and 19–20 scale rows above and below lateral line, respectively; 42–45 lateral line scales; 19–20 gill rakers on 1st gill arch.

**Colour:** Three broad longitudinal dark stripes on body, 1st from nape to base to upper caudal fin base, middle stripe from nape to mid caudal fin base; lowermost stripe indistinct from snout to lower caudal fin base.

**Remarks:** This species might be a synonym of *Hapalogenys filamentosus* Iwatsuki and Russell, 2006 (Y. Iwatsuki pers. com.).



#### Hapalogenys merguiensis Iwatsuki, Satapoomin & Amaoka, 2000

#### Local name(s): ????

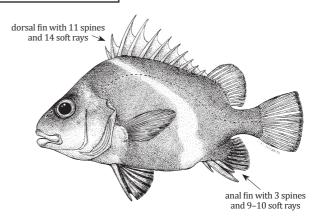
Habitat: On muddy-sand bottoms from about 80 to 180 m depth.

Fisheries: Mainly bottom trawls.

Distinctive Characters: Fleshy lower lip with a cluster of very short dense papillae; 10 pores on chin; pelvic fin tip not reaching to 1st anal fin spine when depressed; 9-10 and 18-20 scale rows above and below lateral line, respectively; 39-42 pored lateral line scales; 17–20 gill rakers on 1st gill arch.

Colour: Two indistinct oblique dark bands on body, the 1st descending from the nape to behind the pectoral fin; the 2nd from base of anterior 2nd or 3rd dorsal fin spines and soft dorsal fin base, curving backward through the lateral line to soft anal fin and caudal peduncle.

#### FAO names: Mergui velvetchin (En)



Size: To 30 cm, common 20 cm (TL)

FAO names: Blackfin slatey (En)

## HAEMULIDAE

Grunts - Sweetlips - Rubberlips - Hotlips

dorsal fin with 10-11 spines

#### Diagramma melanacrum Johnson & Randall, 2001

#### Local name(s): Nga Gone.

Habitat: Juveniles in estuaries and silty reefs; adults on deep reefs.

Fisheries: Handlines, gillnets.

Distinctive Characters: Mouth small; chin with 6 pores, but no median pit (true of all Diagramma spp.); 20–23 gill rakers on 1st gill arch (6–7 on upper limb, 1 at corner, and 12-13 on lower limb); anal fin with 3 spines and 6-7 soft rays; caudal peduncle slender and long.

**Colour:** Body yellowish dorsally, shading to pale silvery grey on sides and ventrally, with numerous small dark brown spots, which form oblique rows on body below lateral line; opercular membrane black. Juveniles with larger spots. Subadults with narrow wavy lines on operculum and cheeks.

#### Diagramma picta (Thunberg, 1792)

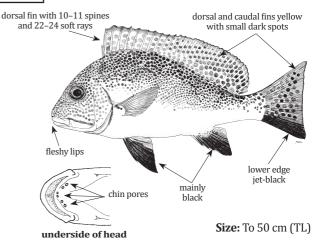
#### Local name(s): Nga Gone.

Habitat: Coastal waters around coral and rocky reefs. Maximum depth 80 m.

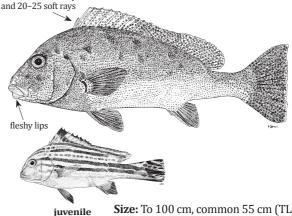
Fisheries: Handlines, gillnets, bottom trawls.

Distinctive Characters: Mouth small; chin with 6 pores, but no median pit; 17-23, rarely 17-18 gill rakers on 1<sup>st</sup> gill arch (5–9 on upper limb, 1 at corner, and 10-16 on lower limb); anal fin with 3 spines and 7 soft rays; caudal peduncle slender and long; scales small. ctenoid.

Colour: Longitudinal black bands on juveniles; adults blue-grey with bright yellow to golden orange spots sometimes forming lines on head; in large individuals the spots become small or indistinct; inside mouth bright orange to red.



FAO names: Painted sweetlips (En) Diagramme voilier (Fr)



#### Plectorhinchus albovittatus (Rüppell, 1838)

#### Local name(s): Nga Gone.

Habitat: Coastal inshore waters near reefs. Fisheries: Handlines, gillnets, bottom trawls.

**Distinctive Characters:** Lips fleshy, greatly swollen with age; chin with 6 pores but no median pit (true of all *Plectorhinchus* spp.); anal fin with 3 spines and 7 soft rays; 26–31 gill rakers on first gill arch (6–9 on upper limb, 1 at corner, and 18–21 on lower limb). **Colour:** Juveniles brown, paler below, with 3 narrow white bands on body. Adults grey to greybrown with pectoral, pelvic, and anal fins blackish, lower lobe and upper tip of caudal fin black, anterior half of soft dorsal fin black, spinous dorsal fin dusky to black; lower lip and chin white; belly silvery grey to white.

#### Plectorhinchus ceylonensis (Smith, 1956)

Local name(s): Nga Gone. Habitat: Coastal fringing reefs.

Fisheries: Handlines, gillnets.

**Distinctive Characters:** Lips fleshy. Chin with 6 pores but no median pit; anal fin with 3 spines and 7 soft rays; 29 gill rakers on first gill arch (9 on upper limb, 1 at corner, and 19 on lower limb).

**Colour:** Slaty-grey with a green tinged, yellow bar from eye to tip of snout; soft dorsal, anal, caudal and pelvic fins dark, or with black margins. Juveniles with broad dark longitudinal stripes.

### Plectorhinchus chaetodonoides Lacepède, 1801

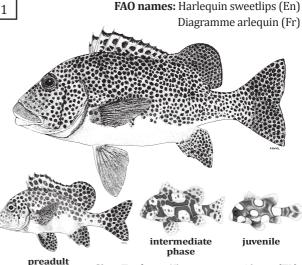
#### Local name(s): Nga Gone.

Habitat: Coastal inshore waters near reefs.

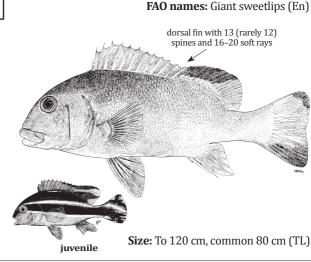
Fisheries: Handlines, gillnets.

**Distinctive Characters:** Lips fleshy, moderately swollen with age; chin with 6 pores but no median pit; dorsal fin with 12 (rarely 11) spines and 18–20 soft rays; anal fin with 3 spines and 7 soft rays; 36–43 gill rakers on first gill arch (9–12 on upper limb, 1 at corner, and 27–32 on lower limb).

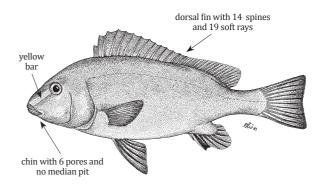
**Colour:** Juveniles brownish with large, welldefined creamy white blotches on body that include brown spots with age; colour gradually changing into a greyish background with large, deep brown spots in adults.



Size: To about 65 cm common 40 cm (TL)



FAO names: Sri Lanka sweetlips (En) Diagramme de Sri Lanka (Fr)



Size: To about 44 cm (TL)

FAO names: Lemonfish (En)

#### Plectorhinchus flavomaculatus (Cuvier, 1830)

#### Local name(s): Nga Gone.

Habitat: Coastal waters near reefs and weedy areas.

**Fisheries:** Caught mainly by handlines and gillnets. **Distinctive Characters:** Lips fleshy, moderately thickened with age; chin with 6 pores but no median pit; anal fin with 3 spines and 7 soft rays; 26–34 gill rakers on 1<sup>st</sup> gill arch (11–14 on upper limb, 1 at corner, and 16–19 on lower limb); chin with 6 pores but no median pit; scales ctenoid (rough).

**Colour:** Body bluish grey with profuse small orange to yellow spots on body; juveniles with golden or rusty-orange stripes along the body that break into a reticulate pattern and form small spots that may be lost with growth or remain as wavy lines of spots on head.

#### Plectorhinchus gibbosus (Lacepède, 1802)

Local name(s): Nga Gone.

Habitat: Coastal reefs and estuaries.

Fisheries: Caught mainly by handlines and gillnets.

**Distinctive Characters:** Lips fleshy, greatly swollen with age; chin with 6 pores but no median pit; anal fin with 3 spines and 7 soft rays; 24–30 gill rakers on first gill arch (8–10 on upper limb, 1 at corner, and 17–19 on lower limb); anal fin with 3 spines and 7 soft rays; in juveniles, spiny portion of dorsal fin twice as high as soft portion, becoming about equal in height in large adults.

**Colour:** Juveniles brownish, caudal fin pink or transparent; adults uniform dark grey to brownish or blackish; large specimens are sometimes mottled with light brown.

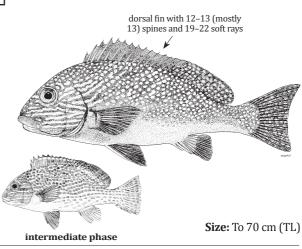
#### Plectorhinchus lineatus (Linnaeus, 1758)

#### Local name(s): Nga Gone.

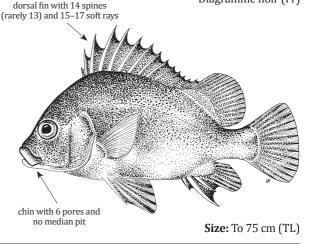
Habitat: Reef-associated in depths of 1–35 m. Fisheries: Handlines, gillnets.

**Distinctive Characters:** Lips fleshy, moderately swollen with age; chin with 6 pores but no median pit; anal fin with 3 spines and 7 soft rays; 25–30 gill rakers on first gill arch (7–10 on upper limb, 1 at corner, and 17–20 on lower limb).

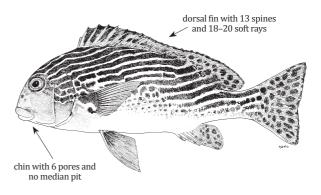
**Colour:** Juveniles with few horizontal to slightly oblique dark brown bands which subdivide with age until the body appears to be dark chocolate brown above, with a network of fine white lines running up and back, the broad brown bars breaking up into smaller and smaller spots on lower sides; belly white; lips and fins bright yellow, anal and caudal fins dotted with black; pectoral fins with a splash of bright crimson or scarlet red at the base.



FAO names: Harry hotlips (En) Diagramme noir (Fr)



FAO names: Lined sweetlips (En)



#### 424

#### Plectorhinchus macrospilus Satapoomin & Randall, 2000

#### Local name(s): Nga Gone.

Habitat: Reef associated in depths of 5-30m. Fisheries: Handlines, gillnets.

Distinctive Characters: Lips fleshy; chin with 6 pores but no median pit; anal fin with 3 spines and 8 soft rays; 18-21 gill rakers on first gill arch (4-6 on upper limb + 14–15 on lower limb).

Colour: Adults whitish with many large black spots on body, nape, and soft portions of median fins, and smaller black spots on head, juveniles with 4 (or probably 5 when smaller) dark stripes more than half orbit diameter in width that gradually break up into spots with growth.

#### Plectorhinchus picus (Cuvier, 1828)

Local name(s): Nga Gone.

Habitat: Reef associated in depths of 3-30m. Fisheries: Handlines, gillnets.

Distinctive Characters: Lips fleshy, greatly swollen with age; chin with 6 pores but no median pit; anal fin with 3 spines and 7-8 soft rays; 33-37 gill rakers on first gill arch (8-13 on upper limb, 1 at corner, and 22-26 on lower limb).

Colour: Juveniles are creamy white below, blackish above with white snout and a pair of white saddles and spots; adults become covered with dark brown spots on head, back, sides, and fins; dorsal fin dark brown to blackish with a median horizontal grey stripe on membranes only and with a series of large black spots; pectoral and pelvic fins with the base and axil vermillion in some specimens; inside of mouth, hind edge of maxilla, gill-cover membrane and base of pectoral fins vermillion, scarlet, or redbrown; belly pale mauve grey.

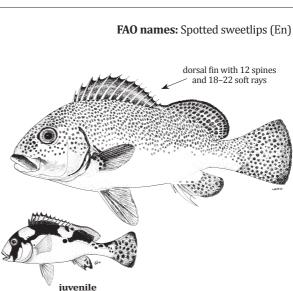
#### Plectorhinchus unicolor (Macleay, 1883)

#### Local name(s): Nga Gone.

Habitat: Coastal rocky reefs in depths of 1-10 m. Fisheries: Handlines, gillnets.

Distinctive Characters: Lips fleshy; chin with 6 pores but no median pit; anal fin with 3 spines and 6-8 soft rays; 27-31 gill rakers on 1st gill arch (10-12 on upper limb + 16–19 on lower limb); lateral line with 54-57 tubed scales.

Colour: Olive-brown, tan, or grey-brown; posterior margin of opercular membrane dusky, with underlying cleithrum red; and caudal fin bright yellow in juveniles, to dull yellowish or greenish brown in adults.



#### Size: To about 85 cm, common 60 cm (TL)

#### FAO names: Sombre sweetlips (En)

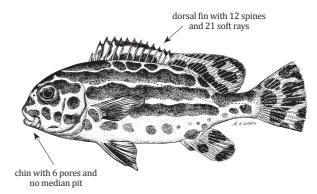
dorsal fin with 12 (rarely 13)

spines and 17–20 soft rays

chin with 6 pores and

no median pit

425



Size: To about 40 cm (TL)

#### Plectorhinchus vittatus (Linnaeus, 1758)

Local name(s): Nga Gone.

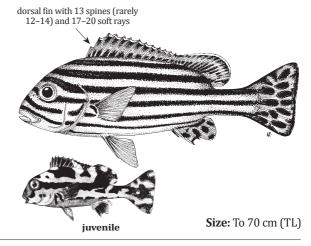
Habitat: Coastal rocky and coral reefs.

Fisheries: Caught mainly by handlines and gillnets.

**Distinctive Characters:** Lips fleshy, greatly swollen with age; chin with 6 pores but no median pit; anal fin with 3 spines and 7–8 soft rays; 28–35 gill rakers on 1<sup>st</sup> gill arch (9–11 on upper limb, 1 at corner, and 18–23 on lower limb).

**Colour:** Varies greatly with age; juveniles with connected black blotches and spots that gradually break up in adults into horizontal bands which unite at tip of snout; pectoral fins black in juveniles, becoming uniformly yellow in adults; tail spotted with age.

FAO names: Indian Ocean oriental sweetlips (En) Diagramme oriental (Fr)



#### Pomadasys and amanensis McKay & Satapoomin 1994

FAO names: Andaman grunt (En)

#### Local name(s): Nga Gone.

Habitat: Coastal waters in open bays and estuaries. Fisheries: Caught mainly by gillnets and bottom trawls.

**Distinctive Characters:** Chin with 2 pores followed by a pit containing a pore on each side (true of all *Pomadasys* spp.); body depth 2.3 in SL; mouth small, maxilla reaching to eye; lips not fleshy; jaw teeth villiform (brush-like); dorsal fin with 12 spines and 14 soft rays; anal fin with 3 spines and 7 rays; 7 scale rows between lateral line and dorsal fin origin.

**Colour:** Pale silvery grey with bluish reflections, white below with fine brown dots on lower sides; 4 dark brown bands on back, lowermost midlaterally from preopercule to base of caudal fin; anal fin with posterior half dusky.

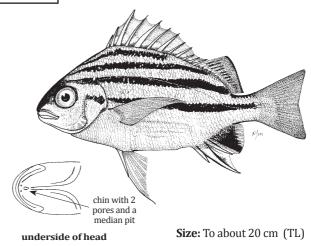
#### Pomadasys argenteus (Forsskål, 1775)

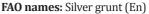
#### Local name(s): Nga Gone.

Habitat: Coastal waters in open bays and estuaries. Fisheries: Caught mainly by gillnets and bottom trawls.

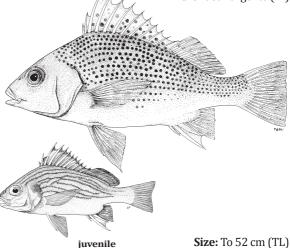
**Distinctive Characters:** Body depth 2.7–2.8 in SL; mouth small, maxilla reaching to eye; chin with 2 pores followed by a pit containing a pore on each side; lips not thickened; jaw teeth villiform (brush-like); dorsal fin with 12 spines and 14 soft rays; anal fin with 3 spines and 7 soft rays; 5 scale rows between lateral line and dorsal fin origin.

**Colour:** Juveniles pale brownish, lighter below; back with irregular longitudinal streaks; dorsal fin with dusky membrane; a dark spot on gill cover; adults silvery, with dark blotches on dorsal fin and numerous scattered dark brown to blackish spots on body.





Grondeur argenté (Fr)



#### Pomadasys argyreus (Valenciennes, 1833)

#### Local name(s): Nga Gone.

**Habitat:** Coastal waters in open bays and on trawling grounds.

Fisheries: Caught mainly by gillnets and bottom trawls.

**Distinctive Characters:** Body depth 2.3–2.7 in SL; mouth small, maxilla reaching to eye; lips not thickened; jaw teeth villiform (brush-like); 2 pores and a median pit on chin; dorsal fin with 12 spines and 13 soft rays; anal fin with 3 spines and 7 soft rays; 6 scale rows between lateral line and dorsal fin origin.

**Colour:** Body silvery; gill cover with a large blue black blotch extending onto opercle and becoming indistinct in adults; peritoneum pale sandy brown; alimentary canal pale (not black).

#### Pomadasys furcatus (Bloch & Schneider, 1801)

Local name(s): Nga Gone.

Habitat: Inhabits coastal waters near reefs.

Fisheries: Gillnets, bottom trawls.

**Distinctive Characters:** Body depth 2.9–3 in SL; mouth small, maxilla reaching to posterior nostril or eye; jaw teeth villiform (brush-like); 2 pores and a median pit on chin; dorsal fin with 12 spines and 14–16 soft rays; anal fin with 3 spines and 8–9 soft rays; 8–9 scale rows between lateral line and dorsal fin origin; soft portions of dorsal and anal fins with a row of interradial scales.

**Colour:** Body purplish-brown above, paler below, with about 6 longitudinal dark stripes that are usually bifurcate anteriorly; the stripes becoming progressively more bifurcate or double with age.

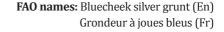
Pomadasys kaakan (Cuvier, 1830)

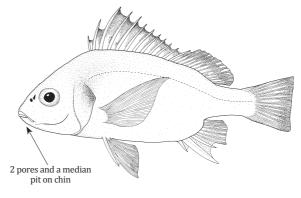
Local name(s): Nga Gone.

Habitat: : Inhabits estuaries and coastal waters. Fisheries: Gillnets, bottom trawls.

**Distinctive Characters:** Body depth 2.5–3 in SL; mouth small, maxilla reaching to eye; jaw teeth villiform (brush-like); 2 pores and a median pit on chin; dorsal fin with 12 spines and 13–15 soft rays; anal fin with 3 spines and 7–8 soft rays; scales ctenoid; 7 scale rows between lateral line and dorsal fin origin.

**Colour:** Juveniles with 12 or more vertical bars comprised of small dark brown spots or irregular blotches; dorsal fin spotted with dark brown to black spots on lower half of spinous dorsal fin and in 3 rows on rayed dorsal fin; adults uniform golden green above, silvery below with traces of the vertical bars present only when alive and spots on dorsal fins indistinct or absent; large individuals sometimes with head, ventral parts of body and lower lobe of caudal fin yellowish.

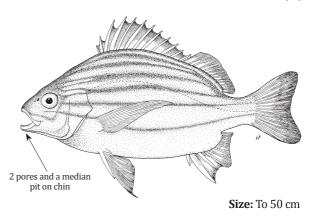


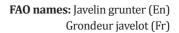


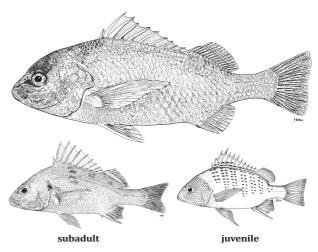
Size: To 40 cm, common 25 cm (TL)

FAO names: Banded grunter (En)

Goret à six bandes (Fr)







Size: To 80 cm, common 50 cm (TL)

#### Pomadasys maculatus (Bloch, 1793)

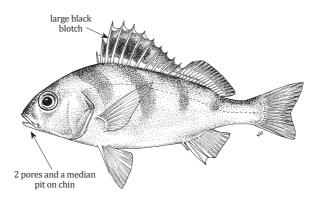
Local name(s): Nga Gone.

Habitat: Inhabits coastal waters down to 40 m. Fisheries: Gillnets, bottom trawls.

**Distinctive Characters:** Body depth 2.3–2.7 in SL; mouth small, maxilla reaching to eye; chin with 2 pores followed by a pit containing a pore on each side; jaw teeth villiform (brush-like); dorsal fin with 12 spines and 13–15 soft rays; anal fin with 3 spines and 7 (rarely 6 or 8) soft rays; 7–9 scale rows between lateral line and dorsal fin origin.

**Colour:** Body silvery grey; head purplish; nape and back with a series of incomplete cross bars (the one on nape conspicuous); fins yellowish.

#### FAO names: Saddle grunt (En)



Size: To 50 cm, common 15 cm (TL)

FAO names: Olive grunt (En)

#### Pomadasys olivaceus (Day, 1875)

Local name(s): Nga Gone.

Habitat: Inhabits coastal waters.

**Fisheries:** Caught mainly by gillnets and bottom trawls.

**Distinctive Characters:** Body depth 2.5–2.8 in SL; mouth small, maxilla reaching to level of posterior nostril or eye; chin with 2 pores followed by a pit containing a pore on each side; jaw teeth villiform (brush-like); dorsal fin with 12 spines and 15–17 soft rays; anal fin with 3 spines and 11–13 soft rays;.

**Colour:** Body and head olive-grey, sometimes tinged with purple; a large blotch, bordered by yellow anteriorly at upper angle of gill cover; dorsal fin with fine brown dots.



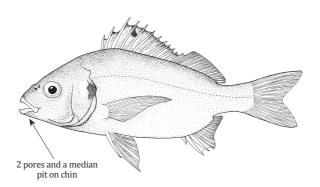
Local name(s): Nga Gone.

**Habitat:** Coastal inshore waters in open bays and mouths of rivers.

Fisheries: Caught mainly by gillnets and bottom trawls.

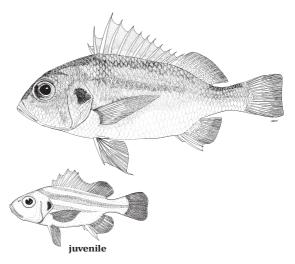
**Distinctive Characters:** Body depth 2.6–2.9 in SL; head blunt, its upper profile convex; mouth small; maxilla reaching to anterior margin of eye or pupil; chin with 2 pores followed by a pit containing a pore on each side; jaw teeth villiform (brush-like); dorsal fin with 12 (rarely 13) spines and 13 (rarely 12 or 14) rays; anal fin with 3 spines and 7 rays.

**Colour:** Adults uniformly silver-grey or with several faint dark stripes. Juveniles with 3 dark stripes, the middle one wide, becoming faded or absent with growth; a distinct black-brown spot on gill cover; dorsal fins without dark spots or blotches.



Size: To 31 cm (TL)

FAO names: Blackeared grunt (En)



Size: To about 15 cm, common 10 cm (TL)

#### Pomadasys unimaculatus Tian, 1982

Local name(s): Nga Gone.

Habitat: Coastal inshore waters.

Fisheries: Caught mainly by bottom trawls.

**Distinctive Characters:** Body depth 2.5–2.8 in SL; head profile convex; mouth small; maxilla reaching to anterior margin of eye; jaw teeth villiform (brushlike); 2 pores and a median pit on chin; dorsal fin with 12 spines and 13–14 rays; anal fin with 3 spines and 7 rays.

**Colour:** Silvery, large dark brown blotch across predorsal space; 4 small dark simicircuolar patches on back; large dark red blotch on dorsal fin between 3rd and 6th spines.

# 2 pores and a median pit on chin Size: To about 19 cm (TL)

**SPARIDAE** Porgies – Seabreams

Acanthopagrus berda (Forsskål, 1775)

Local name(s): Ngwe War Nga

Habitat: Demersal in coastal waters.

**Fisheries:** Caught mainly with gillnets, beach seine, handlines and bottom trawls.

**Distinctive Characters:** Anal fin with 3 spines and 8-9 soft rays; molariform teeth present in both jaws;  $3\frac{1}{2}$  scale rows between  $5^{\text{th}}$  dorsal spine and lateral line; interorbital area scaleless.

**Colour:** Grey, dark silver or olive-brown with silvery or brassy reflections; upper part of body and scale bases darkest; lower part of head and body paler (some individuals observed in Pakistan completely blackish); a dark edge along opercle; pectoral fins dusky with a yellow tinge; soft dorsal, anal, pelvic, and caudal fins blackish.

#### Crenidens macracanthus Günther, 1874

#### Local name(s): Ngwe War Nga.

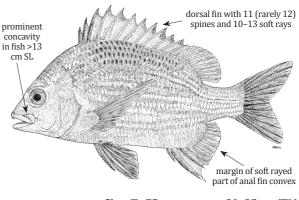
Habitat: Coastal waters, sometimes entering estuaries.

**Fisheries:** Caught mainly with gillnets, beach seine, handlines.

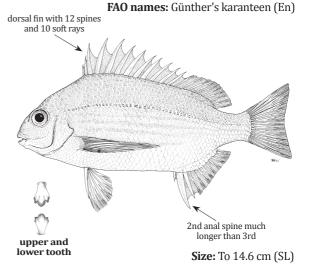
**Distinctive Characters:** Body depth 2.2–2.5 in SL; incisor-like teeth with 5 points, all points subequal in size, forming a flat cutting edge; 47–48 lateral line scales; 5½ scale rows above lateral line, 11½ below; anal fin with 3 spines and 10 soft rays; 2nd anal spine much longer than 3rd anal spine; 14 pectoral fin rays; 19 gill rakers on 1st gill arch.

**Colour:** Head and upper body brownish yellowtan, lower part of body and operculum whitish yellow.

**FAO names:** Goldsilk seabream (En) Pagre berda (Fr)



Size: To 75 cm, common 20-25 cm (TL)



FAO names: Red patched grunter (En)

#### Rhabdosargus sarba (Forsskål, 1775)

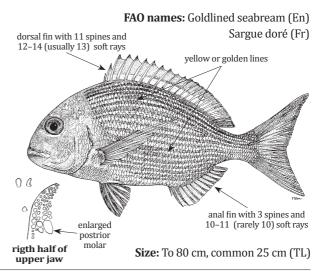
#### Local name(s): Nga Gone.

**Habitat:** Benthic in coastal waters, sometimes entering estuaries.

Fisheries: Caught mainly with gillnets, beach seine and handlines.

**Distinctive Characters:** Body depth <2.3 in SL; 4–8 incisiform teeth at front of jaws followed by 2–5 series of molariform teeth, of which the inner posterior one is greatly enlarged;  $6\frac{1}{2}-7\frac{1}{2}$  scale rows between 5<sup>th</sup> dorsal spine and lateral line; no preopercular flange entirely naked; 7–9 gill rakers on the lower limb; 56–64 lateral line scales.

**Colour:** Head and body silvery black; body with yellow or golden longitudinal lines, as well as yellowish coloration of pelvic and anal fins.



#### LETHRINIDAE

#### Emperors - Large-eye breams - Emperor snappers

#### Gnathodentex aurolineatus (Lacepède, 1802)

Local name(s): Nga Wet Sut.

Habitat: Coral reefs in depths to 20 m. Fisheries: Gillnets, handlines.

**Distinctive Characters:** Body oblong, head profile straight in front of eye; jaw teeth in narrow, villiform band bordered by an outer series of conical teeth; anteriorly 4 moderate-sized canines present in upper jaw and 6 in lower jaw; outer surface of maxilla with a denticulated edge; 15 pectoral fin rays; 4–6 scale rows on cheek.

**Colour:** Back dark brown with narrow silvery stripes, sides and ventral parts of head and body silvery-grey with 4–5 brownish orange stripes; a prominent golden yellow to orange blotch directly below posterior part of dorsal fin and just in front of caudal fin base.

#### Gymnocranius elongatus Senta, 1973

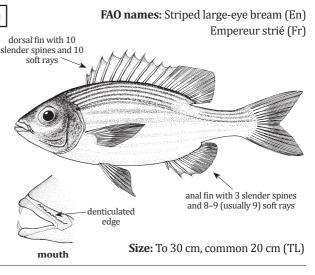
Local name(s): Nga Wet Sut.

**Habitat:** Continental shelf, usually at depths of 50–100 m.

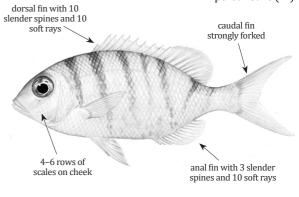
Fisheries: Caught mainly by bottom trawling.

**Distinctive Characters:** Body oblong; head profile evenly rounded, snout somewhat pointed; 4–6 small, slender canines at front of each jaw, lateral teeth villiform to conical; outer surface of maxilla smooth; caudal fin strongly forked, the median rays shorter than eye diameter; 14 pectoral fin rays.

**Colour:** Silvery, sometimes slightly brownish dorsally; about 8 transverse brown bars on sides, scattered blotches and speckling sometimes evident; fins clear to yellow-orange; caudal fin margins and tips often deep red.



FAO names: Forktail large-eye bream (En) Empereur strié (Fr)



### Gymnocranius grandoculis (Valenciennes, 1830)

#### Local name(s): Nga Wet Sut Pyar Sinn.

Habitat: Coastal waters in depths to about 80 m. Fisheries: Bottom trawling, line gear.

**Distinctive Characters:** Body oblong, dorsal profile of head smoothly convex; 2–3 pairs of canines in front of each jaw, conical teeth at sides and fine teeth within; outer surface of maxilla smooth; caudal fin only moderately forked, the median rays much longer than eye diameter; 14 pectoral fin rays.

**Colour:** Silvery grey-blue above, becoming silvery white below; cheeks, snout and opercle with conspicuous wavy blue lines in fresh specimens; median fins orange-yellow, paired fins paler.

**Remarks:** This species has also been reported as *Gymnocranius robinsoni*, a junior synonym.

### Gymnocranius griseus (Temminck & Schlegel, 1843)

Local name(s): Nga Wet Sut Myet Lone Gyi. Habitat: Coastal waters in depths to about 80 m. Fisheries: Bottom trawling, line gear.

**Distinctive Characters:** Body oblong, dorsal profile of head evenly convex; 2–3 pairs of moderate canines in front of each jaw, conical teeth at sides and fine teeth within; outer surface of maxilla smooth; caudal fin only moderately forked, the median rays much longer than eye diameter; 14 pectoral fin rays.

**Colour:** Silvery grey-blue, becoming silvery white ventrally, fins yellow to orange. In young specimens, head and body with 5–8 irregular dark bars, in adults, remnants of bands usually present.

#### Gymnocranius microdon (Bleeker, 1851)

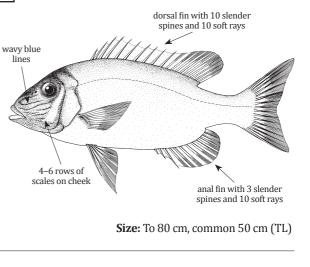
Local name(s): Nga Wet Sut Pyar Kwet.

**Habitat:** Sand and rubble bottoms adjacent to rock and coral reefs, usually at depths of 20–50 m

**Fisheries:** Caught mainly with bottom longlines and handlines.

**Distinctive Characters:** Body oblong, forehead profile moderately steep; 2–3 pairs of small, slender canines at front of each jaw, other teeth villiform becoming conical on lateral sections of jaws; outer surface of maxilla smooth; caudal fin only moderately forked, the median rays much longer than eye diameter; 14 pectoral fin rays.

**Colour:** Silvery to brownish, scale margins with a narrow brown border; numerous vertically elongate blue spots on snout and cheek, and sometimes on operculum; fins clear to yellow or reddish, caudal fin sometimes dusky brown.



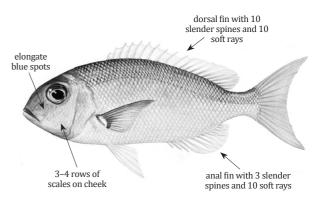
FAO names: Blue-lined large-eye bream (En)

# 

Size: To 80 cm, common 50 cm (TL)

FAO names: Grey large-eye bream (En)

FAO names: Bluespotted large-eye bream (En)



Size: To 80 cm, common 50 cm (TL)

#### Lethrinus atkinsoni Seale, 1910

**Local name(s):** Nga Wet Sut Kyaw Nyo Zin. **Habitat:** Outer reef slopes, sandy areas in lagoons and seagrass beds to depths of about 30 m.

Fisheries: Line gears, bottom trawls, gillnets.

**Distinctive Characters:** Body depth 2.7–2.9 in SL; snout length about 1.9–2.6 in head length; lateral teeth in jaws rounded or molars; inner surface of the pectoral fin base densely scaled; 4½ scale rows between lateral line and base of middle dorsal fin spines; cheeks scaleless (true of all *Lethrinus* species).

**Colour:** Upper sides bluish grey, tan or yellowish, white ventrally, the caudal peduncle and sometimes a broad indistinct band on sides yellow; head brown, lips reddish; fins pale yellowish, orange, or reddish; the base of pectoral fins, basal membranes of anal fin and edges of pelvic, dorsal, anal, and caudal fins often reddish.

Lethrinus erythropterus Valenciennes, 1830

#### Local name(s): ????

Habitat: Coral reefs and adjacent sandy areas. Fisheries: Line gears, bottom trawls, gillnets.

**Distinctive Characters:** Body depth 2.3–2.5 in SL; snout length about 1.9–2.2 in head length; lateral teeth in jaws rounded or molars; inner surface of the pectoral fin base densely scaled; dorsal fin with 10 spines and 9 soft rays; 4½ scale rows between lateral line and base of middle dorsal fin spines; cheeks scaleless.

**Colour:** Head and body brown or rust red, lighter ventrally; sometimes 2 light bars on caudal peduncle; area around eye, a broad streak from eye to tip of snout, lips, and base of pectoral fins red; all fins reddish, often a bright red or orange.

#### Lethrinus harak (Forsskål, 1775)

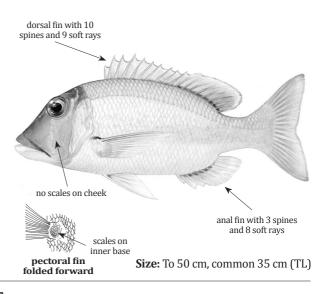
Local name(s): Nga Wet Sut Kyaw Net Kwet.

**Habitat:** Shallow sandy areas, coral rubble, mangroves, lagoon and seagrass areas, inshore and adjacent to coral reefs. Maximum depth 20 m.

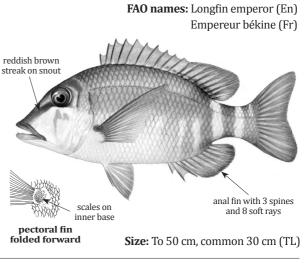
Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Body depth 2.6–2.8 in SL; snout length about 2.0–2.6 in head length; lateral teeth in jaws in adults molars or rounded; inner surface of pectoral fin base densely covered with scales;  $5\frac{1}{2}$  (sometimes  $4\frac{1}{2}$ ) scale rows between lateral line and base of middle dorsal fin spines; cheeks scaleless.

**Colour:** Olive-green above, lighter below, belly often tinged with pink; all fins pinkish to rosy-red; vertical fins mottled or striped.



FAO names: Pacific vellowtail emperor (En)



Empereur Saint Pierre (Fr)

FAO names: Thumbprint emperor (En)

# Lethrinus lentjan (Lacepède, 1802)

Local name(s): Nga Wet Sut Pa Hat Ni.

**Habitat:** Shallow sandy bottoms in coastal areas, deep lagoons and near coral reefs. Maximum depth 90 m.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Body depth 2.5–2.8 in SL; snout length about 1.9–2.4 in head length; lateral teeth in jaws as molars, molars with tubercles or broadly rounded; 5½ scale rows between lateral line and base of middle dorsal fin spines; inner surface of pectoral fin bases scaleless or with only few scales; cheeks scaleless.

**Colour:** Body green-grey above, silver below; white spots sometimes on scale centres especially above lateral line; head brownish mauve-purple; posterior margin of opercle and sometimes base of pectoral fins red; dorsal fin white and orange mottled with a reddish margin.

*Lethrinus microdon* Valenciennes, 1830

Local name(s): Nga Wet Sut Thwar Thaye.

**Habitat:** Sandy areas near coral reefs. Maximum depth 80 m.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Body depth 2.9–3.4 in SL; snout length about 1.8–2.3 in in head length; snout length (measured without lip) 0.7–0.8 in cheek heigth; lateral teeth in jaws conical; 4½ scale rows between lateral line and base of middle dorsal fin spines; inner surface of pectoral fin base and cheeks scaleless.

**Colour:** Body grey or brown with scattered irregular dark blotches on sides; fins pale or orangish; juveniles with indistinct cross band and a dark blotch between lateral line and middle of pectoral fins; 8 vertical bands usually present on upper half of body.

# Lethrinus nebulosus (Forsskål, 1775)

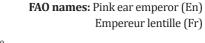
Local name(s): Nga Wet Sut Hnar Zinn.

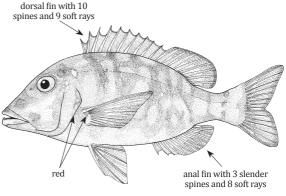
**Habitat:** Near shore habitats and offshore coral reefs. Maximum depth 75 m.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Body depth 2.5–2.9 in SL; snout length 1.8–2.4 in head length; snout length (measured without lip) 0.8–1 in cheek height; lateral teeth in jaws rounded with points or molars that often have tubercles;  $5\frac{1}{2}$  scale rows between lateral line and base of middle dorsal fin spines; inner surface of pectoral fin base densely covered with scales; cheeks scaleless.

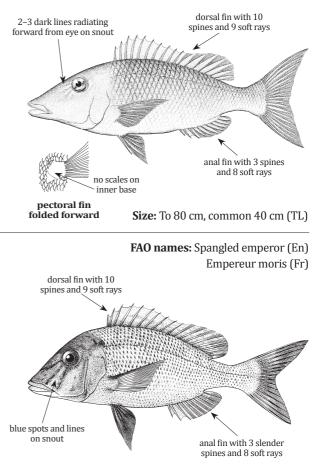
**Colour:** Body yellowish or bronze, lighter below, centres of many scales with a white or light blue spot, sometimes irregular dark indistinct bars on sides; fins whitish or yellowish, pelvic fins dusky, edge of dorsal fin reddish.





Size: To 50 cm, common 30 cm (TL)

FAO names: Smalltooth emperor (En) Empereur tidents (Fr)



#### Lethrinus obsoletus (Forsskål, 1775)

Local name(s): Nga Wet Sut Lein Maw Zinn.

**Habitat:** Inhabits seagrass beds, and sand and rubble areas of lagoons and reefs to depths of about 30 m.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Body depth 2.6–2.9 in SL; snout length 1.8–2.3 in head length; snout length (measured without lip) 0.8–0.9 in cheek height; lateral teeth in jaws conical or rounded; 5½ scale rows between lateral line and base of middle dorsal fin spines; cheeks scaleless.

**Colour:** Body light tan to brown, lighter below; head often with several broad indistinct vertical and diagonal light and dark bands; sometimes white spots below eye; posterior edge of operculum dark brown; fins whitish or tan, sometimes mottled.



Local name(s): Nga Wet Sut Hnar Shae.

Habitat: Coral reefs and coastal waters to rather deep waters. Maximum depth 190 m.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Body depth 2.9–3.4 in SL; snout length about 1.7–2.2 in head length, snout length (measured without lip) 0.6–0.8 in cheek height; lateral teeth in jaws conical; 5½ scale rows between lateral line and base of middle dorsal fin spines; inner surface of pectoral fin base and cheeks scaleless.

**Colour:** Body grey, lighter ventrally, often with scattered irregular dark blotches; snout with wavy dark streaks, upper jaw, especially near corner of mouth sometimes edged behind with red.

#### Lethrinus ornatus Valenciennes, 1830

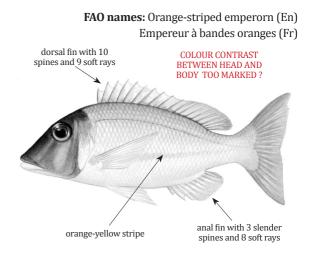
Local name(s): Nga Wet Sut Hnar Toe.

**Habitat:** Inhabits sandy and soft bottom inshore bays, seagrass beds, lagoons, and areas adjacent to reefs. Maximum depth 30 m.

Fisheries: Caught mainly with gillnets.

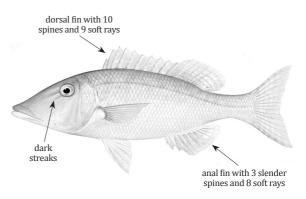
**Distinctive Characters:** Body depth 2.3–2.6 in SL; snout length about 2–2.5 in head length; lateral teeth in jaws rounded with points or molars; inner surface of pectoral fin base densely scaled; cheeks scaleless.

**Colour:** Body dusky whitish, lighter below, with 5–6 yellow-orange stripes; posterior edge of opercle and preopercle bright red (the former more conspicuous); head brown or tan, sometimes a red spot on lower front edge of eye; pectoral fins orangish; pelvic and anal fins, and most of dorsal fin whitish; edge of dorsal and caudal fins reddish.

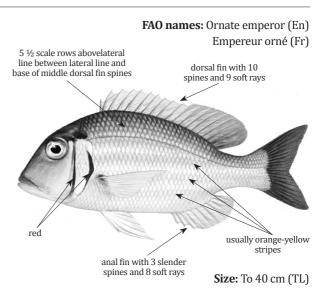


Size: To 60 cm, common 30 cm (TL)





Size: To 100 cm, common 70 cm (TL)



# Lethrinus rubrioperculatus Sato, 1978

Local name(s): Nga Wet Sut Parr Hmart.

Habitat: Inhabits sand and rubble areas of outer reef slopes to depths of 160 m.

Fisheries: Bottom trawls, gillnets, handlines.

Distinctive Characters: Body depth 3.0-3.4 in SL; snout length 1.8-2.1 in head length; snout length (measured without lip) 0.7-0.9 in cheek height; lateral teeth in jaws conical; 4½ scale rows between lateral line and base of middle dorsal fin spines; inner surface of pectoral fin base scaleless; cheeks scaleless; caudal fin lunate, upper lobe usually longer than lower.

**Colour:** Body greyish green to purple, paler below. Head often darker; a conspicuous bright red spot on posterior margin of opercle, slightly above midpoint; fins red to orange, with brighter margins, sometimes mottled with brighter red.

# Monotaxis grandoculis (Forsskål, 1775)

Local name(s): Nga Wet Sut Hnar Kauk.

Habitat: Inhabits lagoon and seaward reefs near sand patches. Maximum depth 100 m.

Fisheries: Caught mainly with gillnets.

Distinctive Characters: Head profile strongly convex in front of a large eye; a broad patch of small villiform teeth in jaws anteriorly, followed by 6-7 round, flat molars on each side and preceded by canines in front of each jaw; inner surface of pectoral fin base densely scaled.

Colour: Body bluish grey above, paler below; lips yellow; area over and around eye yellow or orange; posterior part of dorsal fin with irregular dark spots at bases; small juveniles with 3 prominent black saddles separated by narrower white bars on upper half and a prominent black bar through eye.

#### Wattsia mossambica (Smith, 1957)

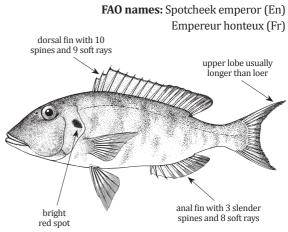
#### Local name(s): Nga Wet Sut Byet Kyi.

Habitat: Outer edge of the continental shelf at depths between 100-180 m.

Fisheries: Caught mainly with bottom longlines and bottom trawls.

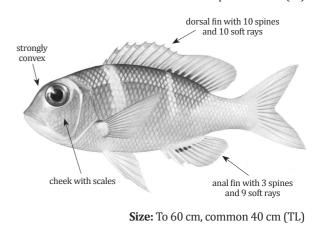
Distinctive Characters: Body relatively deep, roughly rhomboid, its depth 1.9-2.2 in SL; head profile slightly convex; jaw teeth in a narrow, villiform band bordered by an outer series of conical teeth; anteriorly 4 moderate-sized canines in upper jaw and 6 in lower jaw: maxilla with a longitudinal denticulated ridge; inner surface of pectoral fin base scaleless; cheeks with scales.

Colour: Silvery grey with yellowish suffusion; scale margins narrowly brownish; indistinct dark blotches or bars sometimes apparent on body; lips whitish to yellow; fins yellow, faint brown spotting may be present on soft dorsal, anal, and caudal fins.

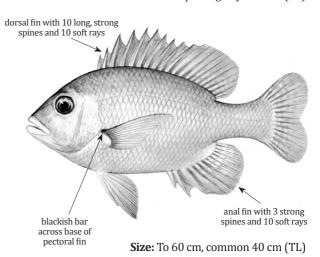


Size: To 40 cm, common 30 cm (TL)

#### FAO names: Humpnose big-eye bream (En) Empereur bossu (Fr)



FAO names: Mozambique large-eye bream (En)



435

# NEMIPTERIDAE

# Threadfin breams - Monocle breams - Dwarf monocle breams

#### Nemipterus bipunctatus (Valenciennes, 1830)

Local name(s): Shwe Nga Ngwe War.

**Habitat:** Benthic on sandy or muddy bottoms in depths of 18–60 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Lower margin of eye tangent to or above a line from tip of snout to upper base of pectoral fin; small canine teeth anteriorly in upper jaw; pectoral fins reaching to or just behind anus; pelvic fins reaching to or just beyond level of anal fin origin; no filament on caudal fin.

**Colour:** Upper part of body pinkish, shading to silvery on the ventral surface; snout with 2 indistinct bluish or mauve stripes; dorsal fin pale pink with a reddish margin and yellow submarginal stripe (lacking in larger specimens); caudal fin yellowish pink.

Nemipterus furcosus (Valenciennes, 1830)

Local name(s): Shwe Nga A Hmee Khwa.

**Habitat:** Sandy or muddy bottoms in depths of 8–110 m.

Fisheries: Bottom trawls.

**Distinctive Characters:** Lower margin of eye tangent to or above a line from tip of snout to upper base of pectoral fins; 2–3 pairs of small recurved canines anteriorly in upper jaw; pectoral fins reaching to or just short of level of anus; pelvic fins reaching to or just short of level of anus; caudal fin deeply forked, without filament.

**Colour:** Head and body pale iridescent pink, shading to silvery white below; back with 9 indistinct cross bars; dorsal fin pale rosy, sometimes with yellowish tinge, outer margin darker pink; anal fin bluish white, with row of transparent or faint yellowish spots near base.

# Nemipterus hexodon (Quoy and Gaimard, 1824)

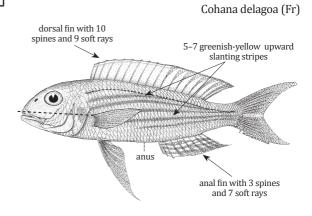
#### Local name(s): Shwe Nga Ngwe War.

**Habitat:** Sandy or muddy bottoms in depths of 10–80 m.

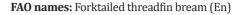
#### Fisheries: Bottom trawls.

**Distinctive Characters:** Lower margin of eye above a line from tip of snout to upper base of pectoral fins; 3–4 pairs of distinctively larger canines anteriorly in upper and lower jaw; pectoral fins reaching to or beyond level of anus; pelvic fins reaching to or just beyond level of anus; caudal fin forked, upper lobe slightly longer than lower lobe.

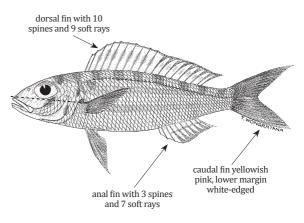
**Colour:** Body pinkish, paling to silvery white below; yellow stripe on either side of ventral midline, from isthmus to lower caudal fin base;



Size: To 30 cm, common 25 cm (TL)

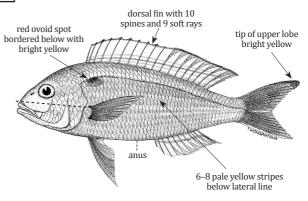


FAO names: Delagoa threadfin bream (En)



Size: To 22.5 cm, common 18 cm (TL)

#### FAO names: Ornate threadfin bream (En)



# Nemipterus japonicus (Bloch, 1791)

Local name(s): Shwe Nga Hmee Shae.

**Habitat:** Benthic in coastal waters, found on sandy bottoms from 5 m to 80 m.

Fisheries: Bottoms trawls, gillnets.

**Distinctive Characters:** Lower margin of eye above a line from tip of snout to upper base of pectoral fins; small canine teeth anteriorly in upper jaw; pectoral fins reaching to or beyond level of anal fin origin; pelvic fins not reaching to level of anal fin origin.

**Colour:** Upper part of body pinkish, becoming silvery below; 11–12 pale golden yellow stripes along body from behind head to base of caudal fin, and a yellow band along belly; dorsal fin edged with red, a pale lemon stripe near its base; caudal fin pink, upper tip and filament yellow.

Nemipterus marginatus (Valenciennes, 1830)

Local name(s): Shwe Nga Lein Maw Zinn.

**Habitat:** Sand or mud bottoms in depths between 12–70 m.

Fisheries: Bottoms trawls, gillnets.

**Distinctive Characters:** Lower margin of eye above a line from tip of snout to upper base of pectoral fins; small canine teeth anteriorly in upper jaw; pectoral fins reaching to between level of anus and anal fin origin; pelvic fins not reaching to or just beyond level of anal fin origin.

**Colour:** Body rosy, silvery-white below; broad yellowish-orange stripe, divided above pectoral fin, along body from below origin of lateral line to upper part of caudal peduncle; dorsal fin pale bluish, with yellow margin and broad yellow median stripe which subdivides into 3 yellow stripes posteriorly; anal fin pale bluish with 2 narrow yellow stripes.

# Nemipterus nematophorus (Bleeker, 1853)

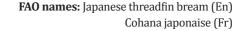
Local name(s): Shwe Nga Hmee Shae.

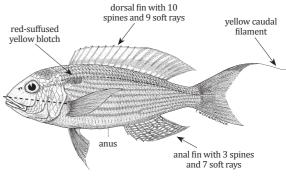
**Habitat:** Benthic in coastal waters, found on sandy bottoms in depths to about 75 m.

Fisheries: Bottoms trawls, gillnets.

**Distinctive Characters:** lower margin of eye tangent to a line from tip of snout to upper base of pectoral fins; 3–5 pairs of small recurved canines anteriorly in upper jaw; pectoral and pelvic fins reaching to between level of anus and origin of anal fin.

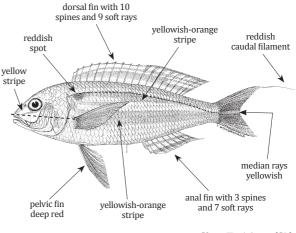
**Colour:** Body pinkish, silvery white below; yellow stripe on either side of ventral midline; dorsal fin translucent pinkish with reddish margin; anal fin translucent, with faint yellow or orange stripe from near base of first spine to middle of last ray; caudal fin pink, upper tip and caudal filament yellow.





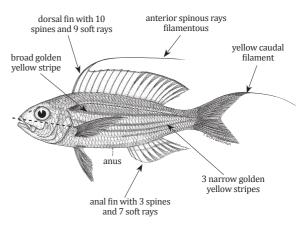
Size: To 30 cm, common 25 cm (TL)





Size: To 16 cm (SL)

#### FAO names: Doublewhip threadfin bream (En)



Size: To 20 cm, common 15 cm (TL)

# Nemipterus peronii (Valenciennes, 1830

Local name(s): Shwe Nga Kyaw Sue Pyat.

Habitat: Coastal waters, on sandy or mud bottoms, in depths to about 100m.

Fisheries: Bottoms trawls, gillnets

**Distinctive Characters:** Lower margin of eye just above a line from tip of snout to upper base of pectoral fins; pectoral fins not reaching to level of anus; small canine teeth anteriorly in upper jaw; pelvic fins reaching to level of anus.

**Colour:** Upper part of body pinkish, with 7–8 indistinct darker pink saddles reaching to or just below the lateral line; lower part of body silvery, with faint golden lines following each scale row; a golden yellow stripe on snout in front of eye passing through nostrils; dorsal fin pale whitish pink, with a pale yellow line or series of spots just above base of fin.

# Nemipterus randalli Russell, 1986

Local name(s): Shwe Nga Ran Dali.

**Habitat:** Benthic on sandy or muddy bottoms from 22 m to 225 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Lower margin of eye tangent to or just above a line from tip of snout to upper base of pectoral fins; small canine teeth anteriorly in upper jaw; pectoral and pelvic fins reaching to or beyond level of anal fin origin.

**Colour:** Body silvery–pink with 2–4 faint yellow stripes on sides below lateral line; broad yellow stripe on either side of ventral midline; dorsal fin edged with red, with yellow-pigmented markings on the lower 3/4 of the fin; caudal fin pink.

#### Nemipterus zysron (Bleeker, 1856)

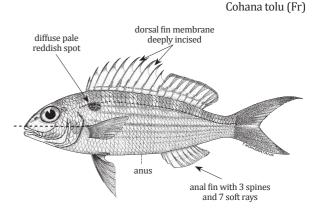
#### Local name(s): Shwe Nga Pain Thaye.

**Habitat:** Benthic on sandy bottoms near rocks from 10 m to 125 m.

### Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Body slender, lower margin of eye tangent to to or just above a line from tip of snout to upper base of pectoral fins; small canine teeth anteriorly in upper jaw; pectoral and pelvic fins short, reaching just to level of anus upper lobe of caudal fin prolonged into a short filament, no filaments in other fins.

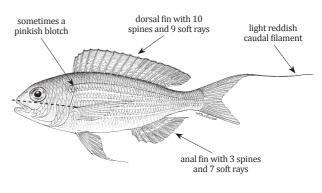
**Colour:** Upper part of body reddish, silvery below; dorsal fin pale with a narrow red margin paralleled immediately below by a thin yellow line and pale blue band; caudal fin pink with inner margin of fork deep red.



FAO names: Notchedfin threadfin bream (En)

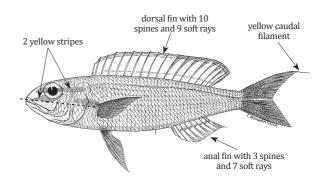
Size: To 26.5 cm, common 17 cm (TL)

#### FAO names: Randall's threadfin bream (En)



Size: To 27 cm, common 18 cm (TL)

#### FAO names: Slender threadfin bream (En) Cohana élégante (Fr)



# Parascolopsis aspinosa (Rao & Rao, 1981)

#### Local name(s): Shwe Nga Kha Kone.

Habitat: A benthic species, found on sand or mud bottoms in offshore waters, in depths of 20–225 m. Fisheries: Bottom trawls, gillnets

**Distinctive Characters:** Head scales reaching forward to between level of anterior margin of eyes and posterior nostrils; no canine teeth in jaws; suborbital and maxilla scaleless; posterior edge of preopercle serrate; >3 transverse scale rows on preopercle; 10–11 gill rakers of 1<sup>st</sup> gill arch.

**Colour:** Body rosy-orange; 4 pale reddish saddles on back and 2 on caudal peduncle; suborbital and edge of preopercle silvery yellow; a black blotch (retained in preserved specimens) at base of dorsal fin between 8<sup>th</sup> spine and 1<sup>st</sup> soft ray; dorsal fin with orange edge; anal fin pale rosy; iris red (in fresh specimens).

#### Parascolopsis sp.

MANU: PLEASE DRAW EX NOVO FROM ODDGEIR'S PHOTO

#### Local name(s): Shwe Nga Sue Ni.

**Habitat:** A benthic species, found on sand or mud bottoms in offshore waters in depths of 109–113 m. **Fisheries:** Bottom trawls.

**Distinctive Characters:** Eye large; pectoral fins long, reaching to level of origin of anal fin.

**Colour:** Body pinkish, becoming silvery white below; 3 pale brownish saddles on upper part of body; traces of 2 lateral pale yellow bands, the first just below lateral line, second on lower half of body; iris pale yellow; fins pale yellow, a blood-red blotch between 8th and 10th dorsal spines; caudal fin with rosy margin.

**Remarks:** This species resembles *P. rufomaculatus* Russell, 1986, but further specimens are needed to establish its true identity (B. Russell, pers. comm. 2018).

#### Parascolopsis eriomma (Jordan & Richardson, 1909)

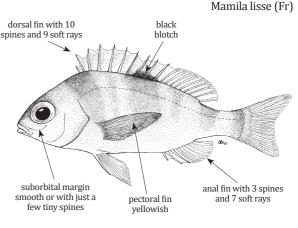
#### Local name(s): Shwe Nga Hnin Si.

**Habitat:** Benthic on sandy or muddy bottoms in offshore waters from 25 m to 175 m.

#### Fisheries: Bottom trawls, gillnets.

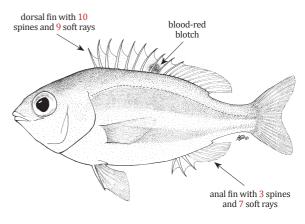
**Distinctive Characters:** Head scales reaching forward to between middle of eyes; no canine teeth in jaws; suborbital and maxilla scaleless; posterior edge of preopercle serrate; >3 transverse scale rows on preopercle; 17–19 gill rakers of 1<sup>st</sup> gill arch.

**Colour:** Overall pinkish; a broad yellowish longitudinal band along middle of body from above pectoral fins to base of caudal fin; upper axil of pectoral fin blackish; dorsal fin pink, spinous margin reddish; pectoral and caudal fin yellowish; iris red (in fresh specimens).



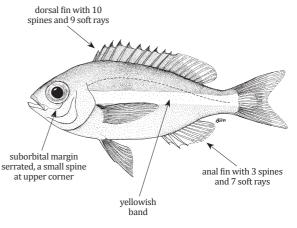
FAO names: Smooth dwarf monocle bream (En)

#### FAO names: None



Size: To about 10 cm (TL)

#### FAO names: Rosy dwarf monocle bream (En) Mamila rosée (Fr)



Size: To 30 cm (TL)

Size: To 21 cm (TL)

<sup>439</sup> 

# Parascolopsis inermis (Schlegel, 1843)

Local name(s): Shwe Nga Phyu Ni Kyarr.

Habitat: Sandy or muddy bottoms in offshore waters in depths of 60-131 m.

Fisheries: Bottom trawls, gillnets.

Distinctive Characters: Head scales reaching forward to between middle of eyes; no canine teeth in jaws; suborbital and maxilla scaleless; posterior edge of preopercle finely serrate; lower limb of preopercle scaleless; 9–10 gill rakers of 1st gill arch. Colour: Body pale yellowish, silvery below; 4 broad dark reddish bars on back; the 1st just in front of dorsal fin and extending to base of pectoral fin; 2nd below middle of dorsal fin and extending to midlateral part of body; 3rd just behind dorsal fin and extending almost to ventral surface of caudal peduncle; 4th extending down base of caudal fin; dorsal fin yellowish, with numerous red spots.

# Scolopsis affinis Peters, 1877

Local name(s): Shwe Nga Hmee Warr.

Habitat: Sandy bottoms close to reefs in depths to 60 m.

Fisheries: Mainly handline or gill nets.

Distinctive Characters: Head scales reaching forward to level of posterior nostrils; lower limb of preopercle scaly; antrorse suborbital spine absent beneath eye; pelvic fins reaching to or beyond level of anus.

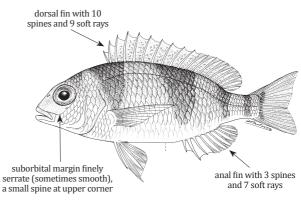
Colour: Body greyish on back above lateral line, silvery-white below; a broad yellow midlateral stripe (yellowish in larger specimens) from behind eve to caudal peduncle; top of head and snout dusky grey, an indistinct bluish stripe between eyes; narrow white stripe from middle of upper lip to below eye; caudal fin yellow, with a narrow pale blue margin.

# Scolopsis bilineatus (Bloch, 1793)

Local name(s): Shwe Nga Parr Zinn. Habitat: Coral reefs, in depths to 20 m. Fisheries: Occasionally handline.

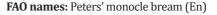
Distinctive Characters: Head scales reaching to or just in front of anterior nostrils; lower limb of preopercle scaly; antrorse suborbital spine present beneath eye; pelvic fins long, reaching to or almost to level of origin of anal fin.

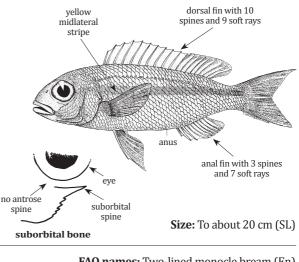
**Colour:** Body olive or grevish-brown, pearly-white below; dark-edged pearly-white stripe ascending from mouth to base of the soft dorsal fin; a yellow middorsal stripe from above eves along base of dorsal fin; a pearly-white patch just below base of posterior half of soft dorsal rays; spinous dorsal fin yellow, soft dorsal and anal fin with anterior halfs deep red or black, remaining part transparent.



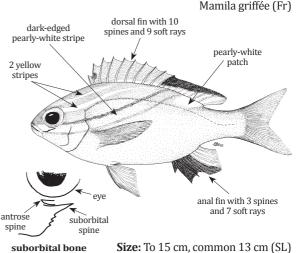
FAO names: Unarmed dwarf monocle bream (En)

Size: To 18 cm, common 12 cm (SL)





FAO names: Two-lined monocle bream (En)



# Scolopsis ciliatus (Lacepède, 1802)

**Local name(s):** Shwe Nga Hlwa Thwar.

Habitat: Sandy bottoms close to coral reefs. Fisheries: Occasionally handline.

**Distinctive Characters:** Head scales reaching forward to or just in front of level of anterior nostrils; lower limb of preopercle scaly; antrorse suborbital spine present beneath eye; pelvic fins reaching to or just beyond level of anus; maxilla denticulate on its external edge.

**Colour:** Olive above, white below; a silvery-white stripe on the back beneath the dorsal fin; a row of golden-yellow spots midlaterally from behind tip of pectoral fin to caudal peduncle; caudal fin with upper and lower edges reddish.

Scolopsis margaritifer (Cuvier, 1830)

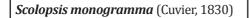
#### Local name(s): ?????

**Habitat:** Sandy bottoms close to coral reefs in depths to 20m.

Fisheries: Occasionally handline.

**Distinctive Characters:** Head scales reaching to or almost to posterior nostrils; lower limb of preopercle scaly; antrorse suborbital spine absent beneath eye; pelvic fins reaching almost to or beyond level of origin of anal fin; anal fin with 3 spines and 7 soft rays.

**Colour:** Olive above, white below; centre of scales with pearly or yellowish spots, forming longitudinal and transverse lines; 2 pearly stripes on snout in front of eyes; fins yellowish; lower lobe of caudal fin reddish.



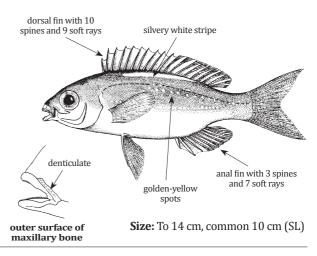
#### Local name(s): ?????

**Habitat:** Sandy bottoms close to coral reefs in depths to about 50m.

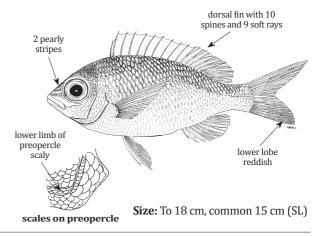
Fisheries: Occasionally trawled, handline.

**Distinctive Characters:** head scales reaching to between anterior margin of eyes and posterior nostrils; lower limb of preopercle scaly; antrorse suborbital spine absent beneath eye; caudal fin forked or lunate, upper lobe a little longer than lower lobe (lobes produced to form short filamentous extensions in larger specimens).

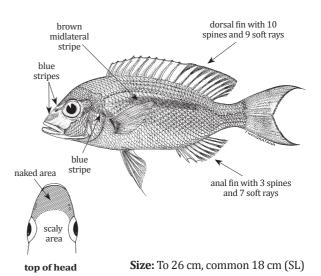
**Colour:** Greyish on back, white below; brown longitudinal steaks on back above lateral line, and oblique yellow streaks below lateral line; a brown midlateral stripe, expanded in the middle; blue stripe on preopercle behind eye, and blue chevron-shaped stripe on opercle from below eye, bending downwards towards pectoral fin base



FAO names: Pearly monocle bream (En)



#### FAO names: Monogrammed monocle bream (En)



#### Scolopsis taenioptera (Cuvier, 1830)

Local name(s): Shwe Nga Myet Lone Kwet.

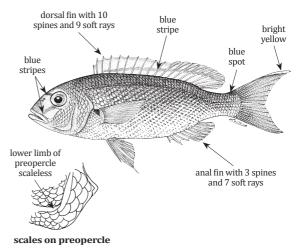
**Habitat:** Sand or mud bottoms in offshore areas, in depths to 50 m.

Fisheries: Mainly bottom trawls.

**Distinctive Characters:** Head scales reaching forward to between level of anterior margin of eyes and posterior nostrils; lower limb of preopercle scaleless; antrorse suborbital spine absent beneath eye; pelvic fins long, reaching to or beyond level of anus;

**Colour:** Greyish yellow on upper part of body, whitish below; sides of body with faint oblique blue and yellow lines, these horizontal on the caudal peduncle; a narrow blue stripe joining eyes just behind nostrils; a blue stripe from middle of upper lip to lower edge of eye; upper base of pectoral fin with a reddish orange spot; fins yellowish; upper tip of caudal fin bright yellow.

#### FAO names: Lattice monocle bream (En)



Size: To 20 cm, common 15 cm (SL)

FAO names: Collared monocle bream (En)

#### Scolopsis torquatus (Cuvier, 1830)

Local name(s): Shwe Nga Parr Phyu.

**Habitat:** Benthic inshore waters, usually on sandy or muddy bottoms close to reefs.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Serrations on preopercle margin distinct; antrose suborbital spine present beneath eye.

**Colour:** Brown reddish with a broad white vertical bar from top of head onto opercle posteriorly edged with red; black spot present on upper base of pectoral fin; scales on sides with yellow tinge; median and paired fins bright yellow.

**Remarks:** Previously synonymized with *Scolopsis vosmeri* (Bloch, 1792), but now regarded as a valid species (B. Russell, pers. comm. 2018).

#### Scolopsis vosmeri (Bloch, 1792)

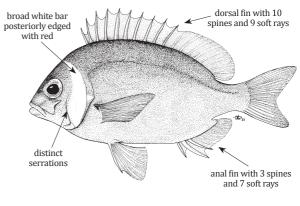
Local name(s): Shwe Nga Parr Phyu.

**Habitat:** Benthic inshore waters, usually on sandy or muddy bottoms close to reefs.

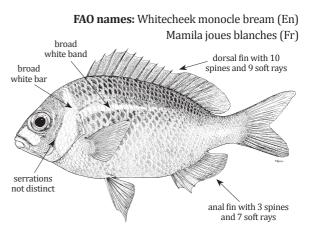
Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Serrations on preopercle margin not distinct; antrose suborbital spine present beneath eye.

**Colour:** Body colour usually dark with a reddish purple tinge; a broad, white vertical bar from top of head on to gill covers and lateral whitish band below lateral line usually present; small black spot on upper base of pectoral fin or spot absent; scales on sides of body with a dark spot at centre; median fins dirty red, pectoral fins with an orange tinge.



Size: To at least 16.5 cm (TL)



442

# Scolopsis xenochrous Günther, 1872

#### Local name(s): ?????

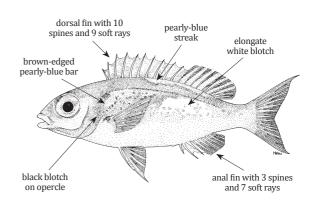
**Habitat:** Rocky-rubble and seaweed areas as well as coral reefs, in depths of 5–50 m.

Fisheries: Occasionally gillnets.

**Distinctive Characters:** Head scales reaching forward to between level of anterior margin of eyes and posterior nostrils; lower limb of preopercle scaly; antrorse suborbital spine present beneath eye; pelvic fins reaching to or almost to level of anus; caudal fin forked.

**Colour:** Greyish-brown above, silvery-white below; a pearly-blue streak from behind eye along dorsal fin base; several short oblique rows of dusky brown spots on the sides; an elongate white blotch below lateral line on posterior half of body, a yellowish tinge above this blotch.

#### FAO names: Oblique-barred monocle bream (En)



Size: To 17 cm, common 14 cm (SL)

# SCIAENIDAE

# Croakers – Drums – Meagres – Weakfishes

#### Atrobucca antonbruun Sasaki 1995

Local name(s): Nga Poke Thin. Habitat: Coastal waters in depths 20–65 m. Fisheries: Mainly bottom trawl.

**Distinctive Characters:** Mouth terminal, oblique; small and large teeth both in upper and lower jaws; inner row teeth on lower jaw weakly differentiated, closely spaced; mental pores in 3 pairs, the 1st small, at front of chin, separated by symphysis; swimbladder carrot-shaped with a number of arboresent appendages, none entering the head; caudal fin rhomboidal.

**Colour:** Dull brown on back and sides owing to broad, dark margined scale pockets, slightly paler below; upper and lower lips edged with brown; lining of mouth, gill chamber, and peritoneum dark

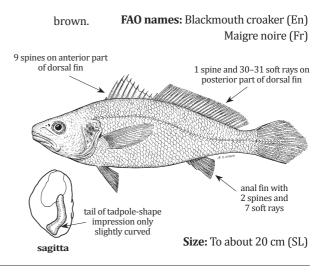
# Bahaba chaptis (Hamilton, 1822)

Local name(s): Thin War Gyi.

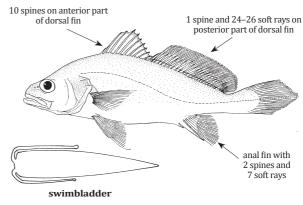
Habitat: Coastal waters and lower parts of rivers. Fisheries: Bottom trawls, gillnets, handlines.

**Distinctive Characters:** Mouth large, terminal, its length more than 1/2 of head length; teeth differentiated into large and small, the large forming outer series in upper jaw, intermixed with smaller teeth in lower jaw; no canine teeth; mental pores in 3 pairs; swimbladder carrot-shaped with only one pair of appendages, each a simple tube, arising from anterior end and lying along the side of the main bladder for about 1/2 the length of the latter.

**Colour:** Pale brownish with indistinct darker saddles on back; margins of dorsal and caudal fins black; pectoral fin black; caudal fin black.



FAO names: Chaptis bahaba (En)



Size: To about 50 cm, common 20–30 cm (TL)

# Chrysochir aureus (Richardson, 1846)

#### Local name(s): Thin War.

Habitat: Shallow coastal waters. Fisheries: Gillnets, handlines.

**Distinctive Characters:** Snout acutely pointed, projecting in front of upper jaw; mouth large, nearly horizontal; mental pores in 3 pairs, the first slit-like on either side of symphysis; swimbladder carrot-shaped, with 27–30 pairs of fan-like appendages along its sides, none entering head; sagitta (large earstone) with a tadpole-shaped impression, the "tail" of which only slightly curved, ending in a disc at the posterior end of sagitta.

**Colour:** Metallic blue above, shading to silvery below; oblique streaks along scale rows on back; pectoral fins yellow, other fins grey suffused with orange.

Daysciaena albida (Cuvier, 1830)

Local name(s): Gaung Pwa Mote Seik.

**Habitat:** Inhabits shallow coastal waters and estuaries.

Fisheries: Gillnets, handlines.

**Distinctive Characters:** Mouth terminal or slightly inferior; a pair of minute barbels on chin; small and large teeth both in upper and lower jaw; 5 mental pores; 2<sup>nd</sup> anal fin spine subequal to peduncle length; swimbladder carrot-shaped, with 17–19 pairs of arborescent appendages along sides, 1<sup>st</sup> pair partly entering head; sagitta (large earstone) with a tadpole-shaped impression, of which the "tail" is sharply curved at about a right angle; anal fin with 2 spines and 7 soft rays.

**Colour:** Grey dorsally, silvery ventrally; faint dark oblique line along scale series; spinous part of dorsal fin black, upper margin of  $2^{nd}$  part of dorsal fin dusky.

#### Dendrophysa russelii (Cuvier, 1829)

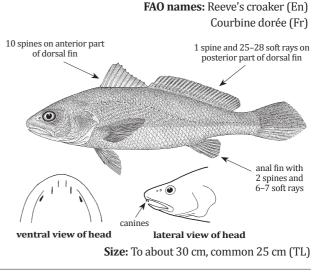
Local name(s): Gaung Pwa Gote Me'.

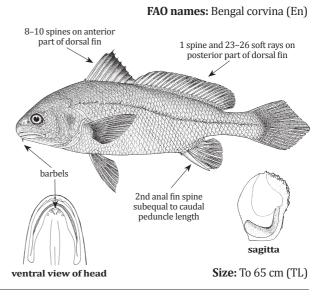
Habitat: Inhabits coastal waters; adults often in estuaries.

Fisheries: Bottom trawls, gillnets.

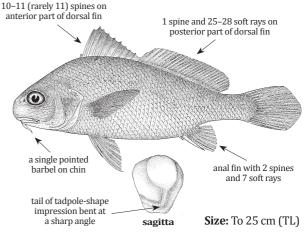
**Distinctive Characters:** Mouth inferior; teeth on upper jaw in a villose band, outer row slightly enlarged; teeth on lower jaw uniformly small; 5 mental pores; swimbladder carrot-shaped with 14–17 pairs of arborescent appendages along sides, none entering the head; sagitta (large earstone) with a tadpole-shaped impression, of which the "tail" is bent at a sharp angle; caudal fin rhomboid.

**Colour:** Body grey dorsally, shading to silvery white on belly; dark brown band on nape; opercle with a deep blue blotch.





FAO names: Goatee croaker (En) Bourrugue chèvre (Fr)



# Johnius amblycephalus (Bleeker, 1855)

#### Local name(s): Nga Poke Thin.

**Habitat:** Inhabits shallow coastal waters and estuaries.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Mouth inferior; teeth differentiated into large and small in upper jaw only; lower jaw with a band of villiform teeth uniform in size; mental pores in 3 pairs, the 1<sup>st</sup> open at base of the barbel in a common pit; 6–9 stiff gill rakers on lower limb of 1<sup>st</sup> gill arch; 7–12 scale rows above lateral line to origin of dorsal fin, 13–18 scale rows below lateral line to origin of anal fin; scales on head and body cycloid (smooth); swimbladder hammer-shaped with 14–15 arborescent appendages along its sides; caudal fin slightly rhomboidal, S-shaped or truncate.

**Colour:** Back and flanks black or dark brown, belly whitish or pale yellow; upper part of the rather high spinous part of dorsal fin black.

# Johnius belangerii (Cuvier, 1830)

**Local name(s):** Nga Poke Thin Bee Lin Garr. **Habitat:** Inhabits shallow coastal waters, enters estuaries and rivers.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Mouth small, inferior; sagitta, swimbladder, mental pores and dentition as in *Johnius amblycephalus*; scales on head and body ctenoid (rough); gill rakers short, club-shaped, 9–11 on lower limb of 1<sup>st</sup> gill arch; caudal fin rhomboidal.

**Colour:** Body dark, but pigments sometimes irregular and concentrated into short, dark bars dorsally or on spinous dorsal fin; other fins often black; dark blotch shows through gill cover.

# Johnius borneensis (Bleeker, 1851)

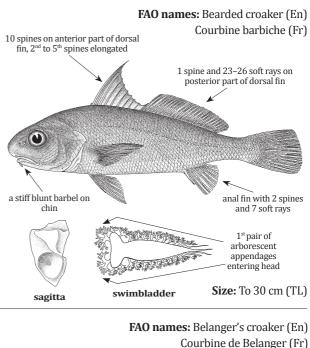
#### Local name(s): Nga Poke Thin.

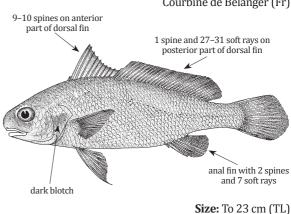
Habitat: Inhabits shallow coastal waters, estuaries and rivers.

#### Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Mouth large, subterminal; snout pointed when seen from above; swimbladder, mental pores and sagitta as in other *Johnius* species; teeth differentiated into large and small in both jaws; 7–16 gill rakers on lower limb of 1<sup>st</sup> gill arch; 7–13 scale rows above lateral line to origin of dorsal fin, 10–16 scale rows below lateral line to origin of anal fin; small scales on spinous dorsal fin basally.

**Colour:** Head and body dusky mauve above, silverwhite below; dusky streak usually present along midsides; fins pale yellow or cream, outer 2/3 of spinous dorsal fin black (occasionally dusky).





FAO names: Sharpnose hammer croaker (En) Courbine dentue (Fr) 9-11 spines on anterior part of dorsal fin 1 spine and 26-32 soft rays on posterior part of dorsal fin of dorsal fin anal fin with 2 spines and 7 soft rays

iaws

Size: To 24 cm (TL)

# Johnius carouna (Cuvier, 1830)

Local name(s): Nga Poke Thin.

**Habitat:** Inhabits shallow coastal waters, entering estuaries and mangrove swamps.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Mouth small, inferior; sagitta, swimbladder, mental pores and dentition as in *Johnius amblycephalus*; gill rakers pointed, slender, not club-shaped, 11–14 on lower limb of 1<sup>st</sup> gill arch; 6–9 scale rows above lateral line to origin of dorsal fin, 10–14 scale rows below lateral line to origin of anal fin; caudal fin rhomboidal.

**Colour:** Upper 2/3 of body light grey or with a white sheen, lower 1/3 yellowish; pectoral, pelvic, and anal fins and lower part of caudal fin with yellow tinge.

### Johnius carutta Bloch, 1793

Local name(s): Nga Poke Thin Ka Yutt.

**Habitat:** Inhabits inshore waters down to 40 m depth.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Mouth small, inferior; sagitta, swimbladder, mental pores (skin around chin pores sometimes thick) and dentition as in *Johnius amblycephalus*; scales on head and front part of body cycloid, rear part of body with finely ctenoid scales; gill rakers very short, stumpy 7–10 on lower limb of first gill arch; 7–10 scale rows above lateral line to origin of dorsal fin, 12–17 scale rows below lateral line to origin of anal fin; caudal fin truncate or weakly S-shaped.

**Colour:** Upper two-thirds of body dark grey or brown with a pale yellow streak along lateral line; belly whitish; upper two-thirds of  $1^{st}$  dorsal fin black.

#### Johnius coitor (Hamilton, 1822)

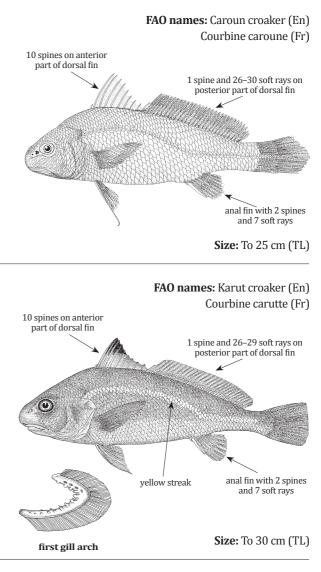
Local name(s): Nga Poke Thin Co Tar.

Habitat: Shallow coastal waters, estuaries, and rivers.

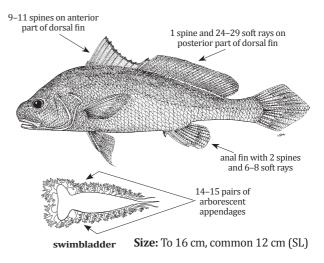
Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Mouth small, inferior; sagitta, swimbladder, mental pores and dentition as in *Johnius amblycephalus*; eye small, 13–24% of head length; scales cycloid on snout, ctenoid on other parts of head and body; gill rakers slender, 10–15 on lower limb of 1st gill arch; 7–10 scale rows above lateral line to origin of dorsal fin, 11–17 scale rows below lateral line to origin of anal fin; caudal fin rhomboidal; small scales on soft parts of dorsal and anal fins.

**Colour:** Light golden yellow with a light purple or blue sheen; spinous part of dorsal fin with dusky to black border; soft parts of dorsal, anal and caudal fins with a dull green or grey border.



FAO names: Coitor croaker (En)



# Johnius dussumieri (Cuvier, 1830)

Local name(s): Nga Poke Thin Mote Seik.

Habitat: Inhabits shallow coastal waters, estuaries and rivers.

Fisheries: Bottom trawls; gillnets.

**Distinctive Characters:** Similar to *Johnius borneensis* but snout broadly rounded when seen from above and without strong anterior teeth and scales on spinous dorsal fin; 13–18 gill rakers on lower limb of 1<sup>st</sup> gill arch; 6–8 scale rows above lateral line to origin of dorsal fin, 9–14 scale rows below lateral line to origin of anal fin; no scales on spinous dorsal fin basally.

**Colour:** Greyish on back, silvery and glossed with golden on flanks and belly; distal 3<sup>rd</sup> of spinous dorsal fin dusky; anal and paired fins yellowish.

#### Johnius macropterus (Bleeker, 1853)

Local name(s): Nga Poke Thin.

Habitat: Coastal waters to 30 m depth. Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Mouth small, inferior; sagitta, swimbladder, dentition and chin pores as in *Johnius amblycephalus* but a short, stiff barbel on chin; scales cycloid (smooth) on head, ctenoid (rough) on body; small scales on soft parts of dorsal and anal fins; gill rakers stiff, 8–13 on lower limb of 1<sup>st</sup> gill arch; 4–6 scale rows above lateral line to origin of dorsal fin, 9–12 scale rows below lateral line to origin of anal fin; caudal fin rhomboidal.

**Colour:** Back dark brown, flanks and belly whitish with silvery reflections; spinous part of dorsal fin darkish; pectoral fins hyaline

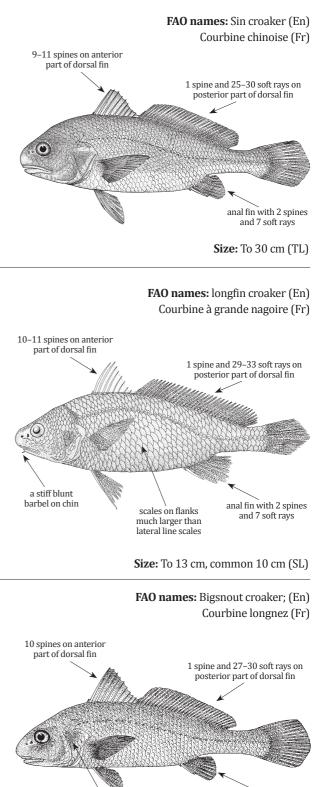
# Johnius macrorhynus (Lal Mohan, 1976)

# Local name(s): Nga Poke Thin

Habitat: Inhabits shallow coastal waters. Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Mouth small, inferior; sagitta, swimbladder and dentition as in *Johnius amblycephalus* but molariform teeth posteriorly in lower jaw; scales on body ctenoid; gill rakers short, stumpy, 6–10 on lower limb of 1<sup>st</sup> gill arch; 6–9 scale rows above lateral line to origin of dorsal fin, 10–14 scale rows below lateral line to origin of anal fin; caudal fin truncate or S-shaped (over 15 cm TL).

**Colour:** Body silvery, lower part with a golden tinge; anal and paired fins yellow; a faint steel blue blotch on gill cover.



steel-blue blotch anal fin with 2 spines

and 7 soft rays

#### FAO names: Large-eve croaker (En)

#### Local name(s): Nga Poke Thin.

Habitat: Shallow coastal waters, estuaries, and rivers.

Fisheries: Bottom trawls, gillnets.

Distinctive Characters: Mouth large, strongly oblique; eye large, about 30% of head length; sagitta, swimbladder, dentition and chin pores as in Johnius amblycephalus but teeth well differentiated into large and small in both jaws; scales on head cycloid, those on body ctenoid; small scales on soft parts of dorsal and anal fins; gill rakers slender 14-17 on lower limb of 1st gill arch: 5-7 scale rows above lateral line to origin of dorsal fin, 10-13 scale rows below lateral line to origin of anal fin; caudal fin rhomboidal.

Colour: Bluish or greenish grey, flanks and belly silvery; fins yellowish.

Nibea maculata (Bloch & Schneider, 1801)

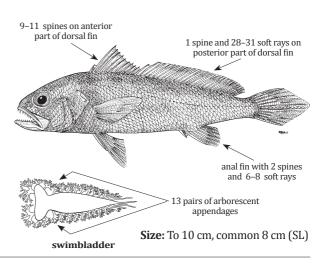
Local name(s): Nat Ka Daw Kyaw Kywet.

Habitat: Found in coastal waters.

Fisheries: Bottom trawls; gillnets.

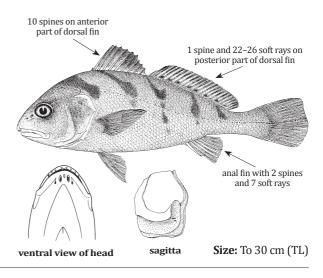
Distinctive Characters: Mouth inferior; mental pores in 3 pairs, the first pair close together, united by a crescent-shaped groove just behind symphysis; teeth differentiated into large and small in both jaws; 10 spines on anterior part of dorsal fin; 8-11 slender gill rakers on lower limb of 1st gill arch; 10–13 scale rows above lateral line to origin of dorsal fin, 17–21 scale rows below lateral line to origin of anal fin; swimbladder carrotshaped with branched appendages along its entire lateral sides, anterior pair entering head.

**Colour:** Head and body dorsally with 5 irregular dark streaks extending obliquely towards lower flanks; spinous dorsal fin black, except base pale, soft dorsal fin with black margin and series of dark spots along base.

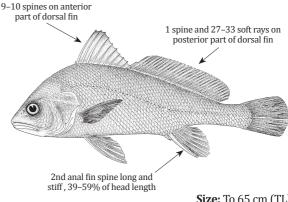


FAO names: Kathala croaker (En)

Courbine kathala (Fr)



FAO names: Soldier croaker (En)



#### Nibea soldado (Lacepède, 1802)

Local name(s): Nat Ka Daw.

Habitat: Found in coastal waters.

Fisheries: Bottom trawls; gillnets.

Distinctive Characters: Mouth inferior; mental pores, dentition, sagitta and swimbladder as in Nibea maculata; 8-13 gill rakers on lower limb of 1<sup>st</sup> gill arch; 8–13 scale rows above lateral line to origin of dorsal fin, 12–17 scale rows below lateral line to origin of anal fin.

**Colour:** Body silvery with faint series of oblique stripes along scale series; margin of soft dorsal fin dark; paired fins with yellow tinge.

# Otolithes cuvieri Trewavas, 1974

#### Local name(s): ????

Habitat: Inhabits inshore and coastal waters. Fisheries: Bottom trawls, gillnets, handlines.

Distinctive Characters: Body fairly slender, depth slightly less than head length; mouth large and strongly oblique; lower jaw projecting; chin pores indistinct; 1–2 pairs of moderate canine teeth in upper jaw or both jaws; 13–15 gill rakers on lower limb of first gill arch; swimbladder carrot-shaped with about 28 pairs of arborescent appendages along sides; anal fin with 2 spines and 7 soft rays caudal fin rhomboid (pointed in juveniles).

**Colour:** Scale centres brown on upper two thirds of body, forming narrow oblique bands; spinous dorsal fin edged in grey-black; anal and paired fins yellowish.

# Otolithes ruber (Bloch & Schneider, 1801)

Local name(s): Thin Phyu.

Habitat: Inhabits shallow coastal waters down to 40 m.

Fisheries: Bottom trawls, gillnets, handlines.

Distinctive Characters: Similar to Otolithes cuvieri but with canine teeth in upper jaw or both jaws stronger; 8-12 gill rakers on lower limb of 1st gill arch.

Colour: Body brownish above, silvery with a golden sheen on flanks and belly, often with oblique dark streaks dorsally; anal and paired fins reddish or pale brown.

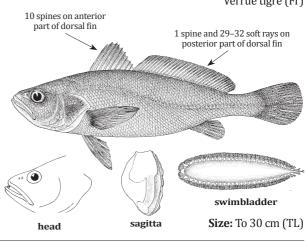
#### Otolithoides biauritus (Cantor, 1849)

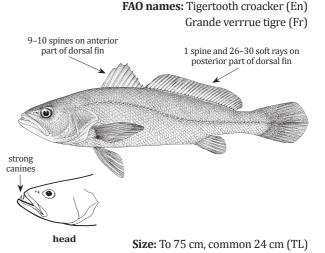
Local name(s): Nat Ka Daw A Chauk.

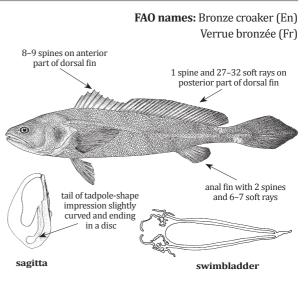
Habitat: Inhabits coastal and inshore waters. Fisheries: Bottom trawls, illnets, handlines.

Distinctive Characters: Body elongate; mouth large and terminal; teeth well differentiated in size in both jaws; dorsal fin weakly notched; chin pores in 2 pairs, the first small, at front of chin, separated by symphysis; swimbladder carrot-shaped, with a pair of long tubular branches that originate near its rear end and run forward beside the main bladder and parallel to it as they penetrate the transverse septum and ramify into several caeca under the skull; caudal fin acutely pointed.

Colour: Head and body greyish, flanks silvery with golden tinge, paler on belly; lateral line golden yellow; median fins yellow to pale orange; pelvic fins pale orange; brownish with a black spot at axil.







FAO names: Lesser tigertooth croaker (En)

Size: To 160 cm (SL)

Verrue tigre (Fr)

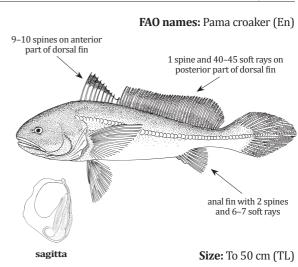
#### Otolithoides pama (Hamilton, 1822)

Local name(s): Nat Ka Daw Gyi.

Habitat: Inhabits coastal and inshore waters. Fisheries: Gillnets, handlines.

**Distinctive Characters:** Body elongate; mouth large and terminal; dentition, mental pores and swimbladder as in *Otolithoides biauritus*; 13–15 gill rakers on lower limb of 1<sup>st</sup> gill arch; 12–15 scale rows above lateral line to origin of dorsal fin, 14–17 scale rows below lateral line to origin of anal fin;

**Colour:** Body pale brownish dorsally and silvery white on belly; head shot with golden and purple; fins yellowish; upper half of dorsal fin grey.



Panna heterolepis Trewavas, 1977

Local name(s): Nat Ka Daw.

Habitat: Coastal waters.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Mouth terminal, oblique; 3 pairs of small mental pores, the 1st pair at front of chin, separated by symphysis; teeth well differentiated into large and small in both jaws; anal fin with 2 spines and 6–7 soft rays; 12–16 gill rakers on lower limb of 1st gill arch; swimbladder with tubular appendage anteriorly on each side, immediately dividing into a long, simple abdominal portion and a simple or branched cephalic portion entering head; caudal fin pointed.

**Colour:** Body grayish above, silvery below; opercle with a bluish spot above; paired fins yellowish; median fins dusky, spinous dorsal blackish.

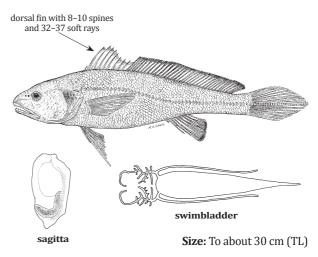
# Pennahia anea (Bloch, 1793)

Local name(s): Nat Ka Daw.

Habitat: Inhabits coastal waters down to 60 m. Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Mouth terminal, oblique; mental pores in 2 pairs, both small, the 1<sup>st</sup> pair at front of chin, separated by symphysis; teeth well differentiated into large and small in both jaws; 10–12 slender gill rakers on lower limb of 1<sup>st</sup> gill arch; swimbladder carrot-shaped with branched appendages along its entire lateral sides, anterior appendages not entering the head; anal fin with 2 spines and 7 soft rays; caudal fin truncate.

**Colour:** Head and body greyish light brown on back, becoming paler ventrally with increasing silvery reflection to whitish abdomen; gill cover with diffused dark blotch; upper 2/3 of spinous dorsal fin dusky.



FAO names: Hooghly croacker (En)

FAO names: Donkey croaker (En)

ventral view of head

mouth

Size: To 30 cm (TL)

#### Pennahia ovata Sasaki 1996

Local name(s): Nat Ka Daw.

Habitat: Coastal waters from 23 to 113 m depth. Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Similar to *Pennahia anea* (Bloch, 1793) but body more oval, its depth 31.4–36.7% of SL; lower jaw teeth closely-spaced and weakly differentiated (vs. well differentiated and widely spaced in *P. anea*); usually 24–25 soft dorsal fin rays; 17–19 (usually 17–18) pectoral fin rays; 10–12 (usually 11–12) slender gill rakers on lower limb of 1<sup>st</sup> gill arch; 2nd anal fin spine long, its length 25.6–38.3% of HL; caudal fin weakly S-shaped.

**Colour:** Head and body pinkish grey on back, becoming paler ventrally with golden reflections on head; gill cover with diffused dark blotch; spinous dorsal fin with a thin black margin; soft dorsal fin with a series of dark spots along base.

# Protonibea diacantha (Lacepède, 1802)

#### Local name(s): Ka Tha Myin.

Habitat: Inhabits coastal waters down to 60 m. Fisheries: Handlines, gillnets, bottom trawls.

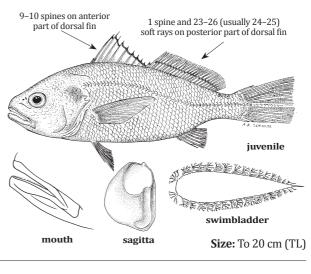
**Distinctive Characters:** Mouth large, slightly oblique; mental pores in 3 pairs, the 1<sup>st</sup> pair small, close together, united by a crescent-shaped groove just behind symphysis; teeth differentiated into large and small in both jaws; 7–10 elongate gill rakers on lower limb of 1<sup>st</sup> gill arch; swimbladder carrot-shaped with branched appendages along its entire lateral sides; no appendages entering head. **Colour:** 3–5 dark bars along back and many small black spots (about size of pupil) on top of head, upper half of body and caudal fin; pectoral, pelvic, and anal fins and lower part of caudal fin black; in larger fishes, bars and spots obscure or absent.

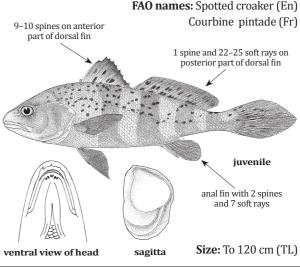
#### Pterotolithus maculatus (Cuvier, 1830)

Local name(s): Nat Ka Daw Ngwe Pyauk. Habitat: Inhabits coastal waters down to 60 m. Fisheries: Handlines, gillnets, bottom trawls.

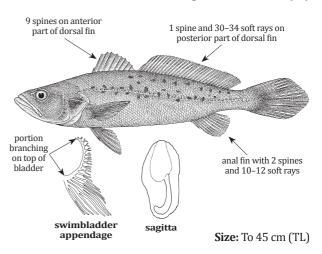
**Distinctive Characters:** Mouth strongly oblique; mental pores inconspicuous; teeth differentiated into large and small in both jaws, a pair of strong canines at front of both jaws; gill rakers slender, 8–11 on lower limb of 1st gill arch; swimbladder carrot-shaped, with 50 or more pairs of branched appendages, the stems of the ventral limbs forming a parallel series of tubes, those of the dorsal limbs roofing the swimbladder with filigree of silvery branched tubules, none entering head.

**Colour:** Upper part of body marked with numerous black blotches, about 1/2 size of eye or larger; fins yellow.





FAO names: Blotched tigertoothed croaker (En)



#### FAO names: Big-head pennah croaker (En)

# POLYNEMIDAE

Threadfins

#### *Eleutheronema tetradactylum* (Shaw, 1804)

Local name(s): Nga Za Yaw.

Habitat: Along coasts and in estuaries.

Fisheries: Gillnets, handlines, bottom trawls.

**Distinctive Characters:** Pectoral fin insertion well below midline of body; anterior part of lower jaw with small teeth extending onto lateral surface of lower jaw; 71–80 pored lateral line scales; 9–12 scale rows above lateral line; 13–15 scale rows below lateral line; 2nd dorsal fin with 1 spine and 14 (rarely 13 or 15) soft rays; 6–18 gillrakers on 1st gill arch; swimbladder absent.

**Colour:** Head and trunk with slight darkish silver tinge, becoming lighter on lower sides; anterior margins of  $1^{st}$  and  $2^{nd}$  dorsal fins blackish.

#### Eleutheronema tridactylum (Bleeker, 1849)

Local name(s): Za Yaw Gyi.

Habitat: Along coasts and in estuaries. Fisheries: Mainly bottom trawl.

**Distinctive Characters:** Similar to *E. tetradactylum* but only 3 pectoral fin filaments; 72–79 pored lateral line scales; 8–10 scale rows above lateral line; 12–16 scale rows below lateral line; 4–10 gillrakers on 1st gill arch; vomer without tooth plates on either side throughout life (deciduous tooth plates on both sides in *E. tetradactylum*).

**Colour:** Body green dorsally; silvery white or yellowish white ventrally; pectoral, dorsal, and caudal fins dark with black borders; golden hue over body and fins.

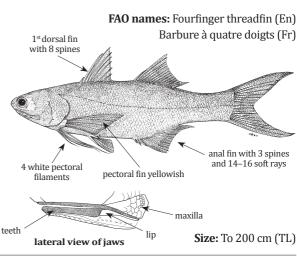
#### *Filimanus similis* Feltes, 1991

#### Local name(s): Za Yaw.

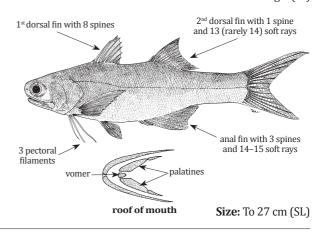
**Habitat:** Usually found in 1–80 m on open sandflats and muddy substrates; also in estuaries. **Fisheries:** Gillnets. bottom trawls.

**Distinctive Characters:** Teeth on lower jaw restricted to dorsal surface; 7 pectoral filaments; space separating premaxillary teeth bands 2 or more times width of each band; 40–49 gill rakers on 1<sup>st</sup> gill arch; 43–52 pored lateral-line scales; 5–8 scale rows above lateral line; 9-12 scale rows below lateral line.

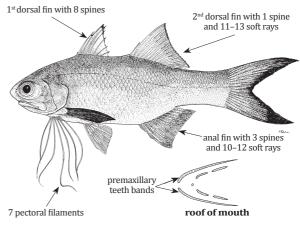
**Colour:** Upper sides of head and trunk with brown tinge, becoming golden on lower sides; posterior margins of 1<sup>st</sup>, 2<sup>nd</sup> dorsal, anal, and caudal fins blackish, remaining parts yellowish; pectoral fin mostly black; base of pectoral filaments white, becoming yellowish white on posterior tips; base of pelvic fin white, other parts yellowish.



FAO names: Threefinger threadfin (En) Barbure à trois doigts (Fr)



### FAO names: Indian sevenfinger threadfin (En) Barbure sept doigts des Indes (Fr)



Size: To 13 cm (SL)

# Filimanus xanthonema (Valenciennes, 1831)

# FAO names: Yellowthread threadfin (En) Barbure à doigts oranges (Fr)

Local name(s): Za Yaw.

Habitat: Coasts and estuaries. Fisheries: Mainly bottom trawl.

**Distinctive Characters:** Similar to *F. similis* but usually 5 pectoral filaments; 36–46 gill rakers on 1<sup>st</sup> gill arch; 45–49 pored lateral-line scales; 5–7 scale rows above lateral line; 9-11 scale rows below lateral line.

**Colour:** Body green, dusky yellow, or brown above and silvery below; fins yellow with black at least at margins; pectoral fins often mostly black; free filaments yellow.



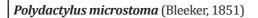
Local name(s): Ka Ku Yan.

Habitat: Mainly occurs near estuaries, sometimes entering rivers.

Fisheries: Mainly bottom trawl.

**Distinctive Characters:** Anterior 1/3 of lower jaw with small teeth extending onto lateral surface; anal fin with 3 spines and 10–11 soft rays; 18–21 gill rakers on 1<sup>st</sup> gill arch; swimbladder with many appendages inserted into lateral walls of abdominal cavity.

**Colour:** Head and upper sides of trunk tinged slightly blackish brown; distal part of 1<sup>st</sup> and 2<sup>nd</sup> dorsal fins and caudal fin blackish; base of pectoral filaments dusky yellowish grading to blackish posteriorly; pectoral fin membrane deep black.



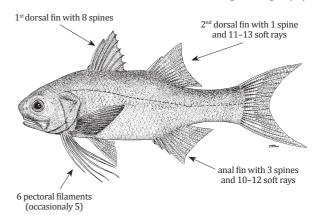
Local name(s): Za Yaw.

Habitat: Coasts and estuaries.

Fisheries: Mainly bottom trawl.

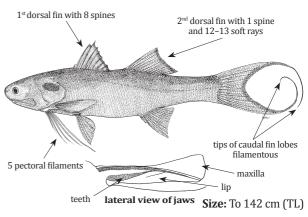
**Distinctive Characters:** Pectoral fin insertion well below midline of body; teeth on lower jaw restricted to dorsal surface; space separating premaxillary teeth bands less than width of each band; vomer without teeth; 46–49 pored lateral line scales; 6–7 scale rows above lateral line; 9–10 scale rows below lateral line; 24–33 gill rakers on first gill arch; swimbladder without appendages.

**Colour:** Head and upper sides of trunk tinged yellowish silver, becoming lighter silver on lower sides; posterior margins of 1st and 2nd dorsal fins and caudal fin slightly blackish, remaining parts translucent yellowish white; pectoral fin membrane yellowish; pectoral filaments faintly white; a large black spot anteriorly on lateral line.



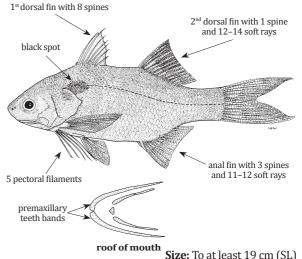
Size: To at least 14 cm (SL)





FAO names: Smallmouth threadfin (En)

Barbure à petite bouche (Fr)



# Polydactylus plebeius (Broussonet, 1782)

#### Local name(s): Za yaw.

**Habitat:** Soft bottoms from estuaries to coastal beaches; also in deeper water (<122 m).

Fisheries: Gillnets, bottom trawls.

**Distinctive Characters:** Lower jaw teeth pattern and premaxillary teeth bands as in *P. microstoma*; villiform teeth on vomer; 60–68 pored lateral line scales; 8–9 scale rows above lateral line; 12–13 scale rows below lateral line; 24–32 gill rakers on 1<sup>st</sup> gill arch; swimbladder without appendages.

**Colour:** Head and upper sides of trunk tinged slightly blackish silver, becoming lighter silver on lower sides; abdominal region white; snout semi-transparent; 1<sup>st</sup> and 2<sup>nd</sup> dorsal fins and caudal fin pale with blackish posterior margins; pectoral fin membrane blackish; pectoral filaments white.

#### Polydactylus sexfilis (Valenciennes, 1831)

Local name(s): Za Yaw.

Habitat: Coasts and estuaries.

Fisheries: Mainly bottom trawl.

**Distinctive Characters:** Lower jaw teeth pattern and premaxillary teeth bands as in *P. microstoma*; villiform teeth on vomer; 60–67 pored lateral line scales; 8–10 scale rows above lateral line; 12–14 scale rows below lateral line; 27–31 gill rakers on 1<sup>st</sup> gill arch; swimbladder without appendages.

**Colour:** Head and upper sides of trunk tinged silvery brown, becoming more silver on lower sides; 1st dorsal fin black; posteriormost ray of 2nd dorsal fin white, remainder of fin greyish black; base of pectoral fin greyish black, becoming dense black posteriorly; bases and tips of pectoral filaments white, middle parts of filaments greyish black; caudal fin uniformly greyish black.

#### Polydactylus sextarius (Bloch & Schneider, 1801)

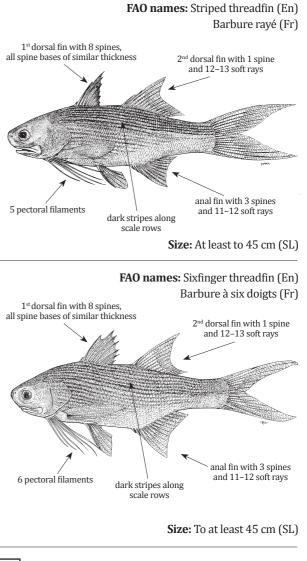
#### Local name(s): Za Yaw.

Habitat: Coasts and estuaries.

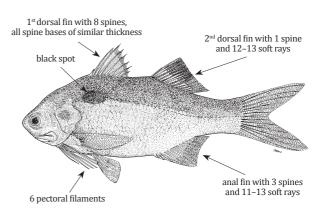
Fisheries: Mainly bottom trawl.

**Distinctive Characters:** Lower jaw teeth pattern and premaxillary teeth bands as in *P. microstoma*; vomer without teeth; 45–51 pored lateral line scales; 5–6 scale rows above lateral line; 8–11 scale rows below lateral line; 25–30 gill rakers on 1<sup>st</sup> gill arch; Swimbladder atrophied, like a fine string.

**Colour:** Head and upper sides of trunk with slightly darkish silver tinge, becoming lighter on lower sides; snout semi-translucent; posterior margin of 1st and 2nd dorsal fins and caudal fin slightly blackish, other parts translucent; posterior tip of anal fin whitish, other parts blackish; pectoral fin membrane white with scattered melanophores; pectoral filaments whitish; a large black spot anteriorly on lateral line.



FAO names: Blackspot threadfin (En) Barbure à tâche noire (Fr)



# Polydactylus siamensis Motomura, Iwatsuki & Yoshino 2001

FAO names: Largemouth threadfin (En) Barbure à grande bouche (Fr)

Local name(s): Za yaw.

Habitat: Coastal waters.

**Fisheries:** Gillnets, bottom trawls.

**Distinctive Characters:** Lower jaw teeth pattern and premaxillary teeth bands as in *P. microstoma*; villiform teeth on vomer; 54–58 pored lateral line scales; 7 scale rows above lateral line; 10–11 scale rows below lateral line; 22–24 gill rakers on 1<sup>st</sup> gill arch; swimbladder absent.

**Colour:** 7 or 8 prominent dark stripes along scale rows above lateral line, 7 to 9 faint stripes below.

# 

#### Polynemus melanochir Valenciennes, 1831

#### Local name(s): Ka Ku Yan.

**Habitat:** Lower sections of rivers. Possibly in estuaries.

Fisheries: Gillnets, bottom trawls.

**Distinctive Characters:** Eye small, its diameter ≥1.3 in snout length; pectoral fins insert about at midpoint on side of body; posterior margin of preopercle serrated; 2nd dorsal fin with 1 spine and 15–16 soft rays; anal fin spine with 3 spines and 11–12 soft rays; vomer without teeth; 68–74 pored lateral line scales; snout length 5–6% of SL; upper caudal fin lobe length 35–44% of SL.

**Colour:** Head and body greyish black dorsally, yellow ventrally; posterior tip of 1st and 2nd dorsal fins intense black, other parts yellow; pelvic fin uniformly yellow; pectoral fin intense black, except for vivid yellow base; base of pectoral filaments vivid yellow, becoming blackish posteriorly.

# Polynemus paradiseus Linnaeus, 1758

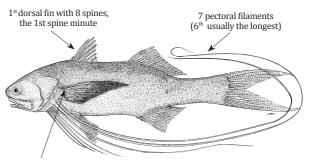
#### Local name(s): Nga Pon Na.

Habitat: Lives over sandy bottoms, regularly entering freshwaters during breeding season. **Fisheries:** Gillnets, bottom trawls.

**Distinctive Characters:** Similar to *P. melanochir* but 1st dorsal fin with 7 spines; 2nd dorsal fin with 1 spine and 12–13 soft rays; anal fin with 2 spines; villiform teeth on vomer; 66–71 pored lateral line scales.

**Colour:** Head and body grayish black dorsally, yellow ventrally; anterior parts of  $1^{st}$  and  $2^{nd}$  dorsal fins grayish black, other parts yellow; posterior margin of caudal fin yellow, other parts greyish black; pectoral and pelvic fins uniformly vivid yellow; base of pectoral filaments vivid yellow, becoming whitish yellow on posterior tips.

FAO names: Blackhand paradise fish; (En) Barbure paradis à doigts noirs (Fr)

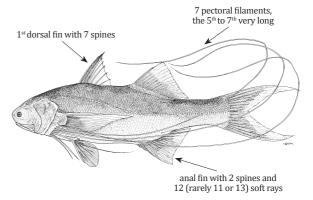


pectoral fin insertion near midline of body

Size: At least to 20 cm (SL)

# FAO names: Paradise threadfin (En)

Barbure paradis (Fr)



Size: At least to 20 cm (SL)

Size: At least to 25 cm (SL)

# MULLIDAE

# Goatfishes - Red mullets

#### Mulloidichthys ayliffe Uiblein, 2011

Local name(s): Kyo Warr.

**Habitat:** Shallow coral reef areas, including submarine caves to 19 m depth.

# Fisheries: Gillnets.

**Distinctive Characters:** Small conical teeth on both jaws; no teeth on roof of mouth; body depth at anal fin origin 3.9–4.4 in SL; 35–37 lateral line scales; 1<sup>st</sup> dorsal fin with 8 spines; 2nd dorsal fin with 9 soft rays; anal fin with 1 spine and 6 soft rays, 5 scale rows between dorsal fins.

**Colour:** Yellow, with 2–5 bluish lateral body stripes; yellow mid-lateral stripe poorly contrasting due to yellow 'background' body coloration; barbels white; fins yellowish.

# Mulloidichthys flavolineatus (Lacepède, 1801)

#### Local name(s): Kyo Warr.

Habitat: Shallow waters on sandy bottoms of calm lagoons and bays; on or near reefs to 76 m depth. Fisheries: Bottoms trawls, gillnets.

**Distinctive Characters:** Similar to *Mulloidichthys vanicolensis* but blackish blotch mid-laterally on body (sometimes weak or absent); body more elongate, and less gill rakers; 34–38 lateral line scales; 1st dorsal fin mostly with 8 spines, the minute first spine sometimes not detectable; body depth at anal fin origin 4.7–5.6 in SL.

**Colour:** Silver white (sometimes intermingled with yellow) with a narrow yellow mid-lateral body stripe bordered above and below by pale blue stripes; a blackish blotch usually present in the yellow stripe beneath  $1^{st}$  dorsal fin; barbels white; fins whitish or yellowish.

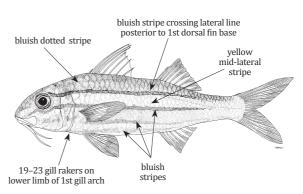
# Mulloidichthys vanicolensis (Valenciennes, 1831)

#### Local name(s): Kyo Warr.

Habitat: Shallow waters on sandy bottoms of calm lagoons and bays; on or near reefs to 113 m depth. Fisheries: Bottom trawls, gillnets.

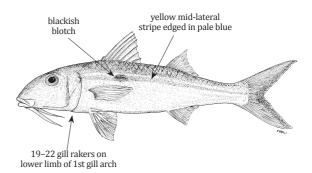
**Distinctive Characters:** Similar to *Mulloidichthys ayliffe* and *M. flavolineatus* but less gill rakers on lower limb of 1st arch; 36–38 lateral line scales; bluish body stripes weak (sometimes whitish); yellow mid-lateral body stripe narrow without black blotch; body depth at anal fin origin.

**Colour:** Whitish to pink with a narrow yellow midlateral body stripe bordered above and below by pale blue or whitish stripes; barbels white; fins yellow, sometimes whitish.



Size: To 25 cm (SL)

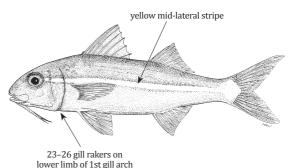
FAO names: Yellowstripe goatfish (En) Capucin à bande jaune (Fr)



Size: To about 30 cm (SL)

FAO names: Yellowfin goatfish (En)

```
Capucin de Vanicolo (Fr)
```



### Parupeneus barberinus (Lacepède, 1801)

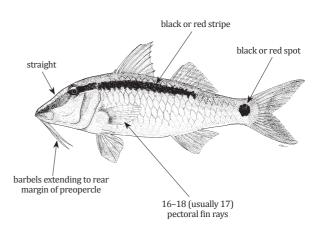
#### Local name(s): Kyo Warr.

**Habitat:** Coral reefs and adjacent sand bottoms in depths to 100 m.

Fisheries: Mainly gillnets.

**Distinctive Characters:** A single row of wellspaced, stout, conical teeth in jaws; no teeth on roof of mouth; 1st dorsal fin with 8 spines, the 1st minute; anal fin with 1 minute, often reduced spine and 6 soft rays (all these characteristics true of all *Parupeneus* species); dorsal profile of snout straight; snout longer than postorbital distance in adults 20–25 gill rakers on lower limb; maximum body depth 3.3–3.7 in SL; barbel length 1.4–1.6 in head length.

**Colour:** Body light grey-brown to yellow, whitish below, scale edges narrowly grey to reddish brown; black or red stripe from snout through lower part of eye and along back to below rear base of second dorsal fin; round black or red spot, larger than eye in adults, posteriorly on midside of caudal peduncle; diagonal pale blue lines alternating with brownish yellow around eye, with 1 or 2 parallel blue lines on cheek; barbels white to pale yellow.



Size: To 41 cm (SL)

### Parupeneus chrysopleuron (Temminck & Schlegel 1843)

#### Local name(s): Kyo Warr.

**Habitat:** Soft or mixed bottoms adjacent to reefs in depths to 200 m.

Fisheries: Mainly bottom trawls.

**Distinctive Characters:** Dorsal profile of snout steep; 19–22 gill rakers on lower limb of 1<sup>st</sup> gill arch; maximum body depth 2.9–3.25 in SL; barbel length 1.35–1.45 in head length.

**Colour:** Pale reddish to bluish gray, scales edged with red; yellow (fish from coastal areas) or red (fi sh from deep water) stripe from eye to caudal fin base just above lateral line; barbels white to pale yellow.



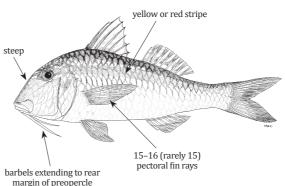
#### Local name(s): Kyo Warr.

**Habitat:** Found on coral reefs sand-associated hard bottoms from 5 to 125 m depth.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Dorsal profile of snout straight to slightly concave; 22–26 gill rakers on lower limb of 1<sup>st</sup> gill arch; maximum body depth 3.3–3.8 in SL; barbel 1.2 in head length or longer.

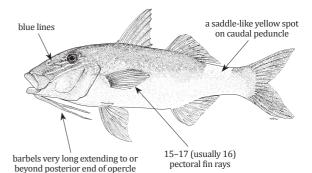
**Colour:** Two colour phases, one entirely yellow the other yellowish grey with blue markings on scales; irregular blue lines radiating from eye and below eye; other blue lines on  $2^{nd}$  dorsal, anal and caudal fin.



Size: To about 22 cm (SL)

FAO names: Goldsaddle goatfish (En) Rouget-barbet doré (Fr)

**FAO names:** Yellow-striped goatfish (En)



Size: To 50 cm, common 35 cm (TL)

FAO names: Cinnabar goatfish (En)

# Parupeneus heptacanthus (Lacepède, 1802)

#### Local name(s): Kyo Warr.

**Habitat:** Lives over silty or mixed bottoms between 4–104 m depth.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Dorsal profile of head convex; posterior end of maxilla evenly convex; 15–17 (usually 16) pectoral fin rays; 19–23 gill rakers on lower limb of 1<sup>st</sup> gill arch; maximum body depth 2.9–3.6 in SL; barbel length 1.1–1.3 in head length.

**Colour:** Purple-red to vermillion dorsally, paler ventrally, often with 1–2 indistinct narrow yellow-orange stripes just above lateral line; a small reddishbrown spot usually present on or just below lateral line above distal third of pectoral fin; barbels white or pale orange except for the white tips.

#### Parupeneus indicus (Shaw, 1803)

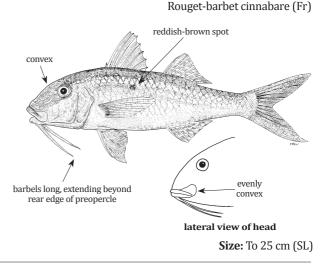
Local name(s): Kyo Warr.

**Habitat:** Inhabits shallow coastal waters in mostly <10 m depth.

Fisheries: Bottom trawls, gillnets.

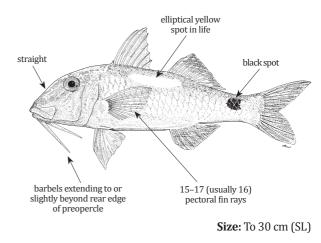
**Distinctive Characters:** Dorsal profile of snout straight, becoming convex anterior to eye; last ray of  $2^{nd}$  dorsal and anal fin longer than penultimate ray; 18–21 gill rakers on lower limb of  $1^{st}$  gill arch; maximum body depth 3.3–3.8 in SL; barbel length 1.3–1.5 in head length.

**Colour:** Body greenish to reddish brown dorsally; a large, horizontal elongate, yellow spot (sometimes partly white) centred on lateral line below posterior part of 1<sup>st</sup> dorsal fin and interdorsal space; irregular pale blue lines radiating from eye; other blue lines on 2<sup>nd</sup> dorsal, anal and caudal fin.



FAO names: Indian goatfish (En)





FAO names: Jansen's goatfish (En)

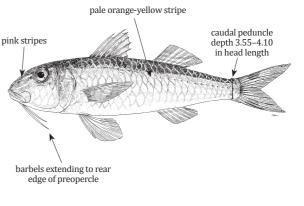
# Parupeneus jansenii (Bleeker, 1856)

#### Local name(s): Kyo Warr.

**Habitat:** Coastal waters in depths of 24–100 m. **Fisheries:** Bottom trawls, gillnets.

**Distinctive Characters:** Similar to *Parupeneus heptacanthus* but body more elongated with a shallower caudal peduncle and barbels mostly shorter; maximum body depth 3.60–4.55 in SL (vs 2.85–3.60); caudal peduncle depth 3.55–4.10 (vs 2.60–3.25) in head length; barbels length 1.30–1.55 (vs 1.10–1.35) in head length; no small reddish-brown spot on body; 19–23 gill rakers on lower limb of 1<sup>st</sup> gill arch; 14–16 pectoral fin rays.

**Colour:** Pinkish red to vermillion dorsally, paler ventrally; a broad, pale orange-yellow stripe running along lateral line; iris red; barbels white or rose to red at basis, tips white.



# Parupeneus macronemus (Lacepède, 1801)

#### Local name(s): Kyo Warr.

**Habitat:** Shallow sandy or weedy bottoms or coral reefs between 3–40 m depth.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Dorsal profile of snout straight; last ray of 2<sup>nd</sup> dorsal and anal fin much longer than penultimate ray; 27–30 gill rakers on lower limb of 1<sup>st</sup> gill arch; maximum body depth 3.3–3.7 in SL; barbel length 1.1–1.3 in head length **Colour:** Reddish brown, paler ventrally and posteriorly; a dark brown band from upper end of gill opening, ending beneath rear base of 2<sup>nd</sup> dorsal fin; a vertical pale blue line or spot on scales of body below dark stripe, and light blue lines on margin of dark band on head.



#### Local name(s): Kyo Warr.

**Habitat:** Coral reefs and adjacent sand down to 120 m depth.

Fisheries: Mainly gillnets.

**Distinctive Characters:** Dorsal profile of snout straight to before eye; last ray of  $2^{nd}$  dorsal and anal fin distinctly longer than penultimate ray; 21–25 gill rakers on lower limb of  $1^{st}$  gill arch; maximum body depth 3.5–4.0 in SL; barbel length 1.3–1.6 in head length.

**Colour:** Body yellowish grey to light red, often with irregular blue lines around eye; black spot usually much larger than eye centred on lateral line below rear base of 1st dorsal fin, with a large oval white spot posterior and adjacent to it; base of 2nd dorsal fin blackish, the outer part yellow with dark-edged blue lines.



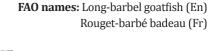
#### Local name(s): Kyo Warr.

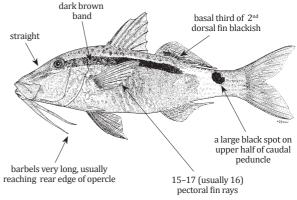
**Habitat:** On or adjacent to coral reefs down to 80 m depth.

#### Fisheries: Bottom trawls, gillnets.

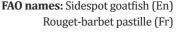
**Distinctive Characters:** Dorsal profile of snout straight or slightly concave to before eye; 27-30 gill rakers on lower limb of  $1^{st}$  gill arch; maximum body depth 2.8–3.4 in SL; barbel length 1.6–1.9 in head length.

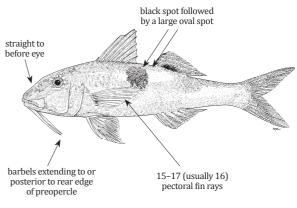
**Colour:** Body colour yellowish grey to brownish red; 2 broad saddle-like dark bars below  $1^{st}$  dorsal and posterior part of  $2^{nd}$  dorsal fin, the anterior bar about 4 scales in width, narrowing as it passes under pectoral fins;



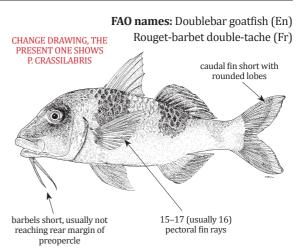


Size: To 25 cm (SL)





#### Size: To 32 cm, common 20 cm (TL)



Size: To 27 cm (SL)

5 (rarely 4) thin reddish

bars on upper lobe of

caudal fin

# Upeneus guttatus (Day, 1868)

#### Local name(s): Kyo Warr.

460

**Habitat:** Soft or mixed bottoms, depth range 8–165 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Small villiform teeth in a narrow band in jaws, on palatines, and in 2 small patches on vomer; small scales basally on 2<sup>nd</sup> dorsal and anal fins; snout subequal to postorbital distance (all these characteristics true of all *Upeneus* species); body depth at 1<sup>st</sup> dorsal fin origin 3.8–4.5 in SL; barbel length 5.0–6.3 in SL; 12–15 (mostly 13) pectoral fin rays; 23–26 total gill rakers on 1<sup>st</sup> gill arch; 28–31 lateral line scales.

**Colour:** Body colour variable, often white or rose below lateral line, covered by red pigmentation above lateral line which may also reach down ventrally and to head, sometimes forming red patches or blotches (no mid-lateral body stripes); belly white; iris red; barbels yellow or white; caudal fin bars red, on lower lobe mingling with irregular red pigmentation.

# Upeneus margarethae Uiblein & Heemstra, 2010

Local name(s): Kyo Warr.

Habitat: Soft or mixed bottoms, depth range 8–105 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Body depth at 1st dorsal fin origin 3.7–4.5 in SL; barbel length 5.0–6.7; 13–15 (mostly 14) pectoral fin rays; 21–24 total gill rakers on first gill arch; 28–30 lateral line scales.

**Colour:** Body red above lateral line becoming white laterally with red or rose dots or blotches; ventral side of head and belly white; a yellow to red mid-lateral stripe on snout through eye; iris red; barbels white; caudal fin bars red or dark grey.

lower lobe with 2–8 short red bars on ventral margin and irregular red pigmentation more dorsally

FAO names: Two-tone goatfish (En)

roof of mouth

slender barbels not reaching to

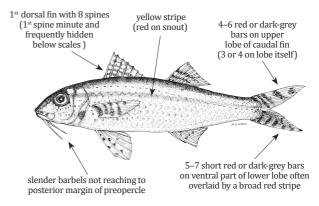
posterior margin of preopercle

1st dorsal fin with 7

spines (1<sup>st</sup> spine longest)

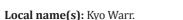
Size: To 16 cm (SL)





Size: To about 13 cm (SL)

FAO names: Goldband goatfish (En)



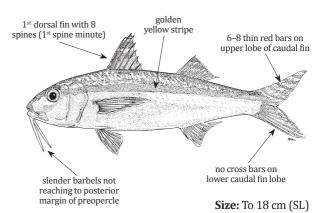
Upeneus moluccensis (Bleeker, 1855)

Habitat: Soft or mixed bottoms down to 99 m depth.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Body depth at 1<sup>st</sup> dorsal fin origin 3.9–4.3 in SL; barbel length 6.0–6.6 in SL; 14–16 pectoral fin rays; 26–29 total gill rakers on 1<sup>st</sup> gill arch; 33–35 lateral line scales.

**Colour:** Golden yellow stripe about as broad as pupil passing from eye along upper side of body to upper caudal base; head and body above stripe silvery pink to greenish, silvery white below; tip of 1<sup>st</sup> dorsal fin tip brown or black; barbels white; caudal fin bars on upper lobe red.



#### Upeneus sulphureus Cuvier, 1829

#### Local name(s): Kyo Warr.

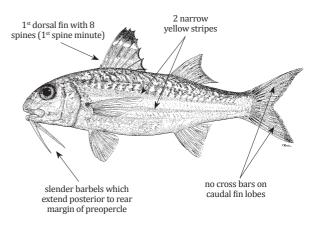
**Habitat:** Soft or mixed bottoms from 20 m to 60 m depth.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Body depth at 1<sup>st</sup> dorsal fin origin 3.0–3.4 in SL; barbel length 4.7–6.0 in SL; 26–30 total gill rakers on 1<sup>st</sup> gill arch; 14–17 pectoral fin rays; 34–37 lateral line scales.

**Colour:** Dorsally pale brown, ventrally white; 2 conspicuous yellow body stripes, one mid-lateral from operculum to caudal fin base, the other starting behind pectoral fin base and reaching back to caudal fin base; tip of 1<sup>st</sup> dorsal fin black; caudal fin grey, lower lobe yellowish at fin base; barbels white; iris red.

#### FAO names: Sulphur goatfish (En)



Size: To 20 cm (SL)

Rouget-souris ocre (Fr)

5-6 weak, red or grey

bars on upper

lobe of caudal fin

lower caudal fin lobe

with a broad greyish

posterior border

Size: To 14 cm (SL)

FAO names: Ochrebanded goatfish (En)

brownish

vellow band

1st dorsal fin with 8

spines (1st spine minute)

barbels do not reach posterior

to rear margin of preopercle

#### Upeneus sundaicus (Bleeker, 1855)

#### Local name(s): Kyo Warr.

**Habitat:** On soft or mixed bottoms at 3–20 m depth.

Fisheries: Bottom trawls.

**Distinctive Characters:** Body depth at 1<sup>st</sup> dorsal fin origin 3.6–4.0 in SL; caudal peduncle very deep (its depth 7.9–8.7 in SL); barbel length 4.8–5.7 in SL; 18–22 total gill rakers on 1<sup>st</sup> gill arch; 13–15 pectoral fin rays; 31–34 lateral line scales.

**Colour:** Dorsally reddish or dark grey, ventrally whitish rose; head with red or grey pigmentation at snout and above eyes; a brownish yellow band running below lateral line from hind margin of eye to base of caudal fin; iris red; barbels yellow; caudal fin upper lobe with weak thin crossbars, lower lobe often with dark stripe.

#### Upeneus supravittatus Uiblein & Heemstra, 2010

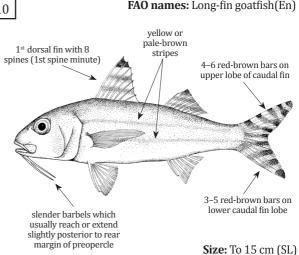
#### Local name(s): Kyo Warr.

**Habitat:** On soft or mixed bottoms, maximum reported depth is 40 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Body depth at 1<sup>st</sup> dorsal fin origin 3.3–4.0 in SL; barbel length 4.3–5.9 in SL; 27–32 total gill rakers on 1<sup>st</sup> gill arch; pectoral fin length 3.5–4.3 in SL; 15–17 pectoral fin rays; 34–36 lateral line scales.

**Colour:** Head and body brassy to silvery grey and dorsally grey to red brown with 2 narrow, yellow lateral stripes, the uppermost extending from behind head to caudal fin base, the lowermost from pectoral fin base to caudal fin base; stripes connecting to oblique bars at caudal fin; tip of 1<sup>st</sup> dorsal fin dark; caudal fin bars red brown or grey.



FAO names: Freckled goatfish (En)

Rouget-souris à bande sombre (Fr)

#### Upeneus tragula Richardson, 1846

#### Local name(s): Kyo Warr.

Habitat: Protected bays and lagoons, often on sand or silty sand near coral reefs; also common in estuaries; maximum reported depth 42 m.

### Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Body depth at 1<sup>st</sup> dorsal fin origin 3.6-4.7 in SL; barbel length 4.8-7.5 in SL; 20-25 total gill rakers on 1st gill arch; 12–14 pectoral fin rays; 28-31 lateral line scales.

Colour: Body and head ground colour white or beige, slightly darker above lateral line, with irregular red, brown or black spots and/or blotches; a red, brown or black mid-lateral body stripe from tip of snout through eye to caudal base; 1st dorsal fin with a large blotch on or around tip; iris red; barbels yellow, pale brown or orange in fresh fish.

Upeneus vittatus (Forsskål, 1775)

Local name(s): Kyo Warr.

Habitat: Shallow sandy areas or lagoons and coastal reefs. Maximum reported depth 100 m. Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Body depth at 1<sup>st</sup> dorsal fin origin 3.3–4.2 in SL; barbel length 4.8–6.3 in SL; total gill rakers 25–29 gill rakers on 1<sup>st</sup> gill arch; pectoral fin length 4.2-4.9 in SL.

**Colour:** Body with 4–5 yellow or pale-brown lateral stripes, the longest mid-lateral stripe extending from eye to caudal fin base, the lowermost stripe from pectoral fin base to caudal fin base; stripes on mid body connecting to oblique bars on caudal fin; barbels white.

red brown or 3-9 red, brown or 1st dorsal fin with 8 black stripe black bars on upper spines (1st spine minute) lobe of caudal fin 4-10 red, brown or black slender barbels not bars on lower lobe of reaching to posterior caudal fin margin of preopercle Size: To at least 19 cm (SL) FAO names: Yellowstriped goatfish (En) Rouget-souris orangé (Fr) 1st dorsal fin with 8 1<sup>st</sup> dorsal fin with 3 dark spines (1st spine minute) stripes, the outer much broader and darker 4-5 brown or dark brown bars yellow or pale-brown 3 (rarely 4) dark bars, the slender barbels not stripes outer broader and darker separated by large interspace

reaching rear margin of preopercle

Size: To 28 cm, common 20 cm (SL)

#### **PEMPHERIDAE**

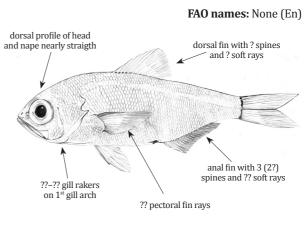
Sweepers

#### Parapriacanthus sp.

Local name(s): ???? Habitat: Depth of capture: 77 m. Fisheries: Bottom trawls.

Distinctive Characters: Body depth 3.2 in SL; no midventral black, pin-like mark anterior to anus; scales on lower jaw, throat and chest; axillary scale on pelvic fins; orbit diameter ca. 8.6 in SL; predorsal 2.1 in SL; preanal 1.5 in SL; ca. 67+3 LL scales; pectoral fin 4.3 in SL (its tip reaching to anus).

Colour: Body greenish yellow anteriorly, pinkish posteriorly; lower head and sides up to anus silvery characoal: no dark dots below lateral line: a black line across base of caudal fin and an an elliptical black spot at base of pectoral fin caudal fin mostly pinkish; other fins hyaline; iris silvery white (black in alcohol).



Size: To 6.5 cm (TL)

# 462

# Pempheris flavicycla Randall, Satapoomin & Alpermann 2013

#### FAO names: Yelloweye Sweeper (En)

#### Local name(s): ????

Habitat: Found in clear-water, coral-reef areas. Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Body deep, its depth 2.3–3.55 in SL; head length 3.25–3.55 in SL; orbit diameter 7.9–8.6 in SL; outer part of paired patch of small teeth anteriorly in lower jaw and narrow band of small teeth of upper jaw exposed when mouth fully closed; 16–19 pectoral fin rays; 53–61 lateral line scales.

**Colour:** Body bronze to copper, suffused with yellowish green dorsally; dorsal fin with a large apical black spot, often with a blackish anterior margin; anal fin whitish with a broad black border, about half the fin ray length anteriorly, progressively much narrower posteriorly; caudal fin usually with a broad blackish posterior margin; iris black with a bright yellow inner ring.

# Pempheris malabarica Cuvier, 1831

#### Local name(s): ???

Habitat: Found in clear-water, coral-reef areas. Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Body depth 2.25–2.45 in SL; head length 3.05–3.4 in SL; orbit diameter 7.9–9.1 in SL; scales on side of chest ctenoid; this species has the highest count of lateral line scales of the genus and the lowest count of gill rakers; lower jaw large and projecting, with two patches of teeth dorsally at the front of the jaw that are still half exposed when mouth fully closed; 17–19 pectoral fin rays; 65–75 lateral line scales.

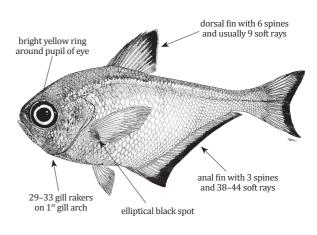
**Colour:** Orangish to reddish copper, the scales with a dark spot forming straight horizontal stripes above and below lateral line; median fins orangish red; no dark band at base of anal fin.



#### Local name(s): ???

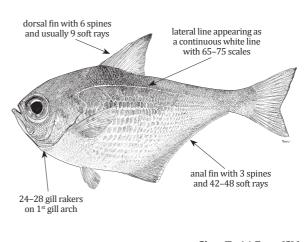
Habitat: Found in clear-water, coral-reef areas. Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Body depth 2.35–2.45 in SL; head length 3.2–3.3 in SL; orbit diameter 7.2–7.7 in SL; 16–18 (modally 17) pectoral fin rays. **Colour:** Silvery gray dorsally, with lavender iridescence, the sides silvery, the scales sometimes rimmed in copper; a black spot on about outer 1/3 of dorsal fin, the leading edge dark; anal fin with a broad blackish band along base; about outer 1/4 of caudal fin blackish; pectoral fins with a dark bluish gray band across base.

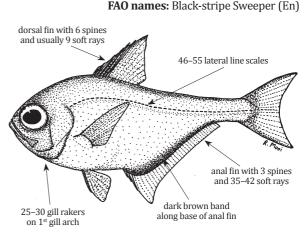


Size: To 14 cm (SL)

FAO names: Malabar Sweeper (En)



Size: To 14.7 cm (SL)



Size: To 14.7 cm (SL)

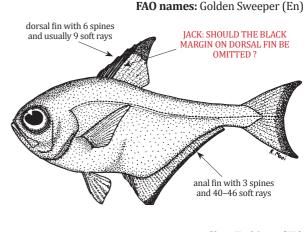
# Pempheris vanicolensis Cuvier, 1831

#### Local name(s): ????

Habitat: Found in clear-water, coral-reef areas. Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Similar to *Pempheris flavicycla* Randall, Satapoomin & Alpermann, 2013 but lacks the yellow ring around the pupil of the eye and the black spot at the base of the pectoral fins; also, the black margin on the anal fin becomes more narrow posteriorly on *P. vanicolensis* and may even disappear on the last few rays; 18–19 pectoral rays; 26–29 gill rakers; 63–68 lateral line scales.

**Colour:** Body bronze with greenish shine over the back and most of the head; iris brownish-green; anal fin pale with black distal margin, black dorsal fin tip; pectoral fins yellowish without black basal spot.



Size: To 20 cm (TL)

# BATHYCLUPEIDAE

Bathyclupeids

Bathyclupea hoskynii Alcock, 1891

Local name(s): ????

Habitat: Bathypelagic; depth range 330–550 m. Fisheries: Deep bottom trawls.

**Distinctive Characters:** Body strongly compressed, its depth 27.8–33.3% of SL (usually more than 29%); snout length ??; orbit diameter ??; tongue bilobed; ventral margin of preopercle serrated; last pair of pleural ribs reduced or absent; pseudobranch elements?.

**Colour:** Upper parts of head and body dark grey becoming lighter on sides; lower parts of head paler; a golden green blotch on opercle; caudal and pectoral fins dusky; mouth cavity and gill arches pale; peritoneum?.

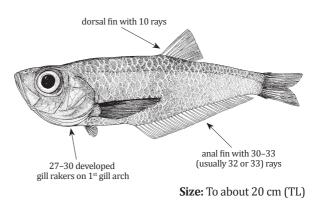
# Neobathyclupea melanoptera Prokofiev, Gon & Psomadakis, 2016

#### Local name(s): ????

Habitat: Bathypelagic; depth range 767–1 120 m. Fisheries: Deep bottom trawls.

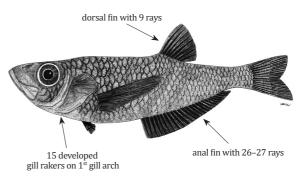
**Distinctive Characters:** Body strongly compressed, its depth 25.2–26.9% of SL; snout (12.8–13.2% of SL) longer than orbit (11.8–12.2% of SL); head length 38.5–38.8% of SL; tongue bilobed; ventral margin of preopercle smooth to finely serrated; last pair of pleural ribs well-developed; large pseudobranch (29–30 elements).

**Colour:** Body blackish dark brown with purple tinge; scales with black edge; head and fins jet black; eye black; mouth cavity and gill arches darkly pigmented; peritoneum jet-black.



FAO names: Indian deep-sea herring (En)

FAO names: Black-fin deep-sea herring (En)



# **KYPHOSIDAE**

Seachubs

# Kyphosus bigibbus Lacepède, 1801

Local name(s): Nga Wa Toke.

**Habitat:** Shallow coastal waters above reefs and rocky areas.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Single row of lanceolate incisor-like teeth on both jaws (true of all Kyphosidae); soft portion of dorsal fin not higher than spiny portion; 51–55 (usually 53) pored lateral line scales; 12–15 (usually 13–14) scale rows above lateral line; 20–25 (usually 21–22) scale rows below lateral line.

**Colour:** Silvery grey, the edges of the scales brown, resulting in a longitudinal linear pattern on body; a broad silvery stripe from front of snout to below eye, bordered below by a grey streak; opercular membrane dark brown; fins dark grey.

Kyphosus cinerascens (Forsskål, 1775)

Local name(s): Nga Wa Toke.

**Habitat:** Occurs in shallow coastal waters around reefs and rocks.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Soft part of dorsal fin clearly higher than the longest spine; 49–52 (usually 50–51) pored lateral line scales; 9–12 (usually 10–11) scale rows above lateral line; 17–21 (usually 18–20) scale rows below lateral line.

**Colour:** Silvery grey, olivaceous to dusky dark above; a dark stripe between each row of scales; a grey or silvery stripe under the eye; opercular membrane dark brown vertical fins blackish, paired fins lighter.

# Kyphosus vaigiensis (Quoy & Gaimard, 1825)

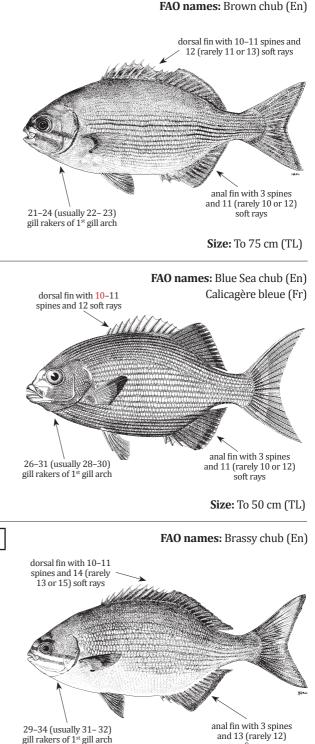
#### Local name(s):Nga Wa Toke.

**Habitat:** Over hard, algal coated bottoms of exposed surf–swept outer reef flats, lagoons, and seaward reefs to a depth of at least 24 m.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Maxilla reaching to below anterior edge of eye when mouth fully closed; soft portion of dorsal fin not higher than spiny portion; 51–55 (usually 52–53) pored lateral line scales; 11–14 (usually 12–13) scale rows above lateral line; 18–21 (usually 18–19) scale rows below lateral line.

**Colour:** Silvery grey with narrow brassy stripes along upper and lower edges of scales of body; two oblique brassy bands on snout and cheeks; opercular membrane usually yellowish brown.





465

soft rays

pectoral fins long.

falciform, reaching

to caudal peduncle

FAO names: Concertina fish (En)

# DREPANEIDAE

Sicklefishes

#### Drepane longimana (Bloch & Schneider, 1801)

Local name(s): Pa Lei Gyi / Pa Lei Pauk.

466

Habitat: Coastal waters including estuaries. Fisheries: Mainly bottom trawls.

Distinctive Characters: Body oval, strongly compressed; mouth highly protrusible; teeth pointed, slender, crowded together; dorsal fin with 8-9 (usually 8) spines and 19-23 rays; anal fin with 3 spines and 17-19 rays.

Colour: Head and body silvery; 4-10 subvertical dark bars (bars faint or absent in some specimens): median fins dusky, darker distally; 2-3 longitudinal rows of small dark spots on soft dorsal fin; some specimens with front part of head dark, and lips white.

# Drepane punctata (Linnaeus, 1758)

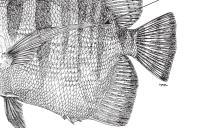
Local name(s): Pa Lei Gyi / Pa Lei Pauk.

Habitat: Occurs in a variety of inshore habitats, such as sand or mud bottoms, reefs, estuaries, and harbours.

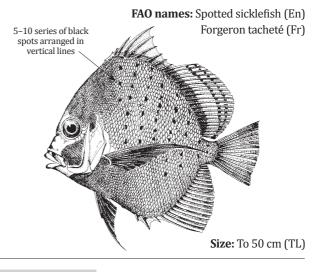
Fisheries: Mainly bottom trawls.

Distinctive Characters: Body, mouth and teeth as in Drepane longimana; dorsal fin with 8-10 (usually 9) spines and 20-22 soft rays; anal fin with 3 spines and 16-19 rays.

Colour: Head and body silvery; fins dusky yellow; dorsal and caudal fins darker distally; 2 or 3 longitudinal rows of small dark spots on soft dorsal fin.



Size: To 50 cm (TL)



# MONODACTYLIDAE

Moonies

Monodactylus argenteus (Linnaeus, 1758)

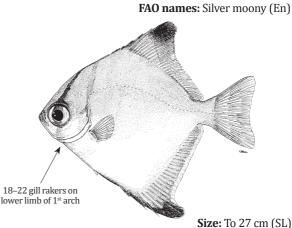
Local name(s):Lay Thi Daw Nga.

Habitat: Shallow coastal waters, fresh waters, estuaries and harbours.

#### Fisheries: Gillnets.

Distinctive Characters: Body oval, strongly compressed, its depth 1.2-1.6 in SL; teeth flattened, tricuspid, middle cusp much longer than other cusps; pelvic fins very small or absent in adults; dorsal fin with 8 spines and 27–30 soft rays; anal fin with 3 spines and 27-30 soft rays.

Colour: Adults silvery; tips of dorsal and anal fin lobes yellow, dusky yellow or blackish; juveniles dusky silver with 2 curved dark stripes across head.



## CHAETODONTIDAE

Butterflyfishes

## Chaetodon and amanensis Kuiter & Debelius, 1999

#### Local name(s): Nga Leik Pyarr.

**Habitat:** Rock or coral reefs near shore or outer slopes at depths between 10–40 m.

Fisheries: Occasionally caught with gillnets.

**Distinctive Characters:** Body ovate, moderately deep and strogly compressed; snout short; head profile moderately steep; lateral line incomplete; dorsal fin with 14 spines and 18 soft rays; anal fin with 4 spines and 16–18 soft rays.

**Colour:** Bright yellow with numerous light browngray narrow horizontal stripes along scale rows on sides; a black spot covering upper half of caudal peduncle, and a blue-edged black bar through eye; caudal fin with hyaline posterior margin.

## Chaetodon collare Bloch, 1787

Local name(s):Nga Leik Pyarr.

**Habitat:** Inhabits coral reefs and aggregates in midwater at depths of 3–15 m; forms pairs or small to large groups.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Body rounded, deep; snout short and pointed; head profile steep and nearly straight; lateral line incomplete; dorsal fin with 12 spines and 25–28 soft rays; anal fin with 3 spines and 20–22 soft rays.

**Colour:** Head brown with a prominent white bar from dorsal fin origin to chest, preceded by a black bar below eye which is edged anteriorly with white, snout and chin black with white markings; caudal fin red with a whitish posterior margin and black submarginal band.

## *Chaetodon triangulum* Cuvier, 1831

#### Local name(s): Nga Leik Pyarr.

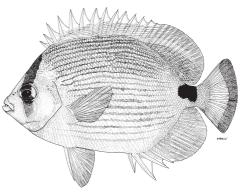
Habitat: Coral reefs, associated with *Acropora* plate coral, usually <10 m depth.

Fisheries: Occasionally caught with gillnets.

**Distinctive Characters:** Body rounded, deep; snout short and pointed; head profile steep and nearly straight; lateral line incomplete; dorsal fin with 11–12 spines and 23–26 soft rays; anal fin with 3 spines and 20–21 soft rays; very deep body, roughly triangular shape.

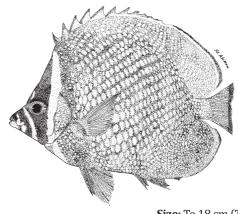
**Colour:** Dark grey with numerous dark chevron -shaped narrow bars on sides; 3 dark bars on head, including one through eye; a yellow streak crossing caudal peduncle into anal fin; a yellow-edged dark triangle on caudal fin.

FAO names: Andaman butterflyfish (En)



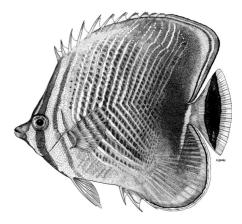
Size: To 15 cm (TL)

FAO names: Redtail butterflyfish (En) Chétodon à collier (Fr)



Size: To 18 cm (TL)

FAO names: Triangle butterflyfish (En)



Size: To 15 cm (TL)

#### FAO names: Yellow-headed butterflyfish (En)

#### Chaetodon xanthocephalus Bennett, 1833

#### Local name(s): Nga Leik Pyarr.

**Habitat:** Rock and coral reefs of lagoons and outer reefs in 5–25 m.

Fisheries: Occasionally caught with gillnets.

**Distinctive Characters:** Body rounded, deep; snout moderately long and pointed; head profile steep and nearly straight; lateral line incomplete; dorsal rays 13–14 spines and 21–26 soft rays; anal fin with 3 spines and 21–23 soft rays.

**Colour:** Pale grey with narrow bluish grey chevron-shaped narrow bars on side, orange area encompassing most of posterior dorsal and anal fins, and yellow forehead, snout, lower part of head, breast, and pelvic fins.

## Heniochus acuminatus (Linnaeus, 1758)

#### Local name(s): Nga Leik Pyarr.

**Habitat:** Inhabits coral and rocky reefs at depths of 2 to 75 m; usually solitary, in pairs or in small groups swimming near the bottom.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Body very deep; snout moderately long and pointed, longer than eye diameter; head profile steep and slightly convex; lateral line complete; dorsal fin with 11 (rarely 12) spines and 23–27 soft rays; anal fin with 3 spines and 15–18 soft rays.

**Colour:** Body white with 2 broad black bands; snout and interorbital space largely blackish; caudal fin and posterior part of dorsal fin mainly yellow.

#### Heniochus diphreutes Jordan, 1903

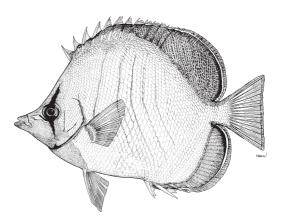
#### Local name(s): Nga Leik Pyarr

**Habitat:** Outer reef slopes at depths of 5–210 m (usually <30 m), often in aggregations.

Fisheries: Caught mainly with gillnets.

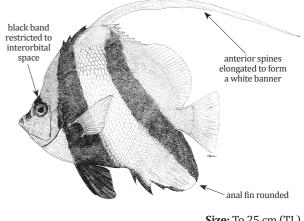
**Distinctive Characters:** Very similar to *H. acuminatus*, but anal fin more pointed; snout shorter, about equal to eye diameter; more rounded chest; eye band running dorsally above interorbital space; dorsal fin with 12–13 spines and 23–25 soft rays; anal fin with 3 spines and 17–19 rays.

**Colour:** Body white with 2 broad black bands, second extending to tip of anal fin; snout and interorbital space largely blackish; caudal fin and posterior part of dorsal fin mainly yellow.



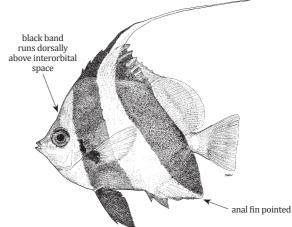
Size: To 20 cm (TL)

FAO names: Longfin bannerfish (En) Pavillon (Fr)



Size: To 25 cm (TL)

FAO names: False moorish idol (En)



Size: To 20 cm (TL)

## Roa jayakari (Norman, 1939)

Local name(s): Nga Leik Pyarr.

Habitat: Reef-associated; depth range 33–274 m. Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Body rounded, deep; snout moderately long and pointed; head profile steep and slightly convex; lateral line complete; dorsal fin with 11 spines and 21–23 soft rays; anal fin with 3 spines and 17–18 soft rays; caudal fin rounded.

**Colour:** White with two broad dark brown bars on body, the  $1^{st}$  extending into dorsal fin, the  $2^{nd}$  into both the dorsal and anal fins; white interspace in middle of body broader ventrally; a dark brown bar from high on nape through eye, ending at lower edge of preopercle; a white edged black spot about as large as eye on soft portion of dorsal fin in upper posterior part of second brown bar.

Size: To 16 cm (TL)

## POMACANTHIDAE

Angelfishes

## Apolemichthys xanthurus (Bennett, 1833)

Local name(s): Nga Leik Pyarr.

**Habitat:** Coral reefs and rocky shores in 5–30 m; found solitary or in pairs.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Body oblong, deep and compressed; a conspicuous spine at angle of preopercle (true of all Pomacanthidae); posterior margin of preopercle finely serrate; subopercle smooth; dorsal fin with 13–14 spines and 17–19 soft rays; anal fin with 3 spines and 17–18 soft rays; caudal fin slightly rounded.

**Colour:** Body grey yellowish with darker scale centres; yellow "ear" spot above gill opening; caudal fin bright yellow; black dorsal and anal fins with white or blue margin.

Centropyge flavipectoralis Randall & Klausewitz, 1977

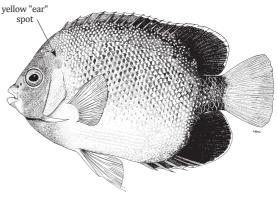
Local name(s): Nga Leik Pyarr.

**Habitat:** Coral rubble and reef margins in 3–20 m. **Fisheries:** Caught mainly with gillnets.

**Distinctive Characters:** Body oblong, moderately deep and compressed; a conspicuous spine at angle of preopercle (true of all Pomacanthidae); subopercle with spines; interopercle and suborbital serrate; dorsal fin with 14–15 spines and 14–15 soft rays; anal fin with 3 spines and 16–18 soft rays; caudal fin rounded.

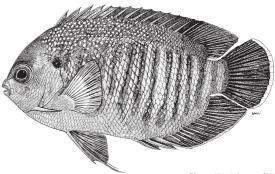
**Colour:** Body dark brown with blue black bars on side; highly contrasting yellow pectoral fins; dorsal, anal and caudal fins blue with light blue margin.

FAO names: Indian yellow-tail angelfish (En)



Size: To 15 cm (TL)

FAO names: Yellowfin pygmy angelfish (En)



## FAO names: Jayakar's butterflyfish (En)

<sup>469</sup> 

#### FAO names: Blueringed angelfish (En)

## *Pomacanthus annularis* (Bloch, 1787)

Local name(s): Nga Leik Pyarr.

**Habitat:** Inhabits lagoons and coral reefs at depths of 10 to 30 m; found solitary or in pairs.

Fisheries: Caught mainly with gillnets.

**Distinctive Characters:** Body oblong, very deep and compressed; a conspicuous spine occurs at angle of preopercle; dorsal fin with 13 spines and 20–22 soft rays; anal fin with 3 spines and 20–21 soft rays; soft portions of dorsal and anal fins round; caudal fin rounded.

**Colour:** Adults yellowish brown with several distinct diagonal blue lines on sides and a distinct blue ring above upper edge of opercle; 2 horizontal blue stripes on head, the upper stripe at the level of mid-eye, the lower just beneath lower edge of eyes; caudal fin transparent white.

## *Pomacanthus imperator* (Bloch, 1787)

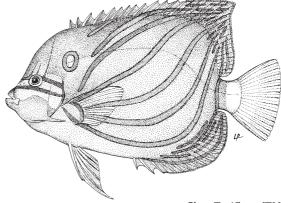
Local name(s): Nga Leik Pyarr.

**Habitat:** Wide variety of habitats at depths of 1–100 m; found solitary or in pairs.

Fisheries: Caught mainly with gillnets.

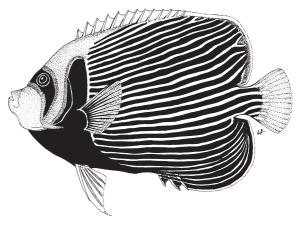
**Distinctive Characters:** Body oblong, very deep and compressed; a conspicuous spine occurs at angle of preopercle; dorsal fin with 13–14 spines and 19–21 soft rays; anal fin with 3 spines and 18– 21 soft rays; soft portions of dorsal and anal fins round; caudal fin rounded.

**Colour:** Adults blue, covered with bright yellow horizontal stripes culminating in a bright yellow to orange caudal fin; a striking blue-edged black mask covers the eyes and a similarly-colored vertical band extends from the pectoral fin two-thirds of the way up the body; this band is highlighted in a sapphire-blue in front, and bright yellow, posteriorly; the mouth is white.



Size: To 45 cm (TL)

FAO names: Emperor angelfish (En) Poisson ange impérial (Fr)



Size: To 35 cm (TL)

## PENTACEROTIDAE

Armorheads

#### Histiopterus typus Temminck & Schlegel, 1844

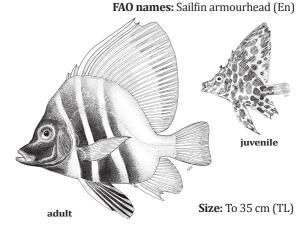
Local name(s): Than Ma Ni Ghaung Nga.

**Habitat:** Steep seaward reef drop-offs; bottom dweller from 40 m to 400 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Head mostly naked, the bones exposed and rugose; dorsal fin very high, sail-like, with 4 spines, the  $1^{st}$  two short; 23–29 dorsal fin soft rays; anal fin with 3 spines and 8–10 soft rays.

**Colour:** Adult body pale, with dark brown bars; juveniles pale with large dark brown blotches over head, body, and dorsal, anal, and pelvic fins; pectoral and caudal fins pale, without spots.



## CEPOLIDAE

## Bandfishes

## Acanthocepola krustensternii (Temminck & Schlegel, 1845)

FAO names: Krusenstern's bandfish (En)

#### Local name(s): Din Gar Ni Nga.

**Habitat:** Burrow dweller occuring on sandy or mud bottoms, including shallow protected estuaries, in depths of 3–50 m.

#### Fisheries: Bottom trawls.

**Distinctive Characters:** Body eel-like; last ray of dorsal and anal fins broadly united to caudal fin by a membrane; dorsal and anal fins long and continuous; lateral line terminating at caudal fin base; head length 8–10.4 in SL; eye diameter 2.9–3 in head length; 12–14 caudal fin rays, all unbranched; preopercle with strong spine at angle and 4–8 smaller spines on lower limb; cheeks scaly. **Colour:** Overall pale pinkish (head and belly paler)

or silvery pinkish with 2 longitudinal rows of yellow-orange spots on sides; iris red; median fins red with yellowish margins; paired fins rosy.

Acanthocepola limbata (Valenciennes, 1835)

Local name(s): Din Gar Ni Nga.

**Habitat:** Burrow dweller occuring on sandy or mud bottoms in depths of 15–100 m.

Fisheries: Bottom trawls.

**Distinctive Characters:** Similar to *Acanthocepola krustensternii* but body more elongate; 102–104 dorsal fin rays; 105–107 anal fin rays; 10 caudal fin rays, all unbranched; a dark-red oblong blotch anteriorly on dorsal fin.

**Colour:** Overall pale red (lower part of head and chest paler) or silvery red with a dark-red oblong blotch on dorsal fin between 9th and 14th rays; iris red; median and paired fins red to pale red (dark margin on anal fin?).

## Owstonia nudibucca Smith-Vaniz & Johnson, 2017

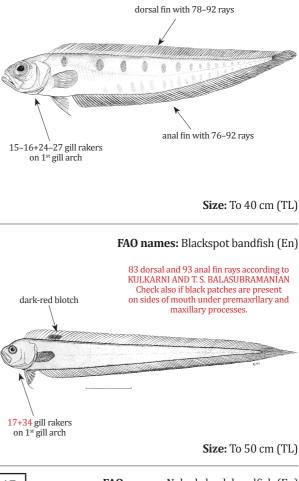
#### Local name(s): Din Gar Ni Nga.

Habitat: Free-swimming in close contact with soft bottoms in depths of about 270 m.

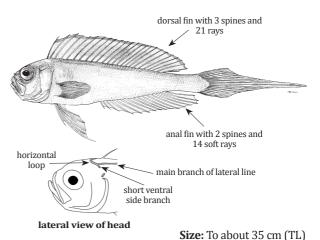
#### Fisheries: Bottom trawls.

**Distinctive Characters:** Body compressed moderately elongated; last ray of dorsal and anal fins not connected to caudal fin by a membrane; lateral line extends anteriorly forming a complete loop across nape and and a short ventral side branch slightly in front of dorsal fin origin; a diagonal row of 2 lateral line scales arising from upper posterior edge of opercle; nape and cheeks naked; 47–50 gill rakers on 1st gill arch; caudal peduncle depth in adults 2.3–3.0 times in its length.

**Colour:** Body and fins pink to red, paler below; iris red; 3 dark brown patches over anterior dorsal fin membrane; black premaxillary groove.



FAO names: Naked cheek bandfish (En)



## **MUGILIDAE**

Mullets

## Chelon macrolepis (Smith, 1846)

Local name(s): Ka Beluu.

Habitat: Schooling in shallow coastal lagoon waters, estuaries and brackish waters.

Fisheries: Bottom trawls, gillnets, seines.

Distinctive Characters: Body mderately robust; hind tip of maxilla exposed when mouth closed; adipose eyefold as a narrow rim around eye or absent; scales ctenoid; origin of 1st dorsal fin closer to base of caudal fin than tip of snout: pectoral axillary scale rudimentary or absent; scales in longitudinal series 31-35 (usually 32-33); caudal fin emarginate; 4-6 pyloric caeca.

Colour: Greenish grey dorsally; flanks and abdomen silvery; fins grey or bluish with dusky margins, may appear vellowish at base; pectoral fins with golden base, and perhaps a dark spot.

## Chelon melinopterus (Valenciennes, 1836)

Local name(s): Ka Beluu.

Habitat: Shallow coastal lagoon waters, estuaries and brackish waters.

Fisheries: Bottom trawls, gillnets, seines.

Distinctive Characters: Body distinctly robust, deep in profile; hind tip of maxilla exposed when mouth closed; scales ctenoid; 1<sup>st</sup> dorsal fin origin nearer to caudal fin base than to snout tip: 2<sup>nd</sup> dorsal fin origin at vertical through middle of anal fin base; 2nd dorsal and anal fins densely scaled; 26-29 scales in lateral series; 9–11 scales in transverse series; caudal fin emarginate; 4-6 pyloric caeca.

Colour: Greenish brown above, white to silvery below; distal margins of dorsal fins and entire caudal fin dusky.

Chelon parsia (Hamilton, 1822)

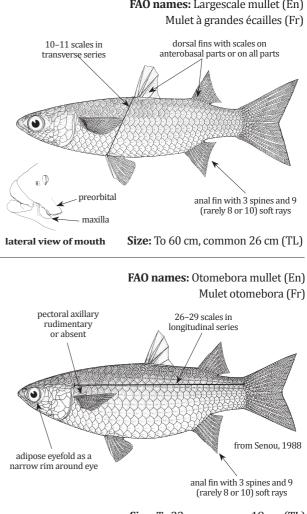
#### Local name(s): Ka Beluu.

Habitat: A schooling species, found in shallow coastal waters including brackish waters.

Fisheries: Bottom trawls, gillnets, seines.

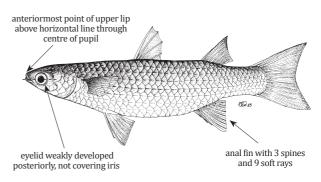
Distinctive **Characters:** Body relatively slender; hind tip of maxilla exposed when mouth closed; scales ctenoid; 1st dorsal fin origin nearer to snout tip than to caudal fin base; pectoral axillary scale rudimentary or absent; 31-36 scales in longitudinal series; caudal fin emarginate.

Colour: Greenish brown above, white to silvery below; a golden spot on upper operculum; base of 2<sup>nd</sup> dorsal, anal and caudal fins yellowish



Size: To 22 cm, common 18 cm (TL)

## FAO names: Gold-spot mullet (En) Mulet joue d'or (Fr)



#### 472

FAO names: Largescale mullet (En)

## Chelon subviridis (Valenciennes, 1836)

#### Local name(s): Ka Beluu.

Habitat: Schools in shallow coastal waters and enters lagoons, estuaries, and fresh waters. Fisheries: Bottom trawls, gillnets, seines.

**Distinctive Characters:** Body moderately robust and not so deep; hind tip of maxilla exposed when mouth closed; scales ctenoid; origin of 1<sup>st</sup> dorsal fin midway between tip of snout and base of caudal fin, or just closer to latter; both fins well scaled on all parts; scales in longitudinal series 28–32 (rarely 26, 27 or 33); 9–11 (rarely 12) scales in transverse series; caudal fin emarginate; 4–6 pyloric caeca.

**Colour:** Dark greenish dorsally, brownish over head, white ventrally; 3–6 indistinct, dark stripes along upper rows of scales; caudal fin bluish with black margin.



Local name(s): Ka Beluu.

**Habitat:** Shallow coastal waters and lagoons; also enters estuaries and rivers.

Fisheries: Bottom trawls, gillnets, seines.

**Distinctive Characters:** Body elongate; head broad, depressed, pointed; head width greater than or equal to depth; hind tip of maxilla exposed when mouth closed; origin of 1<sup>st</sup> dorsal fin midway between tip of snout and base of caudal fin, or slightly nearer the latter; both fins well scaled basally but distal parts are sometimes weakly scaled; 30–35 scales in longitudinal series; 10–11 scales in transverse series; caudal fin forked; 5 pyloric caeca.

**Colour:** Greenish brown dorsally, whitish ventrally; flanks with 5–7 indistinct longitudinal lines along scale rows.

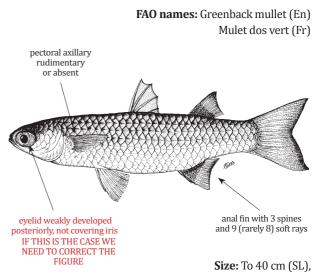
## Crenimugil crenilabis (Forsskål, 1775)

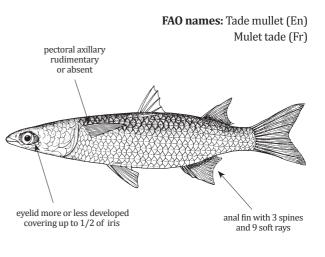
#### Local name(s): Ka Beluu.

Habitat: Found in coastal waters, in sandy or muddy areas of lagoons, reef flats and tidepools. Fisheries: Bottom trawls, gillnets, seines.

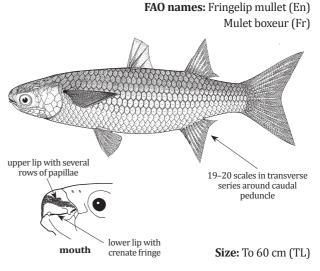
**Distinctive Characters:** Upper lip very thick; lip thickness at point of snout 5.2–9.5 in head length; ventral quarter to half of upper lip with 1–10 rows of papillae medially and laterally; lower lip thin, with anterior margin turned out and downwards with fine crenate fringe on inner part; 36–42 scales in longitudinal series; 12–14 in transverse series.

**Colour:** olive-green dorsally, flanks silvery and abdomen whitish; fins greyish except pectoral fins which are yellowish and have distinct dark purplish spot at upper part of base.





Size: To 70, common to 33 cm (SL)



## Ellochelon vaigiensis (Quoy & Gaimard, 1825)

#### Local name(s): Ka Beluu.

Habitat: Shallow coastal waters and estuaries. Fisheries: Bottom trawls, gillnets, seines.

**Distinctive Characters:** Body moderately robust and not so deep; hind tip of maxilla exposed when mouth closed; both fins well scaled basally; scales ctenoid; 1st dorsal fin origin nearer to caudal fin base than to snout tip; 25–29 (commonly 26) scales in longitudinal series; 8–10 scales in transverse series; 14–23 pyloric caeca.

**Colour:** Head and body silvery, darkened dorsally; scales on upper sides with brown blotches giving the effect of longitudinal bands; anal and caudal fins yellowish; pectoral fin wholly black in small fish.



#### Local name(s): Ka Beluu.

Habitat: Coastal waters, juveniles in estuaries. Fisheries: Bottom trawls, gillnets, seines.

**Distinctive Characters:** Snout moderately long and pointed, 20–25% in head length; maxilla slender, slightly curved tip usually not visible when mouth closed (true of all *Moolgarda* species); anal fin with 3 spines and 9 soft rays; scales with a membranous, digitated hind margin (true of all *Moolgarda* species); adipose eyefold usually as a rim around eye; both fins scaled only on anterior and basal parts; 37–43 (usually 38 or 39) scales in longitudinal series; 17–18 (rarely 15 or 16) scales in transverse series; 5–7 pyloric caeca; caudal fin emarginate.

**Colour:** Greenish grey dorsally; flanks and abdomen silvery;  $2^{nd}$  dorsal and anal fins with black margins.

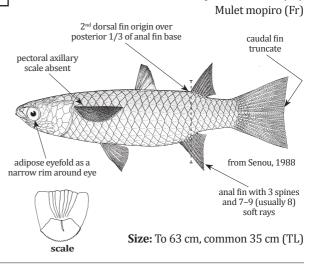
#### Moolgarda engeli (Bleeker, 1859)

#### Local name(s): Ka Beluu.

Habitat: Shallow coastal waters and estuaries. Fisheries: Bottom trawls, gillnets, seines.

**Distinctive Characters:** Snout short and blunt, 17–21% of head length; anal fin well scaled basally, 2nd dorsal fin only scaled anterobasally; 1st dorsal fin origin nearer to caudal fin base than to snout tip; anal fin with 3 spines and 9 (rarely 8) soft rays; thoracic and abdominal scales more distinctly ctenoid; 32–36 scales in longitudinal series; 10½–12½ scales in transverse series; 5–6 pyloric caeca; caudal fin emarginate.

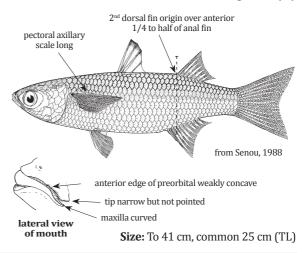
**Colour:** Olive dorsally; flanks and abdomen silvery; fins hyaline; pectoral fins with dark spot dorsally at origin.



## FAO names: Longarm mullet (En)

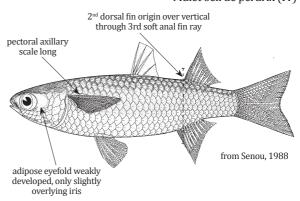
FAO names: Squaretail mullet (En)





#### FAO names: Kanda (En)

Mulet oeil de perdrix (Fr)



## Moolgarda pedaraki (Valenciennes, 1836)

#### Local name(s): Ka Beluu.

Habitat: Shallow coastal waters and estuaries. Fisheries: Bottom trawls, gillnets, seines.

**Distinctive Characters:** Snout short and blunt, 14–18% of head length; origin of 2nd dorsal fin on vertical through anal fin origin, or only just posterior to it; both fins always well scaled basally and medially, and more or less scaled on distal parts; both fins long and falcate; 32–36 (rarely 37) scales in longitudinal series; 11–13 scales in transverse series; 6–7 pyloric caeca; caudal fin deeply emarginate.

**Colour:** Greenish dorsally; flanks and abdomen silvery; small gold patch on upper operculum and on iris; caudal fin bluish; pectoral fins yellow with dark blue spot dorsally at origin.

**Remarks:** *Valamugil buchanani* (Bleeker, 1853) is a synonym (Senou, 2002).

#### Moolgarda perusii (Valenciennes, 1836)

Local name(s): Ka Beluu.

Habitat: Schooling in coastal waters and estuaries. Fisheries: Bottom trawls, gillnets, seines.

**Distinctive Characters:** Similar to *Moolgarda engeli* but adipose eyefold covering most of iris posteriorly and partly anteriorly; both fins moderately to well scaled on all parts; predorsal scales extending to posterior nostril (vs to tip of snout in *M. engeli*); 31–34 (rarely 35) scales in longitudinal series; 10½–11½ scales in transverse series.

**Colour:** Greenish dorsally; flanks and abdomen silvery; gold opercular spot; fins dusky, particularly at margins; pectoral fins with dark spot dorsally at origin.

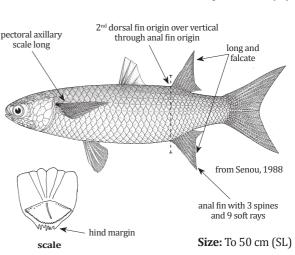


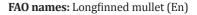
#### Local name(s): Ka Beluu.

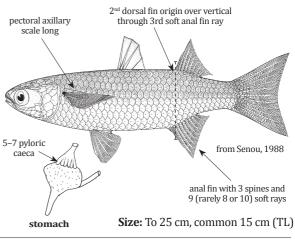
Habitat: Brackish and fresh waters; spawns at sea. Fisheries: Bottom trawls, gillnets, seines.

**Distinctive Characters:** Snout short and blunt, 18–22% of head length; origin of 2nd dorsal fin on vertical through anal fin origin, or only just posterior to it; both fins always well scaled basally and medially, and more or less scaled on distal parts; 36–42 (usually 38–40) scales in longitudinal series; 12–14 scales in transverse series; 6–9 pyloric caeca; caudal fin emarginate.

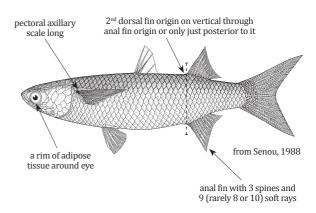
**Colour:** Greenish brown on back, silvery below; upper rows of scales with dusky spots;  $2^{nd}$  dorsal and caudal fins pale blue; pelvic, anal and  $1^{st}$  dorsal fin white, pectoral fins dull yellow with a blue axillary spot; upper lobe of caudal fin with a dark blue tip.











Size: To 60 cm, common 40 cm (TL)

## FAO names: falcate-fin mullet (En)

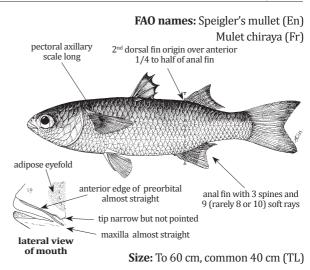
## Moolgarda speigleri (Bleeker, 1858)

Local name(s): Ka Beluu.

Habitat: Brackish and fresh waters; spawns at sea. Fisheries: Bottom trawls, gillnets; seines.

**Distinctive Characters:** Similar to *Moolgarda cunnesius* but adipose eyefold covering iris posteriorly and partly anteriorly; maxilla and anterior edge of preorbital almost straight; both fins well scaled on all parts; 35–45 gill rakers of 1st gill arch (vs 62–75 in *M. cunnesius*); 37–41 scales in longitudinal series; 11–12 scales in transverse series; 4 pyloric caeca.

**Colour:** Greenish dorsally; flanks and abdomen silvery; 1<sup>st</sup> dorsal fin with black margin, other fins dusky; pectoral fins with dark spot dorsally at origin.



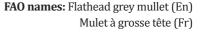
## Mugil cephalus Linnaeus, 1758

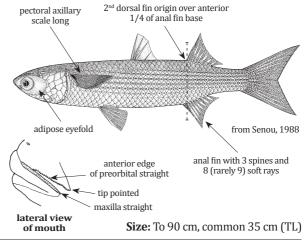
Local name(s): Ka Beluu.

Habitat: Coastal waters and adjacent lagoons. Fisheries: Bottom trawls, gillnets; seines.

**Distinctive Characters:** Maxilla and serrate anterior edge of preorbital straight; adipose eyefold covering most of the eye; both fins scaled only anterobasally; usually 38–42 scales in longitudinal series; 13–15 (rarely 16) scales in transverse series; 2 pyloric caeca; caudal fin deeply emarginate.

**Colour:** Olive-green on back, silvery on sides with 6–7 dark stripes following rows of scales (stripes less conspicuous ventrally); fins dusky; pectoral fins with a dark purple spot at origin and whitish margin.





## **POMACENTRIDAE**

Damselfishes

## Abudefduf bengalensis (Bloch, 1787)

Local name(s): Nga Kyarr Ma.

Habitat: Relatively sheltered coastal reefs and lagoons in shallow water (about 1-6 m depth). Fisheries: Caught mainly with gillnets.

Distinctive Characters: Body deep and compressed, its depth 1.6–2.0 in SL; hind margin of preopercle smooth; upper and lower edge of caudal fin base without projecting spiniform procurrent rays (these last two characters true of all Abudefduf species); dorsal fin with 13 spines and 13-15 (usually 14, occasionally 13) soft rays; anal fin with 2 spines and 13-14 rays; pectoral rays 16-20 (usually 18-19); 19–23 lateral line scales; 22–26 gill rakers on 1<sup>st</sup> gill arch; caudal fin tips rounded.

Colour: White with 6-7 relatively thin dark bars on head and body.

## Abudefduf sordidus (Forsskål, 1775)

#### Local name(s): Nga Kyarr Ma.

Habitat: Inhabit rocky lagoons, reef flat shorelines and piers subject to mild surge; juveniles common in tide pools.

Fisheries: Caught mainly with gillnets.

Distinctive Characters: Body deep and compressed, its depth 1.5–1.8 in SL: dorsal fin with 13 spines and 14–16 (usually 15) soft rays; anal fin with 2 spines and 14-15 rays; pectoral rays 18-20; 20-23 lateral line scales; 20-28 gill rakers on 1st gill arch.

Colour: Body pale, usually with 6-7 dark bars (sometimes the bars are obscured by a dense overlay of small dark spots all over the body); distinct black spot on upper surface of peduncle; dark spot at upper end of pectoral fin base; small black spots above and behind eye and across nape.

## Abudefduf vaigiensis (Quoy & Gaimard, 1825)

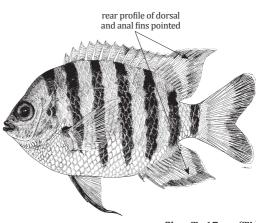
#### Local name(s): Nga Kyarr Ma.

Habitat: Adults inhabit upper edge of outer reef slopes and inshore rocky reefs.

Fisheries: Caught mainly with gillnets.

Distinctive Characters: Bodv deep and compressed, its depth 1.5-1.8 in SL; dorsal fin with 13 spines and 12-14 soft rays; anal fin with 2 spines and 11-13 rays; pectoral rays 16-20; 19-23 lateral line scales; 23-33 gill rakers on 1<sup>st</sup> gill arch; caudal fin tips pointed.

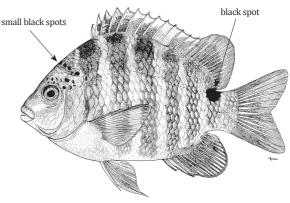
Colour: Body pale with 5 black bars on body; head and back yellowish.



Size: To 17 cm (TL)

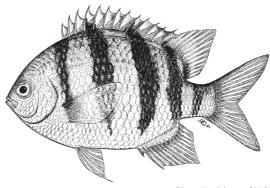
FAO names: Blackspot sergeant (En)

FAO names: Bengal sergeant (En)



Size: To 24 cm (TL)

**FAO names:** Indo-Pacific sergeant (En)



#### FAO names: Andaman Sea sergeant (En)

#### Chromis sp.

#### Local name(s): Nga Kyarr Ma.

Habitat: Deeper coral and rocky reefs at depths of about 105 m.

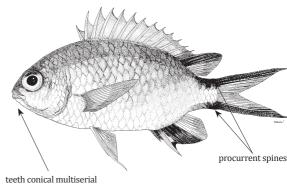
Fisheries: Deep bottom trawls.

Distinctive Characters: Body depth 2.2 in SL; hind margin of preopercle smooth; head length (HL) 2.9 in SL; snout length 4.7 in HL; eye diameter 2.7 in HL; interorbital width 3.5 in HL; dorsal fin with 13 spines and 11 soft rays; anal fin with 2 spines and 10 rays; pectoral fins with 19 rays; 17 lateral line scales; 6+18 gill rakers on 1<sup>st</sup> gill arch; suborbital scaly.

**Colour:** Body grey with dark brown streak along dorsal and ventral edge of caudal fin, uppermost extending broadly onto upper edge of caudal peduncle; anal fin dark brown except last few rays abruptly whitish.

Remarks: A new species presently being described by Allen et al.

#### Pristotis obtusirostris (Günther, 1862)



Size: To 11 cm (TL)

FAO names: Gulf damselfish (En)

#### Local name(s): Nga Kyarr Ma.

Habitat: Flat sandy or rubble bottoms around patch reefs of lagoons and trawling grounds to depths of 80 m.

Fisheries: Caught mainly with bottom trawls.

Distinctive Characters: Body elongate, its depth 2.5–2.9 in SL; teeth in jaws uniserial; hind margin of preopercle and subopercle serrate; upper and lower edge of caudal fin base without projecting spiniform procurrent rays; dorsal fin with 13 spines and 12-13 soft rays; anal fin with 2 spines and 12-14 rays; pectoral fins with 17-18 rays; lateral line scales incomple with 19-20 scales; 26-28 gill rakers on 1st gill arch.

**Colour:** Body pale gray to bluish dorsally, shading to whitish on sides and ventrally; an iridescent blue spot on each scale; a bluish black spot on upper base of pectoral fins; dorsal, anal and caudal fins yellowish.

## Teixeirichthys jordani (Rutter, 1897)

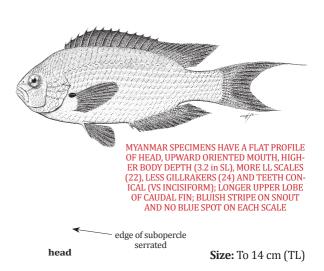
#### Local name(s): Nga Kyarr Ma.

Habitat: Seagrass beds and sandy bottoms to depths of more than 100 m.

Fisheries: Caught mainly with bottom trawls.

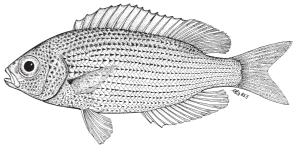
Distinctive Characters: Body depth 2.4-2.8 in SL; head length 3.3–3.6 in SL; hind margin of preopercle smooth; upper and lower edge of caudal fin base without projecting spiniform procurrent rays; dorsal fin with 13 spines and 12-13 soft rays; anal fin with 2 spines and 12–14 rays; pectoral fins with 17–18 rays; 29–31 lateral line scales; 27 gill rakers on 1st gill arch.

**Colour:** Generally blue or brown, a narrow dark stripe on each scale row and blue spots on head.



FAO names: Jordan's damselfish (En)

ELIMINATE THIS IS A MISIDENTIFICATION OF P.OBTUSIROSTRIS



## LABRIDAE Wrasses - Hogfishes - Tuskfishes

## Bodianus leucostictus (Bennett, 1831)

#### Local name (s): Nga Thin Chaw.

Habitat: Rock and coral drop-offs at depths > 50 m. Fisheries: Line gear, gillnets, bottom trawls.

Distinctive Characters: Body moderately deep, greatest depth slightly less than length of head; dorsal profile of head rather straight, the anterior tip of head forming an acute angle; jaws prominent; 4 strong canines situated anteriorly in each jaw; a large, curved canine present on each side at rear of upper jaw; lateral line complete with 30 pored scales.

Colour: Pinkish with 5 narrow reddish horizontal stripes and intervening rows of small spots on sides; stripes and spots superimposed with black in small individuals, reddish stripes broken in larger ones; a large black spot present on fleshy pectoral fin base in small individuals, base with a reddish band in larger ones.

Bodianus mesothorax (Bloch & Schneider, 1801)

#### Local name (s): Nga Thin Chaw.

Habitat: Outer reef slopes and passes in depths of 4-40 m.

Fisheries: Line gear, gillnets.

Distinctive Characters: Body moderately deep, greatest depth 2.8-3.3 in SL; dorsal profile of head straight, the anterior tip of head forming an acute angle; jaws prominent; 4 strong canines situated anteriorly in each jaw; a large, curved canine present on each side at rear of upper jaw; lateral line complete with 31–32 pored scales.

Colour: Adults purplish anteriorly, white to yellowish posteriorly, with broad dark brown band separating the two regions; juveniles deep purple to nearly black with double row of large black-edged yellow spots.

## Cheilinus chlorourus (Bloch, 1791)

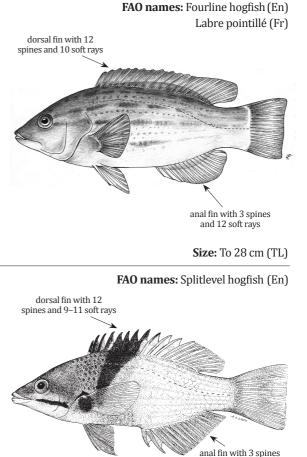
Local name (s): Nga Thin Chaw.

Habitat: Coral reefs and occasionally seagrass areas at depths of 1-30 m.

Fisheries: Line gear, gillnets.

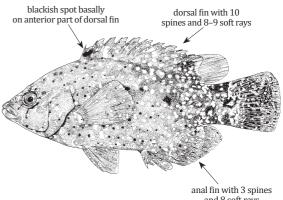
Distinctive Characters: Body moderately deep; dorsal profile of head convex in front of dorsal fin, then straight to tip of snout; 2 strong canines situated anteriorly in each jaw; no enlarged tooth present on each side at rear of upper jaw; caudal fin rounded in small fishes, the upper and lower rays forming elongate lobes in larger individuals; lateral line interrupted below posterior portion of dorsal fin base, with 15-16 pored scales in anterior portion and 6-7 in peduncular part.

**Colour:** Variable from greenish brown to deep reddish brown, usually flecked with white; reddish brown fins; each scale on sides usually with a blue or brown spot, spots extending onto dorsal and anal fins; dark brown blotches on sides.



and 11-12 soft rays Size: To 20 cm (TL)

**FAO names:** Floral wrasse (En)



and 8 soft rays

Size: To 45 cm (TL)

## Choerodon robustus (Günther, 1862)

#### Local name (s): Nga Thin Chaw.

Habitat: Deeper coral and rocky reefs at depths of about 40-70 m.

Fisheries: Line gear, gillnets, bottom trawls.

Distinctive Characters: Body deep, greatest depth more than length of head; dorsal profile of head convexly curved; anterior tip of head forming a broad angle with snout steeply inclined; jaws prominent; 4 strong canines situated anteriorly in each jaw with second pair in lower jaw directed laterally; a moderately small canine present on each side at rear of upper jaw; lateral line complete with 29 pored scales.

Colour: Reddish orange to pinkish brown on head and back, white to yellowish on sides and ventral surface; a diagonal brown line connecting pectoral fin base and posterior end of dorsal fin base; several horizontal rows of blue spots on caudal peduncle; head with 2 short blue lines passing through and beneath eye, respectively; chin blue.

#### Coris batuensis (Bleeker, 1856)

Local name (s): Nga Thin Chaw.

Habitat: Sand-rubble bottoms near reefs of lagoons and seaward reefs in 2-30 m.

Fisheries: Line gear, gillnets.

Distinctive Characters: Body moderately slender; dorsal profile of head gently curved; jaws prominent with 2 strong canines situated anteriorly in each jaw, following teeth slightly smaller; 1-2 separate canines on each side at rear of upper jaw; lateral line complete, with 51-53 pored scales.

Colour: Adults whitish to pale greenish with several dark bars on upper sides and ocellus marking on middle of dorsal fin; juveniles white anteriorly, grading to greenish with numerous reddish spots.

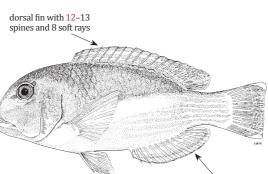
#### Decodon pacificus (Kamohara, 1952)

Local name (s): Nga Thin Chaw. Habitat: Deep reefs, to about 200 m.

Fisheries: Bottom trawls.

Distinctive Characters: Body slender; dorsal profile of head convexly curved; anterior tip of head forming a broad angle with snout steeply inclined; 2 strong canines situated anteriorly in each jaw; 1-2 moderately small canines present on each side at rear of upper jaw; lateral line complete, with 29-31 pored scales.

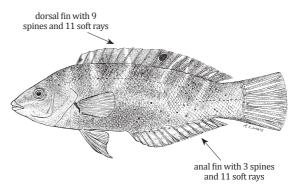
**Colour:** Body pinkish red, paler below, with 5 red bands dorsally; bright yellow markings on snout and below eye.



anal fin with 3 spines and 10 soft rays

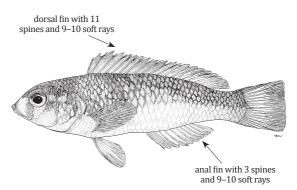
Size: To 35 cm (TL)





Size: To 17 cm (TL)

FAO names: Ten-tooth wrasse (En)



FAO names: Robust tuskfish (En) Maldague robuste (Fr)

## Halichoeres argus (Bloch & Schneider, 1801)

#### Local name (s): Nga Thin Chaw.

Habitat: Seagrass and weed-covered reefs near shore in 1-5 m; usually in groups.

Fisheries: Line gear, gillnets.

Distinctive Characters: Body slightly elongate, compressed; mouth terminal; 2 pairs of prominent canines situated anteriorly in each jaw; a large curved canine present on each side at rear of upper jaw; lateral line complete, with 27 pored scales.

**Colour:** Terminal phase reddish with light green spot on each scale of side, intricate pattern of curved pink, red, or orange bands on head, and often with dark margin on caudal fin. Initial phase with 5-6 white spots along back.

#### Halichoeres bicolor (Bloch & Schneider, 1801)

#### Local name (s): Nga Thin Chaw.

Habitat: Silty sand and mud bottoms near coastal reefs in 3-20 m.

Fisheries: Line gear, gillnets.

Distinctive Characters: Body elongate; snout pointed; anterior teeth in upper and lower jaws enlarged to form canines; lateral line complete, with 27–28 pored scales. **Colour:** Terminal phase white with pair of dark brown stripes, midlaterally and dorsally, often with black spot on middle of dorsal fin (disappears or is faded in large fish); smaller black spot on upper caudal fin base. Initial phase similar, but with narrower midlateral stripe.

## Halichoeres leucoxanthus Randall & Smith, 1982

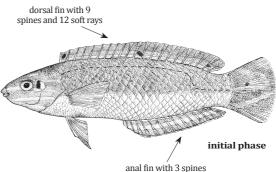
#### Local name (s): Nga Thin Chaw.

Habitat: Sand-rubble fringe of coral reefs usually in 20-40 m; in small groups

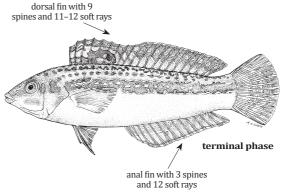
Fisheries: Line gear, gillnets.

Distinctive Characters: Dorsal profile of head slightly convex; jaw prominent; a single pair of prominent canines situated anteriorly in each jaw; a large curved canine present on each side at rear of upper jaw; lateral line complete, with 27 pored scales.

Colour: Terminal phase bright yellow above, lower half of body white; single black spot at front of dorsal fin and faint orange bands on head, breast and median fins. Initial phase similar, but with 3 black spots on dorsal fin



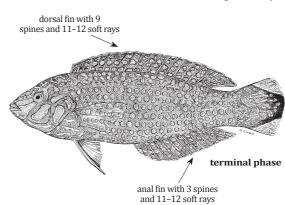




Size: To 12 cm (TL)

FAO names: Brown-striped wrasse (En)

Size: To 11 cm (TL)



## FAO names: Argus coris(En)

FAO names: Canarytop Wrasse (En)

FAO names: Timor wrasse (En)

## Halichoeres timorensis (Bleeker, 1852)

#### Local name (s): Nga Thin Chaw.

Habitat: Coral and rocky reefs dominated by algal and soft coral growth in 5–15 m.

Fisheries: Line gear, gillnets.

Distinctive Characters: Body moderately deep; a large curved canine present on each side at rear of upper jaw; lower jaw with 2 pairs of large slightly recurved canines anteriorly; lateral line complete, with 27 pored scales.

**Colour:** Terminal phase pale greenish with orange and green bands on head, short orange stripes and bars, as well as clusters of black spots on side, and orange bands on median fins. Initial phase similar, but with paleedged black spot at middle of dorsal fin and smaller black spot on upper caudal fin base.

## Hemigymnus fasciatus (Bloch, 1792)

#### Local name (s): Nga Thin Chaw.

Habitat: Coral reefs and reef flats at depths to at least 20 m.

Fisheries: Line gear, gillnets.

Distinctive Characters: Body deep; dorsal profile of head only slightly convex; head forming an acute angle; jaws prominent though mouth small, with a pair of protruding canine teeth in jaws; lips large and fleshy, the lower lips split on the midline forming 2 lobes; a broad canine present at each side at rear of upper jaw; lateral line complete, with 27-28 pored scales.

**Colour:** Body with 5 large, broad black vertical bars with narrow white interspaces; head greenish above, vellowish below, with several blue-edged pink to orange bands; dorsal fin brown with bluish stripes and spots; anal fin black, with several blue stripes; caudal fin brown. Small individuals similar with yellow bars on body continued as yellow bars on dark head.

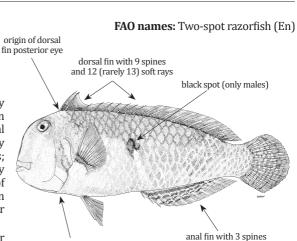
## Iniistius bimaculatus (Rüppell, 1829)

## Local name (s): Nga Thin Chaw.

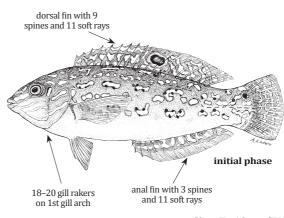
Habitat: Sandy bottoms, at depths to at least 50 m. Fisheries: Line gear, gillnets, bottom trawls.

Distinctive Characters: Body deep and strongly compressed; snout very steep, approaching vertical in adults, the anterior edge a sharp ridge; first 2 dorsal spines joined by membrane to rest of fin (though deeply incised) and closer together than remaining spines; a single pair of long, slender, recurved, and slightly ouflaring teeth anteriorly in jaws; no canine at corner of mouth; lateral line interrupted below posterior portion of dorsal fin base, with 19-20 pored scales in anterior portion and 4–5 in peduncular part.

Colour: Grey dorsally, yellow-white ventrally, with 3 or 4 poorly defined broad, dark vertical bars on sides; a prominent black spot behind pectoral fin (females lack spot).

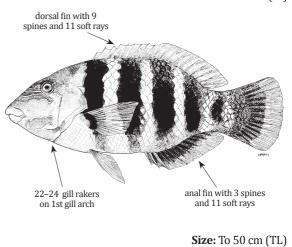


17-22 gill rakers on and 12 soft rays 1st gill arch



Size: To 12 cm (TL)

FAO names: Barred thicklip (En) Tamarin à bandes noires (Fr)



## Iniistius pavo (Valenciennes, 1840)

#### Local name (s): Nga Thin Chaw.

Habitat: Sandy bottoms, at depths of 7 to at least 30 m. Fisheries: mainly bottom trawls.

**Distinctive Characters:** Body deep and strongly compressed; snout very steep, approaching vertical in adults, the anterior edge a sharp ridge; membrane between 2nd and 3rd dorsal fin spines fully separate and closer together than remaining spines; a single pair of long, slender, recurved, and slightly ouflaring teeth anteriorly in jaws; no canine at corner of mouth; lateral line interrupted below posterior portion of dorsal fin base, with 20–22 pored scales in anterior portion and 4–5 in peduncular part.

**Colour:** Grey dorsally, yellow-white ventrally, with 3–4 poorly defined broad, dark vertical bars on sides; adults with a prominent blue-edged black spot immediately above lateral line.

## Leptojulis chrysotaenia Randall & Ferraris, 1981

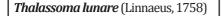
Local name (s): Nga Thin Chaw.

**Habitat:** Sand slopes with scattered coral outcrops in 15–30 m; solitary or in small groups.

Fisheries: Line gear, gillnets.

**Distinctive Characters:** Body not very elongate; dorsal profile of head evenly convex, the snout forming an average angle of 45° to horizontal axis of body; anterior canine teeth not strongly forward-projecting; lateral line continuous, with 27 pored scales.

**Colour:** Seldom seen terminal phase with lime green head marked with pinkish bands, greenish brown on back, shading to lime green below with irregular pinkish-orange bars and reddish median fins. Initial phase pale grey to whitish with mid-lateral orange stripe, becoming brownish posteriorly.



Local name (s): Nga Thin Chaw.

Habitat: coral and rock reefs at depths of 1-20 m. Fisheries: Line gear, gillnets.

**Distinctive Characters:** Body moderately slender; dorsal profile of head slightly convex; anterior tip of head forming an acute angle; jaws prominent, though mouth small; 2 prominent canines anteriorly in each

jaw; no enlarged tooth at rear of upper jaw; lateral line complete, with 25 pored scales. **Colour:** Bright green to blue with a vertical red band on each scale and several, mostly horizontal, prominent, red or purple lines on head; caudal fin green to blue basally and extending along upper and lower edges with a pink stripe directed toward each corner; midposterior portion of fin clear to yellow; pectoral fins blue with a prominent pink stripe from base to tip just below upper edge; small individuals olive green on upper half of body, blue-white below.

## FAO names: Pavo razorfish (En)

anal fin with 3 spines and

12 (rarely 13) soft rays

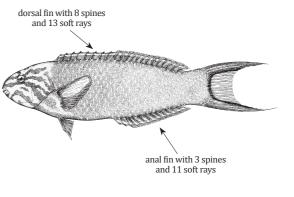
Size: To 35 cm (TL)

Rason paon (Fr) origin of dorsal fin over eye 1st dorsal fin with 2 spines; 2nd with 7 spines and 13–15 soft rays black spot

FAO names: Ochreband wrasse (En)

Size: To 11 cm (TL)

FAO names: Moon wrasse (En) Girelle verte (Fr)



483

FAO names: Bluebanded wrasse (En)

#### Xiphocheilus typus Bleeker, 1856

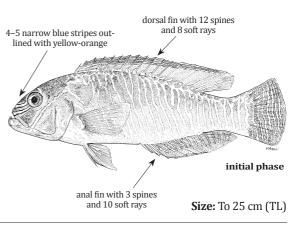
Local name (s): Nga Thin Chaw.

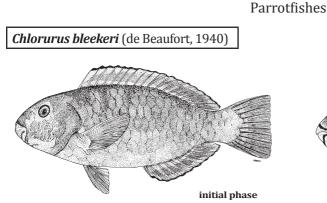
**Habitat:** Coral reefs at depths of 35–85 m.

**Fisheries:** Line gear, gillnets, bottom trawls. **Distinctive Characters:** Body slender, dorsal profile of

head convex; jaws prominent, upper jaw with 2 widely separated prominent anterior canines; 1–2 large, curved canines present on each side of rear of upper jaw; lower jaw also with 2 large anterior canines; lateral line complete, with 29 pored scales.

**Colour:** Initial phase olivaceous above, becoming orange or pink below; a broad blackish band present dorsally on side below about sixth dorsal fin spine; sides with numerous narrow evenly spaced oblique blue bands. Terminal phase similar in colouration but generally lacking blue bands on body.



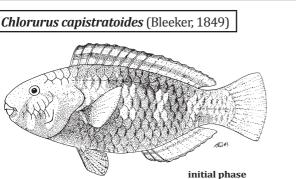


Local name(s): Nga Kyet Tu Yway

**Habitat:** Sheltered coastal reefs, lagoons, and outer slopes in depths of 3–35 m.

#### Fisheries: Mainly gillnets.

**Distinctive Characters:** 5–7 (usually 6) median predorsal scales; 2 rows of scales on cheek; 15 pectoral



Local name(s):Nga Kyet Tu Yway Habitat: Coral reefs at depths of 35–85 m. Fisheries: Mainly gillnets.

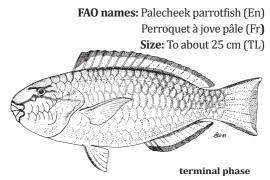
**Distinctive Characters:** 4 (occasionaly 3) median predorsal scales; 2 rows of scales on cheek; 15 (occasionaly 14) pectoral fin rays.

FAO names: Bleeker's parrotfish (En) Perroquet joue blanche (Fr) Size: To 50 cm (TL)

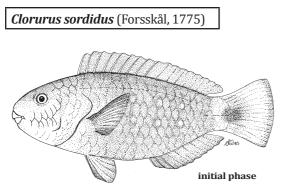
fin rays.

**SCARIDAE** 

**Colour:** Terminal phase greenish, with pink scale edges, green central zone and outer margins on tail; large rectangular whitish area on cheek. Initial phase dark brown with 3–4 broad pale bars.



**Colour:** Terminal phase distinguished by overall pale colour of cheek up to level of eye and blue-green line extending from eye to margin of operculum and down the opercular margin. Terminal phase may have pale patch extending over midbody



Local name(s): Nga Kyet Tu Yway. Habitat: Coral reefs.

Fisheries: Mainly gillnets.

**Distinctive Characters:** 4 median predorsal scales; 2 rows of scales on cheek; 15 (occasionaly 14) pectoral

## *Chlorurus strongylocephalus* (Bleeker, 1854)

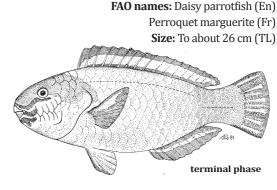
Local name:Nga Kyet Tu Yway.

Habitat: Coral reefs, primarily on exposed reefs.

Fisheries: Mainly gillnets.

**Distinctive Characters:** Characteristic steep dorsal profile; median predorsal scales 3–4; scales rows on cheek 3; pectoral fin rays 15–17 (usually 16).

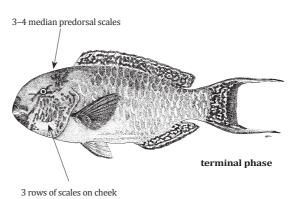
**Colour:** Initial phase yellowish green dorsally, becoming red on sides and ventrally; edge of lips with a broad blue-green band. Terminal phase body green, the scales with a vertical lavender-pink bar, shading dorsoanteriorly to lavender-grey and to lavender-blue on snout; broad green band of upper lip continuing diffusely to eye; 3 narrow green bands diverging posteriorly from eye; cheek below green band yellow, shading ventrally to light green.



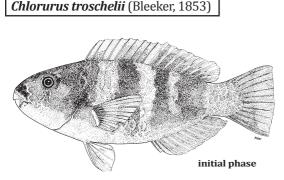
fin rays.

**Colour:** Initial phase uniformly dark or with 2 rows of 4 or 5 pale dots and/or pale caudal peduncle with dark central dot. Terminal phase highly variable, often pale yellow patch on posterior region of body.

FAO names: Indian Ocean steephead parrotfish (En)



Size: To 67 cm (TL)

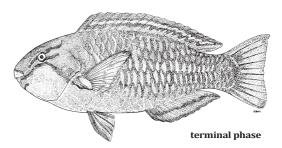


Local name(s): Nga Kyet Tu Yway. Habitat: Coral reefs, mainly on seaward reefs. Fisheries: Mainly gillnets.

**Distinctive Characters:** 4 median predorsal scales; 2 rows of scales on cheek; 15 pectoral fin rays.

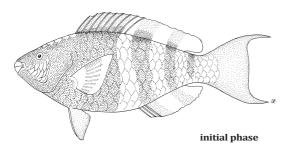
Colour: Initial phase difficult to separate from similar

FAO names: Troschel's parrotfish (En) Size: To about 35 cm (TL)



species. Terminal phase distinguished by its pale cheek, bordered dorsally by a green line which is absent or indistinct ventrally (in *C. bleekeri*, this area is entirely bordered by a green line; in *C. capistratoides*, the whole cheek is pale, not just a delineated patch).

Scarus caudofasciatus (Günther, 1862)



Local name(s): Nga Kyet Tu Yway. Habitat: Coral reefs, mainly on seaward reefs.

Fisheries: Mainly gillnets.

**Distinctive Characters:** 5–7 (usually 6) median predorsal scales; 3 rows of scales on cheek; 13 (occasionally 14) pectoral fin rays.

**Colour:** Initial phase dark brown, almost black with 4 pinkish-white bars (3 on posterior half of body, 4th on

Size: To about 36 cm (SL)

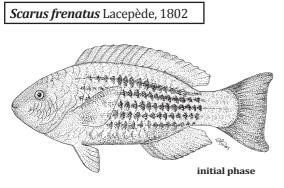
Perroquet à bandes rouges (Fr)

FAO names: Redbarred parrotfish (En)



terminal phase

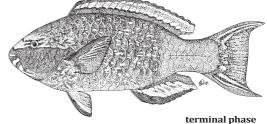
caudal peduncle). Terminal phase blue-green dorsally, the scales edged in pale salmon posteriorly; scales ventral to second row dominated by pale salmon; a broad purplish-grey bar dorsally on body, its posterior edge in line with base of sixth dorsal spine; head pale salmon, with intense blue-green markings on snout, lips and around orbit; caudal fin blue with large pale salmon central crescent.



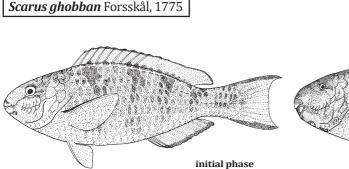
Local name(s): Nga Kyet Tu Yway. Habitat: Coral reefs, on shallow exposed reefs. Fisheries: Mainly gillnets.

**Distinctive Characters:** 6–7 median predorsal scales; 3 rows of scales on cheek; 14 pectoral fin rays.

FAO names: Bridled parrotfish (En) Perroquet à six bandes (Fr) Size: To about 33 cm (SL)



**Colour:** Initial phase characterized by 6 dark lines on posterior flank and brick red fins. Terminal phase characterized by abruptly green region posteriorly over body, caudal peduncle and caudal fin.

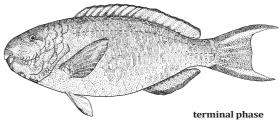


Habitat: Shallow reefs, on flats and reef fronts. Fisheries: Mainly gillnets.

**Distinctive Characters:** 6 median predorsal scales; 3 rows of scales on cheek; 15 pectoral fin rays.

Colour: Initial phase characterized by 5 blue bars on

FAO names: Blue-barred parrotfish (En) Local name(s): Nga Kyet Tu Yway Size: To 75 cm (TL)



yellow body. Terminal phase with a broad irregular green band from corner of mouth across lower part of head linked with two blue-green bands on chin; edge of upper lips salmon pink with a broad green band above; dental plates pale salmon.

Size: To 25 cm (TL)

Guide to Species

Scarus maculipinna Westneat, Satapoomin & Randall, 2007

FAO names: Spot fin parrotfish (En) Size: To about 19 cm (TL)





Local name(s): Nga Kyet Tu Yway.

Habitat: Primarily on reef crest and slope habitats. Fisheries: Mainly gillnets.

**Distinctive Characters:** 4 median predorsal scales; 3 rows of scales on cheek; 14 pectoral fin rays.

**Colour:** Initial phase brown above, pale to white below; two white stripes extending from behind eye to caudal peduncle, often a third white line below dorsal fin; a region to 4th dorsal spine and slanting anteroventrally to just behind pectoral fin base; head with a broad bluegreen stripe on snout that divides to form a branch through upper eye, extending a short distance beyond, a branch through lower eye, extending on to opercle.

distinctive black spot on anal and second dorsal spine. Terminal phase complexly colored in blue-green, pink,

and yellow, with dark saddle extending from postorbital

Scarus niger Forsskål, 1775

Local name(s): Nga Kyet Tu Yway.

Habitat: Occurs on exposed and sheltered reefs. Fisheries: Mainly gillnets.

**Distinctive Characters:** 6–7 median predorsal scales; 3 rows of scales on cheek; 14 (occasionaly 15) pectoral

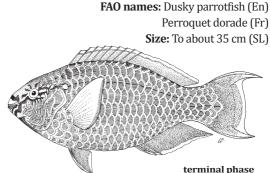
Scarus quoyi Valenciennes, 1840

**Local name:**Nga Kyet Tu Yway. **Habitat:** Shallow coral reefs.

**Fisheries:** Mainly gillnets.

**Distinctive Characters:** Median predorsal scales 6; scales rows on cheek 3; pectoral fin rays 14.

**Colour:** Initial phase almost indistinguishable from several other *Scarus* species. Terminal phase with distinctive green patch beneath eye extending forward to mouth.

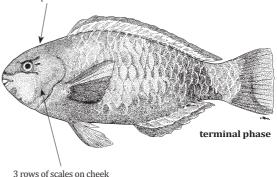


fin rays.

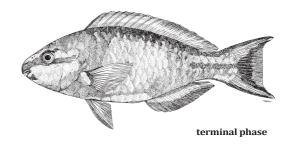
**Colour:** Initial phase and terminal phase similar with uniformly dark body and bright green dot at top end of line from mouth through eye to top of opercular opening.

## FAO names: Quoy's parrotfish (En)

6 median predorsal scales

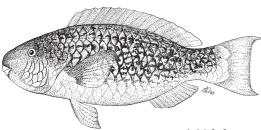


487



FAO names: Ember parrotfish (En)

Scarus rubroviolaceus Bleeker, 1849

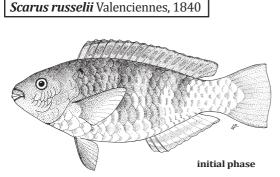


initial phase

Local name(s): Nga Kyet Tu Yway. Habitat: Coral reefs, on shallow exposed reefs.

Fisheries: Mainly gillnets.

**Distinctive Characters:** 6 median predorsal scales; 3 rows of scales on cheek; 14–15 pectoral fin rays.



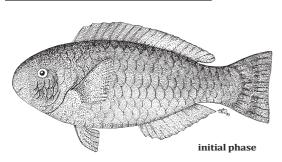
Local name(s): Nga Kyet Tu Yway. Habitat: Shallow coral reefs.

Scarus viridifucatus (Smith, 1956)

Fisheries: Mainly gillnets.

**Distinctive Characters:** 4 median predorsal scales; 2 rows of scales on cheek; 12 (occasionaly 11 or 13) pectoral fin rays.

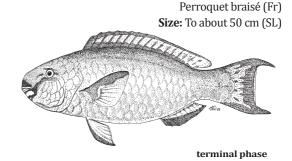
**Colour:** Initial phase reddish to purplish brown with an orange-red bar on each scale; 5 dark bars often



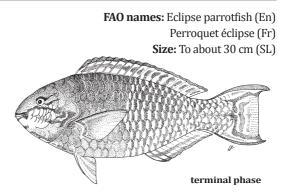
Local name(s): Nga Kyet Tu Yway. Habitat: Shallow coral reefs.

Fisheries: Mainly gillnets.

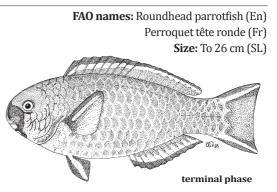
**Distinctive Characters:** 3–5 median predorsal scales; 3 rows of scales on cheek; 12 (occasionaly 11 or 13) pectoral fin rays.



**Colour:** Both phases with characteristic truncate snout. Initial phase dark red with dark irregular markings on body (may be confused with *Scarus frenatus* in which the dark markings are in lines). Terminal phase dark anteriorly and truncate snout pronounced.



present on body; lips dull red-orange, edged with dull blue-green. Terminal phase body blue-green, the scales rimmed with salmon-pink; lower cheek with an area of dull yellow; upper lip bright blue-green and salmon; lower lip edged in bright blue-green, joining upper lip band and continuing as a band beneath and adjacent to orbit onto opercle; deep blue-green band rimming upper orbit.



**Colour:** Initial phase dark brown, sometimes with 5 faint irregular pale bars on body. Terminal phase body green, the scales rimmed with salmon pink; head dull green, shading to orangish ventrally, with a large area of brilliant blue-green shading to almost white centrally on side of snout and anterior cheek.

## CHAMPSODONTIDAE

Gapers - Crocodile toothfishes

## Champsodon longipinnis Matsubara & Amaoka, 1964

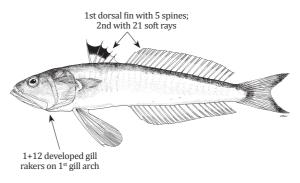
Local name(s): Me Chaung Thwar Nga.

Habitat: Soft bottoms to depths of 267 m.

**Fisheries:** Occasionally bottom trawls, as bycatch. **Distinctive Characters:** Snout length greater than eye diameter; premaxilla only shallowly notched lateral to symphysis; eye with dark posterodorsal cirrus split into two to four branches; breast, belly, and sides completely scaled; small fleshy tabs of skin in lower fold of eye; pectoral fin legth 11.5–12% of SL.

**Colour:** Body dark brown dorsally, with large, irregularly shaped dark blotches on sides; distal two thirds of spinous dorsal fin black; caudal fin base and tips of lobes dark brown; other fins pale.

FAO names: Longfin crocodile toothfish (En)



Size: To 11 cm (SL)

## AMMODYTIDAE

Sandlances

## Ammodytoides cf. xanthops Randall & Heemstra, 2008

Local name(s): Nga Hlan Htan Thae Htoe.

**Habitat:** Pelagic-neritic; depth range 26–62 m.

**Fisheries:** Occasionally bottom trawls, as bycatch. **Distinctive Characters:** Body depth 10–11.7% of SL; eye diameter 3.3–3.5% of SL; teeth absent from both jaws; no small scales dorsally on opercle; no pelvic fin; 106–112 lateral line scales.

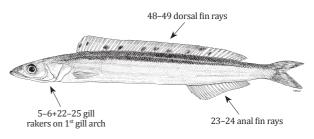
**Colour:** Purplish gray dorsally, pale silvery blue on sides and ventrally; yellow on interorbital and most of head anterior to eye; dusky on front of snout and tip of lower jaw; a series of black spots at edge of dorsal fin; no black dots in fins; caudal fin with a broad blackish posterior border.

Remarks: Inclusion based on photographic record.

## **Bleekeria** sp. A

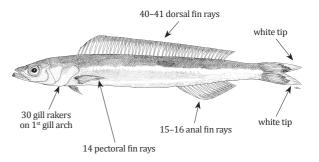
Local name(s): Nga Hlan Htan Thae Htoe. Habitat: Pelagic-neritic, at 77 m depth. Fisheries: Occasionally bottom trawls, as bycatch. Distinctive Characters: Head length 23–28% of SL; eye diameter 14–17% of head length; very fine conical teeth on jaws; scales weakly ctenoid; pelvic fin vestigial, with 5 rays, about 3% of SL; 107–114

tubed scales on lateral line; 3 scale rows above and 15–19 below lateral line; 29+(25–26) vertebrae. **Colour:** Body greyish above, whitish below; caudal fin darker, both tips of upper and lower lobes milky white; upper margin of dorsal fin darker, lower part hyaline; pectoral fin light yellow; anal fin hyaline. **Remarks:** An undescribed species presently being described by Psomadakis and Ida.



Size: To 15 cm (SL)

FAO names: White-tipped sandlance (En)



FAO names: Yellow face sandlance (En)

#### Bleekeria aff. miksukurii Jordan & Evermann, 1902

Local name(s): Nga Hlan Htan Thae Htoe.

**Habitat:** Pelagic-neritic; depth range 121–165 m. **Fisheries:** Occasionally bottom trawls, as bycatch. **Distinctive Characters:** Head length 26% of SL; eye diameter 18–21% of head length; very fine conical teeth on jaws; scales weakly ctenoid; pelvic fin vestigial, with 5 rays, about 4–5% of SL; 106– 111 tubed scales on lateral line; 3½ scale rows above and 17 below lateral line; 26–30+23–24 vertebrae.

**Colour:** Body purplish grey with bright yellow spots on sides; paler ventrally; jaws yellow; a yellow bar above opercle; distal half of pectoral and dorsal fins yellow; caudal fin with marginal black-edged yellow chevron on center; anal fin hyaline.

**Remarks:** Possibly an undescribed species presently being studied by Ida and Psomadakis.

### Bleekeria sp. C

490

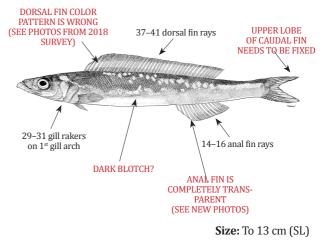
Local name(s): Nga Hlan Htan Thae Htoe.

Habitat: Pelagic-neritic; depth range ?-? m.

**Fisheries:** Occasionally bottom trawls, as bycatch. **Distinctive Characters:** Head length 23.6% of SL; eye diameter 4.1% of SL; bands of canine teeth on jaws; scales weakly ctenoid?; pelvic fin vestigial, with 5 rays, about ?% of SL; 99 tubed scales on lateral line; 4 scale rows above and 19 below lateral line; 27+25 vertebrae.

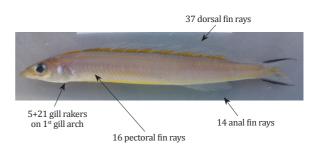
**Colour:** Body salmon pink (darker dorsally and paler ventrally) with a yellow band along belly; dorsal fin hyalin with an orange band near its base; caudal fin yellow medially with upper and lower lobes black-edged.

**Remarks:** An undescribed species presently being described by Psomadakis and Ida.



FAO names: ?? sandlance (En)

FAO names: ?? sandlance (En)



Size: To 10.3 cm (SL)

## URANOSCOPIDAE

Stargazers

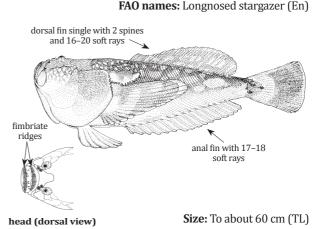
Ichthyscopus lebeck (Schneider, 1801)

Local name(s): Nga Bee luu.

Habitat: Occurs on soft bottoms to ???

**Fisheries:** Occasionally bottom trawls, as bycatch. **Distinctive Characters:** Posterior edge of skull straight laterally; posterior nostril diagonally or longitudinally elongated; posterior portion of lateral line running mostly attached to dorsal fin base; both lips with large branched fimbriate ridges cirri.

**Colour:** Body canary yellow, with buffer brown markings along sides, enclosing pure white round or oval spots; some spots of same white colour also on pectoral and dorsal fins; a dark bar across caudal and pectoral fins.



#### Uranoscopus affinis Cuvier, 1829

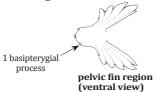
Local name(s): Nga Bee luu.

Habitat: Littoral waters and on the continental shelf to depths of 200 m.

Fisheries: Occasionally bottom trawls, as bycatch.

Distinctive Characters: Upper edge of opercle ascending backward; supracleithrum with a sharp spine at rear end and one spine inside; posterior nostril a slit-like pore; 1 basipterygial process; anterodorsal area between both lateral lines completely scaly; posterior nostril a slit-like pore.

Colour: Body yellowish brown; pectoral and caudal fins orangish brown.



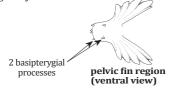
Uranoscopus cognatus Cantor, 1849

Local name(s): Nga Bee luu.

Habitat: Soft bottoms to depths of 50-250 m.

Fisheries: Occasionally bottom trawls, as bycatch. Distinctive Characters: Upper edge of opercle descending backward; supracleithrum with only one spine inside; both nasal valves long and tubular; 2 basipterygial processes; a short black cirrus on eye; respiratory valve inside lower jaw with a thread-like, pale appendage.

Colour: Body brown above, finely mottled and stippled dark brown; pectoral and caudal fins orange or yellowish-brown.



Uranoscopus kaianus Günther, 1880

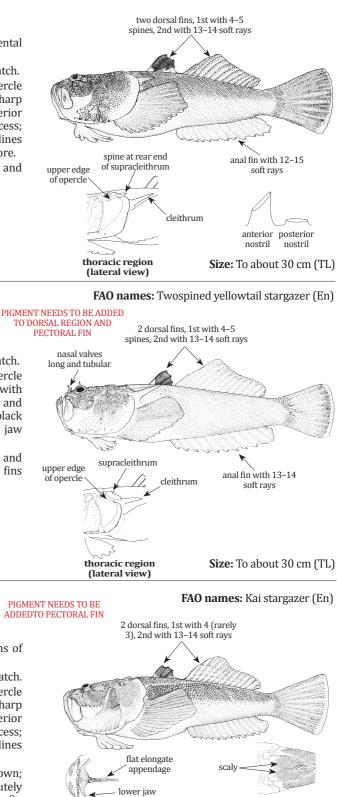
PIGMENT NEEDS TO BE ADDEDTO PECTORAL FIN

Local name(s): Nga Bee luu.

Habitat: Deeper water, soft bottoms to depths of 200-300 m.

Fisheries: Occasionally bottom trawls, as bycatch. Distinctive Characters: Upper edge of opercle ascending backward; supracleithrum with a sharp spine at rear end and 1 spine inside; posterior nostril a slit-like pore; 1 basipterygial process; anterodorsal area between both lateral lines completely scaly; 12-15 anal fin rays.

**Colour:** Upper head and body reddish brown: usually covered with pale spots, but minutely variegated in adults; pectoral and caudal fin reddish brown, the latter with a black margin posteriorly; 2nd dorsal fin pale.



part of head an body (dorsal view) teeth lower jaw and floor Size: To about 24 cm (TL) of mouth (dorsal view)

FAO names: Onespined yellowtail stargazer (En)

#### Uranoscopus oligolepis Bleeker, 1878

#### **FAO names:** Drab naked nape stargazer (En)

Local name(s): Nga Bee luu.

**Habitat:** Soft bottoms to depths of 50–150 m.

Fisheries: Occasionally bottom trawls, as bycatch.

**Distinctive Characters:** Upper edge of opercle ascending backward; supracleithrum with a sharp spine at rear end and 1 spine inside; posterior nostril a slit-like pore; 1 basipterygial process; anterodorsal area between both lateryouyyal lines naked.

**Colour:** Upper head and back plain olive brown; soft dorsal fin dusky; pectoral and caudal fins black, the latter with a white posterior margin.

Xenocephalus australiensis (Kishimoto, 1989)

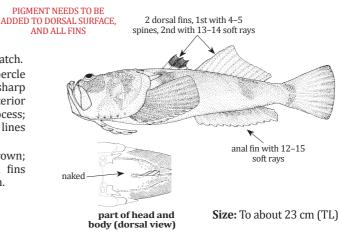
#### Local name(s): Nga Bee luu.

**Habitat:** Juveniles in sandy or muddy bottoms of coastal areas, adults on continental slope to depths of about 500 m.

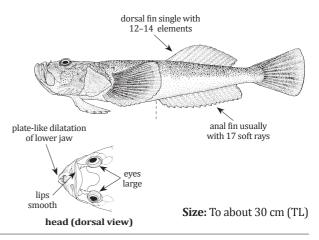
Fisheries: Occasionally bottom trawls, as bycatch.

**Distinctive Characters:** Posterior portion of lateral line running close to, but separated from, dorsal fin base; width of interorbital fossa 4–6 % of SL; eyes large, non-telescopic, located on dorsolateral edges of head; both lips with unbranched tiny cirri; dentary of lower jaw forming a plate-like dilatation; supracleithrum lacking spines.

**Colour:** Body brown scattered with small blackish spots (spot size decreasing with growth); fins brown.







## TRICHONOTIDAE

Sand divers

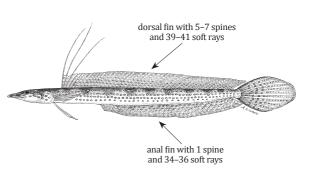
Trichonotus setiger Bloch and Schneider, 1801

Local name(s): Pin Le' Nga Thee Htoe.

Habitat: Sand/rubble bottoms down to 56 m. Fisheries: Rarely, as bycatch in bottom trawls.

**Distinctive Characters:** Elongate, cylindrical; eye with dorsal iris flap consisting of numerous elongate strands extending ventrally; snout pointed; lower jaw with fleshy extension that projects beyond upper jaw; dorsal spines of male greatly prolonged and filamentous; soft part of dorsal fin of male about twice height of fin of female; body entirely scaled; 52–55 lateral line scales.

**Colour:** Whitish to pale brown with 9–12 dark brown saddles/bars on upper half of side; about 6 longitudinal rows of dark-edged blue or yellow spots on side (midlateral row often most prominent) and scattered blue spots on head.



Size: To about 19 cm (TL)

FAO names: Spotted sand-diver (En)

## PERCOPHIDAE

Duckbills

## Acanthaphritis barbata (Okamura & Kishida, 1963)

Local name(s): Be Hnote Thee Nga/Myet Lone Sein Nga.

**Habitat:** Deeper water on soft bottoms at least to 181 m depth.

Fisheries: Occasionally bottom trawls, as bycatch.

**Distinctive Characters:** Head depressed anteriorly; eyes large; interorbital space narrow; lower jaw not projecting beyond upper; barbel at tip of snout in males; pelvic fins placed in front of pectoral fins and with space between pelvic fins comparatively wide (characteristic of all percophids); 34–35 lateral line scales; 20–21 pectoral fin rays.

**Colour:** Brownish with a row of longitudinal yellow spots on back, and 2 rows of blue close-set spots on sides; pelvic fins white, anal fin yellowish.

Bembrops caudimacula Steindachner, 1876

Local name(s): Be Hnote Thee Nga/Myet Lone Sein Nga.

**Habitat:** Deeper water on soft bottoms from 186 to 500 m.

Fisheries: Bottom trawls, as bycatch.

**Distinctive Characters:** Head depressed anteriorly; lower jaw projecting beyond upper; lateral line descending gradually; lower jaw projecting beyond upper; maxilla with well-developed tentacle at posterior tip (characteristic of genus *Bembrops*); 42–54 lateral line scales; 19–25 pectoral fin rays; 3–4 and 5–7 scale rows between lateral line and origin of dorsal and anal fin, respectively.

**Colour:** Brownish with large dusky blotches along lateral line; membrane between anterior 3 spines of 1st dorsal fin with darker pigmentation; distinct black spot on upper base of caudal fin.

## Bembrops platyrhynchus (Alcock, 1894)

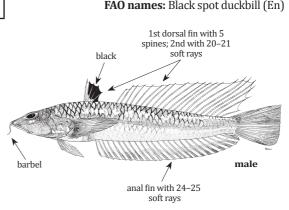
Local name(s): Be Hnote Thee Nga/Myet Lone Sein Nga.

**Habitat:** Deeper water on soft bottoms from 200 to 549 m.

Fisheries: Bottom trawls, as bycatch.

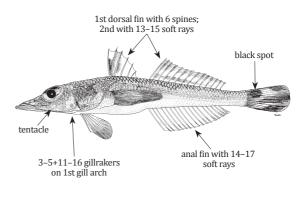
**Distinctive Characters:** Head depressed anteriorly; lower jaw projecting beyond upper; lateral line descending gradually; lower jaw projecting beyond upper; maxilla with well-developed tentacle at posterior tip (characteristic of genus *Bembrops*); 47–57 lateral line scales; 22–25 pectoral fin rays; 2–4 and 4–6 scale rows between lateral line and origin of dorsal and anal fin, respectively.

**Colour:** Vague dusky bars along body, scales edged with black; outer <sup>3</sup>/<sub>4</sub> of spinous dorsal fin black, the basal <sup>1</sup>/<sub>4</sub> white, distal <sup>1</sup>/<sub>4</sub> of caudal fin dusky.

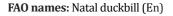


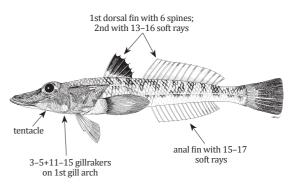
Size: To about 14 cm (TL)





Size: To about 25 cm (TL)





Size: To about 25 cm (TL)

#### FAO names: ?? (En)

#### Bembrops sp.

Local name(s): Be Hnote Thee Nga/Myet Lone Sein Nga.

**Habitat:** Deeper water on soft bottoms between 374–376 m depth.

Fisheries: Bottom trawls, as bycatch.

**Distinctive Characters:** Similar to *Bembrops caudimacula* and *B. platyrhynchus* but more gill rakers on upper arm; maxillary tentacle length 25.2% (vs.???) of upper jaw length.

**Colour:** Grayish with body scales edged with black on dorsum; bright yellow band at corner of opercle; same colouration also on anterior and posterior end of orbit; 1st dorsal fin entirely black; pectoral fin black with white inferior margin.

**Remarks:** A new species presently being described by Das and Psomadakis.

#### Chrionema chryseres Gilbert, 1905

Local name(s): Be Hnote Thee Nga/Myet Lone Sein Nga.

Habitat: Deeper water in depths of 252–490 m. Fisheries: Bottom trawls, as bycatch.

**Distinctive Characters:** Head moderately depressed; lower jaw projecting beyond upper; lateral line originating high on body and descending steeply behind pectoral fin base before levelling off on ventral side of body; maxilla without tentacle; snout with a distinct inflection; 80–87 lateral line scales; 21–23 pectoral fin rays; 5–7+17 gillrakers on 1st gill arch.

**Colour:** Grayish, with irregular dark-edged yellow spots on head and body; upper jaws black-edged; 1st dorsal fin transparent; pelvic fins dark medially; caudal fin dusky on upper and lower edges.

#### Pteropsaron sp.

Local name(s): None.

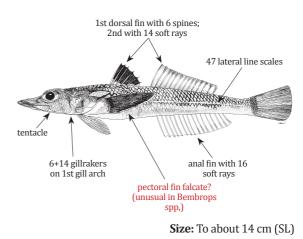
**Habitat:** Deeper water in depth of 197–205 m.

Fisheries: Bottom trawls, as bycatch.

**Distinctive Characters:** Anterior end of maxilla a spine; cheeks naked; origin of spinous dorsal fin slightly behind pectoral fin origin; anal fin rays branched; dorsal margin of eye with a tab projecting into the iris; males with greatly elongate dorsal spines extending nearly to caudal fin base; body covered with cycloid scales; ca 40 lateral line scales; 18 pectoral fin rays; 14 caudal fin rays of which 9 are branched.

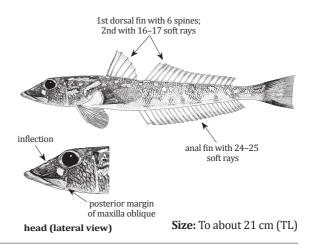
**Colour:** Pale gray with two bright yellow stripes on body, the uppermost broken in segments posteriorly not reaching to caudal fin; yellow bands on maxilla tip, below eye, on opercle, pectoral fin base, branchiostegal rays and caudal fin.

**Remarks:** An undescribed species presently being described by Psomadakis et al.

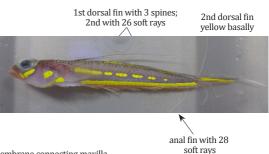








#### FAO names: Tandstad sand-diver (En)



membrane connecting maxilla and premaxilla with a distinct yellow blotch (visible only when jaws are protracted

## PINGUIPEDIDAE

Sandperches

## Parapercis alboguttata (Günther, 1872)

Local name(s): Thae Ka Ka Tit.

Habitat: Usually taken in trawling grounds between 50 and 120 m depth.

Fisheries: Bottom trawls, gillnets, hand lines.

Distinctive Characters: Body cylindrical; 3 pairs of canine teeth on lower jaw anteriorly; 3rd dorsal spine longest; spinous dorsal connected by membrane to 1st soft ray near base; 17-19 pectoral fin rays; 57-60 lateral line scales; palatine teeth absent.

Colour: Body light red dorsally, shading to white ventrally; longitudinal rows of indistinct light red blotches on body, ending in two distinct dark red spots on base of caudal fin; snout light blue with oblique yellow lines.

## Parapercis caudopellucida Johnson & Motomura, 2017

Local name(s): Thae Ka Ka Tit.

Habitat: Deeper water in depths of 75-129 m. Fisheries: Bottom trawls.

Distinctive Characters: Body cylindrical; 3 pairs of canine teeth on lower jaw anteriorly; middle dorsal spines longest; membrane from spinous dorsal connected to 1st soft ray opposite tip of last spine; 17-18 pectoral fin rays; 53 lateral line scales; palatine teeth absent.

Colour: Reddish with a series of 6-7 irregular dusky double blotches along sides; upper lip red; a reddish bar below the eye; unpaired fins yellowish; a series of small black blotches at base of soft dorsal fin; caudal fin base with pair of blackish blotches.

## Parapercis clathrata Ogilby, 1910

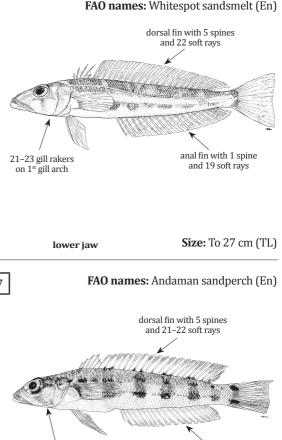
Local name(s): Thae Ka Ka Tit.

Habitat: Shallow-water sand or rubble near reefs in depths of 3-50 m.

Fisheries: Mainly gillnets, hand lines.

Distinctive Characters: Body cylindrical: 3 pairs of canine teeth on lower jaw anteriorly; middle dorsal spines longest; membrane from spinous dorsal connected to 1st soft ray opposite tip of last spine; usually 17 pectoral fin rays; 57-60 lateral line scales; palatine teeth absent.

**Colour:** Body pale brown above with rows of small irregular dark spots, whitish along midsides and below; 9-10 elliptical brown to reddish-brown spots with blackish centres along lower sides; a black ocellus with white margin above gill opening in males; white or yellow spots on caudal fin.

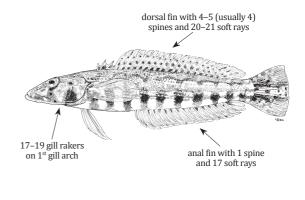


Size: To 10.5 cm (SL)

anal fin with 1 spine

and 17-18 soft rays

FAO names: Latticed sandperch (En)



spinous dorsal fin spines

21-22 gill rakers

on 1st gill arch

Size: To 18 cm (TL)

FAO names: Speckled sandperch (En)

## Parapercis hexophtalma (Cuvier, 1829)

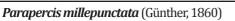
Local name(s): Thae Ka Ka Tit.

**Habitat:** Inshore species generally found on sand or rubble substrata near coral reefs.

Fisheries: Bottom trawls.

**Distinctive Characters:** Body cylindrical; 4 pairs of canine teeth on lower jaw anteriorly; middle dorsal spines longest; membrane from spinous dorsal connected to 1st soft ray opposite tip of last spine; 17–19 pectoral fin rays; 58–61 lateral line scales; palatine teeth absent.

**Colour:** Upper part of body and head tan, with numerous small dark spots (small specimens with small dark spots on head; larger fish with oblique dark lines on cheek); 3–7 white-ringed black ocelli along ventral side; soft dorsal fin with 3–4 horizontal rows of dark spots on membranes; a large, oblong, black blotch on caudal fin.



Local name(s): Thae Ka Ka Tit.

**Habitat:** usually found in clear water on sand and rubble around coral reefs.

Fisheries: Mainly gillnets, hand lines.

**Distinctive Characters:** Body cylindrical; 3 pairs of canine teeth on lower jaw anteriorly; middle dorsal spines longest; membrane from spinous dorsal connected to 1st soft ray opposite tip of last spine; usually 17 pectoral fin rays; 55–58 lateral line scales; palatine teeth absent.

**Colour:** Busy blotched pattern over the back; closeset series of brown to orange blotches behind eyes on top of head; white blotch on tail; males with ocellated black spot above opercle next to upper end of gill opening; female with a smaller dark brown spot at this location.

**Remarks:** Needs confirmation for Myanmar waters.

#### Parapercis ommatura Jordan & Snyder, 1902

Local name(s): Thae Ka Ka Tit.

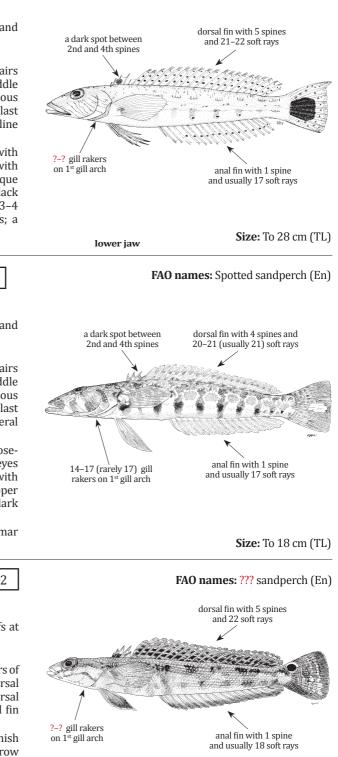
**Habitat:** Silty sand and rubble areas near reefs at depths of 10–40 m.

Fisheries: Mainly bottom trawls, bycatch.

**Distinctive Characters:** Body cylindrical; 4 pairs of canine teeth on lower jaw anteriorly; middle dorsal fin spines longest; membrane from spinous dorsal connected near base of 1st soft ray; ? pectoral fin rays; ? lateral line scales; palatine teeth absent.

**Colour:** Body light tan with three or four brownish 'Y' shaped marks on sides; cheek with two narrow longitudinal dark bands; upper part of caudal fin with rounded black spot.

**Remarks:** Needs confirmation for Myanmar waters.



spinous dorsal fin spines

## Parapercis rubricaudalis Johnson & Motomura, 2017

FAO names: Redtail sandperch (En)

Local name(s): Thae Ka Ka Tit.

Habitat: Deeper water in depths of 70–119 m. Fisheries: Bottom trawls.

**Distinctive Characters:** Body cylindrical; 3 pairs of canine teeth on lower jaw anteriorly; middle dorsal spines longest; membrane from spinous dorsal connected near base of 1st soft ray; 16 (rarely 15 or 17) pectoral fin rays; 57 (rarely 56) lateral line scales; palatine teeth absent.

**Colour:** Six irregular broad orange to reddish transverse bands across body; a pair of small dark spots dorsally behind eyes; soft dorsal fin with 2–3 rows of red spots, anal fin reddish; pelvic fins bright orange-red; caudal fin with several irregular rows of dark red spots, lower third of fin distinctively crimson-red.

Parapercis snyderi Jordan and Starks, 1905

Local name(s): Thae Ka Ka Tit.

**Habitat:** Silty sand or rubble areas near reefs at depths of 10–40 m.

Fisheries: Mainly bottom trawls, as bycatch.

**Distinctive Characters:** Body cylindrical; 4 pairs of canine teeth on lower jaw anteriorly; middle dorsal spines longest; membrane from spinous dorsal connected near base of 1st soft ray; 14–15 (usually 14) pectoral fin rays; 38–44 lateral line scales; palatine teeth present.

**Colour:** Body pale brown dorsally with 3 U-shaped dark bars dorsally on body followed by 2 more posteriorly with the bottom of U missing (hence as double bars); a series of 9 dusky bars on side of body, every other one extending from the bottom of the dorsal markings; cheek with 1 or 2 broad oblique dark brown bands; caudal fin with rows of small black, brown and white spots.

## Parapercis tetracantha (Lacepède, 1802)

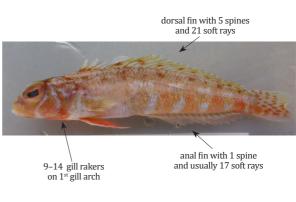
## Local name(s): Thae Ka Ka Tit.

**Habitat:** Usually found on sand or rubble areas in shallow water.

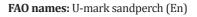
Fisheries: Mainly bottom trawls, as bycatch.

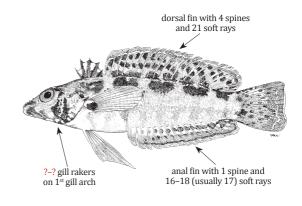
**Distinctive Characters:** Body cylindrical; 3 pairs of canine teeth on lower jaw anteriorly; middle dorsal spines longest; membrane from spinous dorsal connected to 1st soft ray opposite tip of last spine; 17–18 pectoral fin rays; 59–65 lateral line scales; palatine teeth absent.

**Colour:** Body with 3 longitudinal series of large whitish spots with dark grey-brown interspaces forming a coarse reticulum; a dark grey-brown band from nape to interopercle containing a black ring just above gill opening; a broad dark grey-brown bar below eye; 3 black spots on each side of abdomen.



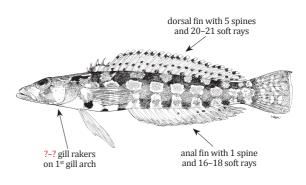
Size: To ?? cm (TL)





Size: To 11 cm (TL)

FAO names: Reticulated sandperch (En)



Size: To 26 cm (TL)

#### Parapercis xanthozona (Bleeker, 1849)

Local name(s): Thae Ka Ka Tit.

**Habitat:** Protected waters of bays or lagoons in depths of 10–28 m.

Fisheries: Mainly bottom trawls, bycatch.

**Distinctive Characters:** Body cylindrical; 3 pairs of canine teeth on lower jaw anteriorly; middle dorsal fin spines longest; membrane from spinous dorsal connected to 1st soft ray opposite tip of last spine; ? pectoral fin rays; 56–60 lateral line scales; palatine teeth absent.

**Colour:** Fine dark spotting over the back; white mid-lateral stripe from the upper pectoral base to tail; males with narrow diagonal lines on the cheek; an orange-yellow bar at base of pectoral fins.

**Remarks:** Needs confirmation for Myanmar waters.

#### Parapercis sp. 1

Local name(s): Thae Ka Ka Tit.

Habitat: Occurs in depths of 41–56 m. Fisheries: Mainly bottom trawls, as bycatch.

**Distinctive Characters:** Body cylindrical; 4 pairs of canine teeth on lower jaw anteriorly; middle dorsal spines longest; membrane from spinous dorsal connected to base of 1st soft ray; 17 pectoral fin rays; 50 lateral line scales; palatine teeth present.

**Colour:** Upper part of body and head pale, with about 7 poorly-defined U-shaped bars; a series of about 6 dark bars on side of body; a yellow spot in centres of scales below lateral line; distinct orangish bars on snout, postocular and subocular region; pelvic fins dusky; anal fin yellowish; base of caudal fin with brown bar enclosing a dark brown ocellus in its upper portion; distal third of caudal fin dark.

**Remarks:** An undescribed species presently being described by Johnson and Psomadakis.

## Parapercis sp. 2

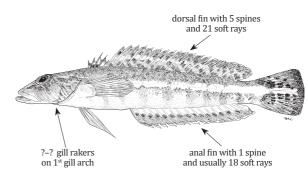
Local name(s): Thae Ka Ka Tit.

Habitat: Deeper water in depths of 181–184 m. Fisheries: Mainly bottom trawls, as bycatch.

**Distinctive Characters:** Body cylindrical; 4 pairs of canine teeth on lower jaw anteriorly; last dorsal fin spine longest; last interspinous membrane of dorsal fin connected to 1st soft ray opposite tip of last spine; 19 pectoral fin rays; 59 lateral line scales; palatine teeth present.

**Colour:** Upper part of body with 6–7 irregular brown saddle marks extending onto basis of dorsal fin; lower sides yellowish; a distinct dark brown ocellus, edged in white anteriorly and posteriorly, on upper caudal fin base; fins mostly yellowish.

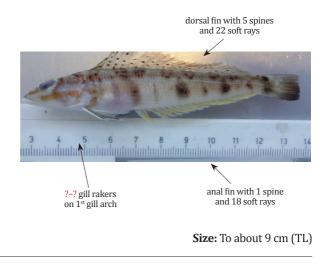
**Remarks:** A new species presently being described by Johnson and Psomadakis.



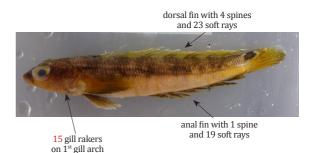
Size: To 26 cm (TL)



FAO names: Yellowbar sandperch (En)



## FAO names: ??? sandperch (En)



498

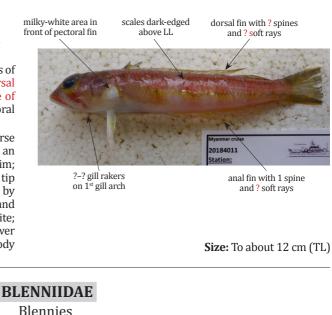
## Parapercis sp. 3

Local name(s): Thae Ka Ka Tit.

Habitat: Deeper water in depths of 119–125 m. Fisheries: Mainly bottom trawls, as bycatch. Distinctive Characters: Body cylindrical; ? pairs of canine teeth on lower jaw anteriorly; middle dorsal fin spine longest?; last interspinous membrane of dorsal fin connected to ? of 1st soft ray; ? pectoral fin rays; ? lateral line scales; palatine teeth?.

**Colour:** Six broad irregular reddish transverse bands across body interrupted at midbody by an ochre horizontal stripe; eye with a yellowish rim; a broad whitish band from snout to posterior tip of maxilla bordered by red lip anteriorly and by oblique red band posteriorly; dorsal, anal and pectoral fins mostly transparent; pelvic fins white; caudal fin dusky with darker upper and lower margins, the latter connected to the ochre midbody band.

## FAO names: ??? sandperch (En)



Xiphasia setifer Swainson, 1839

Local name(s): Nga Phaung Yoe Gyi.

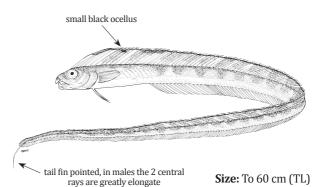
**Habitat:** Occurs on mud or sand bottoms; takes refuge in tubes or burrows.

Fisheries: Bottom trawls.

**Distinctive Characters:** Body compressed and extremely elongate, its depth 30–40 in SL; dorsal fin with 13–14 flexible spines and 105–119 segmented rays, fin origin in adults between front edge of eyes; anal fin rays 107–119.

**Colour:** Pale grey-brown with 20-28 indistinct broad dark bars extending into dorsal fin; margin of sofy dorsal fin dusky with white edge.

FAO names: Hairtail blenny (En)



CALLIONYMIDAE

Dragonets

Callionymus carebares Alcock, 1890

Local name(s): Ye Net Ga Lone Taung.

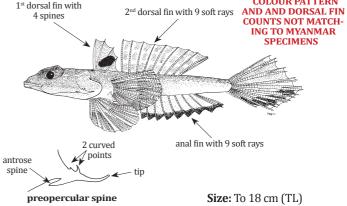
Habitat: Benthic, deeper water, in depths of 135–330 m.

Fisheries: Bottom trawls, as bycatch.

**Distinctive Characters:** Head and body depressed; membrane behind last dorsal fin spine large; gill opening dorsal in position; preopercular spine with 2 (rarely 1) curved points on its dorsal edge and and a strong antrose lower spine; 19–23 pectoral fin rays.

**Colour:** Head and body marbled or variegated; 1st dorsal with a large black spot; 2nd dorsal, anal and caudal fins transparent with wide blackish margin; pelvic fins blackish medially

FAO names: Indian deepwater dragonet (En) COLOUR PATTERN



FAO names: Gardiner's dragonet (En)

## Callionymus cf. gardineri Regan 1908

Local name(s): Ye Net Ga Lone Taung.

**Habitat:** Benthic in depths of 35–55 m. **Fisheries:** Bottom trawls, as bycatch.

**Distinctive Characters:** Head and body depressed; membrane behind last dorsal fin spine large; gill opening dorsal in position; preopercular spine with 6–12 short spinules on its dorsal edge and and a strong antrose lower spine; 18–22 pectoral fin rays.

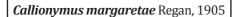
**Colour:** Head and body marbled or variegated; spinous dorsal with oblique stripes, which break up posteriorly into series of spots enclosed in dark rings; black blotch on distal portion of 3rd dorsal spine; caudal fin with some dark spots; anal fin with a dark distal edge.

## Callionymus io Fricke, 1983

**Local name(s):** Ye Net Ga Lone Taung. **Habitat:** Benthic in depths of ??-?? m.

Fisheries: Bottom trawls, as bycatch.

**Distinctive Characters:** Head and body depressed; membrane behind last dorsal fin spine large; gill opening dorsal in position; a short row of preorbital spines along upper lip; preopercular spine with 5–7 and 6 short spinules on its dorsal and on its lower edge, respectively, and a strong antrose lower spine; 21–22 pectoral fin rays. **Colour:** ???



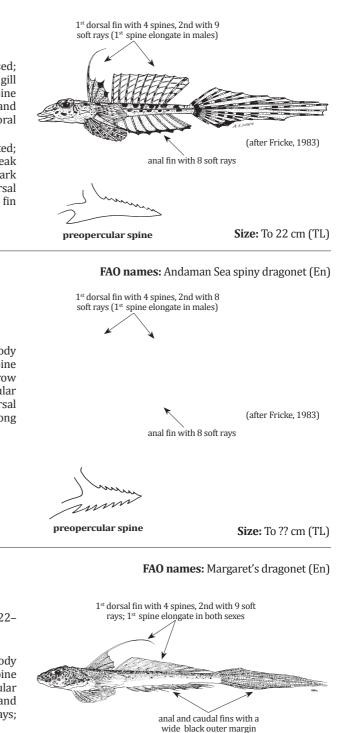
Local name(s): Ye Net Ga Lone Taung.

Habitat: Benthic, coastal areas in depths of 22–107 m.

Fisheries: Bottom trawls, as bycatch.

**Distinctive Characters:** Head and body depressed; membrane behind last dorsal fin spine large; gill opening dorsal in position; preopercular spine with 3–6 short spinules on dorsal edge and a strong antrose lower spine; anal fin with 8 rays; 16–21 pectoral fin rays.

**Colour:** A row of dark saddles on back and a row of elongate dark blotches just below lateral line; suborbital region of males with small dark spots; 2nd dorsal fin with elongate dark spots; caudal fin with vertical rows of black spots along central part of fin (fin may be plain dusky in females).





preopercular spine

Size: To 16 cm (TL)

## Callionymus meridionalis Suwardji, 1965

Local name(s): Ye Net Ga Lone Taung. Habitat: Benthic from shore to 80 m depth. Fisheries: Bottom trawls, as bycatch.

**Distinctive Characters:** Head and body depressed; membrane behind last dorsal fin spine large; gill opening dorsal in position; preopercular spine with 2 strong curved points on dorsal edge and a strong antrose lower spine; 16–22 pectoral fin rays.

**Colour:** Head and body light brown, back with many light spots, ventral parts yellowish to white; sides with a row of dark blotches; pectoral fin base with a dusky spot; 1st dorsal fin in males whitish, in females black; 2nd dorsal, caudal, pectoral, and pelvic fins spotted with brown; anal fin black in males, with a distal black streak in females.

## Callionymus kotthausi Fricke, 1981

Local name(s): Ye Net Ga Lone Taung.

Habitat: Benthic, deeper water, in depths of 138–211 m.

Fisheries: Bottom trawls, as bycatch.

**Distinctive Characters:** Head and body depressed; membrane behind last dorsal fin spine large; gill opening dorsal in position; preopercular spine with 2–3 spinous points on dorsal edge and a strong antrose lower spine; anal fin with 8 rays; 20–21 pectoral fin rays.

**Colour:** Lower part of caudal fin colourless; anal fin with a broad black margin; sides of body with a row of small distinct black blotches a distinct black blotch at base of spinous dorsal fin.

## Synchiropus altivelis (Temminck & Schlegel, 1845)

Local name(s): Ye Net Ga Lone Taung.

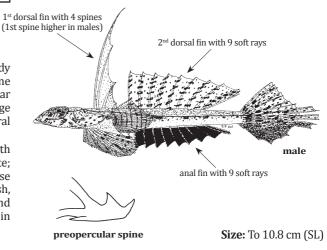
**Habitat:** Edge of continental shelf, in depths of 70–600 m.

Fisheries: Bottom trawls, as bycatch.

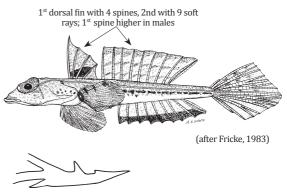
**Distinctive Characters:** Head and body depressed; membrane behind last dorsal fin spine very small; gill opening sublateral; preopercular spine with 1 recurved point on dorsal edge and no antrose lower spine; 19–22 pectoral fin rays.

**Colour:** Head and body orange-red; dorsal fin with a large dark mark which becomes faint with growth; 3 rows of orange spots on soft dorsal fin and often across caudal fin.

SNOUT SHOULD BE SHORTER THAN EYE DIAMETER; A SMALL PIECE OF MEMBRANE SHOULD BE PRESENT BEHIND LAST DORSAL SPINE



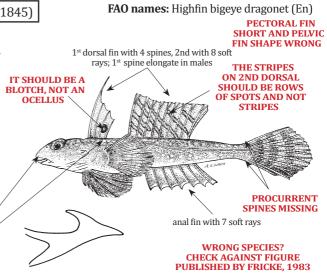
## FAO names: Kotthaus' deepwater dragonet (En)



preopercular spine

preopercular spine

Size: To 10 cm (TL)



### FAO names: Whiteflag dragonet (En)

## DRACONETTIDAE

Deepwater dragonets

#### Centrodraco ornatus (Fourmanoir and Rivaton, 1979)

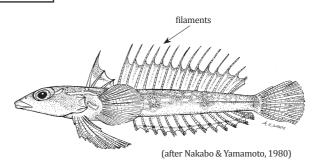
Local name(s): Ye Net Ga Lone Taung.

Habitat: Deepwater, in depths of 300–360 m. Fisheries: Bottom trawls, as bycatch.

**Distinctive Characters:** Body elongate and rounded; a simple spine on opercle and subopercle; 1st dorsal fin with 3 stout and pungent spines (1st spine elongate in males), 2nd with 14 filamentous soft rays; 13 anal fin rays; 22–24 pectoral fin rays; lateral line interrupted, the anterior part running to below base of 8th or 10th soft dorsal fin ray, and the posterior one from 10th–11th to base of caudal fin; cephalic leteral line system well developed.

**Colour:** Body reddish with many vermicular yellow spots on dorsal and lateral sides of body.

FAO names: Ornate slope dragonet (En)



Size: To 12.5 cm (SL)

FAO names: Mud Sleeper (En)

# ELEOTRIDAE Sleepers

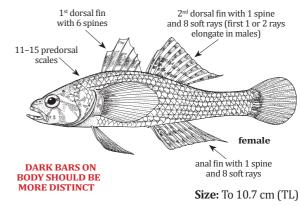
Butis koilomatodon (Bleeker, 1849)

Local name(s): Pin Le' Nga Pyet.

Habitat: Found in marine and estuarine habitats. Fisheries: Caugth mainly with seine nets.

**Distinctive Characters:** Body relatively short, subcylindrical and compressed posteriorly; head slightly depressed; bony interorbital serration around dorsal margin of eye; lower jaw protruding beyond upper jaw; pelvic fins widely separated; cheek and operculum with ctenoid scales; no scales on interorbital area; 21–22 pectoral fin rays.

**Colour:** Blackish brown, with indistinct 4–5 broad dusky oblique bands on body; anteroventral part of pectoral fin with a distinct black spot edged by yellowish rim (more distinct in males); iris yellow.



## GOBIIDAE

Gobies

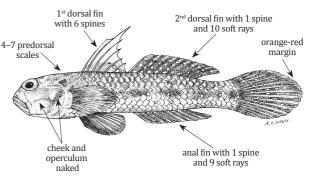
## Acentrogobius cyanomos (Bleeker, 1849)

Local name(s): Pin Le' Nga Pyet.

Habitat: Mangrove and estuarine habitats. Fisheries: Caugth mainly with seine nets.

**Distinctive Characters:** Pelvic fins united medially; frenum present; scales ctenoid, excluding those on nape, pectoral base and breast cycloid; longitudinal pattern of sensory-papillae rows on cheek; uniserial transverse row of sensory papillae just behind chin; 18 pectoral fin rays.

**Colour:** Pale brown to brownish with small dark brown to blackish blotch above rear corner of opercle; 5–6 rows of rounded pale spots along body may be visible; fins blackish.



FAO names: Dussumier's mudskipper (En)

Size: To 11.5 cm (TL)

## Acentrogobius sp.

Local name(s): Pin Le' Nga Pyet.

Habitat: Soft bottoms, in depths of 58–59 m. Fisheries: Bottom trawls, as bycatch.

Distinctive Characters: Head length 26% of SL; eye diameter 32% of HL; small conical teeth present in bands in both jaws, several large caniniform teeth overhanging jaws on each side of premaxillary symphysis; scales large, deciduous, nape fully scaled; no transverse rows of sensory papillae on cheek; 26 scales in longitudinal row.

Colour: Head with 3 yellow stripes across the cheek, along lower edge of orbit; yellow spots on operculum with metallic blue background over lower two thirds; scattered yellow spots on pectoral fin base, nape and sides of trunk; median fins dusky with yellow spots.

Remarks: An undescribed species collected from off southern India and Bangladesh and now found also in Myanmar.

## Amblyotrypauchen arctocephalus (Alcock, 1890)

Local name(s): Pin Le' Nga Pyet.

Habitat: Muddy bottoms, in depths of 17–183 m. Fisheries: Bottom trawls, as bycatch.

Distinctive Characters: Head and body slightly compressed; a pouch-like cavity at dorsal margin of operculum; fang-like teeth on jaws; scales on entire body, including some scale patches on head, cheek and opercle; pelvic fins with innermost rays joined for one third to one fourth their length; eyes absent; 14-18 pectoral fin rays.

Colour: Uniformly pinkish.

#### Boleophthalmus boddarti (Pallas, 1770)

Local name(s): Pin Le' Nga Pyet.

Habitat: Lives on mud flats.

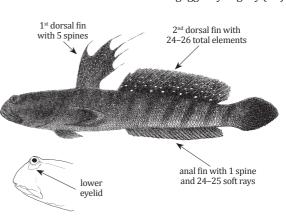
Fisheries: Occasionally caught in beach seines.

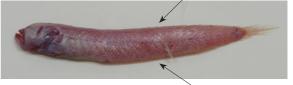
Distinctive Characters: Eves close together, movable to above dorsal profile of head; caudal fin length 17.9-23.3% of SL; head length 25.0-30.4% of SL; length of D2 base 40.2-46.4% of SL; longitudinal scale count 61-79; predorsal scales 25–35; lower jaw teeth notched; pelvic fins united. Colour: Head and dorsal half of body grey brown, ventral half of body greenish white; head and trunk with white speckles; dark brown line from anterior nostril to dorsal tip of operculum; brown spots on head and nape; 5–7 prominent dusky bars inclined anteriorly from dorsum, occasionally extending well below midline

39-43 total elements in anal fin

Size: To 15 cm (TL)

FAO names: Boddart's goggle-eyed goby (En)





pelvic fins (ventral view)



Size: To 9.7 cm (SL)

FAO names: Armour eelgoby (En)

503

48-52 total elements in dorsal fin

FAO names: ??? (En)

## Egglestonichthys melanoptera (Visweswara Rao, 1971)

Local name(s): Pin Le' Nga Pyet.

Habitat: Muddy bottoms, in depths of 50–74 m. Fisheries: Bottom trawls, as bycatch.

**Distinctive Characters:** Eyes large, placed dorsolaterally; jaws nearly supraterminal, oblique, with outer row teeth protruding outside lips; head covered with scales; 21–22 pectoral fin rays; longitudinal scale count 35–45; 29–37 predorsal scales; opercles and cheeks fully scaled; scales on body and most of head ctenoid; transverse papillae pattern on head, papillae large and fleshy; all fins elongated and pointed.

Colour: Uniformly dark brown; fins black.

## Obliquogobius cometes (Alcock 1890)

Local name(s): Pin Le' Nga Pyet.

**Habitat:** Hard sand bottoms in deeper water, 175–186 m.

Fisheries: Bottom trawls, as bycatch.

**Distinctive Characters:** Head length 36.1–41.5% of SL; eye diameter 25.9–28.7% of HL; mouth very oblique, maxilla reaching a vertical through middle of the eye; both jaws with inner band of villiform teeth, and outer row of uniformly enlarged, acute, slightly curved teeth; scales large and very finely ctenoid; cheeks and opercles naked; all fins elongated; caudal fin long and pointed.

**Colour:** Transparent grey, with 7 broad bright yellow cross bands; gills showing through the opercle as a bright pink blotch; the 2nd dorsal and caudal fins beautifully pencilled in alternate, narrow, obliquely transverse stripes of black and white; anal with a broad dark border; ventrals blue-black.

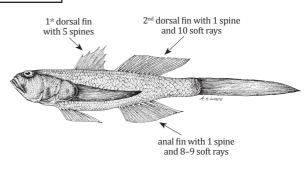
#### *Glossogobius giuris* (Hamilton, 1822)

Local name(s): Pin Le' Nga Pyet.

**Habitat:** Muddy bottoms, in depths of 50–70 m. **Fisheries:** Bottom trawls, as bycatch.

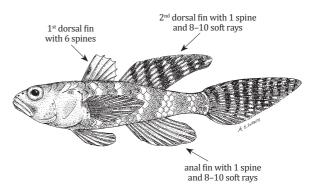
**Distinctive Characters:** Head flattened; lower jaw projecting; Pelvic fins jointed but attached to the body only from their anterior part; ????

**Colour:** Body brownish yellow with 5–6 dark and rounded spots on its sides (specimens living on dark substrates can be very dark, while specimens living on very light substrates show an ivory coloration); dorsal fins pale with small brownish spots forming longitudinal stripes; pelvic fins greyish.



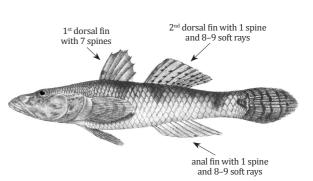
Size: To about 10 cm (TL)





Size: To about 13 cm (TL)

FAO names: Tank goby (En)



#### Gobiinae sp.

#### Local name(s): Pin Le' Nga Pyet.

Habitat: Soft bottoms, in depths of 72–76 m. Fisheries: Bottom trawls, as bycatch.

**Distinctive Characters:** Head length 28–29% of SL; eye diameter 31–32% of HL; small conical teeth present in bands in both jaws with 28 large caniniform teeth overhanging jaws on each side of premaxillary symphysis in upper jaw, 10 on each side of mandibular symphysis in lower jaw; pelvic fins separate; scales large, deciduous, nape and upper opercle scaled; 26–28 scales in longitudinal row; 4+6 elongate gill rakers on 1st gill arch.

**Colour:** Overall whitish grey with 7 saddles on trunk; a yellow band below eye; a yellow spot on the upper rear corner of the opercle; median fins with dusky edges; caudal fin dusky, yellow at base. **Remarks:** An undescribed species collected from off the coast of Myanmar.

## Oxyurichthys cf. auchenolepis Bleeker, 1876

Local name(s): Pin Le' Nga Pyet.

**Habitat:** Soft bottoms, in depths of 56–60 m. **Fisheries:** Bottom trawls, as bycatch.

**Distinctive Characters:** Body compressed; head deeper than wide, its length 21–28% of SL; upper jaw teeth in single row; upper lip constricted at premaxillary symphysis; fleshy knob or callus posterodorsally on eye in adults; scales ctenoid laterally on trunk posterior to middle of 1st dorsal fin, cycloid anteriorly; prepelvic region fully scaled; 1st dorsal fin low, spines of appressed fin not reaching posterior to 5th second dorsal fin element.

**Colour:** Head and body pale with yellowish blotches midlaterally and dorsally; dorsal fins with 3 rows of oblique dusky orange spots or streaks and orange margins.

Remarks: Inclusion based on photographic record.

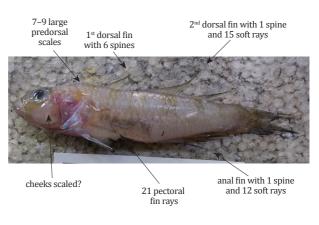
#### Parachaeturichthys polynema (Bleeker, 1853)

Local name(s): Pin Le' Nga Pyet.

Habitat: Muddy bottoms, in depths of 17–183 m. Fisheries: Bottom trawls, as bycatch.

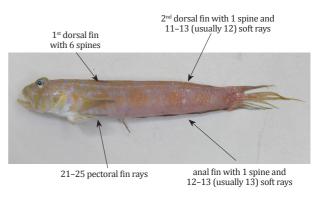
**Distinctive Characters:** Body depth 5.3–6.0 in SL; 20–22 pectoral fin rays; 25–30 scales in longitudinal series; caudal fin pointed, 3.0–3.05 in SL; scales on body ctenoid, cycloid on head, those on cheek small; pelvic fins joined to form a disc with a frenum, not reaching anus.

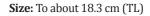
**Colour:** Pale yellowish, the edges of the scales narrowly blackish; a white-edged black spot nearly as large as eye on upper part of caudal fin about one-third distance to posterior edge of fin; a large black spot distally on first three membranes of 1<sup>st</sup> dorsal fin.

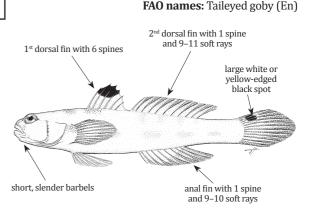


Size: To 8.2 cm (SL)

FAO names: Scaly-nape tentacle goby (En)







FAO names: ??? goby (En)

Size: To 15 cm (TL)

FAO names: Comb goby (En)

## Paratrypauchen microcephalus (Bleeker 1860)

#### Local name(s): Pin Le' Nga Pyet.

**Habitat:** Soft mud bottoms, in estuaries and coastal areas.

Fisheries: Bottom trawls, as bycatch.

**Distinctive Characters:** Head and body slightly compressed; a pouch-like cavity at dorsal margin of operculum; no fang-like teeth on jaws (teeth on outer row sometimes strongly caninoid); ; body entirely scaled except abdomen and head; pelvic fins connected medially, but emarginate posteriorly, not forming a disc; eyes small; 12–20 pectoral fin rays.

**Colour:** Body reddish pink; whitish gray head with pinkish operculum; caudal fin dusky medially; remainder of caudal fin and other fins hyaline.

## Pseudapocryptes elongatus (Cuvier, 1816)

Local name(s): Pin Le' Nga Pyet.

Habitat: Lives on mud flats.

Fisheries: Bottom trawls, as bycatch.

**Distinctive Characters:** Body depth 10–14% of SL; head length 15–22% of SL; head depth 8–11% of SL; pectoral fin length 10–13% of SL; pelvic fin length 9–12% of SL; pectoral fins lanceolate, with 17–21 rays; 150–275 scales in longitudinal series; frenum well developed; caudal fin lanceolate; scales cycloid and small, covering most of body except for snout and most of ventral surface of head; teeth caninoid in both jaws in a single row;

**Colour:** Greenish brown dorsally, yellow brown ventrally; 6 black, diagonal, saddle-like blotches dorsally; dorsal fin elements slightly yellowish brown; caudal fin yellowish or dusky with more than 12 wavy, vertical, brown, broken lines; anal, pelvic and pectoral fins yellowish.

## Taenioides nigrimarginatus Hora, 1924

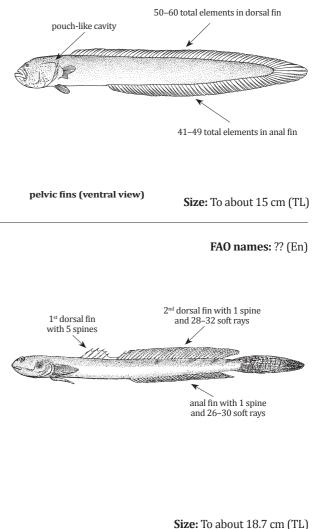
Local name(s): Pin Le' Nga Pyet.

**Habitat:** Occurs along muddy bottoms of coastal rivers, estuaries, bays and lakes.

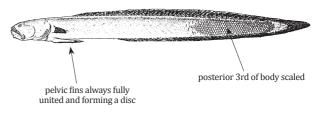
Fisheries: Bottom trawls, bagnets.

**Distinctive Characters:** Head and body with distinct cutaneous ridges; no postsymphyseal canine teeth in lower jaw; upper lip thick, fleshy, with fringed dorsal margin; caudal fin short, the length usually subequal to head length; ventral surface of lower jaw usually with several clusters of long, fleshy barbels; scales posteriorly on the body, remaining parts naked.

**Colour:** Head and body pinkish or purplish to red; median fins blackish.



FAO names: Blackfin eel goby (En)



Size: To 23 cm (TL)

## Trypauchen pelaeos Murdy, 2006

Local name(s): Pin Le' Nga Pyet.

**Habitat:** Soft mud bottoms, in estuaries and coastal areas.

Fisheries: Bottom trawls, as bycatch.

**Distinctive Characters:** Head and body slightly compressed; head length 18% or more of SL; predorsal length typically more than 22% of SL; prepelvic length 18% or more of SL; preanal length more than 36% of SL; a pouch-like cavity at dorsal margin of operculum; no fang-like teeth on jaws (teeth on outer row sometimes strongly caninoid); head naked; abdomen fully scaled; pelvic fins united and rounded posteriorly, typically forming a funnel-like disc; eyes rudimentary covered by skin; 16–20 pectoral fin rays; 19–20 caudal vertebrae.

**Colour:** Body reddish pink; whitish gray head with pinkish operculum; caudal fin dusky medially; remainder of caudal fin and other fins hyaline.

## Trypauchen vagina (Bloch & Schneider, 1801)

Local name(s): Pin Le' Nga Pyet.

**Habitat:** Occurs along the bottom in tidal rivers and estuaries; burrows in mud

Fisheries: Bottom trawls, bagnets.

**Distinctive Characters:** Similar to *Trypauchen vagina* but 50–58 and 43–50 total elements in dorsal and anal fin, respectively; SL typically 84% or more of TL; head length less than 18% of SL; predorsal length less than 22% of SL; prepelvic length less than 18% of SL; preanal length 36% or less of SL; 23–24 caudal vertebrae.

Colour: Head and body entirely reddish.

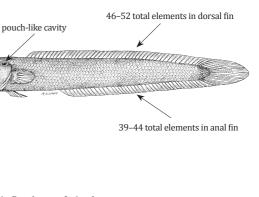
#### Yongeichthys nebulosus (Forsskål, 1775)

Local name(s): Pin Le' Nga Pyet.

Habitat: Muddy bottoms, in depths of 17–183 m. Fisheries: Bottom trawls, as bycatch.

**Distinctive Characters:** Head slightly compressed; jaws subequal; pelvic fins united medially; frenum present; scales ctenoid, excepting those on breast and pectoral fin base cycloid; head naked sensory canals and pores present on head; longitudinal pattern of sensory papillae rows on cheek, some rows multiple; aggregation of sensory papillae just behind chin; 17–18 pectoral fin rays; 25–28 scales in longitudinal row.

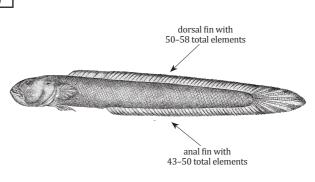
**Colour:** Head and body pale gray with irregular brown saddles and large dusky midlateral blotches; dorsal and caudal fins with rows of brown spots; pelvic and anal fins white with black margin.



pelvic fins (ventral view)

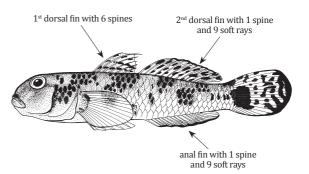
Size: To about 15 cm (TL)

FAO names: Pink worm goby (En)



Size: To 22 cm (TL)

FAO names: Shadow goby (En)



507

## **KURTIDAE** Nurseryfishes

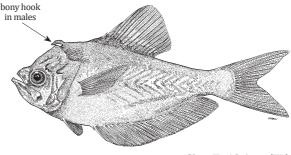
Kurtus indicus Bloch, 1786

Local name(s): Nga Phauk Lauk.

Habitat: Lives in fresh, brakish and marine waters. Fisheries: Bottom trawls, gill nets.

**Distinctive Characters:** Body oval-shaped, compressed; head humped and elevated, especially in males, which have a prominent protuberance or bony hook on forehead; a single, short-based dorsal fin with 5–7 rudimentary spines at front followed by 2 well-developed spines and 12 to 14 soft rays. **Colour:** Semi-transparent pinkish white, with silvery reflections anteriorly on head and body.

FAO names: Indian humphead (En)



Size: To 12.6 cm (TL)

## **EPHIPPIDAE** Spadefishes

Ephippus orbis (Bloch, 1787)

Local name(s): Nga Leik Pyar Gyi. Habitat: No information.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Body orbicular, strongly compressed; single dorsal fin with a deep notch before soft rayed part; pectoral fins shorter than head; mouth small, the maxilla not reaching past vertical at front edge of eye; jaws with bands of slender, incisiform teeth with a single lanceolate cusp; preopercle distinctly serrate, with a broad naked margin; opercle without spines; anal fin with 3 spines and 15–17 soft rays.

**Colour:** Head and body silvery bluegreen; 4–5 faint dark blue bars often visible on body; fins dusky.

## Platax orbicularis (Forsskål, 1775)

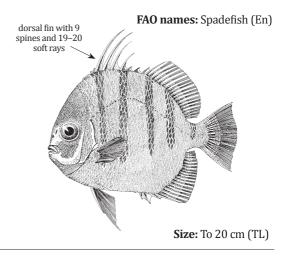
Local name(s): Nga Leik Pyar Gyi.

**Habitat:** Adults found on or near reefs; juveniles occur inshore and are common in mangrove swamps, where they often float on their side at the surface and mimic floating leaves.

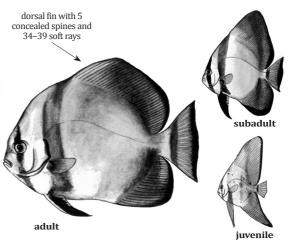
Fisheries: Bottom trawls; gillnets.

**Distinctive Characters:** Body orbicular, strongly compressed; forehead profile somewhat angular; 5 pores on each side of lower jaw; anal fin with 3 spines and 25–29 soft rays.

**Colour:** Adults (above 20 cm) yellowish silvery or dusky with a dark bar through eye and another bar just behind head; occasionally with a few small, scattered black spots on body; median fins yellowish, with black margins posteriorly; pelvic fins black; juveniles with dark vermiculated bar through eye; caudal fin transparent except for base, which is reddish brown.



FAO names: Copper batfish (En)



Size: To 50 cm, common 25 cm (TL)

## Platax teira (Forsskål, 1775)

Local name(s): Nga Leik Pyar Gyi.

Habitat: Juveniles in shallow protected areas; adults in lagoons and seaward reefs down to 20 m. Fisheries: Bottom trawls; gillnets.

Distinctive Characters: Body orbicular. strongly compressed; adults with high nearly vertical forehead and prominent hump on nape; 5 pores on each side of lower jaw; anal fin with 3 spines and 21-26 soft rays.

**Colour:** Yellowish silvery or dusky, with a black bar through eve and another dark bar from dorsal fin origin across rear edge of operculum and pectoral fin base to belly, where it usually encloses a black blotch, with another smaller black vertical streak often present at origin of anal fin; median fins dusky yellow, with black margins posteriorly.

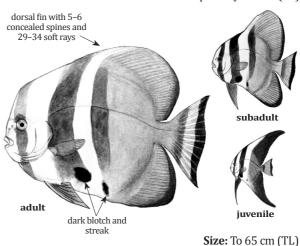
Scatophagus argus (Linnaeus, 1766)

Local name(s): Nga Khet.

jaws.

reaches of fresh-water streams.

### FAO names: Spotbelly batfish (En)



## **SCATOPHAGIDAE**

Scats

FAO names: Spotted scat (En) dorsal fin with 11 spines and 16-18 soft rays Habitat: Occurs in estuaries, harbours, and lower Fisheries: Bottom trawls, gillnets, beach seines. Distinctive Characters: Mouth small, horizontal, not protractile; teeth villiform, in several rows on Colour: Greenish with black spots; in large adults, spots may be faint and restricted to dorsal part of flanks; juveniles with a few large roundish blotches anal fin with 4 spines or with about 5-6 broad, dark, vertical bars. and 14–15 soft rays

Size: To 38 cm, commom 20 cm (TL)

FAO names: Streamlined spinefoot (En)

# **SIGANIDAE**

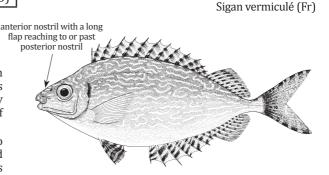
Rabbitfishes - Spinefoots

## Siganus argenteus (Quoy and Gaimard, 1825)

Local name(s): Nga Yan Shar / Nga Suu Pyan. Habitat: Coral reefs down to 40 m depth. Fisheries: Gillnets, cast nets.

Distinctive Characters: Juveniles and adults with body oval and compressed, slender, fusiform, its depth 2.4–3.0 in SL; snout pointed; caudal fin deeply forked; a forward-directed spine present in front of dorsal fin (true of all Siganus species).

**Colour:** Iuveniles/adults: deep-sea blue above to paler blue below; head and trunk usually covered with small yellow spots, bars, and commas (frequently spots joining to form horizontal wavy lines, particularly on lower sides).



509

Size: To 46 cm, commom 25 cm (TL)

Sigan pintade (Fr)

## Siganus canaliculatus (Park, 1797)

Local name(s): Nga Yan Shar / Nga Suu Pyan.

**Habitat:** Demersal, neritic, schooling in turbid inshore areas and inner reefs near river mouths down to 40 m.

Fisheries: Bottom trawls, gillnets, cast nets.

**Distinctive Characters:** Body compressed, moderately slender, its depth 2.3–2.8 in SL; head profile slightly concave above orbit; snout pointed rather than blunt; caudal fin almost emarginate in specimens under 10 cm, forked in larger fish.

**Colour:** In life, highly variable, depending on mood of fish and colour of substrate; greenish grey above to silver on belly; numerous pearly blue spots covering nape and sides, arranged more or less in horizontal rows, 2–3 rows above lateral line; frightened and injured fish mottled brown.

Siganus corallinus (Valenciennes, 1835)

**Local name(s):** Nga Yan Shar / Nga Suu Pyan. **Habitat:** Coral reefs in depths to about 6 m; juveniles in seagrass beds.

Fisheries: Gillnets, cast nets.

**Distinctive Characters:** Body deep and compressed, its depth 1.7–2.4 in SL; profile of head descending at an angle of about 45°, strongly concave before eyes and behind chin so that snout protrudes prominently; caudal fin emarginate in specimens under 5 cm, deeply forked in adults.

**Colour:** Head, body, and fins orange yellow; head, breast, and sides covered with pale blue ocelli with darker blue margins, which may cover whole of sides or be absent from posterior and lower sides; ocelli about pinhead size and about same size as interspaces, larger and more crowded on head, sometimes smaller on sides and much smaller than interspaces; iris unspotted.

#### Siganus guttatus (Bloch, 1787)

Local name(s): Nga Yan Shar / Nga Suu Pyan. Habitat: Fringing reefs in depths to about 6 m; juveniles in seagrass beds around river mouths. Fisheries: Mainly gillnets.

**Distinctive Characters:** Body deep and compressed, its depth 1.8–2.3 in SL; dorsal profile of head descending fairly steeply, slightly concave in front of eye; anterior nostril with a low rim; caudal fin emarginate to moderately forked in adults;

**Colour:** Blue above to silver below; large, roundish, bronze-gold spots over sides (except for thorax and, sometimes, lower belly), largest on midside where same size as pupil, slightly smaller on lower sides; head golden with sinuous blue lines radiating from mouth to eye and across cheeks; a bright yellow spot about size of orbit on sides at base of last few rays of dorsal fin; iris plain yellow.

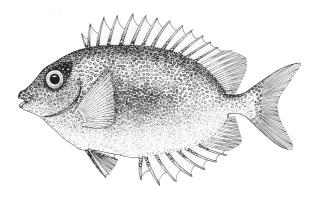
anterior nostril with a flap reaching less than half way to posterior nostril in adults

FAO names: White-spotted spinefoot (En)

Size: To 30 cm, common 20 cm (TL)

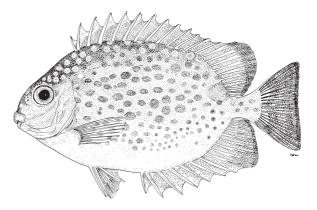
FAO names: Bluespotted spinefoot (En)

Sigan corail (Fr)



Size: To 30 cm, common 20 cm (TL)

FAO names: Orangepotted spinefoot (En)



## Siganus javus (Linnaeus, 1766)

Local name(s): Nga Yan Shar / Nga Suu Pyan.

**Habitat:** Occurs in small schools of up to 10 individuals or so, in shallow coastal waters, brackish lagoons and rock or coral reefs.

Fisheries: Bottom trawls, gillnets, cast nets.

**Distinctive Characters:** Body deep and compressed, its depth 2–2.3 in SL; head profile slightly concave above orbit; snout short and blunt; caudal fin emarginate.

**Colour:** Back dark bronze, to paler below; numerous gun-metal blue spots on head and upper sides, about pinhead size on head but posteriorly just slightly smaller than pupil, coalescing into paler silvery blue undulating lines on mid-and lower sides.

## *Siganus virgatus* (Valenciennes, 1835)

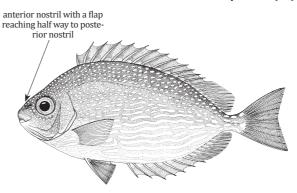
**Local name(s):** Nga Yan Shar / Nga Suu Pyan. **Habitat:** Around both hard coral reefs and areas of sand with patches of rock and soft coral.

Fisheries: Bottom trawls, gillnets, cast nets.

**Distinctive Characters:** Body deep and compressed, its depth 1.8-2.3 in SL; dorsal profile of head convex; anterior nostril with a high flange, a little higher and pointed posteriorly; caudal fin emarginate in juveniles to moderately forked in adults.

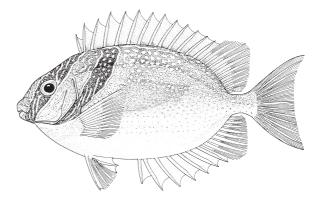
**Colour:** Brown band running from nape through eye to chin; another from base of 4th to 6th dorsal fin spines to base of pectoral fins; these bands with small blue spots or short lines; area between bands lemon yellow, with meandering blue lines breaking up into blue spots on cheek; sides of body lemon yellow above to silvery below, variously marked with small blue ocelli and short blue lines.

FAO names: Streaked spinefoot (En)



Size: To 55 cm (TL)

#### FAO names: Doublebarred spinefoot (En)



Size: To 33 cm, common 20 cm (TL)

**ZANCLIDAE** Moorish idol

#### Zanclus cornutus (Linnaeus, 1758)

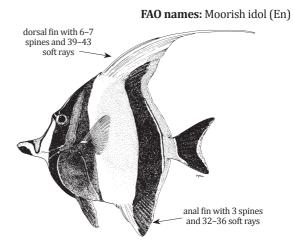
Local name(s): Nga Leik Pyar.

Habitat: Coral reefs or rocky substrata to depths as great as 180 m.

#### Fisheries: Mainly gillnets.

**Distinctive Characters:** Body very deep, its depth 1–1.4 in SL, and very compressed; adults with a sharp bony projection in front of each eye (larger in males); snout narrow and strongly protruding.

**Colour:** White anteriorly, yellow posteriorly, with 2 broad black bars, the first nearly enclosing eye in its anterior part and broadening ventrally to include chest, pelvic fins, and half of abdomen; second black bar on posterior half of body, edged posteriorly with white and black lines, and extending into both dorsal and anal fins; a black-edged orange saddle-like marking on snout; chin black.



Size: To 23 cm, commom 16 cm (TL)

## ACANTHURIDAE

Surgeonfishes - Tangs - Unicornfishes

#### Acanthurus dussumieri Valenciennes, 1835

Local name(s): Nga Yan Shar.

Habitat: Reef-associated in depth greater than 15 m. Fisheries: Mainly gillnets.

Distinctive Characters: Bodv deep and compressed, its depth 1.9-2.1 in SL; dorsal profile of head strongly convex in large adults; snout 4.2-4.6 in SL; caudal fin lunate; teeth fixed, denticulate on all of margin (true of other species of the genus). Colour: Light brown with numerous longitudinal, slightly wavy purplish to bluish grey lines on body; similar, but more irregular lines on head; a yellow band about as wide as pupil extending anteriorly from eye and less distinctly posteriorly from eye; sheath of peduncular spine pale cream to white; dorsal and anal fins vellow, sometimes with traces of narrow bluish longitudinal bands distally caudal fin deep blue with numerous small blackish spots.

## Acanthurus lineatus (Linnaeus, 1758)

Local name(s): Nga Yan Shar.

**Habitat:** Inshore coral reefs or rocky substrata exposed to wave action.

Fisheries: Mainly gillnets.

**Distinctive Characters:** Body moderately elongate and compressed, its depth 2.1–3.0 in SL; snout 5.2–5.7 in SL; caudal fin deeply lunate; Colour: Upper <sup>3</sup>/<sub>4</sub> of body and head with alternating blackedged blue and yellow stripes; lower fourth pale lavender to bluish white; caudal fin blackish with a large, grey crescent centroposteriorly, edged at the front in bluish white and at the posterior margin with black;anal fin grey with a yellow basal band and a light blue margin; pelvic fins yellow-orange with a black submarginal line edged at the front in bluish white.

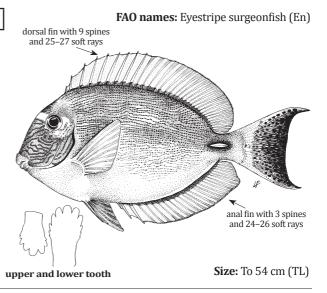
#### Acanthurus mata (Cuvier, 1829)

Local name(s): Nga Yan Shar.

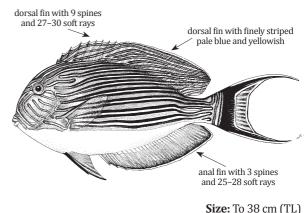
**Habitat:** Coastal and offshore reefs, often in small groups in mid-waters.

Fisheries: Mainly gillnets, occasionaly bottom trawls.

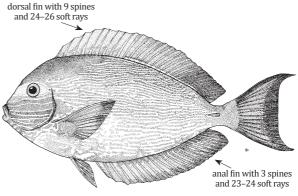
**Distinctive Characters:** Body moderately elongate and compressed, its depth 2.1–2.5 in SL; snout 6.6–6.9 in SL; caudal peduncle slender, its depth 7.7–9.5 in SL; caudal fin of adults deeply emarginate, double emarginate in juveniles. **Colour:** Dark brown with slightly irregular lengthwise blue lines on head and body; a small blackish spot at upper edge of opercle, preceded by a yellow band that continues in front of eye as double band; capable of colour change to overall pale blue.



FAO names: Lined surgeonfish (En) Chirurgien zèbre (Fr)



FAO names: Elongate surgeonfish (En)



Size: To 50 cm (TL)

## Acanthurus nigricauda Duncker & Mohr, 1929

#### Local name(s):Nga Yan Shar.

**Habitat:** Lagoons and bays, around isolated coral heads and rocks and on sandy bottoms.

### Fisheries: Gillnets.

**Distinctive Characters:** Body moderately deep and compressed, its depth 2.0–2.2 in SL; snout 4.3–4.5 in SL; dorsal profile of head of large adults strongly convex; caudal fin progressively more lunate with age.

**Colour:** Brown without lines on body or spots on head; a horizontal black band passing posteriorly from upper end of gill opening (first appearing at about 6 cm SL); a horizontal black streak, enclosing and extending anteriorly from peduncular spine extending forward from (first appearing at about 10 cm SL); dorsal and anal fins without stripes, the distal margin blue; outer fourth of pectoral fins abruptly pale (partly yellow in life); caudal fin blackish with awhite bar across base and a white posterior margin.

## Acanthurus pyroferus Kittlitz, 1834

#### Local name(s): Nga Yan Shar.

**Habitat:** Lagoon and seaward reefs in depths of 4–60 m.

#### Fisheries: Mainly gillnets.

**Distinctive Characters:** Body deep and compressed, its depth 1.8–2.0 in SL; snout 4.6–5.0 in SL; mouth distinctly protruding, hence dorsal profile of snout concave; caudal fin rounded in juveniles, progressively more lunate with age in adults.

**Colour:** Overall yellowish brown with white band around mouth, black margin around eye, brown or black band from chin to upper edge of gill cover, orange patch above pectoral fin base, and yellow margin on caudal fin. Juveniles entirely bright yellow (mimics angelfishes of the genus *Centropyge*).

## Acanthurus thompsoni (Fowler, 1923)

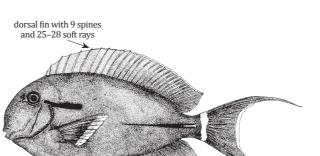
#### Local name(s): Nga Yan Shar.

**Habitat:** Outer seaward reef slopes and steep drop-offs in 4–75 m; usually in groups feeding on zooplankton high above the bottom.

#### Fisheries: Mainly gillnets.

**Distinctive Characters:** Body moderately elongate and compressed, its depth 2.2–2.4 in SL; dorsal profile of head distinctly convex; snout 7.9–8.2 in SL; caudal fin deeply emarginate.

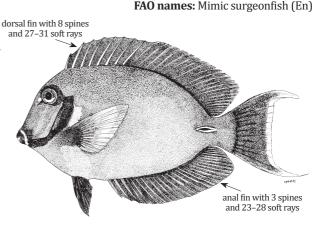
**Colour:** Uniform light to dark brown with a darker brown spot in axil of pectoral fin (difficult to see on dark specimens) and a black spot at rear base of dorsal fin; caudal fin colored like the body in Hawaiian specimens but white elsewhere. Capable of rapidly changing color to pale grayish blue.



FAO names: Blackstreak surgeonfish (En)

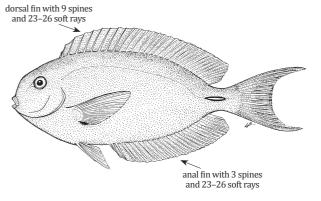
anal fin with 3 spines and 23–26 soft rays





Size: To 29 cm (TL)

FAO names: Thompson's surgeonfish



unu

## Size: To 27 cm (TL)

### Acanthurus tristis Randall, 1993

#### Local name(s): Nga Yan Shar.

Habitat: Lagoon and outer reefs in depths of 2–30 m. Fisheries: Mainly gillnets.

**Distinctive Characters:** Body deep and compressed, its depth 1.8–2.0 in SL; mouth somewhat protruding; dorsal profile of snout convex; caudal fin of adults lunate.

**Colour:** Similar to *Acanthurus pyroferus* (see above); both species have dark band from chin to upper edge of gill cover, but A. tristis lacks dark patch around eye and has white instead of yellow margin on caudal fin.

#### Acanthurus xanthopterus Valenciennes, 1835

#### Local name(s): Nga Yan Shar.

**Habitat:** Lagoon and seaward reefs; adults are common in sandy habitats near reefs from 20 m to 90 m.

Fisheries: Mainly gillnets.

**Distinctive Characters:** Body moderately deep, its depth 1.9–2.2 in SL; snout 4.8–5.3 in SL; dorsal profile of head convex; caudal fin deeply emarginate to lunate; 16–24 gill rakers on 1<sup>st</sup> gill arch.

**Colour:** Body purplish grey when alive; greyish brown when preserved; a region of dull yellow in front of eye, a lesser extension posterior to lower part of eye; dorsal and anal fins brownish yellow with 4 longituinal blue bands and a blue-grey band at base; a whitish band across base of caudal peduncle; outher third of pectoral fins yellow; a broad blue area around caudal spine.

#### Ctenochaetus binotatus Randall, 1955

Local name(s): Nga Yan Shar.

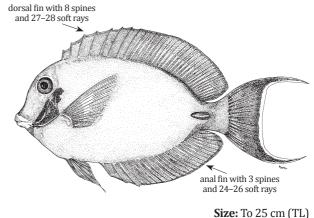
**Habitat:** Coral and rubble areas of reefs in 12-53 m; usually solitary.

Fisheries: Mainly gillnets.

**Distinctive Characters:** Body deep and compressed, 1.8–2.3 in SL; mouth small, teeth numerous, movable, slender and elongate, with expanded incurved tips which are denticulate on the lateral margin (true of other species of the genus); caudal fin lunate.

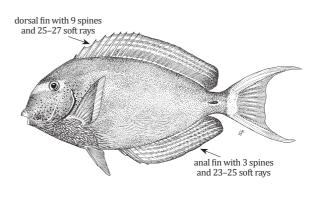
**Colour:** Orange-brown with pale spots on head and breast, longitudinal pale lines on side, and black spot at rear base of dorsal and anal fins; juveniles dark brown with blue spots on head and breast, faint blue lines on body, and yellow tail.

FAO names: Sad surgeonfish (En)



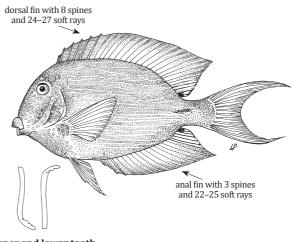
# **FAO names:** Yellowfin surgeonfish (En)

Chirurgien aile jaune (Fr)



Size: To 62 cm, common 50 cm (TL)

FAO names: Twospot bristletooth (En)



upper and lower tooth

## Ctenochaetus striatus (Quoy and Gaimard, 1824)

#### Local name(s): Nga Yan Shar.

**Habitat:** Various reef habitats from protected lagoons to ocean reefs; one of the most abundant and ubiquitous species of surgeonfishes

#### Fisheries: Mainly gillnets.

**Distinctive Characters:** Body deep and compressed, its depth 1.9–2.3 in SL; mouth small, teeth numerous, movable, slender and elongate, with expanded incurved tips which are denticulate on the lateral margin (6 denticulations on upper and 4 on lower teeth); caudal fin lunate.

**Colour:** Dark olive to yellowish brown with blue or blue-grey lengthwise lines on body and small orange spots on head and nape; dorsal and anal fins with about 5 lengthwise dark bluish bands; pectoral fins pale with brownish yellow rays; a small blackish spot at rear base of dorsal fin of juveniles and small adults.

#### Naso annulatus (Quoy & Gaimard, 1825)

#### Local name(s): Nga Yan Shar.

**Habitat:** Outer reef slopes in 20–60 m; usually in small schools.

**Fisheries:** Mainly gillnets, occasionaly bottom trawls. **Distinctive Characters:** Body moderately deep and compressed, its depth 2.2–3.0 in SL; adults with a long, tapering, horn-like projection extending nearly a head length in front of mouth (first developing as a bump on forehead of young of about 20 long); 2 bony plates on each side of caudal peduncle; caudal fin truncate in subadults, scalloped in adults, the large males with a long

**Colour:** Light bluish gray or brown, paler ventrally; edge of lips broadly white; juveniles and subadult s with a white ring around caudal peduncle.

#### Naso unicornis (Forsskål, 1775)

trailing filament from each corner.

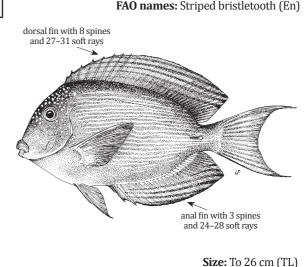
#### Local name(s): Nga Yan Shar.

**Habitat:** An inshore species associated with coral reefs or rocky substrata.

#### Fisheries: Mainly gillnets.

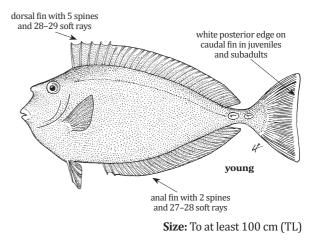
**Distinctive Characters:** Body deep and compressed, its depth 1.8–2.6 in SL; adults with a median horn-like projection anterior to eyes which does not extend in front of mouth (first developing as a bump on forehead of young of about 12 long); 2 bony plates on each side of caudal peduncle.

**Colour:** Light olive to yellowish grey, the peduncular spines and a small area around each bright blue; edges of lips bluish; dorsal and anal fins with a blue margin and alternating narrow bands of light blue and brownish yellow; caudal fin yellowish grey, a little more yellow centroposteriorly.

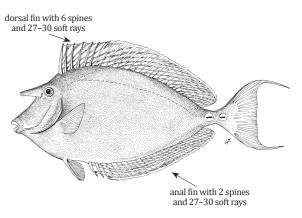


**Size.** 10 20 cm (11)

#### FAO names: Whitemargin unicornfish (En)



#### FAO names: Bluespine unicornfish (En)



#### Size: To 70 cm (TL)

## Zebrasoma scopas (Cuvier, 1829)

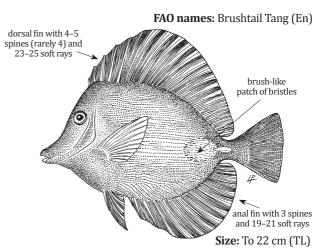
Local name(s): Nga Yan Shar.

**Habitat:** Lagoons and outer reefs in down to 50 m; solitary or in groups.

Fisheries: Mainly gillnets.

**Distinctive Characters:** Body very deep, its depth 1.4–1.8 in SL; prominent protruding snout; retractable spine present on each side of caudal peduncle; brush-like, blackish patch of bristles immediately in front of caudal spine; caudal fin truncate, rounded in juveniles.

**Colour:** Dark brown, often lighter (yellowish brown) on head and anterior body, pale blue dots or longitudinal lines on head and body, and white caudal spine.



## SCOMBROLABRACIDAE

Longfin escolar

## Scombrolabrax heterolepis Roule, 1922

Local name(s): ???

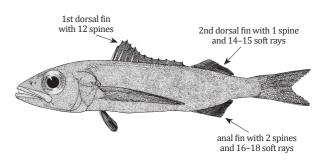
**Habitat:** Continental shelves and slopes at depths between 100–900 m.

Fisheries: Bottom trawls, incidental catch.

**Distinctive Characters:** Body moderately elongate and compressed; eye very large, its diameter almost as long as snout; mouth large, a little protrusible jaws with strong lateral teeth; 2–3 large fangs at front of upper jaw; pectoral fins very long, nearly reaching anal fin origin; lateral line single, running closely to dorsal contour, ending slightly before end of second dorsal fin.

**Colour:** Body uniformly dark brown without distinct markings, fins darker; buccal cavity black.

FAO names: Longfin escolar (En) Escolier aile longue (Fr)



Size: To 30 cm (SL)

## **SPHYRAENIDAE**

Barracudas

FAO names: Sharpfin barracuda (En)

## Sphyraena acutipinnis Day, 1876

Local name(s): Pin Le Nga Mwe Doe.

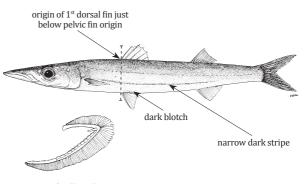
**Habitat:** Inhabits lagoon and seaward reefs; also in bays; schooling species; nocturnally active.

Fisheries: Gillnets, line gears.

**Distinctive Characters:** Maxilla reaching to below anterior nostril; 1<sup>st</sup> gill arch with 1 prominent gill raker; caudal fin forked without a pair of lobes at posterior margin; 122–128 pored lateral line scales.

**Colour:** Body silvery grey, greenish dorsally with a narrow dark stripe on the lower flank; a dark marking present on body near pelvic-fin base; caudal fin darkish.

Remarks: Needs confirmation for Myanmar waters.



1<sup>st</sup> gill arch

Size: To 80 cm, common 50 cm

## Sphyraena barracuda (Edwards, 1771)

#### Local name(s): Pin Le Nga Mwe Doe.

**Habitat:** Juveniles usually in estuaries or mangrove swamps; adults in open sea and close to reef. Diurnal, and solitary or in small schools.

Fisheries: Gillnets, line gears.

**Distinctive Characters:** Maxilla reaching at least to anterior margin of eye; no gill rakers on 1<sup>st</sup> gill arch; upper and lower gill arch with rough platelets which lack distinct spines; caudal fin forked in small juveniles, double emarginate in adults, 69–85 pored lateral line scales.

**Colour:** Adults dusky silver, bluish black dorsally with about 20 oblique dark bars on upper half of body, these not across lateral line; caudal fin black with white tips; some black blotches sometimes present on underside of posterior body; juveniles with a series of large dark blotches irregularly arranged on sides of body.

## Sphyraena forsteri Cuvier, 1829

Local name(s): Pin Le Nga Mwe Doe.

**Habitat:** Nocturnally active, in large schools above lagoon patch reefs and along outer reef slopes by day.

Fisheries: Gillnets, line gears.

**Distinctive Characters:** Maxilla either not reaching anterior margin of eye, or to just below anterior margin; no gill rakers on 1<sup>st</sup> gill arch; upper and lower gill arch with many platelets, each bearing distinct small spines; caudal fin forked without a pair of lobes at posterior margin; 112–123 pored lateral line scales.

**Colour:** Blue or black above, sides silvery, without dark bars or chevrons; a black axillary blotch at base of pectoral fins; caudal fin darkish.

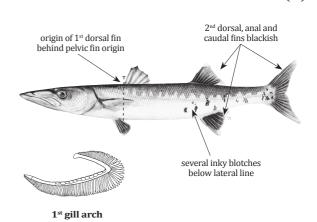
## Sphyraena jello Cuvier, 1829

Local name(s): Pin Le Nga Mwe Doe.

Habitat: Inhabits bays, estuaries, and turbid inner lagoons. Diurnal; solitary or in small schools. Fisheries: Gillnets, line gears.

**Distinctive Characters:** Maxilla reaching to just below anterior margin of eye; no gill rakers on 1<sup>st</sup> gill arch; upper and lower gill arch with rough platelets which lack distinct spines; caudal fin forked without a pair of lobes at posterior margin; 130–140 pored lateral line scales.

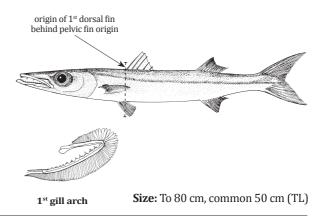
**Colour:** Body dusky yellowish green dorsally with about 20 dark crossbars reaching only slightly below lateral line; dorsal fins dusky green; anal fin pale; caudal fin dusky yellow; juveniles with fewer, more irregular crossbars



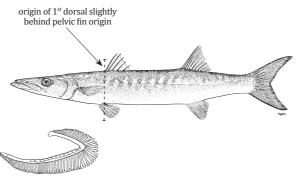
Size: To 200 cm, common 140 cm (TL)

FAO names: Bigeye barracuda (En) Bécune de Forster (Fr)

FAO names: Great barracuda (En)



FAO names: Pickhandle barracuda (En) Bécune jello (Fr)



1<sup>st</sup> gill arch

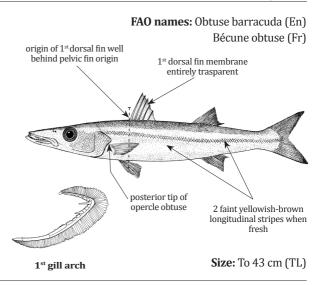
Barracuda (Fr)

## Sphyraena obtusata Cuvier, 1829

Local name(s): Pin Le Nga Mwe Doe. Habitat: Inhabiting bays and estuaries. Fisheries: Gillnets, line gears, bottom trawls.

**Distinctive Characters:** Maxilla not reaching to below anterior margin of eye;  $1^{st}$  gill arch with 2 prominent gill rakers; caudal fin forked without a pair of lobes at posterior margin; tip of pectoral fins reaching past origin of  $1^{st}$  dorsal fin; 78–85 pored lateral line scales;  $5-7\frac{1}{2}$  scales above lateral line;  $8\frac{1}{2}-9\frac{1}{2}$  scales below lateral line.

**Colour:** Head and body dark green dorsally (when fresh), silverry white below; anal and pelvic fins transparent; pectoral fin dusky, with a dark margin on base; caudal fin yellow, greenish near base, entire margin dusky.



FAO names: Red barracuda (En)

### Sphyraena pinguis Günther, 1874

Local name(s): Pin Le Nga Mwe Doe.

**Habitat:** Found near shore on mud, sandy mud or rock bottoms. Usually forms large schools.

Fisheries: Gillnets, line gears, bottom trawls.

**Distinctive Characters:** Similar to *Sphyraena obtusata* but with 80–94 pored lateral line scales;  $7\frac{1}{2}-9\frac{1}{2}$  scales above lateral line;  $10\frac{1}{2}-12\frac{1}{2}$  scales below lateral line; posterior tip of opercle sharply pointed.

**Colour:** Head and body dark brown when fresh; 1<sup>st</sup> dorsal fin membrane dusky distally; body with a single longitudinal dark gray, dark brown or dark yellow (indistinct in some specimens) stripe running above pectoral fin base and extending to middle of caudal fin base; pectoral fins brown on upper half, transparent on lower half.

#### Sphyraena putnamae Jordan & Seale, 1905

#### Local name(s): Pin Le Nga Mwe Doe.

**Habitat:** Inhabiting bays and turbid inner lagoons. A nocturnally active species occurring in relatively large schools during the day.

Fisheries: Gillnets, line gears, bottom trawls.

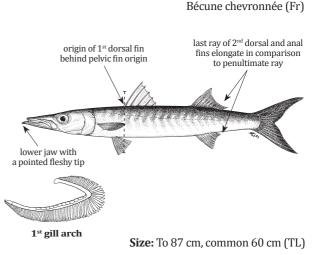
**Distinctive Characters:** Maxilla reaching to just below anterior margin of eye; no gill rakers on 1<sup>st</sup> gill arch; upper and lower gill arch with rough platelets which lack distinct spines; caudal fin forked, in large adults with a pair of indistinct lobes at posterior margin; 120–130 pored lateral line scales.

**Colour:** About 15 dark chevron-shaped bars crossing lateral line on body; dorsal, caudal and upper part of pectoral fins dusky; pelvic and anal fins white.



Size: To 32.6 cm (TL)

FAO names: Sawtooth barracuda (En)



## Sphyraena genie Klunzinger, 1870

Local name(s): Pin Le Nga Mwe Doe.

Habitat: Inhabiting clear waters in the vicinity of coral reefs. Usually seen during the day in large semistationary schools.

Fisheries: Gillnets, line gears.

Distinctive Characters: Similar to Sphyraena putnamae but last ray of 2<sup>nd</sup> dorsal fin not elongate in comparison to penultimate ray; lower jaw without a pointed fleshy tip; 123-136 pored lateral line scales.

Colour: Body with 18-22 vertical or slightly curved dark crossbars extending well below lateral line; cross bars slightly wider than interspaces.

**Remarks:** Widespread in the Indo-Pacific. The exact geographical range is uncertain because of confusion with Sphyraena jello and S. putnamae.

fin rays pale, contrasting with rest of fin usually small black dots on lateral line at rear margin

dorsal, caudal and anal fins

dark grey, except last 2 anal

1<sup>st</sup> gill arch

Size: To 115 cm, common 80 cm (TL)

of each cross bar

FAO names: Blackfin barracuda (En)

## **GEMPYLIDAE** Snake mackerels

Nesiarchus nasutus Johnson, 1862

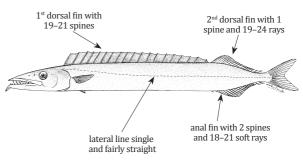
Local name(s): Ye Net Nga Kunn Shut.

Habitat: Benthopelagic at depths between 200 and 1 200 m, migrating to midwater at night. Fisheries: Deep water trawls.

Distinctive Characters: Body elongate and strogly compressed, its depth 10-13 in SL; dermal processes on tips of both jaws well developed; caudal peduncle without keels; gill rakers degenerated; lateral line single; pelvic fins well developed, with 1 spine and 5 soft rays.

Colour: Body dark brown with violet tint; fin membranes black; margin of anus black.

FAO names: Black gemfish (En) Escolier long nez (Fr)



Size: To 130 cm (SL)

FAO names: Sackfish (En)

Neoepinnula orientalis (Gilchrist & von Bonde, 1924)

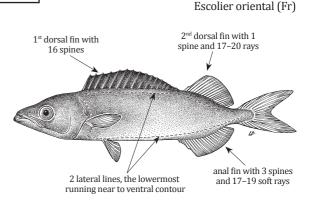
Local name(s): Ye Net Nga Kunn Shut.

Habitat: Benthopelgic on the upper slopes at depths between 200 and 570 m.

Fisheries: Deep water trawls.

Distinctive Characters: Body moderately deep and compressed, its depth 3.9-4.2 in SL; interorbital space wider than eye diameter; pectoral fins with 13-14 (rarely 15) rays; pelvic fins well developed and large with 1 spine and 5 rays; body entirely covered with small deciduous scales; caudal fin forked; 2 lateral lines on the sides, both originating from above the upper angle of the gill opening.

**Colour:** Uniformly dark brown; fins pale except blackish 1st dorsal fin; lining of buccal and branchial cavities black.



Size: To 30 cm (SL)

FAO names: Bengal escolar (En)

Escolier bengalais (Fr)

### Rexea bengalensis (Alcock, 1894)

Local name(s): Ye Net Nga Kunn Shut.

Habitat: Benthopelagic at depths of 143 to 820 m. Fisheries: Deep water trawls.

**Distinctive Characters:** Body moderately elongated and compressed, its depth 6–7 in SL; interorbital space wider than eye diameter; pectoral fins with 14 (rarely 13 or 15) rays; pelvic fins represented by 1 spine (reduced to a subdermal knob in larger specimens); body entirely naked; 2 lateral lines on the sides, the lowermost branching from below the 5th to before the 6th spine of the 1st dorsal fin; the upper lateral line reaching at least to the end of the soft dorsal fin base; pyloric caeca 7 (rarely 8).

**Colour:** Body silvery, fins hyaline except a black blotch on membranes between 1st and 2nd dorsal fin spine.

#### Ruvettus pretiosus Cocco, 1829

Local name(s): Ye Net Nga Kunn Shut.

**Habitat:** Oceanic, benthopelagic on continental slope and sea rises at depths of 200–700 m.

**Fisheries:** Deep water trawls; bycatch in the tuna longline fishery.

**Distinctive Characters:** Body semifusiform and slightly compressed, its depth 4.3–4.9 in SL; lower jaw slightly projecting before the upper; lateral line single, often obscure; skyn very rough, scales medium-sized, interspersed with spinous bony tubercles; scaly keel on belly between pelvic fins and anus.

**Colour:** Body uniformly brown to dark brown; tips of the pectoral and pelvic fins black; margins of the second dorsal and anal fins white in young specimens.

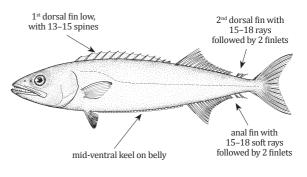
1<sup>st</sup> dorsal fin with 18 (rarely 19) spines 2<sup>nd</sup> dorsal fin with 1 spine and 14–16 rays followed by 2 finlets anal fin with 3 spines

2 lateral lines, the lowermost running near midbody

Size: To 20 cm (SL)

and 11–13 soft rays followed by 2 finlets

### FAO names: Oilfish (En) Rouvet (Fr)



Size: To 200 cm (SL)

## TRICHIURIDAE

Cutlassfishes - Hairtailfishes - Frostfishes - Scabbardfishes

#### Eupleurogrammus glossodon (Bleeker, 1860)

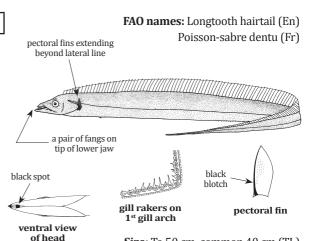
#### Local name(s): Nga Da Gon.

Habitat: Benthopelagic, in coastal waters down to depths of about 80 m.

Fisheries: Bottom trawls, gillnets, line gears.

**Distinctive Characters:** Body ribbon-like tapering to a point; eye small, located close to dorsal profile of head; lower margin of subopercle convex; pelvic fins scale-like, situated below 11<sup>th</sup> to 14<sup>th</sup> soft dorsal fin ray.

**Colour:** Fresh specimens are steel blue with metallic reflections, becoming silvery grey after death; dorsal side of posterior part of body slightly black; dermal process at tip of each jaw black.



Size: To 50 cm, common 40 cm (TL)

## *Eupleurogrammus muticus* (Gray, 1831)

Local name(s): Nga Da Gon.

Habitat: Benthopelagic, in coastal waters down to depths of about 80 m.

Fisheries: Bottom trawls, gillnets, line gears.

**Distinctive Characters:** Similar to *Eupleurogrammus glossodon* but scale-like pelvic fins situated below 15<sup>th</sup> to 18<sup>th</sup> soft dorsal fin ray; eye located far from dorsal profile of head.

**Colour:** As in *E. glossodon* but no black spot on ventral side of lower jaw dermal process at tip of each jaw black; both dorsal and ventral sides of posterior part of body black; a small pale black spot on base of anterior margin of pectoral fins.

#### Lepturacanthus savala (Cuvier, 1829)

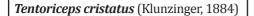
#### Local name(s): Nga Da Gon.

Habitat: Benthopelagic, in coastal waters down to depths of about 100 m.

Fisheries: Bottom trawls, gillnets, line gears.

**Distinctive Characters:** Body ribbon-like tapering to a point; pelvic fins absent; lower margin of subopercle concave; small canine teeth on upper jaw projecting forward; pectoral fins extending beyond lateral line; 1<sup>st</sup> anal fin spine large, its length 1/2 eye diameter; soft anal fin rays pungent spinules breaking through ventral skin.

**Colour:** Fresh specimens are steel blue with metallic reflections, tapering part white; margin of anus pale; tip of both jaws black; inside of opercle and anterior part of the shoulder girdle, pale black.



#### Local name(s): Nga Da Gon.

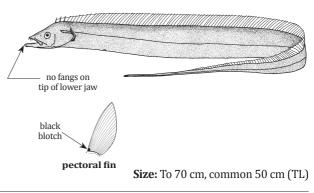
**Habitat:** Benthopelagic or pelagic, in coastal waters at depths of 30 to 110 m.

Fisheries: Bottom trawls, gillnets, bag nets, line gears.

**Distinctive Characters:** Body ribbon-like tapering to a point; dorsal profile of head evenly convex; lower margin of subopercle convex; pelvic fins scale-like, situated below  $47^{\text{th}}$  to  $50^{\text{th}}$  soft dorsal fin ray.

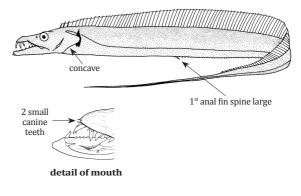
**Colour:** Fresh specimens are silvery white, becoming silvery gray with dark cloud-like patches after death; jaws and dorsal and anal fin bases sooty.

#### FAO names: Smallhead hairtail (En) Poisson sabre asbas (Fr)



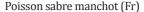
#### FAO names: Savalai hairtail (En)

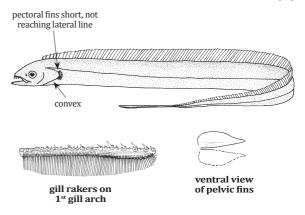
Poisson-sabre cimeterre (Fr)



Size: To 100 cm, common 70 cm (TL)

#### FAO names: Crested hairtail (En)





521

#### FAO names: Largehead hairtail (En) Poisson sabre commun (Fr)

#### Trichiurus lepturus Linnaeus, 1758

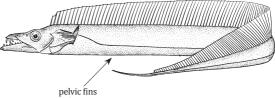
Local name(s): Chind (Sin); Tinji (Bal).

Habitat: Benthopelagic, in coastal waters down to depths of about 100 m.

Fisheries: Bottom trawls, gillnets, line gears.

Distinctive Characters: Similar to Lepturacanthus savala but no small canine teeth projecting forward on upper jaw; 1st anal fin spine small, its length less than pupil diameter; soft anal fin rays slightly breaking through ventral skin in smaller specimens.

Colour: Fresh specimens steel blue with silvery reflection; pectoral fins semitransparent; other fins sometimes tinged with pale vellow, colour sometimes becoming uniformly silvery grey after death.



Size: To 120 cm, common 50–100 cm (TL)

## **SCOMBRIDAE**

Albacore - Bonitos - Kawakawa - Mackerels - Seerfishes - Tunas - Wahoo

#### Acanthocybium solandri (Cuvier, 1832)

Local name(s): ???

Habitat: Epipelagic, oceanic.

Fisheries: Drift gillnets, trolling and line gears.

Distinctive Characters: Body very elongate, fusiform and only slightly laterally compressed; snout (a) about as long as rest of head (b); teeth strong, triangular, compressed, and finely serrate; gill rakers absent; 2 small flaps (interpelvic process) between pelvic fins.

Colour: Head and body iridescent blue-green dorsally, silvery below; live fish often show 24-30 dark blue vertical bars on sides which extend to below lateral line (the bars become dark grey after death).

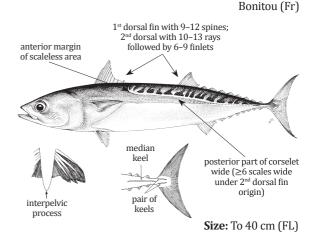
## FAO names: Wahoo (En) Thazard-bâtard (Fr) 1<sup>st</sup> dorsal fin with 23-27 spines. 2<sup>nd</sup> dorsal with 11-16 rays followed by 7-10 finlets anal fin with 11-14 rays and 7-10 finlets maxilla interpelvic concealed process Size: To 250 cm (FL)

#### Auxis rochei (Risso, 1810)

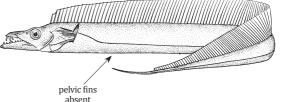
Local name(s): Nga Me Lone Kyee Zan. Habitat: Epipelagic, neritic and oceanic. Fisheries: Gillnets, seines.

Distinctive Characters: Body robust, elongate and rounded; 2 dorsal fins separated by a large interspace (at least equal to length of 1<sup>st</sup> dorsal fin base); teeth small and conical, in a single series; 43-48 gill rakers on 1st gill arch; pectoral fins short, not reaching vertical line from anterior margin of scaleless area above corselet.

Colour: Back bluish, turning to deep purple or almost black on head; scaleless area with pattern of 15 or more fairly broad, nearly vertical dark bars; belly white; pectoral and pelvic fins purple.



FAO names: Bullet tuna (En)



522

## Auxis thazard (Lacepède, 1800)

Local name(s): Nga Me Lone Kyee Kann. Habitat: Epipelagic, neritic and oceanic. Fisheries: Gillnets, seines.

**Distinctive Characters:** Similar to *Auxis rochei*, but 36–42 gill rakers on 1<sup>st</sup> gill arch; pectoral fin reaching past vertical line from anterior margin of scaleless area above corselet; corselet well developed but narrow in its posterior part (no more than 5 scales wide under 2<sup>nd</sup> dorsal fin origin).

**Colour:** Back bluish, turning to deep purple or almost black on the head; a pattern of 15 or more narrow, oblique to nearly horizontal, dark wavy lines in scaleless area above lateral line; belly white; pectoral and pelvic fins purple.

## *Euthynnus affinis* (Cantor, 1849)

**Local name(s):** Nga Me Lone Bor Ni To. **Habitat:** Epipelagic and neritic.

Fisheries: Gillnets, drift gillnets.

**Distinctive Characters:** Body robust, elongate and fusiform; teeth small and conical, in a single series; both dorsal fins separated by only a narrow interspace (not wider than eye) 2 flaps (interpelvic process) between pelvic fins; 25–29 pectoral fin rays; 29–35 gill rakers on 1<sup>st</sup> gill arch.

**Colour:** Back dark blue with a complicated striped pattern which does not extend forward beyond middle of  $1^{st}$  dorsal fin; lower sides and belly silvery white several characteristic dark spots between pelvic and pectoral fins (which, however, may not always be present).

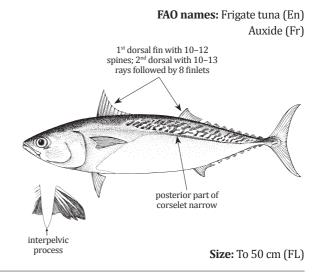
#### Grammatorcynus bilineatus (Rüppell, 1836)

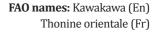
**Local name(s):** Nga Me Lone Bay Hnit Zinn. **Habitat:** Found mainly around coral reefs. Forms large schools.

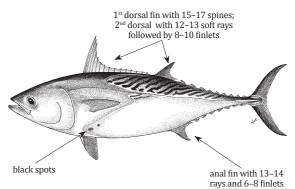
**Fisheries:** Bottom trawls, drift gillnets, long lines, purse seine.

**Distinctive Characters:** Body elongate, slightly compressed; eye large, 4.0–6.0% of FL; teeth slender and conical; rectangular patch of sharp teeth on tongue; a small single flap (interpelvic) process between pelvic fins; 2 lateral lines, the lower joining the upper behind pectoral fin base and at caudal fin base; 19–24 gill rakers on 1st gill arch.

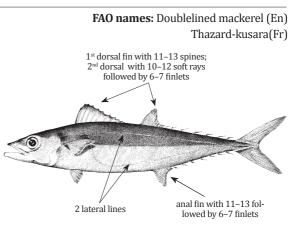
**Colour:** Back and upper sides metallic blue-green; lower sides and belly silvery white without black spots. Juveniles with 2 rows of indistinct blotches under upper lateral line.







Size: To 100 cm, common 60 cm (FL)



#### FAO names: Dogtooth tuna (En) Bonite à gros veux (Fr)

#### *Gymnosarda unicolor* (Rüppell, 1838)

Local name(s): Nga Me Lone Khway Thwar.

**Habitat:** Offshore species found mainly around coral reefs. Usually solitary.

**Fisheries:** Bottom trawls, drift gillnets, long lines, purse seine.

**Distinctive Characters:** Body elongate and moderately compressed; mouth fairly large, upper jaw reaching to middle of eye; 14–31 large, conical teeth on upper jaw, 10–24 on lower jaw; 2 patches of teeth on upper surface of tongue; lateral line strongly undulating; interpelvic process large and single; 11–14 gill rakers on 1st gill arch.

**Colour:** Back and upper sides brilliant blue-black, lower sides and belly silvery; no lines, spots or other markings on body; anterior tip of first dorsal fin dark; other fins greyish.

## Katsuwonus pelamis (Linnaeus, 1758)

**Local name(s):** Nga Me Lone Be Zin Kyarr. **Habitat:** Epipelagic and oceanic.

**Fisheries:** Gillnets; drift gillnets.

**Distinctive Characters:** Body fusiform, elongate and rounded; teeth small and conical, in a single series; both dorsal fins separated by only a narrow interspace (not wider than eye); 2 flaps (interpelvic process) between pelvic fins.

**Colour:** Back dark purplish blue, lower sides and belly silvery, with 4–6 very conspicuous longitudinal dark bands which in live specimens may appear as discontinuous lines of dark blotches.

#### Rastrelliger brachysoma (Bleeker, 1851)

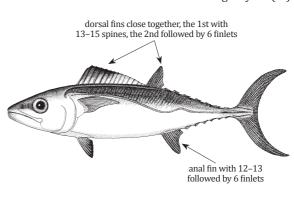
#### Local name(s): Pa Lar Tuu.

**Habitat:** Epipelagic, neritic species that tolerates slightly reduced salinities in estuarine habitats.

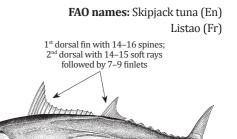
Fisheries: Gillnets, seines, drift gillnet, bottom trawls.

**Distinctive Characters:** Body very deep slightly compressed, its depth at posterior margin of opercle 3.7–4.3 in FL; head equal to or less than body depth; teeth in jaws small and conical; no teeth on roof of mouth; interpelvic process small and single; front and hind margins of eye covered by adipose eyelid; maxilla covered by lacrimal bone but extending nearly to end of lacrimal; gill rakers very long, visible when mouth is opened, 30–48 on lower limb of 1st gill arch.

**Colour:** Spinous dorsal fin yellowish with a black edge, pectoral and pelvic fins dusky, other fins yellowish.



Size: To 110 cm, common 80 cm (FL)

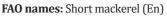


longitudinal dark bands on belly

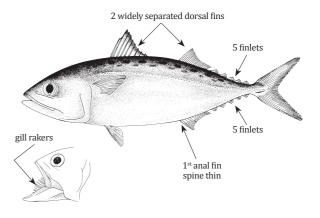
53-63 gill rakers

on 1st gill arch

Size: To 100 cm (FL)



Maquereau trapu (Fr)



Size: To 35 cm (FL)

#### Rastrelliger faughni Matsui, 1967

FAO names: Island mackerel (En) Maquereau de îles (Fr)

## Local name(s): Pa Lar Tuu.

Habitat: Epipelagic, neritic.

**Fisheries:** Gillnets, seines, drift gillnets, bottom trawls.

**Distinctive Characters:** Similar to *Rastrellinger brachysoma* but body slimmer, its depth at posterior margin of opercle 4.9–6.0 in FL; gill rakers short, not visible in lateral view when mouth is opened wide; 21–26 gill rakers on lower limb of 1st gill arch; maxilla covered by lacrimal bone, extending only 3/4 length of lacrimal.

**Colour:** Belly yellowish silver; 2 rows of prominent spots at base of 1st dorsal fin, visible from above; 2 faint stripes at level of lateral line in some specimens; a black blotch behind pectoral fin base; outer margin of dorsal and pectoral fins dark.

#### *Rastrelliger kanagurta* (Cuvier, 1816)

Local name(s): Pa Lar Tuu.

Habitat: Pelagic, schooling in coastal waters.

**Fisheries:** Gillnets, seines, drift gillnets, bottom trawls.

**Distinctive Characters:** Similar to *Rastrellinger brachysoma* but body slimmer, its depth at posterior margin of opercle 4.3–5.2 in FL; head longer than body depth; 30–46 on lower limb of 1st gill arch.

**Colour:** Back blue-green with longitudinal dark bands dorsally (golden in fresh specimens), silvery below; 1 or 2 rows of small, dark spots on sides of dorsal fin bases; a black spot on body near lower margin of pectoral fins; dorsal fins yellowish with black tips; caudal and pectoral fins yellowish; other fins dusky.

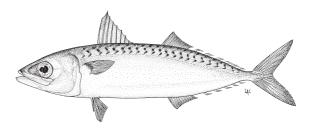
#### Sarda orientalis (Temminck & Schlegel, 1844)

Local name(s): Nga Me Lone Bor Ni To Bay Zinn. Habitat: Pelagic in coastal waters.

#### Fisheries: Gillnets.

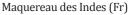
**Distinctive Characters:** Upper jaw reaching beyond posterior margin of eye; dorsal fins close together; teeth fairly large and conical, 10–20 on each side of upper and lower jaws; pelvic fins separated by 2 flaps (interpelvic process); caudal peduncle slender, with a prominent lateral keel between two smaller keels on each side; 8–13 gill rakers on 1<sup>st</sup> gill arch.

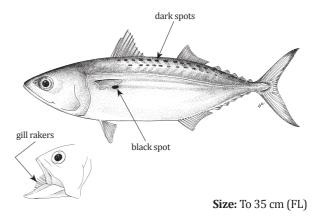
**Colour:** Back and upper sides steel-blue, with 5–11 dark slightly oblique stripes running forward and downward; lower sides and belly silvery; juveniles (to 30 cm fork length) with several transverse bars; 1<sup>st</sup> dorsal fin solid black.



Size: To 20 cm (FL)

#### FAO names: Indian mackerel (En)





FAO names: Striped bonito (En) Bonite oriental (Fr) 1<sup>st</sup> dorsal fin with 17-19 spines; 2nd dorsal with 14-17 soft rays followed by 7-9 finlets dark stripes

teeth fairly large and conical anal fin with 14–16 rays and 6–7 finlets

## Scomberomorus commerson (Lacepède, 1800)

Local name(s): Nga Kun Shut Bay Sin Seik.

**Habitat:** Pelagic in coastal waters from 15 m to 200 m; found in small schools.

Fisheries: Gillnets, trolling and line gears.

**Distinctive Characters:** Body elongate, moderately strongly compressed; snout (a) much shorter than rest of head (b); teeth in jaws strong and compressed (last two characters true of all *Scomberomorus*); 1–8 gill rakers on 1<sup>st</sup> gill arch; lateral line abruptly bent downward below end of 2<sup>nd</sup> dorsal fin.

**Colour:** Back iridescent blue-grey, sides silver with bluish reflections, marked with numerous thin, wavy vertical bands; juveniles frequently spotted.

#### Scomberomorus guttatus (Bloch & Schneider, 1801)

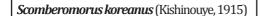
#### Local name(s): Nga Kunn Shut.

**Habitat:** Pelagic in coastal waters from 15 m to 200 m. Sometimes entering turbid estuarine waters; usually found in small schools.

#### Fisheries: Gillnets.

**Distinctive Characters:** Body depth (b) less or nearly equal to head length (a); lateral line with many fine auxillary branches anteriorly, almost straight to below middle of  $2^{nd}$  dorsal fin and gently bent downward to middle of caudal peduncle; Intestine with 2 folds and 3 limbs.

**Colour:** Blue on back, silvery on sides; about 3 irregular rows of dark round spots (smaller than eye) on sides of body; spinous dorsal fin dark up to eighth spine, white posteriorly, with distal margin black.



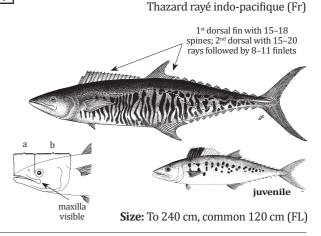
Local name(s): Nga Kunn Shut.

Habitat: Pelagic in neritic waters.

Fisheries: Gillnets.

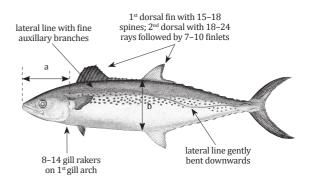
**Distinctive Characters:** Similar to *Scomberomorus guttatus* but body depth (b) greater than head length (a); intestine with 4 folds and 5 limbs; 10-14 gill rakers on 1<sup>st</sup> gill arch.

**Colour:** Back iridescent greyish blue, sides silvery, with 2–3 irregular rows of small, dark, round spots (smaller than eye size); fins blackish; 1<sup>st</sup> dorsal fin black.



FAO names: Narrow-barred Spanish mackerel (En)

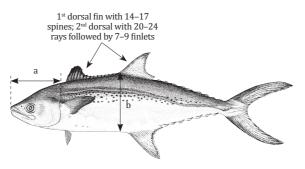
#### FAO names: Indo-Pacific king mackerel (En) Thazard ponctué indo-pacifique (Fr)



Size: To 76 cm, common 55 cm (FL)

FAO names: Korean seerfish (En)

Thazard coréen (Fr)



### Scomberomorus lineolatus (Cuvier, 1829)

Local name(s): Nga Kun Shut Sinn Kyarr.

Habitat: Unlike Scomberomorus commerson and S. guttatus, S. lineolatus is not encountered in very turbid waters or much reduced salinity.

#### Fisheries: Gillnets.

Distinctive Characters: Body elongate, strongly compressed; lateral line running almost straight to below second dorsal finlet, then slightly bent downward toward keel of caudal peduncle (which is very wide).

**Colour:** Back blue-grey; sides silvery white, upper part of body marked with a series of irregular, horizontal, narrow black lines sometimes breaking up into spots ventrally.

## Thunnus albacares (Bonnaterre, 1788)

Local name(s): Nga Mae Lone Suu Taung Warr. Habitat: Epipelagic and mesopelagic in offshore waters from surface to 600 m.

Fisheries: Driftnets, line gears.

Distinctive Characters: Body elongate and fusiform, slightly compressed laterally; teeth small and conical, in a single series; 2 dorsal fins, separated only by a narrow interspace; 2 flaps (interpelvic process) between pelvic fins (above characters valid for all Thunnus); 2nd dorsal and anal fin greatly elongated in adults; 26-34 gill rakers on 1<sup>st</sup> gill arch; swimbladder present.

**Colour:** Back metallic dark blue changing through yellow to silver on belly; dorsal and anal fins, and dorsal and anal finlets bright yellow, the finlets with a narrow black border.

#### Thunnus obesus (Lowe, 1839)

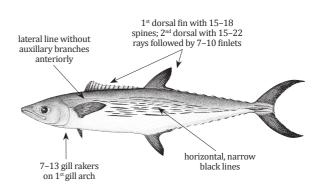
Local name(s): Nga Mae Lone Myet Pyuu.

Habitat: Epipelagic and mesopelagic in offshore waters from surface to 250 m.

#### Fisheries: Driftnets, line gears.

Distinctive Characters: Similar to Thunnus *albacares* but more robust; 2<sup>nd</sup> dorsal and anal fin never greatly elongated; 23-31 gill rakers on 1st gill arch; ventral surface of liver with prominent striations; juveniles with very long pectoral fins, reaching well beyond origin of 2<sup>nd</sup> dorsal fin.

Colour: Back metallic dark blue, lower sides and belly whitish; a lateral iridescent blue band runs along sides in live specimens; 1<sup>st</sup> dorsal fin deep yellow, 2<sup>nd</sup> dorsal and anal fins light yellow.

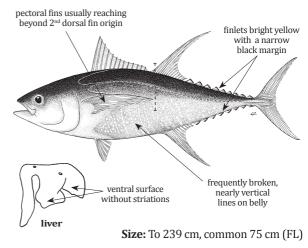


Size: To 80 cm, common 70 cm (FL)

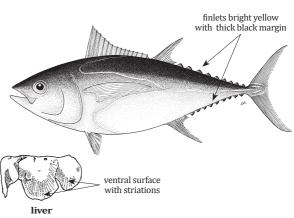
FAO names: Streaked seerfish (En)

Thazard cirrus (Fr)





#### FAO names: Bigeye tuna (En) Thon obèse (Fr)



527

Size: To 200 cm, common 75 cm (FL)

FAO names: Longtail tuna (En)

## Thunnus tonggol (Bleeker, 1851)

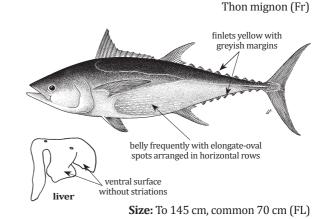
Local name(s): Nga Mae Lone A Myee Shae.

**Habitat:** Predominantly coastal species avoiding very turbid waters and areas with reduced salinity such as estuaries.

### Fisheries: Gillnets.

**Distinctive Characters:** Similar to *Thunnus albacares* but 2<sup>nd</sup> dorsal and anal fin lobes never greatly elongated; 19–27 (usually 26 or fewer) gill rakers on 1<sup>st</sup> gill arch; no swimbladder

**Colour:** Back dark blue or black; dorsal, pectoral, and pelvic fins blackish, tip of second dorsal and anal fins washed with yellow; anal fin silvery; caudal fin blackish, with streaks of yellowish green.



## XIPHIIDAE

Swordfish

#### Xiphias gladius Linnaeus, 1758

Local name(s): Nga E' Maung, Nga Ywet Tike, Nga Phae Htee.

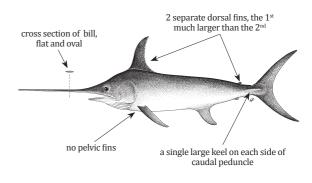
**Habitat:** Epipelagic, primarily oceanic, also occurs in coastal waters.

Fisheries: Driftnets, line gears.

**Distinctive Characters:** Upper jaw flattened and prolonged into a long sword-like bill; pectoral fins falcate, a little rigid; two separate anal fins, the  $1^{st}$  much longer than the  $2^{nd}$ ; juveniles with both jaws prolonged into long bills and dorsal and anal fins continuous.

**Colour:** Head and body blackish brown, dark grey, bronze or bluish black dorsally, paler below; fin membrane of  $1^{st}$  dorsal fin dark blackish brown, other fins brown or blackish brown.

FAO names: Swordfish (En) Espadon (Fr)



Size: To 455 cm, common 120 cm (TL)

## **ISTIOPHORIDAE**

Marlins - Sailfishes - Spearfishes

## Istiompax indica (Cuvier, 1832)

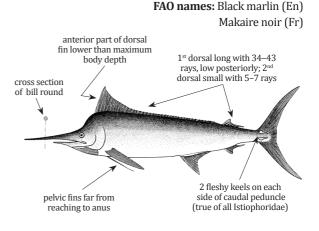
Local name(s): Nga Ywet Tike.

**Habitat:** Oceanic, highly migratory, and epipelagic, usually above thermocline.

Fisheries: Driftnets, line gears.

**Distinctive Characters:** Upper jaw prolonged into a long bill, round in cross-section (true of all Istiophoridae); body elongate and robust, not compressed; profile of head distinctly elevated; pectoral fins rigid and not capable of folding flat against sides of body.

**Colour:** Body dark blue dorsally, silvery white ventrally; 1<sup>st</sup> dorsal fin membrane blue-black, usually unspotted; other fins brown-black; no markings or dots on sides of body; after death body turns greyish white.



## Istiophorus platypterus (Shaw, 1792)

Local name(s): Nga Ywet Tike.

Habitat: Oceanic, epipelagic, and highly migratory, usually above thermocline.

Fisheries: Driftnets, line gears.

**Distinctive Characters:** Body elongate and compressed; 1<sup>st</sup> dorsal fin very high (middle rays longest) with about 42–49 rays; 2 separate anal fins, with 12–17 and 6–7 rays, respectively; pectoral fins falcate, with 17–20 rays

**Colour:** Body dark bluish violet dorsally, silvery white ventrally; 1<sup>st</sup> dorsal membrane dark blue with many small black spots; more or less 20 horizontal bars on body, each consisting of several pale blue spots.

#### Kajikia audax (Philippi, 1887)

Local name(s): Nga Ywet Tike.

**Habitat:** Epipelagic and oceanic species, usually swimming above thermocline.

Fisheries: Driftnets, line gears.

**Distinctive Characters:** Body elongate-fusiform and fairly compressed; forehead fairly elevated; pectoral fins depressible to side of body, with 21–23 rays.

**Colour:** Body dark blue dorsally, silvery white ventrally; 1<sup>st</sup> dorsal fin membrane blue black; other fins dark brown; about 20 vertical bars, each consisting of several small pale blue spots or lines on body.

#### *Makaira nigricans* Lacepède, 1802

Local name(s): Nga Ywet Tike.

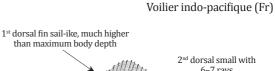
Habitat: Oceanic, epipelagic.

Fisheries: Driftnets, line gears.

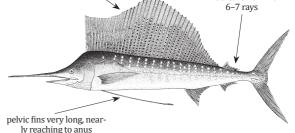
**Distinctive Characters:** Body elongate-fusiform and not strongly compressed; forehead conspicuously elevated; pectoral fins depressible to side of body, with 20–23 rays.

**Colour:** Body blue dorsally, silvery white ventrally; 1<sup>st</sup> dorsal fin membrane blue black, unspotted; other fins dark brown; about 15 vertical bars, each consisting of pale blue spots and lines on body.

**Remarks:** Some authors such as Nakamura (1985) recognize Atlantic (*M. nigricans*) and Indo-Pacific (*M. mazara*) blue marlin as distinct species based on differences in lateral line morphology, but genetic data (Collette, McDowell and Graves, 2006) indicates that there is one world-wide cosmopolitan species in tropical and temperate waters.

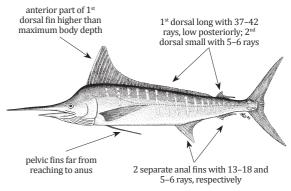


FAO names: Indo-Pacific sailfish (En)



Size: To 348 cm (FL)

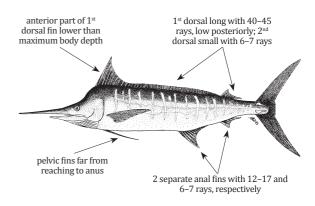
FAO names: Striped marlin (En) Marlin rayé (Fr)



Size: To 420 cm, common 290 cm (TL)

## FAO names: Blue marlin (En)

Makaire bleu (Fr)



## Tetrapturus angustirostris Tanaka, 1915

Local name(s): Nga Ywet Tike.

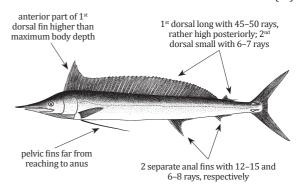
**Habitat:** Highly oceanic, migratory, and epipelagic, usually above thermocline.

Fisheries: Driftnets, line gears.

**Distinctive Characters:** Body elongate and fairly compressed; bill short, less than 15% of body length; forehead nearly straight; pectoral fins short with 17–19 rays; pelvic fins about twice the length of pectoral fins.

**Colour:** Body dark blue dorsally, blue splattered with brown laterally, and silvery white ventrally, without dots or stripes;  $1^{st}$  dorsal fin dark blue, without dots or blotches, remaining fins brown or dark brown; bases of  $1^{st}$  and  $2^{nd}$  anal fins often tinged with silvery white.

#### FAO names: Shortbill spearfish (En) Makaire à rostre court (Fr)



Size: To 230 cm, common 190 cm (TL)

## CENTROLOPHIDAE

Medusafishes - Ruffs - Barrelfishes

## Psenopsis cyanea (Alcock, 1890)

Local name(s): Nga Ye Myaw /Le' San Hmwe. Habitat: Found in deep water from about 250 to 300 m.

Fisheries: Bottom trawls.

**Distinctive Characters:** Body moderately deep, compressed, its depth 28–31% of SL; musculature soft; palate toothless; eye diameter less than 25% of HL; broad forward scoop on surface of opercle below the weak 2nd opercular spine; caudal peduncle short and compressed, without keels; subdermal canal system usually visible on sides (could be confused with lateral line); lateral line high, following dorsal profile; scales small, cycloid, very deciduous and extending onto bases of median fins.

**Colour:** Generally uniform brownish to violet, with a darker head and often with a spot on shoulder; opercles blackish and gill cavity dark; inside of mouth lightly speckled.

## Psenopsis obscura Haedrich, 1967

**Local name(s):** Nga Ye Myaw /Le' San Hmwe. **Habitat:** Deep continental slope in depths of 200–800 m over sand and mud bottoms.

Fisheries: Deep bottom trawls.

**Distinctive Characters:** Similar to *Psenopsis cyanea* but body more oval, its depth 31–38% of SL; eye larger, its diameter 27–31% of HL; anal fin originating at about mid-body, with 25–27 soft rays; musculature firm.

**Colour:** Dark brownish blue to brown, grading to tan on sides; a prominent darker area on shoulder near lateral line; inside of opercles and peritoneum dark; fins dusky.

a single dorsal fin with 6-7 weak, short spines and 26-28 much longer segmented rays

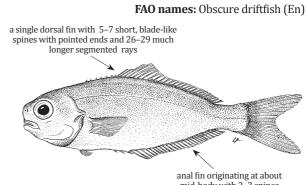
pelvic fins originating in front of pectoral fin origin and folding into a groove

anal fin originating behind midbody with 3–4 weak spines and 21–23 soft rays

FAO names: Indian ruff (En)

Rouffe indien (Fr)

Size: To 25 cm, common 18 cm (TL)



anal fin originating at about mid-body with 2–3 spines and 25–28 soft rays

## **NOMEIDAE** Driftfishes – Cigarfishes

#### Cubiceps kotlyari Agafonova, 1989

Local name(s): Ye Net Nga Ye Myaw.

**Habitat:** Bentho-pelagic-oceanic, in depths from 500–725 m.

Fisheries: Deep water bottom trawls.

**Distinctive Characters:** Body moderately elongate and compressed; dorsal profile strongly convex; snout moderately bluntly pointed with jaws slightly inferior; teeth on midline of roof of mouth and tongue in single rows (rows usually raised); scales on top of head of similar size (pockets usually still evident when scales shed); eye large, equal to or greater than snout; pectoral fin broad and elongate, usually longer than head.

**Colour:** Body dark brown, operculum, thoracic region and fins blackish.

## Cubiceps pauciradiatus Günther, 1872

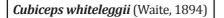
Local name(s): Ye Net Nga Ye Myaw.

**Habitat:** Bathypelagic-oceanic, in depths from 58–1 000 m, found near surface at night.

Fisheries: Deep water bottom trawls.

**Distinctive Characters:** Body moderately elongate and compressed; snout short and blunt; mouth terminal; eye large, equal to or greater than snout; pectoral elongate, much longer than head; teeth patches on midline of roof of mouth and tongue large, broad and granular.

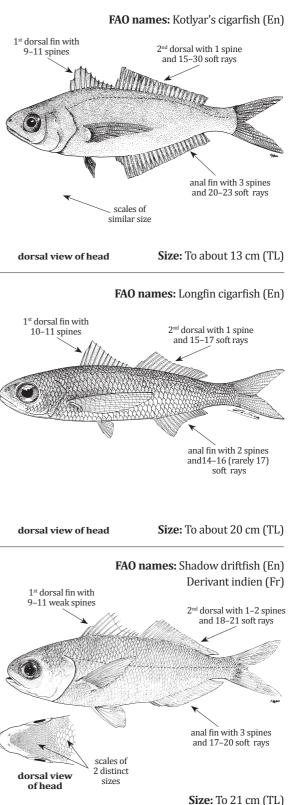
**Colour:** Body light tan to brown; operculum blackish; caudal fin dusky, other fins clear.



Local name(s): Ye Net Nga Ye Myaw.

Habitat: Deep waters on the continental slope. Fisheries: Bottom trawls.

Distinctive **Characters:** Body moderately elongate and compressed, ventral profile very convex; snout blunt and broad, mouth terminal or slightly inferior; teeth on midline of roof of mouth and tongue in single rows; scales on top of head in 2 sizes which merge above hind margin of eye; pelvic fins relatively long reaching anus: small, scales fairly cycloid, easily shed. Colour: Silvery white when fresh, becoming brownish with well-defined scale pockets in preservative.



FAO names: Man-of-war fish (En)

#### *Nomeus gronovii* (Gmelin, 1789)

#### Local name(s): Ye Net Nga Ye Myaw.

**Habitat:** Juveniles pelagic in coastal and offshore waters usually in association with floating Portuguese man-of-war, *Physalia*; adults possibly demersal in deep water.

Fisheries: Bottom trawls, incidental catch.

**Distinctive Characters:** Body elongate and rather compressed; snout rounded; predorsal scales extending to interorbital space; small conical teeth similar in both jaws; no teeth on tongue; pectoral fins extending far beyond the origin of the anal fin; ventral fins greatly expanded in juveniles.

**Colour:** Juveniles silvery-white with striking dark blue back and dark blue markings on the sides; large dark fan-like pelvic fins and a deeply forked tail. Adults dark brown on dorsal side, silvery ventrally with dark pectoral and pelvic fins; remnants of dark brown and silvery skin present

#### Psenes arafurensis Günther, 1889

#### Local name(s): Ye Net Nga Ye Myaw.

**Habitat:** Pelagic-oceanic from surface to depths to 650 m, often associated with medusae.

Fisheries: Bottom trawls, incidental catch.

**Distinctive Characters:** Body firm, moderately deep and rather compressed; predorsal scales extending forward to about middle of eyes, of similar size and separable into distinct patches; pectoral fin with 18 rays, its length equal to head; teeth in lower jaw round in cross-section, neither long, knife-like, nor close-set, similar to those in the upper jaw.

**Colour:** Body with brownish mottled or banded colour pattern in small fish; adults uniformly coloured, almost black.

#### Psenes cyanophrys Valenciennes, 1833

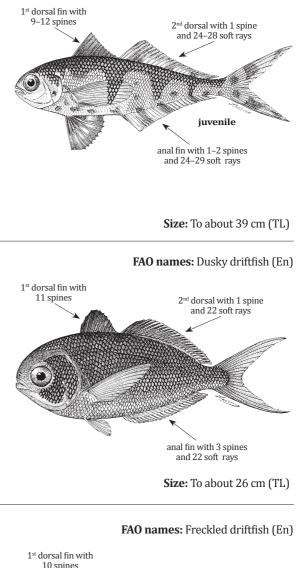
#### Local name(s): Ye Net Nga Ye Myaw.

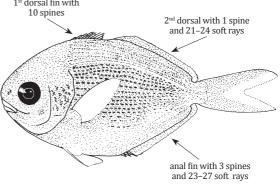
Habitat: Oceanic, in association with floating objects.

Fisheries: Bottom trawls, incidental catch.

**Distinctive Characters:** Body firm, deep and rather compressed; scales on top of head of 2 distinct sizes, boundary between patches sharply demarcated from each other above front half of eye (anterior scales very small and extending forward to nostrils); pectoral fin with 18 rays, its length equal to or less than head; teeth in both jaws small and pointed, not laterally compressed.

**Colour:** Overall brownish mottled colour pattern; several horizontal rows of dark spots on sides; a distinct dark band below eye; dorsal, pelvic, anal and caudal fins dark, the latter washed with yellow; pectoral fin transparent with a yellowish base.





dorsal view of head

Size: To about 30 cm (TL)

## Psenes pellucidus Lütken, 1880

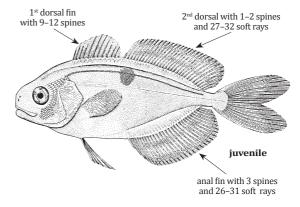
Local name(s): Ye Net Nga Ye Myaw.

**Habitat:** Meso- or epi-pelagic; juveniles live in association with drifting seaweed rather than jellyfish.

Fisheries: Bottom trawls, incidental catch.

**Distinctive Characters:** Body very compressed, flabby at all sizes; scales on top of head of similar size, not separable into distinct patches; pectoral fin short and rounded; teeth in lower jaw long, knife-like, close-set, very different from those in the upper jaw.

**Colour:** Translucent young with brown spotted colour pattern; adults dark brown to deep purple; eye dark blue.



Size: To 80 cm (SL)

ARIOMMATIDAE

Ariommas

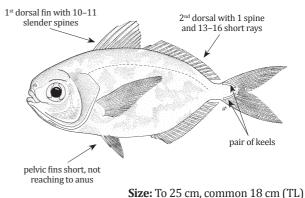
Ariomma indicum (Day, 1871)

Local name(s): Nga Ye Myaw.

Habitat: Muddy bottoms down to 300 m. Fisheries: Bottom trawls.

**Distinctive Characters:** Body depth usually 42–50% SL; caudal peduncle short, almost square in cross-section with two fleshy keels at base of caudal fin; no teeth on roof of mouth; anal fin with 3 spines and 14–15 soft rays; eyes large, surrounded by thick adipose tissue; caudal fin lobes not capable of folding into a single lobe. **Colour:** Silvery with bluish tinge on back; inside opercle black; eye with 2 golden crescents separated by a vertical dark region; large specimens may be uniformly dark; fins grayish.

FAO names: Indian driftfish (En) Ariomme indienne (Fr)



**STROMATEIDAE** 

Butterfishes - Silver pomfrets

Pampus argenteus (Euphrasen, 1788)

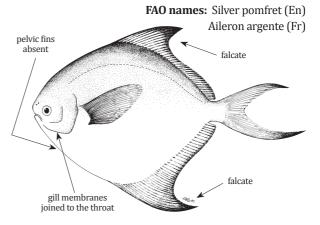
Local name(s): Nga Moke Phyu/Ngwe Yaung Nga Moke Phyu.

**Habitat:** Demersal on the continental shelf to about 80 m; forms large schools over muddy bottoms.

Fisheries: Bottom trawls, gillnets, seines.

**Distinctive Characters:** Body firm, very deep, oval, compressed; dorsal and anal fins preceded by 5–10 short, blade-like spines with pointed ends (embedded and barely visible in adults); dorsal fin rays 37–43; caudal fin deeply forked, lower lobe often extended.

**Colour:** Silvery white on sides, slightly darker bluish or greyish on back.



FAO names: Bluefin driftfish (En)

533

Size: To 60 cm, common 20 cm (SL)

## Pampus chinensis (Euphrasen, 1788)

Local name(s): Nga Moke Phyu/Ta Yoke Nga Moke Phyu.

Habitat: Inshore, demersal on the continental shelf over muddy bottoms; usually occurs in schools; sometimes enters estuaries.

Fisheries: Bottom trawls, gillnets, seines.

Distinctive Characters: Similar to Pampus argenteus but dorsal and anal fins not produced into a falcate lobe anteriorly; no blade-like spines before dorsal and anal fins; 43–50 dorsal fin rays; caudal fin not deeply forked, lobes equal in length. Colour: Greyish to brownish dorsally, silvery white on sides; covered in dark pigment spots; fins silvery to greyish, darkest distally.

Aileron chinois (Fr) pelvic fins absent gill membranes

joined to the throat

Size: To 60 cm, common 30 cm (SL)

FAO names: Chinese silver pomfret (En)

CAPROIDAE **Boarfishes** 

Antigonia indica Parin & Borodulina, 1986

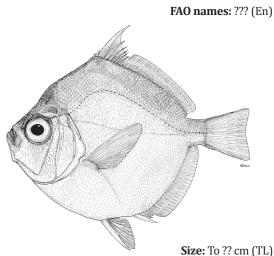
Local name(s): Nga Wett Thoo. Habitat: Fisheries: Deep water bottom trawls. **Distinctive Characters:** Colour:

FAO names: ??? (En)

Size: To ?? cm (TL)

#### Antigonia ovalis Parin & Borodulina, 2006

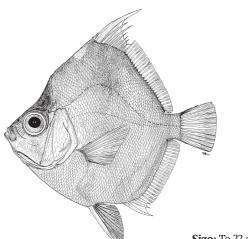
Local name(s): Nga Wett Thoo. Habitat: Fisheries: Deep water bottom trawls. **Distinctive Characters: Colour:** 



534

## Antigonia rubescens (Günther, 1860)

Local name(s): Nga Wett Thoo. Habitat: Fisheries: Deep water bottom trawls. Distinctive Characters: Colour:

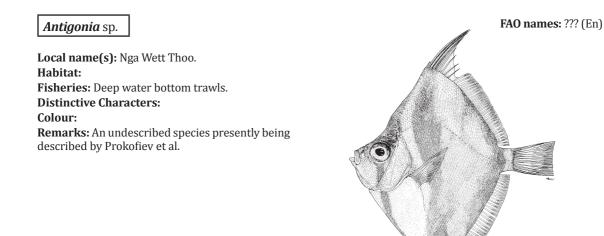


Size: To ?? cm (TL)

## Antigonia undulata Parin & Borodulina, 2005

Local name(s): Nga Wett Thoo. Habitat: Fisheries: Deep water bottom trawls. Distinctive Characters: Colour: FAO names: ??? (En)

Size: To ?? cm (TL)



Size: To ?? cm (TL)

## PSETTODIDAE

Spiny turbots

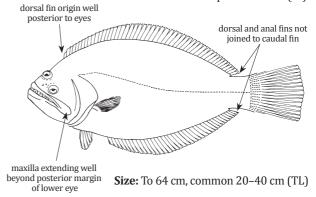
## Psettodes erumei (Bloch & Schneider, 1801)

Local name(s): Nga Khway Shar Gyi / Sharr Gyi. Habitat: Benthic in coastal waters and estuaries on muddy and sandy bottoms down to 100 m. Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Body oval and flat, but thicker than that in most other flat fishes; mouth large with strong canine teeth; pelvic fins with 1 spine and 5 soft rays; both eyes on left or right side; anterior rays of dorsal and anal fins spinous.

**Colour:** Usually brown or grey, sometimes with 4 broad dark crossbars; dorsal, anal and caudal fin tips black; eyed side occasionally only partially coloured.

## FAO names: Indian halibut (En) Turbot épineux-indien (Fr)



## **CITHARIDAE** Largescale flounders

#### Brachypleura novaezeelandiae Günther, 1862

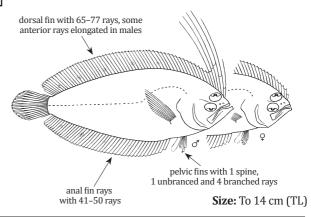
**Local name(s):** Nga Khway Sharr A Kyae Kwet. **Habitat:** Sand and mud bottoms at depths of 18– 73 m; often in areas near river mouths.

Fisheries: Bottom trawls as bycatch.

**Distinctive Characters:** Body elliptical; both eyes on right side of head; all dorsal and anal fin rays, except a few at posterior end of fin, unbranched; caudal fin with 13–14 branched rays; scales large and deciduous, ctenoid on eyed side, cycloid or weakly ctenoid on blind side.

**Colour:** Ground colour yellowish or yellowish brown; dorsal, anal, and caudal fins paler than body with dark spots; spots on dorsal and anal fins near middle of rays; blind side whitish.

FAO names: Widemouth largescale flatfish (En)



## PARALICHTHYIDAE

Sand flounders - Short pelvic flounders

#### Cephalopsetta ventrocellata Dutt & Rao, 1965

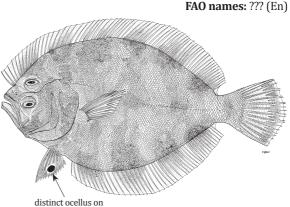
Local name(s): Nga Khway Sharr.

Habitat: On soft bottoms down to 200 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Eyes on left side of head (true of all Paralichthydae); head length 2.3–3.1 in SL; snout short, 4.7–5.9 in HL; 23–31 closely spaced teeth on lower jaw of blind side, no enlarged canines; scales on eyed side with feeble ctenii and those on blind side cycloid.

**Colour:** Background colour of eyed side brownish with varying pattern of irregular dark blotches; a distinct black spot enclosed by a light-coloured ring (ocellus) between the  $3^{rd}$  and  $5^{th}$  ray of pelvic fin of the ocular side.



distinct ocellus on pelvic fin of eyed side

## Pseudorhombus arsius (Hamilton, 1822)

#### Local name(s): Nga Khway Sharr.

Habitat: Benthic in coastal waters and estuaries on muddy and sandy bottoms down to 200 m. Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Body ovoid, its depth 1.8–2.3 in SL; upper jaw teeth small, closely spaced posteriorly, becoming widely spaced and enlarged anteriorly; lower jaw teeth large, widely spaced, 8–18 on blind side lower jaw; gill rakers longer than broad, 9–13 on lower limb of 1<sup>st</sup> gill arch; scales on eyed side ctenoid, those on blind side cycloid.

**Colour:** Background colour of eyed side brownish with varying pattern of dark spots but always a large black blotch and 1 or 2 smaller dark spots along lateral line.

#### Pseudorhombus cinnamoneus (Temminck and Schlegel, 1846)

#### Local name(s): Nga Khway Sharr.

**Habitat:** Mud and sand bottoms along shallow coasts or bays.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Body deeply ovoid, its depth 2.0–2.1 in SL; teeth in upper jaw small, slightly enlarged anteriorly, those on lower jaw stronger and wider separated from each other; gill rakers moderately long and slender, 10–12 on lower limb of 1st gill arch; scales ctenoid on eyed side, cycloid on blind side.

**Colour:** Body brownish, a distinct ocellus at junction of straight and curved parts of lateral line; many dark rings scattered on body, many dark spots on median fins.

#### Pseudorhombus dupliciocellatus Regan, 1905

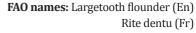
#### Local name(s): Nga Khway Sharr.

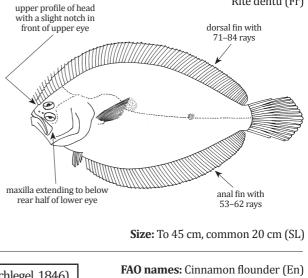
**Habitat:** Shallow water on mud and sand bottoms in depths of 50–150 m.

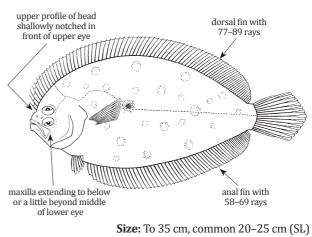
#### Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Body ovoid, its depth 2.2–2.4 in SL; teeth in both jaws small, without strong canines; gill rakers palmate, as broad as long, 8–9 on lower limb of 1st gill arch; scales ctenoid on eyed side, cycloid on blind side.

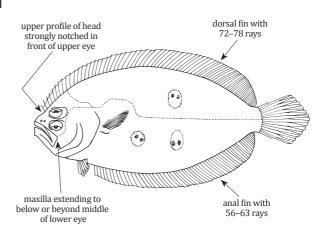
**Colour:** One or two pairs of distinct double ocelli above and below lateral line; many darker rings and spots scattered on body and median fins.







#### FAO names: Ocellated flounder (En)



#### Size: To 40 cm, common 20-30 cm (SL)

FAO names: Deep flounder (En)

## Pseudorhombus elevatus Ogilby, 1912

#### Local name(s): Nga Khway Sharr.

**Habitat:** Benthic on clay, sand and mud bottoms at depths from 7 m to 200 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Body deeply ovoid, its depth 1.7–2.0 in SL; teeth in both jaws all small, not enlarged anteriorly; a broad flap-like membrane joining proximal half of 1<sup>st</sup> dorsal fin ray to head; scales ctenoid on eyed side and cycloid on blind side; gill rakers long and slender, 15–19 on lower limb of 1<sup>st</sup> gill arch.

**Colour:** Body pale brownish, a distinct large blotch at junction of straight and curved parts of lateral line, and many dark rings and spots scattered on body and median fins.

## Pseudorhombus javanicus (Bleeker, 1853)

Local name(s): Nga Khway Sharr.

**Habitat:** Inhabits shallow waters on mud and sand bottoms on the continental shelf.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Body ovoid, its depth 2.1–2.4 in SL; teeth in both jaws small, with slightly enlarged teeth anteriorly; scales on eyed side ctenoid on anterior part and on dorsal and ventral margins on eyed side of body, cycloid on remaining areas; scales cycloid on blind side; gill rakers pointed, moderately short, 12–16 on lower limb of 1<sup>st</sup> gill arch.

**Colour:** Body brownish, a distinct, large dark blotch at junction of straight and curved parts of lateral line and a smaller blotch on middle of straight section of lateral line, many dark rings scattered on body.

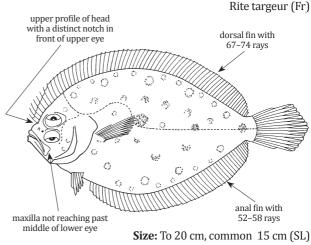
#### Pseudorhombus malayanus Bleeker, 1866

Local name(s): Nga Khway Sharr.

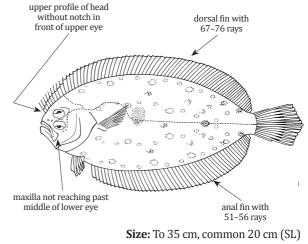
Habitat: Shallow waters on mud and sand bottoms. Fisheries: Bottom trawls, gillnets.

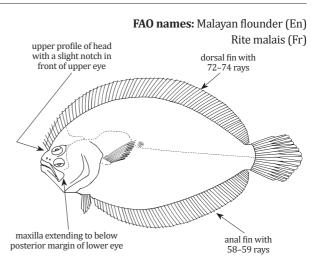
**Distinctive Characters:** Body deeply ovoid, its depth 1.8–2.0 in SL; teeth in upper jaw small and close-set laterally, and enlarged anteriorly; teeth in lower jaw stronger and more widely spaced than those of upper jaw; scales ctenoid on both sides of body; gill rakers moderately long, 8–10 on limb of 1st gill arch.

**Colour:** Body brownish, a small dark blotch at junction of straight and curved parts of lateral line.



### FAO names: Javan flounder (En) Rite javanais (Fr)





Size: To 35 cm, common 20 cm (SL)

#### Pseudorhombus megalops Fowler, 1934

#### Local name(s): Nga Khway Sharr.

**Habitat:** Moderately deep waters (about 200–270 m) on mud and sand bottoms.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Similar to *Cephalopsetta ventrocellata* but head length 3.0–3.3 in SL; snout short, 3.9–4.5 in HL; 12–20 widely spaced large canines anteriorly on lower jaw of blind side; scales on eyed side with well-developed ctenii and those on blind side mostly ctenoid.

**Colour:** Body pale brownish, with many indistinct dark rings; pelvic fin on eyed side with very distinct black spot or ocellus between the  $4^{th}$  and  $5^{th}$  ray of pelvic fin of the ocular side.

#### Pseudorhombus natalensis Gilchrist, 1904

Local name(s): Nga Khway Sharr.

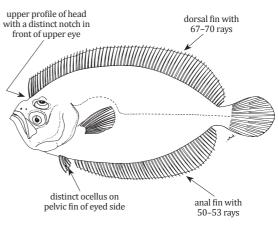
**Habitat:** Mud and sand bottoms in depths of 60–260 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Body ovoid, its depth 1.8–2.3 in SL; more than 20 close-set teeth on lower jaw of blind side (no developed canine teeth); scales ctenoid on eyed side; nearly all scales on blind side cycloid; gill rakers pointed longher than broad, 10–13 on lower limb of first gill arch.

**Colour:** Body pale brownish, eyed side with about 5 longitudinal rows of dark rings; median fins with a row of small dark spots; dark spot near margin of pelvic fin (eyed side).

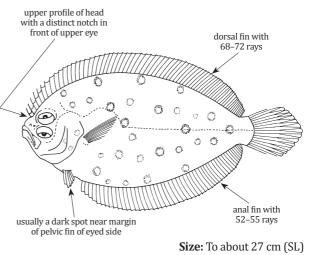
#### FAO names: Bigeye flounder (En)



Size: To 35 cm, common 20 cm (SL)

FAO names: Neglected flounder (En)





#### Pseudorhombus neglectus Bleeker, 1866

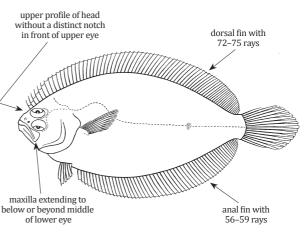
#### Local name(s): Nga Khway Sharr.

**Habitat:** Shallow waters (30–40 m) on mud and sand bottoms of continental shelf.

#### Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Body elliptical, its depth 1.9–2.1 in SL; teeth in upper jaw small, slightly enlarged anteriorly, teeth in lower jaw larger and more widely spaced than those in upper jaw; scales ctenoid on eyed side, cycloid on blind side; gill rakers pointed and moderately short, 9–10 on lower limb of 1st gill arch.

**Colour:** Body pale brownish, with small ocelli at junction between curved and straight portions of lateral line and another one near middle of straight section.



Size: To about 25 cm (SL)

FAO names: Five-eved flounder (En)

#### Pseudorhombus quinquocellatus Weber and Beaufort, 1929

#### Local name(s): Nga Khway Sharr.

**Habitat:** Deep waters (80–100 m) on mud and sand bottoms of continental shelf.

#### Fisheries: Bottom trawls.

540

**Distinctive Characters:** Body ovoid, rather well compressed, its depth 2.0–2.1 in SL; teeth in upper jaw small and close-set with 3–4 pairs of canines anteriorly, teeth in lower jaw stronger and more widely spaced than those in upper jaw; scales ctenoid on eyed side, mostly cycloid on blind side, but sometimes with some ctenoid; gill rakers pointed and rather short, 9–13 on lower limb of 1st gill arch.

**Colour:** Body uniformly brownish, 2 ocelli above and below lateral line and 1 ocellus on posterior third of straight section of lateral line; many indistinct rings scattered on body and median fins.

#### Pseudorhombus triocellatus (Bloch & Schneider, 1801)

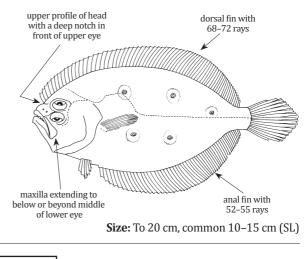
#### Local name(s): Nga Khway Sharr.

**Habitat:** Inhabits mud and sand bottoms in shallow waters on the continental shelf.

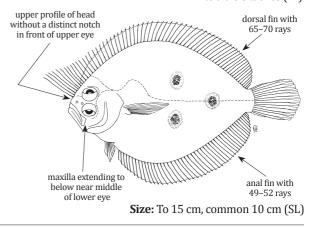
Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Body deeply ovoid, its depth 1.5–1.8 in SL; teeth in both jaws small, not enlarged anteriorly; scales ctenoid on eyed side, cycloid on blind side; gill rakers long and slender, 20–25 on lower limb of 1st gill arch.

**Colour:** Body brownish, with 1 ocellus above and one below lateral line and 1 ocellus on posterior third of straight section of lateral line; many indistinct spots and blotches on body.



#### FAO names: Three spotted flounder (En) Rite à trois taches (Fr)



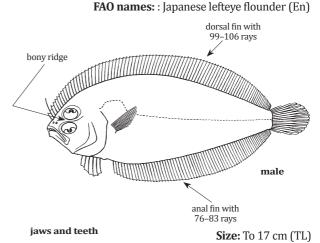
**BOTHIDAE** Lefteye flounders

#### Arnoglossus japonicus Hubbs, 1915

**Local name(s):** Be' Myet Lone Khway Sharr. **Habitat:** Inhabits mud, sand and gravel bottoms in depths of 86 to 154 m.

#### Fisheries: Bottom trawls.

**Distinctive Characters:** Body elliptical, elongate, strongly compressed; interorbital region narrow with continous bony ridge; head length 3.60–3.90 in SL; maxilla reaching to about middle of lower eye; anterior teeth of upper jaw larger than posterior teeth; lower jaw teeth widely spaced; a single row of teeth in jaws; no gill rakers on upper limb; cycloid scales on ocular side; 2nd dorsal fin ray elongated in males; 65–73 lateral line scales; caudal fin rounded. **Colour:** Pale brownish, no dark blotch on pectoral and pelvic fins.



#### Arnoglossus macrolophus Alcock, 1889

Local name(s): Be' Myet Lone Khway Sharr. Habitat: Inhabits mud, sand and gravel bottoms in depths of 18-141 m.

Fisheries: Bottom trawls.

Distinctive Characters: Body elliptical, elongate, strongly compressed; head length 3.6-4.1 in SL; interorbital region narrow with continous bony ridge; maxilla reaching to about middle of lower eve; teeth in both jaws small, closely spaced; no gill rakers on upper limb?; cycloid scales on ocular side; anterior 4–5 rays of dorsal fin greatly elongate in males, not or only slightly elongate in females; 48-62 lateral line scales; caudal fin pointed?.

Colour: Body brownish; 5 indistinct dusky spots on body below base of dorsal fin; 4 spots below base of anal fin; the posteriormost spots more distinct and extending onto fin; dark blotch on pectoral and pelvic fins.

#### Arnoglossus yamanakai Fukui, Yamada & Ozawa, 1988

Local name(s): Be' Myet Lone Khway Sharr. Habitat: Soft bottoms in depths of 65-130 m. Fisheries: Bottom trawls.

Distinctive Characters: Similar to Arnoglossus japonicus but head smaller, its length 4.02-4.50 in SL; upper eye closer to the dorsal margin of head; teeth in both jaws in 2 rows (inner row teeth very small and covered by membrane); scales on ocular side feebly ctenoid; 63-68 lateral line scales; caudal fin pointed.

Colour: Body nearly transparent, uniformly light brownish with dark brownish peritoneum; no dark blotch on pectoral and pelvic fins.

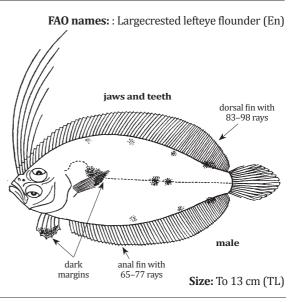
Bothus myriaster (Temminck & Schlegel, 1846)

Local name(s): Be' Myet Lone Khway Sharr. Habitat: Lives on mud bottoms at depths of 10 to 155 m.

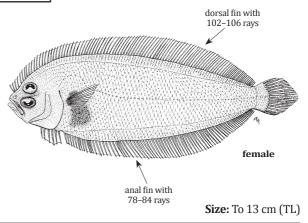
#### Fisheries: Bottom trawls.

Distinctive Characters: Body deep and compressed, its depth 1.6-2.0 in SL; interorbital region broad and concave, wider in males than females; maxilla reaching to or slightly beyond anterior margin of lower eye; teeth in upper jaw biserial; pectoral fin on eyed side with 8-10 rays, longer in males than females; males with a strong rostral spine and smaller spines around orbits; eve of adult males with a broad flap on posterior edge; scales mostly cycloid on eyed side, cycloid on blind side.

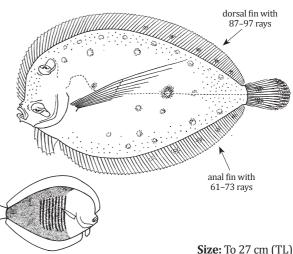
Colour: Eyed side brown with many dark spots; a dark brown blotch above junction of straight and curved portions of lateral line and another on middle of straight section of lateral line; margin of caudal fin blackish; pectoral fin of eyed side with faint cross bars.







FAO names: Oval flounder (En)



blind side of male

Size: To 27 cm (TL)

#### Chascanopsetta lugubris Alcock, 1894

**Local name(s):** Be' Myet Lone Khway Sharr. **Habitat:** benthic fish that occurs from 120 m down to 977 m depth.

Fisheries: Bottom trawls.

**Distinctive Characters:** Body rather elongate, and thin; interorbital space narrow; maxilla long (70% of head length or rather) extending backward well beyond posterior edge of eye; teeth small, slender (no distinct canines), depressible on lower jaw; gill rakers absent, although 1 or 2 rudiments may be present on lower limb of 1st arch; scales small, cycloid on both sides, about 190 in lateral line.

**Colour:** Eyed side greyish or yellowish brown, with or without numerous spots; fins dusky; peritoneum black, visible through the thin abdominal walls. blind side uniformly light.

#### Crossorhombus azureus (Alcock, 1889)

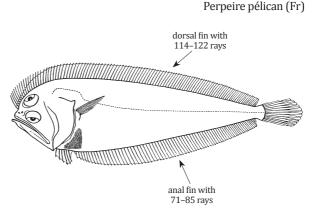
Local name(s): Be' Myet Lone Khway Sharr.

**Habitat:** Lives on mud bottoms at depths of 13 to 60 m.

Fisheries: Bottom trawls.

**Distinctive Characters:** Body ovoid, its depth 1.7–2 in SL; interorbital region broad and concave, wider in males than females; maxilla reaching to or slightly beyond anterior margin of lower eye; teeth in upper jaw biserial; pectoral fin on eyed side with 11–14 rays, its length 1.3–1.6 in HL in both sexes; males with a rostral spine, 1–3 low bony bumps around orbits; eye of adult males with a flap on posterior edge.

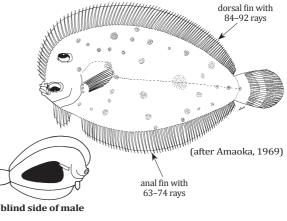
**Colour:** Eyed side brownish grey, with darker spots and blotches; caudal fin with 2 distinct dark bands; blind side whitish in females; males with distinct bluish black pyriform colour pattern on blind side.



Size: To 40 cm, common 25 cm (TL)

FAO names: : Pelican flounder (En)

FAO names: Blue flounder (En)



Size: To 18 cm (TL)

Engyprosopon grandisquama (Temminck and Schlegel, 1846)

FAO names: : Largescale flounder (En) Perpeire à grandes écailles (Fr)

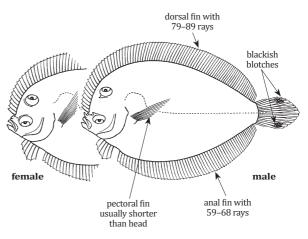
Local name(s): Be' Myet Lone Khway Sharr.

**Habitat:** Mud and sand bottoms on the continental shelf at depths of about 10–100 m.

#### Fisheries: Bottom trawls.

**Distinctive Characters:** Body deeply ovate and flat, its depth 1.63–1.86 in SL; in adults eyes separated by a more or less concave space (wider than one eye diameter); maxilla extending to below anterior edge of lower eye; teeth in upper jaw biserial; gill rakers on 1st gill arch short, not serrate, absent on upper limb, 5–8 on lower limb; scales large, with short ctenii on eyed side, cycloid on blind side; 36–48 scales in lateral line; adult males have spines on snout and on rim of each orbit, and a larger space between eyes than females.

**Colour:** Eyed side light brown; many dark spots and rings scattered on head and body; caudal fin with a pair of large prominent jet-black blotches.



2011y 1 131103

Size: To 11 cm, common 8 cm (SL)

#### Engyprosopon maldivense (Regan, 1908)

**Local name(s):** Be' Myet Lone Khway Sharr. **Habitat:** Sand and mud bottoms at depths of 30 to 215 m.

Fisheries: Bottom trawls.

**Distinctive Characters:** Similar to *Engyprosopon grandisquama* but body less deep, its depth 1.8–2.1 in SL; maxilla larger, extending to below anterior 1/3 of lower eye; pectoral rays elongated into filaments, longer than head length; rostral spine present in adult males but no spine on rim of each orbit; caudal fin lacking a pair of black blotches.

**Colour:** Eyed side pale brownish, with pale blotches on body.

#### Grammatobothus polyophthalmus (Bleeker, 1866)

**Local name(s):** Be' Myet Lone Khway Sharr. **Habitat:** Mud, sand, and rubble bottoms down to 90 m depth.

Fisheries: Bottom trawls.

**Distinctive Characters:** Body deeply ovoid and flat, its depth 1.5–1.8 in SL; interorbital region narrow, concave in both sexes; maxilla reaching to or slightly beyond anterior margin of lower eye; teeth in both jaws uniserial; gill rakers short, 7–8 gill rakers on lower limb of 1st gill arch; scales on eyed side ctenoid; scales on blind side cycloid; lateral line on both sides of body; pectoral fin filamentous in males. **Colour:** Eyed side pale brownish, with 3 large, prominent dark ocelli, 1 each above and below pectoral fin, 1 on middle of straight section of lateral line; head, body and fins with many small, distinct, dark spots.

#### Laeops guentheri Alcock, 1890

Local name(s): Be' Myet Lone Khway Sharr.

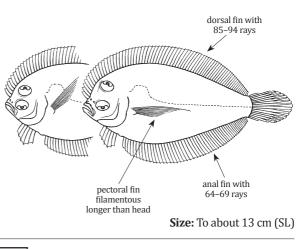
**Habitat:** Sand-mud, sometimes on sand-andbroken shell bottoms in depths of 15–329 m.

# Fisheries: Bottom trawls.

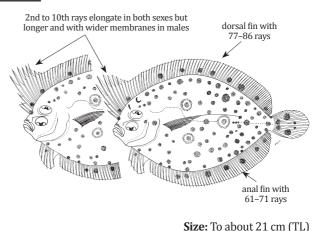
**Distinctive Characters:** Body lanceolate, moderately compressed, its depth 2.5–3.0 in SL; head length 4.3–5.0 in SL; interorbital region narrow with continous bony ridge; upper profile convex above and behind eye; mouth small, maxilla hardly reaching anterior edge of lower eye; all upper-jaw teeth and all lower-jaw teeth confined to blind side (true of all species of the genus); teeth in villiform bands; 6–8 small gill rakers on lower part of anterior arch; scales cycloid on both sides of body; dorsal fin origin above posterior nostril of blind side; 1st two rays detached from remainder of fin, none of the rays prolonged.

**Colour:** Pale brownish; dorsal and anal fins darker towards their margins; caudal dusky.

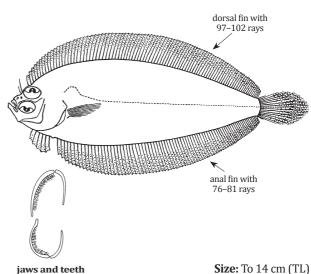
FAO names: Olive wide-eyed flounder (En)



#### FAO names: Many-eyed flounder (En)



FAO names: Günther's flounder (En)



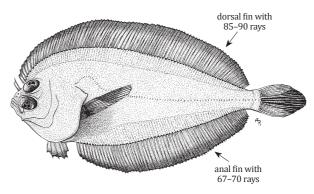
#### *Laeops macrophthalmus* (Alcock, 1889)

Local name(s): Be' Myet Lone Khway Sharr. Habitat: Soft bottoms to depths of 183 m. Fisheries: Bottom trawls.

**Distinctive Characters:** Similar to *Laeops guentheri* but deeper body, its depth ?-? in SL; fewer dorsal (85–90) and anal (67–70) fin rays; teeth uniserial; mouth larger, maxilla extending to beyond anterior edge of eye.

**Colour:** Brownish; dorsal and anal fins darker towards their margins ; middle rays of caudal and distal part of left pectoral dark brown or blackish.

#### FAO names: ??? flounder (En)



Size: To about 12 cm (TL)

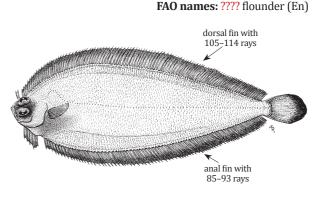
#### Laeops kitaharae (Smith & Pope, 1906)

**Local name(s):** Be' Myet Lone Khway Sharr. **Habitat:** Sand-mud, sometimes on sand-andbroken shell bottoms in depths of 15–329 m.

#### Fisheries: Bottom trawls.

**Distinctive Characters:** Similar to *Laeops guentheri* but head extremely small, its length 5.92–7.28 in SL; caudal peduncle more slender, its depth 2.12–2.73 in SL; more dorsal (105–114) and anal (85–93) fin rays; fewer gill rakers (about 4) on lower limb of 1st gill arch.

**Colour:** Pale brownish; dorsal and anal fins darker towards their margins; caudal dusky.



Size: To 20 cm (TL)

#### Psettina profunda (Weber, 1913)

**Local name(s):** Be' Myet Lone Khway Sharr. **Habitat:** Sand and mud bottoms at depths of 99–112 m.

#### Fisheries: Bottom trawls.

**Distinctive Characters:** Body elliptical, moderately compressed, its depth ?-?; interorbital region narrow with continous bony ridge; head length ?-? in SL; maxilla reaching to about ? of lower eye; a single row of teeth in jaws; no gill rakers on upper limb; scales small and not deciduous, strongly ctenoid on ocular side, blind side with cycloid scales (true of all species of the genus); ?-? lateral line scales; caudal fin rounded; pectoral fin with 5 rays on blind side; left pelvic fin very long, longest ray 1.7–1.8 in HL.

**Colour:** Eyed side pale brownish, with irregular black spots and blotches; dark spots along upper and lower edges of body not including bases of dorsal and anal fins; pectoral and caudal fins without blackish band.

dorsal fin with 90-95 rays

FAO names: Weber's deepwater flounder (En)

#### Psettina variegata (Fowler, 1934)

**Local name(s):** Be' Myet Lone Khway Sharr. **Habitat:** Sand and mud bottoms to depths of 112 m.

Fisheries: Bottom trawls.

**Distinctive Characters:** Similar to *Psettina profunda* but body more slender, its depth about 2.5–2.7 in SL; 7–8 gill rakers on lower limb of 1st gill arch; head 3.5 in SL; 72 lateral line scales; dark spots or blotches along upper and lower edges of body include basal parts of dorsal and anal fins; a dark

**Colour:** Eyed side pale brownish, with irregular black spots and blotches; a dark patch on distal part of pectoral fin; distal part of caudal fin with a broad blackish band.

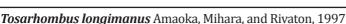
#### Tosarhombus nielseni Amaoka & Rivaton, 1991

**Local name(s):** Be' Myet Lone Khway Sharr. **Habitat:** Sand and mud bottoms at depths of 124–230 m.

Fisheries: Bottom trawls.

**Distinctive Characters:** Body ovate and flat; eyes separated by a wide concave space, broader in males than in females and young; males with a very short rostral spine (absent or feeble in females and young); no orbital spine; maxilla extending beyond anterior margin of lower eye; diameter of lower eye 4.0–4.9 in HL; teeth in upper jaw biserial; gill rakers on 1st gill arch moderate in length, pointed, not serrate, absent on upper limb, 8–9 on lower limb; scales moderate, deciduous with feeble ctenii on eyed side, cycloid on blind side; 66–70 scales in lateral line.

**Colour:** Females, uniform light brown; males, pale violet on middle part of body on ocular side.

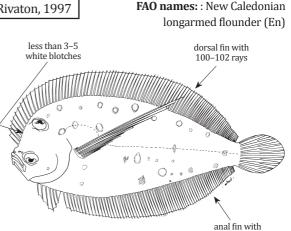


**Local name(s):** Be' Myet Lone Khway Sharr. **Habitat:** Sand and mud bottoms at depths of 217–310 m.

Fisheries: Bottom trawls.

**Distinctive Characters:** Similar to *Tosarhombus nielseni* but body shallower; pectoral fin on eyed side greatly elongate and much longer than head in males; 3–5 white blotches along head margin.

**Colour:** Light brown; anterior margin of head darkened; series of 3–5 white blotches along head margin in front upper eye; diffused dark blotch at junction of straight and curved parts of lateral line, and a few obscure dark blotches on straight portion of lateral line; many indistinct whitish markings on entire body, some with dark rings.

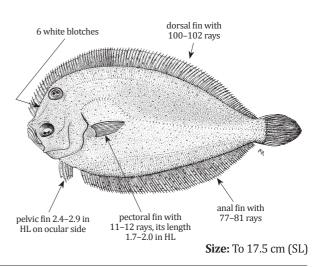


77–81 rays Size: To about 14 cm (SL)

FAO names: : Nielsen's flounder (En)

anal fin with 75-80 rays

Size: To 10 cm (SL)



## FAO names: Fowler's variegated flounder (En)

# POECILOPSETTIDAE

Small righteye flounders

#### Marlevella bicolorata (von Bonde, 1922)

Local name(s): Be' Myet Lone Khway Sharr. Habitat: Sand and mud bottoms to depths of 20-406 m

Fisheries: Bottom trawls.

Distinctive Characters: Body oval and strongly compressed; origin of dorsal fin above eyes, behind nasal organ on blind side; no tentacles on eves; anterior rays of dorsal and right ventral prolonged, especially in males; lateral line strongly curved over pectoral fin; teeth on outer surface of upper jaw in males; scales weakly ctenoid on eyed side, cycloid on blind side.

Colour: Eyed side dark brown, with black spots and blotches forming vague crossbars; dark bar on at caudal fin base: blind side dark brown.

#### Poecilopsetta colorata Günther, 1880

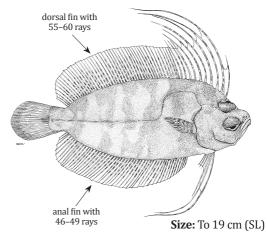
Local name(s): Be' Myet Lone Khway Sharr. Habitat: Sand and mud bottoms to depths of 214-800 m.

Fisheries: Bottom trawls.

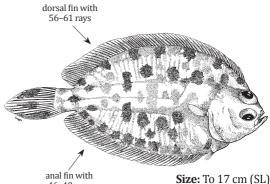
Distinctive Characters: Body oval and strongly compressed; origin of dorsal fin above eyes, behind nasal organ on blind side; eyes separated by a narrow bony ridge; no tentacles on eyes; no prolonged fin rays; lateral line strongly curved over pectoral fin; 90-109 lateral line scales.

**Colour:** Brownish to dusky grey, indistinct dusky spots on body, fins dusky; caudal fin with 2 distinct dusky spots

FAO names: Comb flounder (En)



FAO names: Coloured righteye flounder (En)



46-40 rays

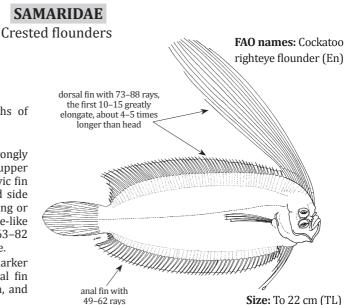


Local name(s): Nga Khway Sharr A Mouk. Habitat: Lives on sandy bottoms at depths of about 20 to 70 m.

#### Fisheries: Bottom trawls.

Distinctive Characters: Body elongated, strongly compressed; origin of dorsal fin in front of upper eye; anterior dorsal fin rays and rays of pelvic fin on eyed side elongate; pectoral fin on eyed side with 4 rays, pectoral fin on blind side missing or rudimentary; 1st pelvic fin ray with a paddle-like extension; all caudal fin rays unbranched; 63-82 lateral line scales; scales ctenoid on eved side.

Colour: Body on eved side brownish with darker spots and blotches; elongate anterior dorsal fin rays white, remainder of dorsal fin, anal fin, and caudal fin brown; blind side of body whitish.



#### Samaris macrolepis Norman, 1927

#### Local name(s): Nga Khway Sharr A Mouk.

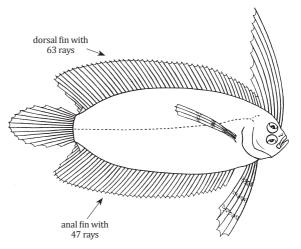
**Habitat:** Lives on sandy bottoms at depths of about 20 to 70 m.

Fisheries: Bottom trawls.

**Distinctive Characters:** Similar to *Samaris cristatus* but only first8 rays moderately prolonged, the first ray 2.5 in HL, others decreasing in height from first; fewer dorsal and anal fin rays; only 49 lateral line scales.

**Colour:** Brownish, mottled and spotted with paler and darker; median fins with brown spots; pelvic of ocular side with 3 narrow cross-bars

#### FAO names: Large-scale crested righteye flounder



Size: To about 5 cm (TL)

#### Samariscus huysmani Weber, 1913

Local name(s): Nga Khway Sharr A Mouk.

Habitat: Sandy bottoms at depths of about 98–122 m.

Fisheries: Bottom trawls.

**Distinctive Characters:** Body elongated, strongly compressed; origin of dorsal fin in front of upper eye; none of the rays of the dorsal or pelvic fins elongate and filamentous; head 4.4–4.7 in SL; caudal with the middle rays branched; 5 pectoral fin rays; 60–78 scales in lateral line; scales ctenoid on both sides.

**Colour:** Pale brownish, with a number of darker spots and rings, of which a row of 5 rings along upper edge and 4 along lower edge of body are most conspicuous; median fins paler, with traces of small brown spots; pectoral fin brown, its distal portion darker.

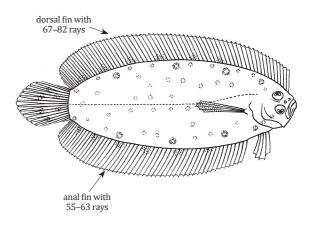
#### Samariscus maculatus (Günther, 1880)

Local name(s): Nga Khway Sharr A Mouk. Habitat: Known from a depth of 252 m. Fisheries: Bottom trawls.

**Distinctive Characters:** Similar to *Samariscus huysmani* but head larger, its length 3.7–4.0 in SL; anterior dorsal fin rays more widely spaced as the following; eyes larger and closer together, interorbital space 53.0 (vs 14.9–35.3) in HL.

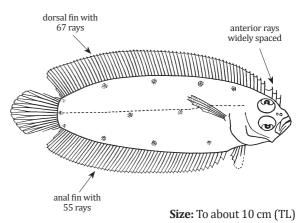
**Colour:** Pale brownish, with a series of 5 well separated black spots along upper edge of body, a similar row along lower edge, and a third, composed of 3 spots, along lateral line; median fins with irregular blackish dots and blackish margins; pectoral fin variegated with black

FAO names: Huysman's flounder (En)



Size: To about 12 cm (TL)

#### FAO names: Spotted righteye flounder (En)



# SOLEIDAE

Soles

#### Aesopia cornuta Kaup, 1858

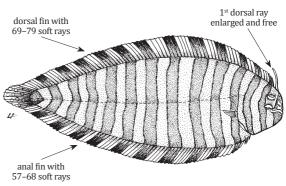
#### Local name(s): Nga Khway Sharr Kyarr.

Habitat: Benthic in coastal waters to at least 100 m. Fisheries: Bottom trawls.

**Distinctive Characters:** Body elongate, strongly compressed; dorsal and anal fins joined to caudal fin; 1<sup>st</sup> ray of dorsal fin enlarged and free; 11–15 pectoral fin rays; scales smooth, cycloid or weakly ctenoid on both sides.

**Colour:** Background colour greyish or brown with 15–16 black-edged dark bars; caudal fin blackish with pale or yellow spots.

#### FAO names: Unicorn sole (En)



Size: To 25 cm (SL)

FAO names: ??? sole (En)

#### Aseraggodes cyaneus (Alcock, 1890)

Local name(s): Nga Khway Sharr Kyarr.

**Habitat:** Sand and mud bottoms in depths of about 36–270 m.

Fisheries: Bottom trawls.

**Distinctive Characters:** Body oval, strongly compressed; caudal fin separate from dorsal and anal fins; pectoral fins absent; scales ctenoid on both sides of body; mouth extending to below middle of eye or beyond; upper eye greater than interorbital width, its diameter 6–8 in HL

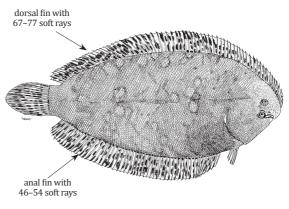
**Colour:** Body and fins on right side very dark olive, with some blackish flecks arranged in 5 cross series; blind side uniformly clouded with blueblack; dorsal and anal fins usually with blackish punctulations on the membranes.

#### Brachirus annularis Fowler, 1934

Local name(s): Nga Khway Sharr Kyarr. Habitat: Known from depths of 175–271 m. Fisheries: Bottom trawls.

**Distinctive Characters:** Body elongate, strongly compressed; dorsal and anal fins joined to caudal fin; opercular membrane joined to upper rays of pectoral fins to form a pocket; scales ctenoid on both sides of body; pectoral fin with 6–9 rays on ocular side and 8–9 on blind side; pectoral fins small, with unbranched elements.

**Colour:** Ocular side of body fawn with a regular pattern of 6–7 large pale brown annular patches, each patch outlined in dark brown, some extending onto fins; margins of fins dark brown.



Size: To 11 cm (TL)

FAO names: Annular sole (En)



anal fin with 56–59 soft rays

#### Dagetichthys commersonnii (Lacepède, 1802)

Local name(s): Nga Khway Sharr Kyarr.

**Habitat:** Inhabits mainly sand or mud bottoms in coastal waters.

Fisheries: Bottom trawls.

**Distinctive Characters:** Body elongate, compressed, broad anteriorly and tapering posteriorly; dorsal and anal fins joined to caudal fin; pectoral fins symmetrical in size; interorbital space scaly and narrow; mouth curved, cleft reaching posteriorly only to vertical through middle of upper eye; lower lip distinctly fringed; scales ctenoid on eyed side, cycloid on blind side; 12 caudal fin rays.

**Colour:** Grey or brown on eyed side of body; dorsal, anal, and caudal fins dusky towards edges of both sides and with a conspicuous white margin; pectoral fins dusky.

Dagetichthys albomaculatus (Kaup 1858)

Local name(s): Nga Khway Sharr Kyarr.

**Habitat:** Inhabits mainly sand or mud bottoms in coastal waters.

Fisheries: Bottom trawls.

**Distinctive Characters:** Body elongate, compressed, broad anteriorly and tapering posteriorly; dorsal and anal fins joined to caudal fin; pectoral fins symmetrical in size; interorbital space scaly and narrow; mouth curved, cleft extending to a little beyond middle of upper eye; lower lip distinctly fringed; scales ctenoid on eyed side, cycloid on blind side; 16 caudal fin rays.

**Colour:** Brownish with 2–5 rows of widely separated white spots; median fins blackish towards their edges on both sides, and with a narrow white margin; pectoral fin on ocular side blackish with a pale margin posteriorly.

#### Heteromycteris oculus (Alcock, 1889)

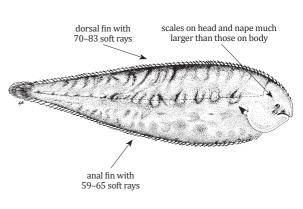
Local name(s): Nga Khway Sharr Kyarr.

**Habitat:** Inhabits mainly sand or mud bottoms in coastal waters.

Fisheries: Bottom trawls.

**Distinctive Characters:** Body oval, strongly compressed; caudal fin separate from dorsal and anal fins; pectoral fins absent; snout forming distinct hook; mouth inferior, markedly contorted; ocular side lips not fringed; scales not extending to bases of dorsal and anal fins.

**Colour:** Body and fins on right side very dark olive, with some blackish flecks arranged in 5 cross series; blind side uniformly clouded with blueblack; dorsal and anal fins usually with blackish punctulations on the membranes.

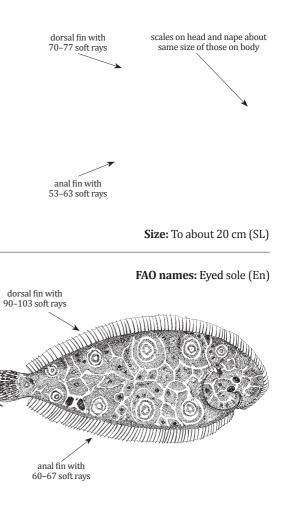


Size: To 32 cm, common 20 cm (TL)

FAO names: Kaup's sole (En)

FAO names: Commerson's sole(En)

Sole de Commerson (Fr)



Size: To 15 cm (TL)

#### Pardachirus pavoninus (Lacepède, 1802)

Local name(s): Khwar Sharr Myin Kyarr Hmee Kwet.

**Habitat:** Inhabits shallow sand or mud bottoms in coastal waters down to about 40 m.

#### Fisheries: Bottom trawls.

**Distinctive Characters:** Body oblong and very compressed; caudal fin separate from dorsal and anal fins; pectoral fins absent; pelvic fin bases unequal in length, the right one with an elongated base and attached posteriorly to genital papilla; series of toxin glands with pores along bases of dorsal- and anal fin rays.

**Colour:** Reddish brown, densely spotted on head; body and fins of eyed surface also with spots of various sizes and shapes, bordered by a dark rim and some with a blackish spot in centre.

#### Zebrias altipinnis (Alcock, 1890)

Local name(s): Khwar Sharr Myin Kyarr Hmee Kwet.

Habitat: Mud bottoms, in depths of 45 m.

Fisheries: Bottom trawls.

**Distinctive Characters:** Body elongate and flat; eyes nearly continguous, without tentacle; posterior rays of dorsal and anal fins completely joined to caudal fin; pectoral fins on ocular and blind side equal in length, about 6–8 in HL; scales moderately ctenoid on both sides of body.

**Colour:** Ocular side of body and fins pale striped with a number of alternate cross bands of purplebrown and ash-brown; caudal purple-brown, with large ash-brown blotches.

#### Zebrias quagga (Kaup, 1858)

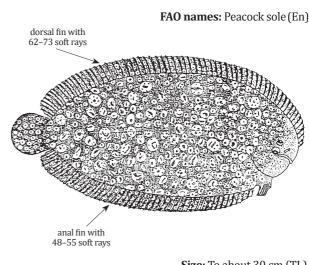
Local name(s): Khwar Sharr Myin Kyarr Hmee Kwet.

**Habitat:** Coastal waters, on sand and mud bottoms in deepths of 47–60 m.

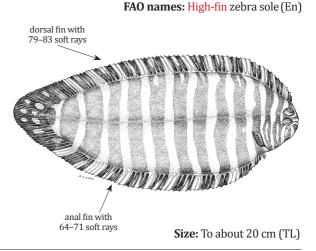
Fisheries: Bottom trawls.

**Distinctive Characters:** Body elongate and flat; eyes practically continguous; each eye with a small tentacle; posterior rays of dorsal and anal fins more or less completely joined to caudal fin; pectoral fins unequal in length; scales moderately ctenoid on both sides of body.

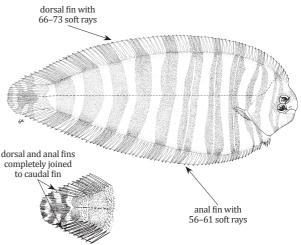
**Colour:** Light brown with 10 or 11 darker simple or double crossbands wider than pale interspaces, continued in oblique slant on dorsal and anal fins; posteriormost pale interspace whitish; caudal fin dark brown, with a narrow U-shaped whitish band on its base.



Size: To about 30 cm (TL)



FAO names: Fringefin zebra sole (En)



Size: To about 15 cm (TL)

#### Zebrias synapturoides (Jenkins, 1910)

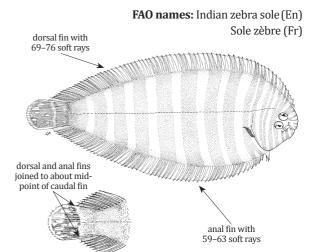
Local name(s): Khwar Sharr Myin Kyarr Hmee Kwet.

**Habitat:** Inhabits shallow sand/mud bottoms on the continental shelf and in estuaries.

Fisheries: Bottom trawls.

**Distinctive Characters:** Body elongate and flat; eyes nearly continguous, without tentacle; pectoral fin shorter than eye, with 11 rays on eyed side; pectoral fin on blind side rather smaller; scales strongly ctenoid on both sides of body.

**Colour:** Ocular side greyish, with 12–13 darker crossbars, broader than the interspaces; posterior part of caudal fin with a blackish circular area, margined with yellowish-white, and with a number of bright yellow spots and blotches in the centre.



Size: To 15 cm, common 10 cm (TL)

# CYNOGLOSSIDAE

Tonguesoles

#### Cynoglossus arel (Bloch & Schneider, 1801)

FAO names: Largescale tonguesole (En)

Local name(s): Nga Khway Sharr.

**Habitat:** Inhabits muddy and sandy bottoms on the continental shelf to depths of about 125 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Body elongate and flat; dorsal and anal fins joined to caudal fin interorbital space small scaly; snout obtusely pointed; corner of mouth extending posteriorly to or beyond lower eye, about midway between gill opening and tip of snout; scales large, ctenoid on eyed side of body, cycloid on blind side; usually 10 caudal fin rays. **Colour:** Eyed side uniform brown, with a dark

patch on gill cover; blind side white.

#### Cynoglossus carpenteri Alcock, 1889

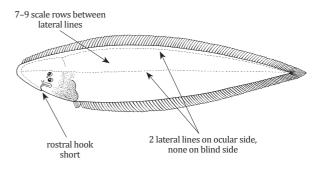
#### Local name(s): Nga Khway Sharr.

**Habitat:** Inhabits muddy and sandy bottoms at depths of about 120–450 m.

#### Fisheries: Bottom trawls.

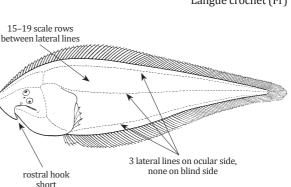
**Distinctive Characters:** Body elongate and flat; interorbital space small scaly; snout obtusely pointed; corner of mouth extending posteriorly to well beyond lower eye, either slightly nearer to gill opening than to tip of snout or midway between them; scales cycloid on ocular side, except on posterior part of body where they are ctenoid; scales all cycloid on blind side; usually 10 caudal fin rays.

**Colour:** Upper side brownish, with darker opercular region; blind side whitish.



Size: To 38 cm, common 20–30 cm (TL)

#### FAO names: Hooked tonguesole (En) Langue crochet (Fr)



#### Size: To 23 cm, common 15 cm (TL)

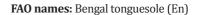
#### Cynoglossus cynoglossus (Hamilton, 1822)

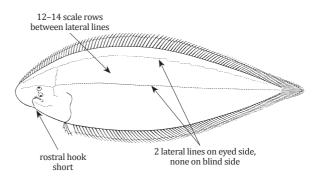
#### Local name(s): Nga Khway Sharr.

Habitat: Inhabits muddy and sandy bottoms, often in shallow areas, including brackish waters. Fisheries: Bottom trawls.

**Distinctive Characters:** Body elongate and flat; eyes not contiguous; snout rounded; corner of mouth not reaching posteriorly beyond vertical through posterior margin of lower eye, nearer to tip of snout than to gill opening; scales on both sides of body ctenoid; usually 10 caudal fin rays.

**Colour:** Eyed side uniformly brown-grey, with vague dark marbling.





Size: To 20 cm, common 10-15 cm (TL)

FAO names: Shortheaded tonguesole (En)

Cynoglossus kopsii (Bleeker, 1851)

#### Local name(s): Nga Khway Sharr.

**Habitat:** Inhabits muddy and sandy bottoms at depths of about 24–204 m.

#### Fisheries: Bottom trawls.

**Distinctive Characters:** Body elongate and flat; eyes relatively large and contiguous; snout short rounded to somewhat obtusely pointed; corner of mouth extending to below vertical from anterior half of fixed eye, much nearer to tip of snout than to gill opening; scales on both sides of body ctenoid; 10 caudal fin rays.

**Colour:** Eyed side reddish brown, sometimes with irregular brown-black patches; a large black blotch on gill cover.

**Remarks:** Recorded at Ranong (Thailand) near border with Myanmar.

#### Cynoglossus lingua Hamilton, 1822

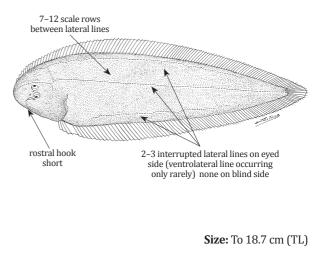
#### Local name(s): Nga Khway Sharr.

**Habitat:** Inhabits mainly shallow muddy and sandy bottoms on the inner continental shelf, often entering estuaries

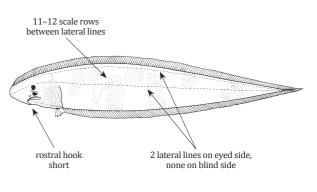
#### Fisheries: Bottom trawls.

**Distinctive Characters:** Body elongate and flat; eyes with a small interorbital space; snout obtusely pointed; corner of mouth reaching well beyond vertical through posterior margin of lower eye, much nearer to gill opening than to tip of snout; scales comparatively large, ctenoid on eyed side of body, cycloid on blind side; 10 caudal fin rays.

**Colour:** Eyed side reddish brown, sometimes with irregular brown-black patches; a large black blotch on gill cover.



FAO names: Long tonguesole (En)



Size: To 40 cm, common 20-30 cm (TL)

#### Cynoglossus macrostomus Norman, 1928

#### Local name(s): Nga Khway Sharr.

**Habitat:** Shallow muddy and sandy bottoms of the continental shelf to depths of 25 m; enters estuaries.

#### Fisheries: Bottom trawls.

**Distinctive Characters:** Body flat and elongate; eyes with no space between them; snout short and obtusely pointed; corner of mouth reaching well beyond lower eye, and nearer to tip of snout than to gill opening; scales moderate in size, ctenoid on both sides of body; 10 caudal fin rays.

**Colour:** Light brown on eyed side with dark brown mottling forming diffuse, irregular cross-bands; dorsal and anal fins grey or black.

#### Cynoglossus puncticeps (Richardson, 1846

#### Local name(s): Nga Khway Sharr.

**Habitat:** Found on the continental shelf over sandy and muddy bottoms to about 140 m; also in lower courses of rivers and in estuaries.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Body elongate and flat; a small scaly interorbital space; snout rounded; corner of jaws not reaching posteriorly beyond vertical through posterior margin of lower eye, a little nearer to tip of snout than to gill opening; scales ctenoid on both sides of body; usually 10 caudal fin rays.

**Colour:** Eyed side yellow-brown, with very distinct irregular dark brown blotches, often forming irregular cross bands; some rays of dorsal and anal fins dashed with dark brown.

#### Cynoglossus quadrilineatus (Bleeker, 1851)

#### Local name(s): Nga Khway Sharr.

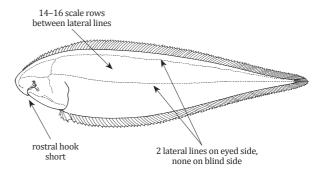
**Habitat:** Inhabits muddy and sandy bottoms on the inner continental shelf to about 80 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Body elongate and flat; a small scaly interorbital space; snout rounded; corner of mouth reaching posteriorly beyond lower eye, nearer to gill opening than to tip of snout; scales ctenoid on eyed side of body, cycloid on blind side; usually 12 caudal fin rays.

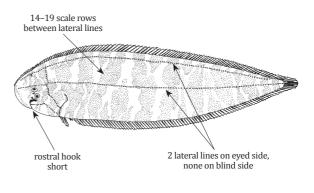
**Colour:** Eyed side brown with an irregular dark blotch on gill cover; blind side white.

**Remarks:** *Cynoglossus bilineatus* (Lacepède 1802) is a junior synonym of this species.



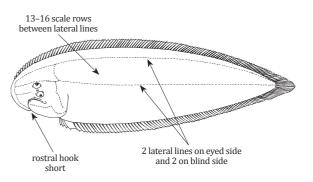
Size: To 17 cm, common 15 cm (TL)

#### FAO names: Speckled tonguesole (En) Langue tachetée (Fr)



Size: To 18 cm, common 8-10 cm (TL)

#### FAO names: Fourlined tonguesole (En)



# FAO names: Malabar tonguesole (En)

553

#### FAO names: Andaman tonguesole (En)

#### Cynoglossus sp.

Local name(s): Nga Khway Sharr. Habitat: Collected at 116 m depth. Fisheries: Bottom trawls.

**Distinctive Characters:** Body elongate and flat; eyes with a small interorbital space; snout rounded; corner of mouth extending slightly beyond to posterior margin of lower eye, nearer to tip of snout than to gill opening; scales ? on eyed side of body, ? on blind side; 7 caudal fin rays.

**Colour:** Eyed side reddish brown; abdomen region nearly black; blind side white; dorsal and anal fins black.

**Remarks:** Possibly an undescribed species presently being studied by Munroe and Psomadakis.

#### Paraplagusia bilineata (Bloch, 1787)

Local name(s): Nga Khway Sharr.

**Habitat:** Inhabits muddy and sandy bottoms on the inner continental shelf; also in estuaries.

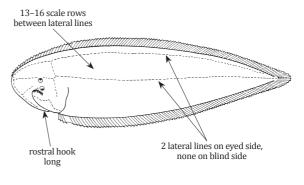
Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Body flat and elongate; a small scaly interorbital space; snout rounded; corner of mouth not reaching beyond vertical through posterior margin of lower eye, nearer to gill opening than to tip of snout; mouth fringed with branched labial papillae; scales ctenoid on both sides of body; 75–97 scales in midlateral line; usually 8 caudal fin rays.

**Colour:** Eyed side brown with pale ocelli and sometimes spotted or marbled with darker patches; blind side tinged with yellow.

Size: To about 18 cm (TL)

#### FAO names: Doublelined tonguesole (En) Langue a deux ligne (Fr)



Size: To 30 cm, common 25 cm (TL)

#### TRIACANTHODIDAE

Spikefishes

FAO names: Longsnout spikefish (En)

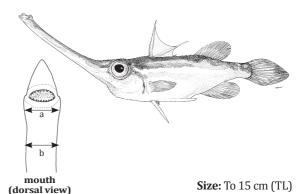
Local name(s): Nga Suu Htoe.

Habitat: Demersal between depths of 99–527 m. Fisheries: Bottom trawls, as bycatch.

Halimochirurgus centriscoides Alcock, 1899

**Distinctive Characters:** Snout extremely long and tubular, its length much greater than that of rest of head; width of mouth immediately behind snout (a) equal to, or only slightly greater than, snout width (b); mouth symmetrically placed, not twisted to one side or the other; teeth conical in both jaws, often mostly embedded and difficult to see; third dorsal fin spine usually barely protruding through surface of skin, occasionally better developed but still less than 1/2 length of second.

Colour: Uniformly reddish or orange.



#### Macrorhamphosodes platycheilus Fowler, 1934

#### FAO names: Trumpetsnout spikefish (En)

#### Local name(s): Nga Suu Htoe.

Habitat: Demersal between depths of 99–527 m. Fisheries: Bottom trawls, as bycatch.

**Distinctive Characters:** Snout extremely long and tubular, its length much greater than that of rest of head; width of mouth immediately behind snout (a) about twice the snout width (b); mouth usually twisted to either the right or left, except in small specimens; teeth in lower jaw easily seen; gill opening extending ventrally to between levels of 3/4 down pectoral fin base and below pectoral fin base; third dorsal fin spine moderately well developed, about 2/3 length of second.

**Colour:** Upper half of head and body reddish brown; lower half silvery.

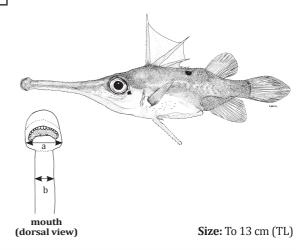
#### Mephisto fraserbrunneri Tyler, 1966

Local name(s): Nga Suu Htoe.

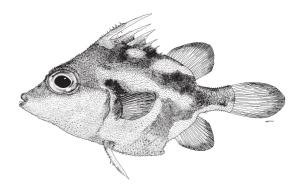
Habitat: Demersal between depths of 70–337 m. Fisheries: Bottom trawls, as bycatch.

**Distinctive Characters:** Deep body, depth about half of SL; short snout; origin of anal fin distinctly posterior to origin of soft dorsal fin; 6 dorsal spines, decreasing in length from first to last; conical teeth in both jaws.

**Colour:** Head and body pinkish red except for the silvery pale area bordering the abdominal cavity laterally; the pinkish color becoming deeper dorsally and blotched with darker red.



#### FAO names: Fraser-Brunner's spikefish (En)



Size: To 10 cm (SL)

#### Mephisto albomaculosus Matsuura, Psomadakis & Mya Than Thun, 2018

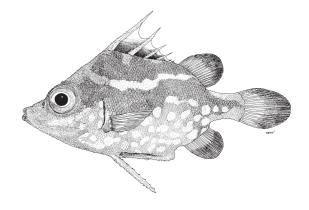
FAO names: White spotted spikefish (En)

#### Local name(s): Nga Suu Htoe.

Habitat: Demersal between depths of 74–379 m. Fisheries: Bottom trawls, as bycatch.

**Distinctive Characters:** Similar to *Mephisto fraserbrunneri* but distinct white spots on ventral half of head and body; fewer pseudobranch lamellae (16 vs. 18–19); more teeth in jaws (25 on both jaws vs. 17 on upper and 19–20 in lower jaw); pelvis narrower (width 7.8% SL vs. 11.3–11.7% SL; pelvic width in pelvic length 4.0 vs. 2.7–2.8); central spinule of midbody scales with a bifurcate spinule at its base (vs. no bifurcate spinule).

**Colour:** Head and body pinkish red with many white spots on side of head and body below level of eye; long longitudinal white line running on dorsal half of side of body from just above eye to below sixth dorsal fin spine; basal third of spinous dorsal fin membrane dark red with pale margin; all other fins pale pink with distal third red.



#### Triacanthodes ethiops Alcock 1894

Local name(s): Nga Suu Htoe.

Habitat: Demersal between depths of 50-125 m. Fisheries: Bottom trawls, as bycatch.

Distinctive Characters: Deep body, depth about half of SL; snout shorter than rest of head, its length about equal to or shorter than orbit diameter: interorbital flat to slightly concave; teeth in 2 series in both jaws, a major series and an internal series of 1-6 (usually 2) isolated teeth.

Colour: Generally reddish, paler below; with 3 yellowish principal lines and 2 reddish-yellow supplemental lines, upper between dorsal fin base and uppermost principal line, lower between uppermost and middle principal lines at about mid-body posteriorly onto caudal peduncle.

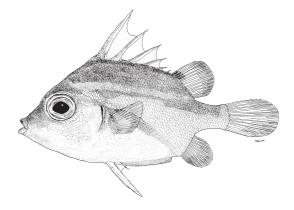
Tydemania navigatoris Weber, 1913

Local name(s): Nga Suu Htoe.

Habitat: Demersal between depths of 50-607 m. Fisheries: Bottom trawls, as bycatch.

Distinctive Characters: Snout shorter than rest of head, its length about equal to or shorter than orbit diameter; mouth supraterminal; teeth compressed from front to back, wider than thick, truncated distally; lips large, swollen, spongy to touch.

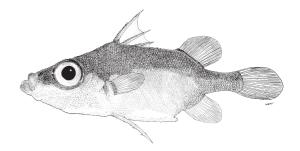
Colour: Reddish, darker above; some specimens with a blue stripe from eye through gill opening and pectoral base to halfway back on body.



Size: To 9 cm (SL)

FAO names: Fleshy-lipped spikefish (En)

FAO names: Shortsnout spikefish (En)



Size: To 12 cm (SL)

#### TRIACANTHIDAE

Tripodfishes

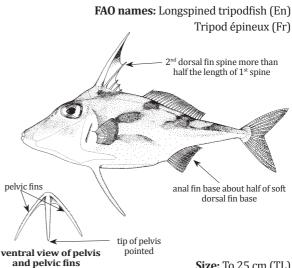
#### Pseudotriacanthus strigilifer (Cantor, 1849)

Local name(s): Nga Sin/ Thone Chaung Htouk. Habitat: Coastal and estuarine waters, over sandy or muddy substrates, to depths of usually 60 m, occasionally to 100 m.

Fisheries: Mainly bottom trawls, as bycatch.

Distinctive Characters: Scale-covered ventral surface of pelvis much wider anteriorly than posteriorly, distinctly tapered to a point.

Colour: Upper half of head and body dusky silver, and lower half silvery, with large, elongate, brown to orange blotches, usually with darker margins; distal two-thirds of 1<sup>st</sup> dorsal fin spine usually blackish; a dusky blotch on the pectoral fin.



Size: To 25 cm (TL)

#### Triacanthus biaculeatus (Bloch, 1786)

**Local name(s):** Nga Sin/ Thone Chaung Htouk. **Habitat:** Coastal and estuarine waters, over sandy or muddy substrate, to depths of 60 m.

Fisheries: Mainly bottom trawls, as bycatch.

**Distinctive Characters:** Scale-covered ventral surface of pelvis almost as wide anteriorly as posteriorly, not distinctly tapered to a point; outline of head from base of first dorsal fin spine to above eye an even slightly convex curve or almost a straight line; postorbital length about equal to diameter of orbi; spiny dorsal fin membrane black between first and third spines.

**Colour:** Upper side dusky silver and lower side creamy silver, with an indistinct silvery stripe along midside of body; spiny dorsal fin membrane very dark between 1<sup>st</sup> and 3<sup>rd</sup> spines, and usually equally dark between 3<sup>rd</sup> and 5<sup>th</sup> spines.

#### Triacanthus nieuhofii Bleeker, 1852

Local name(s): Nga Sin/ Thone Chaung Htouk. Habitat: Coastal, over sandy or muddy substrate. Fisheries: Mainly bottom trawls, as bycatch.

**Distinctive Characters:** Similar to *Triacanthus biaculeatus* but spiny dorsal fin membrane very black between 1<sup>st</sup> and 2<sup>nd</sup> spines, slightly to much less darker between 2<sup>nd</sup> and 3<sup>rd</sup> spines, and pale between 3<sup>rd</sup> and 5<sup>th</sup> spines; outline of head between base of 1<sup>st</sup> dorsal fin spine and eyes somewhat convex in front of spine and then straight or slightly concave over eye.

**Colour:** Dorsal half of body silvery light brown, ventral half silvery white; several irregular dark yellow blotches on mid-body; soft dorsal, anal and pectoral fins pale.

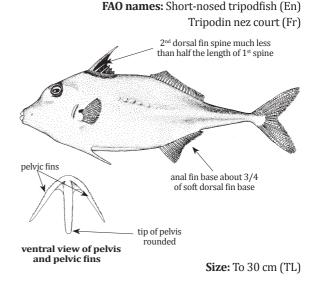
#### Tripodichthys oxycephalus Bleeker, 1851

**Local name(s):** Nga Sin/ Thone Chaung Htouk. **Habitat:** Coastal, over sandy or muddy substrate, to depths of 35 m.

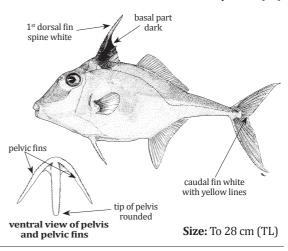
Fisheries: Mainly bottom trawls, as bycatch.

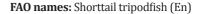
**Distinctive Characters:** Scale-covered ventral surface of pelvis much wider anteriorly than posteriorly, distinctly tapered to a point; anal fin base usually 1.5 to 1.7 times in soft dorsal fin base; pelvis wide between bases of pelvic fin spines, its width usually slightly less than 4 times in length of pelvis.

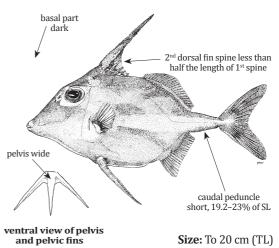
**Colour:** Silvery; snout and area beneath eye dusky; dusky blotches on back, above and behind pectoral fin, and from pectoral fin to middle of base of anal fin.



FAO names: Silver tripodfish (En)







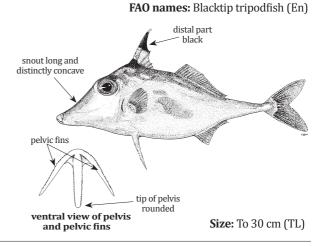
#### Trixiphichthys weberi (Chaudhuri, 1910)

Local name(s): Nga Sin/ Thone Chaung Htouk. Habitat: Coastal, over sandy or muddy substrate,

to depths of 65 m. **Fisheries:** Mainly bottom trawls, as bycatch.

**Distinctive Characters:** Scale-covered ventral surface of pelvis almost as wide anteriorly as posteriorly, not distinctly tapered to a point; postorbital distance (eye to upper end of gill opening) short (5.2 to 6.8% of SL), slightly more than 1/2 diameter of orbit; snout long (21.2 to 27.7% of SL), distinctly concave and much compressed anteriorly.

**Colour:** Silvery with diffuse dusky blotches on snout, back and sides.



**BALISTIDAE** Triggerfishes

#### Abalistes filamentosus Matsuura & Yoshino, 2004

Local name(s): Nga Than / Kha Loke Nga.

**Habitat:** Inhabits mud and silt sand bottoms between 61–180 m depth.

Fisheries: Gillnets, bottom trawls.

**Distinctive Characters:** Body moderately deep, compressed; 2 dorsal fins with 3 spines and 25–27 soft rays, respectively; 22–25 anal fin rays; scales enlarged above pectoral fin base and just behind gill opening to form a flexible tympanum; cheek with 3 or 4 longitudinal grooves; upper and lower rays of caudal fin greatly produced into filaments both in males and females; mouth terminal.

**Colour:** Ground color of body dark brown dorsally, mottled with irregular pale markings, becoming white ventrally; cheek brown with greenish tinge; proximal part of spinous dorsal fin dark brown.

#### Abalistes stellatus (Anonymous, 1798)

Local name(s): Nga Than / Kha Loke Nga.

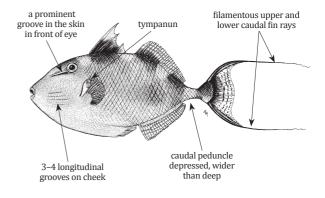
**Habitat:** Inhabits mud and silt sand bottoms to depths of 350 m. Also in estuaries.

Fisheries: Gillnets, bottom trawls.

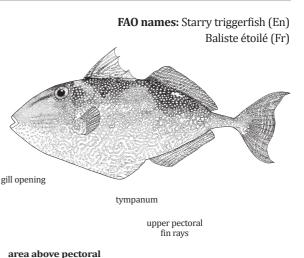
**Distinctive Characters:** Similar to *Abalistes filamentosus* but no filamentous rays in caudal fin; 26–27 and 24–26 dorsal and anal fin rays, respectively; no longitudinal grooves on cheeks; yellow/pale blue spots and yellow reticulations on the body.

**Colour:** Grey-brown to olivaceous on back, pale below, with small pale blue or yellow spots dorsally and larger yellow spots ventrally (frequently faint); 3 large white blotches on back, disappearing in large specimens; soft dorsal and anal fins with yellow, slightly oblique stripes; pectoral fins yellow.

FAO names: filamentous-fin triggerfish (En)



Size: To 32 cm (SL)



Size: To 60 cm, common 40 cm (TL)

fin base

#### Balistapus undulatus (Park, 1797)

Local name(s): Nga Than / Kha Loke Nga. Habitat: Coral reefs at depths to 30 m. Fisheries: Mainly gillnets.

**Distinctive Characters:** Body deep, compressed; 2 dorsal fins with 3 spines and 24–27 soft rays, respectively; 20–24 anal fin rays; tympanum present; scales of caudal peduncle with 2 longitudinal rows of large anteriorly projecting spines; no groove in front of eye; caudal peduncle compressed; mouth terminal.

**Colour:** Dark green to dark brown with oblique curved orange lines on posterior head and body; oblique band of narrow blue and orange stripes from around mouth to below pectoral fins; large round black blotch around peduncular spines; rays of soft dorsal, anal, and pectoral fins orange; caudal fin orange.

#### *Balistoides conspicillum* (Bloch and Schneider, 1801)

Local name(s): Nga Than / Kha Loke Nga. Habitat: Outer reef areas adjacent to steep drop-

offs at depths to 75 m.

Fisheries: Mainly gillnets.

**Distinctive Characters:** Body deep, compressed; 2 dorsal fins with 3 spines and 25–27 soft rays, respectively; 21–23 anal fin rays; scales of cheek in an even, relatively complete covering; tympanum present; 3 or 4 rows of small anteriorly projecting spines on caudal peduncle; prominent groove extending anteriorly from front of eye for a distance of about 1 eye diameter; mouth terminal.

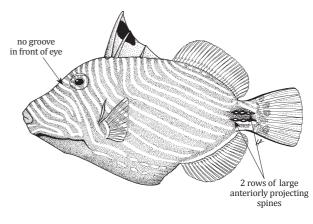
**Colour:** Black with large round white blotches on ventral half of body; a yellow network on back; white or yellowish band across snout in front of eye; lips and area around mouth orange-yellow; broad vertical white, slightly yellowish band on caudal fin.

#### Balistoides viridescens (Bloch and Schneider, 1801)

Local name(s): Nga Than / Kha Loke Nga. Habitat: Coral reefs at depths to 50 m. Fisheries: Mainly gillnets.

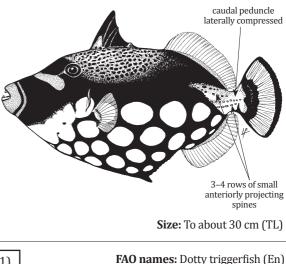
**Distinctive Characters:** Body deep, compressed; 2 dorsal fins with 3 spines and 25–26 soft rays, respectively; 22–24 anal fin rays; cheek covered with scales but scaleless area around lips, continuing and narrowing posterior to corner of mouth; tympanum present; prominent groove extending anteriorly from front of eye for a distance of about 1 eye diameter; mouth terminal.

**Colour:** Yellowish grey to brown, the centres of scales broadly dark brown or greenish; the area around anteriorly projecting spines pale; broad blackish band containing a pale line from above mouth to half-way across cheek; soft dorsal, anal, and caudal fins with broad blackish borders.



Size: To about 30 cm (TL)

FAO names: Clown triggerfish (En)



FAO names: Orangestriped triggerfish (En)

naked area

Size: To about 30 cm (TL)

caudal peduncle

laterally compressed

#### Canthidermis maculata (Bloch, 1786)

Local name(s): Nga Than / Kha Loke Nga. Habitat: Occurs in offshore waters. Fisheries: Driftnets.

**Distinctive Characters:** Body elongate; 2 dorsal fins with 3 spines and 23–26 rays, respectively; anal fin with 21–23 rays; mouth terminal; tympanum absent; cheeks evenly scaly; caudal fin double emarginate in adults (rounded in juveniles); mouth terminal.

**Colour:** Head, body and fins of adults dark, lighter below with elongated white spots that may disappear with growth.

#### Melichthys indicus Randall & Klausewitz, 1973

Local name(s): Nga Than / Kha Loke Nga. Habitat: Coral reefs at depths to 35 m. Fisheries: Mainly gillnets.

**Distinctive Characters:** Body deep, compressed; 2 dorsal fins with 3 spines and 31–35 soft rays, respectively; 27–30 anal fin rays upper and lower profiles of head prominently convex, giving the body a distinctive ovoide shape; cheek entirely covered with scales?; tympanum present; a groove in front of eye; caudal peduncle compressed; mouth terminal.

**Colour:** Body dark brown (sometimes bluish or violet in life), the posterior half of body with many longitudinal narrow yellow lines; bases of soft dorsal and anal fins with a distinct white line; dorsal, anal and caudal fins black with a narrow white margin; narrow blue bands radiating from eye.

#### Odonus niger (Rüppell, 1836)

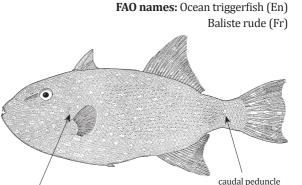
Local name(s): Nga Than / Kha Loke Nga.

**Habitat:** Occurs on current-swept seaward coral reefs to depths of 40 m.

Fisheries: mainly gillnets.

**Distinctive Characters:** Body deep, compressed; 2 dorsal fins with 3 spines and 33–36 rays, respectively; anal fin with 28–31 soft rays; 2 upper teeth projecting and canine-like; prominent groove in the skin in front of eye; caudal peduncle compressed laterally.

**Colour:** Blue to dark purplish blue; soft dorsal, anal and caudal fins margin light blue; teeth red



no tympanum

laterally compressed

Size: To 50 cm (TL)

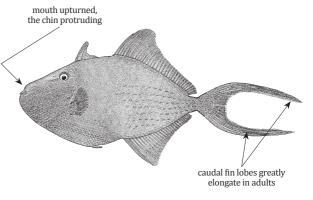
FAO names: Indian triggerfish (En)



Size: To 25 cm (TL)

FAO names: Red-toothed triggerfish (En)

Baliste dents rouges (Fr)



# Pseudobalistes flavimarginatus (Rüppell, 1828)

Local name(s): Nga Than / Kha Loke Nga. Habitat: Coral reefs at depths to 70 m. Fisheries: Mainly gillnets.

**Distinctive Characters:** Body deep, compressed; anterior part of cheek largely naked; 2 dorsal fins with 3 spines and 24–27 rays, respectively; anal fin with 23–25 rays; mouth terminal; tympanum present; small spines in 5 or 6 rows on side of, and a short distance anterior to, caudal peduncle; a prominent groove extending anteriorly from front of eye for a distance of about 1 eye diameter; caudal peduncle compressed, mouth terminal.

**Colour:** Light greyish yellow, the scale centres darker yellowish grey; anterior and ventral part of head orange-yellow; margins of soft dorsal, anal, and caudal fins orange-yellow.

# Pseudobalistes fuscus (Bloch & Schneider, 1801)

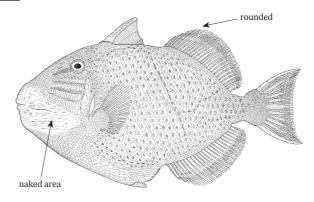
Local name(s): Nga Than / Kha Loke Nga. Habitat: Occurs solitary in coral reefs at depths to

77 m.

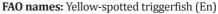
Fisheries: Gillnets, bottom trawls.

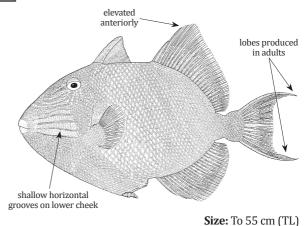
**Distinctive Characters:** Similar to *Pseudobalistes flavimarginatus* but no rows of spines on caudal peduncle; soft dorsal and anal fins elevated anteriorly; upper and lower caudal fin lobes produced in adults.

**Colour:** Deep blue to greyish blue with small yellow spots, these often forming irregular network; margins of soft dorsal, anal, and caudal fins light blue.



Size: To 60 cm cm (TL)





FAO names: Wedge-tail triggerfish (En)

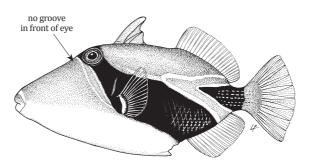
Rhinecanthus rectangulus (Bloch & Schneider, 1801)

Local name(s): Nga Than / Kha Loke Nga.

**Habitat:** Occurs in shallow outer reefs at depths to 20 m.

Fisheries: Mainly at gillnets.

**Distinctive Characters:** Body deep, compressed; 2 dorsal fins with 3 spines and 22–25 rays, respectively; anal fin with 20–22 rays; mouth terminal; tympanum present; no groove in front of eye; caudal peduncle with 4 rows of forwardly-curved small spines; caudal peduncle compressed. **Colour:** A broad, oblique black band running on side of body from eye through gill opening to anterior part of anal fin base; caudal peduncle with a black triangular blotch produced into a point below middle of soft dorsal fin.



FAO names: Yelloface triggerfish (En)

561

#### Sufflamen bursa (Bloch & Schneider, 1801)

Local name(s): Nga Than / Kha Loke Nga.

Habitat: Seaward reefs in mixed coral, sand, and rubble areas in depths of 3-90 m.

Fisheries: Mainly at gillnets.

562

Distinctive Characters: Body deep, compressed; 2 dorsal fins with 3 spines and 22-25 rays, respectively; anal fin with 20-22 rays; tympanum present; deep groove in front of eye; dorsal and ventral profiles of head nearly straight; series of longitudinal ridges (following scale rows) bearing small spiny tubercles on body, upper ridges extending to rear of pectoral fins.

Colour: Greyish to brown with white chin and belly, distinctive curved yellow to brownish band behind eye, similar-coloured bar above gill opening, and white diagonal line behind mouth.

Sufflamen chrysopterum (Bloch & Schneider, 1801)

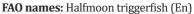
Local name(s): Nga Than / Kha Loke Nga.

Habitat: Lagoon and seaward reefs in depths of 2-30 m.

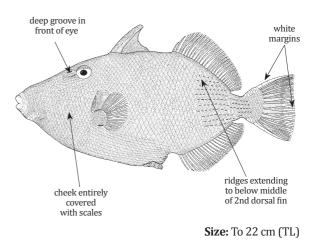
Fisheries: Mainly at gillnets.

Distinctive Characters: Body deep, compressed; 2 dorsal fins with 3 spines and 26-28 rays, respectively; anal fin with 23-26 rays; tympanum present; dorsal and ventral profiles of head nearly straight; series of longitudinal ridges (following scale rows) bearing small spiny tubercles on body, ridges extending forward to below middle of 2nd dorsal fin; caudal peduncle compressed.

Colour: Overall brown (bluish chin and belly in male); narrow yellow-orange to bluish bar behind eye; white-edged, yellow-brown triangular marking on caudal fin; capable of changing colour to overall light yellowish brown.



FAO names: Boomerang triggerfish (En)



# MONACANTHIDAE

Filefishes - Leatherjackets

#### Aluterus monoceros (Linnaeus, 1758)

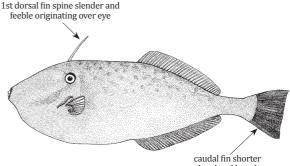
Local name(s): Nga Hlwar Parr/A Yae Htuu Nga. Habitat: Semi-pelagic on the continental shelf down to 88 m.

Fisheries: Driftnets, bottom trawls.

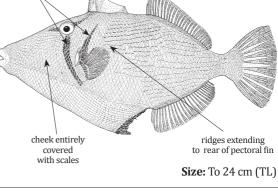
Distinctive Characters: Body moderately deep and compressed; dorsal fin with 2 anterior spines well separated from soft part of fin; 45–53 dorsal rays; anal fin with 47-53 soft rays; snout profile straight to convex; rudimentary pelvic spine plate-like in juveniles, disappearing in large specimens.

**Colour:** Uniform light grev to sandy or with darker blotches and spots; fins yellowish with caudal more dusky.

FAO names: Unicorn leatherjacket filefish (En) Bourse loulou (Fr)



than head length



2 black bands

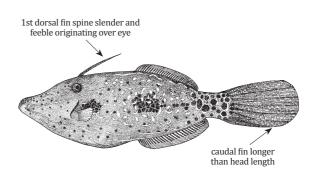
#### Aluterus scriptus (Osbeck, 1765)

Local name(s): Nga Hlwar Parr/A Yae Htuu Nga. Habitat: Lagoons and seaward reefs from 2–80 m. Fisheries: Driftnets, bottom trawls.

**Distinctive Characters:** Body elongate, strongly compressed; dorsal fin with 2 spines and 43–50 rays anal fin with 46–52 soft rays; snout profile prominently concave; spinous pelvic knob rudimentary or absent.

**Colour:** Ground colour olive brown to grey, with blue lines and dark spots; juveniles may be yellowish-brown with dark spots.

#### FAO names: Scribbled leatherjacket filefish (En)



Size: To 100 cm (TL)

#### Amanses scopas (Cuvier, 1829)

Local name(s): Nga Hlwar Parr/A Yae Htuu Nga. Habitat: Coral reefs in depth of 5–20 m. Fisheries: Mainly gillnets.

**Distinctive Characters:** Body deep and compressed; dorsal fin with 2 spines and 26–29 rays; anal rays 22–25; rudimentary pelvic spine fixed; dorsal profile of snout straight to slightly concave; males with 5–6 posteriorly directed, long spines in front of caudal peduncle; females with a toothbrush-like patch of bristles.

**Colour:** Body brown, darker on head, with several incomplete dark brown crossbars on middle of side.

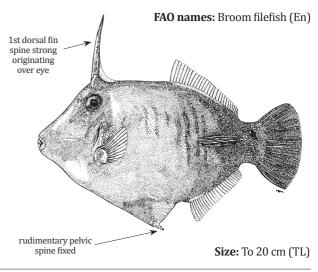
#### Anacanthus barbatus Gray, 1831

**Local name(s):** Nga Hlwar Parr/A Yae Htuu Nga. **Habitat:** Soft bottoms, near reefs, preferring areas of weeds and seawhips.

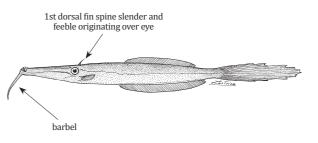
Fisheries: Driftnets, gillnets, bottom trawls.

**Distinctive Characters:** Body extremely elongate, its depth at anal fin origin about 10–11 in SL; dorsal fin with single feeble and inconspicuous spine and 26–29 rays; anal rays 22–25; gill opening about as long as eye, nearly horizontal, its posterior end below front edge of eye; fleshy barbel on chin; caudal fin rhomboidal.

**Colour:** Generally brownish with whitish stripe on dorsal midline-upper back from mouth to caudal fin base; brown stripe from snout to posterior body; whitish to yellow ventrally on head and body, often with brown reticulum; may also assume strongly blotched pattern.



#### FAO names: Barbled leatherjacket (En)



Local name(s): Nga Hlwar Parr/A Yae Htuu Nga. Habitat: Coral reefs in depth of 5–20 m. Fisheries: Mainly gillnets.

**Distinctive Characters:** Body deep and compressed; dorsal fin with 2 spines and 34–39 rays; anal rays 29–34; dorsal profile of snout nearly straight; 2 pairs of spines on each side on caudal peduncle (small in juveniles and adult females, enlarged and recurved in adult males); pelvic fin rudiment consisting of 3 pairs of encasing scales.

**Colour:** Pale grey to greenish brown with about 12–14 vertical dark bars on body, more evident posteriorly; lips whitish; soft dorsal, anal and pectoral fins pale yellowish; adult males with caudal fin, part of caudal peduncle, and peduncle spines orange.

*Cantherhines fronticinctus* (Günther, 1866)

**Local name(s):** Nga Hlwar Parr/A Yae Htuu Nga. **Habitat:** Outer reefs to 40 m depth, usually below 15 m.

Fisheries: Mainly gillnets.

**Distinctive Characters:** Similar to *Cantherhines dumerilii* but no peduncular spines; dorsal profile of snout concave, 32–35 dorsal rays; anal rays 30–32.

**Colour:** Brown, frequently with darker blotches around eye and on sides (those on sides often horizontally elongate); white bar across tail base.

#### *Cantherhines pardalis* (Rüppell, 1837)

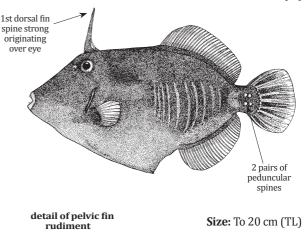
**Local name(s):** Nga Hlwar Parr/A Yae Htuu Nga. **Habitat:** Outer reefs in 2–20 m depth.

Fisheries: Mainly gillnets.

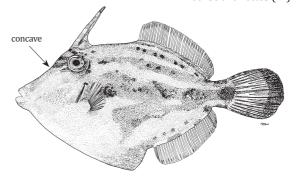
**Distinctive Characters:** Similar to *Cantherhines dumerilii* but males with a brush-like patch of setae on caudal peduncle; dorsal profile of snout slightly concave, 32–36 dorsal rays; anal rays 29–32.

**Colour:** Body bluish grey with bluish stripes on head; pale grey "honeycomb" network on body; usually white spot on upper caudal fin base.

FAO names: Whitespotted filefish (En) Bourse à taches blanches (Fr)



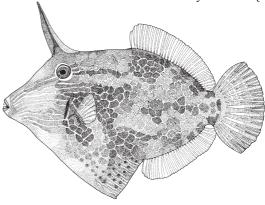
FAO names: Spectacled filefish (En) Bourse à lunettes (Fr)



Size: To 24 cm (TL)

Bourse rayon de miel (Fr)

FAO names: Honeycomb filefish (En)



Size: To 25 cm (TL)

#### *Oxymonacanthus longirostris* (Bloch and Scheider, 1801)

**Local name(s):** Nga Hlwar Parr/A Yae Htuu Nga. **Habitat:** Lagoon and seaward reefs in depths of 1–35 m.

**Fisheries:** Mainly gillnets, popular aquarium fish. **Distinctive Characters:** Body relatively elongate; dorsal fin with 2 spines and 31–35 rays; anal fin rays 29–32; snout produced into a tube, turning upwards at mouth; pelvic fin rudiment small and non-movable.

**Colour:** Body green with 6–7 rows of orange spots, and black spot or bar on posterior caudal fin; males with white-spotted black patch on pelvic flap; females sometimes with black colouration on flap, but lacking white spots.

#### Paramonacanthus pusillus (Rüppell, 1829)

Local name(s): Nga Hlwar Parr/A Yae Htuu Nga. Habitat: Mud or sand bottoms in 28–79 m. Fisheries: Bottom trawls.

**Distinctive Characters:** Females relatively deepbodied with straight to slightly convex snouts and low fins; males more slender with convex snouts, usually with prominent hump in front of nostrils, and elevated soft dorsal and anal fins; dorsal fin with 2 spines and 25–30 rays; anal rays 24–29; 11–13 pectoral fin rays; 2nd dorsal and anal fins elevated anteriorly; posterior margin of ventral flap concave; movably articulated pelvic fin rudiment extending rearwards of flap; upper and lower lobe of caudal fin filamentous in male; caudal peduncle lacking bristles or spines.

**Colour:** Greyish on dorsal half with 3–4 broad, diffuse brown stripes, grading to white on ventral portion of head and body.

#### Paramonacanthus tricuspis (Hollard, 1854)

Local name(s): Nga Hlwar Parr/A Yae Htuu Nga. Habitat: Mud or sand bottoms in 10–78 m depth. Fisheries: Bottom trawls.

**Distinctive Characters:** Similar to *Paramonacanthus pusillus* but 26–29 and 27–30 dorsal and anal fins, respecively; 11–12 (mostly 12) pectoral fin rays; 1st dorsal spine originating over posterior third of eye, or slightly behind eye; dorsal profile of snout straight to convex in males, rarely with obvious hump in front of nostrils, straight to slightly concave in females and juveniles; only upper lobe of caudal fin filamentous in males.

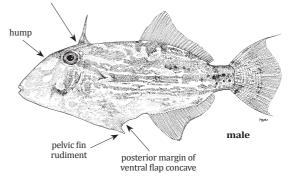
Colour: Variable brownish to yellow.



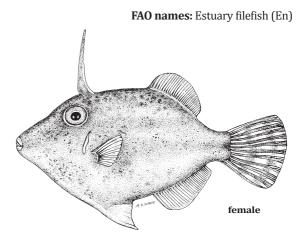
Size: To 10 cm (TL)

#### FAO names: Sinhalese leatherjacket (En)

1st dorsal fin spine originating over posterior half of eye, or slightly behind eye



Size: To 19 cm (SL)



#### FAO names: Harlequin filefish (En)

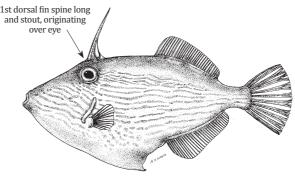
#### Thamnaconus multilineatus (Tanaka, 1918)

Local name(s): Nga Hlwar Parr/A Yae Htuu Nga. Habitat: Mud or sand bottoms in 58–117 m depth. Fisheries: Bottom trawls.

**Distinctive Characters:** Body deep and compressed; dorsal fin with 2 spines and 32–33 rays; anal rays 30–32; rudimentary pelvic spine fixed; soft dorsal and anal fins noticeably higher anteriorly, projecting prominently rearward of ventral flap; caudal peduncle unarmed.

**Colour:** Brownish grey with wavy horizontal dark brown lines covering entire head and body except dorsal- and ventralmost parts, the lines breaking into elongate spots ventrally.

#### FAO names: ??? filefish (En)



Size: To 26 cm (TL)

#### **OSTRACIIDAE**

Boxfishes

Lactoria cornuta (Linnaeus, 1758)

Local name(s): Nga Nwarr / Thit Tar Nga.

Habitat: Coastal on coral and rocky reefs, to depths of 100 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** A sharp, strong spine projecting anteriorly from upper edge of each eye (true of all species in the genus); a second pair of spines extending posteriorly from posteroventral edge of carapace (also generic); caudal fin greatly elongate, one half to two-thirds of carapace length.

**Colour:** Body yellowish brown with light blue spots on sides; dorsal, anal and pectoral fins pale; caudal fin yellowish with light blue spots.

Lactoria diaphana (Bloch and Schneider, 1801)

Local name(s): Nga Nwarr / Thit Tar Nga.

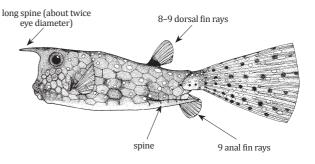
**Habitat:** Coastal on coral and rocky reefs, to a depth of 50 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** A short, strong spine extending anteriorly from upper edge of each eye; second pair of spines directed posteriorly, one on each side of lower rear edge of carapace; small thorn-like spine on middle of back, dorsal profile of snout steep and concave; ventral profile of carapace broadly rounded; caudal fin slightly rounded.

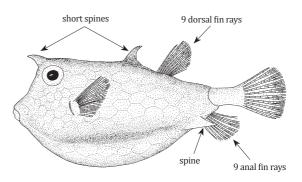
**Colour:** Pale greenish grey with brown blotching and fine "honeycomb" reticulum.

FAO names: Longhorn cowfish (En)



Size: To 50 cm (TL)

FAO names: Roundbelly cowfish (En)



#### Ostracion cubicum Linnaeus, 1758

Local name(s): Nga Nwarr / Thit Tar Nga.

Habitat: Coastal on coral reefs and flat bottoms, to a depth of 75 m.

Fisheries: Bottom trawls, gillnets.

Distinctive Characters: Carapace quadrangular in cross section without spines (true of all species in the genus); back gently convex without median dorsal ridge; large adults with a bump on anterior part of snout; caudal fin rounded.

Colour: Body brownish yellow with white spots edged in black or rimmed with small black spots; small juveniles bright yellow with round small balck spots.

#### Ostracion meleagris Shaw, 1796

Local name(s): Nga Nwarr / Thit Tar Nga.

Habitat: Coastal, lagoon, and outer reefs down to 30 m depth.

Fisheries: Bottom trawls, gillnets, seines.

Distinctive Characters: Carapace guadrangular in cross section without spines; back gently convex without median dorsal ridge; dorsal profile of snout more or less straight, without bony protuberance above upper lip; caudal fin rounded.

Colour: Males with white-spots on black back, bluish head and sides with bright vellow spots, and vellow stripe (often broken) on upper edge of carapace; females entirely dark brown to blackish with numerous white spots on head and body.

#### Ostracion nasus Bloch, 1785

Local name(s): Nga Nwarr / Thit Tar Nga.

Habitat: Sheltered bays exposed to heavy silt and mud bottoms in 340 m.

Fisheries: Bottom trawls, gillnets, seines.

Distinctive Characters: Carapace quadrangular in cross section without spines, becoming oval anteriorly, sides and ventral surface concave; dorsal ridge relatively high and conspicuous; anal fin overlapping level of posterior part of dorsal fin; profile of snout concave, produced into knob above mouth; caudal fin rounded.

Colour: Pale grey to yellowish with brown spots, usually one per hexagonal plate of carapace.

FAO names: Yellow trunkfish (En)

9 dorsal fin ravs

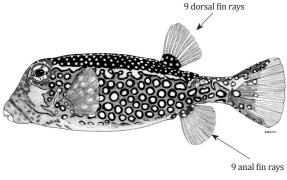




9 anal fin rays

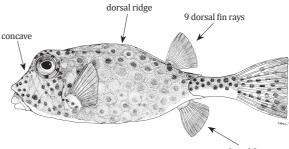
Size: To 45 cm (TL)

#### FAO names: Spotted boxfish (En)



Size: To 18 cm (TL)

FAO names: Shortnose boxfish (En)



9 anal fin rays

#### Ostracion rhinorhynchos Bleeker, 1851

Local name(s): Nga Nwarr / Thit Tar Nga.

**Habitat:** Coastal on coral reefs and flat bottoms, to a depth of 75 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Carapace quadrangular in cross section; no spines on carapace and no ridge on dorsal midline; a large protuberance on snout; ridges and back gently rounded; caudal fin rounded. **Colour:** Body blue-grey with blue lines bordering hexagonal bony plates of carapace; many small black spots on carapace; fins pale.

#### *Tetrosomus concatenatus* (Bloch 1785)

Local name(s): Nga Nwarr / Thit Tar Nga.

**Habitat:** Seagrass and weed bottoms of coastal reefs down to 60 m depth.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Carapace triangular in cross section with moderately elevated dorsal ridge containing two small spines on middle portion; dorsal profile of snout straight to slightly concave; caudal fin truncate to slightly rounded; juveniles with large spines along dorsal and ventral ridges.

**Colour:** Pale grey to yellowish brown with darker brown network of hexagons and small blue spots or large spots enclosing stellate pale lines.

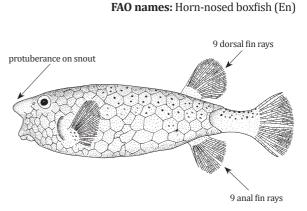
#### Tetrosomus gibbosus (Linnaeus, 1758)

**Local name(s):** Nga Nwarr / Thit Tar Nga. **Habitat:** Coastal, frequently found in seagrass beds and sandy bottoms to depths of 63 m.

Fisheries: Bottom trawls, gillnets.

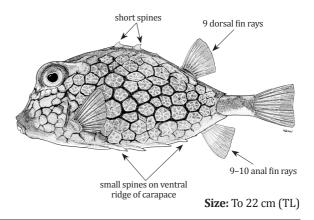
**Distinctive Characters:** Carapace triangular in cross-section with elevated dorsal ridge containing a strong spine and smaller ones on ventral ridges.

**Colour:** Body light brown to yellowish grey with brown network of hexagons and irregular blotches frequently found on side; dorsal, anal, and pectoral fins pale and caudal fin dusky.

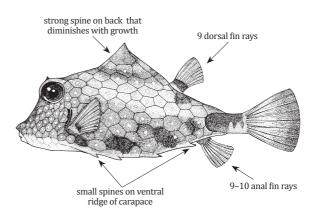


Size: To 35 cm (TL)

#### FAO names: Triangular boxfish (En)



FAO names: Humpback boxfish (En) Coffre bossu (Fr)



# TETRAODONTIDAE

#### Puffers

#### Arothron hispidus (Linnaeus, 1758)

#### Local name(s): Nga Pu Tinn Gyi.

**Habitat:** Mixed coral, sand, rubble, and weed bottoms down to 75 m depth.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Nasal organ with 2 bifid tentacles (true of all species in the genus); a single lateral line on side of body (also generic); head and body covered with small spinules except for snout and posterior caudal peduncle.

**Colour:** Body grey to greenish brown with white ring around eye (sometimes absent in large individuals); white spots on snout, upper side, and caudal fin base; white bands on belly (sometimes absent), and large white-edged, black spot (sometimes surrounding yellow concentric rings) around pectoral fin base.

#### Arothron immaculatus (Bloch & Schneider, 1801)



# 17-19 pectoral fin rays fin rays fin rays for a set of the set of

#### FAO names: Immaculate puffer (En)

#### Local name(s): Nga Pu Tinn Gyi.

**Habitat:** Coastal mangroves, seagrass beds, weedy areas, and silt bottoms near reefs in depths of 3–45 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Nasal organ with 2 bifid tentacles; a single lateral line on side of body; head and body covered with small spinules except around eye, gill opening, fins, and posterior caudal peduncle. **Colour:** Body pale grey to brown, grading to white on ventral surface, large yellowish-brown to nearly black spot surrounding pectoral fin base, and black-edged, yellow tail. Sometimes assumes mottled pattern.

#### Arothron manilensis (Marion de Procé, 1822)

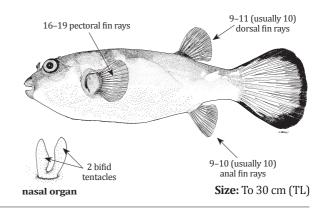
#### Local name(s): Nga Pu Tinn Gyi.

**Habitat:** Coastal seagrass beds, weedy areas, and sandsilt bottoms near reefs; juveniles in mangroves; in depths of 2–20 m.

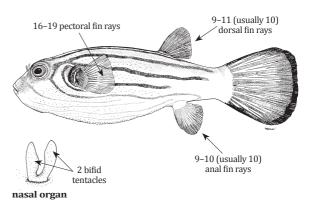
#### Fisheries: Mainly gillnets.

**Distinctive Characters:** Nasal organ with 2 bifid tentacles; a single lateral line on side of body; head and body covered with small spinules (may be embedded).

**Colour:** Brownish to greenish grey dorsally, whitish to pale yellowish ventrally, with several brown to yellowish longitudinal stripes on side, including one that sometimes arcs around front of pectoral fin base.



#### FAO names: Narrow-lined puffer (En)



**FAO names:** White-spotted puffer (En)

#### Arothron mappa (Lesson, 1831)

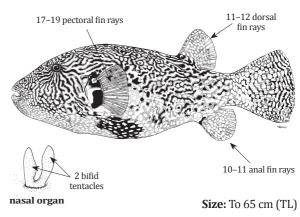
Local name(s): Nga Pu Tinn Gyi.

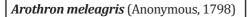
Habitat: Lagoon and seaward reefs in 4–30 m. Fisheries: Mainly gillnets.

**Distinctive Characters:** Nasal organ with 2 bifid tentacles; a single lateral line on side of body; head and body covered with small spinules except for snout and posterior part of caudal peduncle.

**Colour:** Yellowish grey with irregular maze of black bands, spoke-like marks around eye, irregular black botch around pectoral fin base, and extensive black blotch on belly.

# FAO names: Map puffer (En)





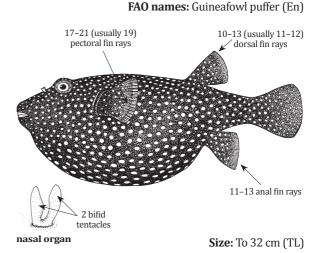
#### Local name(s): Nga Pu Tinn Gyi.

**Habitat:** Rich coral areas and rocky bottoms of coastal, lagoon, and outer reefs down to 15 m depth.

Fisheries: Mainly gillnets.

**Distinctive Characters:** Nasal organ with 2 bifid tentacles; a single lateral line on side of body; head and body covered with small spinules except around mouth, caudal peduncle, and variable area of back, spinules best developed on ventral surface.

**Colour:** Body black with small white spots covering head, body, and fins; less common variety entirely or mainly yellow.



Arothron nigropunctatus (Bloch & Schneider, 1801)

Local name(s): Nga Pu Tinn Gyi.

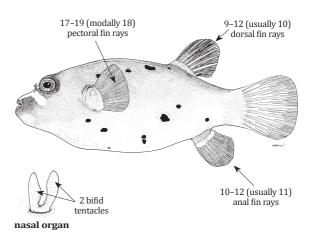
**Habitat:** Lagoon and seaward reefs in depths of 3-25 m.

Fisheries: Mainly gillnets.

**Distinctive Characters:** Nasal organ with 2 bifid tentacles; a single lateral line on side of body; head and body covered with small spinules except around mouth, caudal peduncle, and variable area of back, spinules best developed on ventral surface.

**Colour:** Body with variable pattern, often pale grey with dark patches around eye and on snout, white bar across top of snout, and widely scattered black spots. Sometimes with variable amount of yellow on head and body.

FAO names: Blackspotted puffer (En)



# Arothron stellatus (Anonymous, 1798)

#### Local name(s): Nga Pu Tinn Gyi.

**Habitat:** Adults on deep slopes and outer reefs; juveniles inshore, usually on muddy substrates and estuaries.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Nasal organ with 2 bifid tentacles; a single lateral line on side of body; small spinules on head and body except top of snout, base of fins, and side of caudal peduncle, the spinules most evident ventrally.

**Colour:** Adults white with small black spots on head, body, and caudal fin, those on pectoral fin base and around gill opening largest; juveniles yellow to orange with small black spots, the abdomen with broad, irregular, oblique, black bands.

#### Canthigaster papua (Bleeker, 1848)

Local name(s): Nga Pu Tinn Gyi. Habitat: Coral reefs to 35 m depth.

Fisheries: Mainly gillnets.

**Distinctive Characters:** Nasal organ barely visible without aid of magnification (true of all species in the genus); dorsal surface posterior to eyes distincly keeled (also generic); body moderately compressed, covered with scattered prickles; snout long and conical.

**Colour:** Reddish brown with small blue-white spots on head, body, and caudal fin, blue eye spokes, blue lines on snout and back, and prominent blue-edged black spot at dorsal fin base; also frequently orange at snout tip and around eye.

#### *Canthigaster petersii* (Bianconi, 1854)

Local name(s): Nga Pu Tinn Gyi.

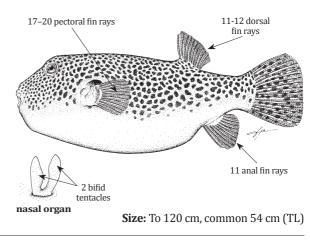
Habitat: Coral reefs in depths to 25 m.

Fisheries: Mainly gillnets.

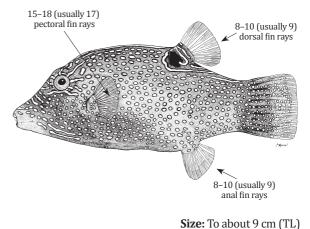
**Distinctive Characters:** Nasal organ barely visible without aid of magnification; dorsal surface posterior to eyes distincly keeled; body moderately compressed, covered with scattered prickles; snout long and conical.

**Colour:** Brown with numerous white spots on snout, side of body, and caudal fin, bluish-white lines mainly around eye region and on upper back, prominent white-edged black spot below dorsal fin base, and abruptly white belly.

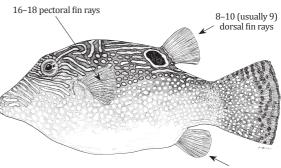
#### FAO names: Stellate puffer (En)







#### FAO names: Peter's toby (En)



8-10 anal fin rays

FAO names: ??? Toby (En)

#### Canthigaster punctata Matsuura, 1992

Local name(s): Nga Pu Tinn Gyi. Habitat: Coral reefs in depths to 92 m. Fisheries: Gillnets, bottom trawls.

572

**Distinctive Characters:** Nasal organ barely visible without aid of magnification; dorsal surface posterior to eyes distincly keeled; body covered with scattered prickles; snout long and conical; a raised skin fold on back extending from above posterior edge of eye to dorsal fin origin.

**Colour:** Dorsal half of body light brown with many small blue spots; an elongate horseshoe-shaped yellow band on side of body; ventral half of body white with many blue and yellow spots; snout with many yellow spots and irregular yellow lines;, caudal fin light yellow with several vertical blue lines; dark brown spot on upper and lower caudal fin base.

#### Canthigaster valentini (Bleeker, 1853)

Local name(s): Nga Pu Tinn Gyi.

Habitat: Coral reefs in depths to 92 m.

Fisheries: Gillnets, bottom trawls.

**Distinctive Characters:** Nasal organ barely visible without aid of magnification; dorsal surface posterior to eyes distincly keeled; body moderately compressed, covered with scattered prickles; snout long and conical.

**Colour:** Generally white with light brown spots and four dark brown to blackish saddles, two middle ones extending onto belly.

Chelonodontops alvheimi Psomadakis, Matsuura & Htun Thein, 2018

FAO names: Alvheim's pufferfish (En)

Size: To about 10 cm (TL)

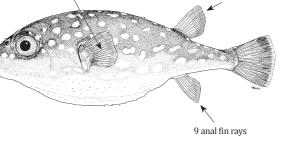
11 dorsal fin rays

#### Local name(s): Nga Pu Tinn Gyi.

Habitat: Deeper water in depths of 72–164 m. Fisheries: Bottom trawls.

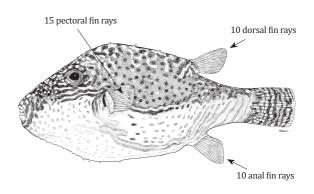
**Distinctive Characters:** Nasal organ a depression with a low rim and anterior and posterior flaps (true of all species in the genus); 2 lateral lines, the upper joining the lower in the region above or behind anal fin (also generic); patch of spinules on back from internarial region to dorsal fin origin and another on throat to anus; caudal peduncle slender, its depth 7.4–7.8% of SL; caudal fin short, its length 17.4–18.5% of SL.

**Colour:** Greenish brown with white spots on head and body; 3 indistinct dark cross bars on dorsum; iris bright yellow; dorsal, anal and pectoral fins hyaline; caudal fin brownish with irregular blakish band posteriorly and hyaline margin.



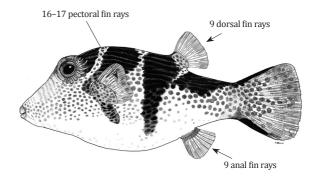
17-18 pectoral fin rays

Size: To about 11.7 cm (SL)



Size: To about 9 cm (TL)

FAO names: Black-saddled Toby (En)



#### Chelonodontops leopardus Day, 1878

Local name(s): Nga Pu Tinn Gyi.

Habitat: Deeper water in depths of 72-164 m. Fisheries: Bottom trawls.

Distinctive Characters: Similar to Chelonodontops alvheimi but patch of spinules on back from interorbital region to midpoint between pectoral fin and dorsal fin origin and another on throat to anus; caudal peduncle depth 12.2–15.2% of SL; caudal fin length 24.5-31.8% of SL.

Colour: Greenish brown with white spots on head and body; 3 indistinct dark cross bars on dorsum; dorsal, anal and pectoral fins dusky; caudal fin dark brown with several rows of vertical white spots.

#### Chelonodontops patoca (Hamilton, 1822)

#### Local name(s): Nga Pu Tinn Gyi.

Habitat: Inhabits coastal waters and enters the lower reaches of rivers and lagoons.

Fisheries: Bottom trawls, gillnets.

Distinctive Characters: Similar to Chelonodontops alvheimi but nasal organ a depression with anterior flap smaller than posterior flap; spinule patch on back extending from behind interorbital region nearly to just anterior to dorsal fin origin; usually 8 anal fin rays; caudal peduncle depth 12-15% of SL; caudal fin length 24.0-30.9% of SL.

Colour: Grey to brown dorsally with large round to ovate white spots (sometimes with dark centres), shading to white ventrally; a broad streak of vellow on lower side within the white ventral side.

#### Chonerhinos naritus (Richardson, 1848)

#### Local name(s): Nga Pu Tinn Gyi.

Habitat: Coastal and estuarine waters. Known to migrate towards rivers upstream for spawning. Fisheries: Bottom trawls, gillnets.

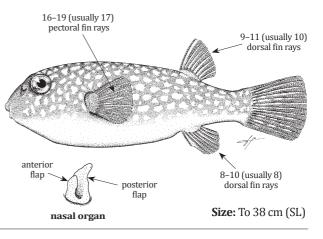
Distinctive Characters: Nasal organ with flaps greatly reduced and olfactory lamellae almost entirely exposed; 3 lateral lines on side of body; spinules restricted to ventral parts of head and body up to level of pectoral fin; dorsal and anal fins with long bases.

Colour: Extremely variable, from grey-brown dorsally, bright yellow ventrally to grey-brown dorsally, silvery-white ventrally; fins yellowish except basal parts of dorsal fin in both colour morphs.

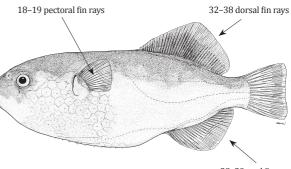


18-19 pectoral fin rays 11-12 dorsal fin rays (from Day, 1878) 8-9 anal fin rays

Size: To about 14.3 cm (SL)



#### FAO names: Yellow pufferfish (En)



28-29 anal fin rays

#### Lagocephalus cheesemanii (Clarke, 1897)

#### Local name(s): Nga Pu Tinn Gyi.

**Habitat:** Continental shelf over sandy or muddy bottoms; juveniles may occur in estuaries.

#### Fisheries: Bottom trawls.

**Distinctive Characters:** Nasal organ a tubular papilla set in a depression with a nostril at each end (applies to all species of the genus); 2 lateral lines, the lower in a ventrolateral ridge from front of chin to lower base of caudal fin (also generic); spinules on the back in a rhomboidal patch, extending from the region between nasal organ to posterior part of pectoral fin; ventral surface of head and belly covered with spinules; caudal fin double emarginate with middle rays posteriorly produced;

**Colour:** Back, dark brown to brownish-black; lower half of body silvery white with a yellowish tinge; dorsal and pectoral fins dark; anal fin pale; caudal fin dark brown to black with white tips.

#### Lagocephalus guentheri Miranda Ribeiro, 1915

Local name(s): Nga Pu Tinn Gyi.

Habitat: occurs mainly on the continental shelf. Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** A rhomboidal or ellipticalshaped spinule patch that extends posteriorly to the region dorsal to the posterior part of the pectoral fin; patch of spinules ventrally on body from below nostrils and ending a 1/2 to 2/3 eye diameter anterior to anus; caudal fin with a slight posterior extension medially that makes it appear to be double emarginate (only in fresh specimens).

**Colour:** Dorsal half of body light brown with several dusky bands; side of head and body broadly silvery; ventral part of body silvery white; dorsal fin dusky; pectoral and anal fins pale; gill opening black internally; caudal fin dark brown, the lobe tips white; dorsal fin dusky.

Lagocephalus inermis (Temminck & Schlegel, 1850)

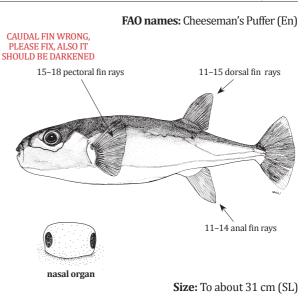
#### Local name(s): Nga Pu Tinn Gyi.

**Habitat:** Occurs mainly on the continental shelf edge.

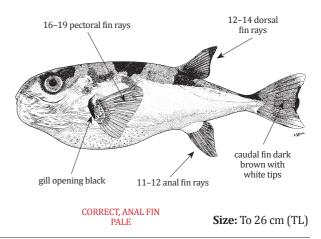
#### Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Minute embedded spinules on belly from below eye almost to anus, otherwise body and head smooth; ?? pectoral fin rays; caudal fin slightly concave.

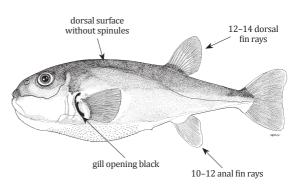
**Colour:** Greenish or dark grey above, lower half of body silvery white; gill opening black internally; distal third of dorsal fin dark; pectoral and anal fins pale; caudal fin dusky.



FAO names: Diamondback puffer (En)



FAO names: Smooth blaasop (En)



#### Lagocephalus lagocephalus (Linnaeus, 1758)

#### Local name(s): Nga Pu Tinn Gyi.

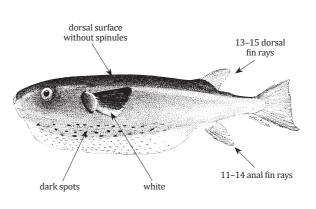
Habitat: Primarily pelagic but occasionaly entering estuaries.

Fisheries: Bottom trawls.

**Distinctive Characters:** Body smooth except for well-developed spinules on belly from chin to anus; 13–16 pectoral fin rays; caudal fin lunate, lower lobe longer than upper in adults.

**Colour:** Adults dark green, brownish grey, or blue above, white below; juveniles with about 9 bars on back, from eye to dorsal fin; dark spots on front and middle of belly and on side near pectoral base in specimens less than 33 cm; pectoral fins dark, except lower 1/3 of fin white.

#### FAO names: Oceanic puffer (En) Compère océanique (Fr)



Size: To 61 cm (TL)

# Lagocephalus lunaris (Bloch & Schneider, 1801)

#### Local name(s):

**Habitat:** Mainly marine, occasionally enters estuaries.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** A broad patch of spinules dorsally on head and body from above posterior edge of nostrils to origin of dorsal fin; patch of spinules ventrally on body from below anterior edge of eyes to below tip of pectoral fins; caudal fin deeply emarginate.

**Colour:** Grey dorsally without obvious dark markings, silvery on side and ventrally, sometimes with a golden sheen on lower side; caudal fin yellowish grey on upper half, the lower half bluish white.

#### *Lagocephalus spadiceus* (Richardson, 1845)

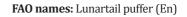
#### Local name(s):

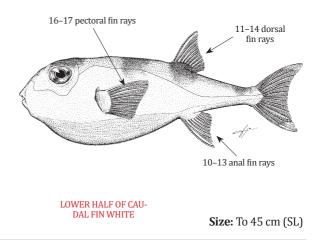
**Habitat:** Essentially an inhabitant of marine waters, but enters the mouths of rivers.

#### Fisheries: Bottom trawls, gillnets.

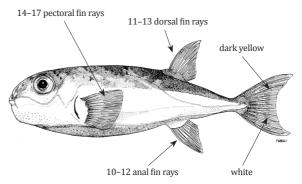
**Distinctive Characters:** Similar to *Lagocephalus guentheri* but caudal fin slightly lunate, without a medial posterior extension; caudal fin with dark yellow upper lobe and white ventral lobe.

**Colour:** Dorsal half of body grayish brown, side silver white, and belly white; pectoral and anal fins pale; dorsal fin dusky; caudal fin with 2/3 of dorsal lobe yellow and 1/3 of ventral lobe white.





#### FAO names: Half-smooth golden pufferfish (En) Tétraodon-lièvre doré (FR)



LOWER LOBE OF CAU-DAL FIN WHITE

#### Lagocephalus suezensis Clark & Gohar, 1953

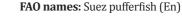
#### Local name(s): Nga Pu Tinn Gyi.

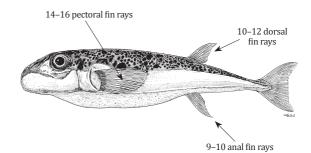
**Habitat:** Shallow sandy areas surrounding reefs, depths of about 80 m.

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** A patch of spinules on back from snout to dorsal fin origin; belly covered with spinules; caudal fin deeply lunate.

**Colour:** Dorsal half of body grayish with numerous small brown spots and larger dark spots and blotches; sides silver white, and belly white; dorsal, anal and pectoral fins pale; caudal fin with yellow upper lobe and white ventral lobe.





#### Size: To 18 cm (TL)

#### Sphoeroides pachygaster (Müller & Troschel, 1848)

#### Local name(s): Nga Pu Tinn Gyi.

**Habitat:** Deeper water species, depths of 50–480 m, usually 50–250 m

Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Nasal organ a tubular papilla set in a depression with a nostril at each end; a single lateral line on side of body; body totally devoid of spinules and lappets.

**Colour:** Uniform brown or grey on dorsal and lateral surfaces, fading ventrally to a totally unpigmented ventral surface; tip of or all lower rays of the caudal fin white.

#### Takifugu oblongus (Bloch, 1786)

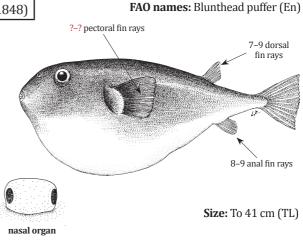
Local name(s):Nga Pu Tinn Gyi.

Habitat: Lives in shallow coastal waters, but enters brackish waters.

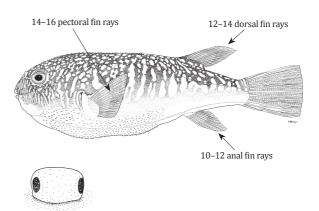
#### Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Nasal organ covered by small sac with 2 nostrils; 2 lateral lines, the lower along the ventrolateral part of peduncle on a low skin ridge; belly, top of head and front part of back covered with spinules (spinules on back and belly well separated); caudal fin truncated.

**Colour:** Brownish above with pale spots, yellowish white below; transverse white bars on back from snout to caudal peduncle.







nasal organ

#### Torquigener brevipinnis (Regan, 1903)

Local name(s):Nga Pu Tinn Gyi.

Habitat: Sandy bottoms in depths of 20–100 m. Fisheries: Bottom trawls, gillnets.

**Distinctive Characters:** Nasal organ covered by small sac with 2 nostrils (applies to all species of the genus); 2 lateral lines (also generic); ventrolateral skin fold extending behind pectoral fin to caudal fin base (also generic); chin well developed (also generic); spinules covering entire head and body from level of nasal organs and chin to just before dorsal fin base and vent; caudal fin truncated.

**Colour:** Dorsum with many small, round or oval, pale yellowish spots outlined by small brownish dots; yellowish-brown band laterally from behind pectoral fin to caudal fin base; 3 slightly oblique, narrow, creamy-white bands traversing cheek just anterior to gill opening.

#### Torquigener florealis (Cope, 1871)

Local name(s):Nga Pu Tinn Gyi.

**Habitat:** Sandy bottoms in depths to about 238 m, usually 90–128 m.

Fisheries: Bottom trawls.

**Distinctive Characters:** Similar to *Torquigener brevipinnis* but higher dorsal, anal and pectoral ray fin counts; dorsal and anal fins somewhat rounded (vs. pointed); different colour pattern (see description below).

**Colour:** Numerous small whitish spots on back, delineated by rosette of smaller brown spots; lateral band of close-set brownish-orange blotches; cheek with small yellowish-brown spots.

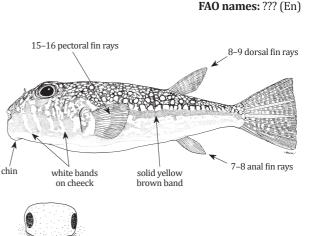
#### Tylerius spinosissimus (Regan, 1908)

Local name(s): Nga Pu Tinn Gyi.

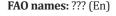
Habitat: Sandy bottoms, deepwater in 103–435 m. Fisheries: Bottom trawls.

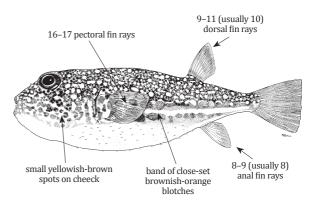
**Distinctive Characters:** Nasal organ a tubular papilla set in a depression with a nostril at each end; 2 well-developed lateral lines extending along body to base of caudal fin; no ventro-lateral skinfold; small spines moderately dense on body, extending well onto caudal peduncle.

**Colour:** Body greyish brown; dark blotch above and behind eye, another at base of dorsal fin; fins pale; rear margin of caudal fin darker; usually dark dots all over white belly.



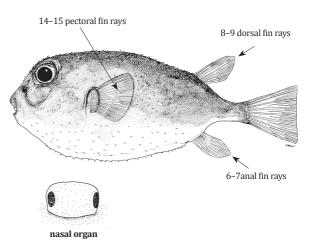
Size: To 10 cm (SL)





nasal organ

FAO names: Spiny blaasop (En)



#### Size: To 12 cm (SL)

Size: To 19 cm (SL)

#### DIODONTIDAE

Porcupinefishes - Spiny puffers - Burrfishes

#### Chilomycterus reticulatus (Linnaeus, 1758)

Local name(s): Nga Pu Tinn Suu Pyan.

Habitat: Young pelagic; adults on reefs and soft bottoms to depths of 100 m.

Fisheries: Bottom trawls, gillnets.

Distinctive Characters: All or most body spines of back and sides fixed in an erect position (not movable through 90°) and 3-rooted: 1-2 small spines wholly on dorsal surface of caudal peduncle; 12-14 dorsal fins; 11-14 anal fins; 19-22 pectoral fins rays; normally 10 caudal fin rays.

Colour: Small, relatively wide-spaced black spots on head, body and fins, and four diffuse brown bars (sometimes very faint or absent), including one below eye.

Cyclichthys orbicularis (Bloch, 1785)

Local name(s): Nga Pu Tinn Suu Pyan.

Habitat: Found from surface to 150 m. usually over soft bottoms, but occasionally on reefs.

Fisheries: Bottom trawls, gillnets.

Distinctive Characters: Body bearing massive but relatively short, immovable spines; 4 dorsally between pectoral fin bases, 8–9 anterior to dorsal fin base; a short, movable spine near corner of mouth; all spines on top of head with 3-rooted;

Colour: Back brown to grey, white on belly; clusters of spots occasionally merged to form blotches; no dark spots on fins; a light area often surrounds the spine bases on back and sides.

#### Cyclichthys spilostylus (Leis & Randall, 1982)

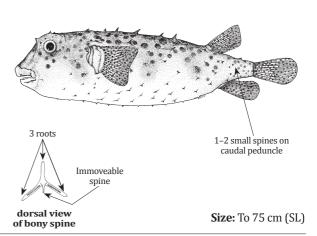
Local name(s): Nga Pu Tinn Suu Pyan.

Habitat: Found in coastal waters in the vicinity of reefs.

Fisheries: Bottom trawls, gillnets.

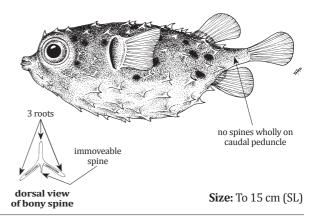
Distinctive Characters: Similar to Cyclichthys orbicularis but spines more numerous, 5-6 dorsally between pectoral fin bases, 11-12 anterior to dorsal fin base; no movable spines; some spines on top of head with 4 roots; nasal organs separated by more than one eye diameter; teeth thick.

**Colour:** Body with many small unclustered black spots at base of spines laterally and ventrally.

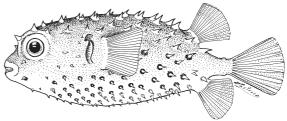


FAO names: Birdbeak burrfish (En)

Porc-épine bécard (Fr)



FAO names: Spotbase burrfish (En)



FAO names: Spotfin burrfish (En)

#### Diodon eydouxii Brissout de Barneville, 1846

#### Local name(s): Nga Pu Tinn Suu Pyan.

Habitat: Pelagic-oceanic, surface schooling species.

Fisheries: Purse seines, incidental catch.

Distinctive Characters: All body spines erectile (movable through at least 90°) and 2-rooted (except a few around gill opening or dorsal fin base) (applies to all species of the genus); nearly uniform short spines; one or more small spines wholly on dorsal surface of caudal peduncle; 13-17 spines from snout to dorsal fin base; 10-14 spines from lower jaw to anus; 16–18 dorsal fins; 16-18 anal fins; 19-22 pectoral fins rays.

Colour: Back and sides blue, with small elongate black spots; fins with spots; dark gular band; belly silvery white.



Local name(s): Nga Pu Tinn Suu Pyan.

Habitat: Juveniles pelagic, to about 6 to 9 cm; larger fish found in a variety of benthic habitats from shallow reefs to open, soft bottoms to at least 100 m.

Fisheries: Bottom trawls, gillnets.

Distinctive Characters: All body spines erectile (movable through at least 90°) and 2-rooted (except a few around gill opening or dorsal fin base); no spines wholly on caudal peduncle; no small downward-pointing spine below anterior margin of eye; 12–15 spines along ventral midline from lower jaw to anus; 12-16 spines from snout to dorsal base; a pair of short barbels on chin.

**Colour:** Back brown to grey white on belly; 6 large dark blotches on back and head; many small black spots on back and sides; blotch below eye coninues over interorbital; no spots on fins.

#### Diodon hystrix Linnaeus, 1758

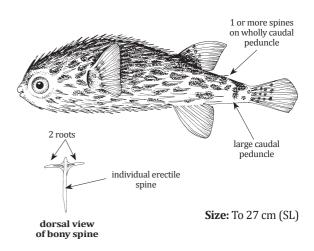
Local name(s):Nga Pu Tinn Suu Pyan.

Habitat: Juveniles pelagic, to about 20 cm; larger fish on reefs to at least 50 m.

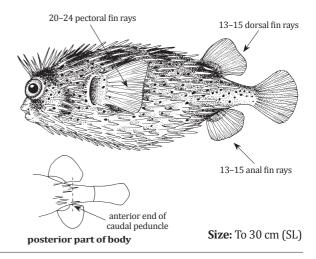
Fisheries: Bottom trawls, gillnets.

Distinctive Characters: Similar to Diodon holocanthus but one or more small spines wholly on caudal peduncle; higher dorsal, anal and pectoral ray fin counts; 14-19 spines along ventral midline from lower jaw to anus; 16-20 spines from snout to dorsal base; no barbels on chin.

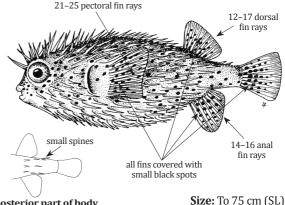
**Colour:** Benthic stage grey to brown with back, sides and fins covered with small black spots; dark gutter band present; belly white, surrounded by dusky ring.



#### FAO names: Longspined porcupinefish (En) Porc-épine ballon (Fr)



#### FAO names: Spot-fin porcupinefish (En) Porc-épine boubou (Fr)



posterior part of body

579

#### FAO names: Pelagic porcupinefish (En)

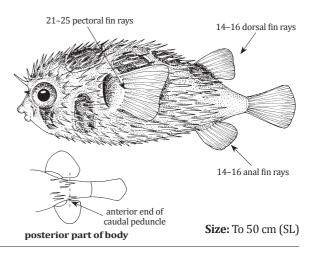
#### Diodon liturosus Shaw, 1804

Local name(s): Nga Pu Tinn Suu Pyan. Habitat: Coral reefs in depth from 1–90 m. Fisheries: Gillnets.

Distinctive Characters: All body spines erectile (movable through at least 90°) and 2-rooted (except a few around gill opening or dorsal fin base); numerous, short erectile spines on head and body: spines on forehead much shorter than those behind pectoral fins, none wholly on caudal peduncle; small downward-pointing spine below anterior margin of eve: 17-22 spines from lower jaw to anus; 16–21 spines from snout to dorsal fin base.

Colour: Brown grading to white ventrally, with large white-edged, dark brown to black blotches below eye, on back, and on side.

#### FAO names: Blackblotched porcupinefish (En)



#### MOLIDAE Molas - Ocean sunfishes

Masturus lanceolatus (Liénard, 1840)

Local name(s): Nay Min Nga/Ta Paing Pyat Nga. Habitat: Oceanic, pelagic.

Fisheries: Drifnets.

Distinctive Characters: Body deep and compressed, its depth about 1.5 in length; midpart of pseudo-caudal fin posteriorly projected (very long in juveniles, noticeably shorter in adults); lips not funnel-like, closing in roundish form; skin with rough texture; pectoral fin small and rounded, not fitting into shallow groove in side of body.

Colour: Grey to bluish grey.

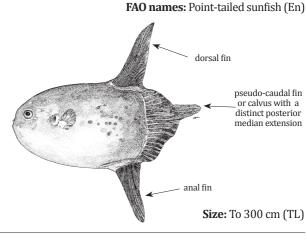
#### Mola mola (Linnaeus, 1758)

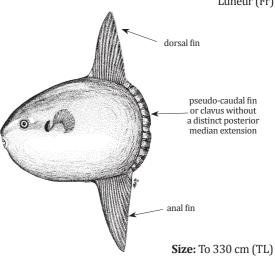
Local name(s): Nay Min Nga/Ta Paing Pyat Nga. Habitat: Oceanic, pelagic.

#### Fisheries: Drifnets.

**Distinctive Characters:** Body deep and compressed, its depth usually equal to length; lips not funnel-like, closing in roundish form; skin with rough texture; pectoral fin small and rounded, not fitting into shallow groove in side of body; clavus supported by about 12 fin rays, of which 8 or 9 bear ossicles; ossicles widely separated, less broad than spaces between them

Colour: Grey to dark grey on back; grey-brown or brownish green on sides, with silvery reflections and dusky below; sides sometimes with small light spots.





FAO names: Ocean sunfish (En) Luneur (Fr)

#### Mola alexandrini (Ranzani 1839)

Local name(s): Nay Min Nga/Ta Paing Pyat Nga. Habitat: Oceanic, pelagic.

#### Fisheries: Drifnets.

deep Distinctive Characters: Body and compressed, its depth usually equal to length; lips not funnel-like, closing in roundish form; skin with rough texture; pectoral fin small and rounded, not fitting into shallow groove in side of body; clavus supported by about 16 fin rays, of which 12 bear ossicles; ossicles close together, much broader than spaces between them

Colour: Brown to grey above, often with pale blotches; paler below.

Remarks: Previously known as Mola ramsayi (Giglioli, 1883) which is now regarded as a junior synonym.

#### Ranzania laevis (Pennant, 1776)

Local name(s): Nay Min Nga/Ta Paing Pyat Nga. Habitat: Oceanic, epipelagi and generally solitary. Fisheries: Drifnets.

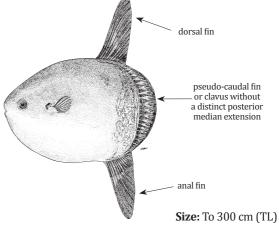
Distinctive Characters: Body moderately deep, more or less oblong in lateral profile, body depth approximately 2 times in body length; lips funnellike, closing as a vertical slit; skin smooth; pectoral fins elongate, fitting into shallow groove in side of body; pelvic fins absent.

Colour: Dorsal half of body dark blue; side and ventral parts of body brilliant silver with several blue, grey, brown or green darkish stripes and spots; series of dark stripes curving below and behind eye to ventral part of head and body.

FAO names: Slender mola(En) Ranzania (Fr)

Size: To 90 cm (TL)





# pectoral fin elongate

# FAO names: Short ocean sunfish (En)