

## FAO SPECIES IDENTIFICATION SHEETS

FISHING AREA 51  
(W. Indian Ocean)

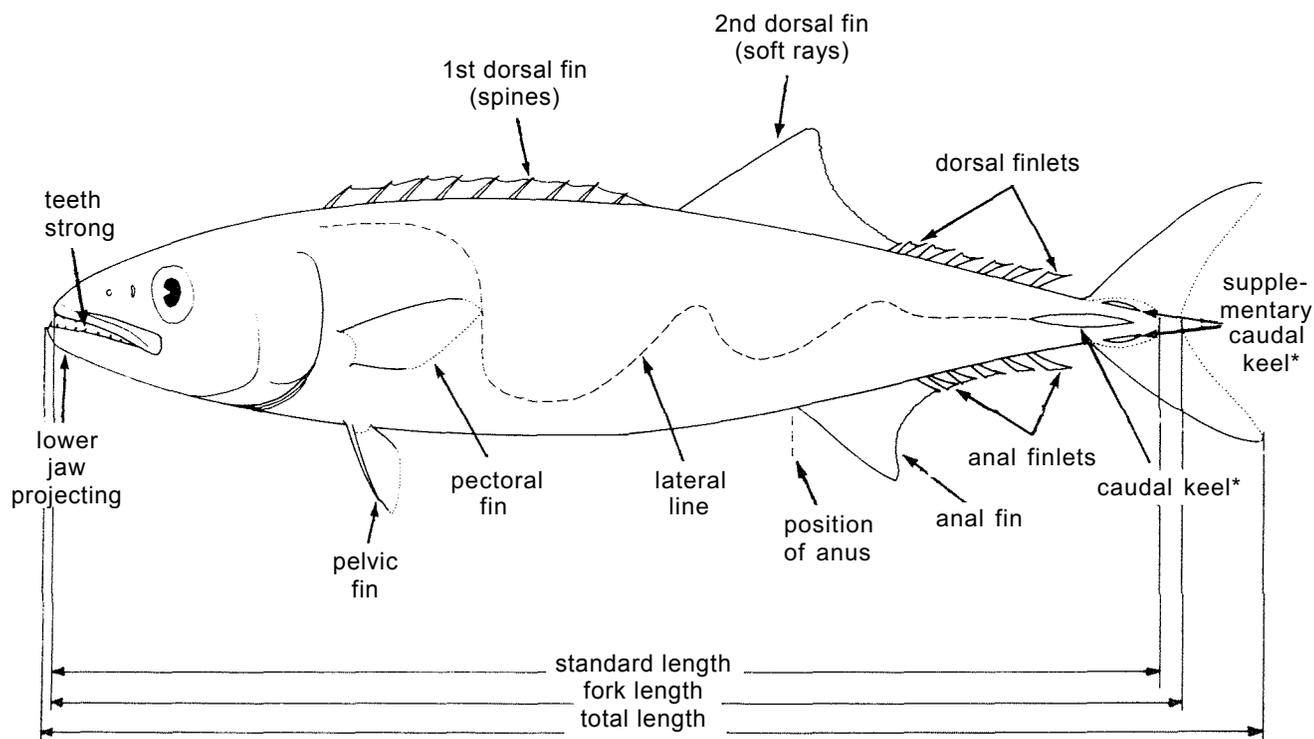
## GEMPYLIDAE

Snake mackerels, barracoutas, escolars and oilfishes

Body elongate and compressed or somewhat fusiform (*Lepidocybium*, *Ruvettus*). Mouth large, not protractile, with strong teeth in jaws, those at front of upper jaw often fang-like; lower jaw projecting beyond tip of upper jaw; gill openings wide, gill membranes not united, free from isthmus. Two dorsal fins, the second (excluding finlets) shorter than the first; anal fin similar to second dorsal fin in size and shape, or a little smaller; detached finlets often present behind dorsal and anal fins; pectoral fins small, shorter than head; pelvic fins usually small, often reduced to a spine or spine with only a few or no soft rays; caudal fin moderate in size, always forked; no keels on caudal peduncle (except in *Lepidocybium*). Lateral line single or double, ending at caudal fin base. Scales small or virtually absent, sometimes modified (*Lepidocybium*, *Ruvettus*). Vertebrae about 35, except in *Gempylus* (about 50) and *Diplospinus* (about 60).

Colour: back usually brown or dark brown, rarely blue-brown, lower sides and belly silvery; fins usually darker; no distinct marks or blotches on body.

Large, fast-moving, carnivorous, meso-, bathy- or benthopelagic fishes of tropical and temperate seas, throughout the world, usually occurring at depths beyond 150 m, but often migrating to surface water at night. There appears to be no special fishery for any of the Western Indian Ocean species, except *Thyrsites atun*, which is angled or lined in South African waters. Some species are frequently taken as bycatch in the tuna longline fishery. The flesh is edible and tasty (*Thyrsites* and *Rexea*), but oily in some species (*Lepidocybium* and *Ruvettus*).

Lepidocybium only

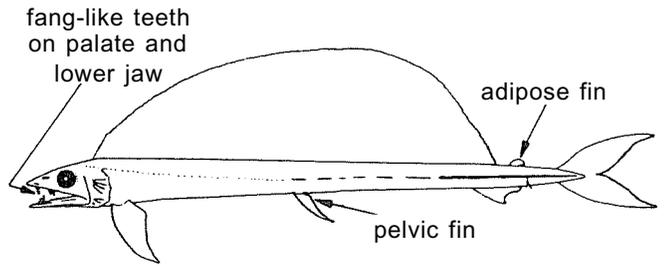
**SIMILAR FAMILIES OCCURRING IN THE AREA:**

Alepisauridae: somewhat similar to elongate gempylids in general appearance, when the sail-like dorsal fin is folded back, but easily distinguished by their jelly-like body, a dorsal adipose fin (instead of a rayed second dorsal fin), and the insertion of the pelvic fins far behind the pectorals.

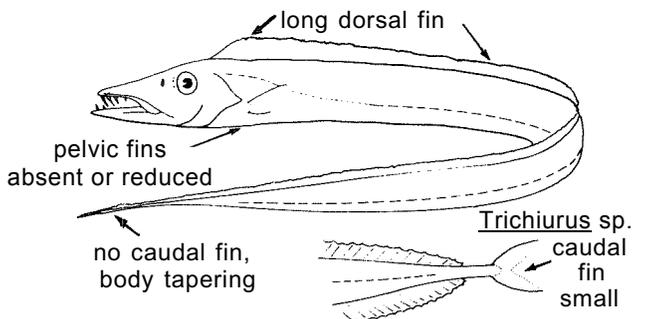
Trichiuridae (including Lepidopidae): a single and very long dorsal fin, running almost the entire length of body; no dorsal or anal finlets; caudal fin either very small and forked or body tapering to a point; pelvic fins reduced to a scale-like spine, or absent.

Scombridae: those forms which might be confused with fusiform Gempylidae (especially Acanthocybium, Scomberomorus, Sarda, etc.) differ in having the back blue or blue-grey with bars, spots or other dark markings (back brown, without markings, in Gempylidae); keels present on caudal peduncle (absent in Gempylidae, except in Lepidocybium) Those species without markings (Allothunnus and Gymnosarda) differ on having keels on caudal peduncle, no fangs in upper jaw and a more or less straight and single lateral line.

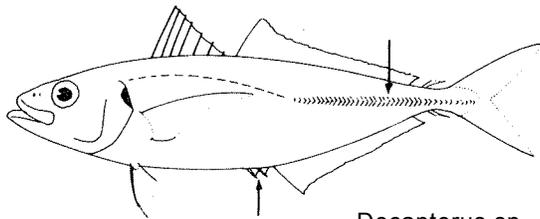
Carangidae: base of first dorsal fin shorter than that of second; 2 detached spines usually visible in front of anal fin (but present also in the gempylid genus Nealotus); scutes often present along lateral line; dorsal and anal finlets only present in Decapterus, Elagatis and Megalaspis; mouth slightly protractile.



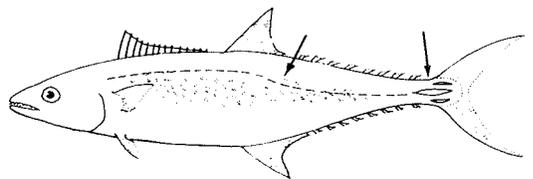
Alepisauridae



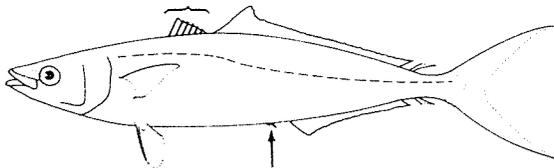
Trichiuridae



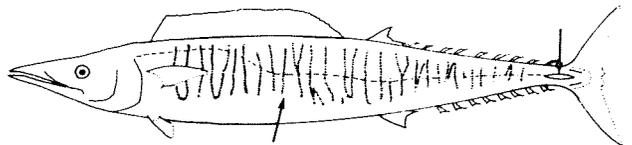
Decapterus sp.



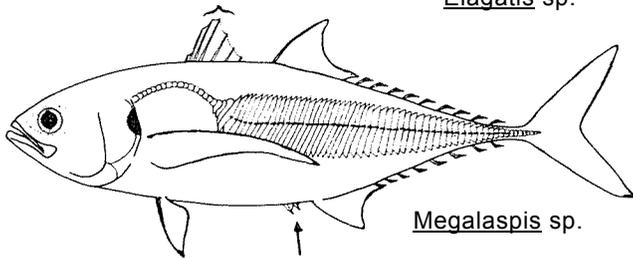
Scomberomorus sp.



Elagatis sp.

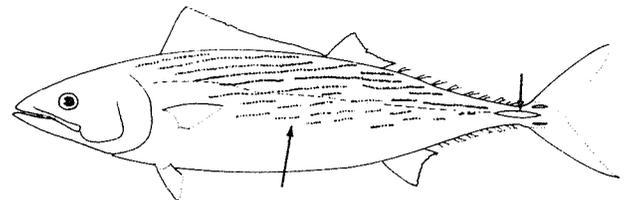


Acanthocybium sp.



Megalaspis sp.

Carangidae

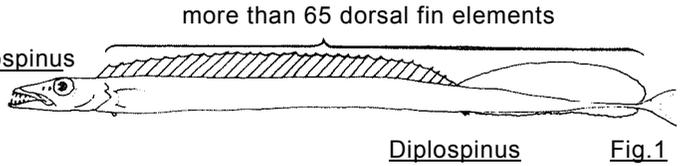


Sarda sp.

Scombridae

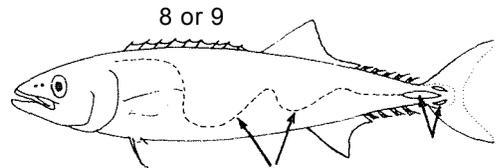
**KEY TO ADULTS OF GENERA OCCURRING IN THE AREA:**

1a. Dorsal fin element more than 65 (Fig.1) ..... Diplospinus

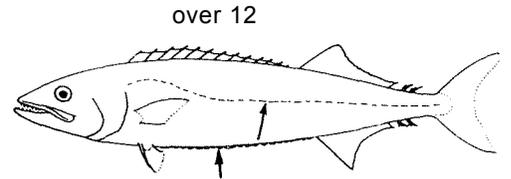


1b. Dorsal fin elements less than 65

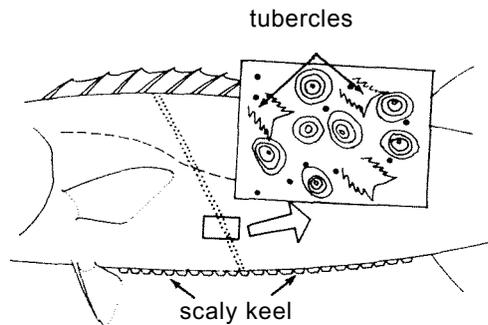
2a. Caudal peduncle with a large keel and 2 small supplementary keels on either side; 8 or 9 dorsal fin spines; lateral line single, very markedly sinuous (Fig.2) ..... Lepidocybium



2b. No keels on caudal peduncle; more than 12 dorsal fin spines; lateral line simple, single or bifurcated, but not markedly sinuous (Fig.3)

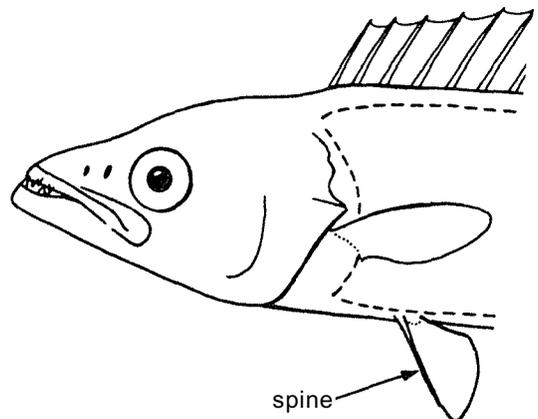


3a. A rigid scaly keel on belly; scales on body interspersed with spinous bony tubercles; lateral line simple, single but obscure (Fig.4) ..... Ruvettus

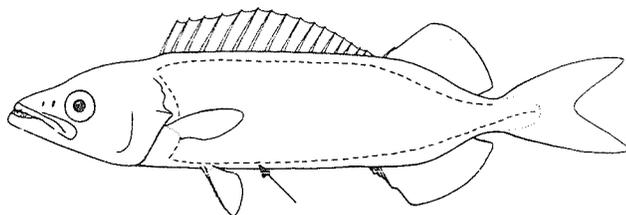


3b. No scaly keel on belly; body smooth, scales small cycloid and deciduous, not interspersed with tubercles; lateral line well developed

4a. Pelvic fins developed, each with a spine and 5 soft rays inserted well behind base of pectoral fin (Fig.5)



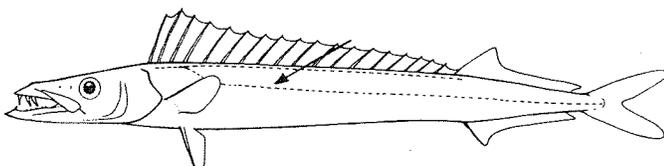
5a. Body semi-fusiform; lateral line bifurcated, its lower branch running near lower contour of body (Fig.6); lining of mouth and gill cavity black... Neopinnula



Neopinnula Fig.6

5b. Body elongate; lateral line single or bifurcated (in which case, its lower branch running along middle of body); lining of mouth and gill cavity pale

6a. Lateral line bifurcated (Fig.7).... Thyrsitoides

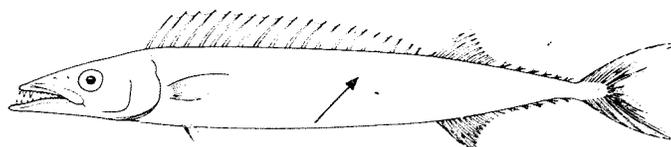


Thyrsitoides Fig.7

6b. Lateral line single (Fig.8) ..... Thyrsites

4b. Pelvic fins much reduced in size, with a minute spine and only a few or no soft rays, inserted a little behind base of pectoral fins (Fig.9)

7a. Body elongate; 5 to 7 dorsal and anal finlets; about 30 dorsal fin spines (Fig.10); gillraker at angle of first arch small, triangular ..... Gempylus



Thyrsites Fig.8

7b. Body moderately elongate; usually 2 dorsal and anal finlets; about 20 dorsal fin spines; gillrakers at angle of first arch T-shaped

8a. Lateral line bifurcated; pelvic fins minute or absent (Fig.11) ..... Rexea

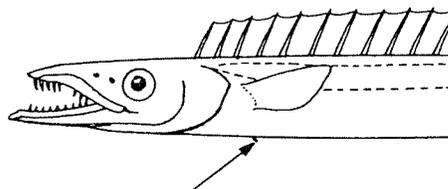
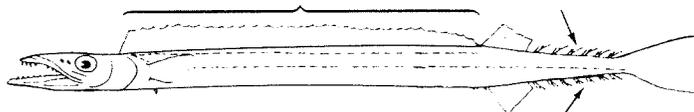
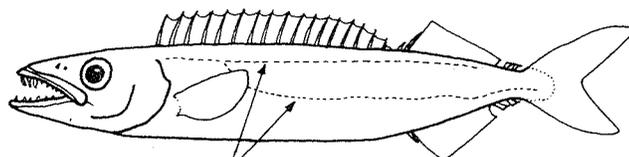


Fig.9

8b. Lateral line single; pelvic fins small but present



Gempylus Fig.10

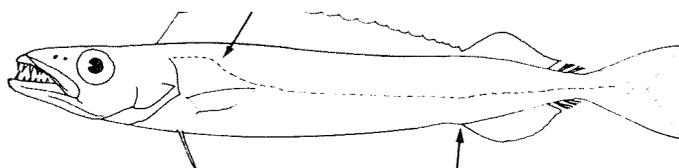


lateral line bifurcated  
Rexea Fig.11

- 9a. A dagger-shaped spine followed by a small free spine parallel to ventral contour in front of soft anal fin (Fig.12); lateral line fairly straight ..... Nealotus
- 9b. No free spines in front of soft anal fin; lateral line abruptly curving downward anteriorly (Fig.10) ..... Promethichthys



Nealotus Fig.12



Promethichthys Fig.13

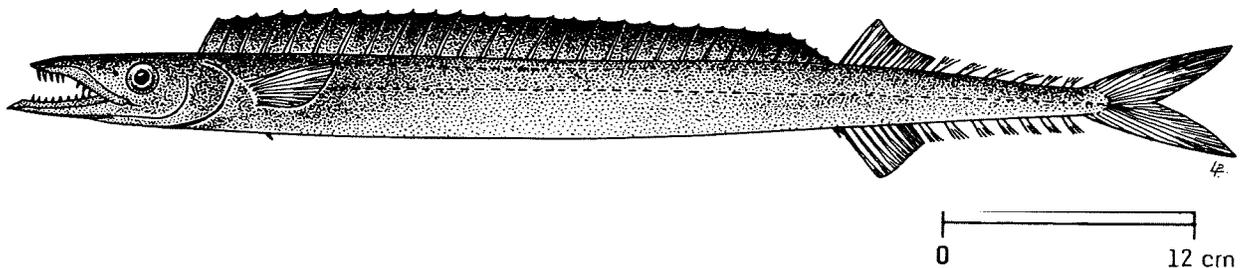
**LIST OF SPECIES OCCURRING IN THE AREA:**

Code numbers are given for those species for which Identification Sheets are included

<u>Diplospinus multistriatus</u> Maul, 1948	
<u>Gempylus serpens</u> Cuvier, 1829	GEMP Gemp 1
<u>Lepidocybium flavobrunneum</u> (Smith, 1849)	GEMP Lepid 1
<u>Nealotus tripe</u> Johnson, 1865	
<u>Neopinnula orientalis</u> (Gilchrist & von Bonde, 1924)	GEMP Neo 1
<u>Promethichthys prometheus</u> (Cuvier, 1832)	GEMP Prom I
<u>Rexea prometheoides</u> (Bleeker, 1856)	GEMP Rex I
<u>Ruvettus pretiosus</u> Cocco, 1829	GEMP Ruv 1
<u>Thyrsites atun</u> (Euphrasen, 1791)	GEMP Thyrs 1
<u>Thyrsitoides marleyi</u> Fowler, 1929	GEMP Thyrsd 1

## FAO SPECIES IDENTIFICATION SHEETS

FAMILY: GEMPYLIDAE

FISHING AREA 51  
(W. Indian Ocean)Gempylus serpens Cuvier, 1829OTHER SCIENTIFIC NAMES STILL IN USE: Acinacea notha Bory de Saint-Vincent, 1804

## VERNACULAR NAMES:

FAO: En - Snake mackerel  
Fr - Escolier serpent  
Sp - Escolar de canal

NATIONAL:

## DISTINCTIVE CHARACTERS:

Body greatly elongate, strongly compressed. Snout conical, acutely pointed; lower jaw also sharply pointed, projecting beyond tip of snout; teeth in both jaws rather large, conical and widely spaced, several large fangs anteriorly in upper jaw, some of them depressible; palatine teeth small and weak, vomer toothless but rough; eye large, contained about 6 times in head length; interorbital space flat, much narrower than eye. First dorsal fin base long, with 28 to 32 spines, second dorsal fin with 1 small spine and 11 to 14 soft rays followed by 5 or 6 finlets; anal fin with 1 to 3 spines and 10 to 12 soft rays followed by 6 or 7 finlets; pectoral fins slightly longer than snout, with about 14 soft rays; pelvic fins minute, inserted a little behind pectoral fin origin, with 1 spine and 4 soft rays (the first soft ray longest); caudal fin small, deeply forked. Two lateral lines, both originating below first spine of dorsal fin; the upper line follows dorsal contour of body to end of first dorsal fin base; the lower line descends gently backward to about tip of pectoral fin, then runs along middle of body to base of caudal fin. Small, thin, deciduous, scales behind eye and on caudal fin base.

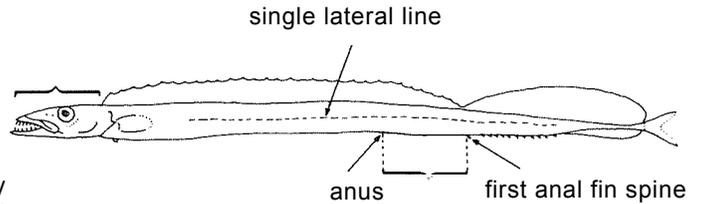
Colour: uniformly dark brown with light metallic reflections; sometimes a few small black spots above pectoral fin base; fins dark brown, with darker margins.

## DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Diplospinus multistriatus: no finlets; a single lateral line; anus situated in front of first anal spine by a distance equal to head length (anus situated just in front of first anal spine in G. serpens).

Remaining species of Gempylidae: body deeper and shorter, head less than 6 times in total length; dorsal fin with about 20 spines and no finlets (Thyrsitoides) or 2 dorsal and anal finlets in Nealotus, Promethichthys, Rexea and Ruvettus (30 dorsal fin spines and 5 or more finlets in G. serpens).

Species of the family Trichiuridae having a forked caudal fin: no dorsal and anal finlets, dorsal fin single, and a single lateral line.



Diplospinus multistriatus

## SIZE:

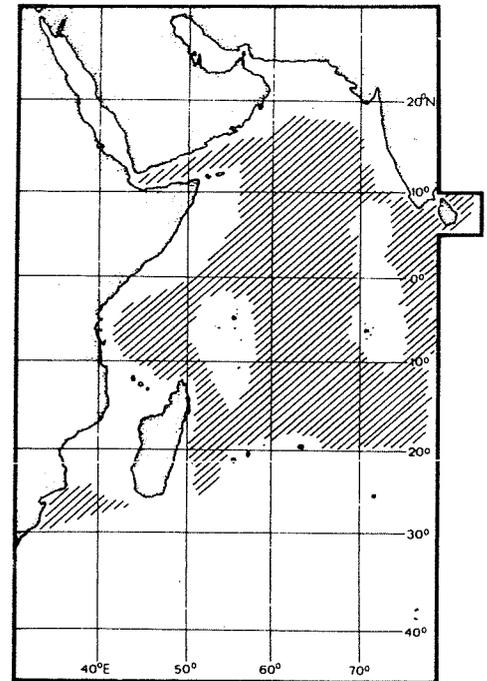
Maximum: about 100 cm standard length;  
common to 60 cm standard length.

## GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

In oceanic waters throughout the area. Elsewhere, worldwide in tropical and subtropical seas, but adult individuals are also often caught in temperate waters; rather common in offshore areas

Mesopelagic or pelagic, oceanic, rather sparsely distributed, down to depths of 200 m or more; often found near the surface at night and attracted by nightlight.

Feeds on a wide variety of fishes (Exocoetidae, Myctophidae, etc.), crustaceans and cephalopods.



## PRESENT FISHING GROUNDS:

No special fishery, but sometimes appearing as bycatch in tuna longline fishery; large individuals may be taken at depths of 200 m in day time.

## CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught mainly with longlines.

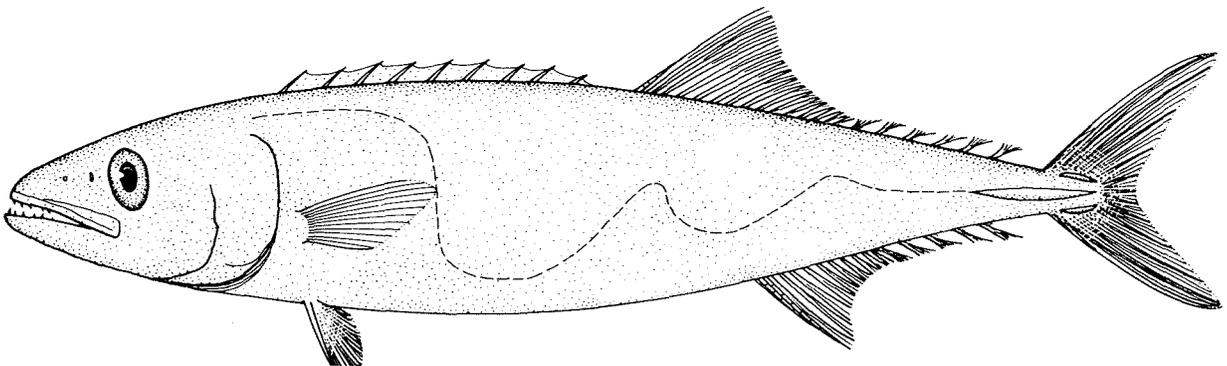
Sometimes marketed frozen for fish sausage and fish cake.

## FAO SPECIES IDENTIFICATION SHEETS

FAMILY: GEMPYLIDAE

FISHING AREA 51  
(W. Indian Ocean)Lepidocybium flavobrunneum (Smith, 1849)

## OTHER SCIENTIFIC NAMES STILL IN USE:

Xenogramma carinatum Waite, 1904Nesogrammus thompsoni Fowler, 1923Lepidocybium flavo-brunneum: Munro, 1949

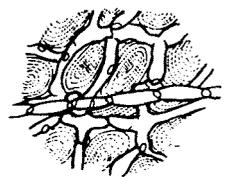
## VERNACULAR NAMES:

FAO :           En - Escolar  
                  Fr - Escolier noir  
                  Sp - Escolar negro

## NATIONAL:

## DISTINCTIVE CHARACTERS:

Body moderately elongate and slightly compressed. Teeth conical and recurved, in a single row in both jaws, those in lower jaw larger and wider apart, the two anterior pairs in upper jaw canine-like; teeth also present on vomer and palatines (roof of mouth); eye rather large and oval. First dorsal fin very low, with 8 or 9 spines, well separated from second dorsal fin which has 16 to 18 soft rays followed by 4 or 5 finlets; anal fin with 13 to 15 soft rays followed by 4 or 5 finlets; pectoral fins short, with about 15 soft rays; pelvic fins well developed, with 1 spine and 5 soft rays; caudal fin rather small and forked; a strong keel flanked by 2 small supplementary keels on either side of caudal peduncle. Lateral line single, very markedly sinuous. Scales cycloid (smooth), rather small, each surrounded by a network of tubules bearing pores.

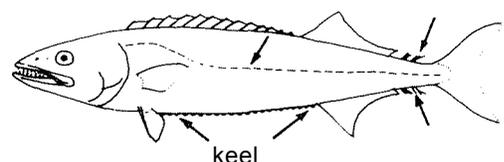


lateral line canal and scales surrounded by a network of tubules

Colour: almost uniformly dark brown, becoming almost black with age.

## DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Ruvettus pretiosus (the most similar species): no keels on caudal peduncle, more than 12 dorsal fin spines, lateral line not markedly sinuous, belly with a scaly keel; only 2 dorsal and anal finlets.



Ruvettus pretiosus

Other species of Gempylidae: no caudal keels, more than 12 dorsal fin spines, lateral line not markedly sinuous.

Acanthocybium, Scomberomorus, Sarda and other similar scombroid species: back blue or blue-grey, with bars, spots or other dark markings; lateral line not markedly sinuous; usually more than 10 dorsal fin spines; 7 or 8 dorsal and anal finlets.

Carangid species with dorsal and anal finlets: 2 detached spines in front of anal fin; base of first dorsal fin shorter than that of second (finlets excluded); also, caudal peduncle without keels, and scutes present along lateral line (Decapterus and Megalaspis) or only 1 dorsal and 1 anal finlet (Elagatis and Decapterus).

**SIZE:**

Maximum: 200 cm standard length and at least 45 kg body weight; common to 150 cm.

**GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:**

Discontinuous distribution in tropical and subtropical (sometimes temperate) waters, of the Indo-Pacific and Atlantic Oceans.

Meso- or bathypelagic, oceanic, down to depths of 200 m or more.

Feeds on a wide variety of fishes, crustaceans and cephalopods.

**PRESENT FISHING GROUNDS:**

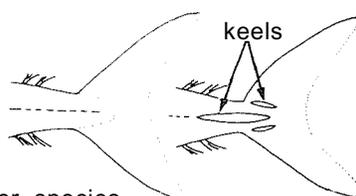
No special fishery, but appearing as bycatch in the tuna longline fishery; caught usually at depths from 80 to 200 m.

**CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:**

Separate statistics are not reported for this species.

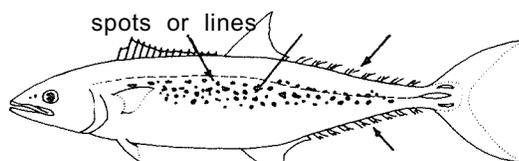
Caught mainly with longlines.

Marketed mostly frozen, prepared as fish cake in Japan. Flesh very oily, may have purgative properties.

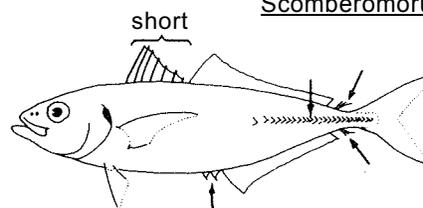


other species of Gempylidae

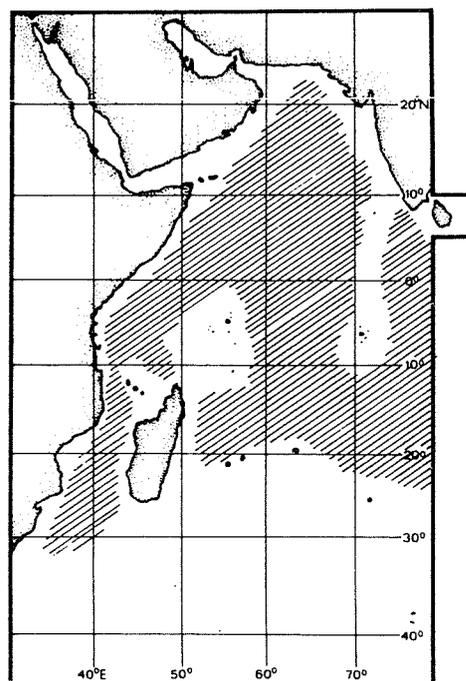
*L. flavobrunneum*



*Scomberomorus* sp.

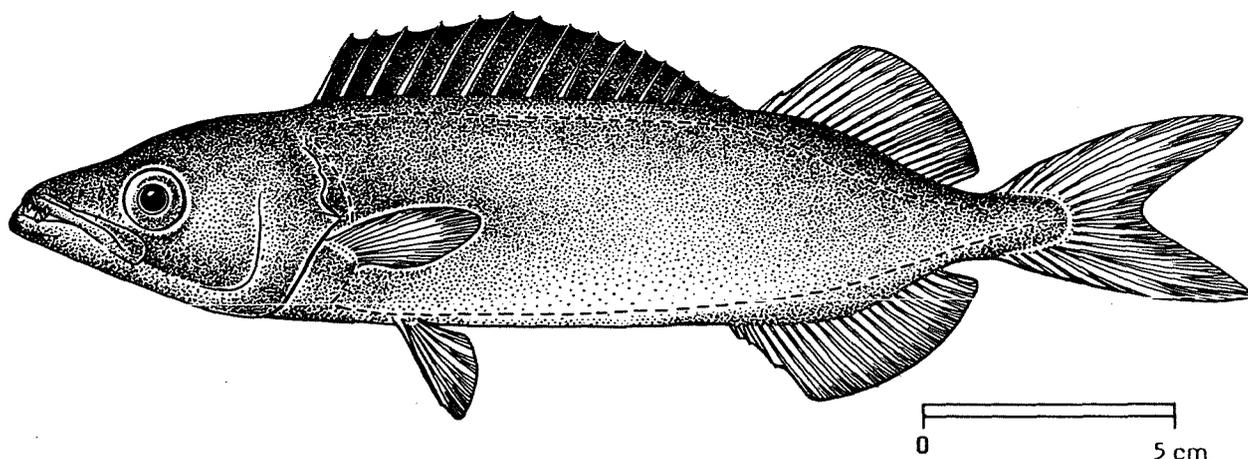


*Decapterus* sp.



## FAO SPECIES IDENTIFICATION SHEETS

FAMILY : GEMPYLIDAE

FISHING AREA 51  
(W. Indian Ocean)*Neopinnula orientalis* (Gilchrist & von Bonde, 1924)OTHER SCIENTIFIC NAMES STILL IN USE: *epinnula orientalis* Gilchrist & von Bonde, 1924

## VERNACULAR NAMES:

FAO: En - Sackfish  
Fr - Escolier oriental  
Sp - Escolar oriental

NATIONAL:

## DISTINCTIVE CHARACTERS:

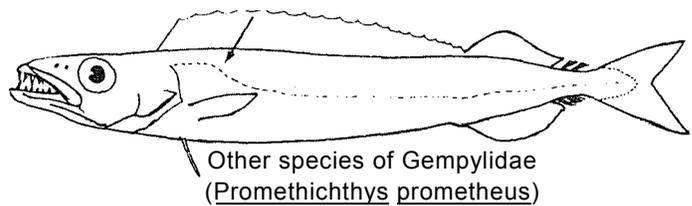
Body deep, semifusiform and fairly compressed. Mouth large; 3 or 4 fangs anteriorly in upper jaw (2 or 4 immovable, the remaining depressible), a pair of enlarged canines anteriorly in lower jaw; lateral teeth in both jaws conical and widely spaced, those in lower jaw much larger than those of upper; several small teeth present on vomer; a single series of small conical teeth on palatines; eye moderate in size, contained about 5 to 6 times in head length. First dorsal fin rather low, with 16 spines, second dorsal fin also low, with 1 spine and 18 to 20 soft rays; anal fin almost same as second dorsal fin in shape and size, with 3 spines and 18 to 20 soft rays; pectoral fins round and small, a little longer than snout, with 13 or 14 soft rays; pelvic fins well developed and large, slightly smaller than pectoral fins, with one spine and 5 soft rays; caudal fin forked, with a fairly deep caudal peduncle. Two lateral lines, both originating together above upper angle of gill cover; the upper branch running parallel to dorsal contour to slightly beyond end of second dorsal base, lower branch running along ventral contour to base of middle ray of caudal fin. Head and body, except upper jaw, lower jaw, throat and branchiostegal membrane, wholly covered with minute, deciduous (easily shed) cycloid scales.

Colour: uniformly bluish brown (in formaline); fins pale except blackish first dorsal; lining of buccal and branchial cavities black.

## DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

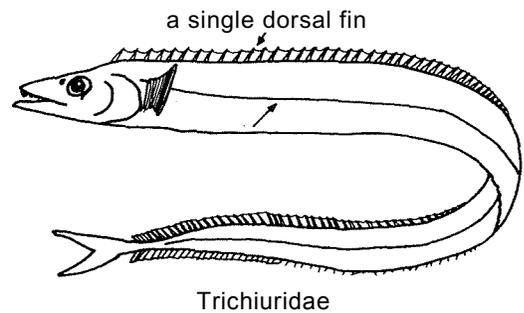
Other species of Gempylidae: body more elongate, depth in adults contained more than 5 times in standard length (contained about 4 times in *N. orientali*); lateral line single or double but in latter case, lower branch not running near to ventral contour.

Species of Trichiuridae having a forked caudal fin; body elongate, depth of body more than 6 times in standard length; dorsal fin single, and a single lateral line.



## SIZE:

Maximum: 30 cm standard length;  
common to 20 cm.



## GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

In the area, known to occur along the east African coast from Kenya to Natal and in the northern part of the area off Pakistan and India. Elsewhere, distributed in tropical and subtropical (sometimes temperate) waters of the Eastern Indian Ocean, the Western Pacific and the Western Central Atlantic.

Meso- or bathypelagic, down to depths of 350 m; living along the continental edge of the continental shelf and upper slope.

Feeds on a wide variety of small fishes, crustaceans and cephalopods.

## PRESENT FISHING GROUNDS:

No special fishery, sometimes caught by deep water trawlers.

## CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught mainly with deep water trawlers.

Sometimes marketed frozen or iced for fish sausage and fish cake.

