FAO SPECIES IDENTIFICATION SHEETS
FOR FISHERY PURPOSES

EASTERN CENTRAL ATLANTIC
FISHING AREA 34 AND PART OF 47

VOLUME
II

Canada
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FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

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FAO SPECIES IDENTIFICATION SHEETS

FOR FISHERY PURPOSES

EASTERN CENTRAL ATLANTIC

Fishing Areas 34, 47 (in part)

edited by

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VOLUME II

CONTENTS:

Bony Fishes

Families: Cepolidae to
Macrouridae

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Identification sheets. Taxonomy. Geographic distribution. Fisheries. Vernacular names. Bony fishes. Chimaeras. Sharks. Batoid fishes. Lobsters. Shrimps. True crabs. Stomatopods. Molluscs. Sea turtles. ASW

CEPOL

1981

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

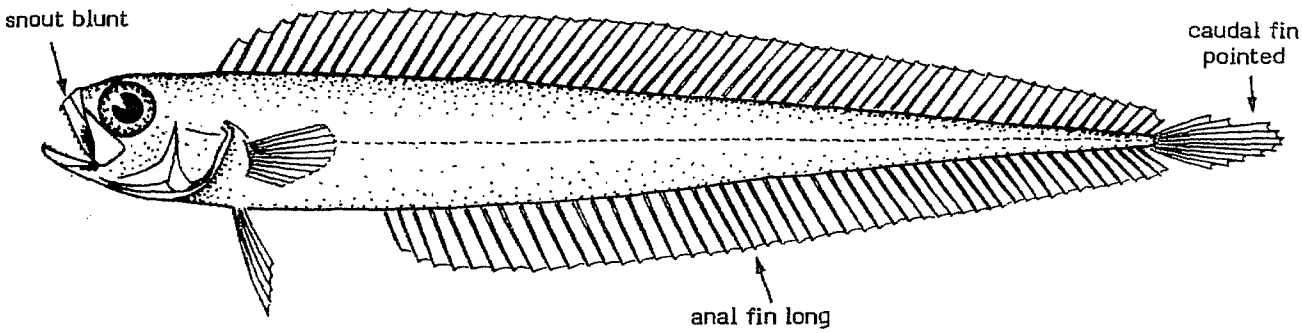
CEPOLIDAE

Bandfishes

Body very elongate and compressed, ribbon-like and gradually tapering to a pointed tail. Head short, with a blunt snout and an oblique mouth; a single row of widely spaced teeth in each jaw. Anal opening placed far forward. Dorsal fin very long, originating slightly posterior to head and extending backward to caudal fin; pectoral fins short; pelvics thoracic in position, inserted at level or slightly in advance of pectoral fin bases; anal fin very long; caudal fin distinct and pointed. Scales minute.

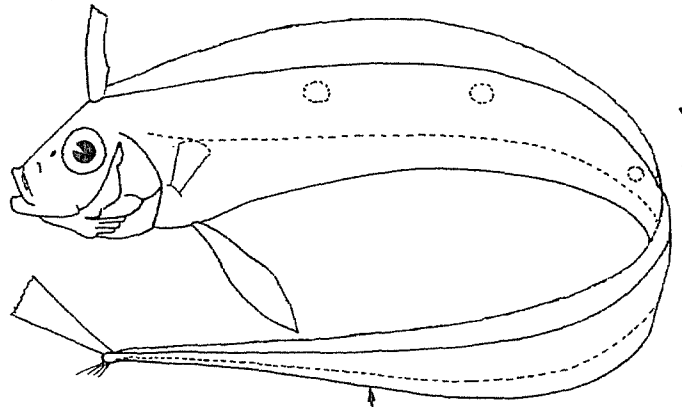
Colour: the species in Fishing Area 34 are generally reddish or yellowish.

Medium-sized (20 to 25 cm total length) to large (up to about 70 cm) fishes living single or in small groups on muddy sand bottoms at depths between 20 and 200 m. They are never very abundant, but are utilized in certain Mediterranean countries for fish soups. Along the West African coast, these fishes are often taken as bycatch in the trawl fisheries; they may be consumed occasionally, and are also utilized for fishmeal and oil.

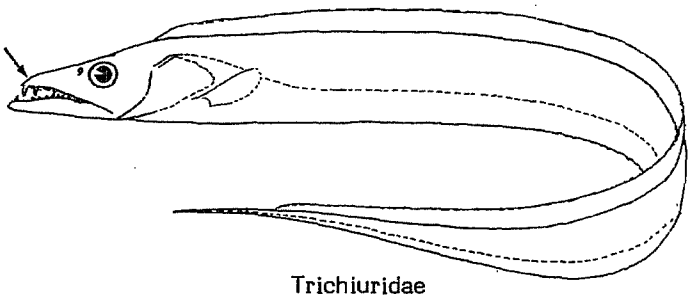


SIMILAR FAMILIES OCCURRING IN THE AREA :

The elongate, ribbonlike body, the long anal fin and the blunt snout readily distinguish the band fishes from other families. Furthermore, other long-bodied, ribbon-like and superficially similar fishes can be separated from the Cepolidae by other conspicuous features such as: anal fin absent (Trachipteridae), snout pointed (Trichiuridae), or jaws prolonged into a beak (Nemichthyidae and Serrivomeridae).

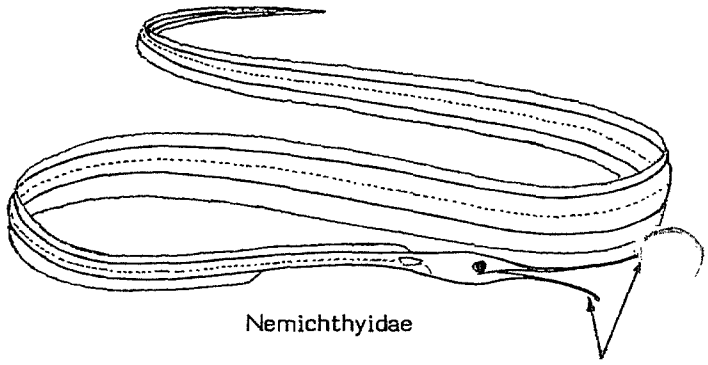


Trachipteridae



Trichiuridae

Serrivomeridae



Nemichthyidae

KEY TO SPECIES OCCURRING IN THE AREA :

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

1 a. Eye diameter contained less than twice in body depth and less than 3 times in head length; body depth contained more than 13 times in total length; teeth long; dorsal fin with 67 to 70 rays; anal fin with 59 to 61 rays (Fig. 1) ..... Cepola macrophthalma (Linnaeus, 1758) CEPOL Cepol 1

1 b. Eye diameter contained more than 3 times in body depth and in head length; body depth contained more than 10 times in total length; teeth short; dorsal fin with 60 to 62 rays; anal fin with 53 or 54 rays (Fig. 2) ..... Cepola pauciradiata Cadenat, 1949

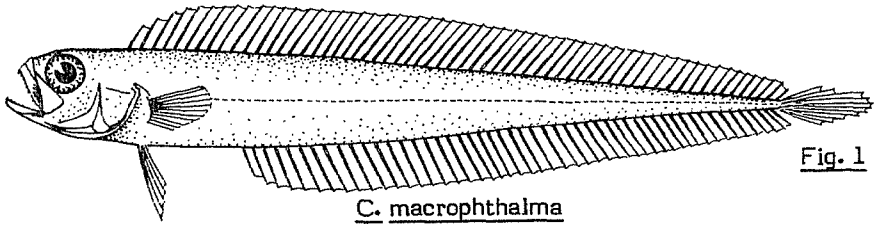
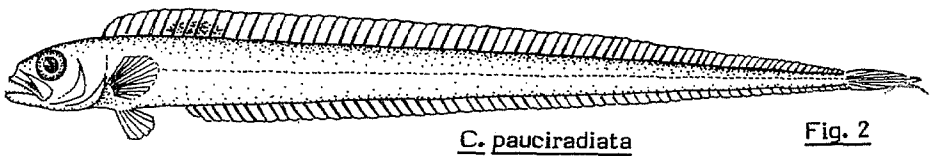


Fig. 1

C. macrophthalma



C. pauciradiata

Fig. 2

Prepared by J.C. Quéro, Institut scientifique et technique des Pêches maritimes, La Rochelle, France

CEPOL Cepol 1

1981

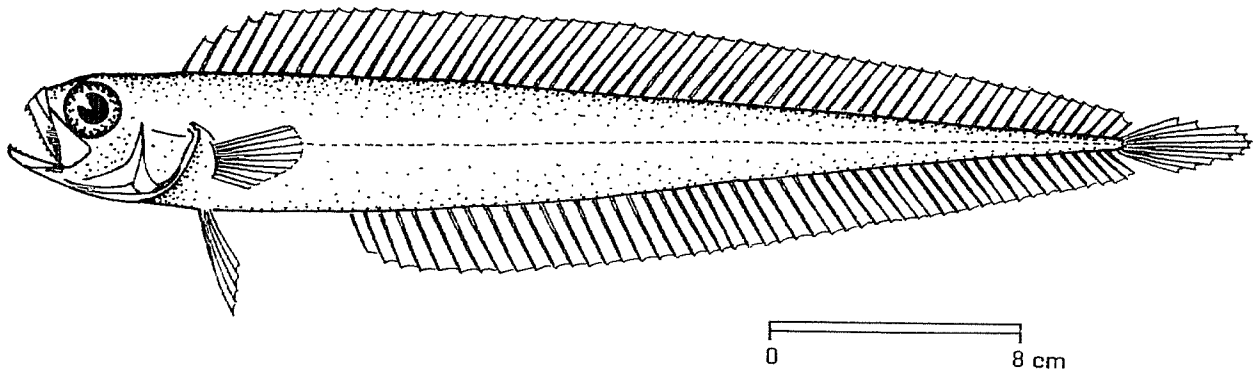
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : CEPOLIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Cepola macrophthalma (Linnaeus, 1758)

OTHER SCIENTIFIC NAMES STILL IN USE : Cepola rubescens Linnaeus, 1766



VERNACULAR NAMES:

FAO : En - Red bandfish
Fr - Cépole commune
Sp - Cinta colorada

NATIONAL :

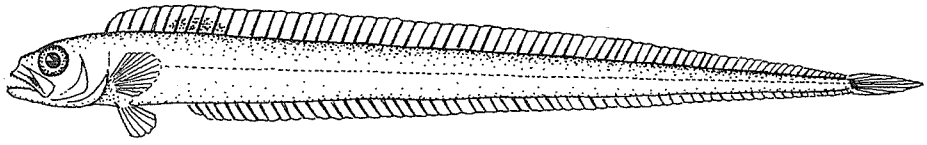
DISTINCTIVE CHARACTERS :

Body very elongated, ribbon-like, easily undulating, low and gradually tapering to a pointed tail, its depth contained more than 13 times in total length. Head short, snout blunt; eyes large, contained less than twice in body depth, and less than 3 times in head length; mouth large, oblique; teeth long, slender and pointed, their tips slightly curved backward, widely spaced in a single row in each jaw. Dorsal and anal fins very long, the dorsal with 67 to 70 and the anal with 59 to 61 rays. Scales minute.

Colour: back and sides red or orange red; belly orange or yellowish; fins of a light reddish yellow; eyes silvery.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Cepola pauciradiata: eye small, contained more than 3 times in body depth (less than twice in C. macrophthalma); body depth contained less than 10 times in total length (more than 13 times in C. macrophthalma); teeth short; dorsal fin with 60 to 62 rays (67 to 70 in C. macrophthalma); anal fin with 53 or 54 rays (59 to 61 in C. macrophthalma).



C. pauciradiata

SIZE:

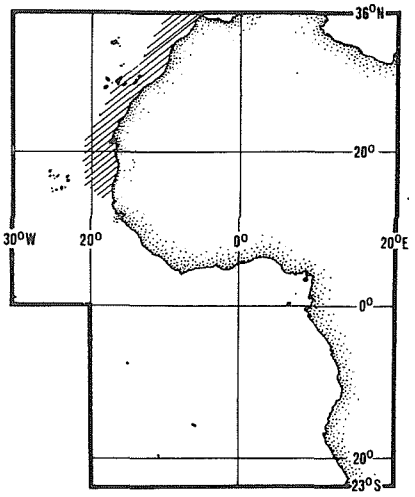
Maximum: 70 cm; common to 40 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

In the area it occurs from the Straits of Gibraltar to northern Senegal (15°N); northward extending into the Mediterranean and the North Atlantic up to the Orkney Islands.

Lives single or in small groups on muddy sand bottoms at depths between 20 and 200 m.

Feeds on small crustaceans (decapod larvae, copepods, amphipods, euphausids) and on chaetognaths (Sagitta).



PRESENT FISHING GROUNDS:

Continental shelf off Morocco and Mauritania.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught mainly with bottom trawls.

Utilized mainly for fishmeal and oil; occasionally marketed fresh and used for fish soups.

CHAETOD

1981

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

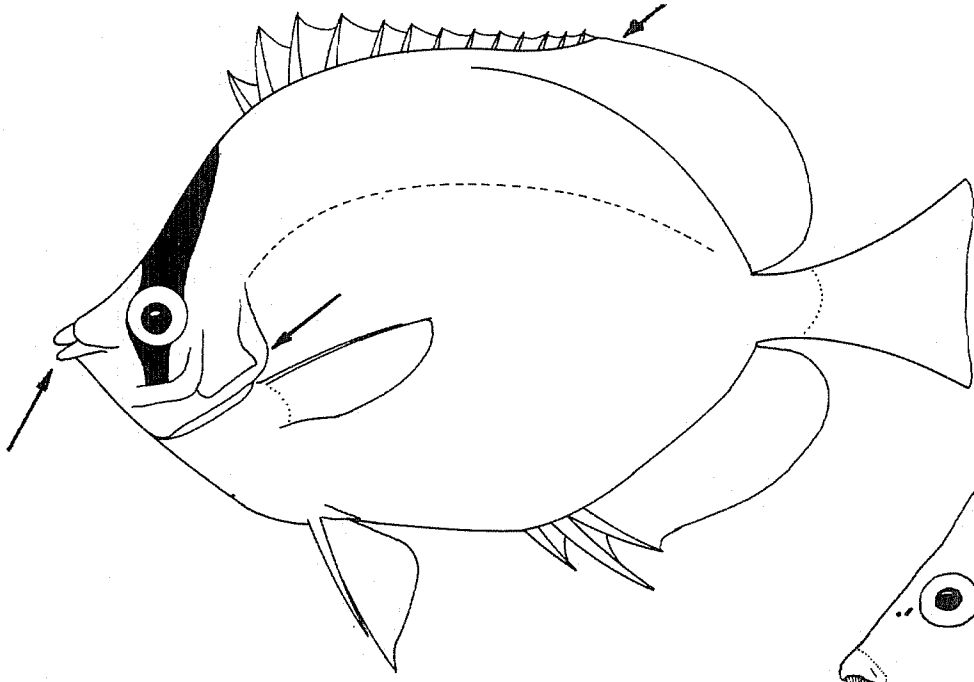
CHAETODONTIDAE

Butterflyfishes

Body deep and strongly compressed, oval to orbicular or sub-rhomboidal in outline. Mouth very small, protractile, terminal; teeth long, slender, flexible, in narrow or brushlike bands in jaws; palate toothless or not; eye moderate, lateral; preopercle without any strong and long spine at angle; gill membranes more or less joined to isthmus, usually narrowly attached to it. Dorsal fin single, continuous, with, in the area, 11 to 14 spines; anal fin with 3 spines. Scales moderate to small, ctenoid, often finely ciliated over body and head, forming a dense cover over soft vertical fins. Lateral line present, following arch of dorsal profile, often angular, but not reaching caudal fin. Caudal peduncle short. Axillary process present at base of pelvic fin.

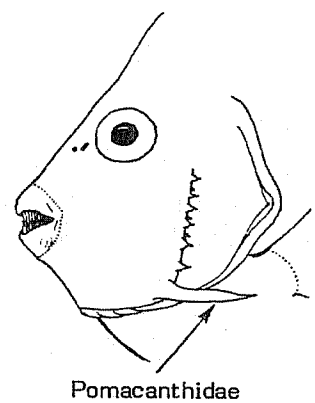
Colour: generally handsomely and brilliantly coloured, often with an ornamented design of dark brown or black bars over a whitish or silvery body, yellow tints frequent. Juveniles may have black rounded spots, sometimes narrowley bordered with whitish; these ocellated marks may disappear or persist in older individuals.

Butterflyfishes are generally found on coral reefs, usually in shallow water. Chaetodon hoefleri and Chaetodon marcellae, however, occur to 100 m depth or more. Butterflyfishes are solitary or occur in pairs. They feed diurnally where they shelter, about reefs or on seagrass beds and they are known to graze on coral polyps, colonial sea anemones, tentacles of tube worms and algae. They are edible, but of little importance as food because of their small size; those seen in markets are caught mainly by traps.



SIMILAR FAMILIES OCCURRING IN THE AREA:

Pomacanthidae: larger, often more brightly coloured; always with a long and strong spine at angle of preopercle.



Pomacanthidae

FAO Sheets CHAETODONTIDAE Fishing Areas 34, 47 (in part)

GENERA OCCURRING IN THE AREA:

Chetodon only; Bauchotia used for some species, but probably has to be considered as a subgenus.

KEY TO SPECIES OCCURRING IN THE AREA:

1 a. Eleven or 12 dorsal spines; blackish eyeband present or not

2 a. Eleven dorsal spines; eyeband without blue-white margins (Fig. 1) ... C. hoefleri

2 b. Twelve dorsal spines

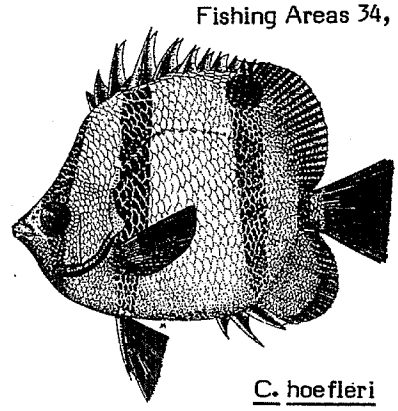
3 a. Eyeband absent; front and lower parts of body blackish (Fig. 2) ..... C. dichrous

3 b. Eyeband present and white marginated (Fig. 3) ..... C. robustus

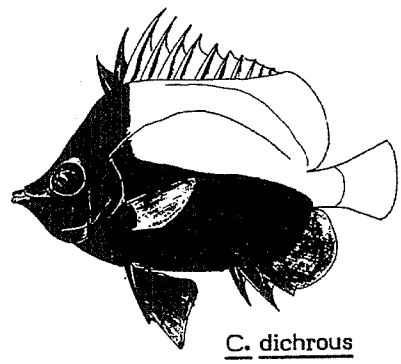
1 b. Thirteen dorsal spines, eyeband present

4 a. Dorsal spines relatively long; a dark bar on posterior part of body (Fig. 4) .. C. marcellae

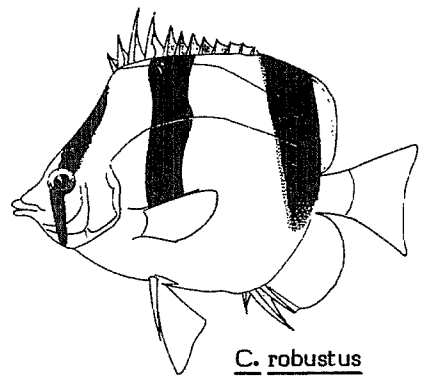
4 b. Dorsal spines relatively short; body without dark bar (Fig. 5) ..... C. sanctaehelenae



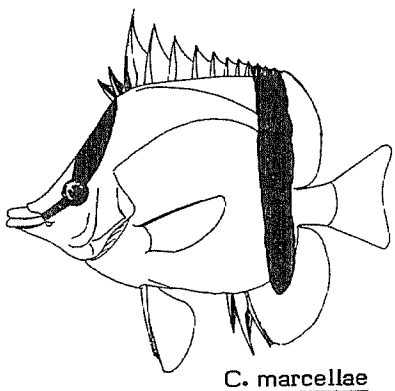
C. hoefleri Fig. 1



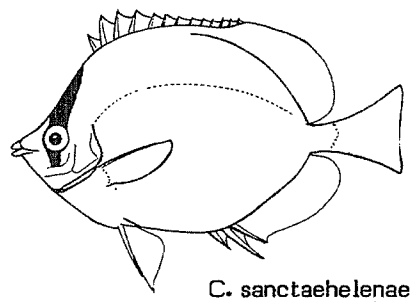
C. dichrous Fig 2



C. robustus Fig. 3



C. marcellae Fig. 4



C. sanctaehelenae Fig. 5

LIST OF SPECIES OCCURRING IN THE AREA:

* Chaetodon dichrous Günther, 1869
** Chaetodon hoefleri Steindachner, 1883
*** Chaetodon marcellae Poll, 1950
*** Chaetodon robustus Günther, 1860
* Chaetodon sanctaehelenae Günther, 1860

Prepared by A. Maugé, Muséum National d'Histoire Naturelle, Ichtyologie générale et appliquée, Paris, France.
Illustrations provided by author

* St. Helena, Ascension
** Cape Blanc to Angola, exceptionally in the Mediterranean Sea (Torchio, 1968; Mars, 1959)
*** Tropical West Africa

CITH

1981

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

CITHARIDAE

Flounders

A single species in the area; see species sheet for:

Citharus linguatula (Linnaeus, 1758) CITH Cith 1

Prepared by J. Nielsen, Zoologisk Museum, Copenhagen, Denmark

CITH Cith 1

1981

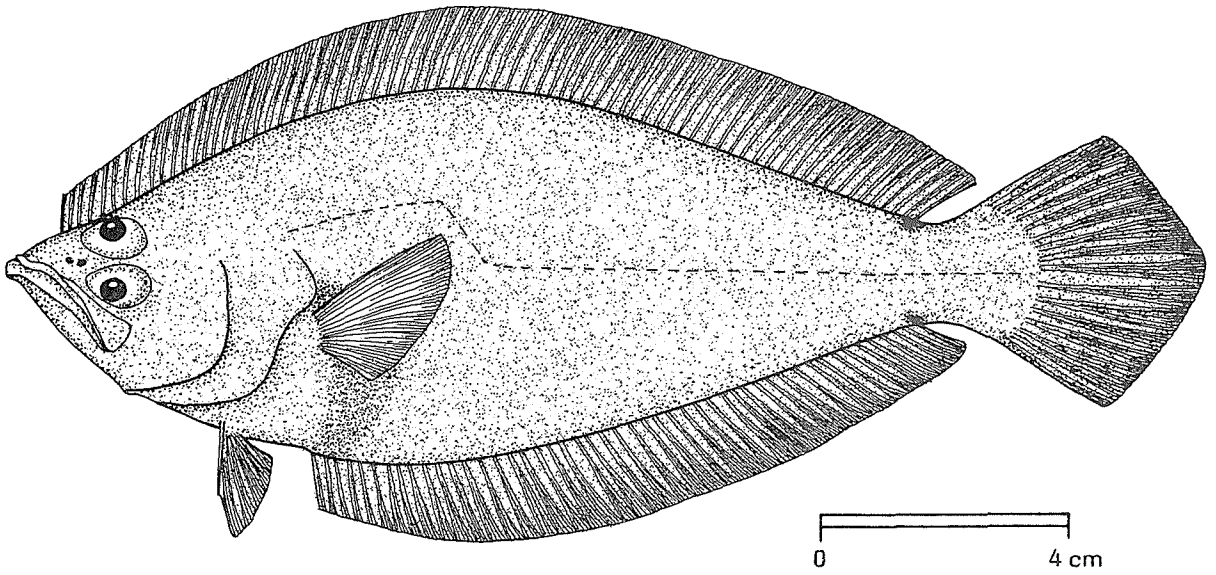
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : CITHARIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Citharus linguatula (Linnaeus, 1758)

OTHER SCIENTIFIC NAMES STILL IN USE : Citharus macrolepidotus (Bloch, 1787)



VERNACULAR NAMES:

FAO : En - Spotted flounder
Fr - Feuille
Sp - Solleta

NATIONAL :

DISTINCTIVE CHARACTERS :

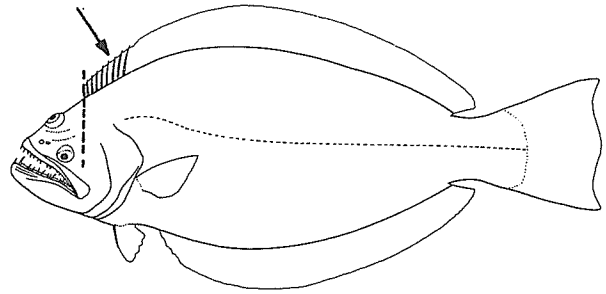
Body oval, head pointed. Mouth strongly bent downward; eyes on left side; strong teeth on vomer (roof of mouth); 11 or 12 gillrakers on lower limb of anterior arch. Dorsal fin without spinous rays, its origin in front of upper eye; pelvic fins with 1 spine and 5 soft rays. Anus placed on eyed side. Lateral line forming a curve above the pectoral fin.

Colour: eyed side brownish and fins often with dark spots; a conspicuous black spot just posterior to the dorsal and the anal fins.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Species of Psettodidae: dorsal fin with spinous rays anteriorly, its origin well behind upper eye.

All other flatfish families (Bothidae, Cynoglossidae, Pleuronectidae, and Soleidae): no spine in pelvic fin; anus placed on midventral margin or on blind side. Also, eyes on right side in Pleuronectidae and Soleidae.



Psettodidae

(Psettodes)

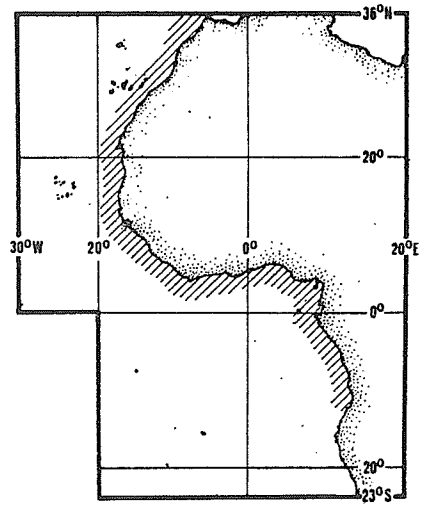
SIZE:

Maximum: about 25 cm; common to 20 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Along the west coast of Africa from Gibraltar southward to about 16°S (Angola).

Inhabits soft bottoms from the coastline to about 300 m depth, but rarely caught at depths greater than 200 m.



PRESENT FISHING GROUNDS:

Regularly fished in shelf waters throughout its range, but not the object of a special fishery.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught with bottom trawls and beach seines.

Marketed mostly fresh; the flesh is not highly esteemed.

CLIN

1981

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

CLINIDAE

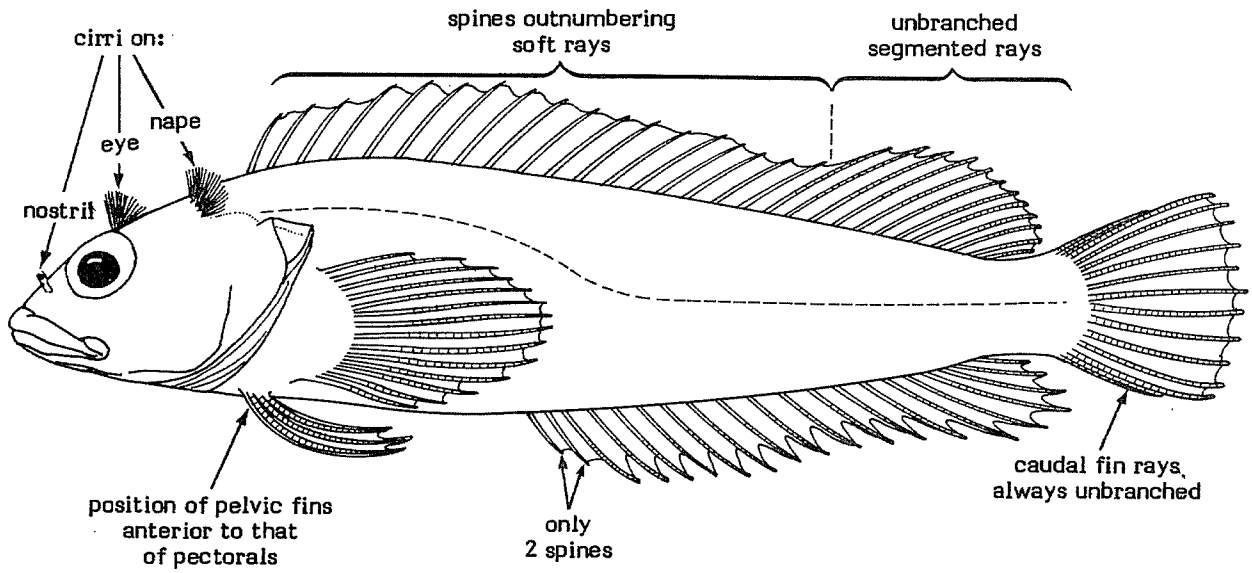
Clinids

Small, often elongate fishes; largest species about 20 cm, most under 10 cm. Head usually with cirri or fleshy flaps on anterior nostrils, eyes and laterally on nape; gill membranes continuous with each other across ventro-posterior surface of head. Each jaw with an outer row of relatively large, canine-like or incisor-like teeth, often with patches of smaller teeth behind; teeth usually also present on vomer and often on palatines (roof of mouth). Dorsal and anal fins long, frequently highest anteriorly; dorsal fin spines often flexible, usually outnumbering the segmented (soft) rays; two usually flexible spines in anal fin; pelvic fins inserted anterior to position of pectoral fins, with one spine not visible externally and only 2 or 3 segmented (soft) rays; all fin rays, including those of caudal, unbranched (simple). Lateral-line tubes or canals varying from complete (extending entire length of body) to completely absent; at least anterior portion of lateral line present in scaled forms (one exception); lateral-line tubes completely absent in naked forms. Scales cycloid (smooth to touch) when present.

Colour: varying from drab to brilliant hues, usually with irregular vertical bands.

Benthic fishes restricted to rocky, shelly, or coral reefs in shallow water, a few species in marine grass beds or sponges; a few species in deep water. The larvae, which are scaleless and often cirriless, are often misidentified as Blenniidae. The presence of more spines than rays in the dorsal fin of almost all clinids is an aid to identification.

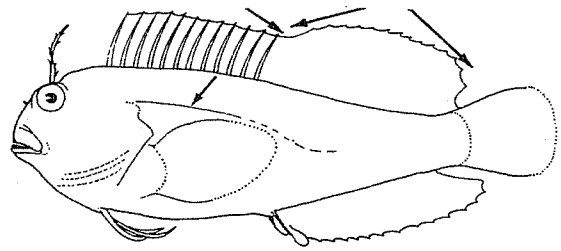
Clinids do not have any commercial importance in Fishing Area 34. They are edible, but rarely consumed.



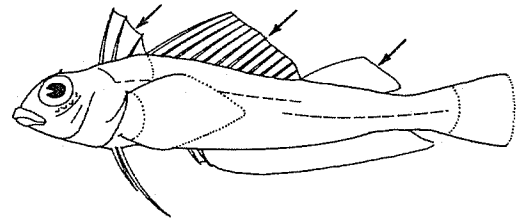
SIMILAR FAMILIES OCCURRING IN THE AREA:

Blenniidae: caudal fin rays branched in all but one species (always simple in Clinidae); scales always absent; lateral line tubes always present; always more segmented (soft) dorsal fin rays than spines (most clinids have more dorsal fin spines than segmented rays).

Trypterygiidae: caudal fin rays branched; usually 3 clearly defined dorsal fins, posteriormost dorsal fin spines always completely separated from soft rays; scales ctenoid (rough to touch).



Blenniidae

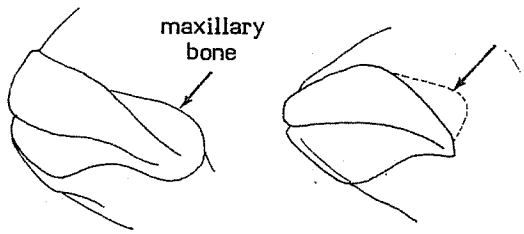


Trypterygiidae

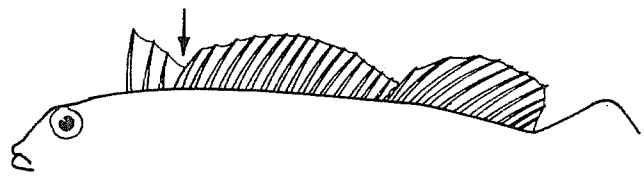
KEY TO GENERA OCCURRING IN THE AREA:

1 a. Maxillary bone exposed (Fig. 1a); patches of small teeth behind outer row of large teeth in upper jaw; spinous part of dorsal fin without notch ..... Labrisomus

1 b. Maxillary bone sheated (hidden, Fig. 1b); no small teeth behind outer row of large teeth in either jaw; spinous part of dorsal fin clearly notched after the first three spines (Fig. 2) ..... Malacoctenus



a b Fig. 1



Malacoctenus Fig. 2

LIST OF SPECIES OCCURRING IN THE AREA:

Labrisomus nuchipinnis (Quoy & Gaimard, 1824)

Malacoctenus africanus Cadenat, 1951

Prepared by P. Wirtz, Max Planck Institut für Verhaltensphysiologie, D-8131 Seewiesen, Federal Republic of Germany (based on identification sheets for the Western Central Atlantic prepared by V. Springer, Washington, U.S.A.)

CLUP

1981

FAO SPECIES IDENTIFICATION SHEETS

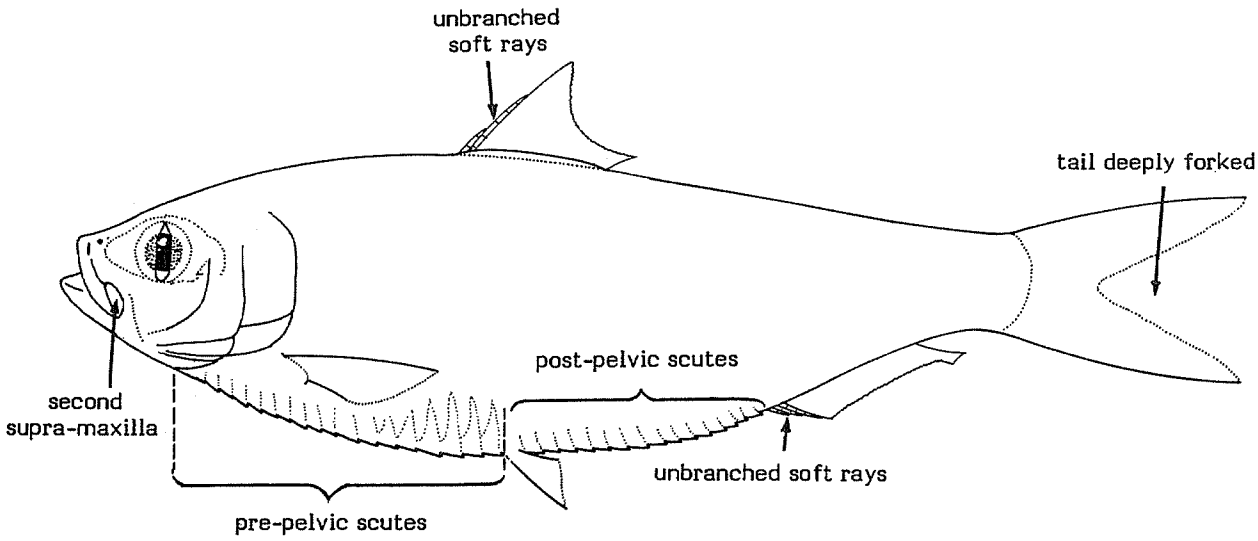
FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

CLUPEIDAE

Herrings, shads, pilchards, sprats, sardinellas

Small, mostly silvery fishes, usually with fusiform, subcylindrical bodies but sometimes quite strongly compressed; a keel of scutes present along belly. Lower jaw short but deep, giving typical clupeid mouth shape (lower jaw projecting in Ilisha). Fins lacking spiny rays; a single dorsal fin, usually short and at midpoint of body; pectoral fins set low on body; pelvic fin bases about equidistant between pectoral fin bases and anal fin origin; anal fin usually short, its origin behind dorsal fin base (long and under dorsal fin base in Ilisha); caudal fin deeply forked. Scales always cycloid (smooth to touch), but often shed rather easily, their hind border sometimes fimbriated; no lateral line.

Colour: usually dark blue or blue/green on back, silvery on flanks; darker markings include a spot behind gill opening (Sardinella, Alosa alosa), sometimes followed by a series of spots (Sardinops, Sardina, Alosa finta), a spot at base of anterior dorsal finrays (Sardinella) and a dusky margin to caudal fin.



Most species are marine, but some are anadromous (shads) and in this area Ethmalosa tolerates very low salinities in lagoons and estuaries during the dry season; a freshwater clupeid fauna (13 genera) exists in West African rivers, of which species of Pellona occur in estuaries and lagoons. Although mostly small (about 15 to 25 cm), certain species form large shoals and are the basis of sizable fisheries. The total catch of Clupeidae from the area covered is well over 1 000 000 t annually. In 1977 it exceeded 1 600 000 t (or over 40 percent of total landings), of which 1 250 000 t came from the northern part of the area (36°N to 9°N), 190 500 t from equatorial waters (9°N to 7°S), and about 180 000 t from the southern part (7°S to 23°S). Some two-thirds of the total catch were taken by foreign fleets fishing in the area. Of the total 1977 catch, about 850 000 t is broken down by

species or genera. The species predominating in the reported statistics (1977) are Sardinella aurita and S. maderensis (about 500 000 t), Sardina pilchardus (about 820 000 t) and Ethmalosa fimbriata (about 90 000 t). The CECAF Working Party on Resources Evaluation has recently recommended that all countries fishing in the area collect separate landing statistics for Sardina pilchardus, Sardinella maderensis, S. aurita, Sardinella species not elsewhere identified, Ethmalosa fimbriata and Ilisha africana. Furthermore, the working party recommended that length-frequency distributions be taken in the case of the following species: Sardina pilchardus, Sardinella aurita and S. maderensis.

SIMILAR FAMILIES OCCURRING IN THE AREA:

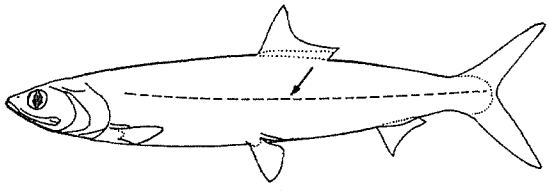
Elopidae: lateral line present, no keel of scutes along belly.

Megalopidae: last dorsal finray a filament, lateral line present.

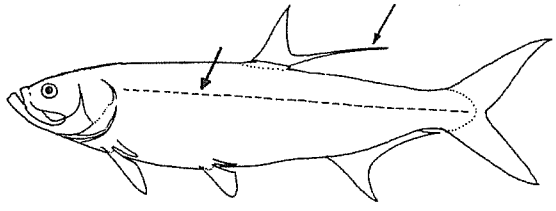
Albulidae: snout conical, projecting beyond lower jaw, mouth inferior, lateral line present.

Engraulidae: snout conical, projecting beyond lower jaw, mouth inferior.

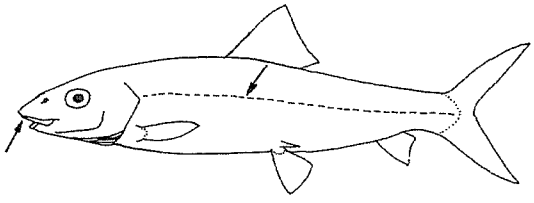
Similar silvery fishes of other families: no keel of scutes along belly.



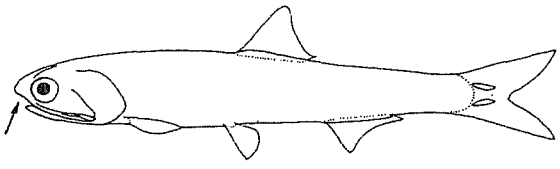
Elopidae



Megalopidae



Albulidae



Engraulidae

KEY TO GENERA OCCURRING IN THE AREA*:

1 a. Anal fin short, with less than 40 finrays, beginning behind dorsal fin base (Fig. 1); jaws usually equal

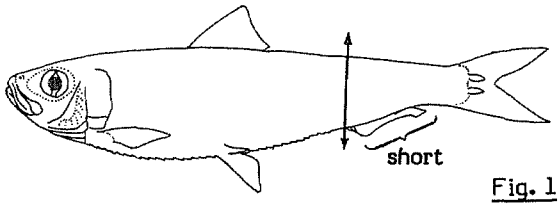


Fig. 1

*Excluding purely freshwater species

2 a. Upper jaw without median notch for reception of tip of lower jaw (Fig. 2)

3 a. Two supra-maxillae (Fig. 3)

4 a. Gill cover smooth; a single black spot behind gill cover ..... Sardinella

4 b. Gill cover with bony radiating striae (Fig. 4); also, black spots along flanks

5 a. Lower gillrakers not decreasing in size at angle of first arch (Fig. 5); restricted to northern part of area ..... Sardina

5 b. Lower gillrakers decreasing in size at angle of first arch (Fig. 6); restricted to southern part of area (Angola) ..... Sardinops

3 b. A single supra-maxilla (anterior missing) (Fig. 7)

6 a. Jaw teeth small, of even lengths ..... Pellonula

6 b. Enlarged canine-like teeth in upper jaw (behind outer series) .. Cynothrissa

2 b. Upper jaw with distinct median notch for reception of tip of lower jaw (Fig.8)

Fig. 2

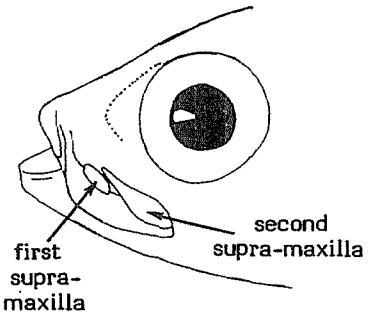


Fig. 3

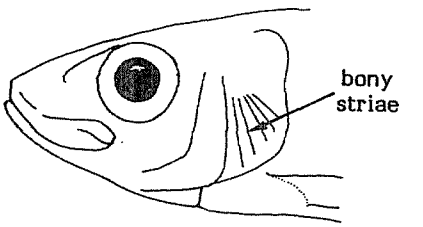


Fig. 4

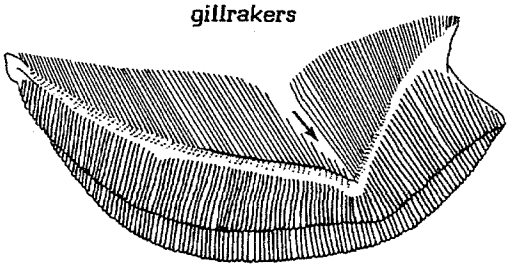


Fig. 6

Sardinops

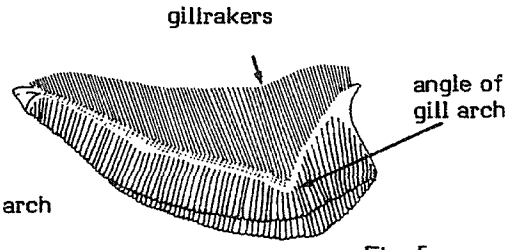


Fig. 5

Sardina

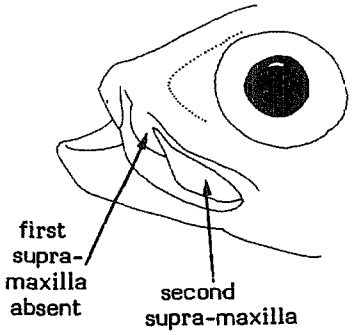


Fig. 7

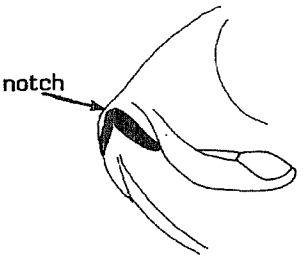
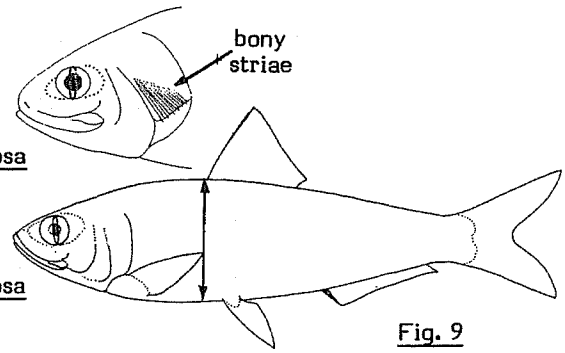


Fig. 8

7 a. Body fairly slender, gill cover with bony radiating striae (Fig. 9); posterior borders of scales not fringed; found only in northern part of area (to Cape Blanc) ..... Alosa

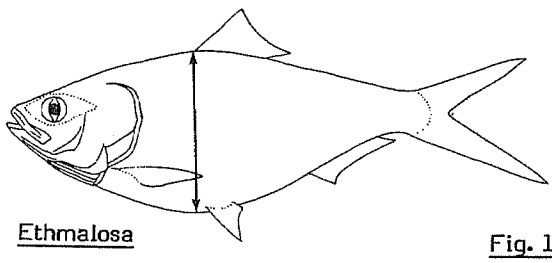
7 b. Body deep, gill cover smooth (Fig. 10); posterior borders of scales fringed; not found in northern part of area (from southern Mauritania) ..... Ethmalosa

1 b. Anal fin long, with more than 40 finrays, beginning underneath dorsal fin base; lower jaw strongly projecting (Fig. 11) ..... Ilisha



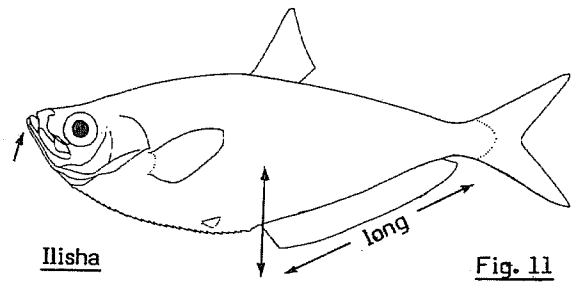
Alosa

Fig. 9



Ethmalosa

Fig. 10



Ilisha

Fig. 11

LIST OF SPECIES OCCURRING IN THE AREA*:

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

Alosa alosa (Linnaeus, 1758)	CLUP Alos 5
Alosa fallax (Lacepède, 1803)	CLUP Alos 6
Cynothrissa ansorgii (Boulenger, 1916)	
Cynothrissa mento Regan, 1917	
Ethmalosa fimbriata (Bowdich, 1825)	CLUP Ethm 1
Ilisha africana (Bloch, 1795)	CLUP Ilish 5
Pellonula leonensis Regan, 1917	CLUP Pellon 1
Pellonula vorax (Günther, 1868)	
Sardina pilchardus (Walbaum, 1792)	CLUP Sardi 1
Sardinella aurita Valenciennes, 1847	CLUP Sardl 1
Sardinella maderensis (Lowe, 1839)	CLUP Sardl 2
Sardinella rouxi (Poll, 1953)	CLUP Sardl 12
Sardinops ocellata (Pappé, 1853)	CLUP Sardop 2

Note: the status of the West African Sardinella aurita and S. maderensis vis-a-vis their Mediterranean counterparts, as well as the homogeneity of the West African stocks, is still being studied. Similarly, the species of Pellonula are not yet certain.

Prepared by P.J.P. Whitehead, Zoology Department, British Museum (Natural History), London SW7 5BD, U.K.

*Excluding purely freshwater species

CLUP Alos 5

1981

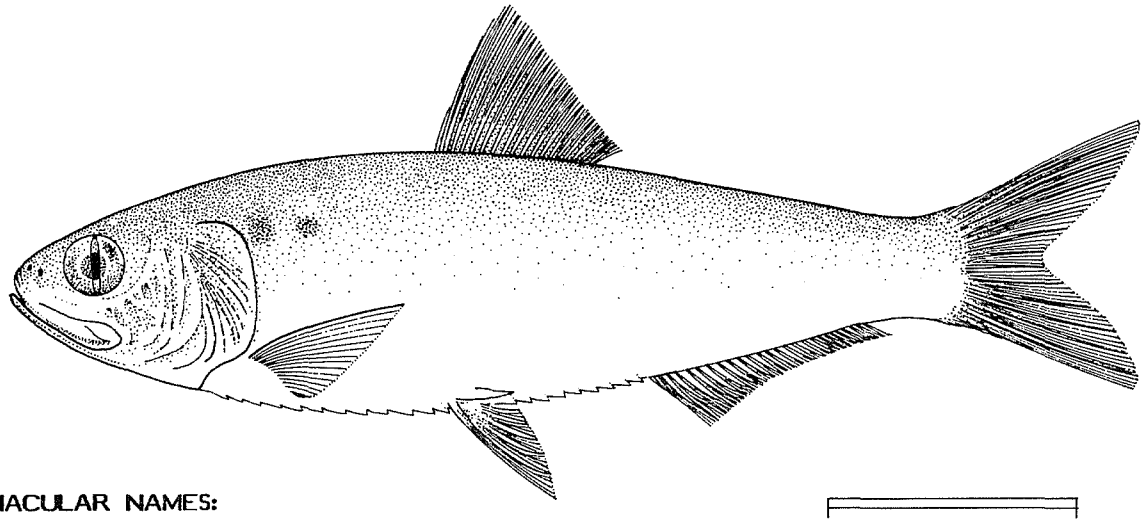
FAO SPECIES IDENTIFICATION SHEETS

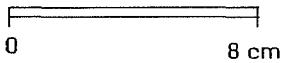
FAMILY : CLUPEIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Alosa alosa (Linnaeus, 1758)

OTHER SCIENTIFIC NAMES STILL IN USE : None





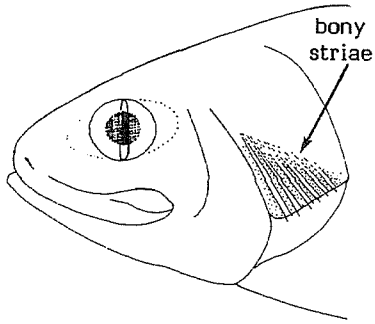
VERNACULAR NAMES:

FAO : En - Allis shad
Fr - Alose vraie
Sp - Sábalo común

NATIONAL :

DISTINCTIVE CHARACTERS :

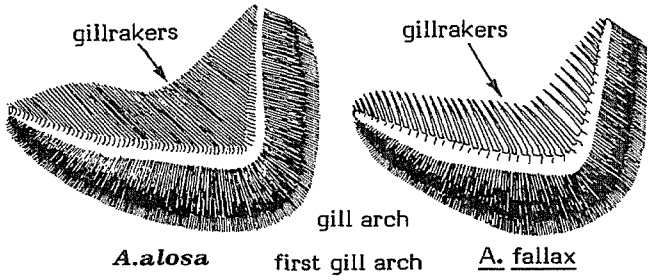
Body fusiform, a little compressed, the head wedge-shaped in cross section; belly with a keel of scutes. Gill cover with radiating bony striae; upper jaw with a distinct notch to receive tip of lower jaw; lower gillrakers 55 to 85, fairly slender, appearing to be more numerous and longer than the gill filaments. Dorsal fin origin a little before midpoint of body; anal fin origin well behind dorsal fin base.



Colour: back deep blue, flanks silvery, both with a metallic gleam; usually a dark spot behind gill cover, occasionally followed by one or even two more.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

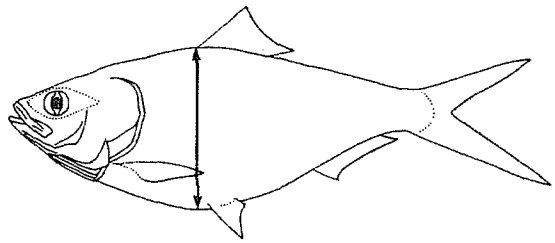
Alosa fallax: lower gillrakers 20 to 40, short and coarse, fewer than gill filaments (slender, 55 to 85, more than gill filaments in A. alosa); also, 6 or 7 dark spots along flanks.



Ethmalosa fimbriata: body much deeper, posterior borders of scales fringed; also not found further north than southern Mauritania.

Other species of Clupeidae: upper jaw not distinctly notched to receive tip of lower jaw. Furthermore, anal fin very long and lower jaw projecting strongly in Ilisha africana.

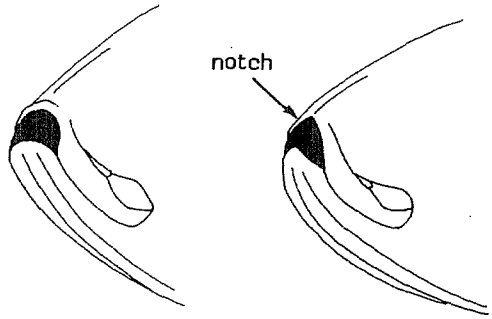
Similar silvery fishes: no keel of scutes along belly.



Ethmalosa fimbriata

SIZE :

Maximum: 60 cm; common to 40 cm.



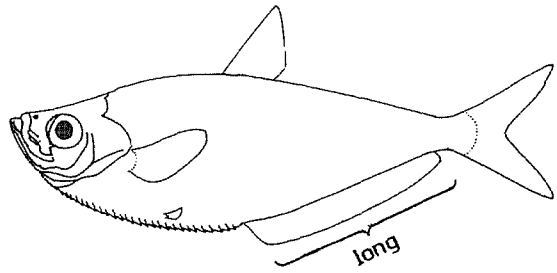
Sardinops, Sardinella *Alosa*

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Morocco and Sahara, also Canary Islands, southward to Cape Blanc (21°N). Elsewhere, in the Eastern Atlantic from Norway to the Iberian peninsula, also in the Mediterranean and the Black Sea.

Anadromous, entering rivers to breed; caught in the area at depths from 10 to 400 m.

Feeds principally on plankton organisms such as copepods (Calanus) and euphasids (Meganyctiphanes); also on decapods (Pandalus), at least in the more northern waters.



Ilisha

PRESENT FISHING GROUNDS :

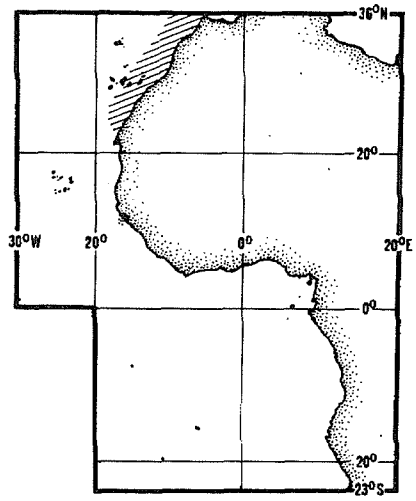
Caught in small numbers in its area of distribution.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Taken in trawls, perhaps also in purse seines.

Marketed fresh.



CLUP Alos 6

1981

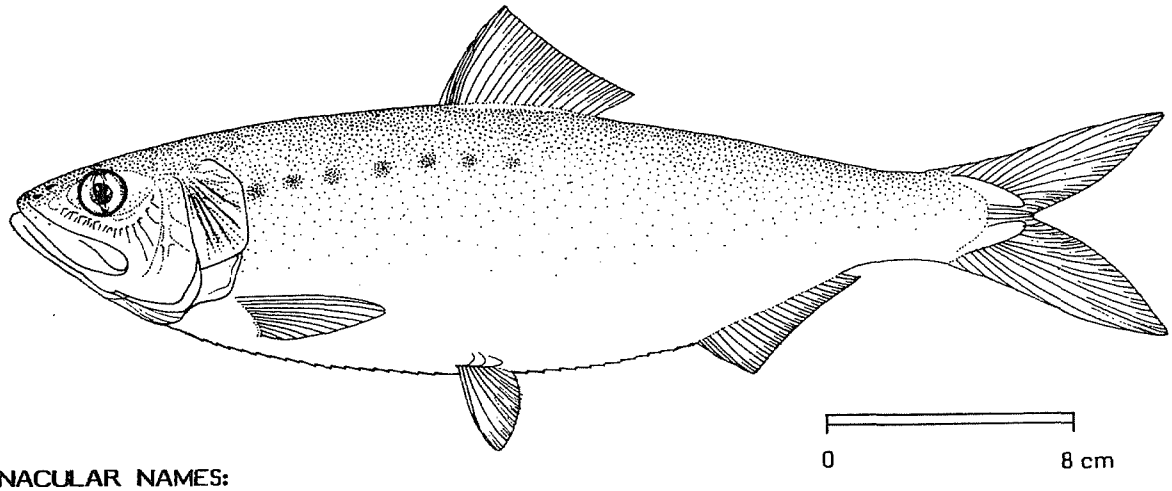
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : CLUPEIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Alosa fallax (Lacepède, 1803)

OTHER SCIENTIFIC NAMES STILL IN USE : Alosa finta (Cuvier, 1829)



VERNACULAR NAMES:

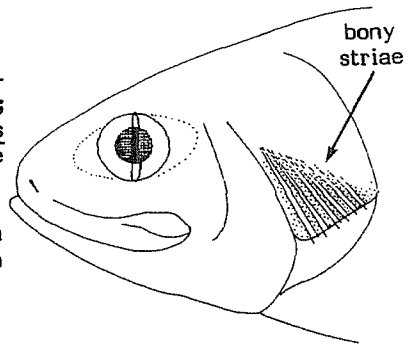
FAO : En - *Twaite shad*
Fr - Alose feinte
Sp - Saboga

NATIONAL :

DISTINCTIVE CHARACTERS :

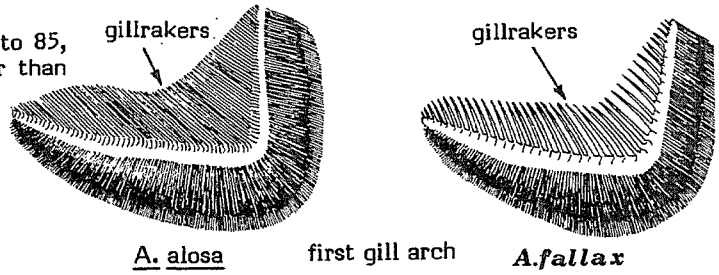
Body fusiform, a little compressed, the head wedge-shaped in cross-section; belly with a keel of scutes. Gill cover with radiating bony striae; upper jaw with a distinct notch to receive tip of lower jaw; lower gillrakers 20 to 40, short and coarse, fewer than gill filaments. Dorsal fin origin a little before midpoint of body; anal fin origin well behind dorsal fin base.

Colour: back blue, flanks silvery, both with a metallic gleam; usually a dark spot behind gill cover and 6 or 7 dark spots along flanks, occasionally with another series below.



DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Alosa alosa: lower gill rakers slender, 55 to 85, more than gill filaments (coarse, 20 to 40, fewer than gill filaments in A. fallax).

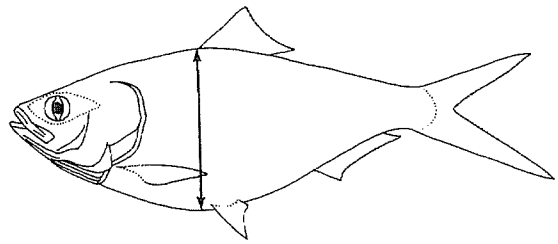


A. alosa first gill arch *A.fallax*

Ethmalosa fimbriata: body much deeper, posterior borders of scales fringed; also, not found further north than southern Mauritania.

Other species of Clupeidae: upper jaw not distinctly notched to receive tip of lower jaw. Furthermore, anal fin very long and lower jaw projecting strongly in Ilisha africana.

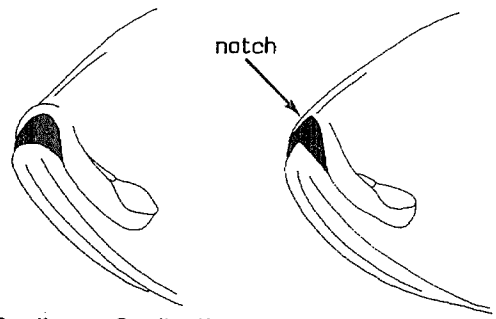
Similar silvery fishes: no keel of scutes along belly.



Ethmalosa fimbriata

SIZE :

Maximum: 60 cm; common to 40 cm.



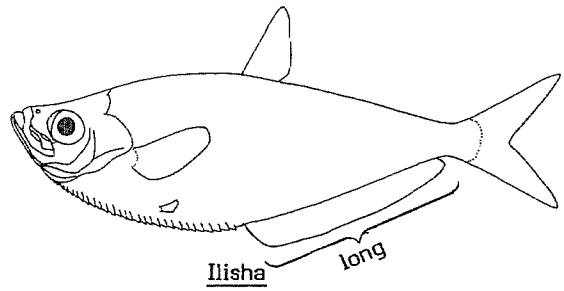
Sardinops, Sardinella *Alosa*

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Morocco, perhaps Canary Islands and further south to Sahara. Elsewhere, in the Mediterranean (A. fallax nilotica) and in the northeastern Atlantic, from Scandinavia to Gibraltar (A. fallax fallax).

Anadromous, entering rivers to breed; caught in the area at depths from 10 to 400 m.

A plankton feeder, but also feeds on small fishes.



Ilisha

PRESENT FISHING GROUNDS :

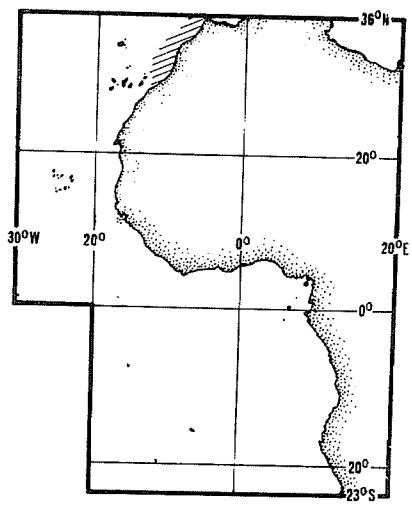
Caught in small numbers in the E.C. Atlantic area.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Taken in trawls, perhaps also in purse seines.

Marketed fresh.



CLUP Ethm 1

1981

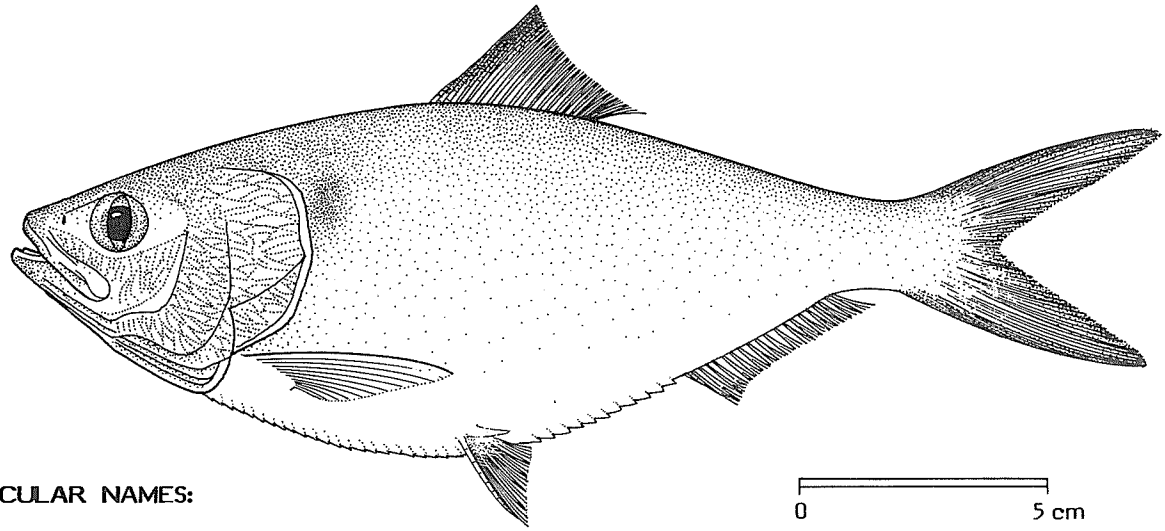
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : CLUPEIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Ethmalosa fimbriata (Bowdich, 1825)

OTHER SCIENTIFIC NAMES STILL IN USE : Ethmalosa dorsalis (Valenciennes, 1847)



VERNACULAR NAMES:

FAO : En - Bonga shad
Fr - Ethmalose d'Afrique
Sp - Sábalo africano

NATIONAL :

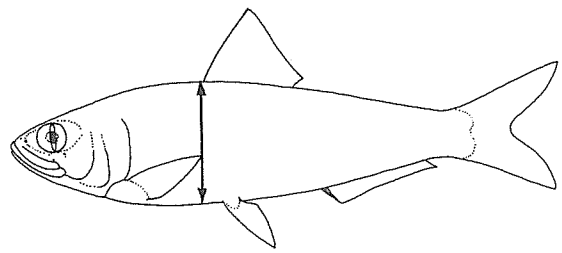
DISTINCTIVE CHARACTERS :

Body deep and compressed, the head rather large; belly with a keel of scutes (partly concealed in a groove of scales). Mouth terminal, the lower jaw fitting into a median notch of upper jaw; gillrakers long, fine and numerous. Dorsal fin short, at about midpoint of body; anal fin well behind dorsal fin base; caudal fin tips long and pointed. Scales with fringed posterior borders.

Colour: back blue/green, sides silvery, with a faint oval spot a short distance behind gill opening (occasionally followed by other faint spots); golden areas on upper part of head; anterior dorsal finrays dark, rest of fin yellow, except at base; anal fin yellow at base; caudal fin deep chrome yellow, but upper edge and hind margin grey.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Alosa species: body much more slender, posterior borders of scales not fringed; also, not found further south than Sahara.

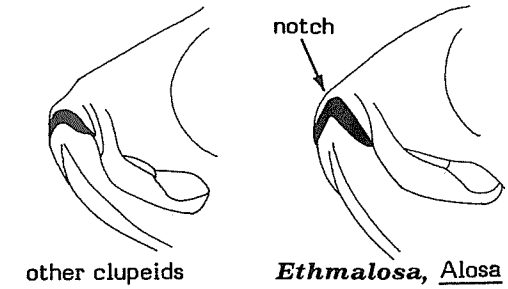


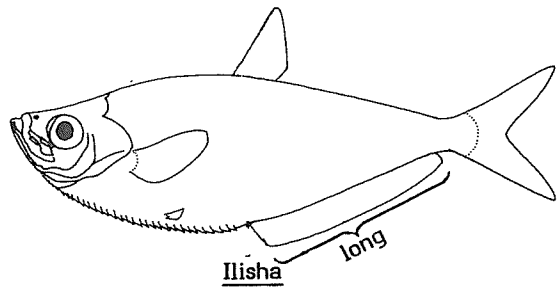
Alosa

Sardinella species: body usually much more slender, upper jaw without distinct median notch; scales not markedly fringed posteriorly; also, head smaller, caudal fin not a deep yellow (faint yellow in S. rouxi, grey in others).

Ilisha africana: lower jaw strongly projecting, mouth pointing upward; also, anal fin very long, beginning under dorsal fin.

Species of Elopidae, Megalopidae, Albulidae: no scutes present along belly.





SIZE :

Maximum: 30 cm; common to 25 cm.

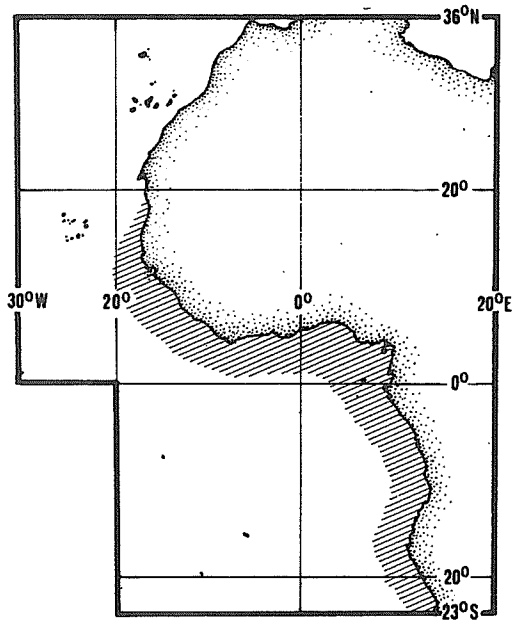
GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

From Senegal (perhaps southern Mauritania) southward to Angola, with major concentrations in areas of lagoons and estuaries.

Occurs in fairly shallow coastal waters, lagoons and estuaries, sometimes in complete freshwater. One and two year old fishes migrate 200 km up the Gambia river (in March and January respectively). In Ebrie Lagoon (Ivory Coast) the first year is spent in the lagoon, the fishes migrating to the sea in their second year.

Spawns throughout year in the Senegambian region, with peaks in March, June/July and October/November; off Sierra Leone from July to December; and off Ivory Coast and Nigeria from November to May/June (i.e. progressively later to the south). Spawns in the sea, lagoons and estuaries.

Feeds principally on phytoplankton fillered by the very fine gillraker sieve.



PRESENT FISHING GROUNDS :

The largest fisheries are in Senegal, Sierra Leone, Ivory Coast, Nigeria and Cameroun, mainly in the dry season.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

The annual landings of this species are nearly 100 000 t. In 1977 the reported catch totalled about 92 000 t (Nigeria, 30 000 t; Senegal, 25 000 t; Sierra Leone, 15 000 t; Ivory Coast, 14 000 t; Gambia, 7 000 t; Gabon, 600 t; and Ghana less than 100 t.

Caught by canoe fishermen using purse seines and encircling gillnets, also seine nets in lagoons and estuaries.

Marketed fresh, also smoked or dried (the latter greatly preferred in Cameroon and perhaps elsewhere, but the Senegambian catch is mainly marketed fresh).

CLUP Ilish 5

1981

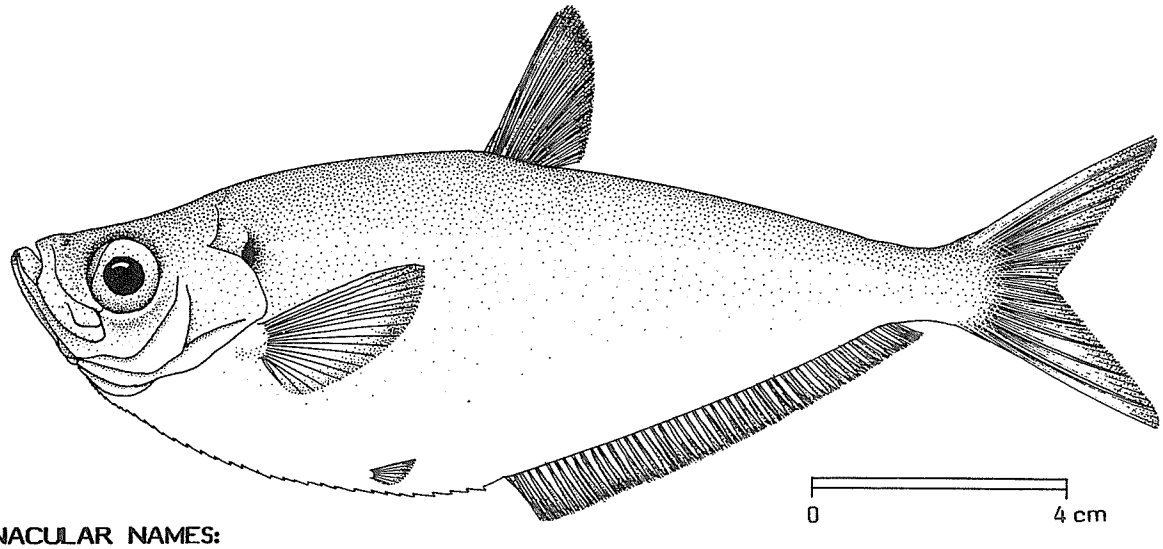
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : CLUPEIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Ilisha africana (Bloch, 1795)

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES:

FAO : En - West African ilisha
Fr - Alose rasoir
Sp - Sardineta africana

NATIONAL :

DISTINCTIVE CHARACTERS :

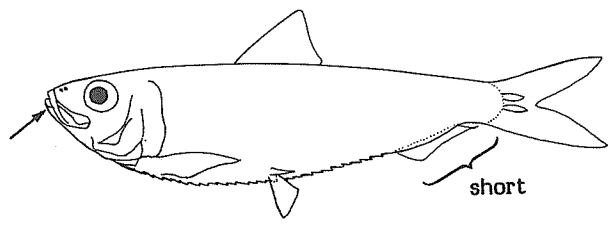
Body deep and compressed; belly with a sharp and serrated keel of scutes from gill opening to anus. Eye large, mouth pointing upwards, lower jaw projecting. Dorsal fin short; anal fin very long, with more than 40 finrays, beginning under dorsal fin; pelvic fins small.

Colour: back grey, flanks pale grey or silver, with a faint dark spot behind gill cover (green/gold when alive); dorsal fin yellow, with a dusky tip; pectoral fins with upper finrays yellow, the rest colourless, as also pelvic fins; anal fin with yellow border; caudal fin yellow with upper lobe and hind margin dusky.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Other species of Clupeidae: anal fin short, with much less than 40 finrays; lower jaw not strongly projecting.

Similar silvery fishes: no keel of scutes along belly.



other clupeid species

SIZE :

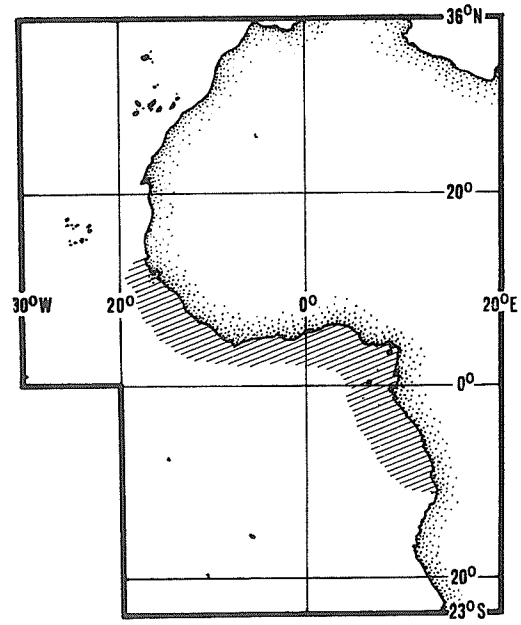
Maximum: 22 cm; common to 18 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Senegal (not abundant), Sierra Leone to Congo (common), probably also in Angola.

Inshore waters, sandy beaches, estuaries (in almost fresh water); caught near bottom down to 25 m or at surface.

Feeds on small fishes, crustaceans, etc.



PRESENT FISHING GROUNDS :

Comprises a minor part of the clupeid catch from Sierra Leone to Congo, but no special fishery.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Caught with beach seines, purse seines, gillnets and trawls.

Marketed fresh or frozen, probably also dried.

CLUP Pellon 1

1981

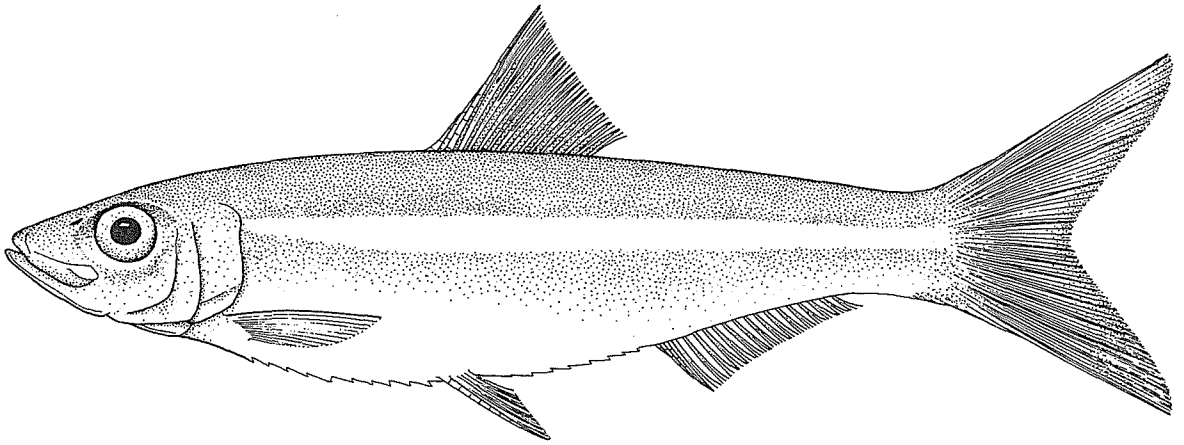
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : CLUPEIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Pellonula leonensis Regan, 1917

OTHER SCIENTIFIC NAMES STILL IN USE : Pellonula azeliusi Johnels, 1954
Microthrissa miri Daget, 1954



VERNACULAR NAMES:

FAO : En - Guinean sprat
Fr - Spratelle de Guinée
Sp - Sardinita guineana

NATIONAL :

DISTINCTIVE CHARACTERS :

Body variable, slender to moderately deep and compressed; belly sharply keeled, with scutes from pectoral fin base to anus, but no scutes in front of pectoral fin base. Mouth terminal, or lower jaw only very slightly projecting; teeth on premaxillae and dentaries small, no canine-like teeth present; gillrakers moderately fine, 20 to 30 on lower part of first arch. Dorsal fin near midpoint of body; 8 pelvic finrays; anal fin origin a little behind dorsal fin base.

Colour: back pale green, flanks with a silver stripe, grey below and becoming very pale on belly; a faint gold line above silver stripe when viewed from above; fins clear, but faint yellow on dorsal fin and stronger yellow on caudal fin (except outermost rays); hind margin of caudal fin dusky, tip of lower lobe darker.

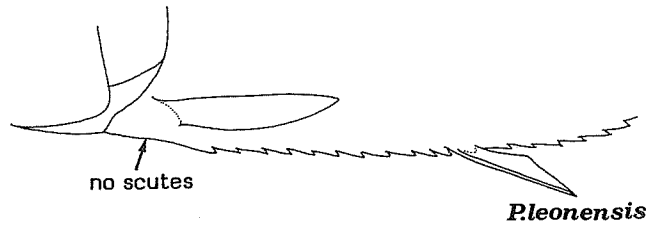
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Pellonula vorax: scutes present in front of pectoral fin base, reaching to gill opening.

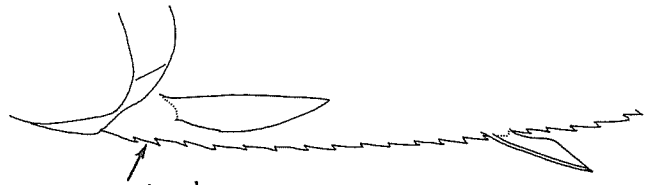
Cynothrissa, Odaxothrissa species: strong canine-like teeth in both jaws.

Sardinella maderensis: a dark spot at dorsal fin origin and lower gillrakers more than 35; also, scutes present in front of pectoral fin base.

Ethmalosa fimbriata: body deep and compressed and overall colour golden; also, scutes present in front of pectoral fin base.



Pleonensis



P. vorax

SIZE:

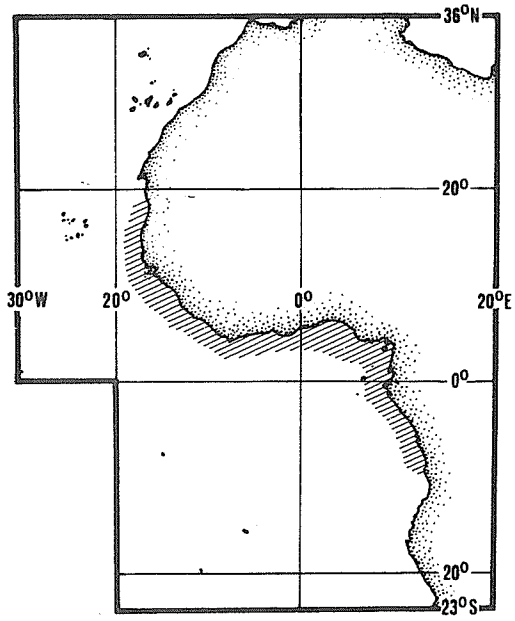
Maximum: 9 cm; common to 8 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

From northern Senegal to at least Congo, probably also Angola.

Chiefly in fresh water, but also found in estuaries and lagoons of moderate salinity, often occurring with juvenile Sardinella maderensis and Ethmalosa fimbriata. Breeds in rivers, lakes and perhaps estuaries and lagoons (July to September in Volta Lake). Recently reported from beaches on the Congo coast at Pointe Noire.

Feeds on insects and small crustaceans.



PRESENT FISHING GROUNDS:

Caught throughout area of distribution; a special fishery in the Wouri river estuary near Douala (Cameroon), but others probably exist.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught by seine nets in shallow water (fresh or brackish), by scoop nets and in basket traps; also on line using as bait the eye of a Pellonula (Cameroon).

Marketed fresh.

CLUP Sardi 1

1981

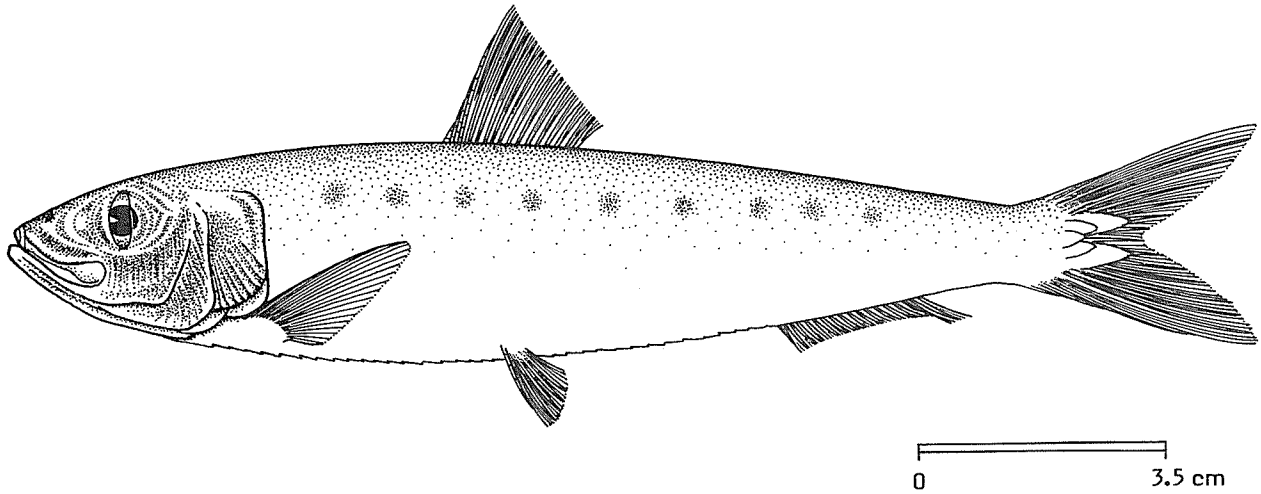
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : CLUPEIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Sardina pilchardus (Walbaum, 1792)

OTHER SCIENTIFIC NAMES STILL IN USE : None



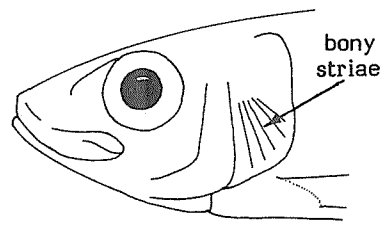
VERNACULAR NAMES :

FAO : En - European pilchard
Fr - Sardine commune
Sp - Sardina europea

NATIONAL :

DISTINCTIVE CHARACTERS :

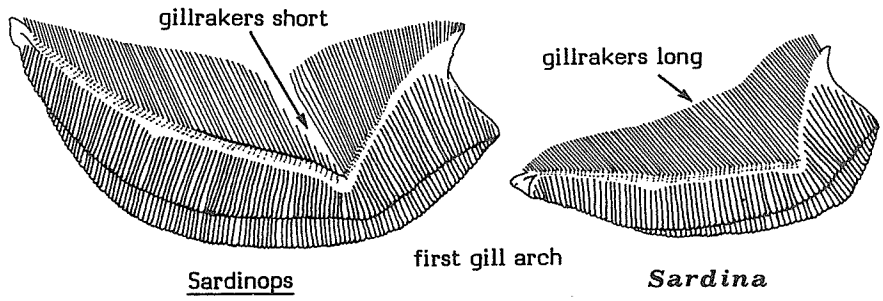
Body fairly slender, oval in cross section; belly not sharply keeled, but with a small ridge from gill opening to anus. Jaws about equal; lower gillrakers 44 to 68 (Mediterranean) or 59 to 106 (Sahara, Senegal), not decreasing in length at angle of gill arch, the lower gillrakers not overlapped by those on upper limb at this point; strong radiating bony striae on lower part of gill cover. Dorsal fin at about midpoint of body; 8 pelvic finrays; anal fin origin well behind dorsal fin base, last two finrays enlarged.



Colour: back green or olive, flanks golden, shading to silvery-white on belly; a series of dark spots along upper flanks, sometimes with a second or third series below.

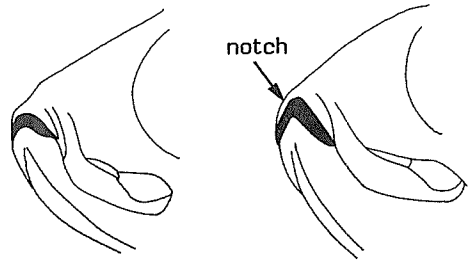
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Sardinops ocellata (only from Angola southward): gillrakers decrease in size at angle of first arch, the lower overlapped by the upper.



Alosa and Ethmalosa species: a distinct notch in upper jaw to receive tip of lower jaw; also, E. fimbriata is much more deep-bodied.

Other species of Clupeidae: lower part of gill cover without radiating bony striae. Furthermore, Sardinella aurita and other remaining clupeid species have at most a single dark spot on flanks.



Sardina Alosa, Ethmalosa

SIZE :

Maximum: 25 cm; common to 18 cm.

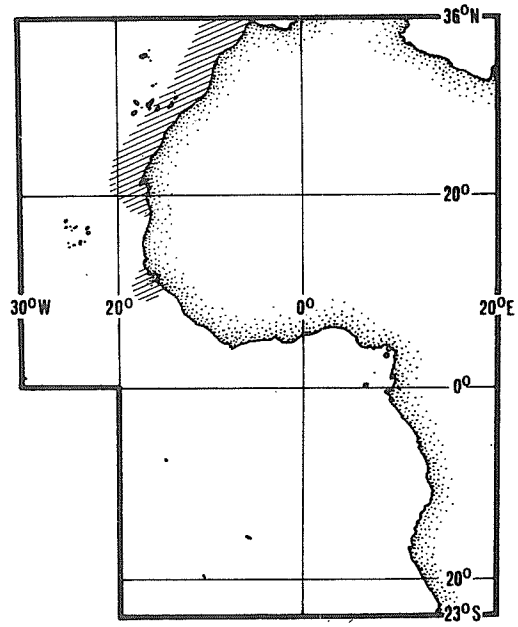
GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Common off southern Morocco, Madeira, Canary Islands and southward to 26°N, but since 1970 further southward to the northern coasts of Mauritania (Cape Timiris), with stray individuals caught as far south as Dakar (Senegal). Elsewhere, northeastern Atlantic from southern half of the United Kingdom to Morocco; also Mediterranean (except southeast) and Black Sea.

A pelagic and migratory fish, forming shoals at shallow depths (10 to 35 m at night, 25 to 100 or even 350 m by day) in coastal waters; normally a 'cold water' species (14 to 19°C), but juveniles caught in beach seines at Dakar (Senegal) at 25 to 28°C. Breeds in December (also March) off Sahara.

Feeds on phyto- and zooplankton.

Two subspecies: S. p. pilchardus (North Atlantic south to Gibraltar) and S. p. sardina (Gibraltar to Mauritania, also Mediterranean). Specimens from northern Mauritania suggest a third subspecies and those from Senegal a fourth.



PRESENT FISHING GROUNDS :

Principally off southern Morocco (main ports Safi, Essaouira and Agadir) and northern Sahara (ports Puerto Cansado, El Ayoun); of limited importance southwards (to Cape Timiris, Mauritania); a small fishery off the Canary Islands.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

The reported catch for this species in 1977 was about 820 000 t, most of which was taken by foreign fleets (U.S.S.R., 390 000 t; Poland, 136 000 t; Spain, 112 000 t; Morocco, 110 000 t; Bulgaria, 30 000 t; Romania, 27 000 t; German Democratic Republic, 13 000 t; and France less than 1 000 t.)

Caught with purse seines, lamparas (light fishing), gillnets and beach seines.

Marketed fresh, frozen or canned.

CLUP Sardl 1

1981

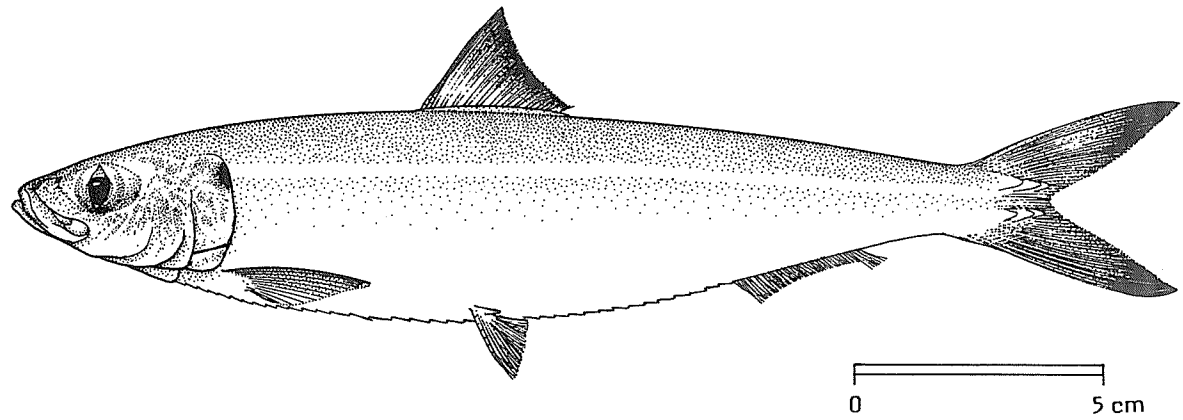
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : CLUPEIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Sardinella aurita Valenciennes, 1847

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES:

FAO : En - Round sardinella
Fr - Allache (= Sardinelle ronde, Area 37)
Sp - Alacha (= Sardinela atlántica, Area 31)

NATIONAL :

DISTINCTIVE CHARACTERS :

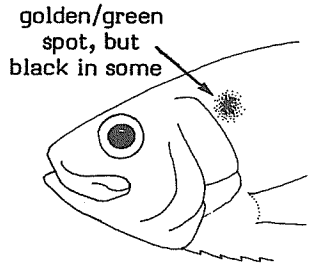
Body elongate, subcylindrical in cross section; belly rounded, but with a distinct keel of scutes. Eye moderate, more than 3 times in head length; mouth terminal; gillrakers fine and numerous, more than 80 on lower limb of first arch. Dorsal fin origin a little before midpoint of body; 9 pelvic finrays; anal fin origin well behind dorsal fin base.

Colour: back blue/green, lower flanks silvery, with a faint golden midlateral line preceded by a gold spot behind gill cover; a distinct black spot on hind edge of gill cover (absence of underlying pigment); dorsal fin pale to deep yellow, upper margin dusky, anterior finrays black, but no black spot at dorsal fin origin; pectoral fins pale yellow with dark speckling; caudal fin faint yellow near base, remainder dusky, tips very dark or black.

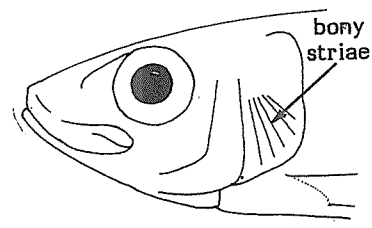
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Sardinella maderensis, S. rouxi: a black spot at dorsal fin origin, but no black spot on hind edge of gill cover (black spot sometimes behind gill cover); pelvic finrays 8 (9 in S. aurita).

Sardinops, Sardina species: a series of dark spots along flanks and gill cover with bony radiating striae.



S. maderensis

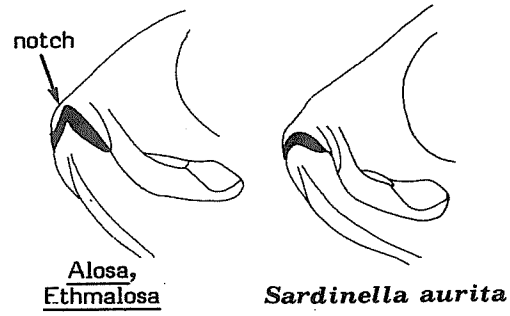


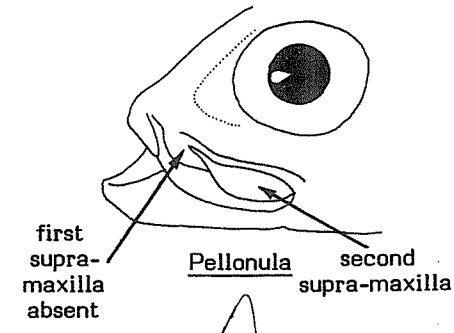
Sardinops, Sardina

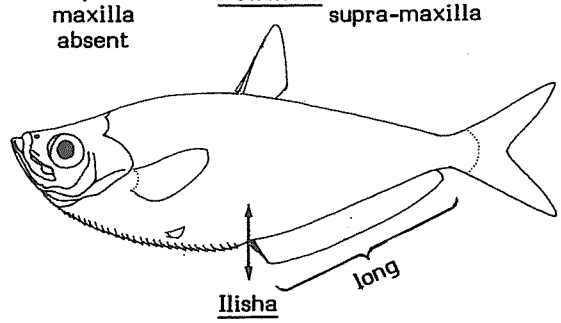
Alosa species and Ethmalosa fimbriata: lower jaw fitting into a distinct median notch in upper jaw; also, body deep in E. fimbriata and scales fringed posteriorly.

Pellonula, Cynothrissa species: a single supra-maxilla (2 in Sardinella); no scutes in front of pectoral fin base in P. leonensis.

Ilisha africana: lower jaw strongly projecting, anal fin very long, beginning under dorsal fin base.







SIZE :

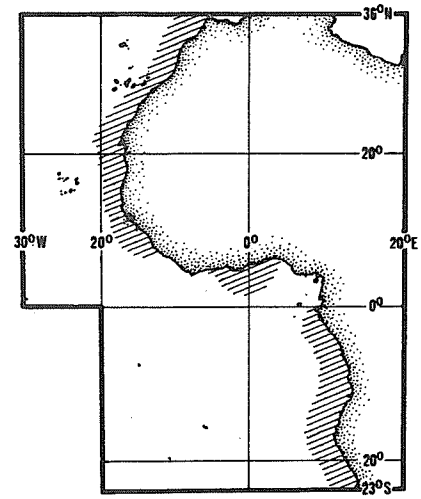
Maximum: 31 cm; common to 25 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Throughout the area (but rare in the Gulf of Biafra), apparently extending to the southern boundary of Angola (but perhaps confused there with Sardinops); elsewhere, extreme south of Spain and Portugal (Atlantic) and Mediterranean, also Western Atlantic and Japan.

A 'cold water' species (18 to 25°C), approaching the coast and shoaling near the surface in the period of upwelling, but retreating below the thermocline in the hot season, down to depths of 200 to 300 m; clear horizontal migrations associated with the seasonal movements of cold water occur in both the north and the south of the area. Juveniles come into shallow water. Breeds in the transitional seasons off Senegal (May/June and October/November) and during the two cold seasons off Gabon and Congo (chiefly May/June and September to December).

Feeds on planktonic organisms (phytoplankton and copepods, euphausids, etc.).



PRESENT FISHING GROUNDS :

Major fisheries from Senegal to Sierra Leone, Ivory Coast to Benin, and Gabon to Angola, mainly in areas of upwelling (Mauritania to Senegal, Congo to Angola).

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are reported only by a few countries (for 1977: Romania, 1 500 t and Spain, 1 200 t). Usually there are mixed catch records for Sardinella species, which in 1977 totalled 485 000 t (272 000 t taken by foreign fleets and 213 000 t by coastal countries).

Caught by canoe fishermen using ring nets, gillnets and beach seines, mainly for young and juvenile fishes (especially Senegal, Ghana); by local purse-seiners (especially Mauritania/Senegal, Ivory Coast, Ghana, Congo/Angola); and by industrial trawlers (mid-water trawls).

Marketed fresh, frozen; also salted.

CLUP Sardl 2

1981

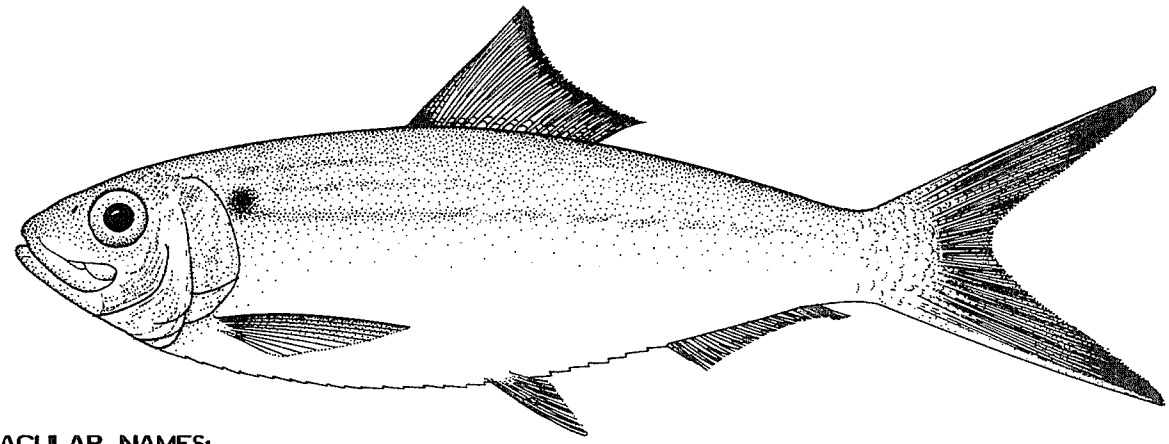
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : CLUPEIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Sardinella maderensis (Lowe, 1839)

OTHER SCIENTIFIC NAMES STILL IN USE : Sardinella granigera Valenciennes, 1847
Sardinella eba Valenciennes, 1847
Sardinella cameronensis Regan, 1917



0 5 cm

VERNACULAR NAMES:

FAO : En - Madeiran sardinella (= Short body sardine, Area 37)
Fr - Grande allache
Sp - Machuelo

NATIONAL :

DISTINCTIVE CHARACTERS :

Body elongate, moderately compressed, variable in depth; belly sharply keeled, with scutes from gill opening to anus. Eye moderate, more than 3 times in head length; mouth terminal; gillrakers fine and numerous, more than 70 on lower limb of first arch. Dorsal fin origin a little before midpoint of body; 8 pelvic finrays; anal fin origin well behind dorsal fin base.

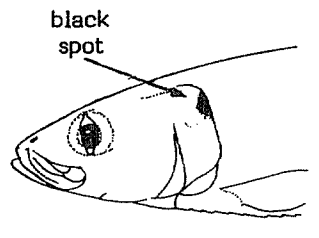
Colour: back blue/green, lower flanks silvery, with a faint gold midlateral line, preceded by a gold, green or faint black spot behind gill cover; one or two very faint gold lines above the main one. Dorsal fin yellow with dusky margin and a black spot at base of anterior finrays; pectoral fin black between white finrays in upper part, colourless below; caudal fin dark grey, tips almost black, lowermost finray colourless.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

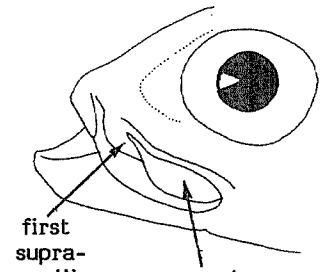
Sardinella aurita: a black spot on hind edge of gill cover; also, pelvic finrays 9 (8 in S. maderensis).

S. rouxi: caudal fin pale yellow, upper part of pectoral fins dusky; also, only 30 to 40 gill-rakers on lower limb of first arch (more than 70 in S. maderensis).

Pellonula species: a single supramaxilla (2 in Sardinella); no dark spot at dorsal fin origin and lower gillrakers 35 at most; also, no scutes in front of pectoral fin base in P. leonensis.



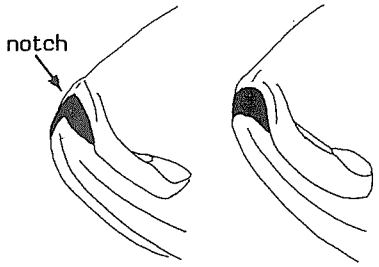
S. aurita



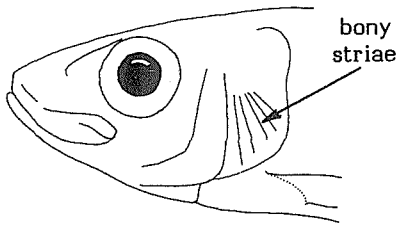
Pellonula

Alosa species and Ethmalosa fimbriata: lower jaw fitting into a distinct median notch in upper jaw; caudal fin deep chrome yellow in life and body deep in E. fimbriata.

Other species of Clupeidae: dark spots along flanks and gill cover with radiating bony striae (Sardina, Sardinops), or lower jaw projecting strongly and anal fin long (Ilisha).



Ethmalosa *Sardinella*



Sardina , Sardinops

SIZE :

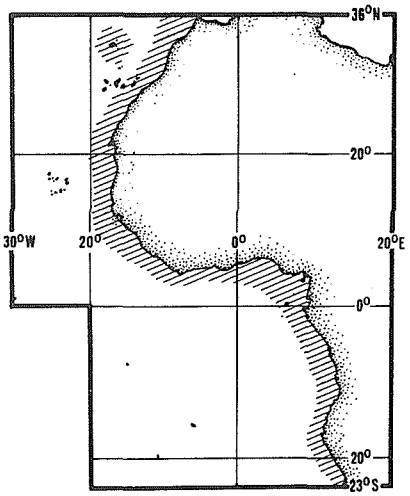
Maximum: 30 cm; common to 25 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Throughout the area, southward to at least Luanda (Angola) and perhaps further. Elsewhere, Mediterranean.

A more coastal species than S. aurita and less migratory, shoaling at the surface or at the bottom down to at least 50 m; tolerant of fairly low salinity, the juveniles sometimes entering estuaries (e.g. Gabon). Breeds in some areas (Ivory Coast, Gabon to Angola) almost throughout year, but usually with one or several maxima; a single breeding season off Senegambia in July to September/October.

Feeds on phytoplankton (diatoms, dinoflagelates, etc.) and zooplankton (especially crustacean larvae), also fish larvae.



PRESENT FISHING GROUNDS :

Major fisheries off Senegal, Sierra Leone, Ghana, Ivory Coast and Congo.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics for this species are reported only by a few countries (for 1977: Ivory Coast, 18 000 t; Romania, less than 50 t). Usually, there are mixed catch records for Sardinella species which in 1977 totalled 485 000 t (272 000 t taken by foreign fleets and 213 000 t by coastal countries).

Caught by canoe fishermen using ring nets, gillnets, very large cast nets, and beach seines; by local purse-seiners; and by industrial trawlers.

Marketed fresh, frozen, also salted.

CLUP Sardl 12

1981

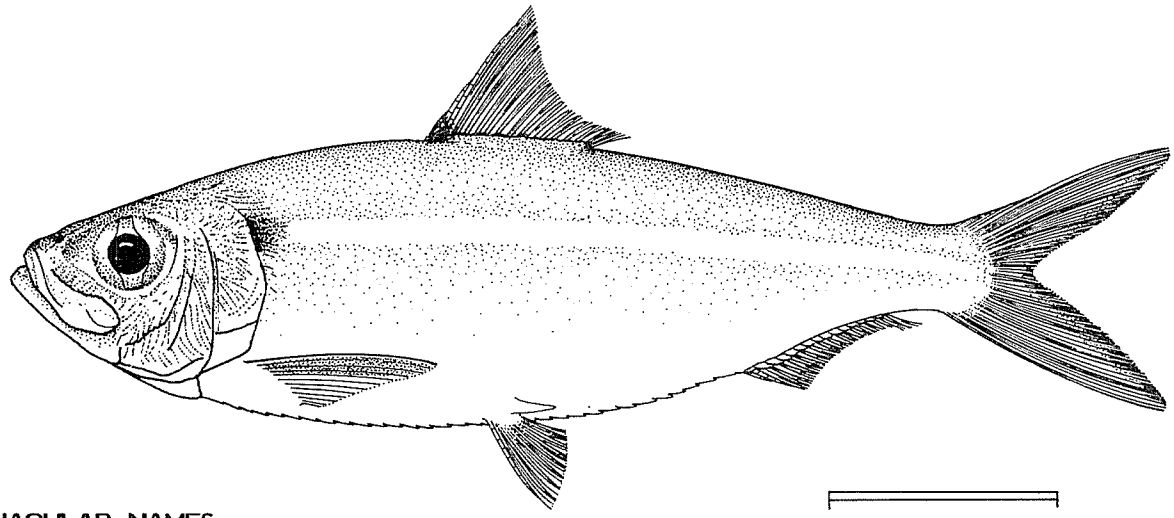
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : CLUPEIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Sardinella rouxi (Poll, 1953)

OTHER SCIENTIFIC NAMES STILL IN USE : Harengula rouxi Poll, 1953



0 2.5 cm

VERNACULAR NAMES:

FAO : En - Yellowtail sardinella
Fr - Sardinelle à queue jaune
Sp - Alacha rabo amarillo

NATIONAL :

DISTINCTIVE CHARACTERS :

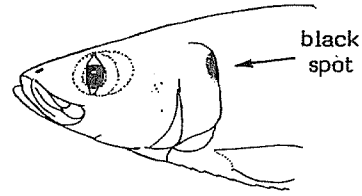
Body fusiform, but moderately compressed and deep; belly sharp with keeled scutes. Eye large, 3.0 to 3.3 times in head; mouth terminal; lower gillrakers 34 to 40. Dorsal fin origin a little before midpoint of body; 8 pelvic finrays; anal fin origin well behind dorsal fin base.

Colour: back blue/green, flanks silvery, with a faint golden midlateral line preceded by a black spot behind gill cover; dorsal fin pale yellow with a dusky upper margin and a black spot at base of anterior finrays; caudal fin pale yellow with a dusky hind margin; other fins hyaline, but upper part of pectoral fins dusky.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Sardinella maderensis: caudal fin dusky, at most only faintly yellow, upper pectoral finrays white on a black membrane; also, more than 70 lower gillrakers (34 to 40 in S. rouxi).

S. aurita: a distinct black spot on hind edge of gill cover; caudal fin dusky, at most only faintly yellow, and body almost round in cross section; also, more than 80 lower gillrakers and 9 pelvic finrays.



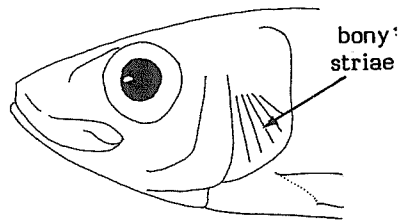
S. aurita

Sardinops, Sardina species: a series of dark spots along flanks and gill covers with radiating bony striae.

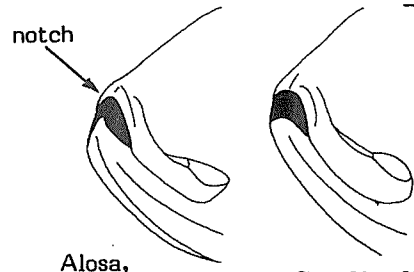
Alosa species and Ethmalosa fimbriata: lower jaw fitting into a distinct median notch in upper jaw; also, caudal fin deep chrome yellow in life; also, more than 80 lower gillrakers in E. fimbriata.

Pellonula and Cynothrissa species: a single supra-maxilla (2 in Sardinella); no scutes in front of pectoral fin base in P. leonensis.

Ilisha africana: lower jaw strongly projecting; anal fin very long, beginning under base of dorsal fin.

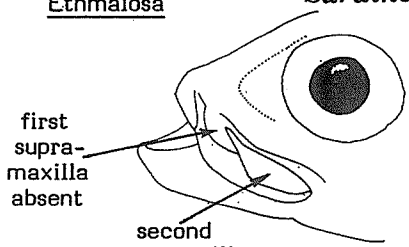


Sardinops, Sardina

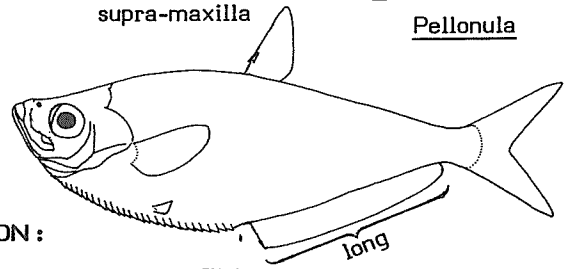


Alosa, Ethmalosa

Sardinella rouxi



Pellonula



Ilisha

SIZE :

Maximum: 16 cm; common to 13 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Senegal to Congo, perhaps southward to Angola.

Inshore waters, beaches.

PRESENT FISHING GROUNDS :

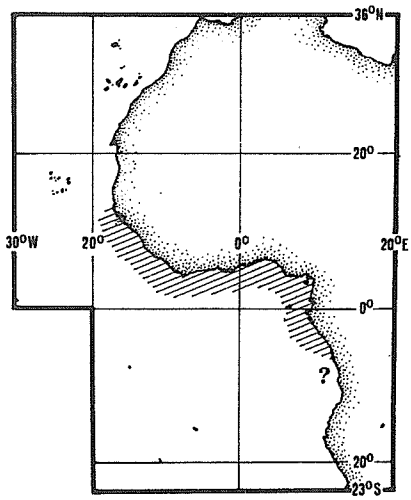
Caught in small numbers throughout its area of distribution.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Caught with beach seines, purse seines and gill-nets.

Marketed fresh, perhaps also dried.



CLUP Sardop 2

1981

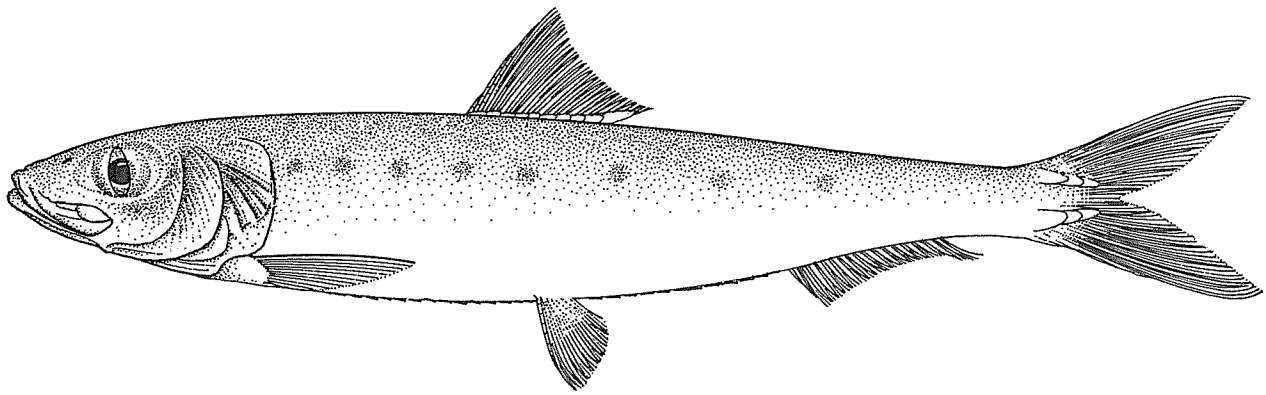
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : CLUPEIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Sardinops ocellata (Pappé, 1853)

OTHER SCIENTIFIC NAMES STILL IN USE : Sardinops sagax (Jenyns, 1842)
Sardinops sagax ocellata auct.



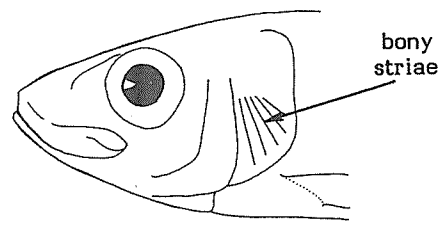
VERNACULAR NAMES:

FAO : En - Southern African pilchard
Fr - Sardinops d'Afrique du Sud
Sp - Sardina sudafricana

NATIONAL :

DISTINCTIVE CHARACTERS :

Body fairly slender, oval in cross-section; belly not sharply keeled, but with a small ridge from gill opening to anus. Jaws about equal; lower gillrakers to about 120, decreasing in length at angle of gill arch, the lower gillrakers overlapped by the upper at this point; strong radiating bony striae on lower part of gill cover. Dorsal fin at about midpoint of body; 8 pelvic finrays; anal fin origin well behind dorsal fin base, last two finrays enlarged.

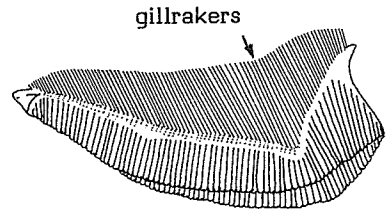


Colour: back green or olive, flanks golden, shading to silvery-white on belly; a series of dark spots along upper flanks, sometimes with a second or third series below.

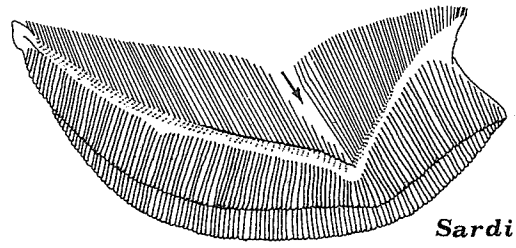
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Sardina pilchardus: gillrakers not decreasing in length at angle of arch, lower gillrakers not overlapped by upper at this point; also, recorded only in north of area (southward to Dakar).

Sardinella aurita, S. maderensis: lower part of gill cover without radiating bony striae; gillrakers not decreasing in length at angle of arch, lower gillrakers not overlapped by upper; also, at most a single dark spot on flank.



Sardina



Sardinops

first gill arch

SIZE:

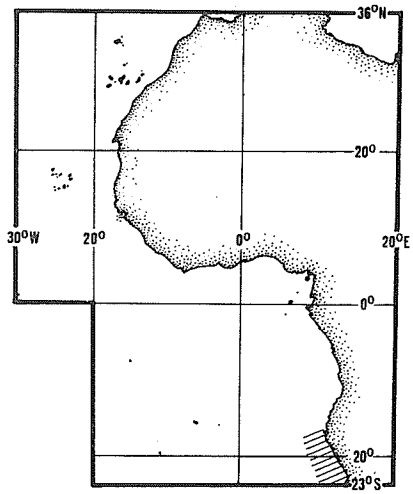
Maximum: 28 cm; common to 24 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Southern Angola (Baia dos Tigres) south to Cape Town and northeast to Durban (in June).

A pelagic and migratory species, forming large inshore shoals, especially in March to July in this area. Breeds from September to April off the Namibia coast, either offshore (January to March), or inshore (September to December).

Feeds on zooplankton (mainly calanoid copepods) when young, but on phytoplankton (mainly diatoms) from about 100 mm standard length.



PRESENT FISHING GROUNDS:

Within the area, two major fishing grounds, Baia dos Tigres (Angola) and Walvis Bay (Namibia).

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Catch statistics from the area are reported by Angola and Namibia (about 1 000 t and 194 000 t, respectively, in 1977).

Caught with purse seines, gillnets and beach seines.

Marketed fresh, frozen or canned; used also for fish meal and fish oil.

CONGR

1981

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

CONGRIDAE

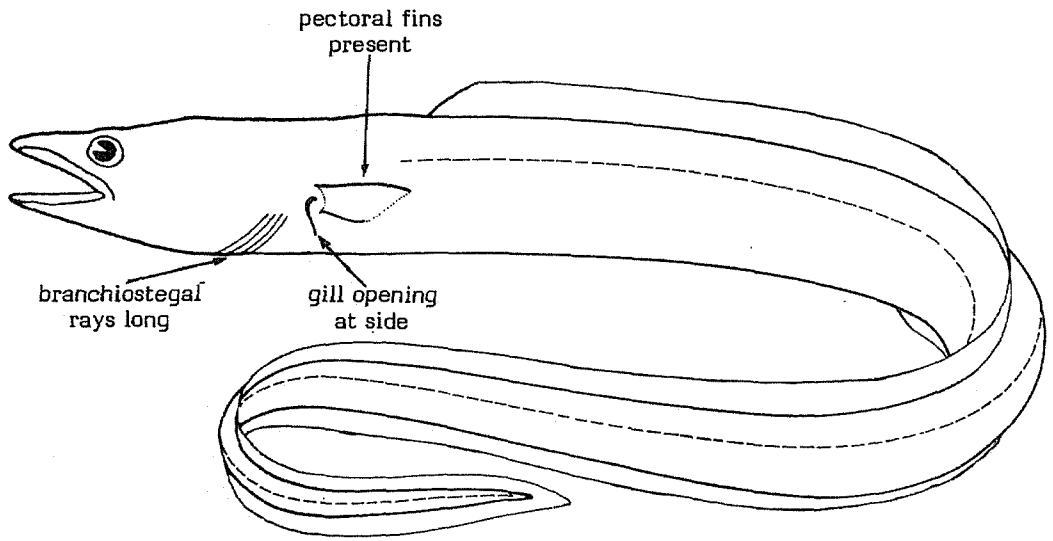
Conger eels*

Like other eel families, the Congridae are elongate fishes with numerous vertebrae. Body cylindrical becoming compressed posteriorly. Eyes well developed; jaws equal or upper jaw slightly longer (except Heterocongrinae); angle of mouth usually below eye; posterior nostril usually in front of eye, sometimes above or below mid-eye level, but never opening inside mouth; some species with a free, upturned flange on upper lip; teeth present on maxilla, premaxilla, vomer (except Coloconger), and dentary (lower jaw), varying in form from granular to fang-like; tongue free; branchiostegal rays fewer than 15, not overlapping ventrally; gill openings at sides. Dorsal and anal fins confluent with caudal (caudal fin reduced in Heterocongrinae); the dorsal originating over or slightly behind pectoral fin; pectoral fins well developed (reduced in Heterocongrinae); pelvic fins absent. Lateral line complete, scales absent. Frontal bones fused.

Colour: usually dull brown or grey, often with dorsal and anal fins edged in black, at least posteriorly. Some heterocongrines brightly marked.

Congrid eels occur from near shore to depths of nearly 2 000 m; the majority of species inhabit the continental shelf or upper continental slope. They are carnivores that prey on a wide variety of organisms, both fishes and invertebrates. Some species appear to be nocturnal, whereas others, such as the Heterocongrinae, are diurnal. Evidence suggests that some species undertake long spawning migrations, but most are probably relatively sedentary.

Congrid eels are of little economic importance in the Eastern Central Atlantic. Some species appear in markets and are consumed locally (especially Conger conger), but there seems to be no special fishery for them. The total catch of conger eels reported from the area in 1978 totalled about 3 300 t, of which at least 2 000 t corresponded to Conger conger. They are good foodfish, although the species other than Conger conger are probably not fully exploited and not so much appreciated due to their smaller size.



* This account excludes the Muraenesocidae for which separate family and species sheets are presented, despite the fact that this group is now considered as part of the Congridae by many authors.

SIMILAR FAMILIES OCCURRING IN THE AREA:

Muraenesocidae: teeth on vomer (medially on roof of mouth) fang-like, larger than those on jaws; upper jaw ending behind eye (under eye in most congrids).

Xenocongridae: lateral line incomplete, only one or two pores at anteriormost end; gill opening reduced to a small pore; pectoral fins sometimes absent; posterior nostril usually opening into upper lip; teeth on vomer usually in 2 rows (a single row or a patch in Congridae).

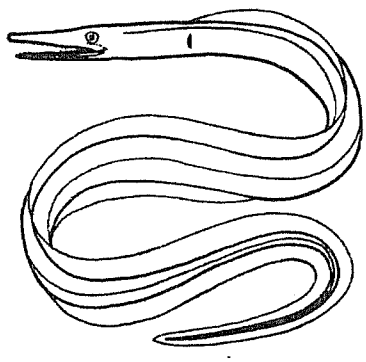
Anguillidae: small embedded scales present; lower jaw projecting; origin of dorsal fin well behind pectoral fins.

Ophichthidae: posterior nostril usually opening into upper lip or inside mouth; branchiostegal rays more than 15, overlapping ventrally; caudal fin often absent with tip of tail hard and spike-like.

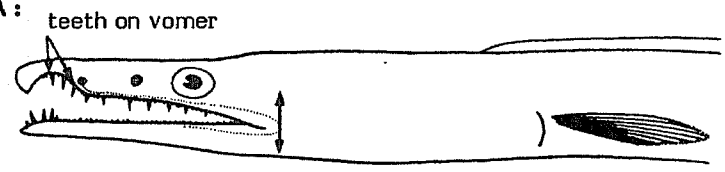
Muraenidae: pectoral fins absent; gill opening reduced to a small pore; posterior nostril high on head, above level of eye; body compressed; lateral line incomplete, only one or two pores at anteriormost end.

Myrocongridae: body compressed; posterior nostril high on head, near level of upper margin of eye; lateral line incomplete, 5 to 7 pores at anteriormost end.

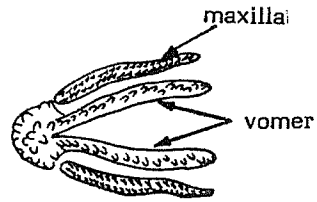
Nettastomatidae: pectoral fins absent; body very elongate.



Nettastomatidae



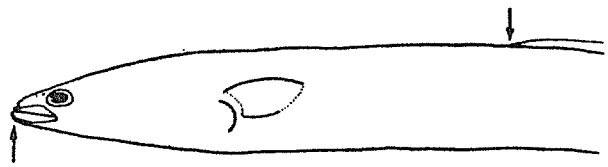
Muraenesocidae



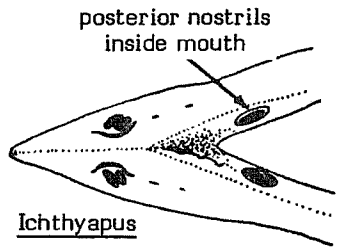
teeth on roof of mouth

(vomer and maxillaries)

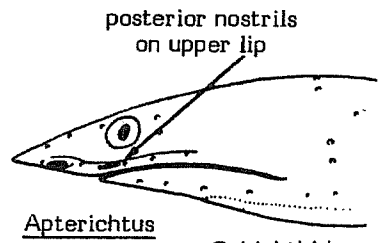
Xenocongridae



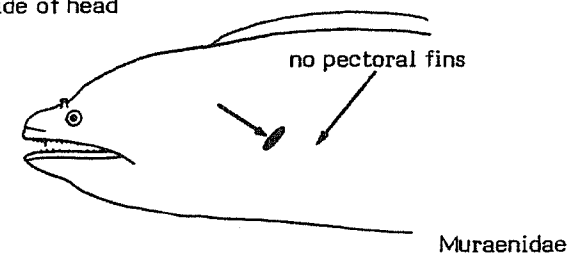
Anguillidae



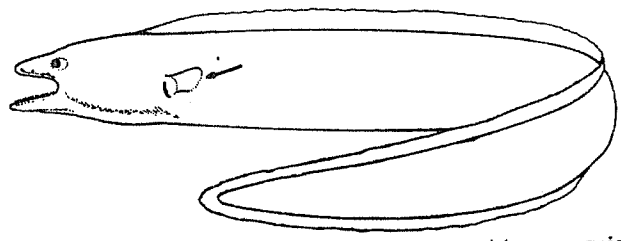
underside of head



Ophichthidae



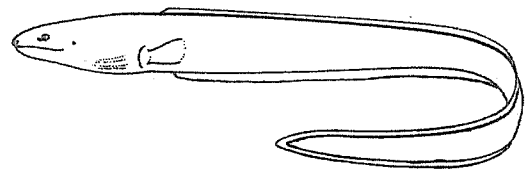
Muraenidae



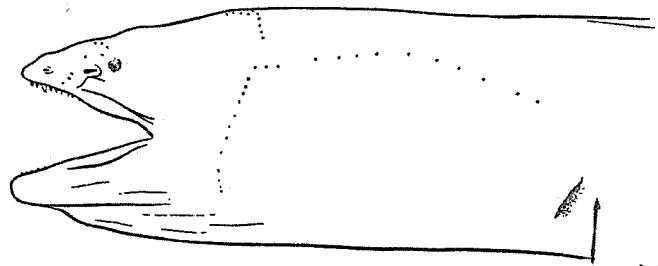
Myrocongridae

Synaphobranchidae (including Dysommidae): either small, embedded scales present, or anus located under or close behind pectoral fins.

Heterenchelyidae: eyes greatly reduced, covered by skin; pectoral fins absent.



Synaphobranchidae



Heterenchelydae

KEY TO SUBFAMILIES AND GENERA OCCURRING IN THE AREA:

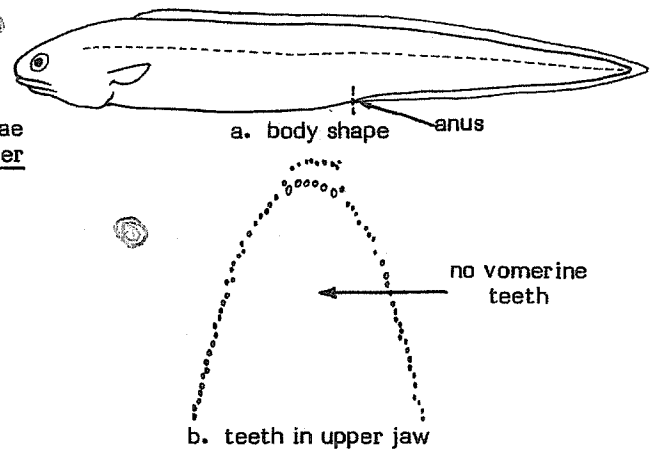
1 a. Body short and stubby, preanal distance greater than 55% of total length; vomerine teeth absent; sensory pores on head numerous, most opening through a short tube (Fig. 1) ..... Subfamily Colocongrinae
Coloconger

1 b. Body elongate, preanal distance less than 55% of total length; vomerine teeth present; sensory pores on head without tubes

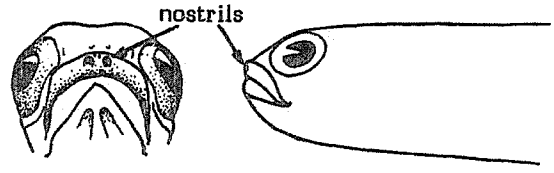
2 a. Body extremely elongate; mouth oblique; snout very short; flange on upper lips continuous across midline, enclosing anterior nostrils; pectoral and caudal fins reduced or absent (Fig. 2) ..... Subfamily Heterocongrinae
Heteroconger

2 b. Body moderately elongate; mouth horizontal or nearly so; snout equal to or longer than eye diameter; flange on upper lips, when present, interrupted at midline, anterior nostrils free; pectoral and caudal fins well developed

3 a. Dorsal and anal fin rays unsegmented; preanal length greater than 40% of total length; caudal fin somewhat reduced, tip of tail stiffened for burrowing; a well developed flange on upper lip ..... Subfamily Bathymyrinae



Coloconger Fig. 1



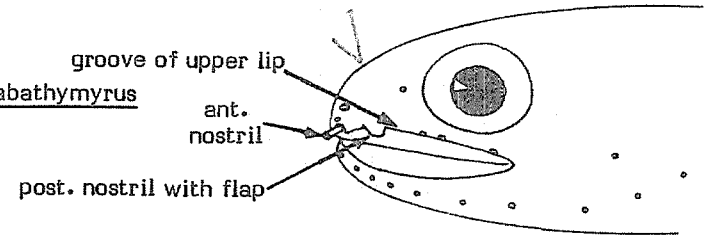
Heteroconger Fig. 2

4 a. Posterior nostrils located near upper edge of flange on upper lip, covered dorsally by a flap (Fig. 3) ..... Parabathymyrus

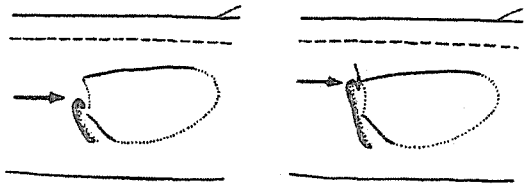
4 b. Posterior nostrils located above labial flange, not covered by a flap

5 a. Upper edge of gill opening opposite midpoint of pectoral fin base (Fig. 4a); teeth in jaws in bands ..... Ariosoma

5 b. Upper edge of gill opening opposite upper end of pectoral fin base (Fig. 4b); teeth in jaws in one or two rows, the outer forming a cutting edge ..... Paraconger



Parabathymyrus Fig. 3



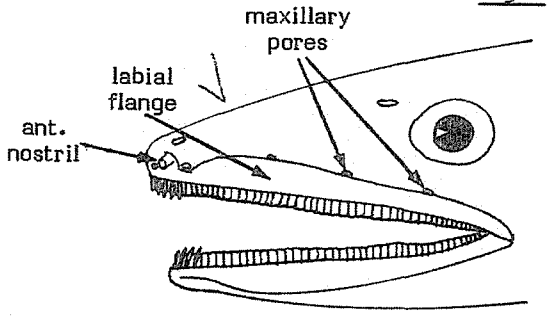
a. Ariosoma b. Paraconger

Fig. 4

3 b. Dorsal and anal fin rays segmented; preanal length less than 40% of total length (except specimens with regenerated tails), tip of tail generally slender, flexible (except Gnathophis); flange present or absent on upper lip ..... Subfamily Congrinae

6 a. Flange present on upper lip; pores along upper jaw small (Fig. 5)

7 a. Flange wide; teeth in jaws in one or two rows, the outer forming a cutting edge (Fig. 5) ..... Conger

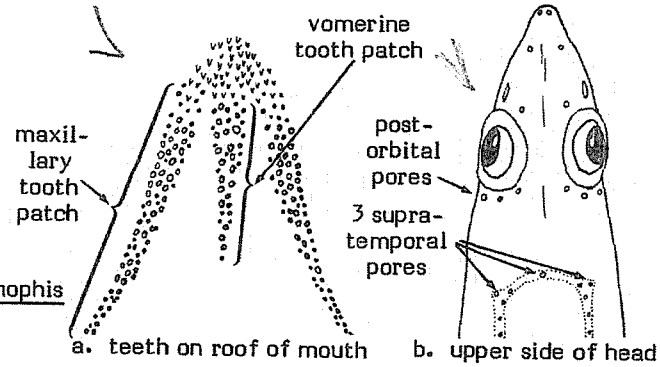


Conger Fig. 5

7 b. Flange narrow; teeth in jaws in bands

8 a. Pores present behind eye; usually 3 pores in supratemporal commissure (Fig. 6b); caudal fin somewhat reduced, tip of tail slightly stiffened; vomerine tooth patch at least half the length of maxillary tooth patch (Fig. 6a) ..... Gnathophis

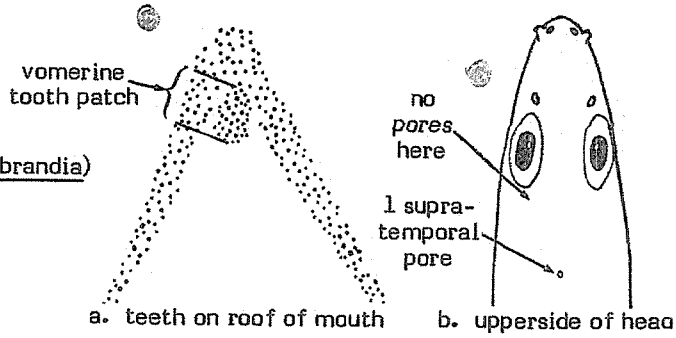
8 b. No pores behind eye; one pore in supratemporal commissure (Fig. 7b); tip of tail slender, almost filamentous; vomerine tooth patch less than half the length of maxillary tooth patch (Fig. 7a) ..... Rynchoconger (= Hildebrandia)



a. teeth on roof of mouth b. upper side of head

Gnathophis Fig. 6

6 b. Flange on upper lip absent; pores along upper jaw often enlarged



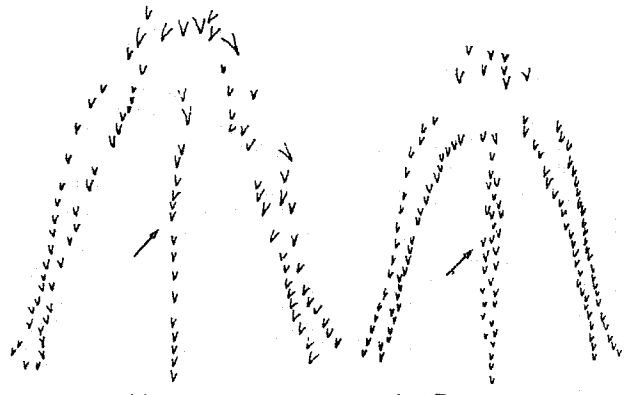
a. teeth on roof of mouth b. upperside of head

Rynchoconger Fig. 7

9 a. Vomerine tooth patch long and narrow, extending to level of posterior end of maxillary teeth (Fig. 8)

10 a. Vomerine teeth in a single row (Fig. 8a) ..... Uroconger

10 b. Vomerine teeth in more than one row (Fig. 8b) ..... Paruroconger



a. Uroconger b. Paruroconger

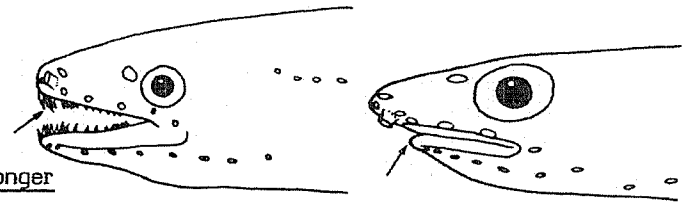
teeth on roof of mouth Fig. 8

9 b. Vomerine tooth patch short, not reaching posterior end of maxillary tooth patch

11 a. Premaxillary teeth, anterior maxillary and mandibular teeth and some vomerine teeth enlarged; vomerine tooth patch short, sometimes followed by a few teeth in a line posteriorly

12 a. Mouth nearly terminal; anterior teeth fang-like (Fig. 9a) ..... Bathyuroconger

12 b. Upper jaw projecting beyond lower; anterior teeth smaller (Fig. 9b) ..... Rhechias

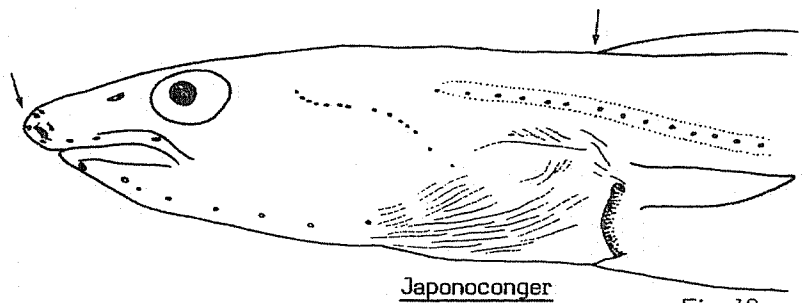


a. Bathyuroconger b. Rhechias

Fig. 9

11 b. Teeth not enlarged; vomerine tooth patch broad, reaching at least halfway to posterior end of maxillary tooth patch

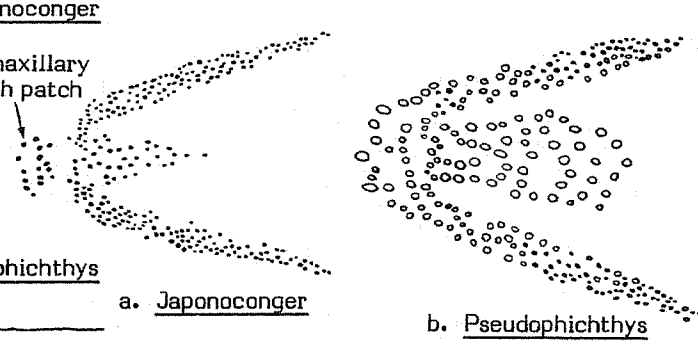
13 a. Premaxillary tooth patch separated from maxillary and vomerine tooth patches (Fig. 11a); dorsal fin origin over or slightly ahead of pectoral fin base; snout conical (Fig. 10) ..... Japonoconger



Japonoconger

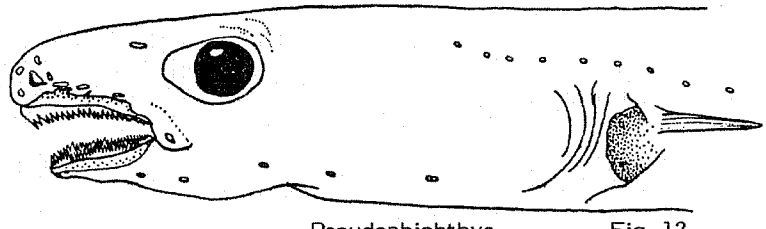
Fig. 10

13 b. Premaxillary tooth patch confluent with maxillary and vomerine tooth patches (Fig. 11b); dorsal fin origin behind pectoral fin base; snout blunt, bulbous (Fig. 12) .. Pseudophichthys



a. Japonoconger b. Pseudophichthys

teeth on roof of mouth Fig. 11



Pseudophichthys Fig. 12

LIST OF SPECIES OCCURRING IN THE AREA:

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

Subfamily Colocongrinae (sometimes considered a distinct family)

Coloconger cadenati Kanazawa, 1961

Subfamily Heterocongrinae

Heteroconger longissimus Günther, 1870

Subfamily Bathymyrinae

Ariosoma anale (Poey, 1858)
Ariosoma balearicum (Delaroche, 1809) CONGR Ario 1
Ariosoma mellissi (Günther, 1869)

Parabathymyrus sp. (presence indicated by larvae, although adults have not yet been collected)

Paraconger macrops (Günther, 1870)
Paraconger notialis Kanazawa, 1961 CONGR Parac 1

Subfamily Congrinae

Bathyuroconger vicinus (Vaillant, 1888)

Conger conger (Linnaeus, 1758) CONGR Cong 4
Conger esculentus Poey, 1858 (a single questionable record)
Conger orbignyanus Valenciennes, 1847 (presence indicated by larvae)

Gnathophis codoniphorus Maul, 1972
Gnathophis mystax (Delaroche, 1809) CONGR Gnath 1

Japonoconger africanus (Poll, 1953)

Paruroconger drachi Blache & Bauchot, 1976

Pseudophichthys splendens (Lea, 1913)

Rhechias bertini (Poll, 1953)

Rhynchoconger sp. (presence indicated by larvae)

Uroconger syringinus Ginsburg, 1954

Prepared by David G. Smith, Marine Biomedical Institute, University of Texas (Galveston), Texas, U.S.A.

Many of the illustrations were redrawn from Blache & Bauchot, 1976, Bini, 1970 and Saldanha, 1967

CONGR Ario 1

1981

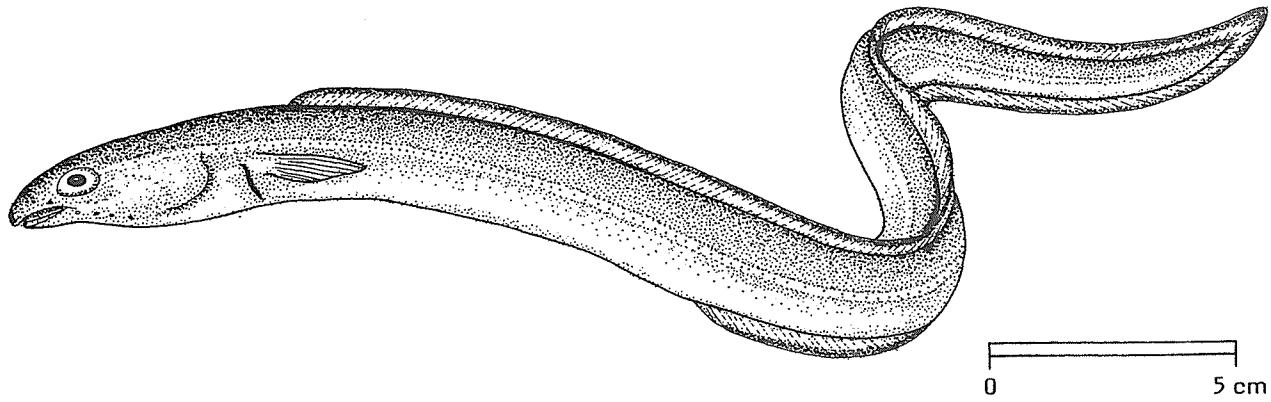
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : CONGRIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Ariosoma balearicum (Delaroche, 1809)

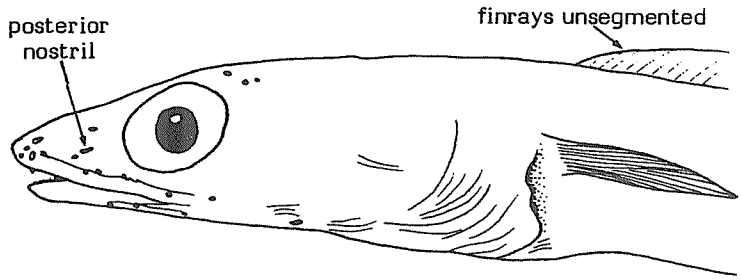
OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES:

FAO : En - Baleares conger
Fr - Congre des Baléares
Sp - Varga

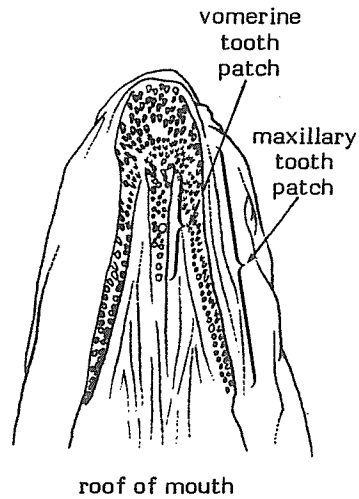
NATIONAL :



DISTINCTIVE CHARACTERS :

Body moderately elongate, cyclindrical anteriorly, compressed near tail; caudal fin somewhat reduced, tip of tail stiffened; preanal length 45 to 49% of total length. A flange present on upper lip; posterior nostril opposite lower half of eye; teeth small, conical, in bands; vomerine tooth patch about half the length of maxillary tooth patch. Dorsal fin origin over base of pectoral fin; dorsal and anal fin rays unsegmented. Three pores behind eye, three pores in supratemporal commissure. Vertebrae 120 to 136.

Colour: light brown, paler below, vertical fins edged in black posteriorly; in life silvery or golden reflections on lower half of flank, crescentic orange area on eye above pupil and red pectoral fin.

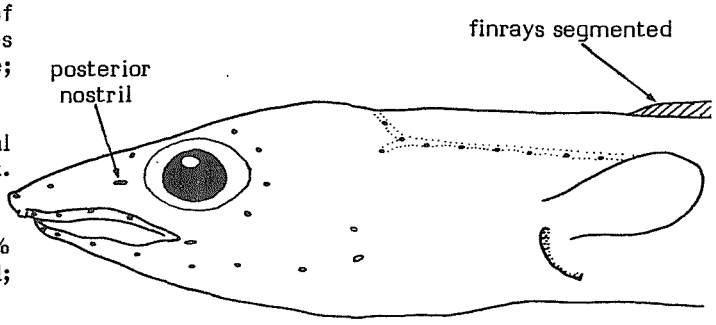


DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Ariosoma anale: preanal length 49 to 52% of total length (45 to 49% in A. balearicum); no pores behind eye, one pore in supratemporal commissure; vertebrae 146 to 150 (120 to 136 in A. balearicum).

A. mellissi: preanal length 43 or 44% of total length; vertebrae 140 or 141; known only from St. Helena.

Gnathophis mystax: preanal length less than 42% of total length; posterior nostril at mid-eye level; dorsal and anal fin rays segmented.



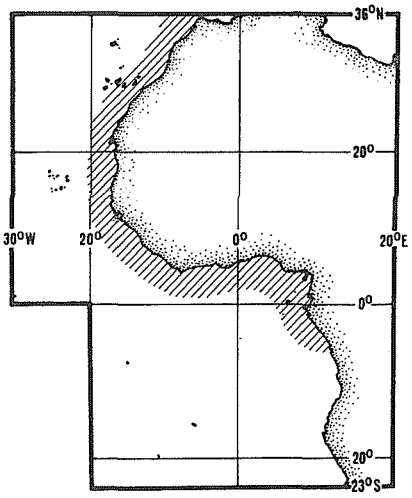
Gnathophis mystax

SIZE:

Maximum: about 35 cm

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

In the area, from Gibraltar at least to the mouth of the Congo River, although the southern limits are uncertain. Northward extending into the Mediterranean.



Benthic on sand bottoms. Recorded depth range 1 to 752 m, but most common in less than 100 m. Spends much of its time buried in the substratum, which it enters tail-first, leaving only the head exposed.

Appears to feed mainly on small benthic invertebrates.

PRESENT FISHING GROUNDS:

Taken incidentally throughout its range.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Taken by bottom trawls.

Probably not often eaten due to its small size, but likely to be taken frequently in trawls.

CONGR Cong 4

1981

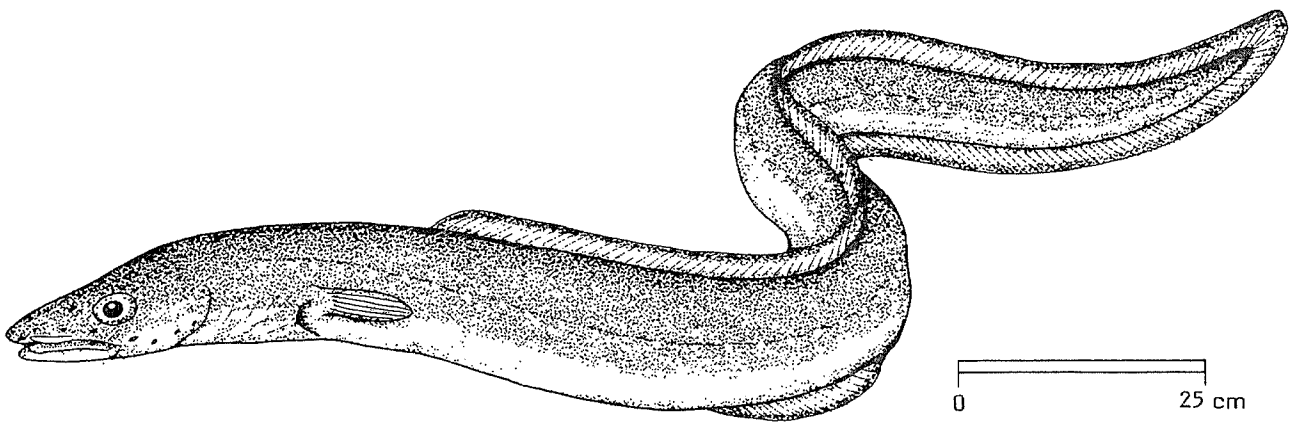
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : CONGRIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Conger conger (Linnaeus, 1758)

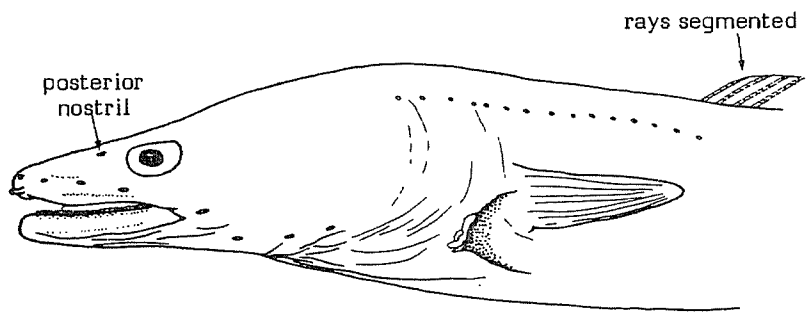
OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES:

FAO : En - European conger
Fr - Congre commun
Sp - Congrio europeo

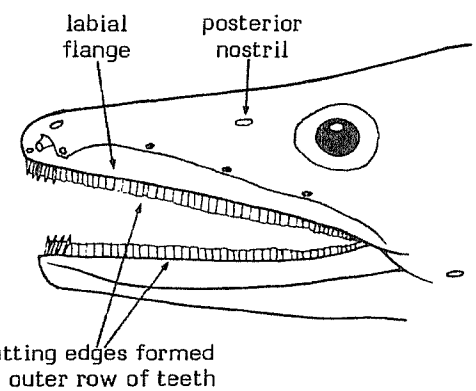
NATIONAL :



DISTINCTIVE CHARACTERS :

Body elongate, cylindrical anteriorly, compressed posteriorly; tip of tail flexible but not greatly attenuate. A well developed flange on upper lip; diameter of eye more than 1.75% of total length; two rows of teeth in jaws, the outer forming a cutting edge; maxilla reaching to below center of eye; posterior nostril at mideye level; upper edge of gill opening opposite about middle of pectoral fin base. Dorsal fin origin slightly ahead to slightly behind tip of appressed pectoral fin; dorsal and anal fin rays segmented; pectoral fin rays 17 to 20. Lateral line pores anterior to a vertical line at anus 44 to 47. Vertebrae about 148 to 161.

Colour: brown or grey above, pale ventrally, vertical fins edged in black.

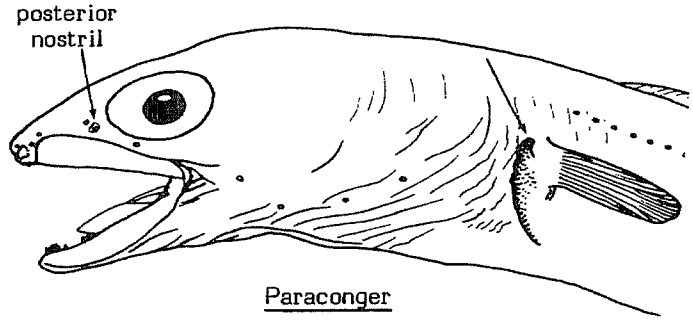


DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Conger orbignyanus: diameter of eye less than 1.75% of total length (more than 1.75% in C. conger); pectoral fin rays 15 to 17 (17 to 20 in C. conger); vertebrae 160 or 161, (148 to 161 in C. conger).

Paraconger species: jaw teeth also compressed and arranged as a cutting edge, but tip of tail stiffened, preanal length more than 40% of total length, and upper edge of gill opening opposite upper end of pectoral fin base.

Other genera of Congridae: outer row of teeth not compressed, not forming a cutting edge.



Paraconger

SIZE:

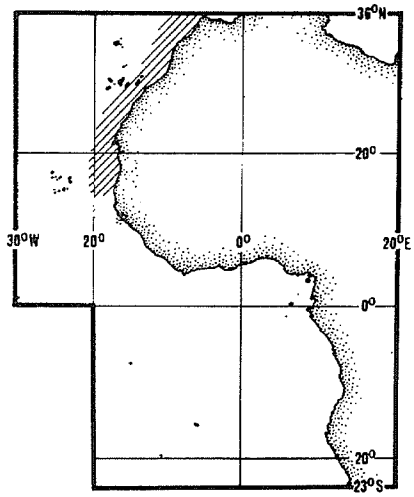
Maximum: said to be about 3 m; males generally mature at 50 to 75 cm, females at about 2 m.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

In the area, from the Straits of Gibraltar to Dakar, Senegal, including the Canary Islands. Northward extending into the Mediterranean and the western Black Sea, and along the Atlantic coasts of Europe to Norway.

Occurs from the shoreline to depths of 500 m.

Feeds on fishes and invertebrates.



PRESENT FISHING GROUNDS:

Northern part of the area only, uncommon south of Cape Blanc. Its main fishing grounds are outside the area, in the Mediterranean and along the western coasts of Europe.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

The catch reported from the area in 1978 totalled about 2 000 t (mainly Morocco and Spain).

Caught on hook and line and in bottom trawls.

Marketed mostly fresh and canned.

CONGR Gnath 1

1981

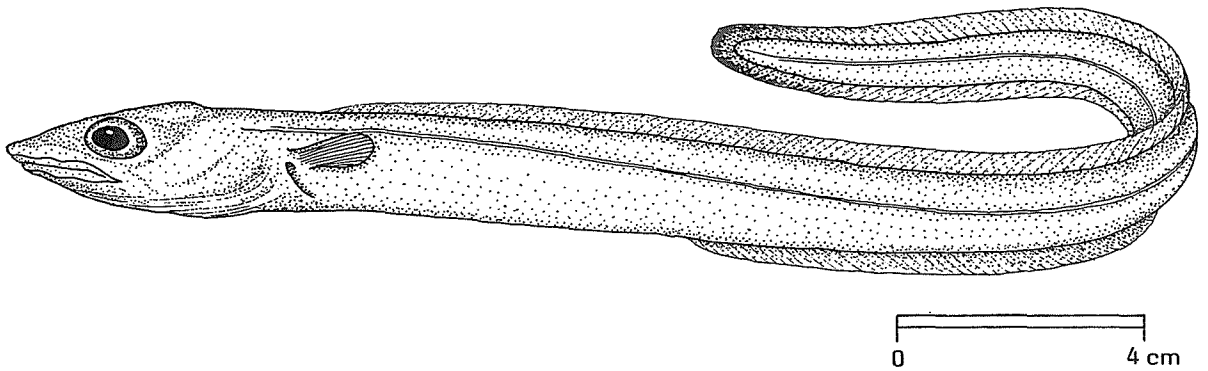
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : CONGRIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Gnathophis mystax (Delaroche, 1809)

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES:

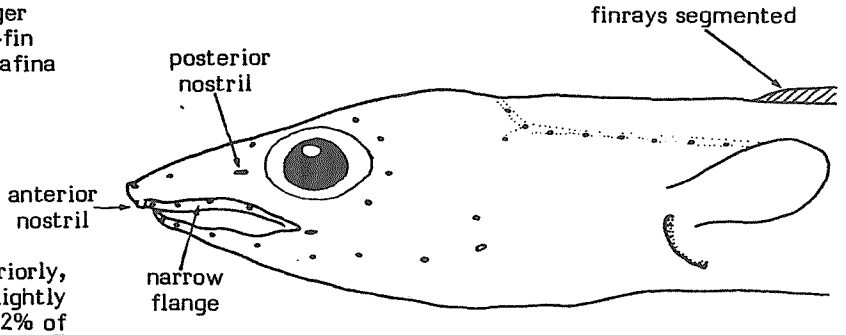
FAO : En - Thinlip conger
Fr - Congre bec-fin
Sp - Congrio bocafina

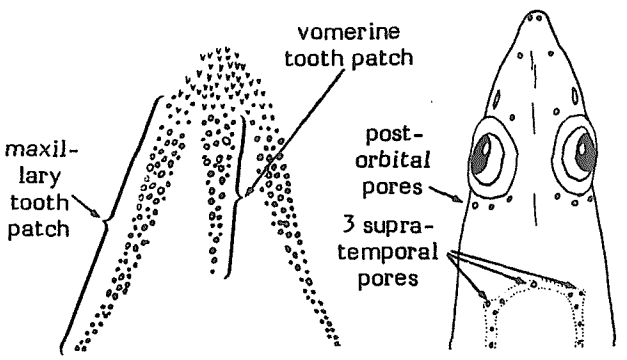
NATIONAL :

DISTINCTIVE CHARACTERS :

Body elongate, cylindrical anteriorly, compressed toward tail; tip of tail slightly stiffened. Preanal length less than 42% of total length. A narrow flange on upper lip; posterior nostril at mideye level; teeth small, conical, in bands; vomerine tooth patch elongate, slightly more than half the length of maxillary tooth patch. Dorsal fin origin over pectoral fin; dorsal and anal fin rays segmented. Three pores behind eye; three pores in supratemporal commissure; second and about seventh to thirteenth lateral line pores open from upper edge of canal, while all others open from lower edge. Vertebrae 134 to 141.

Colour: brown, paler below, vertical fins edged in black posteriorly.





roof of mouth

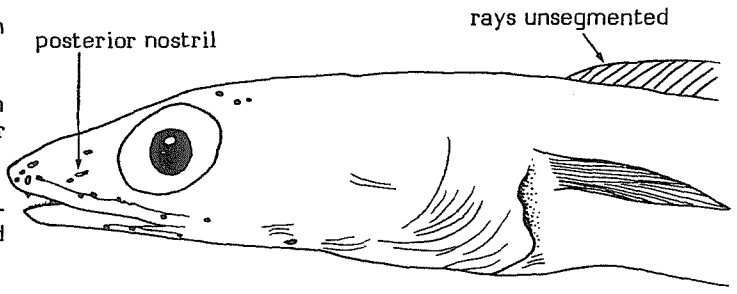
upper side of head

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Gnathophis codoniphorus: 144 vertebrae; known to occur only on certain central Atlantic seamounts.

Ariosoma species: preanal length greater than 42% of total length; posterior nostril opposite lower half of eye; dorsal and anal fin rays unsegmented.

Other congrid genera: none have the combination of a narrow flange on upper lip, pores behind eye, and teeth in bands.



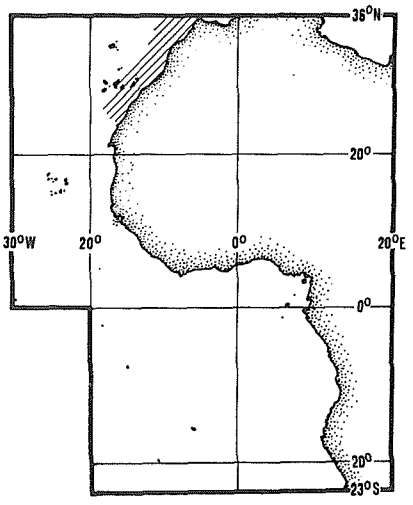
Ariosoma balearicum

SIZE:

Maximum: probably not more than 40 cm; common to 35 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

In the area, from Gibraltar to about the Tropic of Cancer, including Madeira and the Canary Islands, although the southern limits are uncertain. Northward extending into the Mediterranean and to Portugal.



Benthic on muddy or sandy bottoms in depths of 40 to 800 m, probably most common in the 80 to 400 m range. Crepuscular or nocturnal in habits, much more frequently captured at night; during daytime burrows into the substratum, although cloudy weather or turbid water conditions may bring it out.

Feeds on benthic invertebrates and small fishes.

PRESENT FISHING GROUNDS:

Taken incidentally throughout its range.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Taken in bottom trawls.

Probably not often consumed, due to its small size, but can appear frequently in trawls, especially those made at night.

CONGR Parac 1

1981

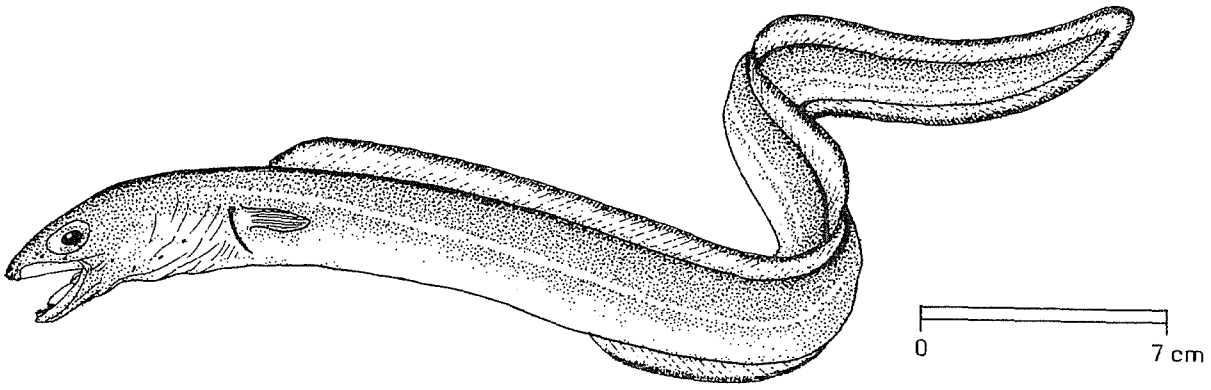
FAO SPECIES IDENTIFICATION SHEETS

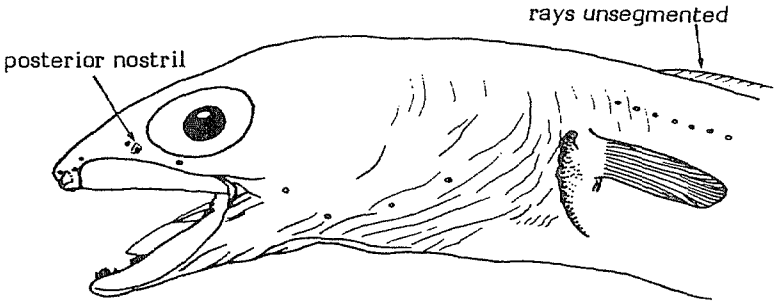
FAMILY : CONGRIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Paraconger notialis Kanazawa, 1961

OTHER SCIENTIFIC NAMES STILL IN USE : Conger macrops Günther, 1870





VERNACULAR NAMES:

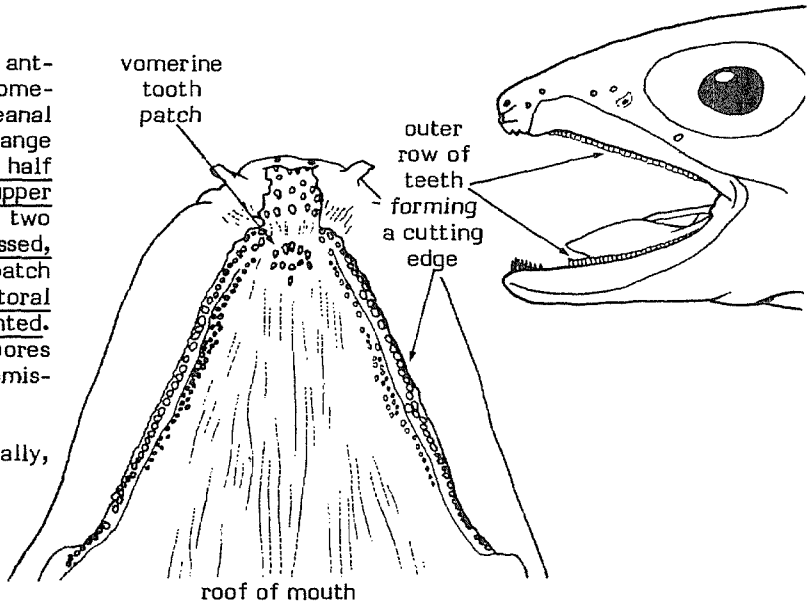
FAO : En - Guinean conger
Fr - Congre de Guinée
Sp - Congrio de Guinea

NATIONAL :

DISTINCTIVE CHARACTERS :

Body moderately elongate, cylindrical anteriorly, compressed posteriorly; caudal fin somewhat reduced, tip of tail stiffened; preanal length 41 to 49% of total length. A broad flange on upper lip; posterior nostril opposite lower half of eye; upper edge of gill opening opposite upper end of pectoral fin base; teeth in jaws in two rows, those of the outer row larger, compressed, forming a cutting edge; vomerine tooth patch short. Dorsal fin origin over middle of pectoral fin; dorsal and anal fin rays unsegmented. Lateral line pores before anus 34 to 40; no pores behind the eye or in the supratemporal commissure. Vertebrae 132 to 138.

Colour: yellowish brown, paler ventrally, vertical fins edged in black posteriorly.

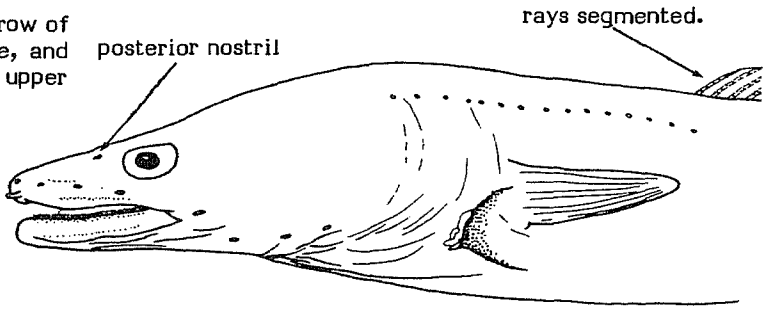


DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Paraconger macrops: lateral line pores anterior to anus 50 to 53 (34 to 40 in P. notialis); upper edge of gill opening slightly above upper end of pectoral fin base; pores behind eye and in supratemporal commissure; vertebrae 145 to 147; known only from Madeira.

Conger conger: tip of tail soft and flexible; posterior nostril at mideye level; upper edge of gill opening at middle of pectoral fin base; dorsal fin origin over tip of appressed pectoral fin; dorsal and anal fin rays segmented.

Other congrid genera: none have the outer row of jaw teeth compressed and forming a cutting edge, and none have the upper edge of gill opening opposite upper end of pectoral fin base.



Conger conger

SIZE:

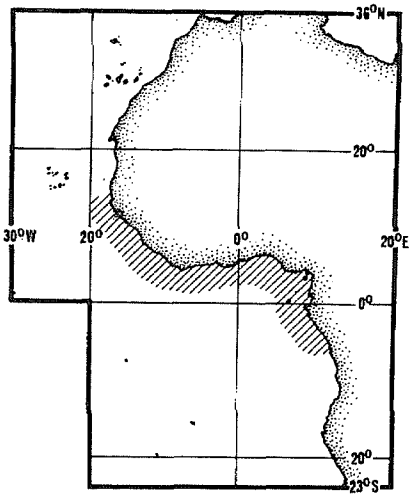
Maximum recorded: 62.7 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Coast of West Africa from Senegal to Angola.

Occurs on sandy bottoms at depths of 25 to 50 m, where it is said to be common. It burrows into the substratum tail-first, with only the head exposed.

Food unknown, but probably small fishes and invertebrates.



PRESENT FISHING GROUNDS:

Taken incidentally throughout its range.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught mainly in bottom trawls.

Probably consumed occasionally but not common in markets.

CORY

1981

FAO SPECIES IDENTIFICATION SHEETS

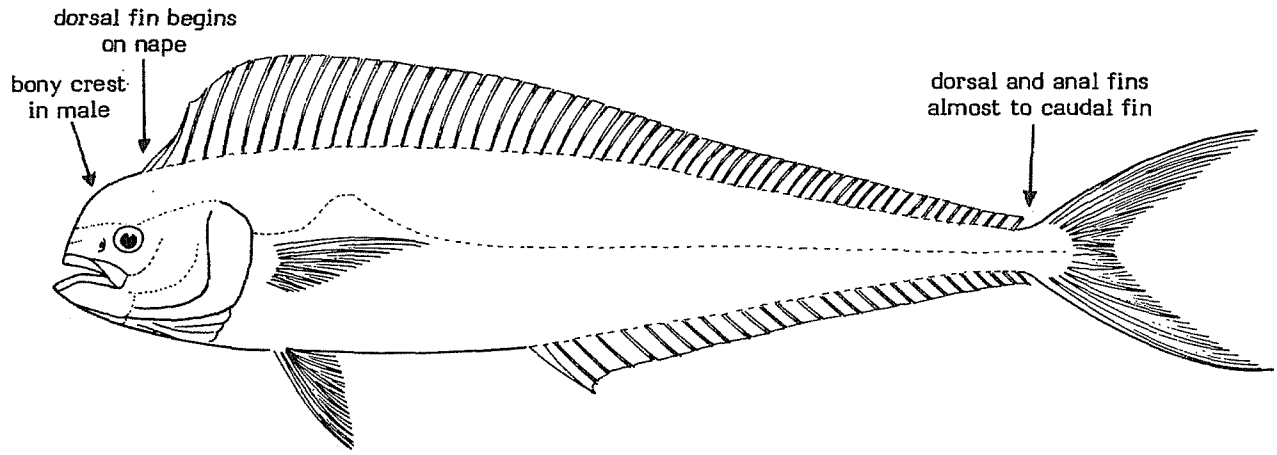
FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

CORYPHAENIDAE

Dolphinfishes, "dolphins"

Elongate compressed fishes. Scales small and cycloid (smooth). Mouth large, with many fine teeth in bands; adult males develop a bony crest on front of head. Lateral line curved upward above pectoral fin. Dorsal and anal fins very long, continuing almost to caudal fin, without sharp spines, or finlets; dorsal fin origin on nape; anal fin origin at or before mid-point of body; pelvic fins fitting into a groove on body; caudal fin deeply forked, without any keels on fin or caudal peduncle.

Colour: in life very variable, sides with golden hues and back brilliant metallic greens and blues; many small, black spots on head and body. Specimens less than 15 cm have dark vertical bars.



SIMILAR FAMILIES OCCURRING IN THE AREA:

No other fishes have a combination of characters such as dorsal fin from nape almost to caudal fin; anal fin from about mid-point of body almost to caudal fin; no sharp spines in dorsal and anal fins; caudal fin deeply forked; and pelvic fins well developed.

KEY TO GENERA OCCURRING IN THE AREA:

Coryphaena only.

LIST OF SPECIES OCCURRING IN THE AREA:

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

Coryphaena equiselis Linnaeus 1758	CORY Cory 2
Coryphaena hippurus Linnaeus, 1758	CORY Cory 1

Prepared by B.B. Collette, NMFS Systematics Laboratory, NOAA, National Museum of Natural History, Washington, D.C., U.S.A.

CORY Cory 1

1981

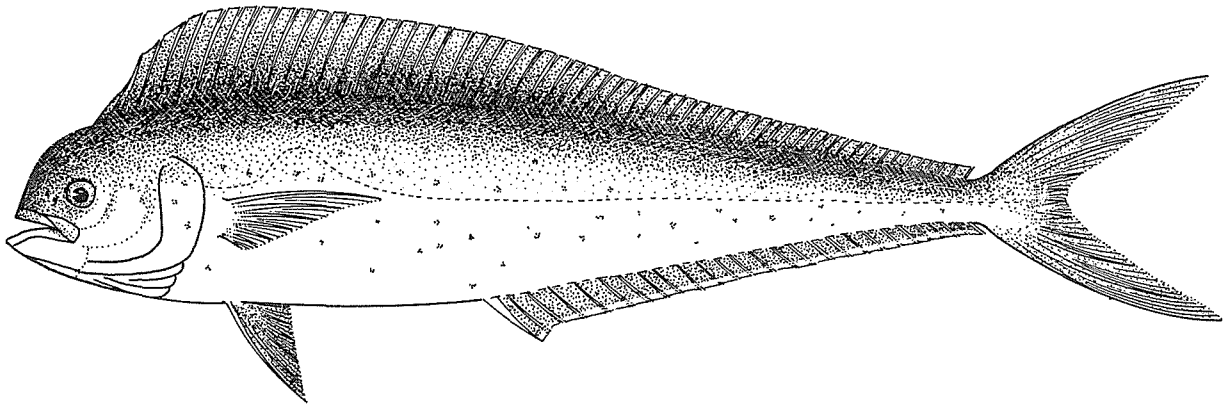
FAO SPECIES IDENTIFICATION SHEETS

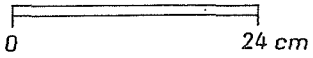
FAMILY : CORYPHAENIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Coryphaena hippurus Linnaeus, 1758

OTHER SCIENTIFIC NAMES STILL IN USE : None





VERNACULAR NAMES:

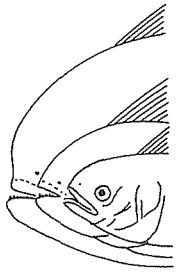
FAO : En - Common dolphinfish (Amer.Fish.Soc.: common dolphin)
Fr - Coryphène commune
Sp - Dorado común (= Llampuga, Area 37)

NATIONAL :

DISTINCTIVE CHARACTERS :

Body elongate and compressed, greatest body depth in adults less than 25% of standard length; young fish (up to 30 cm) have a slender, elongate body with head profile slightly convex; in larger males (30 to 200 cm) the head profile becomes vertical with development of a bony crest; tooth patch on tongue small and oval; bands of teeth on jaws, vomer and palatines (roof of mouth). A single dorsal fin extending from above eye almost to caudal fin, with 58 to 66 rays; a concave anal fin extending from anus almost to caudal fin; pectoral fin more than half of head length; caudal fin deeply forked; lateral-line scales 200 or more; vertebrae 31.

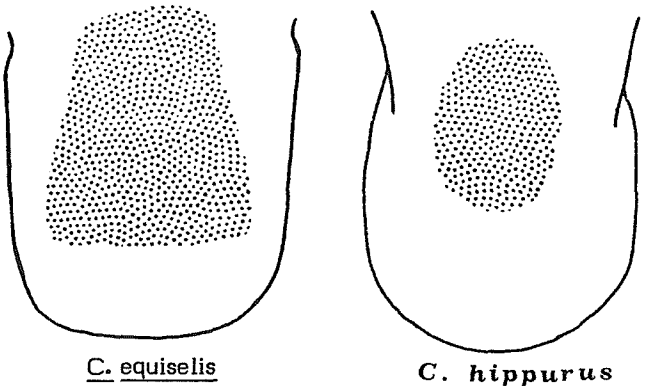
Colour: back brilliant metallic blue/green in life, after death fading to grey with a green tinge; sides silvery with a golden sheen, and 1 row of dark spots or golden blotches running below dorsal fin and 1, 2 or more rows on and below lateral line, some scattered irregularly; dorsal and anal fins black, the latter with a white edge; pectoral fins pale; caudal fin silvery with a golden sheen. In juveniles, only tips of caudal fin lobes white; pelvic fins black.



head showing increase in steepness of profile with age in male

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Coryphaena equiselis: dorsal fin rays 52 to 59 (58 to 66 in C. hippurus), a broad and square tooth patch on tongue; greatest body depth more than 25% of standard length; pectoral fins about half of head length; anal fin convex in outline. In juveniles, entire margin of caudal fin white, but pelvic fins not pigmented. Vertebrae 33 (31 in C. hippurus).



C. equiselis C. hippurus

dorsal surface of tongue with tooth patches

SIZE:

Maximum: 200 cm; common to 100 cm.

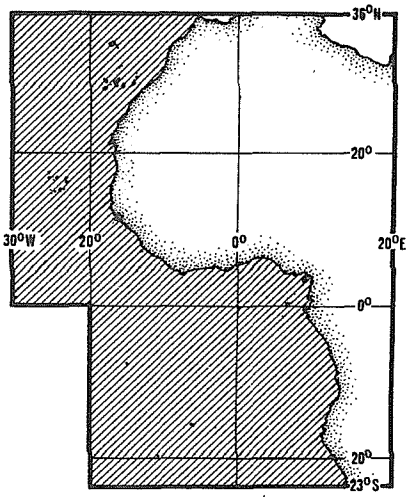
GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Throughout the whole area; worldwide in tropical and subtropical seas.

Pelagic, inhabiting open waters, but also approaching the coast; follows ships and forms small concentrations below floating objects.

Feeds mainly on fishes, but also on crustaceans and squids.

Breeds in the open sea, probably approaching the coast as water temperatures rise.



PRESENT FISHING GROUNDS:

Mainly oceanic waters.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught by trolling and on tuna longlines; also occasionally with purse seines.

Marketed fresh; a very highly appreciated food fish.

CORY Cory 2

1981

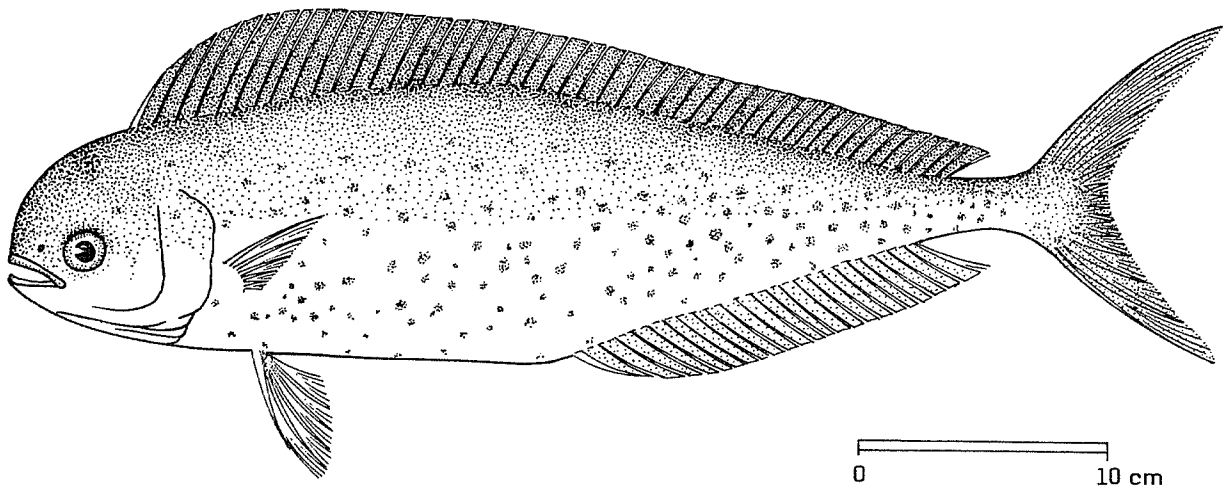
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : CORYPHAENIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Coryphaena equiselis Linnaeus, 1758

OTHER SCIENTIFIC NAMES STILL IN USE : Coryphaena equisetis Linnaeus, 1758



VERNACULAR NAMES:

FAO : En - Pompano dolphinfish (Amer.Fish.Soc.: pompano dolphin)
Fr - Coryphène dauphin
Sp - Dorado

NATIONAL :

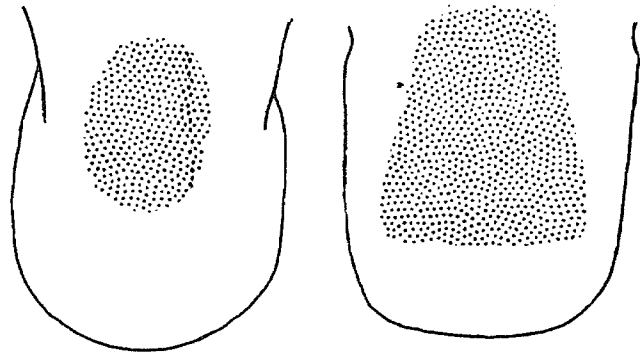
DISTINCTIVE CHARACTERS :

Body elongate and compressed, greatest body depth in adults more than 25% of standard length; young fish (up to 30 cm) have head profile slightly convex. Tooth patch on tongue broad and square; bands of teeth on jaws, vomer and palatines (roof of mouth). A single dorsal fin extending from just behind eye almost to caudal fin, with 52 to 59 rays; a convex anal fin extending from anus almost to caudal fin; pectoral fin about half of head length; caudal fin deeply forked; lateral-line scales 200 or fewer; vertebrae 33.

Colour: back brilliant metallic blue/green in life; fading rapidly after death to grey with a green tinge; sides silvery with a golden sheen and numerous black spots; dorsal fin dark. In juveniles, entire margin of caudal fin white; pelvic fins not pigmented.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Coryphaena hippurus: 58 to 66 dorsal fin rays (52 to 59 in C. equiselis); an oval tooth patch on tongue; greatest body depth less than 25% of standard length; pectoral fins more than half of head length; anal fin concave in outline. In juveniles, only caudal fin tips white, pelvic fins pigmented. Vertebrae 31 (33 in C. equiselis).



C. hippurus *C. equiselis*

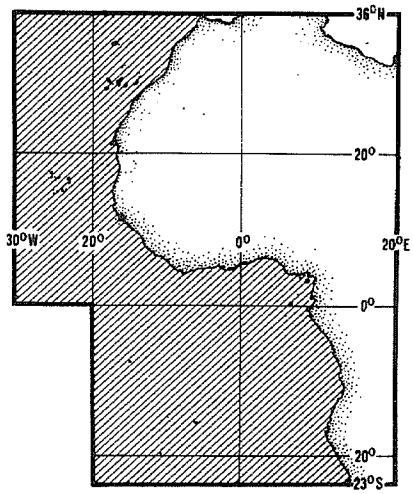
dorsal surface of tongue with tooth patches

SIZE:

Maximum: 75 cm; common to 50 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Probably throughout the area, but not always distinguished from C. hippurus; also, probably in most tropical and subtropical seas.



Pelagic, inhabiting open waters, but also approaching the coast. Probably resembles C. hippurus in following ships and concentrating below floating objects.

Feeds on small fishes and squids.

PRESENT FISHING GROUNDS:

Mainly oceanic waters.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught mainly by trolling and with floating lines.

Marketed fresh.

CYNO

1981

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

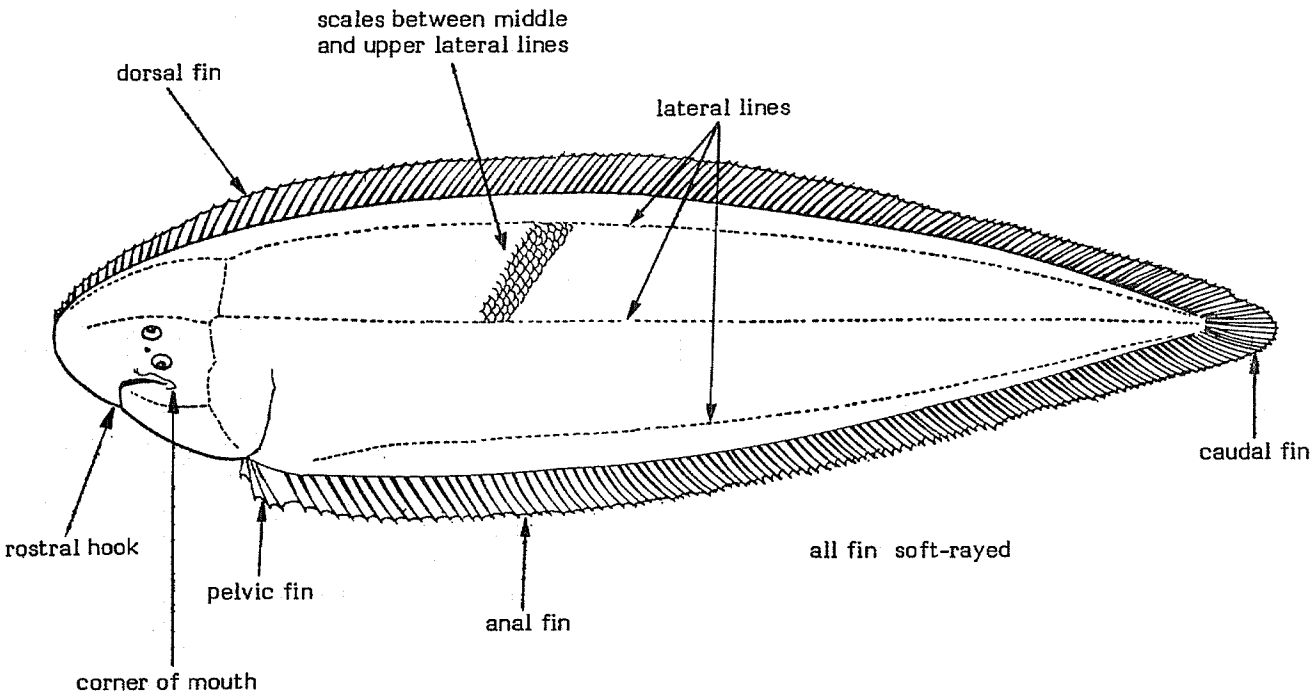
CYNOGLOSSIDAE

Tonguefishes and tonguesoles

Flatfishes with eyes on left side, body lanceolate (lance - or tongue-shaped), compressed and tapering posteriorly. Mouth small, the lower jaw not prominent, the jaws of the blind side strongly curved and toothed, eyes quite small; preopercular margin not free, covered with skin and scales; teeth small, sometimes hidden. No spines in fins, dorsal fin extending forward beyond upper eye; dorsal and anal fin rays confluent with caudal fin; pectoral fins absent or rudimentary; a single pelvic fin located on median line, confluent with anal fin or free. Lateral line either absent on both sides or well developed on eyed side with a midlateral line accompanied by margino-dorsal line and frequently by margino-ventral line. Scales ctenoid (rough to touch) on both sides or generally ctenoid on eyed side, ctenoid or cycloid (smooth) on blind side.

Colour: eyed side brownish, species variably marked on the body and fin rays, these marks can be in the form of bands, blotches, or spots; blind side white; colour pattern highly variable within and between species.

Benthic fishes found mainly on muddy bottoms of shelf areas. In the Eastern Central Atlantic, species of Cynoglossus are of a large size and abundantly found in commercial catches. Species of Symphurus are small and have little commercial potential. The combined catch of tonguesoles from the area exceeded 16 000 t in 1978.

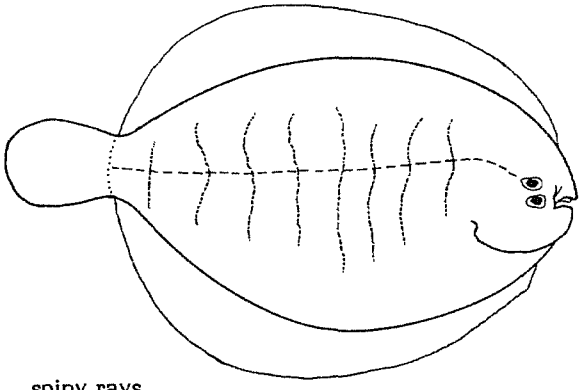


SIMILAR FAMILIES OCCURRING IN THE AREA:

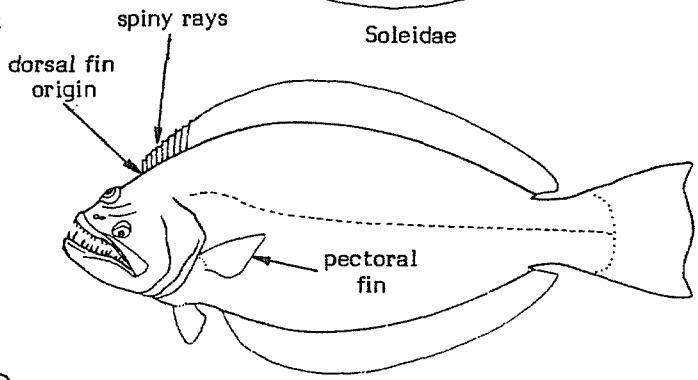
Soleidae: dorsal fin also far forward on head, pectoral fins small or absent and dorsal and anal fins confluent or not with caudal fin, but eyes on right side of body (eyes on left side in Cynoglossidae).

Psettodidae: preopercular margin free (no free margin, preopercle hidden beneath skin in Cynoglossidae); dorsal and anal fins separate from caudal fin; dorsal fin not extending forward onto head and spiny rays present in dorsal and pelvic fins (no spiny rays in Cynoglossidae); pectoral fins well developed; eyes on left or right side.

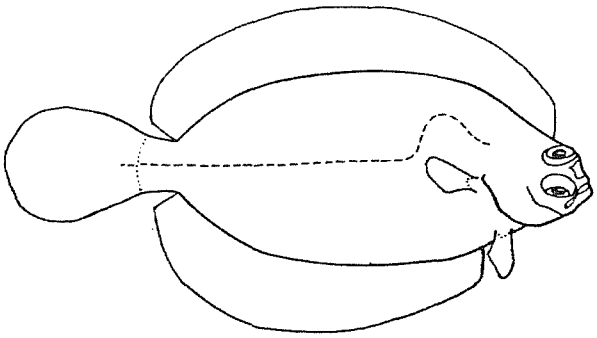
Pleuronectidae, Bothidae: preopercular margin free; pectoral fins well developed; eyes on right side of body in Pleuronectidae, on left side in Bothidae.



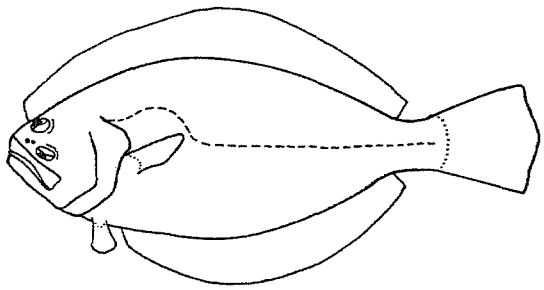
Soleidae



Psettodidae



Pleuronectidae

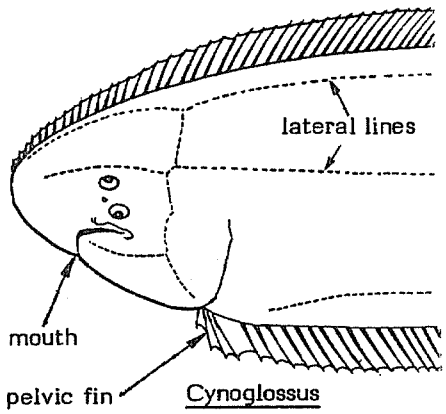


Bothidae

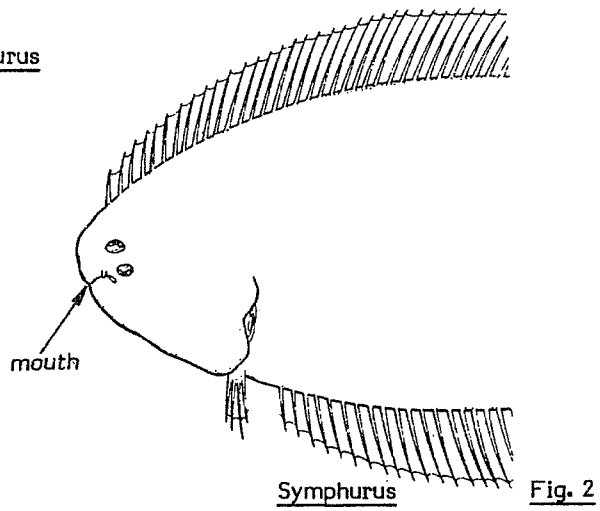
KEY TO GENERA OCCURRING IN THE AREA:

1 a. Pelvic fin connected with anal, lateral line(s) present on eyed side, snout hooked, mouth inferior (Fig. 1) ..... Cynoglossus

1 b. Pelvic fin free from anal, no lateral line on eyed side, snout not hooked, mouth anterior (Fig. 2) ..... Symphurus



Cynoglossus Fig. 1



Symphurus Fig. 2

LIST OF SPECIES OCCURRING IN THE AREA :

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

Cynoglossus browni Chabanaud, 1949	CYNO Cyno 8
Cynoglossus cadenati Chabanaud, 1947	CYNO Cyno 9
Cynoglossus canariensis Steindachner, 1882	CYNO Cyno 10
Cynoglossus monodi Chabanaud, 1949	CYNO Cyno 11
Cynoglossus senegalensis (Kaup, 1858)	CYNO Cyno 12

Symphurus lingulatus (Cocco, 1844)
Symphurus nigrescens Rafinesque, 1810
Symphurus normani Chabanaud, 1950

Prepared by A.G.K. Menon, Department of Zoology, University of Dar-es-Salaam, Dar-es-Salaam, Tanzania

CYNO Cyno 8

1981

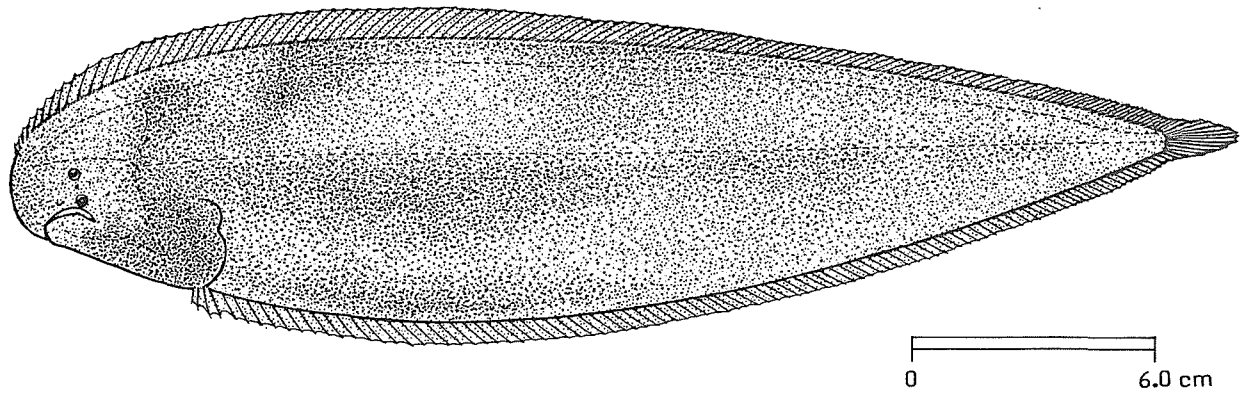
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : CYNOGLOSSIDAE

FISHING AREAS
34; 47 (in part)
(E.C. Atlantic)

Cynoglossus browni Chabanaud, 1949

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES:

FAO : En - Nigerian tonguesole
Fr - Sole-langue nigérienne
Sp - Lengua nigeriana

NATIONAL :

DISTINCTIVE CHARACTERS :

Body flat and elongate with dorsal and anal fins joined to caudal fin. Eyes on left side of body, with a broad space between them; snout narrowly rounded, rostral hook short, not reaching to vertical through front margin of upper eye; maxilla extending well beyond lower eye; angle of mouth extending to beyond vertical from posterior margin of lower eye, and much nearer to tip of snout than to branchial opening. Dorsal fin with 115 to 125 rays, anal fin with 96 to 99 rays, caudal fin with 12 rays. Scales ctenoid (rough to touch) on eyed side, cycloid on blind side. Two lateral lines on eyed side, mid-lateral line with 84 to 91 scales; 14 to 16 scales between middle and upper lateral lines; no lateral line on blind side.

Colour: dark brown on eyed side, lower side rather whitish.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Cynoglossus canariensis, C. monodi and C. senegalensis: 1 lateral line on blind side (none on blind side in C. browni). Furthermore, 3 lateral lines on eyed side in C. canariensis and sometimes, in C. senegalensis (2 in C. browni).

Cynoglossus cadenati: lateral line on blind side also absent, but 10 caudal fin rays (12 in C. browni); 109 to 115 dorsal fin rays (119 to 125 in C. browni) and 87 or 88 anal fin rays (96 to 99 in C. browni).

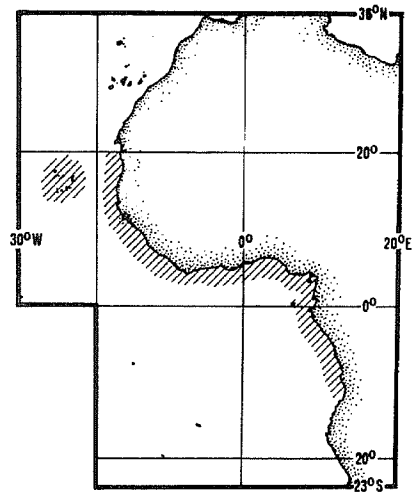
Symphurus species: no lateral line on eyed side; pelvic fins free from anal fin; snout not hooked, mouth anterior.

SIZE:

Maximum: 40 cm; common to 30 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

From Senegal to Nigeria and Congo.



Inhabits shallow waters on muddy and sandy bottoms of the continental shelf, mainly at depths between 15 and 25 m.

Feeds predominantly on small benthic invertebrates.

PRESENT FISHING GROUNDS:

Found throughout its range on trawlable bottoms. Regularly found in local markets.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species, but the combined catch of tonguesoles from the area exceeded 16 000 t in 1978.

Caught mainly with bottom trawls and fixed bottom nets.

Marketed mostly fresh and frozen. Also exported.

CYNO Cyno 9

1981

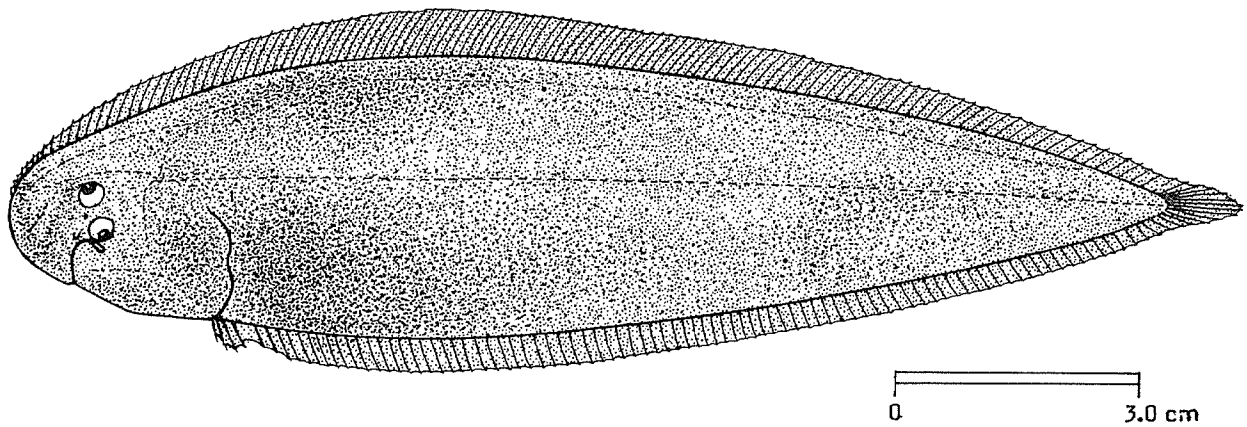
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : CYNOGLOSSIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Cynoglossus cadenati Chabanaud, 1947

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES:

FAO : En - Ghanaian tonguesole
Fr - Sole-langue du Ghana
Sp - Lengua de Ghana

NATIONAL :

DISTINCTIVE CHARACTERS :

Body flat and elongate with dorsal and anal fins joined to caudal fin. Eyes small, on left side of head, with a broad space between them; snout rounded, rostral hook short, extending only to front margin of anterior nostril; maxilla extending to below posterior margin of lower eye; angle of mouth extending to below vertical from posterior half of lower eye, nearer to tip of snout than to branchial opening. Dorsal fin with 109 to 115 rays, anal fin with 87 or 88 rays, caudal fin with 10 rays. Scales ctenoid (rough to touch) on both sides. Two lateral lines on eyed side, midlateral line with 68 to 72 scales; 11 or 12 scales between middle and upper lateral lines; no lateral line on blind side.

Colour: uniformly brown on eyed side, whitish on blind side.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

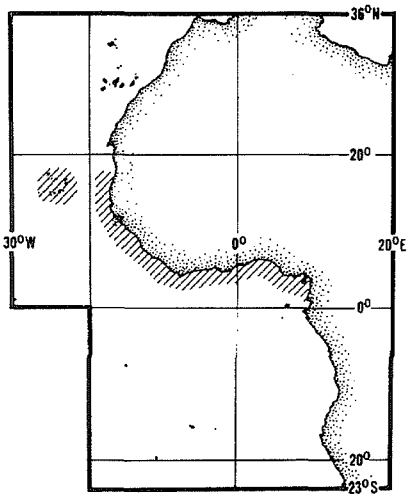
Other Cynoglossus species: 12 caudal fin rays (10 in C. cadenati); 119 or more dorsal fin rays (109 to 115 in C. cadenati); 93 or more anal fin rays (87 or 88 in C. cadenati); scales cycloid (smooth) on blind side (ctenoid in C. cadenati). Furthermore, 1 lateral line present on blind side in C. canariensis, C. monodi and C. senegalensis (none in C. cadenati).

Symphurus species: no lateral line on eyed side; pelvic fins free from anal fin; snout not hooked, mouth anterior.

SIZE:

Maximum: 20 cm; common to 15 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:



From Senegal to Ghana.

Inhabits muddy and sandy bottoms of inshore waters, at depths between 12 and 15 m.

Feeds predominantly on small benthic invertebrates.

PRESENT FISHING GROUNDS:

Found throughout its range on trawlable bottoms; apparently not abundant.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught with bottom trawls and fixed bottom nets.

Marketed fresh or frozen.

CYNO Cyno 10

1981

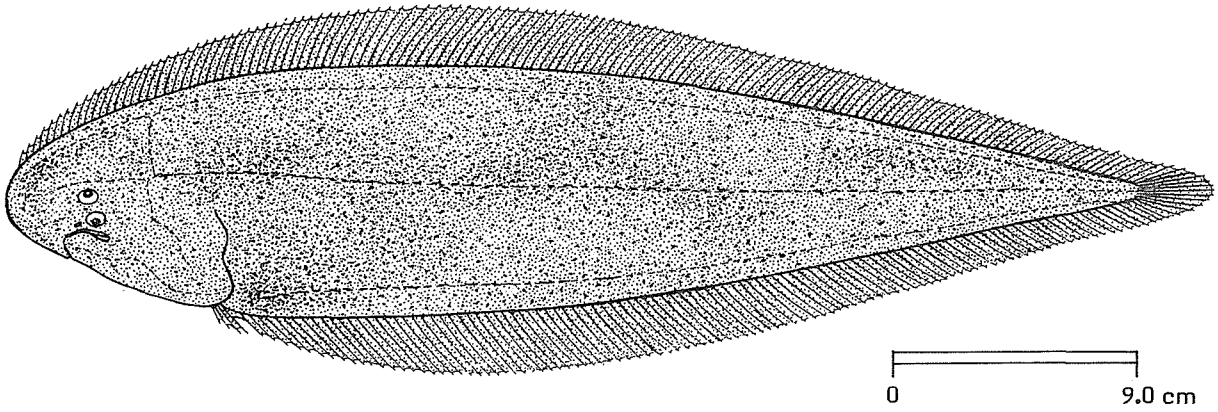
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : CYNOGLOSSIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Cynoglossus canariensis Steindachner, 1882

OTHER SCIENTIFIC NAMES STILL IN USE : Cynoglossus lagoensis Regan, 1915



VERNACULAR NAMES:

FAO : En - Canary tonguesole
Fr - Sole-langue canarienne
Sp - Lengua de Canarias

NATIONAL :

DISTINCTIVE CHARACTERS :

Body flat and elongate, with dorsal and anal fins joined to caudal fin. Eyes on left side of head with a broad space between them; snout rather pointed, rostral hook short and hardly reaching to vertical through front margin of upper eye; maxilla extending to well beyond lower eye; angle of mouth extending to beyond vertical from posterior margin of lower eye, nearer to tip of snout than to branchial opening. Dorsal fin with about 125 rays, anal fin with about 99 rays, caudal fin with 12 rays. Scales ctenoid (rough to touch) on anterior part of eyed side, cycloid posteriorly, cycloid on blind side. Three lateral lines on ocular side, midlateral line with 76 to 88 scales; 10 to 13 scales between middle and upper lateral lines; 1 lateral line on blind side.

Colour: uniformly brownish on eyed side, rather whitish on blind side.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Cynoglossus browni and C. senegalensis: scales much smaller (14 to 16 rows between middle and upper lateral lines in C. browni, and 17 or 18 rows in C. senegalensis (against 10 to 13 in C. canariensis). Furthermore, no lateral line on blind side in C. browni (1 in C. canariensis); 2 lateral lines on eyed side (3 in C. canariensis and sometimes in C. senegalensis).

C. cadenati: no lateral line on blind side; dorsal fin rays 115 or less (about 125 in C. canariensis); anal fin rays 87 or 88 (about 99 in C. canariensis).

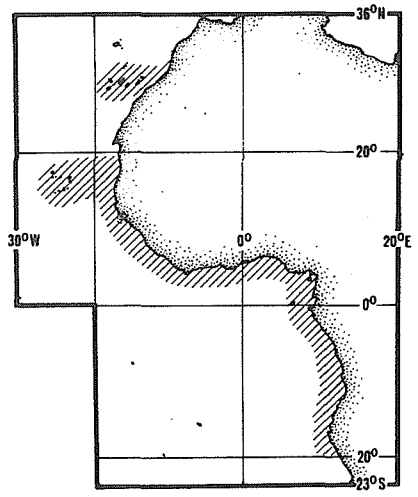
C. monodi: scales cycloid (smooth) on both sides (ctenoid on anterior part of eyed side in C. canariensis), body more elongate (depth about 5 times in standard length (4 times in C. canariensis)); 2 lateral lines on eyed side (3 in C. canariensis).

Symphurus species: no lateral line on eyed side; pelvic fins free from anal fin; snout not hooked, mouth anterior.

SIZE:

Maximum: 60 cm; common to 45 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:



Around the Canary Islands and from Senegal to Angola.

Inhabits muddy and sandy bottoms of inshore waters at depths between 15 to 300 m.

Feeds predominantly on small benthic invertebrates.

PRESENT FISHING GROUNDS:

Found throughout its range on trawlable bottoms; common in local markets and presently exploited by offshore fleets.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species, but the combined catch of Cynoglossidae from the area exceeded 16 500 t in 1978.

Caught mainly with bottom trawls and fixed bottom nets.

Marketed fresh or frozen.

CYNO Cyno 11

1981

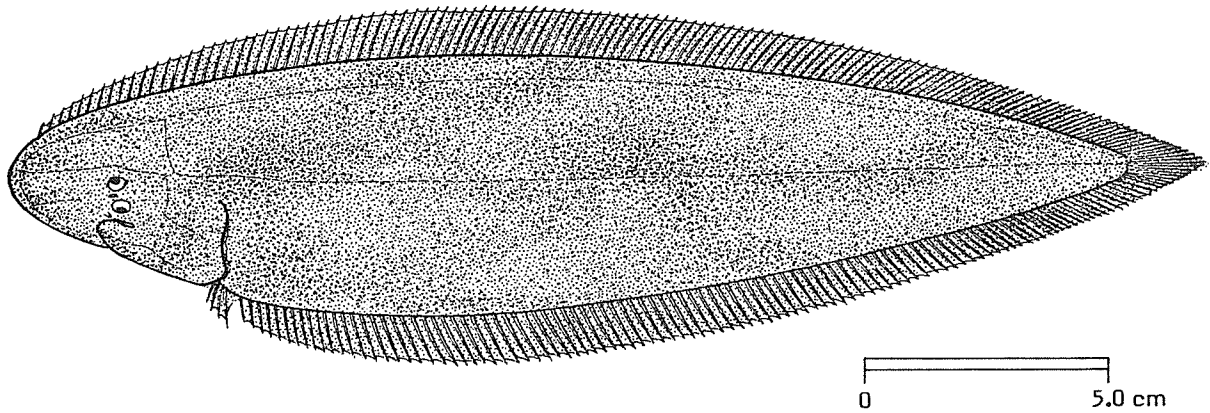
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : CYNOGLOSSIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Cynoglossus monodi Chabanaud, 1949

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES:

FAO : En - Guinean tonguesole
Fr - Sole-langue de Guinée
Sp - Lengua de Guinea

NATIONAL :

DISTINCTIVE CHARACTERS :

Body flat and elongate, with dorsal and anal fins joined to caudal fin. Eyes on left side of body, with a rather narrow space between them; snout narrowly rounded, rostral hook rather short, stopping just in front of vertical through front margin of lower eye; maxilla extending to well beyond lower eye; angle of mouth extending to just behind vertical from posterior margin of lower eye, nearer to branchial opening than to tip of snout. Dorsal fin with 125 to 131 rays, anal fin with 99 to 105 rays, caudal fin with 12 rays. Scales cycloid (smooth) on both sides; 2 lateral lines on eyed side, the midlateral line with 85 to 96 scales; 12 to 14 scales between middle and upper lateral lines; 1 lateral line on blind side.

Colour: light brown on eyed side, rather whitish on blind side.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Cynoglossus browni, C. canariensis and C. senegalensis: scales ctenoid (rough to touch) on eyed side (cycloid in C. monodi); *body much less elongate (depth about 4 times in standard length against 5 times in C. monodi).* Furthermore, 3 lateral lines on eyed side in C. canariensis and sometimes in C. senegalensis (2 in C. monodi).

C. cadenati: also has ctenoid scales on eyed side, but only 10 caudal fin rays (12 in C. monodi); 115 or less dorsal fin rays (125 to 131 in C. monodi) and 87 or 88 anal fin rays (99 to 105 in C. monodi).

Symphurus species: no lateral line on eyed side; pelvic fins free from anal fin; snout not hooked, mouth anterior.

SIZE:

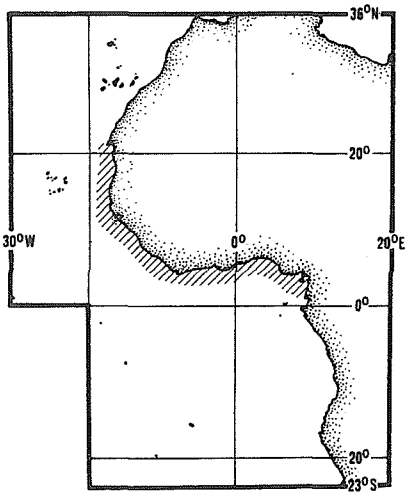
Maximum: at least 35 cm; common to 25 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

From Senegal to Nigeria.

Inhabits muddy and sandy bottoms of inshore waters at depths between 10 and 25 m.

Feeds predominantly on small benthic invertebrates.



PRESENT FISHING GROUNDS:

Found on trawlable bottoms throughout its range. Quite abundant and regularly found in local markets.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species, but the combined catch of tonguesoles from the area exceeded 16 500 t in 1978.

Caught mainly with bottom trawls and fixed bottom nets.

Marketed fresh or frozen. Also exported.

CYNO Cyno 12

1981

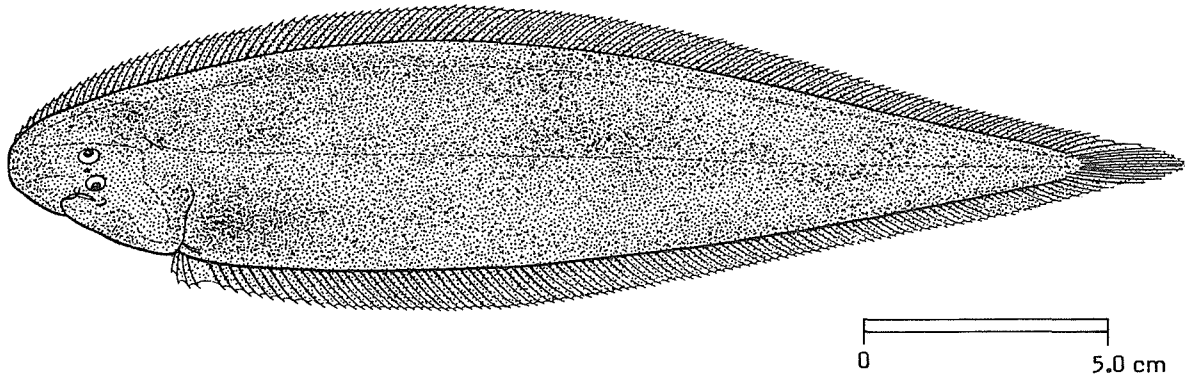
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : CYNOGLOSSIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Cynoglossus senegalensis (Kaup, 1858)

OTHER SCIENTIFIC NAMES STILL IN USE : Cynoglossus goreensis Steindachner, 1882



VERNACULAR NAMES:

FAO : En - Senegalese tonguesole
Fr - Sole-langue sénégalaise
Sp - Lengua del Senegal

NATIONAL :

DISTINCTIVE CHARACTERS :

Body flat and elongate, with dorsal and anal fins joined to caudal fin. Eyes on left side of body with a fairly wide space between them; snout broadly rounded, rostral hook rather short, extending only to front margin of anterior nostril; maxilla extending beyond lower eye; angle of mouth extending to just beyond vertical from posterior border of lower eye, slightly nearer tip of snout than to branchial opening. Dorsal fin with 119 to 125 rays, anal fin with 93 to 99 rays, caudal fin with 12 rays. Scales ctenoid on eyed side, cycloid on blind side. Two or sometimes three lateral lines on eyed side, midlateral line with 89 to 108 scales; 17 or 18 scales between upper and middle lateral lines; 1 lateral line on blind side.

Colour: dark brown on eyed side, lower whitish.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Other Cynoglossus species: scales larger, 16 or less rows between middle and upper lateral lines. Furthermore, no lateral lines on blind side in C. browni and C. cadenati.

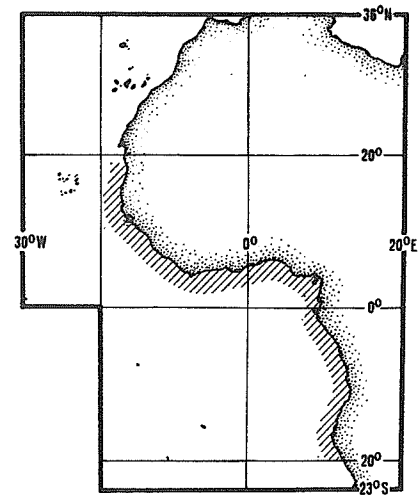
Symphurus species: no lateral line on eyed side; pelvic fins free from anal fin; snout not hooked, mouth anterior.

SIZE:

Maximum: about 38 cm; common to 25 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

From Senegal to Angola.



Inhabits muddy and sandy bottoms of inshore waters at depths between 10 and 110 m.

Feeds predominantly on small benthic invertebrates.

PRESENT FISHING GROUNDS:

Found throughout its range on trawlable bottoms; rather abundant; regularly found in local markets and also exploited by foreign offshore fleets.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species, but the combined catch of tonguesoles from the area exceeded 16 500 t in 1978.

Caught mainly with bottom trawls and fixed bottom nets.

Marketed fresh or frozen. Also exported.

DACTYL

1981

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

DACTYLOPTERIDAE

Flying gurnards

A single species in the area; see species sheet for:

Dactylopterus volitans (Linnaeus, 1758) DACTYL Dactyl 1

Prepared by W.F. Smith-Vaniz, Department of Ichthyology, The Academy of Natural Sciences of Philadelphia, Philadelphia, Pennsylvania, U.S.A.

DACTYL Dactyl 1

1981

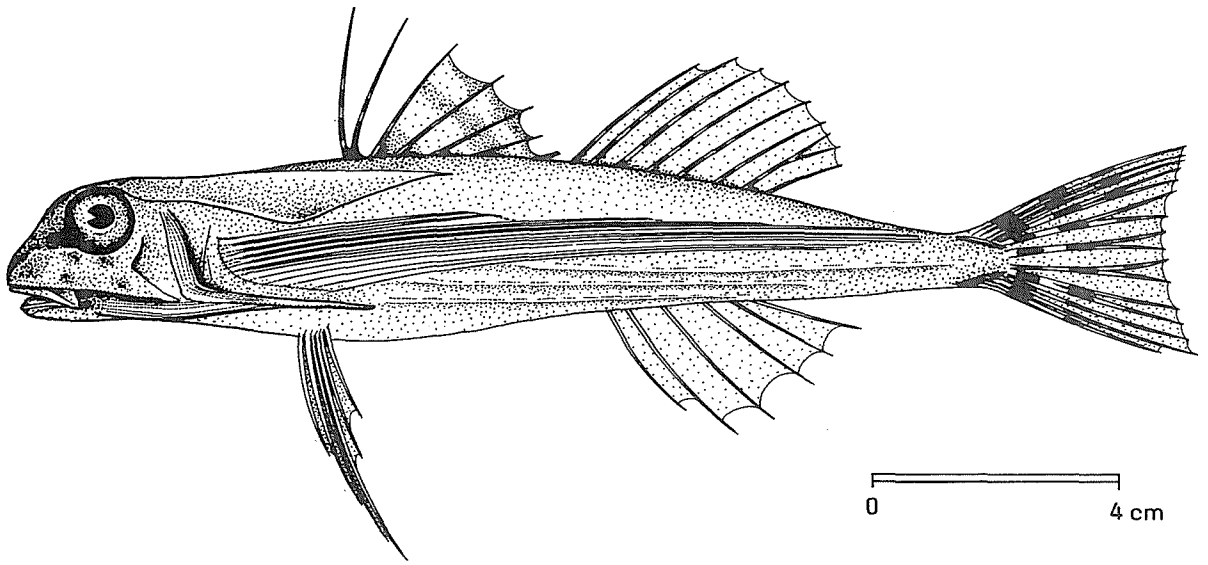
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : DACTYLOPTERIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Dactylopterus volitans (Linnaeus, 1758)

OTHER SCIENTIFIC NAMES STILL IN USE : Cephalacanthus volitans (Linnaeus, 1758)



VERNACULAR NAMES:

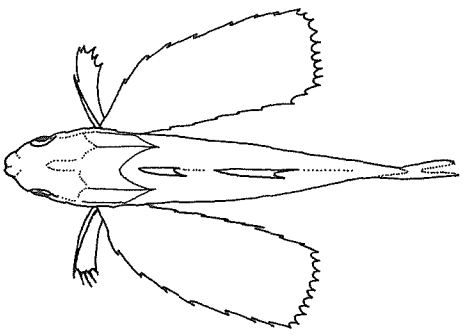
FAO : En - Flying gurnard
Fr - Poule de mer
Sp - Alón (= Chicharra)

NATIONAL :

DISTINCTIVE CHARACTERS :

A moderately elongate fish. Head blunt, top and sides encased in a bony shield; a long, keeled spine extending posteriorly from the nape to below mid-base of first dorsal fin; angle of preopercle also bearing a long spine, with a serrate keel; jaws with a band of small nodular teeth. Spinous and soft dorsal fins separated by a deep notch; anterior 2 dorsal fin spines separated from remainder of spinous dorsal fin and interconnected by a basal membrane; anal fin with only 6 soft rays; base of pectoral fins horizontal, the fins divided into 2 sections, an anterior short part of 6 rays and a posterior long part of 26 to 30 rays which reach the caudal fin base in adults; caudal fin emarginate, with 2 sharp keels on its base. Scales scute-like with sharp keels.

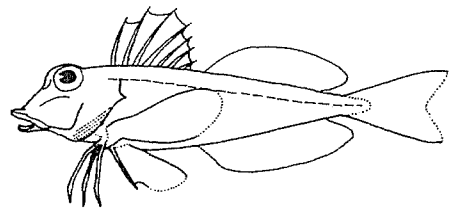
Colour: variable with surroundings; often yellowish brown, with bright blue spots on pectoral fins.



dorsal view

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

The bony head shield in combination with the long keeled spine on nape and the long serrated preopercular spine will readily distinguish this species from all others occurring in the area. The Triglidae, which are superficially similar in having the head encased in bony armour and large pectoral fins, differ additionally in having the spinous dorsal fin entire and all spines united by a fin membrane.



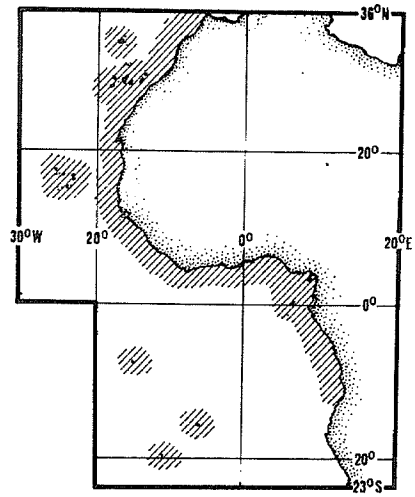
Triglidae

SIZE:

Maximum: at least 45 cm; common to 20 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

In the Eastern Atlantic from Portugal to Angola and in the Mediterranean. Also broadly distributed in the Western Atlantic from Massachusetts to Argentina.



A benthic fish inhabiting sandy or muddy bottoms in shallow coastal waters; capable of "walking" on the bottom by alternately moving the pelvic fins while using the short pectoral fin rays to scratch in the sand, probably in search of food. Widely reported in the literature as capable of leaping free of the surface and gliding for short distances, hence the common name (but these reports are probably erroneus). When the fish is alarmed, the pectoral fins are spread laterally.

Feeds primarily on benthic crustaceans, especially crabs, clams and small fishes.

PRESENT FISHING GROUNDS:

More or less regularly taken in artisanal fisheries in some localities; also as bycatch in trawl catches by offshore fleets.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Adults are taken with bottom trawls, fixed bottom nets and on line gear.

Utilized fresh, dried salted, smoked and for fishmeal and oil.

DIOD

1981

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

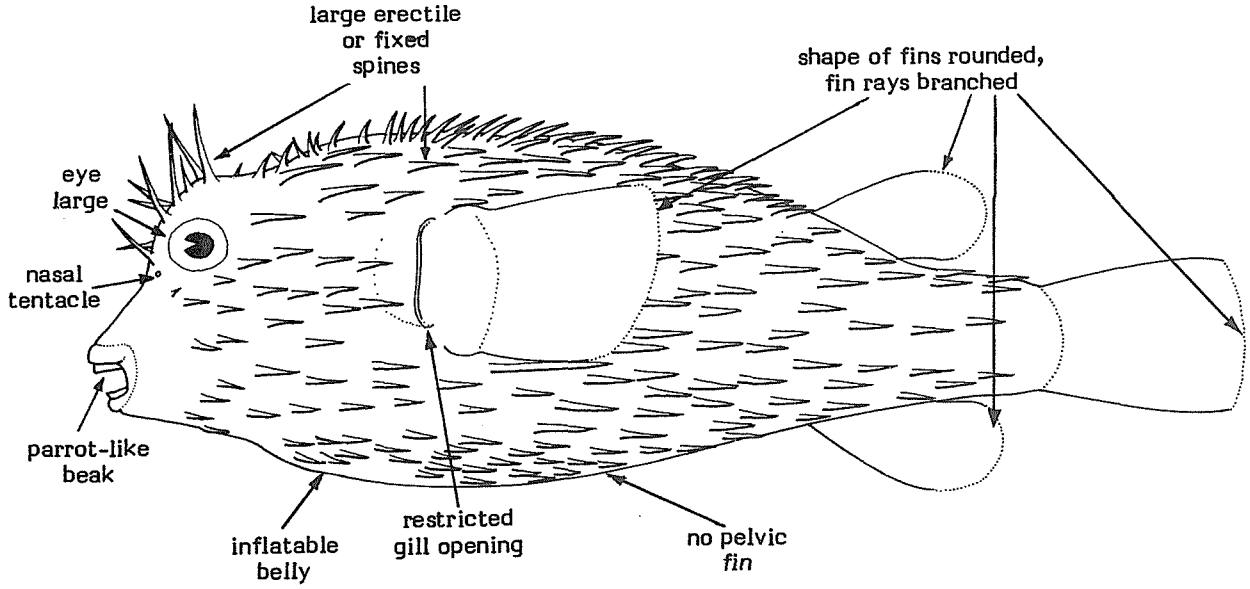
DIODONTIDAE

Porcupinefishes, spiny puffers, burrfishes

Small to medium-sized fishes, to 1 m in length. Body wide and capable of great inflation; covered with short to long spines which are expanded as large bases or roots under the skin; long spines are usually erectile and two-rooted, while short spines are fixed in an erect position by their three-rooted bases. Head broad and blunt; gill openings relatively small, vertical slits immediately before the pectoral fin bases; nasal organs usually inside small tentacles located in front of the large eyes; mouth large, wide and terminal, the teeth fused to form a beak-like crushing structure without a median suture dividing the upper and lower jaws into left and right halves. Dorsal and anal fins spineless, set far back on body, and, like the caudal fin, usually rounded with most fin rays branched and bases often thick and fleshy; pelvic fins absent. Lateral line inconspicuous. No normal scales.

Colour: background colour light tan to brown, but not uncommonly grey; usually overlain with dark brown to black spots, bars and/or blotches; green overtones and yellowish spots may also be present. Undamaged spines are covered with skin on which the colour pattern is continued. Belly white, often with yellow overtones. The only pelagic species is deep blue dorsally, and pelagic juveniles of other species may also be blue.

Most species are benthic around coral or rocky reefs, but some frequent sand or mud bottoms in deeper water (to 100 m); one species plus the juveniles of others are pelagic. They feed on hard-shelled benthic invertebrates which are crushed with the powerful jaws. When disturbed, they inflate and present a potential predator with a large, very spiny ball. Most or all species spawn pelagic eggs and pass through a pelagic juvenile phase. Not known to school. Porcupine fishes are sometimes collected as bycatch in bottom trawls, but they are normally not used except perhaps as fishmeal. Inflated and dried specimens are sold as curios. Thought to be poisonous, but some Pacific species are eaten without causing any ill-effects.



SIMILAR FAMILIES OCCURRING IN THE AREA:

No other family has the following combination of characters: large body spines, pelvic fins absent, capability of inflating the body, and teeth fused into a single beak-like unit in each jaw, without a median suture.

KEY TO SPECIES OCCURRING IN THE AREA:

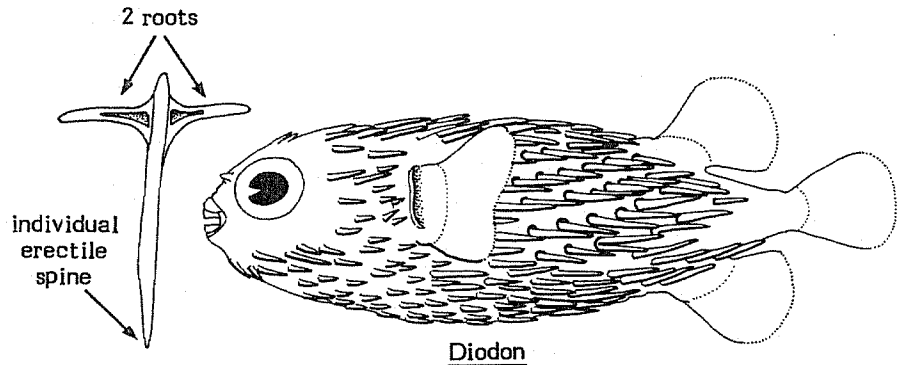
1 a. Spines all two-rooted,* long and erectile (Fig. 1), except for a few around the gill openings, dorsal fin base and on the caudal peduncle ..... Diodon

2 a. None of the spines wholly on caudal peduncle (Fig. 2a); body with several large dark dorsal blotches; no small dark spots on fins ..... Diodon holocanthus

2 b. One or more small spines wholly on dorsal surface of caudal peduncle (Fig. 2b); body without large, dark blotches, fins with numerous small spots

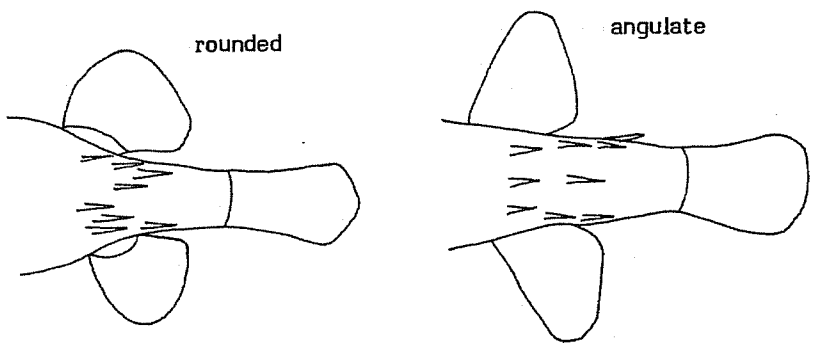
3 a. Pectoral fin rays 19 to 22; dorsal and anal fins somewhat angulate in adults (Fig. 2b); body relatively slender, width of head less than 30% of standard length; a wholly pelagic species coloured dark blue ..... Diodon eydouxii

3 b. Pectoral fin rays 22 to 25; dorsal and anal fins rounded; body relatively robust, width of head more than 30% of standard length; juveniles (to 20 cm) pelagic, adults demersal and coloured tan to brown ..... Diodon hystrix



Diodon

Fig. 1



a. D. holocanthus b. D. eydouxii

posterior part of body (lateral view)

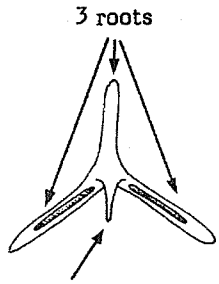
Fig. 2

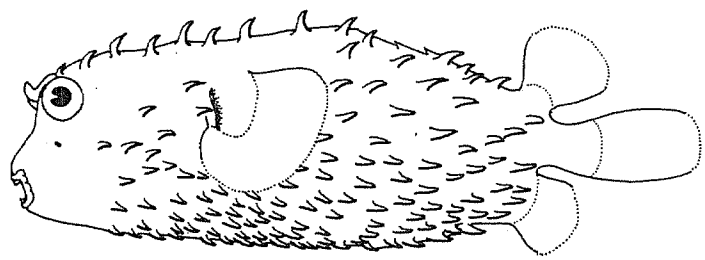
*There may be a short anterior extension of the spine shaft which resembles a short, third root (Fig. 1)

1 b. Spines all, or nearly all, three- or four-rooted, short and immovable (Fig. 3) ..... Chilomycterus

4 a. One or more small spines wholly on dorsal surface of caudal peduncle; nasal organ of adults a flat, ridged plate; colour pattern dominated by small black spots on body and fins ..... Chilomycterus reticulatus

4 b. None of the spines wholly on caudal peduncle; nasal organ a short, hollow tentacle with 2 openings; colour pattern with large dark dorsal and lateral blotches, thin dark lateral diagonal lines, and no small black spots ..... Chilomycterus spinosus mauretanicus





Chilomycterus Fig. 3

LIST OF SPECIES OCCURRING IN THE AREA :

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

Chilomycterus reticulatus (Linnaeus, 1758)
Chilomycterus spinosus mauretanicus (Le Danois, 1959) DIOD Chilo 1

Diodon eydouxii Brissout de Barneville, 1846
Diodon holocanthus Linnaeus, 1758
Diodon hystrix Linnaeus, 1758

Prepared by J.M. Leis, The Australian Museum, Sydney, New South Wales, Australia

DIOD Chilo 1

1981

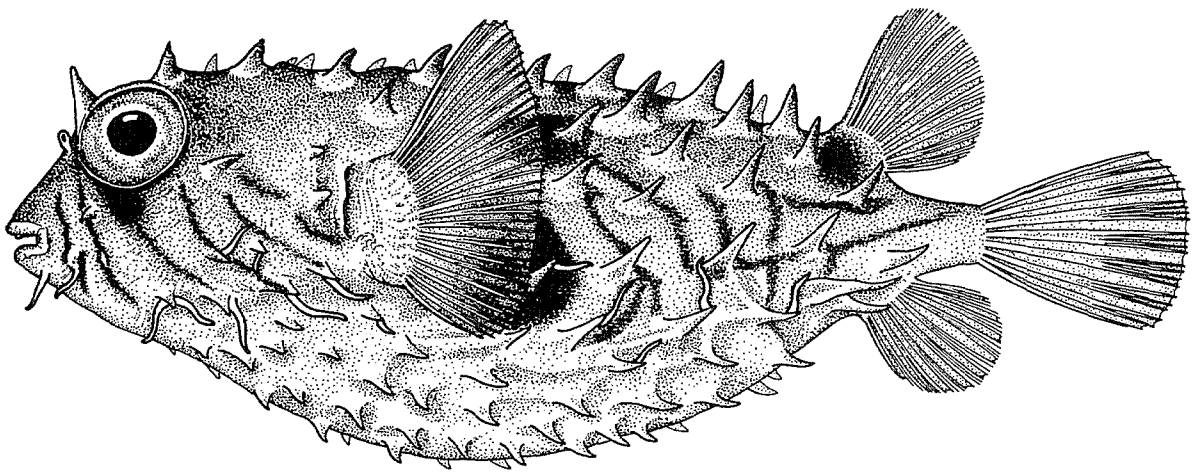
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : DIODONTIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Chilomycterus spinosus mauretanicus (Le Danois, 1959)

OTHER SCIENTIFIC NAMES STILL IN USE : Atinga atinga mauretanicus Le Danois, *1959*
Chilomycterus spinosus (Linnaeus, 1758)
Chilomycterus antennatus* (not of Cuvier, 1818, misidentification)



0 5 cm

VERNACULAR NAMES:

FAO : En - Guinean burrfish
Fr - Porc-épic de Guinée
Sp - Puercoespín de Guinea

NATIONAL :

DISTINCTIVE CHARACTERS :

Body rotund and capable of inflation, bearing massive, but relatively short, immovable three-rooted spines; medial spine on forehead even with the anterior edge of the eye; none of the spines wholly on caudal peduncle; short, fleshy tentacles under the lower jaw and along the lower edges of sides from head to anus (these tentacles mostly associated with body spines); nasal organ a hollow tube with two openings near the tip; teeth fused to form a beak-like crushing structure without a median suture dividing upper and lower jaws into right and left halves. All fins spineless; dorsal and anal fins rounded and set far back on body; pelvic fins absent.

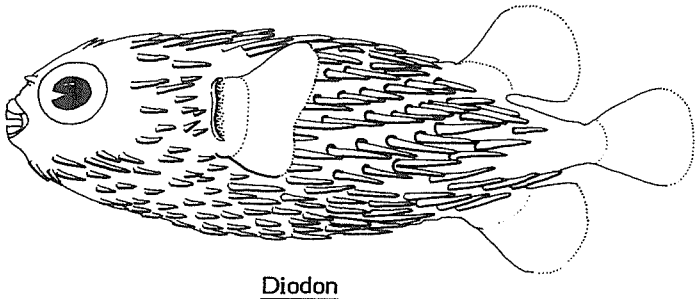
Colour: back dark brown to grey fading to yellow-white on belly. Spines on back with a lighter area at bases. Large dark blotches on trunk located above pectoral fin bases, on sides at tips of pectoral fins and at base of dorsal fin. Often a short, dark bar under the eye. Sides with thin, dark, diagonal lines often crossing the snout, and becoming horizontal on caudal peduncle. No small black spots on body or fins.

*A valid species in the Western Central Atlantic

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Chilomycterus reticulatus: many spines with 4 roots (3 roots in C. spinosus mauretanicus); medial spine on forehead, if present, located behind middle of eye; one or more spines wholly on top of caudal peduncle; no tentacles on body; nasal organ a flat, ridged plate (adults only); body and fins covered with small, black spots; no large blotches. Size to about 60 cm.

Diodon species: all spines long, thin, capable of erection, with only 2 roots.



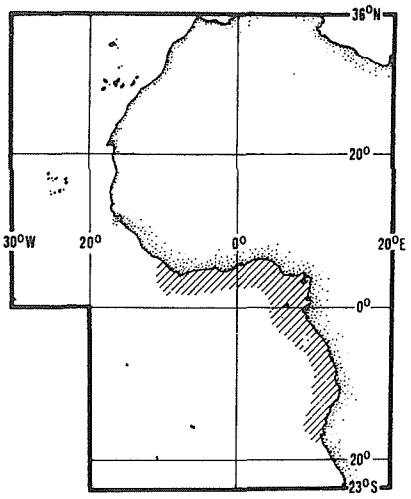
Diodon

SIZE:

Maximum: about 25 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Found from Liberia to Angola. This subspecies is apparently endemic to the Eastern Central Atlantic; the Western Atlantic subspecies C. spinosus spinosus occurs from the Bahamas to southern Brazil.



Found in moderate depths (to about 100 m), apparently mostly over sand and mud bottoms.

Feeds on hard-shelled invertebrates such as molluscs.

PRESENT FISHING GROUNDS:

Taken incidentally throughout its range.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught mainly with bottom trawls.

Apparently not consumed in Africa. Sale banned in some countries due to belief that this species is poisonous (documented proof lacking).

DIRET

1981

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

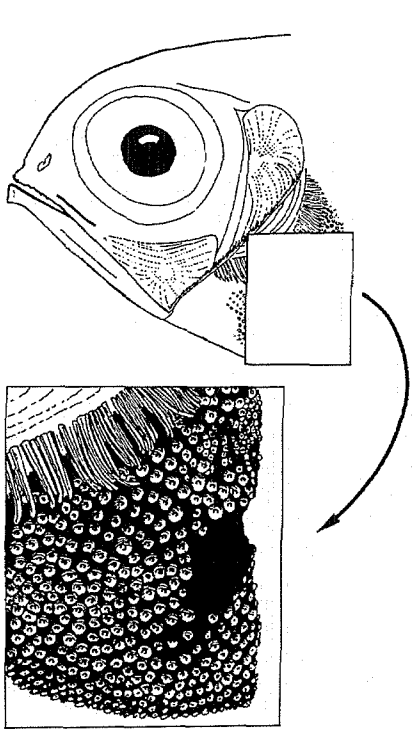
DIRETMIDAE

Diretmids

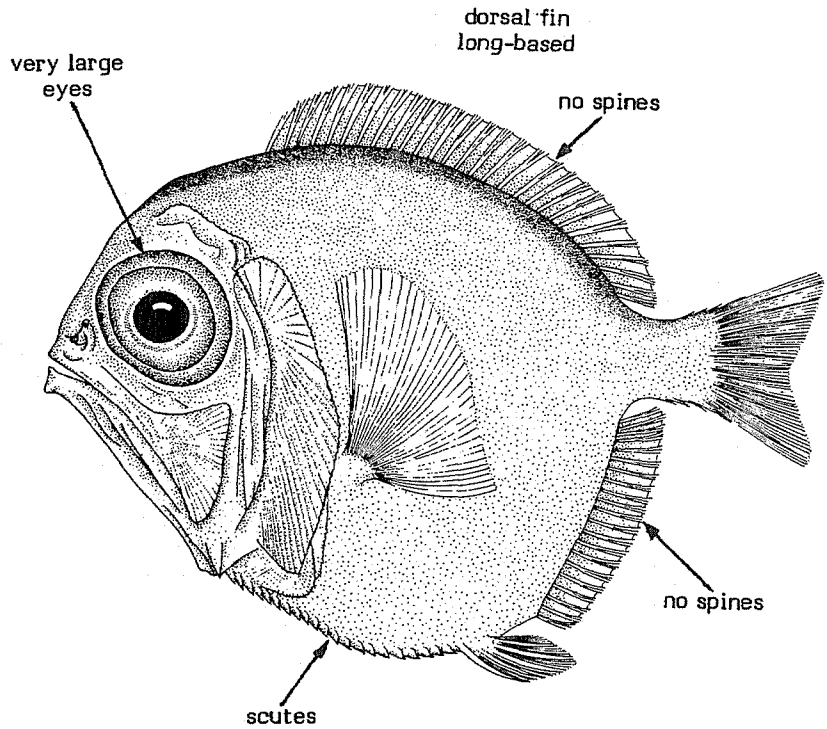
Small or medium-sized fishes, usually less than 40 cm in length (standard length). Body deep and strongly compressed, disc-like to elliptic. Head about as high as long; mouth large, oblique or steep; eye very large, its diameter about half the head length; teeth in jaws very small, multiserial, no teeth on roof of mouth (palatines and vomer); gillrakers lath-like. Special glands present beneath gill cover (unique within beryciform fishes). Vertical fins without spines; dorsal fin base longer than that of anal fin. Scales ctenoid (rough to touch); strong scutes on ventral midline; lateral line obscure. Swimbladder present.

Colour: silvery or greyish black.

Diretmids are mesopelagic fishes usually occurring at depths between 400 and 600 m; very young specimens live near the surface, while old adults often descend to below 1 000 m; live single or in small groups, sometimes above the continental slope. They feed on small crustaceans and planctonic organisms; nocturnal vertical migrations probable. All species are dioecious (sexes separate). Apparently abundant locally, and taken as by-catch in trawl fisheries but of no commercial importance at present.



suboperacular gland



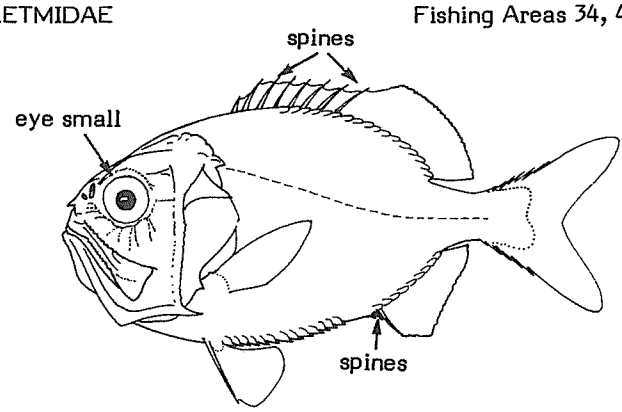
SIMILAR FAMILIES OCCURRING IN THE AREA:

Trachichthyidae: spines always present in dorsal and anal fins; eye diameter distinctly less than half the head length; no dermal glands under gill cover.

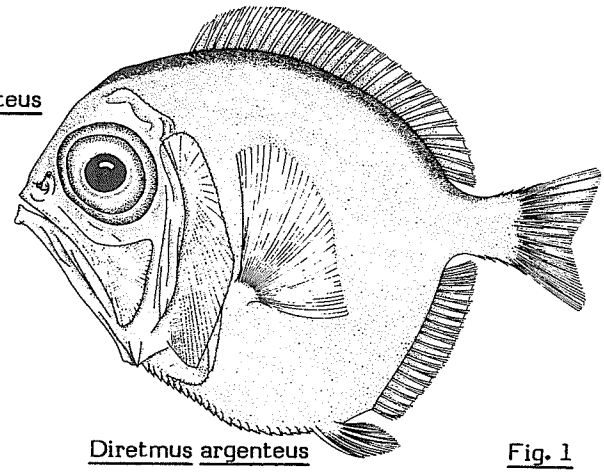
KEY TO SPECIES OCCURRING IN THE AREA:

1 a. Body disc-like at all sizes (Fig. 1); gill cover with more than 10 radiating bony ridges on upper third (Fig. 2a); ventral midline anterior to pelvic fins sharply keeled, covered with spiny scutes (Fig. 3a); anus immediately in front of first anal finray (Fig. 4a) ..... Diretmus argenteus

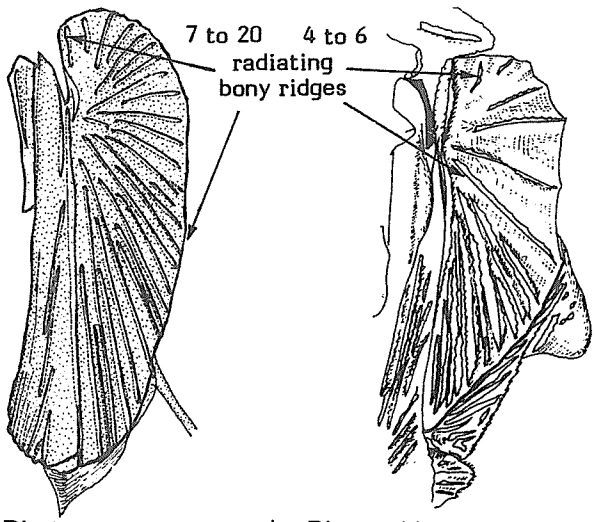
1 b. Body elliptic (Figs. 5,6), but sometimes disc-like in juveniles; gill cover with 3 to 6 radiating bony ridges on upper third (Fig. 2b); ventral midline anterior to pelvic fins flat, covered with normal ctenoid scales (Fig. 3b) anus half way between origin of pelvics and anal fin (Fig. 4b)



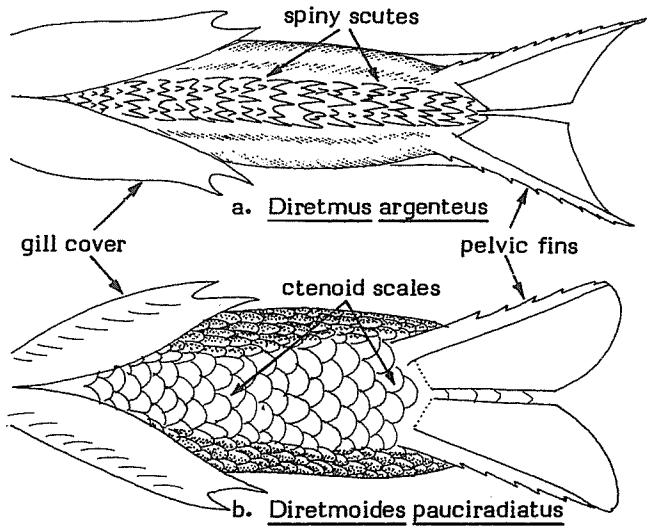
Gephyroberyx darwini (Trachichthyidae)



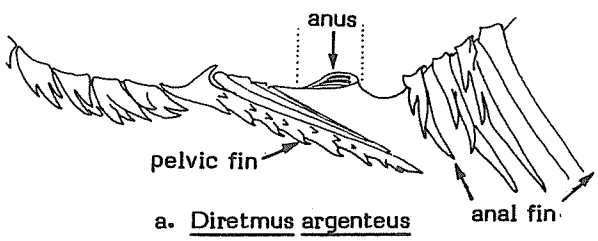
Diretmus argenteus Fig. 1



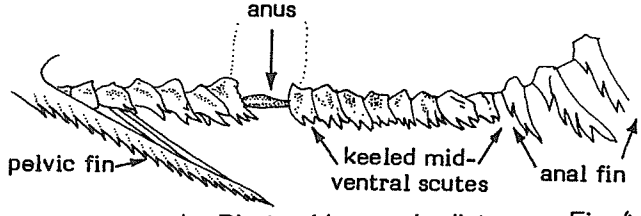
a. Diretmus argenteus b. Diretmoides pauciradiatus
gill cover (left side) Fig. 2



a. Diretmus argenteus
b. Diretmoides pauciradiatus
ventral midline of body Fig. 3



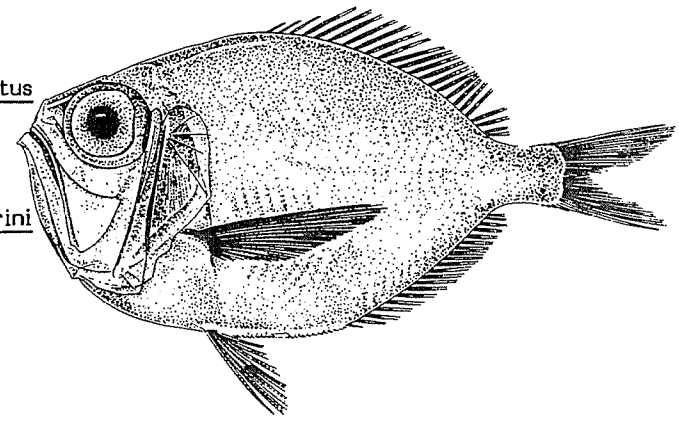
a. Diretmus argenteus



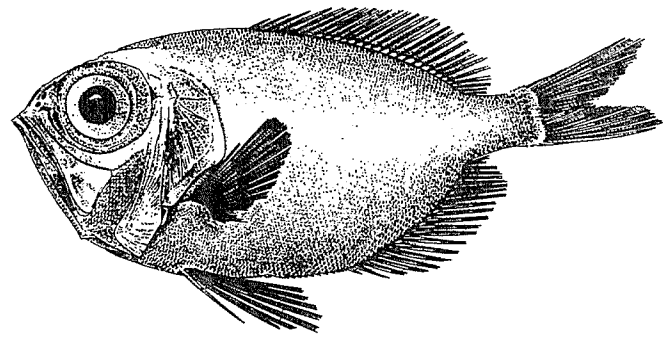
b. Diretmoides pauciradiatus Fig. 4

2 a. Dorsal fin rays 24 or 25; anal fin rays 18 to 20; rakers on first gill arch 13 to 15; tips of pelvic fins not, or scarcely, reaching anterior anal fin ray (Fig. 5) ..... Diretmoides pauciradiatus

2 b. Dorsal fin rays 27 or 28; anal fin rays 21 or 22; rakers on first gill arch 17 to 19; tips of pelvic fins reaching to anterior anal fin rays (Fig. 6) ..... Diretmoides parini



Directmoides pauciradiatus Fig. 5



Diretmoides parini Fig. 6

LIST OF SPECIES OCCURRING IN THE AREA :

Diretmus argenteus Johnson, 1863
size to 15 cm, occurrence in northern part of area, southward to 16°S

Diretmoides parini Post & Quéro, 1981
size to 40 cm, occurrence in the area from Madeira to south of Canary Islands and off Angola

Diretmoides pauciradiatus (Woods, 1973)
size to 14 cm, occurrence in the area between 12°N and 8°S

Prepared by A. Post, Aussenstelle Ichthyologie, Institut für Seefischerei, Zoologisches Institut und Zoologisches Museum, Hamburg, Federal Republic of Germany

Illustrations provided by author

DREP

1981

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

DREPANIDAE

Sicklefishes

A single species in the area; see species sheet for:

Drepane africana Osorio, 1892 DREP Drep 2

Prepared by G.R. Allen, Western Australian Museum, Perth, Australia

DREP Drep 2
1981

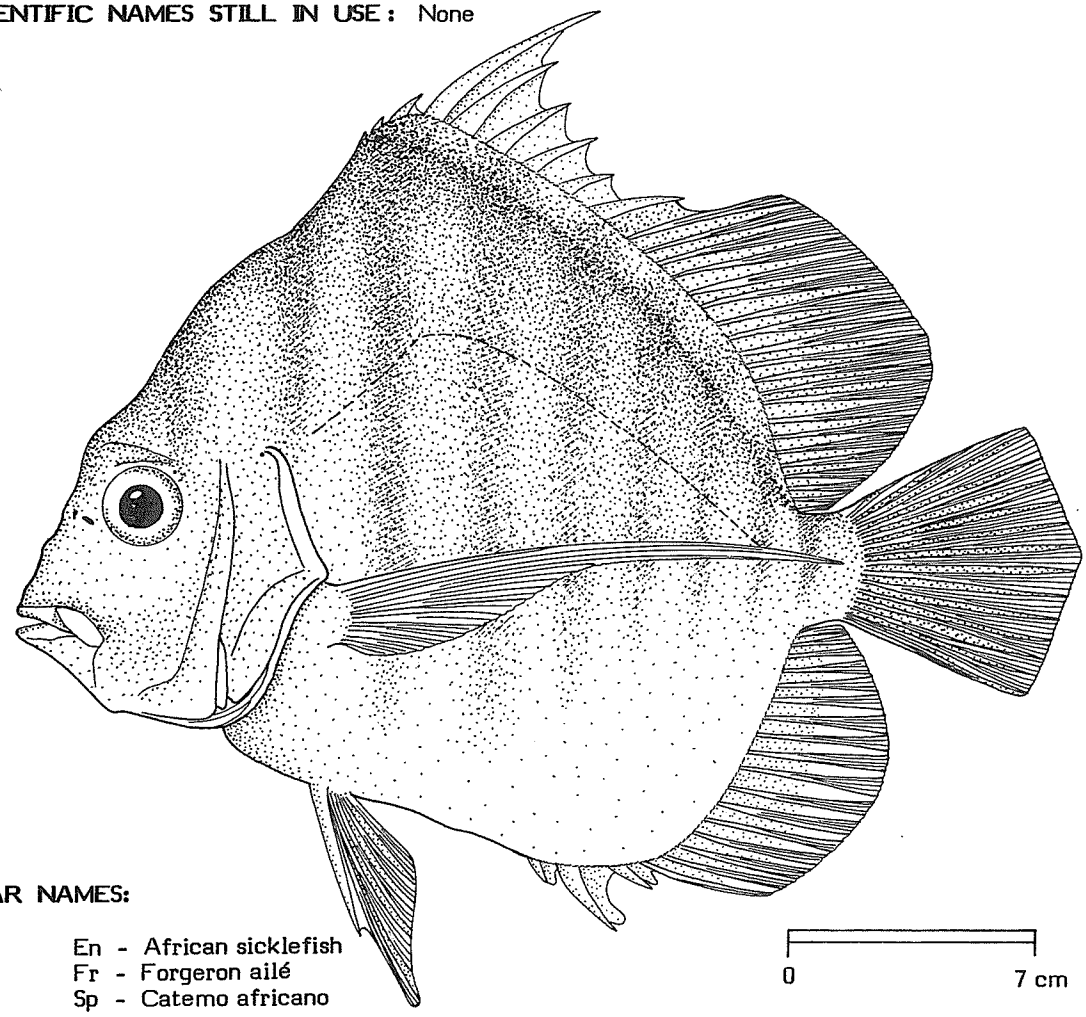
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : DREPANIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Drepane africana Osorio, 1892

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES:

FAO : En - African sicklefish
Fr - Forgeron ailé
Sp - Catemo africano

NATIONAL :

DISTINCTIVE CHARACTERS :

Body deep, rhomboid, laterally compressed. Forehead profile very steep; interorbital space slightly convex; lower edge of preopercle denticulate; mouth small, jaws somewhat protractile, lips fleshy; jaws with bands of slender, brushlike teeth, palate toothless. Dorsal fin deeply notched between spinous and soft portions, with 8 or 9 spines and 20 or 21 soft rays; anal fin with 3 spines and 17 or 18 soft rays; pectoral fins falcate and very elongate, with 15 to 17 rays, reaching nearly to base of caudal fin; caudal fin slightly rounded. Scales moderate in size, about 45 to 48 in lateral line.

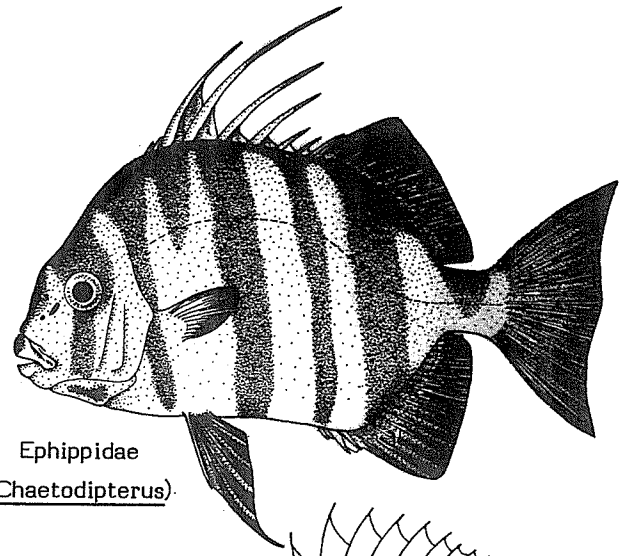
Colour: primarily silvery-white, darker dorsally; a series of about 8 vertical brown bands frequently present on sides.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Species of Ephippidae (Chaetodipterus): pectoral fins short and rounded, not reaching beyond middle of body.

Species of Monodactylidae (Psettias sebae): dorsal and anal fins greatly elevated without a notch in middle of dorsal; soft dorsal fin rays 31 to 37; soft anal fin rays 36 to 38; pelvic fins rudimentary; pectoral fins short, not reaching beyond middle of body.

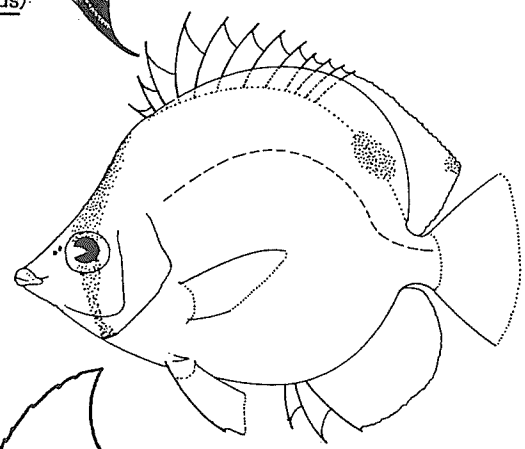
Species of Chaetodontidae: no deep notch between spinous and soft parts of dorsal fin; dorsal fin spines usually 11 to 13 (8 or 9 in D. africana); pectoral fins short, not reaching much beyond middle of body.



Ephippidae
(Chaetodipterus)

SIZE:

Maximum: 40 cm; common to 30 cm.



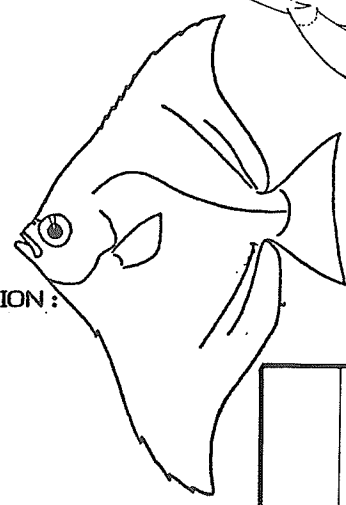
Chaetodontidae

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

West African coast between about Cape Verde and Angola.

This species is locally abundant in some trawling grounds at depths between about 20 and 50 m. Sometimes occurs in large schools.

Feeds primarily on invertebrates.



Monodactylidae
(Psettias sebae)

PRESENT FISHING GROUNDS:

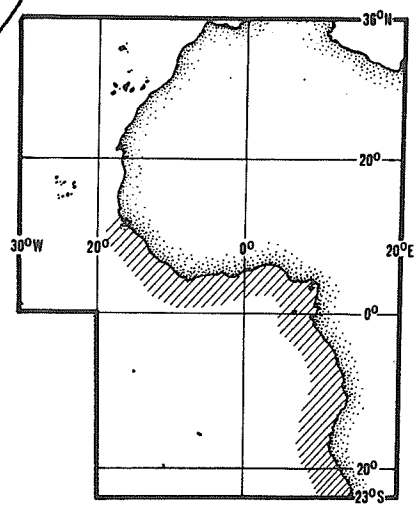
Inshore trawling grounds in 20 to 50 m; of some commercial importance in some countries (Nigeria).

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught mainly with trawl gear and purse seines.

Marketed fresh or dried salted; the flesh is of good quality.



ECHEN

1981

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

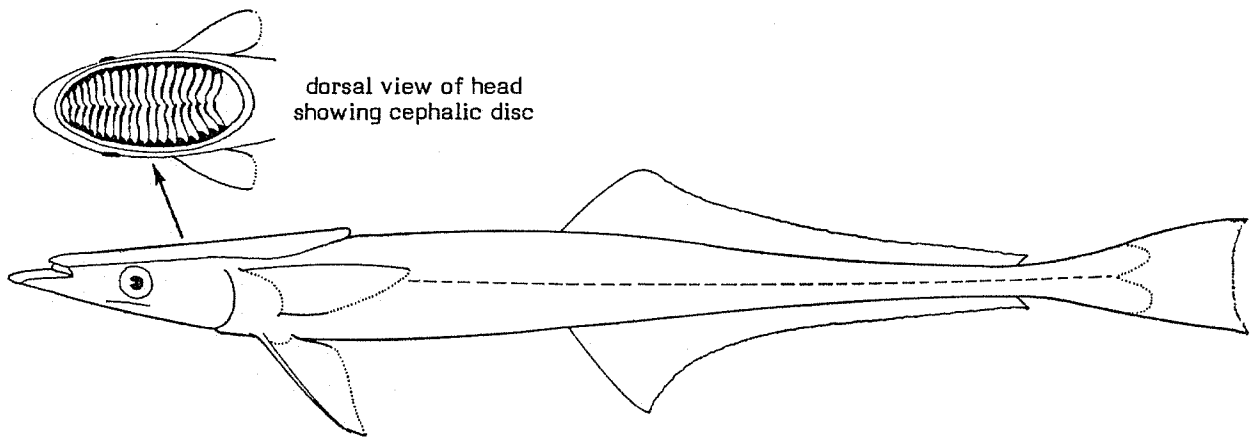
ECHENEIDAE

Remoras, sharksuckers, discfishes

Perciform fishes with a transversely laminated, oval-shaped cephalic disc, this structure homologous with spinous dorsal fin; skull wide, depressed to support disc; body fusiform, elongate. Opercle without spines, premaxillae not protractile, gill membranes free from isthmus. Jaws broad, the lower projecting beyond the upper; villiform teeth present in jaws and vomer (centrally on roof of mouth), usually on tongue and in certain species on palatines (laterally on roof of mouth). Dorsal and anal fins long, lacking spines, dorsal rays range from 18 to 45, anal rays from 18 to 41; pectoral fins set high on body, pointed or rounded, with 18 to 32 rays; pelvic fins far forward, close together, narrowly or broadly attached to underside of body, with 1 spine and 5 soft rays; caudal fin slightly forked, emarginate, or slightly rounded (in large specimens of some species), juveniles of some species with an elongate median caudal filament. Scales small, cycloid (smooth), usually embedded in the skin. No swimbladder.

Colour: life colours subdued, pale brown, greyish to black, sometimes light to whitish or with light and dark horizontal stripes on trunk.

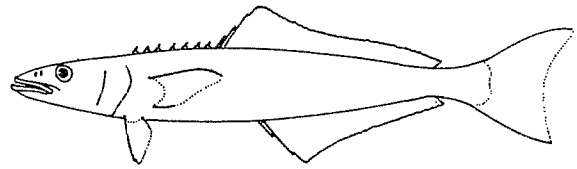
The Echeneidae is divisible into two subfamilies, four genera, and eight species, seven of which occur in the Eastern Central Atlantic. The remoras attach themselves to many different marine vertebrates including sharks, rays, tarpons, barracudas, sailfishes, marlins, swordfishes, jacks, basses, groupers, ocean sunfish, sea turtles, whales, and dolphins; they may also attach to ships and various floating objects. Some remoras have a great preference or specificity toward certain hosts. Remora australis, the whalesucker, is only known from marine mammals. Remora osteochir, the marlinsucker, is almost always found attached to spearfishes, particularly the sailfish and white marlin. The preferred host of Remorina albescens, the white sucker, is the manta ray. Species of the genus Echeneis are often free-swimming and occur in shallow, inshore waters. Remora and Remorina are almost always captured on their host where they may be found attached to the body, in the mouth, or in the gill cavity. The live sharksucker, Echeneis naucrates, is used by natives as an aid to line-fishing. A line is tied around the caudal peduncle of the sharksucker and then it is released in the water. Upon attaching to as host it is reeled in to the fisherman. The diskfishes have relatively little commercial importance. Echeneis naucrates is readily taken on hook and line and is occasionally seen in markets. In the Eastern Central Atlantic, the species most often consumed for food appear to be Echeneis naucrates and Remora remora. They are reported to be marketed dried salted and smoked, especially in Ghana and Senegal.



dorsal view of head
showing cephalic disc

SIMILAR FAMILIES OCCURRING IN THE AREA:

No other family of fishes has a cephalic sucking disc. The cobia family (Family Rachycentridae) bears some resemblance to the remoras. It has been postulated that a cobia-like ancestor may have given rise to the echeneid fishes.



Rachycentridae

KEY TO GENERA OCCURRING IN THE AREA:

1 a. Body very elongate, the depth contained 8 to 14 times in standard length; pectoral fins pointed; usually a dark longitudinal band on sides, bordered with white; anal fin base long, anal rays 29 to 41; caudal fin lanceolate in young, the middle rays filamentous, almost truncate in adults, the lobes produced (subfamily Echeneinae) (Fig. 1)

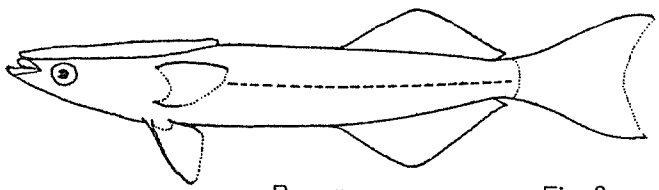
2 a. Sucking disc with 18 to 28 laminae; vertebrae 30 ..... Echeneis

2 b. Sucking disc with 9 to 11 laminae; vertebrae 39 to 41 ..... Phtheirichthys

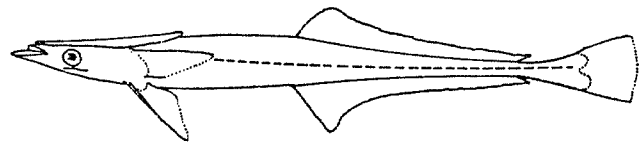
1 b. Body not elongate, the depth contained 5 to 8 times in standard length; pectoral fins rounded; colour nearly uniform, without bands; anal fin base short, anal rays 18 to 28; caudal fin forked in young becoming emarginate or truncate in adults (subfamily Remorinae) (Fig. 2)

3 a. Pelvic fins broadly attached to abdomen; disc laminae 15 to 19; vertebrae 27; colour light to dark brown; hosts include sharks, billfishes or cetaceans, depending on species ..... Remora

3 b. Pelvic fins narrowly attached to abdomen; disc laminae 13 or 14; vertebrae 26; colour whitish; usual host, manta rays ..... Remorina



Remora Fig. 2



Echeneis Fig. 1

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

Echeneis naucrates Linnaeus, 1758

Phtheirichthys lineatus (Menzies, 1791)

Remora australis (Bennett, 1840)
Remora brachyptera (Lowe, 1839)
Remora osteochir (Cuvier, 1829)
Remora remora (Linnaeus, 1758)

Remorina albescens (Temminck & Schlegel, 1845)

Prepared by E.A. Lachner, Division of Fishes, National Museum of Natural History, Smithsonian Institution, Washington, D.C., U.S.A.

*The only remora species not occurring in this area is Echeneis naucratoides Zuieuw, which is confined to the W. Atlantic Ocean

ELEOTR

1981

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

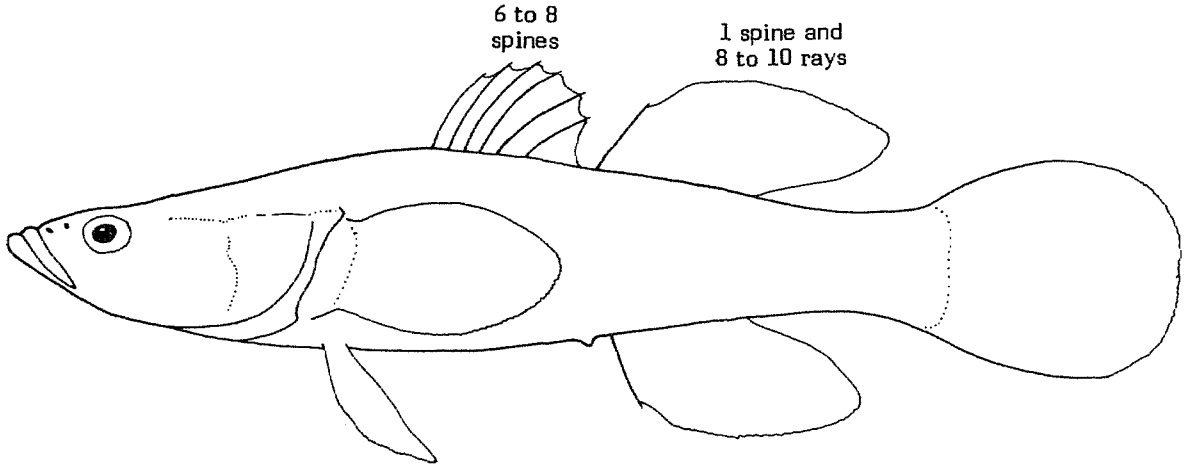
ELEOTRIDAE

Sleeper gobies, sleepers

Small to medium-sized fishes (adults 11 to 30 cm in length) with a compressed body. Head somewhat flattened, with widely spaced eyes. Two separate dorsal fins, the first with 6 to 8 flexible spines, the second with 1 spine and 8 to 10 branched rays; second dorsal fin base not longer than the distance from its posterior end to caudal fin base; no lateral-line canal along midline of body.

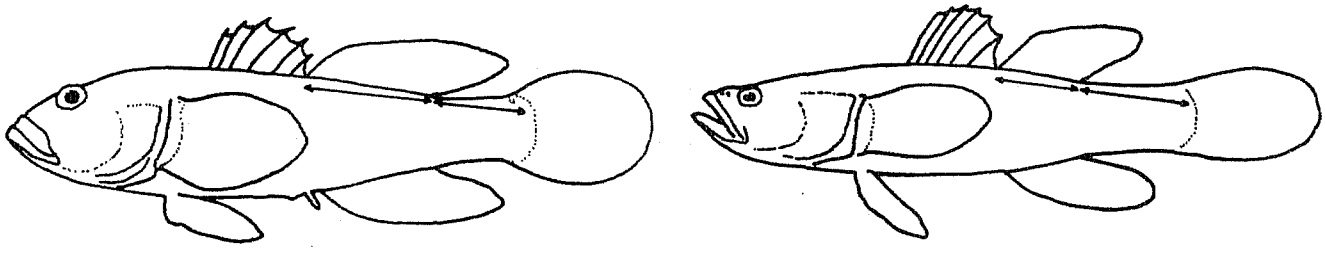
Colour: olive, mottled, to dark.

Habits: bottom-living to midwater, in brackish and fresh waters. None of the sleeper gobies from the area is of commercial importance, but larger specimens, caught with baskets in brackish waters, may be seen in local markets.



SIMILAR FAMILIES OCCURRING IN THE AREA:

Gobiidae: second dorsal fin base much longer than distance from its posterior end to caudal fin base; pelvic fins usually united into a disc, or at least connected by a low transverse membrane between bases. Size mostly less than 20 cm.



Gobiidae

Eleotridae

KEY TO GENERA OCCURRING IN THE AREA:

1 a. Body with 28 to 62 ctenoid scales in lateral series; no head canals (Figs. 1,2)

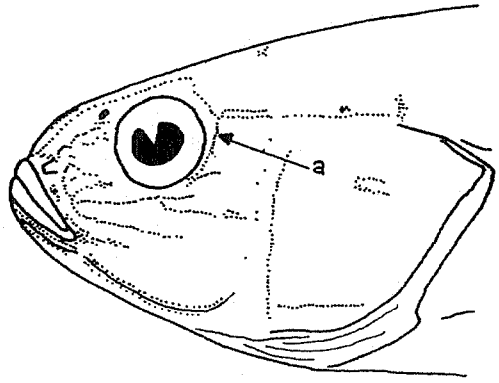
2 a. Scales large, 28 to 32 in lateral series; cheek sensory papillae in longitudinal rows, row a around lower edge of eye; no spine at lower corner of opercle (Fig. 1); marine to freshwater, intertidal and estuarine; size to 11.5 cm .... Batanga

2 b. Scales small, 41 to 62 in lateral series; cheek papillae in vertical as well as longitudinal rows, no row around lower edge of eye (Fig. 2); a spine present at lower rear edge of cheek, more or less covered by skin and curving downwards (Fig. 2); brackish and freshwater; size to 26.5 cm ..... Eleotris

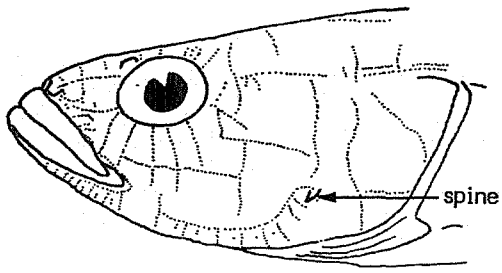
1 b. Body with 90 to 110 scales in lateral series; head canals present, at least at rear cheek (Figs. 3,4)

3 a. *Head canals above and behind* eye and above opercle; vertical rows of cheek papillae long (Fig. 3); scales cycloid; brackish and freshwater; size to 21 cm ..... Bostrychus

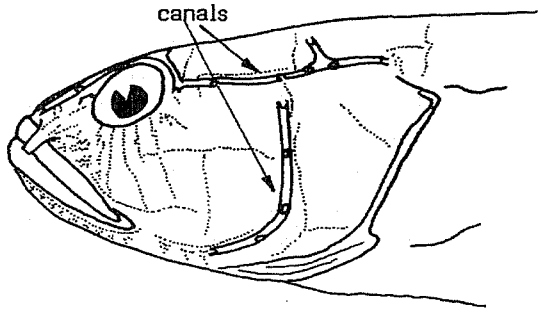
3 b. Head canals only down rear edge of cheek; vertical rows of cheek papillae short (Fig. 4); scales ctenoid; brackish and freshwater; size to 30 cm ..... Guavina



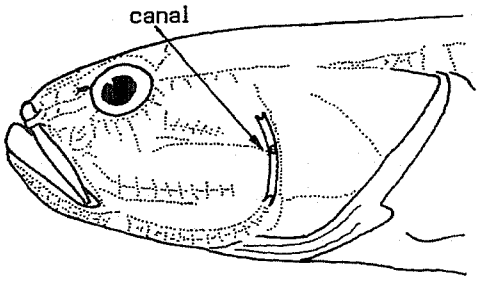
Batanga Fig. 1



Eleotris Fig. 2



Bostrychus Fig. 3



Guavina Fig. 4

LIST OF SPECIES OCCURRING IN THE AREA:

Batanga lebretonis (Steindachner, 1870)

Bostrychus africanus (Steindachner, 1880)

Eleotris daganensis Steindachner, 1870
Eleotris senegalensis Steindachner, 1870
Eleotris vittata Duméril, 1858

Guavina guavina (Valenciennes, 1837) (doubtful)

Prepared by P.J. Miller, Zoology Department, The University, Bristol, U.K.; diagrams of head lateral-line canals and sensory papillae by P. Wongrat, Faculty of Fisheries, Kasetsart University, Bangkok, Thailand

ELOP

1981

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

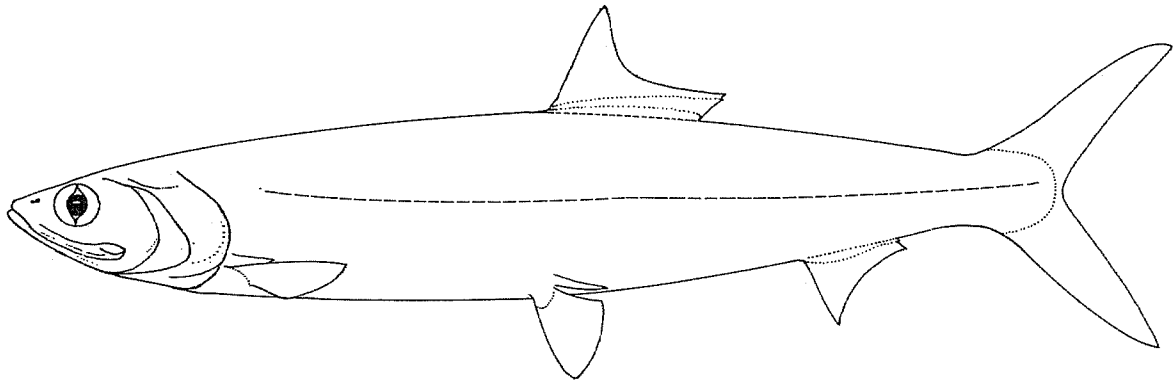
ELOPIDAE

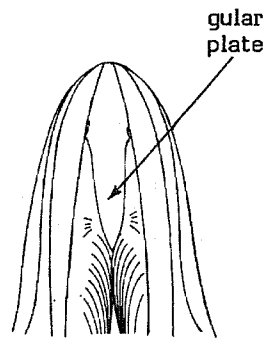
Tenpounders, ladyfishes

Elongate, fusiform fishes, body oval in cross section; resembling the Clupeidae (herrings), but possessing a lateral line and lacking scutes along belly. Mouth terminal, lower jaw slightly projecting; a bony gular plate between arms of lower jaw; branchiostegal rays numerous, up to 30 or more. Fins lacking spines; a single dorsal fin, at about midpoint of body; anal fin origin behind dorsal fin base. Scales very small, 70 to 120 in lateral line.

Colour: blue/green on back, sides bright silver; fins tinged with yellow, tip of dorsal fin and upper edge as well as hind margin of caudal fin dusky or black.

Species of Elops occur in all warm seas; two species in the area, their distribution overlapping and by no means clear from the literature. They chiefly inhabit shallow coastal areas, penetrating into brackish or even freshwaters. Spawning occurs in the sea, all species having a leptocephalus larval stage. Adults feed mainly on crustaceans and small fishes.





underside
of head

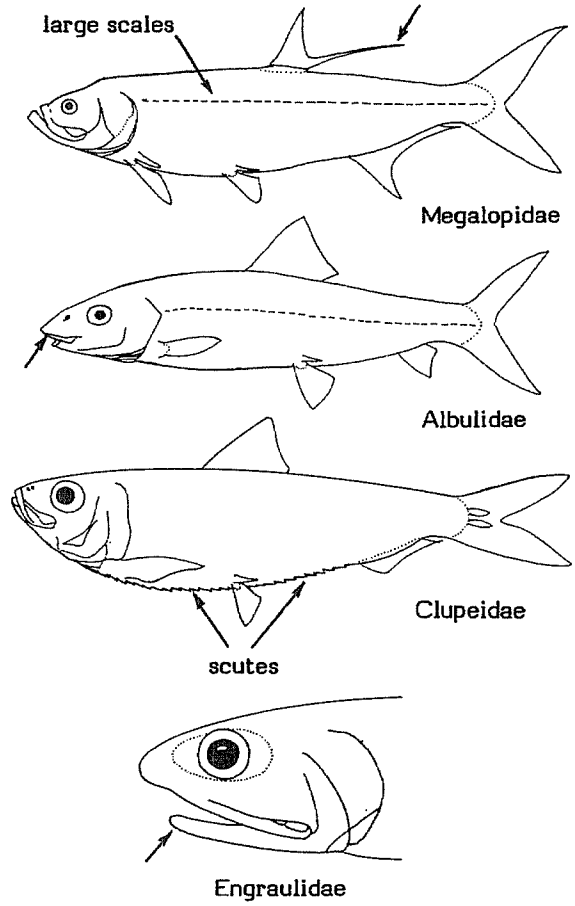
SIMILAR FAMILIES OCCURRING IN THE AREA:

Megalopidae: last dorsal finray a filament; also, scales large, 40 to 48 in lateral line (70 to 120 in Elopidae).

Albulidae: snout conical, projecting beyond lower jaw, mouth inferior.

Clupeidae: keel of scutes present along belly; also, no gular plate, no lateral line.

Engraulidae: snout conical, projecting, mouth inferior.



KEY TO GENERA OCCURRING IN THE AREA:

Elops only.

LIST OF SPECIES OCCURRING IN THE AREA:

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

Elops lacerta Valenciennes, 1846 ELOP Elop 3

Elops senegalensis Regan, 1909

Prepared by P.J.P. Whitehead, Zoology Department, British Museum (Natural History), London SW7 5BD, U.K.

ELOP Elop 3

1981

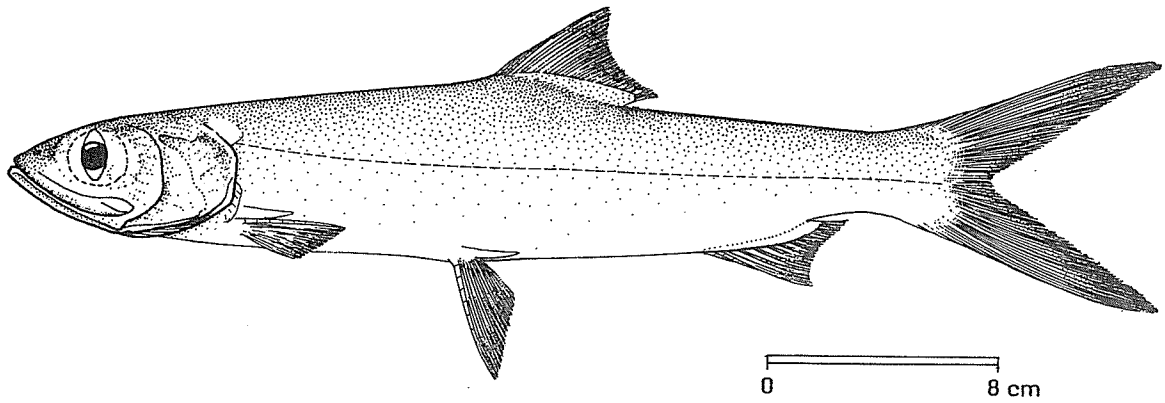
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : ELOPIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Elops lacerta Valenciennes, 1846

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES:

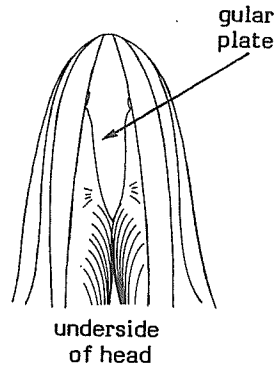
FAO : En - West African ladyfish
Fr - Guinée du Sénégal
Sp - Malacho senegalés

NATIONAL :

DISTINCTIVE CHARACTERS :

Body elongate, fusiform, oval in cross section. Mouth terminal, upper jaw reaching well beyond eye; a gular plate present between arms of lower jaw; branchiostegal rays numerous, at least 20; lower gillrakers 17 to 19. Dorsal fin a little behind midpoint of body; anal fin short, well behind dorsal fin base. Scales very small, 72 to 83 in lateral line.

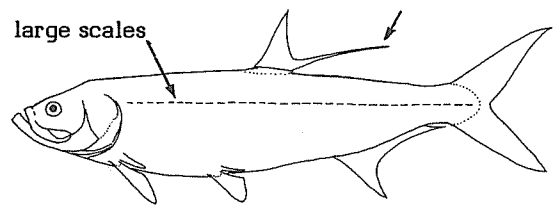
Colour: back blue/grey, sides bright silver; all fins with some pale yellow; tip of dorsal fin dusky, as also upper edge and hind margin of caudal fin.



DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Elops senegalensis: 11 to 15 lower gill-rakers (17 to 19 in E. lacerta) and 92 to 100 scales in lateral line (72 to 83 in E. lacerta).

Tarpon atlanticus: scales large, 40 to 48 in lateral line; also, last dorsal finray a filament.

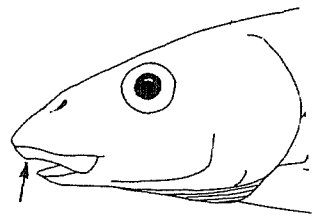


Tarpon

Albula vulpes: snout conical, projecting beyond lower jaw, mouth inferior.

Species of Clupeidae: keel of scutes along belly; also, no gular plate, no lateral line.

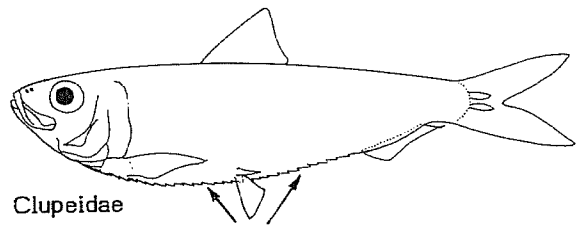
Engraulis encrasicolus: snout conical, projecting beyond lower jaw, mouth inferior.



Albula

SIZE :

Maximum: 90 cm; common to 40 cm.



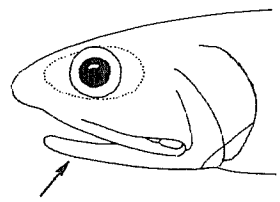
Clupeidae

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

From Mauritania (perhaps also further north) southward to Angola, but records may be mixed with those for E. senegalensis.

Inhabits shallow coastal waters, penetrating into brackish or even freshwater. Spawns in the sea, the transparent larvae (leptocephali) probably migrating inshore to nursery areas (by analogy with the Western Atlantic E. saurus).

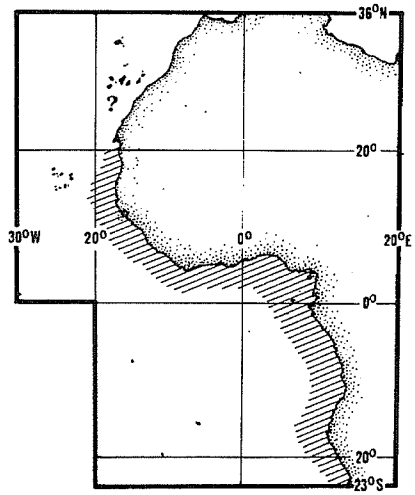
Feeds mainly on crustaceans and small fishes.



Engraulidae

PRESENT FISHING GROUNDS :

Caught throughout its range, but no special fishery.



CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Caught with purse seines, encircling gill nets and beach seines.

Marketed fresh or frozen.

EMMEL

1981

FAO SPECIES IDENTIFICATION SHEETS

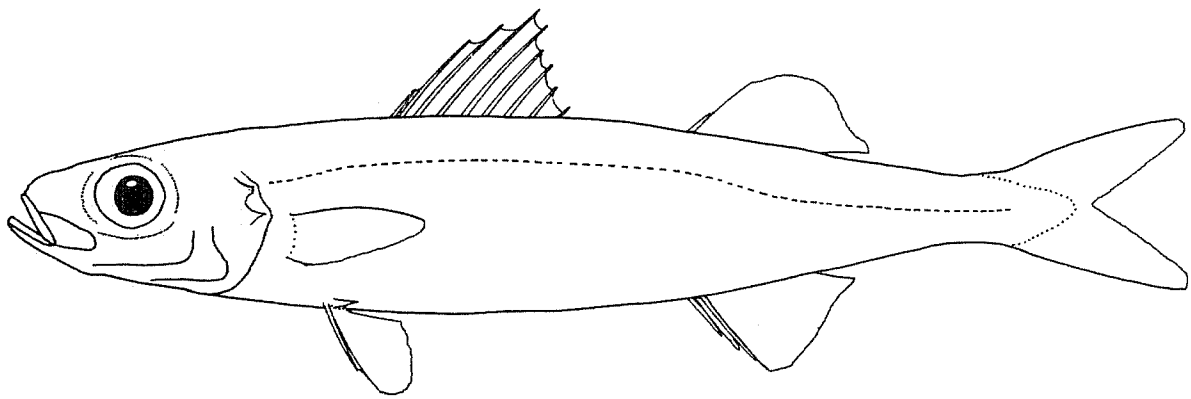
FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

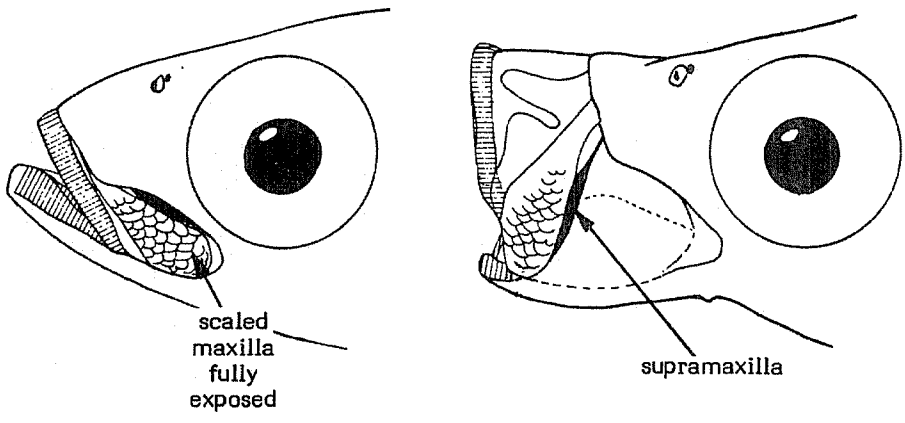
EMMELICHTHYIDAE

Rubyfishes, redbaits and rovers

Body elongate, subcylindrical or oblong and somewhat compressed. Upper jaw very protrusible; maxilla broadly expanded, scaly, and not covered by preorbital bone when mouth is closed; supramaxillary bone very large; jaws toothless or with a series of minute teeth; 2 flat opercular spines; preopercle edge thin, broadly rounded, smooth or crenulate with weak serrae; gill membranes separate, free from isthmus; branchiostegal rays 7; gill rakers long and numerous, 9 to 12 on upper and 24 to 31 on lower limb of first arch. Dorsal fin continuous or divided, with 11 to 14 spines and 9 to 12 segmented rays; spinous part of fin higher than soft-rayed part; anal fin with 3 spines and 9 or 10 soft rays. Soft dorsal and anal fins with a scaly sheath at base that is best developed posteriorly; pelvic fins with 1 spine and 5 rays, a large axillary process of fused scales, and another mid-ventral scaly process between the fins; caudal fin forked, heavily scaled at base; branched rays 15. Lateral line single, continuous, slightly curved. Body and head covered with finely ctenoid, firm scales. Vertebrae 10 + 14. Swimbladder elongate, fusiform, not bifurcate at either end.

Colour: reddish pink or greyish-blue dorsally and silvery pink below.





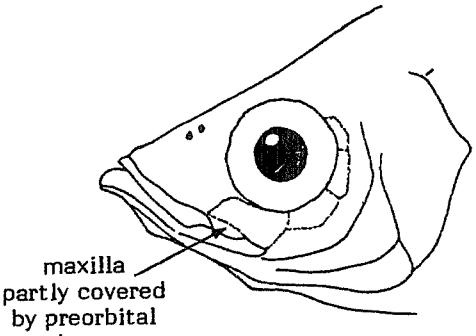
mouth protruded

SIMILAR FAMILIES OCCURRING IN THE AREA:

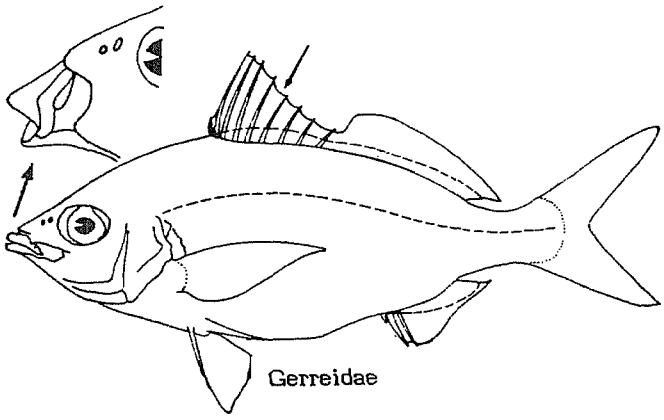
Centracanthidae: no supramaxilla; maxilla without scales and covered by preorbital bone when mouth is closed; jaws with cardiform teeth.

Gerreidae: body deeper; only 9 dorsal fin spines (11 to 14 in Emmelichthyidae); maxilla unscaled and mouth pointing downward when protruded.

Other superficially similar percoid fishes (Paranthias, Anthiidae, Pomatomidae, Priacanthidae): mouth not greatly protrusible; no scaly axillary process at base of pelvic fins.



Centracanthidae



Gerreidae

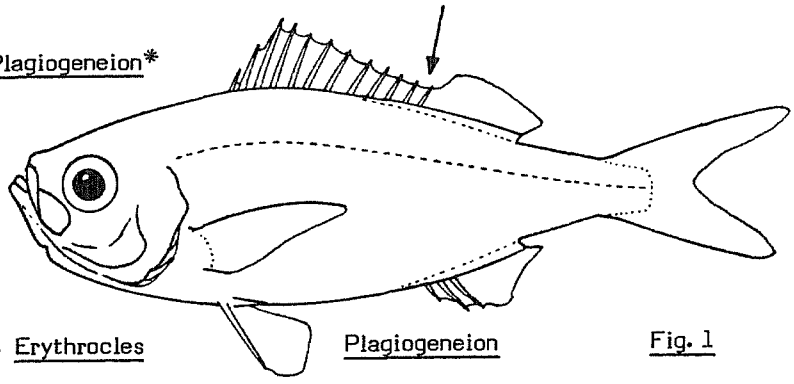
KEY TO GENERA OCCURRING IN THE AREA:

1 a. Dorsal fin not (or only slightly) notched between spinous and soft-rayed parts (Fig. 1) ..... Plagiogeneion*

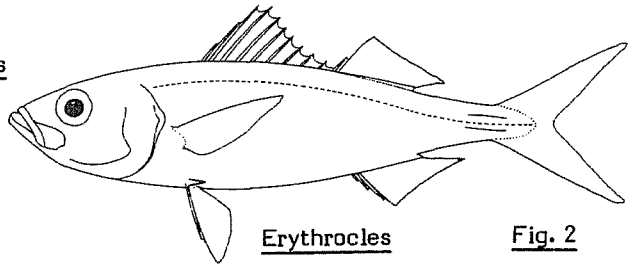
1 b. Dorsal fin divided to the base, or spinous part separated by a distinct gap from soft-rayed fin

2 a. Dorsal fin divided to the base before last spine, but without a distinct gap between the two parts (Fig. 2) ..... Erythrocles

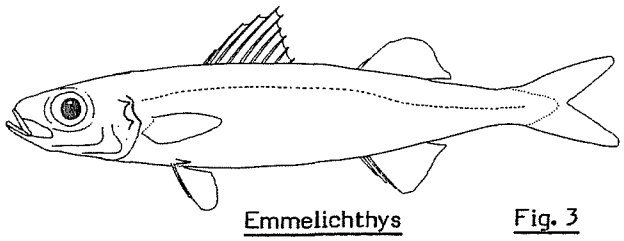
2 b. Spinous dorsal fin separated from soft dorsal by a wide gap (Fig. 3) .. Emmelichthys



Plagiogeneion Fig. 1



Erythrocles Fig. 2



Emmelichthys Fig. 3

*Plagiogeneion rubiginosus (Hutton, 1875) has been reported from Vema Seamount west of Cape Town (31°38'S, 08°21.5'E)

LIST OF SPECIES OCCURRING IN THE AREA :

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

Emmelichthys ruber (Trunov, 1976)	EMMEL Emmel 1
Erythrocles monodi Poll & Cadenat, 1954	EMMEL Eryth 1

Prepared by P.C. Heemstra, J.L.B. Smith Institute of Ichthyology, Rhodes University, Grahamstown, South Africa

EMMEL Emmel 1

1981

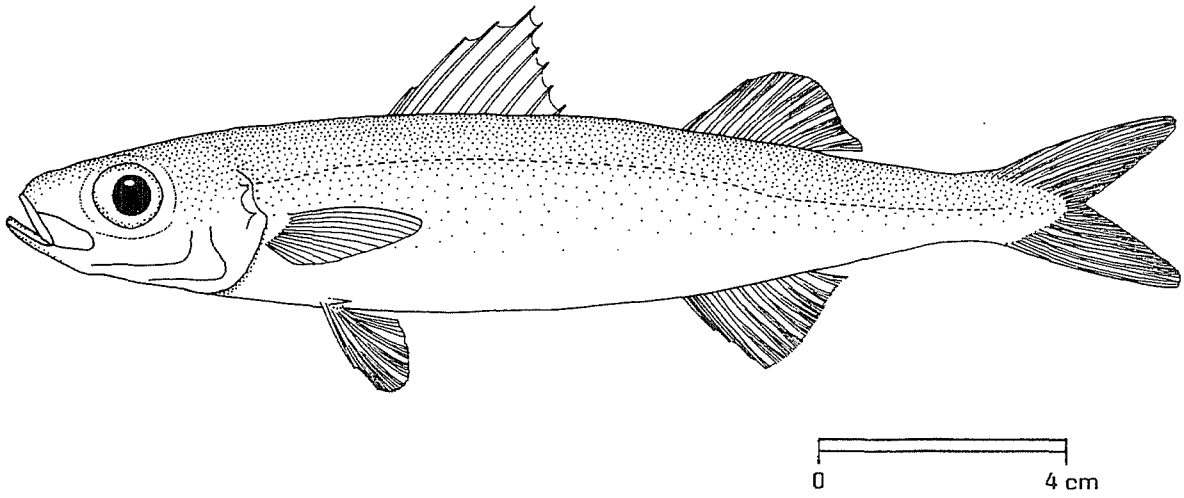
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : EMMELICHTHYIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Emmelichthys ruber (Trunov, 1976)

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES:

FAO : En - Red rover
Fr - Andorrève
Sp - Andorrero

NATIONAL :

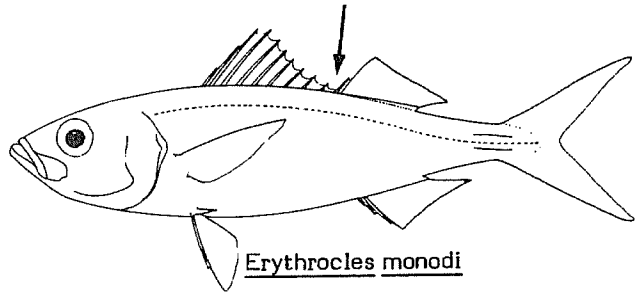
DISTINCTIVE CHARACTERS :

Body elongate, fusiform, its depth contained 4.5 to 5.2 times in standard length, distinctly less than head length. Upper jaw very protrusible; maxilla broad and scaly, not covered by the preorbital bone when mouth is closed; jaws toothless or with a few minute teeth at front; palate toothless; gillrakers on first arch 8 to 12 upper and 24 to 27 lower. Two well separated dorsal fins, the first with 7 to 9 spines connected by a membrane plus 3 to 5 spines reduced to buried nubins (visible on radiographs); scales continuous across the gap between the dorsal fins; second dorsal with 1 spine and 9 to 11 segmented rays; anal fin with 3 slender spines and 9 or 10 segmented rays.

Colour: reddish dorsally, silvery below, with a reddish cast; iris yellow orange.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Plagiogeneion and Erythrocles species: dorsal not divided into two separate fins; body depth 3.1 to 4.2 times in standard length (4.5 to 5.2 times in E. ruber).



Erythrocles monodi

SIZE :

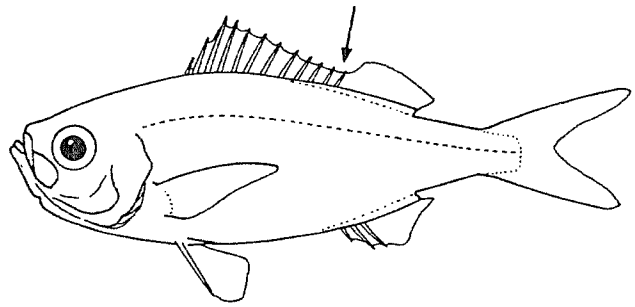
Maximum: 30 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

In the area, known from St. Helena Island only. Elsewhere, in Jamaica and Bermuda.

The young occur near the surface; adults are found near the bottom in depths of 100 to 200 m.

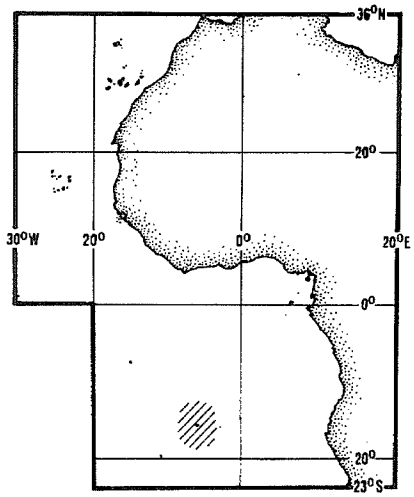
Feeds on larger zooplankton organisms.



Plagiogeneion monodi

PRESENT FISHING GROUNDS :

Trawlable bottoms off St. Helena, in depths of 100 to 200 m. Apparently not abundant and of no commercial importance.



CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Caught incidentally with trawls.

EMMEL Eryth 1

1981

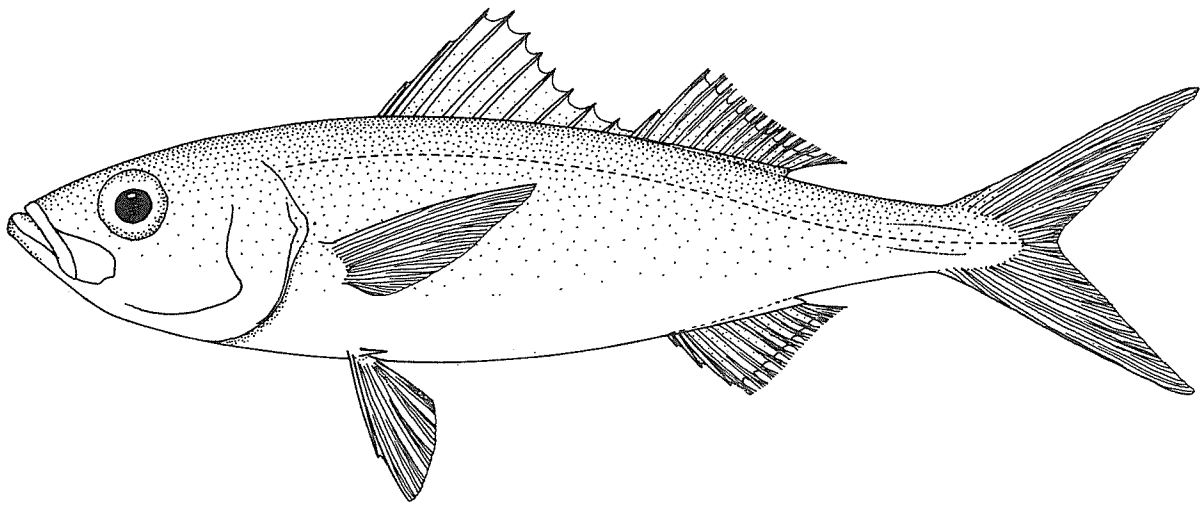
FAO SPECIES IDENTIFICATION SHEETS

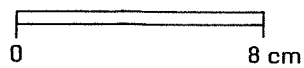
FAMILY : EMMELICHTHYIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Erythrocles monodi Poll & Cadenat, 1954

OTHER SCIENTIFIC NAMES STILL IN USE : None





VERNACULAR NAMES:

FAO : En - Atlantic rubyfish
Fr - Poisson rubis
Sp - Pez rubí

NATIONAL :

DISTINCTIVE CHARACTERS :

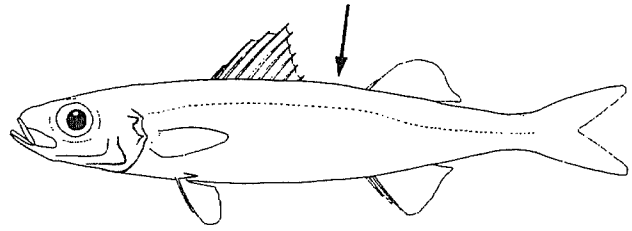
Body oblong, not much compressed, its depth contained 3.6 to 4.4 times in standard length. Upper jaw very protrusible; maxilla broad and scaly, not covered by the preorbital bone when mouth is closed; jaws toothless or with a few tiny teeth at front; palate toothless; gillrakers on first arch 9 to 12 upper and 27 to 29 lower. Dorsal fin divided to the base before last spine, with 11 spines and 11 or 12 segmented rays; anal fin with 3 spines and 9 or 10 soft rays. A well developed mid-lateral keel along caudal peduncle of fish larger than 30 cm standard length.

Colour: head and body reddish, darker dorsally, silvery below.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Emmelichthys ruber (only St. Helena Island): a wide gap between spiny and soft dorsal fins; body more elongate (depth 4.5 to 5.2 times in standard length) (3.6 to 4.4 times in E. monodi).

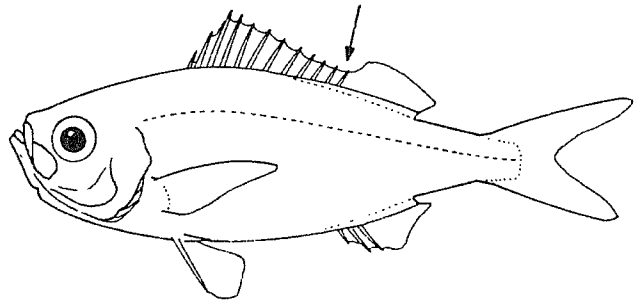
Plagiogeneion rubiginosus: dorsal fin continuous, not, or only slightly, notched.



Emmelichthys ruber

SIZE :

Maximum: 55 cm; common to 40 cm.



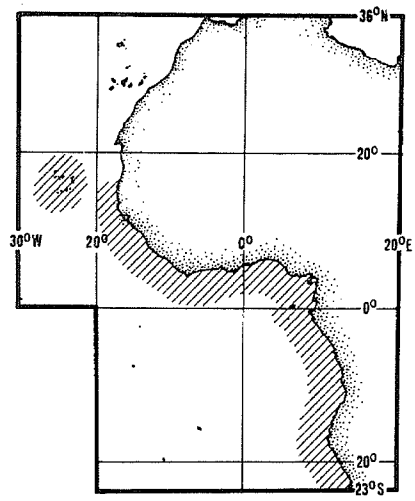
Plagiogeneion rubiginosus

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

In the Eastern Atlantic, from Mauritania southward to Angola and around the Canary Islands. Also reported from the Western Atlantic.

Adults occur near the bottom in depths of 100 to 300 m.

Feeds on larger zooplankton organisms.



PRESENT FISHING GROUNDS :

Trawlable bottoms in depths of 100 to 300 m. Reported to be rather abundant in some areas.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Caught with trawls.

An excellent foodfish; marketed fresh or frozen; also used for fishmeal and oil by offshore trawling fleets.

ENGR

1981

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

ENGRAULIDAE

Anchovies

A single species in the area; see species sheet for:

Engraulis encrasicolus (Linnaeus, 1758) ENGR Engr 1

Prepared by P.J.P. Whitehead, Zoology Department, British Museum (Natural History), London SW7 5BD, U.K.

ENGR Engr 1

1981

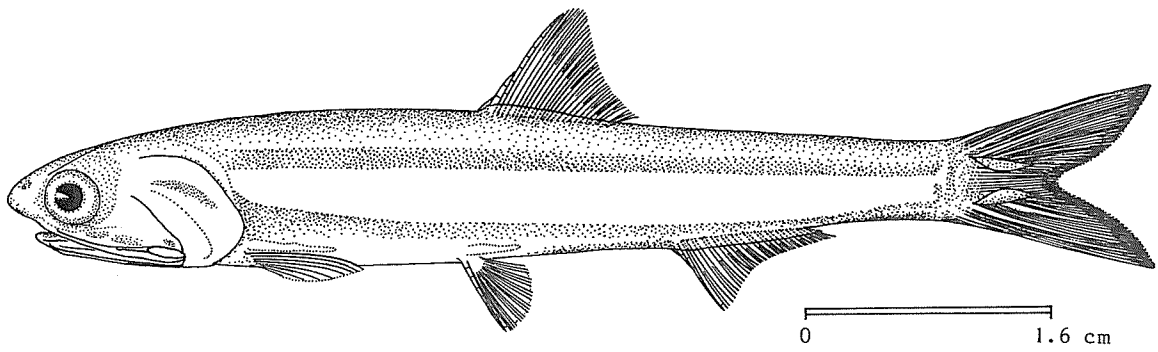
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : ENGRAULIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Engraulis encrasicolus(Linnaeus, 1758)

OTHER SCIENTIFIC NAMES STILL IN USE : Anchoa guineensis Rossignol & Blache, 1961
Engraulis guineensis (auct.)



VERNACULAR NAMES:

FAO : En - European anchovy
Fr - Anchois commun
Sp - Anchoa europea (= Boquerón)

NATIONAL :

DISTINCTIVE CHARACTERS :

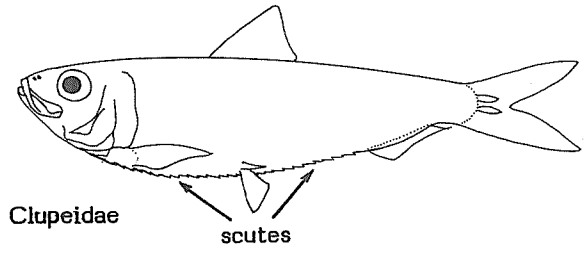
Body fusiform, oval in cross section; belly not sharply keeled, without a series of scutes. Snout prominent, pointed, projecting in front of lower jaw, mouth inferior; upper jaw long, reaching well behind eye. Dorsal fin short, at about midpoint of body; anal fin origin behind dorsal fin base. Scales deciduous (easily shed).

Colour: back blue/green, quickly fading to fleshy grey, sides with a silver stripe edged with a dark grey line above, belly pale; caudal fin with a dark margin.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

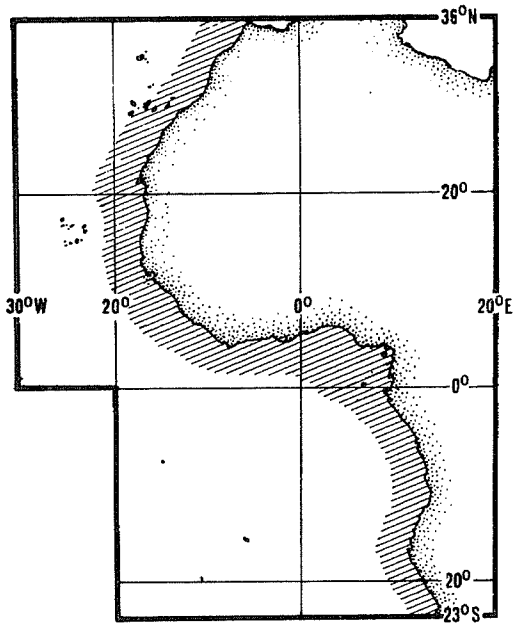
Species of Clupeidae: snout not conical, not projecting beyond tip of lower jaw, mouth not ventral; also, a keel of scutes present along belly.

Other small silvery fishes: snout not conical and projecting, often more than one dorsal fin.



SIZE :

Maximum: 12 cm; common to 6 cm.



GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Occurs throughout whole area; elsewhere, northward to Norway, Mediterranean and Black Sea, and southward to meet E. capensis of South Africa (perhaps this species is identical with E. encrasicolus).

A coastal species found in shallow water and down to depths of about 400 m, often forming large shoals.

Feeds on planktonic organisms, chiefly copepods and other small crustaceans.

PRESENT FISHING GROUNDS :

Caught throughout the area, but particularly off Morocco, Senegal, Ghana, Togo and Congo.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

The total catch of Engraulidae from the area exceeds 200 000 t annually. In 1977, about 5 000 t came from the northern part of the area (36°N to 9°N), 59 000 t from equatorial waters (9°N to 7°S), and 125 000 t from the southern part (7°S to 23°S). Most of the total catch was taken by Ghana (about 60 000 t) and Namibia (about 125 000 t), while smaller quantities were caught by other countries, e.g. Morocco: 5 000 t; Romania: 900 t; Togo: 900 t; and Angola: less than 50 t. The catch in the northern and equatorial parts of the area is reported as E. encrasicolus; for Namibia as E. capensis (but possibly this is the same species). E. encrasicolus is one of the species for which the CECAF Working Party on Resources Evaluation has recently recommended the reporting of separate statistics and of length frequencies.

Caught with purse seines, lamparas (light fishing), trawls and beach seines.

Marketed fresh, frozen, or salted and dried, also canned.

EPHIP

1981

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

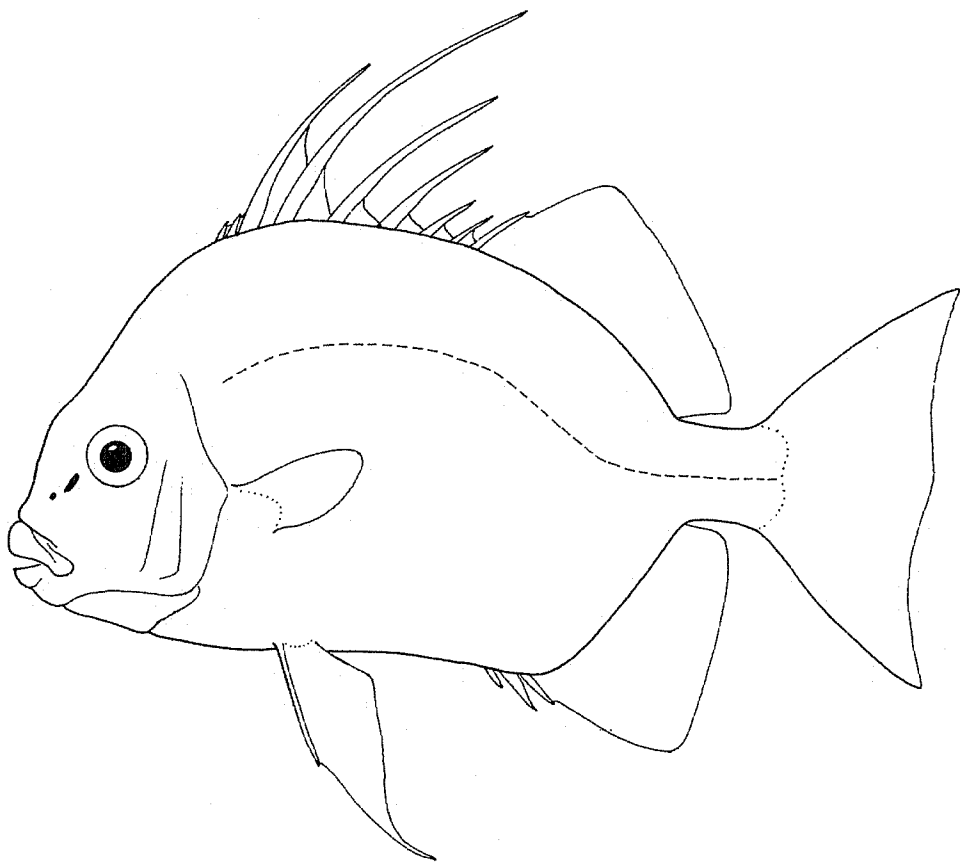
EPHIPPIDAE

Spadefishes

Body deep, compressed, orbicular. Head small, with a steep dorsal profile; mouth small, terminal; teeth in bands, outer row largest and slightly compressed, none on palate; preopercular margin finely serrate; opercle with a blunt point. Spinous and soft parts of dorsal fin nearly separated; the spinous portion with one or more rays prolonged into filaments; dorsal fin with 9 spines and 18 to 20 soft rays; anal fin with 3 spines and 15 to 18 soft rays. Scales small, about 55 to 70 in lateral line.

Colour: primarily silvery-white, with series of blackish cross bars on head and body; fins dusky to blackish.

The spadefishes are inhabitants of inshore tropical reefs at depths to about 30 m. Most species are found in the Indo-West Pacific, but two are known from the West African coast. They frequent rocky or reef areas as well as wrecks and pilings, sometimes forming schools of up to 500 or more individuals. They feed on a variety of invertebrates, both benthic and plankton. Caught mainly with nets and trawl gear, and marketed fresh. The flesh is of good quality.

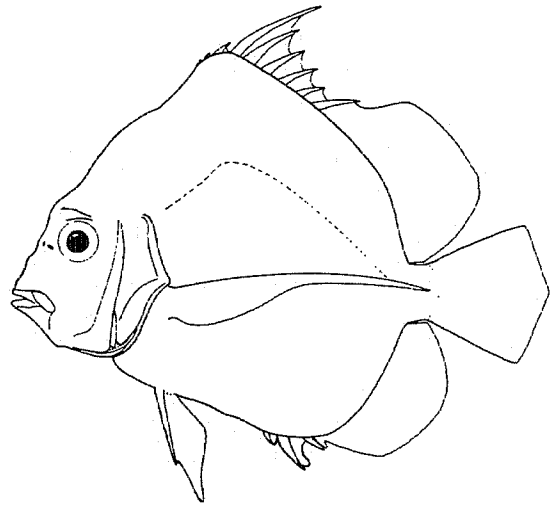


SIMILAR FAMILIES OCCURRING IN THE AREA:

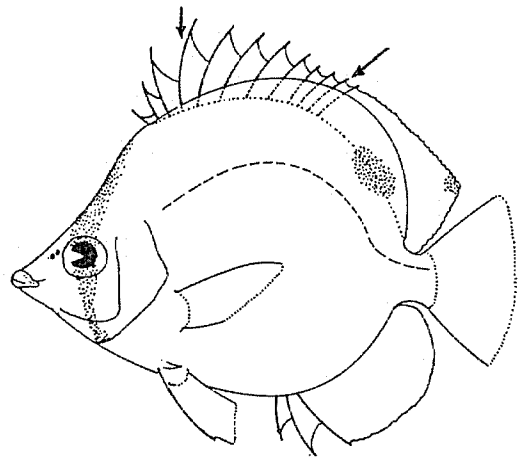
Drepanidae: pectoral fins falcate and very elongate (extending nearly to caudal fin base).

Chaetodontidae: no deep notch between spinous and soft parts of dorsal fin; dorsal spines usually 11 to 13, not prolonged as filaments.

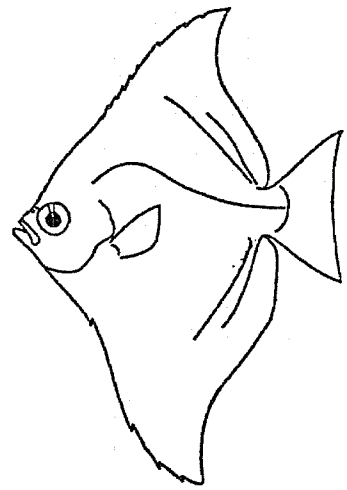
Monodactylidae: dorsal and anal fins greatly elevated, without a notch in middle of dorsal; soft dorsal fin rays 31 to 37 (12 to 20 in Ephippidae); soft anal fin rays 36 to 38 (15 to 18 in Ephippidae); pelvic fins rudimentary.



Drepanidae



Chaetodontidae



Monodactylidae

KEY TO GENERA OCCURRING IN THE AREA:

Chaetodipterus only.

LIST OF SPECIES OCCURRING IN THE AREA:

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

Chaetodipterus goreensis (Cuvier, 1831) EPHIP Chaet 1
Chaetodipterus lippei Steindachner, 1895

Prepared by G.R. Allen, Western Australian Museum, Perth, Australia

EPHIP Chaet 1

1981

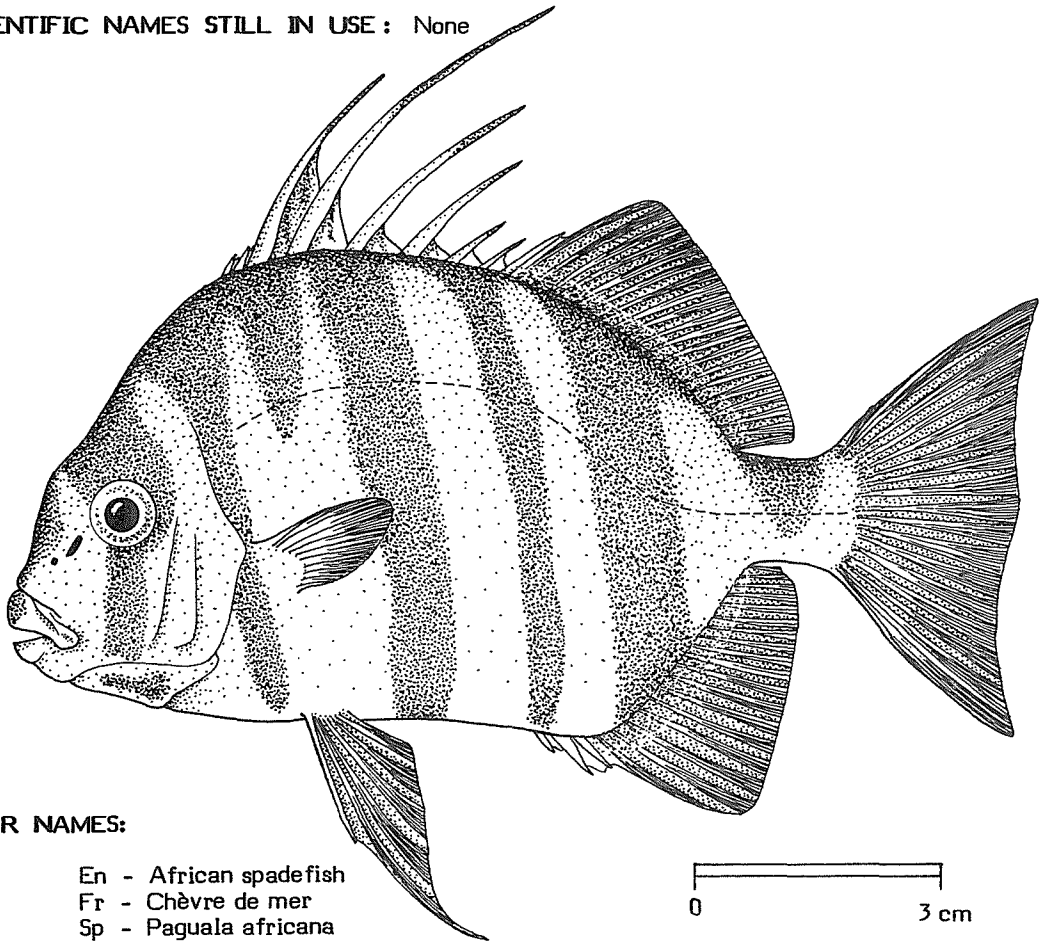
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : EPHIPPIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Chaetodipterus goreensis (Cuvier, 1831)

OTHER SCIENTIFIC NAMES STILL IN USE : None



0 3 cm

VERNACULAR NAMES:

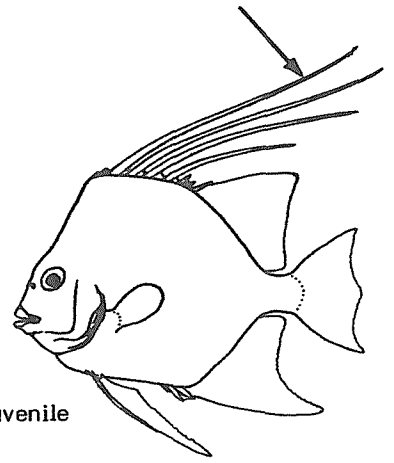
FAO : En - African spadefish
Fr - Chèvre de mer
Sp - Paguala africana

NATIONAL :

DISTINCTIVE CHARACTERS :

Body deep, laterally compressed, orbiculate. Forehead profile very steep, nearly vertical; mouth small, terminal; teeth in bands, outer row largest and slightly compressed, none on palate; preopercle finely serrate. Spinous and soft parts of dorsal fin nearly separated, the anterior portion with 4 or 5 prolonged spines; middle spines very elongate, especially in juveniles, sometimes reaching to caudal fin; dorsal fin with 9 spines and 18 to 20 soft rays; anal fin with 3 spines and 15 to 18 soft rays; pectoral fin rounded; caudal fin truncate. Scales small, about 55 to 70 in lateral line.

Colour: primarily silvery white with series of 6 or 7 blackish cross-bands, including one on head which passes through eye; pelvic fins black, pectoral fins translucent, other fins dusky to black.

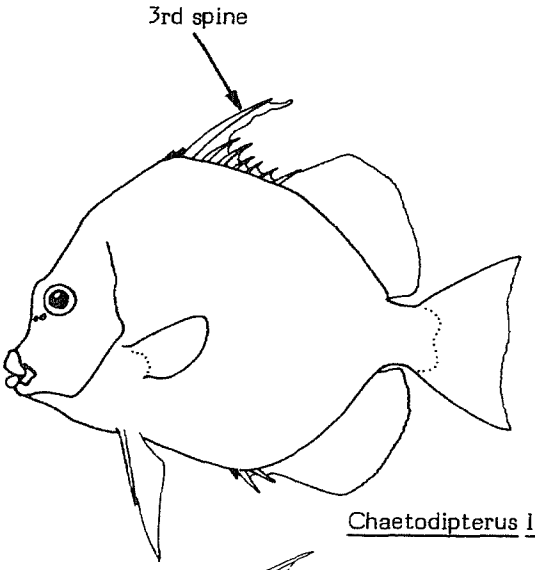


juvenile

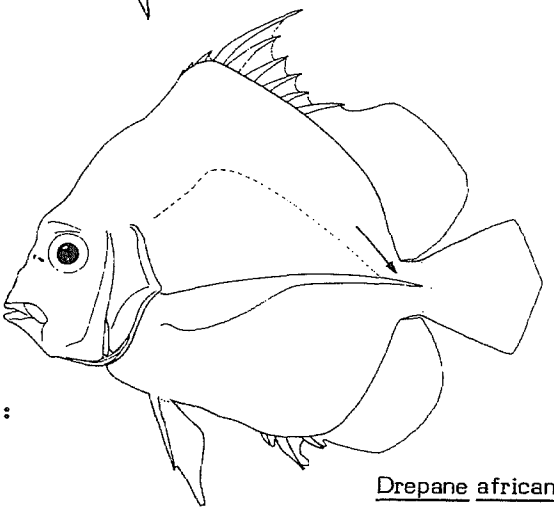
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Chaetodipterus lippei: only third dorsal spine elongate (more prolonged in juveniles).

Drepane africana (Family Drepanidae): pectoral fins falcate and very elongate (extending nearly to caudal fin base).



Chaetodipterus lippei


Drepane africana

SIZE:

Maximum: 25 cm; common to 18 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

West African coast between Cape Verde and Gabon.

This species occurs in the vicinity of coral or rocky reefs, also around wrecks and wharf pilings. It sometimes forms large schools composed of up to 500 or more individuals.

Food items consist mainly of benthic and planktonic invertebrates.

PRESENT FISHING GROUNDS:

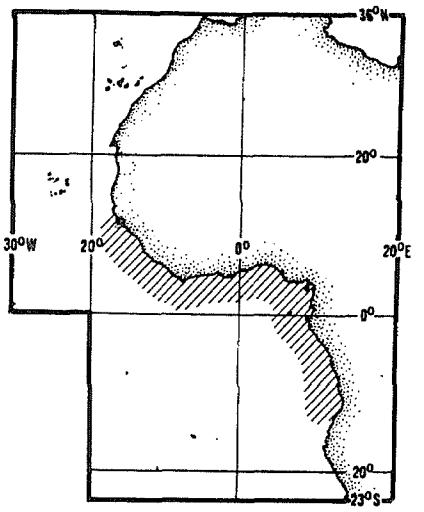
Inshore waters.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species which is not considered to be of great commercial importance.

Caught mainly with trawl gear, set and seine nets, and by hook and line.

Marketed fresh, dried salted or smoked, sometimes processed into fishmeal.



EXOC

1981

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

EXOCOETIDAE

Flyingfishes

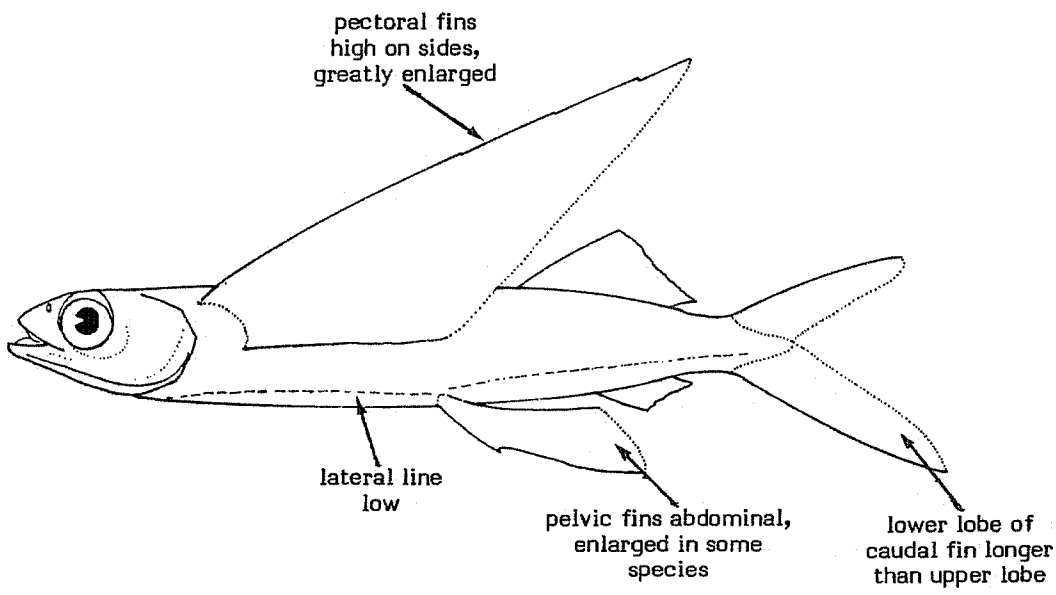
Elongate fishes, their bodies broadly cylindrical (round in cross-section), flattened ventrally in some species. Snout usually blunt (produced in Fodiator only); mouth small; jaw teeth absent or very small; gillrakers well developed; upper pharyngeal bones of third gill arches close together, but not fused into a single plate. No spines in fins; dorsal and anal fins set equally far back on body, their bases short and opposed; pectoral fins high on sides, strikingly long, always extending beyond dorsal fin origin; pelvic fins abdominal in position, and greatly enlarged in many, but not all, species; caudal fin deeply forked, its lower lobe longer than the upper. Lateral line low on body; scales large, cycloid (smooth to touch), easily shed. Swimbladder large, extending posteriorly beyond body cavity.

Colour: dark above, pale below; the dark colours usually iridescent blue or green in life.

Young stages (to about 10 cm); quite different in appearance from adults; dorsal fin often higher than in adults, pectoral fins shorter; colour patterns variable, spots and bars often developed; chin barbels conspicuous in many species.

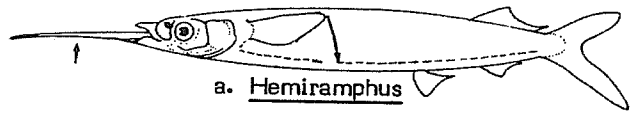
Flying fishes inhabit the surface waters of the open ocean, seldom frequenting inshore areas. They are well known for their habit of leaping out of the water and gliding over long distances by means of their expanded pectoral fins (two-wing gliders) and sometimes also with their pelvic fins (four-wing gliders).

Flyingfishes are usually appreciated as food and some species are highly prized. Most are attracted by light and this is sometimes used to aid in their capture. However, few commercial fisheries have developed, probably because of the difficulties in finding appropriate fishing gear for these fast-moving and usually dispersed fishes. Within the present fishing area, none of the species seems to be the object of a special fishery and there are no statistics available for flying fishes. However, they are known to be taken as bycatch or accidentally and utilized as food or for fishmeal although their market price is reported to be low. Most probably, there is much confusion with the identification of the various species, and more data by species are badly needed.



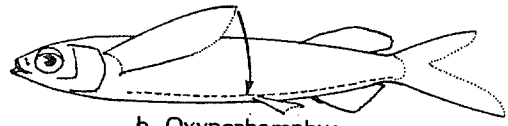
SIMILAR FAMILIES OCCURRING IN THE AREA:

Hemiramphidae: all with longer bodies, except Oxyporhamphus; pectoral fins short to medium length, never reaching dorsal fin origin; lower jaw much longer than upper jaw, except in adult Oxyporhamphus: upper pharyngeals of third gill arch fused, forming a single plate; swim-bladder not extending posteriorly beyond body cavity.



a. Hemiramphus

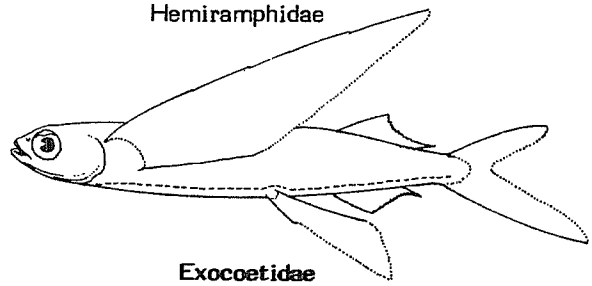
a typical representative



b. Oxyporhamphus

a representative without prolonged lower jaw

Hemiramphidae



Exocoetidae

KEY TO GENERA OCCURRING IN THE AREA:

1 a. Pelvic fins short, not reaching or barely reaching origin of anal fin (Figs. 2,3)

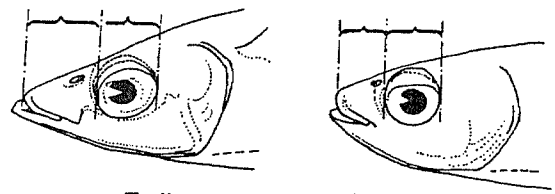
2 a. Snout long and pointed, longer than eye diameter (Fig. 1a) ..... Fodiator

2 b. Snout short and blunt, shorter than or equal to eye diameter (Fig. 1b)

3 a. Pectoral fins not reaching beyond posterior part of anal fin base; pelvic fin insertion closer to anal fin origin than to pectoral fin insertion; dorsal high, with a dark pigmented area (Fig. 2) ..... Parexocoetus

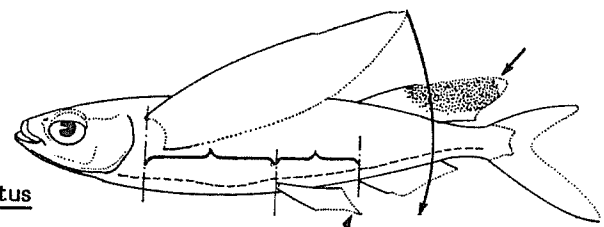
3 b. Pectoral fins reaching beyond anal fin base to, or almost to, caudal fin base; pelvic fin insertion closer to pectoral fin insertion than to anal fin origin; dorsal fin low, lightly pigmented or without pigment (Fig. 3) .... Exocoetus

1 b. Pelvic fins long, reaching well beyond origin of anal fin (Figs. 4, 5)



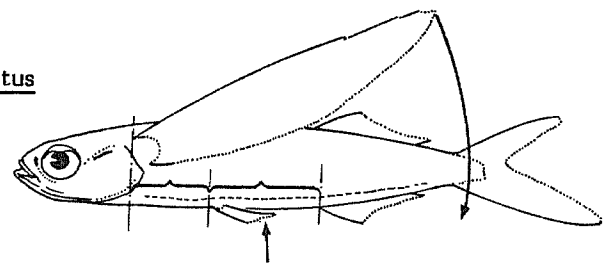
a. Fodiator b. Parexocoetus

Fig. 1



Parexocoetus

Fig. 2



Exocoetus

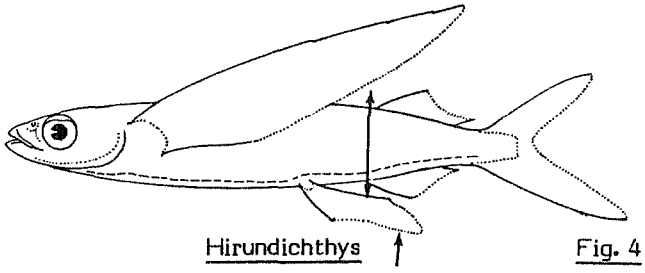
Fig. 3

4 a. Origin of anal fin slightly before, under, or not more than 3 rays behind origin of dorsal fin (Fig. 4); number of rays in dorsal and anal fins the same or differing by not more than 2 rays ..... Hirundichthys

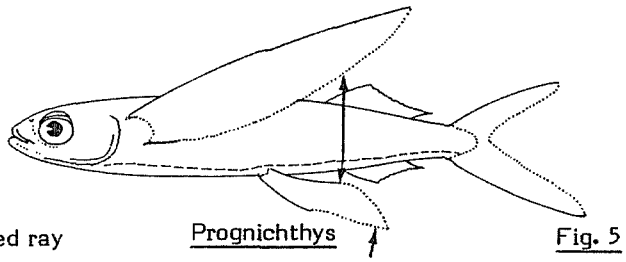
4 b. Origin of anal fin 3 rays of more behind origin of dorsal fin (Fig. 5); dorsal fin with 2 to 5 rays more than anal fin (0 to 4 in C. pinnatibarbatus)

5 a. First 2 pectoral fin rays unbranched (Fig. 6a) ..... Prognichthys

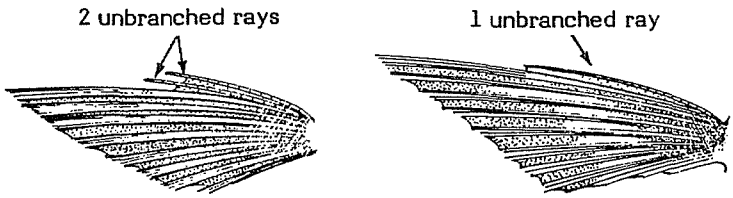
5 b. Only the first pectoral fin ray unbranched (Fig. 6b) ..... Cypselurus



Hirundichthys Fig. 4



Prognichthys Fig. 5



a. Prognichthys b. Cypselurus

pectoral fin of left side pulled forward Fig. 6

LIST OF SPECIES OCCURRING IN THE AREA*:

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

**Cypselurus cyanopterus (Valenciennes, in Cuv. & Val., 1846)	EXOC Cyp 2
**Cypselurus furcatus (Mitchill, 1815)	EXOC Cyp 4
**Cypselurus melanurus (Valenciennes, in Cuv. & Val., 1846)	EXOC Cyp 6
**Cypselurus milleri Gibbs & Staiger, 1970	EXOC Cyp 7
**Cypselurus nigricans (Bennett, 1840)	EXOC Cyp 8
**Cypselurus pinnatibarbatus (Bennett, 1831)	EXOC Cyp 9
Exocoetus obtusirostris Günther, 1866	EXOC Exoc 1
Exocoetus volitans Linnaeus, 1758	EXOC Exoc 2
Fodiator acutus (Valenciennes, in Cuv. & Val., 1846)	EXOC Fod 1
Hirundichthys affinis (Günther, 1866)	EXOC Hir 1
Hirundichthys rondeletii (Valenciennes, in Cuv. & Val., 1846)	EXOC Hir 2
Hirundichthys speculiger (Valenciennes, in Cuv. & Val., 1846)	EXOC Hir 3
Parexocoetus brachypterus (Richardson, 1846)	EXOC Par 1
Parexocoetus mento atlanticus Bruun, 1933	EXOC Par 2
Prognichthys gibbifrons (Valenciennes, in Cuv. & Val., 1846)	EXOC Prog 1

Prepared by R.H. Gibbs, Jr., Division of Fishes, National Museum of Natural History, Smithsonian Institution, Washington, D.C., U.S.A.

Main illustrations taken from Bruun, A.F., Dana-Report Vol. II, Copenhagen, *1935-37*

* The E.C. Atlantic representatives of this family have not been studied thoroughly. In particular, the identity of Cypselurus and Hirundichthys species needs to be clarified further

** Cypselurus species placed in the genus Cheilopogon by some authors

EXOC Cyp 2

1981

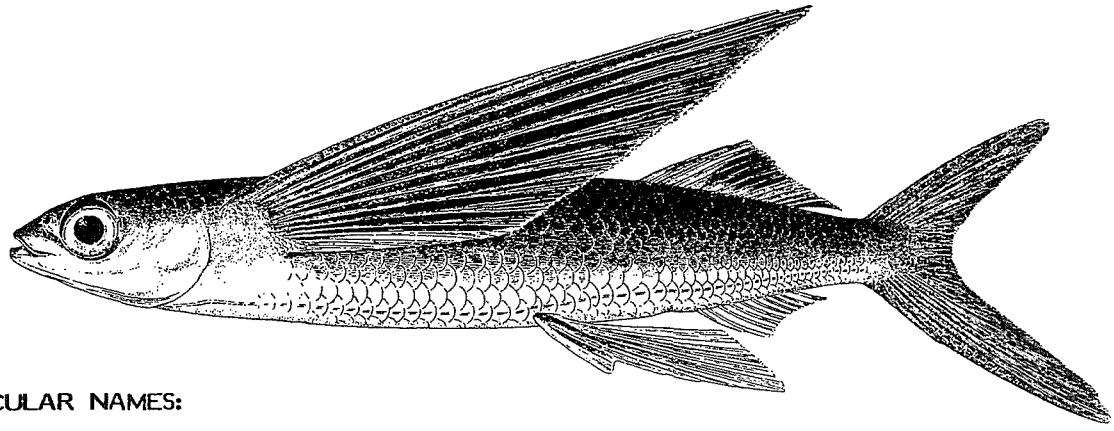
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : EXOCOETIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

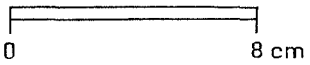
Cypselurus cyanopterus (Valenciennes, in Cuv. & Val., 1846)

OTHER SCIENTIFIC NAMES STILL IN USE : None. Placed in genus Cheilopogon by some authors



VERNACULAR NAMES:

FAO : En - Margined flyingfish
Fr - Exocet codène
Sp - Volador bordiblanco



NATIONAL :

DISTINCTIVE CHARACTERS :

Body elongate, thick, somewhat flattened ventrally, its greatest depth 17 to 21% of standard length; least caudal peduncle depth greater than 6% of standard length. Snout shorter than eye, blunt; palatine teeth usually present. Dorsal and anal fins set far back on body, their bases short; dorsal fin low, rays at anterior end the longest; pectoral fins strikingly long, 65 to 75% of standard length, only first ray unbranched; pelvic fins abdominal, large, reaching well beyond anal fin origin; anal fin origin 3 rays or more behind dorsal fin origin. Scale rows across back in front of dorsal fin (predorsal scales) 33 to 41.

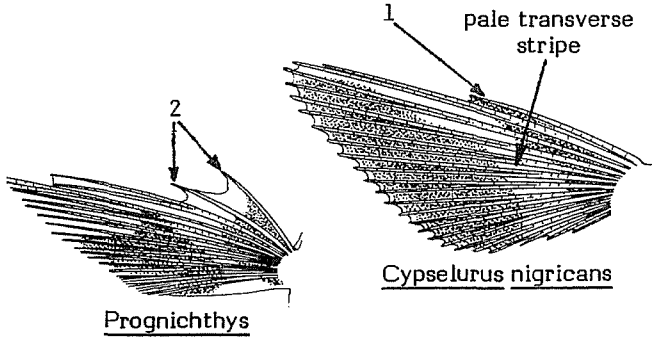
Colour: dark above, pale below, the dark colour usually iridescent blue or green in life; dorsal fin with a prominent black spot; pectoral fins darkly pigmented, without a pale transverse stripe or basal triangle.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Cypselurus milleri: also with dark pectoral fins that have no transverse stripe, but lacking the large black spot on dorsal fin.

Cypselurus pinnatibarbatus: some have dark pectoral fins and a large black spot on dorsal fin (others have pale pectoral fins and lack the dorsal spot), but has a more slender body, its greatest depth less than 18% of standard length (17 to 21% in C. cyanopterus); least caudal peduncle depth less than 6% of standard length (greater than 6% in C. cyanopterus); 39 to 47 predorsal scales (33 to 41 in C. cyanopterus) and 49 to 52 vertebrae (42 to 46 in C. cyanopterus).

Other Cypselurus species: pectoral fin lightly pigmented or darkly pigmented, with a pale transverse stripe (C. furcatus, C. nigricans) or a basal triangle (C. melanurus). Furthermore, C. furcatus and C. nigricans have 33 or fewer predorsal scales (33 to 41 in C. cyanopterus).

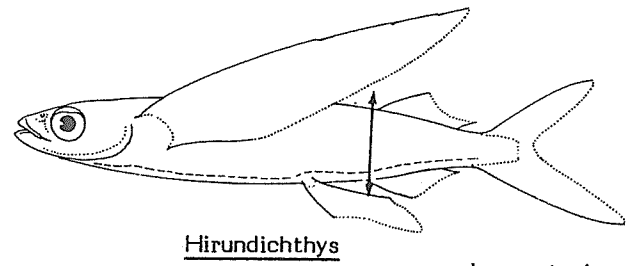


pectoral fin pulled forward showing unbranched rays (numbers)

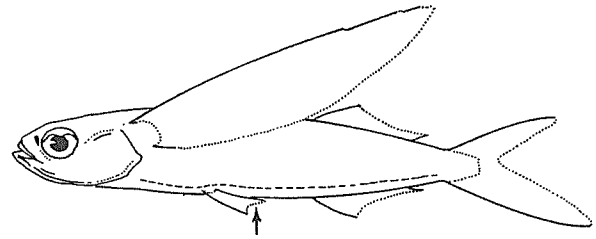
Prognichthys gibbifrons: first two pectoral fin rays unbranched (only first ray unbranched in C. cyanopterus) and fewer than 25 predorsal scales.

Hirundichthys species: anal fin origin before, or only 1 to 2 rays behind dorsal fin origin. Furthermore, a pale basal triangle on pectoral fins in H. affinis and H. speculiger, and first two pectoral fin rays unbranched in H. rondeletii.

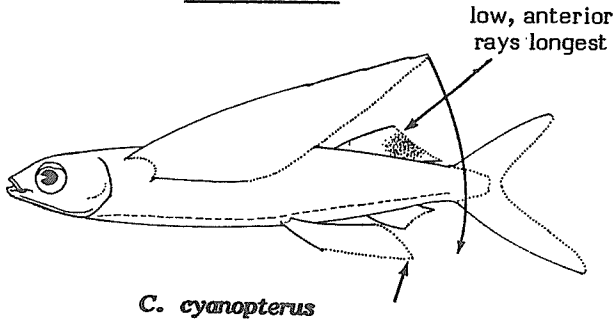
All other species of Exocoetidae: pelvic fins short, not reaching, or barely reaching (Parexocoetus) anal fin origin. Furthermore, pectoral fins considerably shorter and dorsal fin high, with middle rays the longest in Fodiator and Parexocoetus; snout pointed, longer than eye in Fodiator.



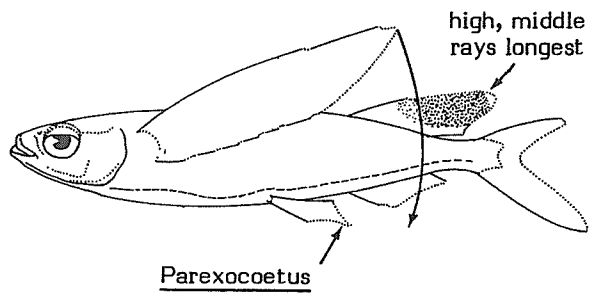
Hirundichthys



Exocoetus



C. cyanopterus



Parexocoetus

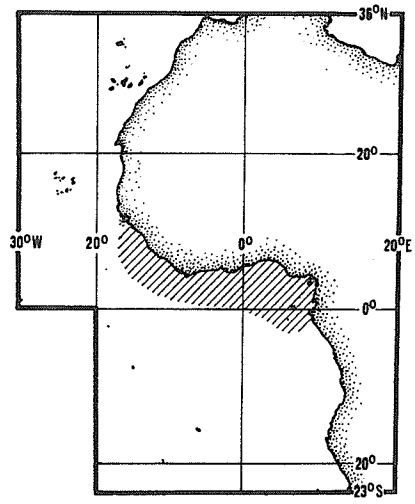
SIZE :

Maximum: about 35 cm standard length.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Off the West African coast, from Guinea to Gabon. Also occurs in the Western Central Atlantic, but not known from mid-oceanic waters.

A pelagic species in near-shore waters; capable of leaping out of the water and gliding for long distances above the surface.



PRESENT FISHING GROUNDS :

Not known to be a commercial species, but like the other flyingfishes, caught accidentally in purse seines, drift seines, pelagic trawls, etc., and utilized locally (fresh, dried salted, smoked or as fishmeal).

EXOC Cyp 4

1981

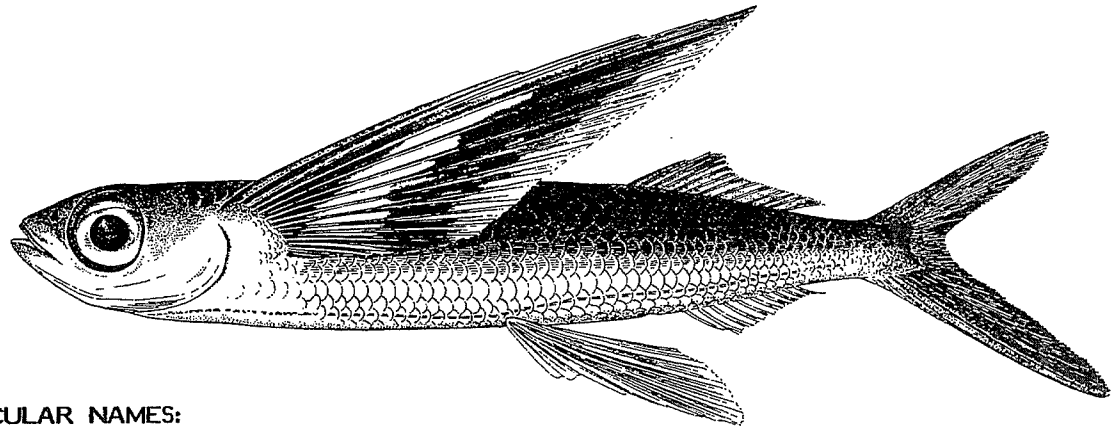
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : EXOCOETIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

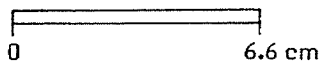
Cypselurus furcatus (Mitchill, 1815)

OTHER SCIENTIFIC NAMES STILL IN USE : None. Placed in genus Cheilopogon by some authors



VERNACULAR NAMES:

FAO : En - Spotfin flyingfish
Fr - Exocet tacheté
Sp - Volador manchado



NATIONAL :

DISTINCTIVE CHARACTERS :

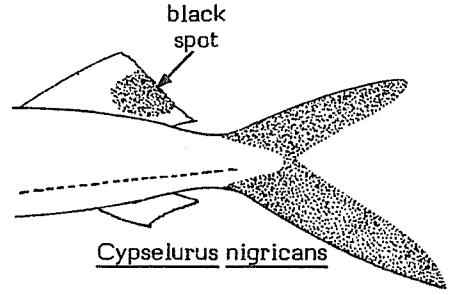
Body elongate, thick, somewhat flattened ventrally, its greatest depth 16 to 21% of standard length; least caudal peduncle depth greater than 6% of standard length. Snout shorter than eye, blunt; palatine teeth absent. Dorsal and anal fins set far back on body, their bases short; dorsal fin low, rays at anterior end the longest; pectoral fins strikingly long, 64 to 75% of standard length, only first ray unbranched; pelvic fins abdominal, large, reaching well beyond anal fin origin; anal fin origin 3 rays or more behind dorsal fin origin; anal fin base 11.5% of standard length or longer. Scale rows across back in front of dorsal fin (predorsal scales) 27 to 33. Vertebrae 43 to 46.

Colour: dark above, pale below, the dark colour usually iridescent blue or green in life; dorsal fin lightly or not pigmented; pectoral fins relatively dark (pigment more pronounced on outer half of fin) and with a pale margin, the central portion crossed by a pale curved stripe becoming narrower toward fin base.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Cypselurus nigricans: pectoral fins also dark and with a pale transverse stripe, but a prominent black spot present on dorsal fin.

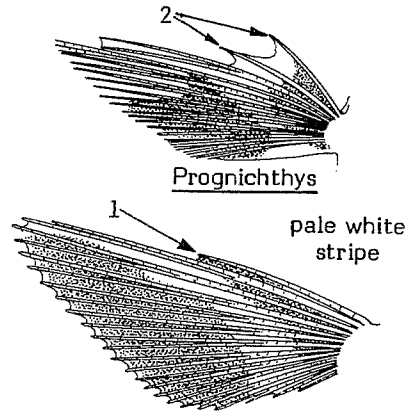
Other Cypselurus species: pectoral fins either lightly pigmented or without pale transverse stripe (a pale basal triangle may be present in C. melanurus). Furthermore, a black spot on dorsal fin in C. cyanopterus and some C. pinnatibarbatus, and usually more than 33 predorsal scales in all.



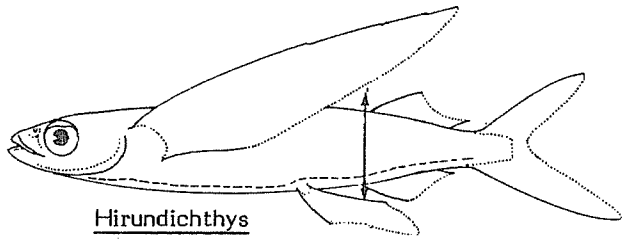
Prognichthys gibbifrons: first two pectoral fin rays unbranched (only first ray unbranched in C. furcatus) and fewer than 25 predorsal scales.

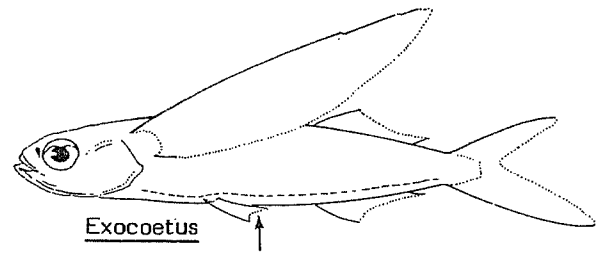
Hirundichthys species: anal fin origin before, or only 1 or 2 rays behind dorsal fin origin and no pale transverse stripe on pectoral fins (but pale basal triangle present in H. affinis and H. speculiger); also, first two pectoral fin rays unbranched in H. rondeletii.

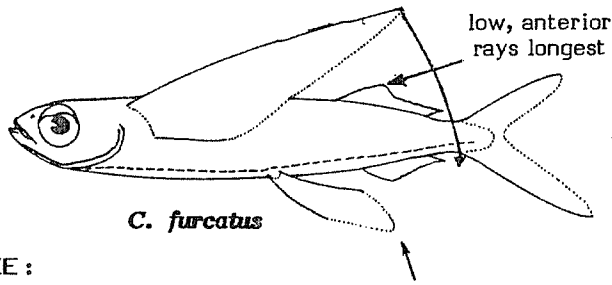
All other species of Exocoetidae: pelvic fins short, not reaching, or barely reaching (Parexocoetus) anal fin origin. Furthermore, pectoral fins considerably shorter and dorsal fin high, with middle rays the longest in Fodiator and Parexocoetus; snout pointed, much longer than eye in Fodiator.

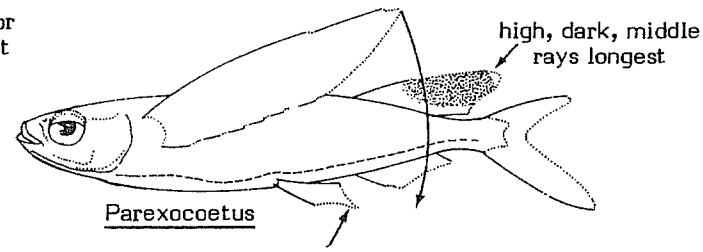


C. furcatus
pectoral fin pulled forward showing unbranched rays (numbers)









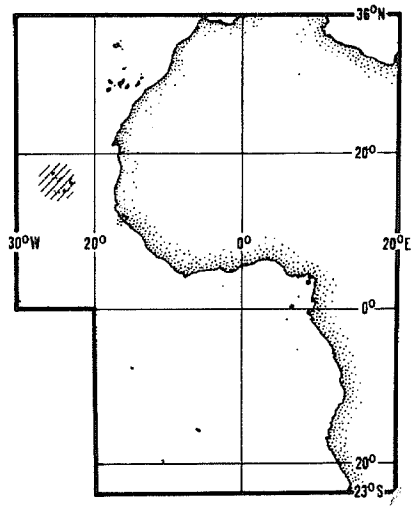
SIZE :

Maximum: about 30 cm standard length.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

An oceanic species, known only from west of the Cape Verde Islands within the area. Occurs throughout the open North Atlantic.

Pelagic in oceanic waters; capable of leaping out of the water and gliding for long distances above the surface.



PRESENT FISHING GROUNDS :

Not known to be a commercial species, but like the other large flyingfishes, caught accidentally in purse seines, drift seines and pelagic trawls.

EXOC Cyp 6

1981

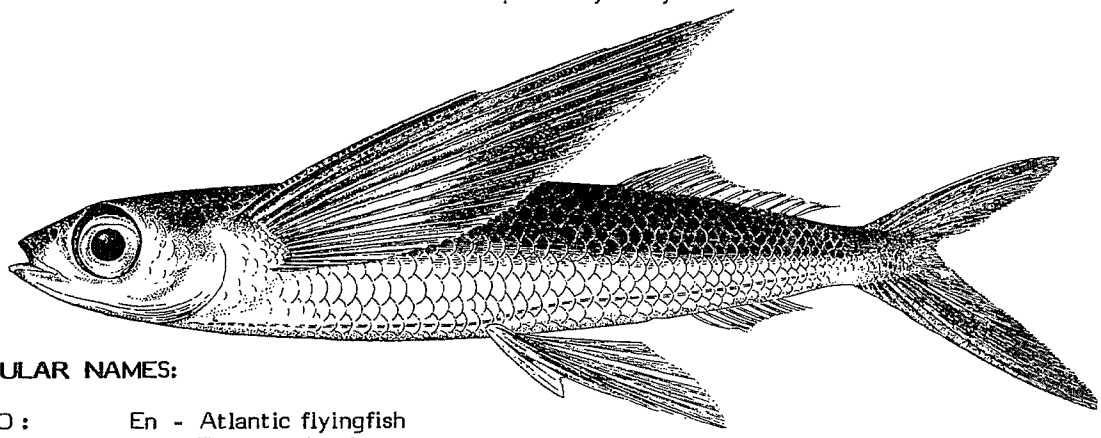
FAO SPECIES IDENTIFICATION SHEETS

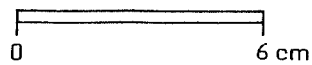
FAMILY : EXOCOETIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Cypselurus melanurus (Valenciennes in Cuv. & Val., 1846)

OTHER SCIENTIFIC NAMES STILL IN USE : Cypselurus lutkeni (Jordan & Meek, 1896)
Cypselurus heterurus - not a true synonym
Cheilopogon melanurus (Valenciennes in Cuv. & Val., 1846)
C. heterurus and C. melanurus have been considered the same species by many authors





VERNACULAR NAMES:

FAO : En - Atlantic flyingfish
Fr - Exocet atlantique
Sp - Volador atlántico

NATIONAL :

DISTINCTIVE CHARACTERS :

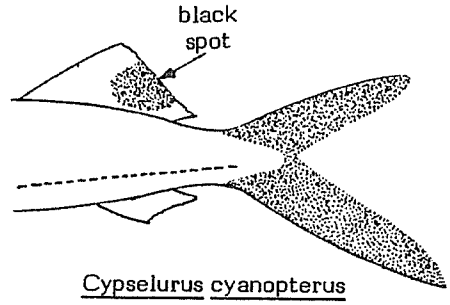
Body elongate, thick, somewhat flattened ventrally, its greatest depth 17 to 19% of standard length; least caudal-peduncle depth greater than 6% of standard length. Snout shorter than eye, blunt; palatine teeth absent. Dorsal and anal fins set far back on body, their bases short; dorsal fin low, rays at anterior end the longest; pectoral fins strikingly long, 63 to 75% of standard length, only first ray unbranched; pelvic fins abdominal, large reaching well beyond anal fin origin; anal fin origin 3 rays or more behind dorsal fin origin; anal fin base less than 11.5% of standard length. Scale rows across back in front of dorsal fin (predorsal scales) 27 to 35, usually 28 to 32. Vertebrae 45 to 48, usually 45 or 46.

Colour: dark above, pale below, the dark colour usually iridescent blue or green in life; dorsal fin lightly or not pigmented; pectoral fins lightly pigmented, with a paler basal triangle.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Cypselurus pinnatibarbatus: becomes larger, reaching 40 cm in standard length (C. melanurus maximum 26 cm); body longer, more slender, its greatest depth 13 to 18% of standard length (17 to 19% in C. melanurus), its least caudal-peduncle depth less than 6% of standard length (greater than 6% in C. melanurus); 39 or more predorsal scales (32 to 36 in C. melanurus); 49 or more vertebrae (45 to 47 in C. melanurus).

Other Cypselurus species: pectoral fins darkly pigmented. Furthermore, a pale transverse stripe on pectoral fins in C. nigricans and C. furcatus, and a prominent black spot on dorsal fin in C. cyanopterus and C. nigricans.

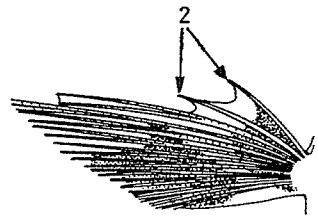


Cypselurus cyanopterus

Prognichthys gibbifrons: first two pectoral fin rays unbranched (only first ray unbranched in C. melanurus); fewer than 25 predorsal scales.

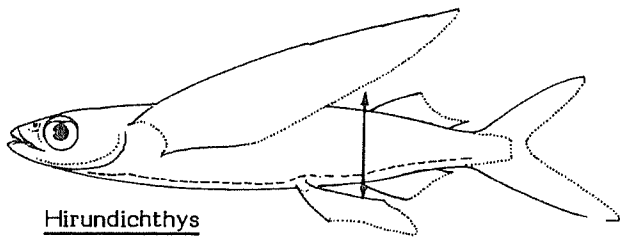
Hirundichthys species: anal fin origin before, or only 1 or 2 rays behind dorsal fin origin and pectoral fins darkly pigmented; also, first two pectoral fin rays unbranched in C. rondeletii.

All other species of Exocoetidae: pelvic fins short, not reaching, or barely reaching (Parexocoetus) anal fin origin. Furthermore, pectoral fin considerably shorter and dorsal fin high with middle rays the longest and much black pigment in Fodiator and Parexocoetus; snout pointed, much longer than eye in Fodiator.

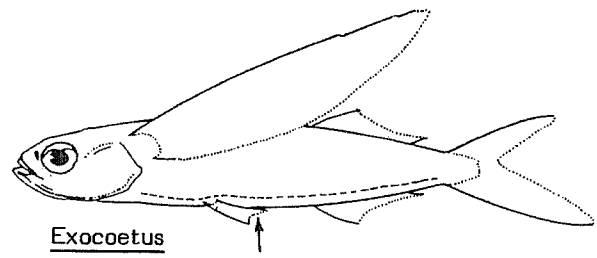


Prognichthys

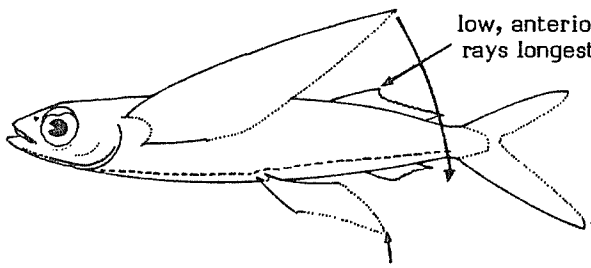
left pectoral fin pulled forward showing unbranched rays (numbers)



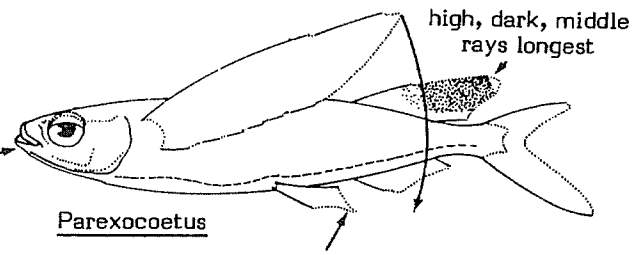
Hirundichthys



Exocoetus



Cypselurus melanurus



Parexocoetus

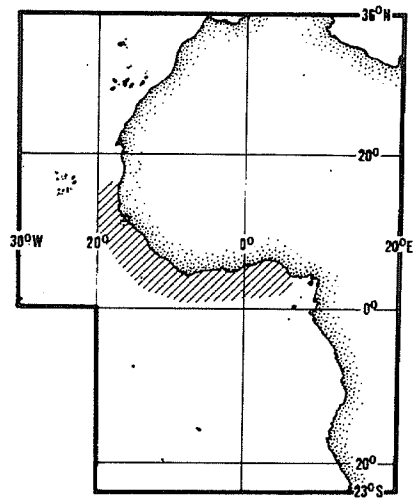
SIZE :

Maximum: about 26 cm standard length.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

In the area found from Senegal to Nigeria. Also occurs in the Western Central Atlantic.

Pelagic, mainly in nearshore surface waters; capable of leaping out of the water and gliding for longer distance above the surface.



PRESENT FISHING GROUNDS :

Not known to be a commercial species, but caught accidentally in purse seines, driftnets, pelagic trawls, etc., and utilized locally (fresh, dried salted, smoked, or reduced to fishmeal).

EXOC Cyp 7

1981

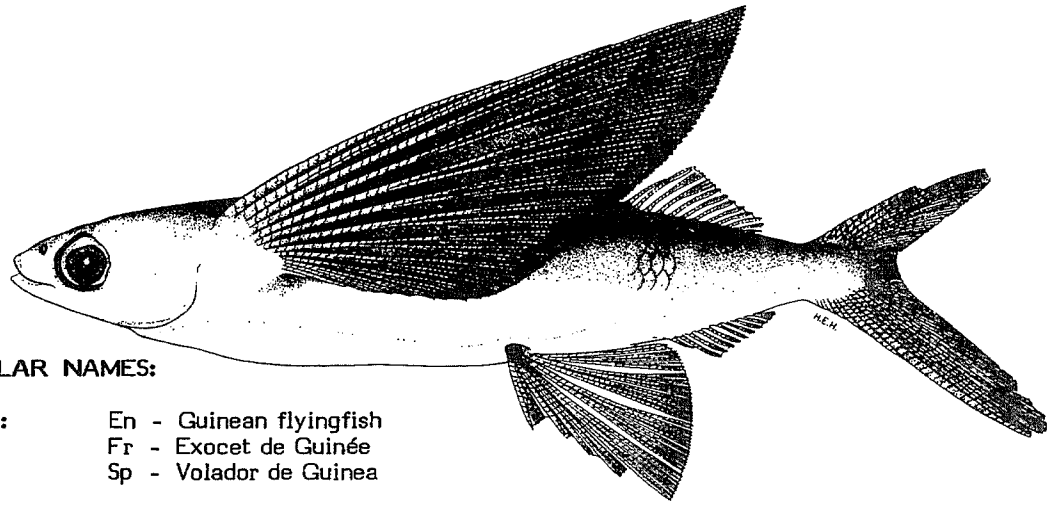
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : EXOCOETIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Cypselurus milleri Gibbs & Staiger, 1970

OTHER SCIENTIFIC NAMES STILL IN USE : None. Would be placed in the genus Cheilopogon by some authors



VERNACULAR NAMES:

FAO : En - Guinean flyingfish
Fr - Exocet de Guinée
Sp - Volador de Guinea

NATIONAL :

0 6 cm

DISTINCTIVE CHARACTERS :

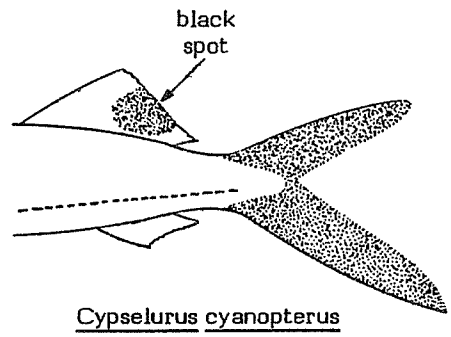
Body elongate, thick, somewhat flattened ventrally, its greatest depth 17 to 21% of standard length; least caudal peduncle depth greater than 6% of standard length. Snout shorter than eye, blunt; palatine teeth present or absent. Dorsal and anal fins set far back on body, their bases short; dorsal fin low, rays at anterior end the longest; pectoral fins strikingly long, 65 to 75% of standard length, only first ray unbranched; pelvic fins abdominal, large, reaching well beyond anal fin origin; anal fin origin 4 rays or more behind dorsal fin origin; anal fin base less than 11.5% of standard length. Scale rows across back in front of dorsal fin (predorsal scales) 36 to 45. Vertebrae 45 or 46.

Colour: dark above, pale below, the dark colour usually iridescent blue or green in life; dorsal fin lightly or not pigmented; pectoral fins uniformly dark, with a narrow unpigmented margin, sometimes with a small unpigmented notch near the base.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Cypselurus cyanopterus and some C. pinnatibarbatus: also with uniformly dark pectoral fins, but a prominent black spot present on dorsal fin (not in all C. pinnatibarbatus). Also, C. pinnatibarbatus becomes over 40 cm in standard length (the longest C. milleri is 28 cm), is more slender, with greatest depth less than 18% and least caudal peduncle depth less than 6% of standard length (greatest depth 17.5% or more, caudal peduncle depth greater than 6% of standard length in C. milleri), and has 49 to 52 vertebrae (45 or 46 in C. milleri).

Other Cypselurus species and some C. pinnatibarbatus: pectoral fins either lightly pigmented, with a paler basal triangle or darkly pigmented with a pale transverse stripe. Also, except in C. pinnatibarbatus, predorsal scales 36 or fewer (36 to 45 in C. milleri).

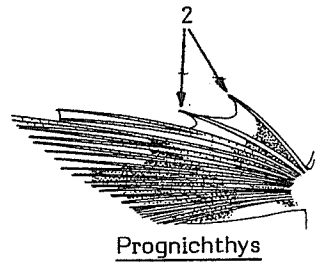


Cypselurus cyanopterus

Prognichthys gibbifrons: first two pectoral fin rays unbranched (only first ray unbranched in C. melanurus); fewer than 25 predorsal scales.

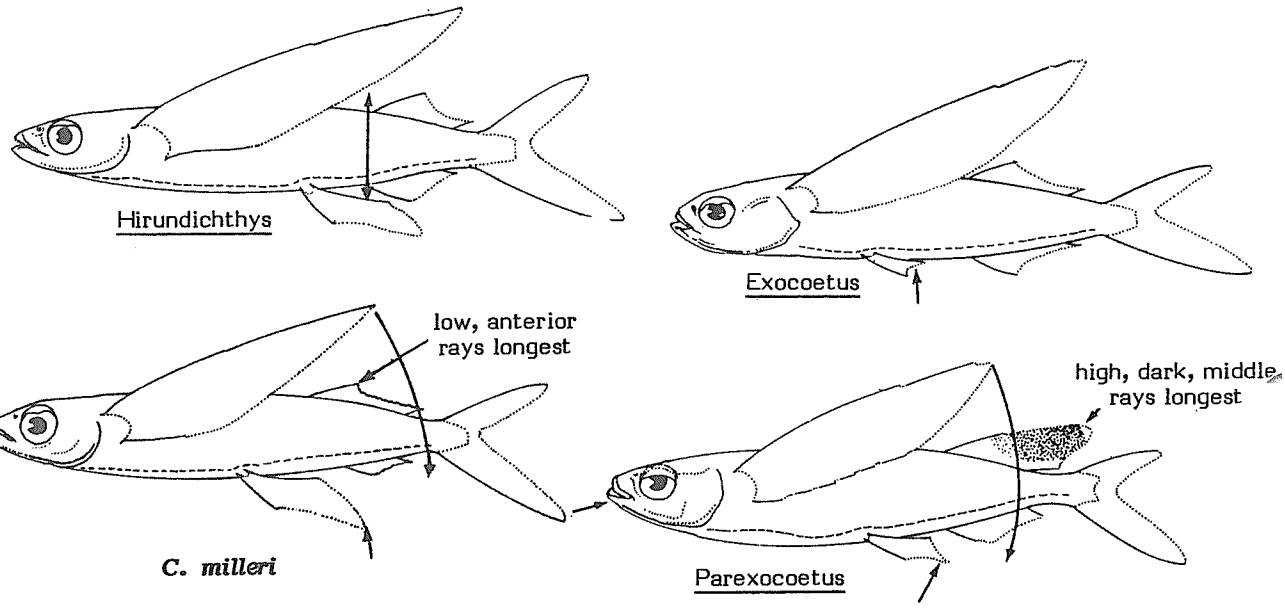
Hirundichthys species: anal fin origin before, or only 1 or 2 rays behind dorsal fin origin and pectoral fins darkly pigmented; also, first two pectoral fin rays unbranched in C. rondeletii.

All other species of Exocoetidae: pelvic fins short, not reaching, or barely reaching (Parexocoetus) anal fin origin. Furthermore, pectoral fin considerably shorter and dorsal fin high with middle rays the longest and much black pigment in Fodiator and Parexocoetus; snout pointed, much longer than eye in Fodiator.



Prognichthys

left pectoral fin pulled forward showing unbranched rays (numbers)



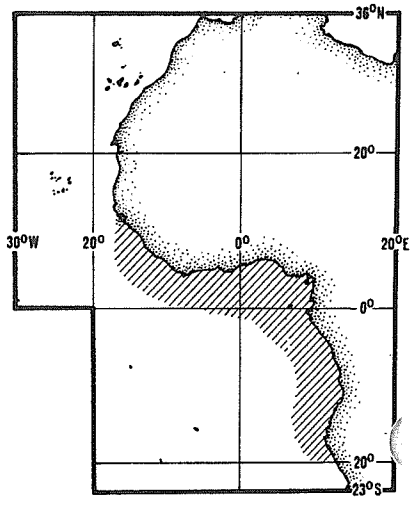
SIZE :

Maximum: about 28 cm standard length.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Found off West Africa, from Guinea to Namibia.

Pelagic in oceanic or nearshore surface waters; capable of leaping out of the water and gliding for long distances above the surface.



PRESENT FISHING GROUNDS :

Not known to be a commercial species, but like other flyingfishes caught accidentally in purse seines, driftnets, pelagic trawls, etc., and utilized locally (fresh, dried salted, smoked or reduced to fishmeal and oil).

EXOC Cyp 8

1981

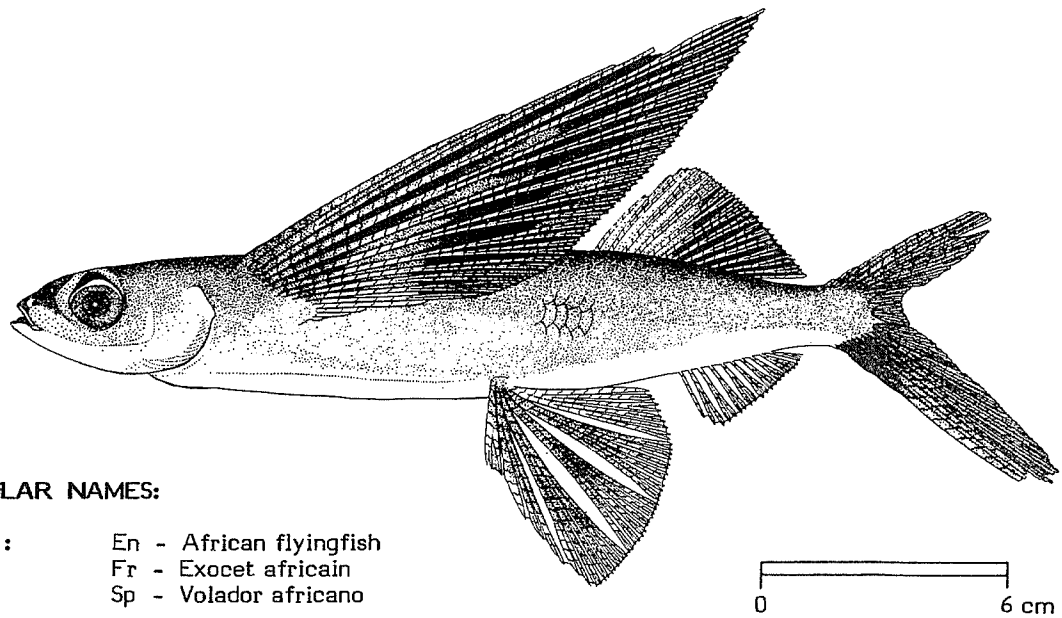
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : EXOCOETIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Cypselurus nigricans (Bennett, 1840)

OTHER SCIENTIFIC NAMES STILL IN USE : Misidentified as C. exsiliens before 1970. Placed in the genus Cheilopogon by some authors.



VERNACULAR NAMES:

FAO : En - African flyingfish
Fr - Exocet africain
Sp - Volador africano

NATIONAL :

DISTINCTIVE CHARACTERS :

Body elongate, thick, somewhat flattened ventrally, its greatest depth 15 to 19% of standard length; least caudal peduncle depth greater than 6% of standard length. Snout shorter than eye, blunt; palatine teeth usually present. Dorsal and anal fins set far back on body, their bases short; dorsal fin low, rays at anterior end the longest; pectoral fins strikingly long, 67 to 75% of standard length, only first ray unbranched; pelvic fins abdominal, large, reaching well beyond anal fin origin; anal fin origin 3 rays or more behind dorsal fin origin. Scale rows across back in front of dorsal fin (predorsal scales) 24 to 30.

Colour: dark above, pale below, the dark colour usually iridescent blue or green in life; dorsal fin with a prominent black spot; pectoral fins darkly pigmented, with a pale transverse stripe.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

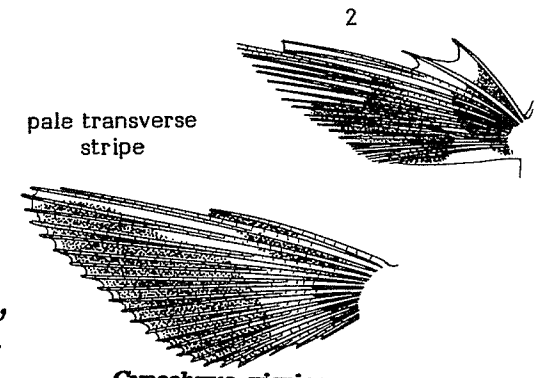
Cypselurus cyanopterus, C. milleri and some C. pinnatibarbatus: pectoral fins uniformly dark, without a pale transverse stripe. Also, 33 or more predorsal scales (24 to 30 in C. nigricans).

Cypselurus furcatus, C. melanurus, and some C. pinnatibarbatus: no prominent black spot on dorsal fin (C. furcatus and C. melanurus), or pectoral fins with a pale transverse stripe (C. furcatus) or lightly pigmented with a pale basal triangle (C. melanurus, C. pinnatibarbatus). Also 32 or more predorsal scales in C. melanurus and C. pinnatibarbatus.

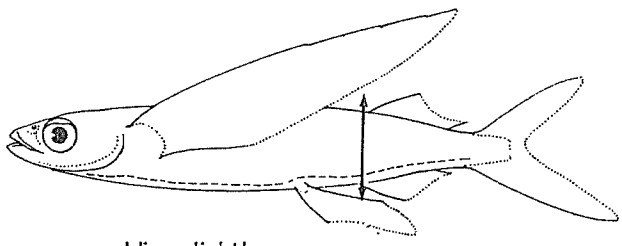
Prognichthys gibbifrons: first two pectoral fin rays unbranched (only first ray unbranched in C. nigricans), and fewer than 25 predorsal scales.

Hirundichthys species: anal fin origin before, or only 1 or 2 rays behind dorsal fin origin and pectoral fins darkly pigmented; also, first two pectoral fin rays unbranched in C. rondeletii.

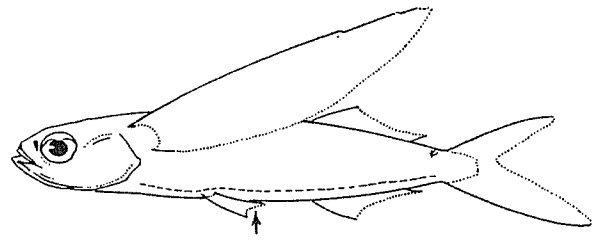
All other species of Exocoetidae: pelvic fins short, not reaching, or barely reaching (Parexocoetus) anal fin origin. Furthermore, pectoral fin considerably shorter and dorsal fin high, with middle rays the longest and much black pigment in Fodiator and Parexocoetus; snout pointed, much longer than eye in Fodiator.



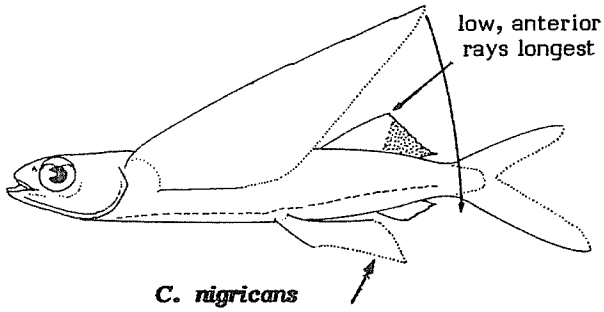
Cypselurus nigricans
left pectoral fin pulled forward



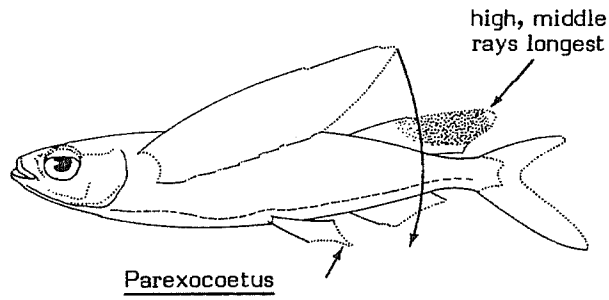
Hirundichthys



Exocoetus



C. nigricans



Parexocoetus

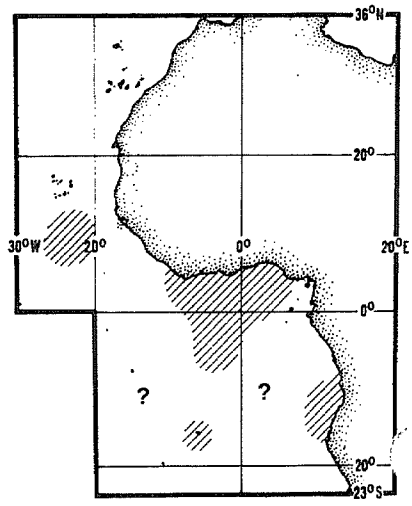
SIZE :

Maximum: about 28 cm standard length.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Near the African coast from Liberia to Nigeria and off Angola. Also in oceanic waters of the Northeastern and Southeastern Atlantic. Replaced in the Western Atlantic by the similar species C. exsiliens.

Pelagic in oceanic waters; capable of leaping out of the water and gliding for long distances above the surface.



PRESENT FISHING GROUNDS :

Not known to be a commercial species, but, like the other flyingfishes, caught accidentally in purse seines, driftnets, pelagic trawls, etc., and utilized locally (fresh, dried salted, smoked, or reduced to fishmeal).

EXOC Cyp 9

1981

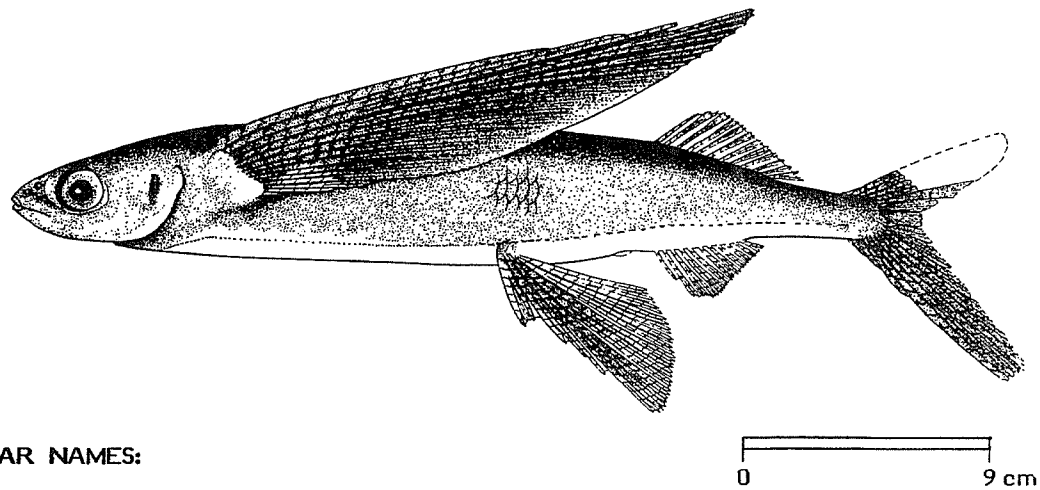
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : EXOCOETIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Cypselurus pinnatibarbatus (Bennett, 1831)

OTHER SCIENTIFIC NAMES STILL IN USE : Cypselurus lineatus (Valenciennes, in Cuv. & Val., 1846). Placed in the genus Cheilopogon by some authors



VERNACULAR NAMES:

FAO : En - Bennett's flyingfish
Fr - Exocet de Bennett
Sp - Volador de Bennett

NATIONAL :

DISTINCTIVE CHARACTERS :

Body elongate, thick, somewhat flattened ventrally; its greatest depth 13 to 18% of standard length; least caudal peduncle depth less than 6% of standard length. Snout shorter than eye, blunt; palatine teeth either absent or very small. Dorsal and anal fins set far back on body, their bases short; dorsal fin low, rays at anterior end the longest; pectoral fins strikingly long; 65 to 77% of standard length, only first ray unbranched; pelvic fins abdominal, large, reaching well beyond anal fin origin; anal fin origin 3 rays or more behind dorsal fin origin. Scale rows across back in front of dorsal fin (predorsal scales) 39 to 47. Vertebrae 49 to 52.

Colour: dark above, pale below, the dark colour usually iridescent blue or green in life; dorsal fin with a large black spot in some individuals, this spot reduced or absent in some large adults; pectoral fins in some individuals darkly pigmented, with a narrow transverse pale stripe, in large adults darkly to lightly pigmented and with no apparent stripe.

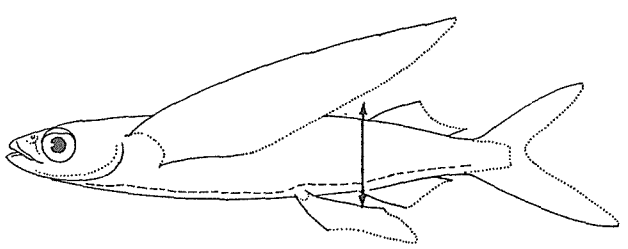
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Other Cypselurus species: not reaching over 35 cm standard length, most not over 30 cm (C. pinnatibarbatus grows to about 40 cm); least caudal peduncle depths greater than 6% of standard length (less than 6% in C. pinnatibarbatus), and 47 or fewer vertebrae (49 to 52 in C. pinnatibarbatus). Furthermore, in C. nigricans, C. furcatus, and C. melanurus 36 or fewer predorsal scales (39 to 47 in C. pinnatibarbatus).

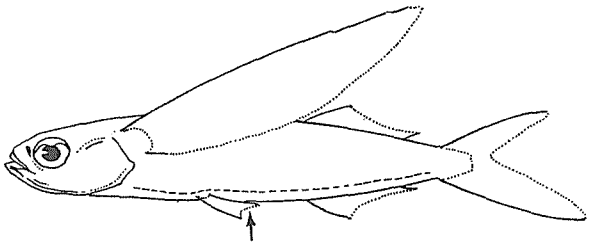
Prognichthys gibbifrons: first two pectoral fin rays unbranched (only first ray unbranched in C. pinnatibarbatus) and fewer than 25 predorsal scales.

Hirundichthys species: anal fin origin before, or only 1 or 2 rays behind dorsal fin origin. Furthermore, a pale basal triangle on pectoral fins in H. affinis and H. speculiger, and first two pectoral fin rays unbranched in H. rondeletii.

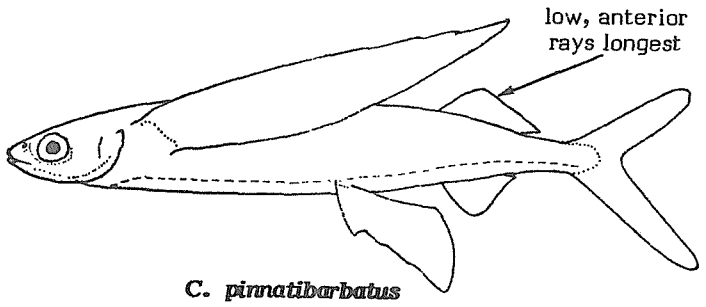
All other species of Exocoetidae: pelvic fins short, not reaching, or barely reaching (Parexocoetus) anal fin origin. Furthermore, pectoral fins considerably shorter and dorsal fin high, with middle rays the longest in Fodiator and Parexocoetus; snout pointed, longer than eye in Fodiator.



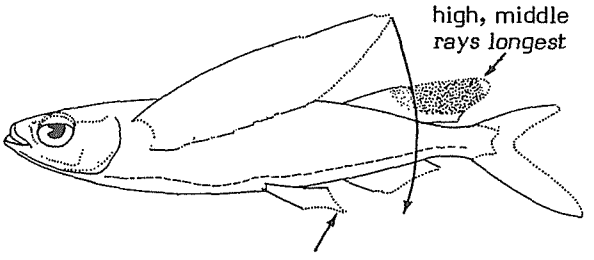
Hirundichthys



Exocoetus



C. pinnatibarbatus



Parexocoetus

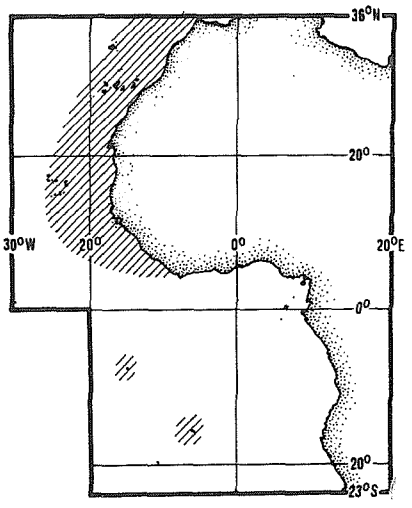
SIZE :

Maximum: about 40 cm standard length.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Found near the West African coast from Morocco to Liberia; also known from Ascension and St. Helena Islands. Several subspecies have been recognized in the Atlantic, Indian and Pacific Oceans.

Pelagic in near-shore waters; tends to occur near land or islands in cooler waters; capable of leaping out of the water and gliding for long distances above the surface.



PRESENT FISHING GROUNDS :

Not known to be a commercial species, but like other flyingfishes, caught accidentally in purse seines, driftnets, pelagic trawls, etc., and utilized locally (fresh, dried salted, smoked or reduced to fishmeal).

EXOC Exoc 1

1981

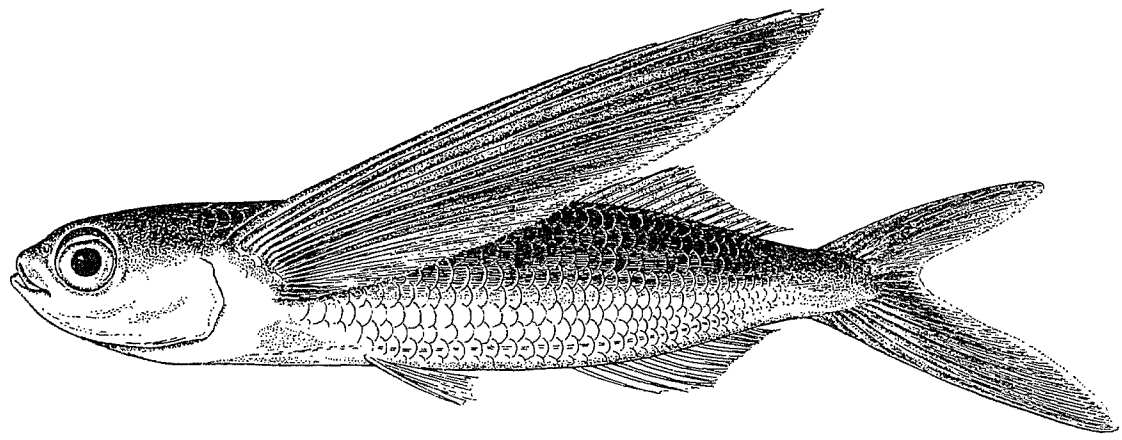
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : EXOCOETIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Exocoetus obtusirostris Günther, 1866

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES:

FAO : En - Oceanic two-wing flyingfish
Fr - Exocet bouledogue
Sp - Volador ñato

NATIONAL :

DISTINCTIVE CHARACTERS :

Body elongate, thick, somewhat flattened ventrally; body depth usually greater than 19% of standard length. Snout shorter than eye, blunt. Gillrakers on first arch 24 to 29. Dorsal and anal fins set far back on body, their bases short; dorsal fin low, rays at anterior end the longest; pectoral fins strikingly long, 70% of standard length or longer; pelvic fins short, far from reaching anal fin, their insertion closer to pectoral fin base than to anal fin origin.

Colour: dark above, pale below, the dark colour usually iridescent blue or green in life; dorsal fin colourless or only slightly pigmented.

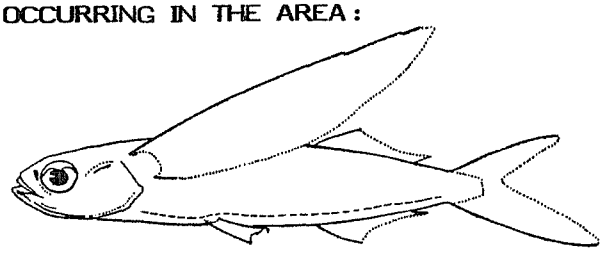
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Exocoetus volitans: gillrakers on first arch 29 to 37 (24 to 29 in E. obtusirostris); *body depth usually* less than 19% of standard length (usually greater than 19% in E. obtusirostris).

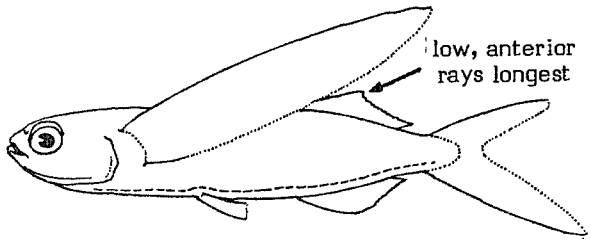
Fodiator acutus: snout pointed, longer than eye; pectoral fins shorter, about 50% of standard length (70% or more in E. obtusirostris); dorsal fin high, middle rays the longest and with much black pigment (low, rays at anterior end the longest and slightly or not pigmented in E. obtusirostris).

Parexocoetus brachypterus: pectoral fins shorter, 55 to 60% of standard length; pelvic fin insertion closer to anal fin origin than to pectoral fin base; *dorsal fin high, middle rays the longest and with much* black pigment.

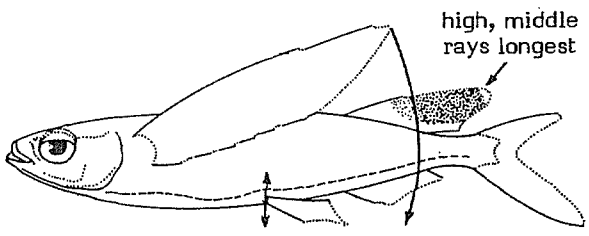
All other species of Exocoetidae: pelvic fins long, reaching well beyond anal fin origin, often to beyond the posterior part of anal fin base.



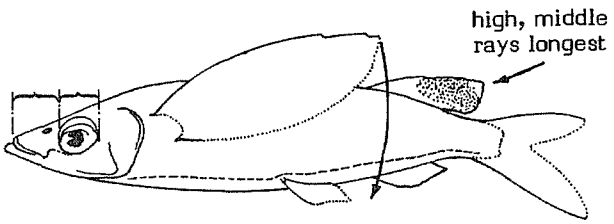
Exocoetus volitans



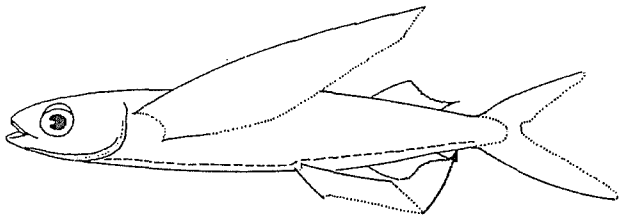
Exocoetus obtusirostris



Parexocoetus brachypterus



Fodiator acutus



Hirundichthys rondeletii

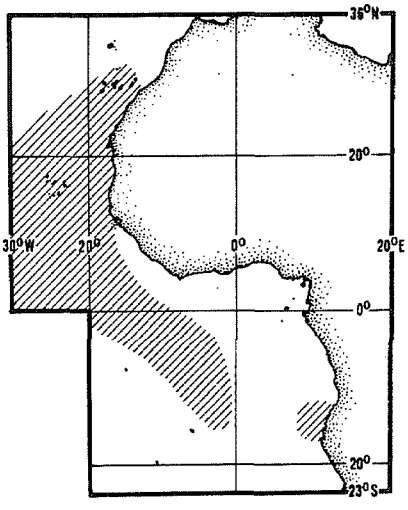
SIZE :

Maximum: about 19 cm standard length.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Tropical and subtropical Atlantic, recorded from Western Sahara to Senegal and from Angola near the coast; oceanic records almost to 20°S. Also found in the Indian and Pacific Oceans.

Pelagic in surface waters, capable of leaping out of the water and gliding for long distances above the surface.



PRESENT FISHING GROUNDS :

Not known to be a commercial species, but like other flyingfishes, caught accidentally in purse seines, driftnets, pelagic trawls, etc., and utilized locally (fresh, dried salted, smoked or reduced to fishmeal).

EXOC Exoc 2

1981

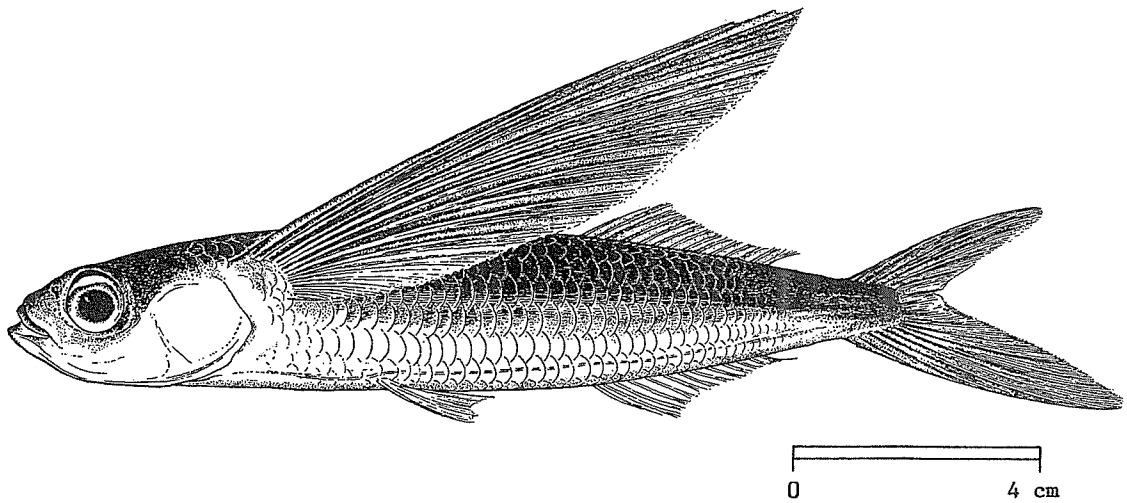
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : EXOCOETIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Exocoetus volitans Linnaeus, 1758

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES:

FAO : En - Tropical two-wing flyingfish
Fr - Exocet volant
Sp - Volador

NATIONAL :

DISTINCTIVE CHARACTERS :

Body elongate, thick, somewhat flattened ventrally; body depth usually less than 19% of standard length. Snout shorter than eye, blunt. Gillrakers on first arch 29 to 37. Dorsal and anal fins set far back on body, their bases short; dorsal fin low, rays at anterior end the longest; pectoral fins strikingly long, 70% of standard length or longer; pelvic fins short, far from reaching anal fin, their insertion closer to pectoral fin base than to anal fin origin.

Colour: dark above, pale below, the dark colour usually iridescent blue or green in life; dorsal fin colourless or only slightly pigmented.

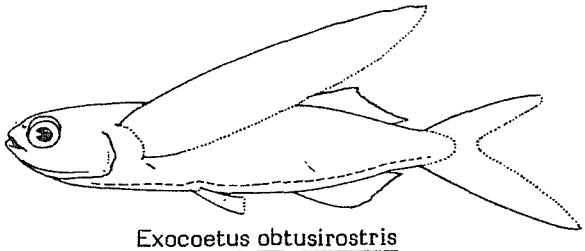
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Exocoetus obtusirostris: gillrakers on first arch 24 to 29 (29 to 37 in E. volitans); body depth usually less than 19% of standard length (usually less than 19% in E. volitans).

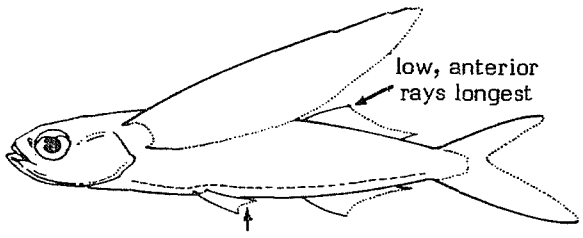
Fodiator acutus: snout pointed, longer than eye; pectoral fins shorter, about 50% of standard length (70% or more in E. volitans); dorsal fin high, middle rays the longest and with much black pigment (low, rays at anterior end the longest and slightly or not pigmented in E. volitans).

Parexocoetus brachypterus: pectoral fins shorter, 55 to 60% of standard length; pelvic fin insertion closer to anal fin origin than to pectoral fin base; dorsal fin high, middle rays the longest and with much black pigment.

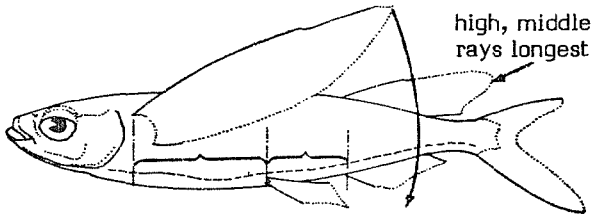
All other species of Exocoetidae: pelvic fins long, reaching well beyond anal fin origin, often to beyond the posterior part of anal fin base.



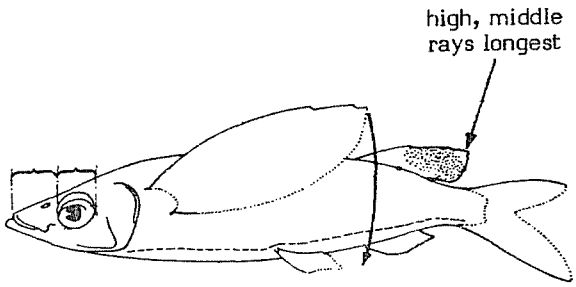
Exocoetus obtusirostris



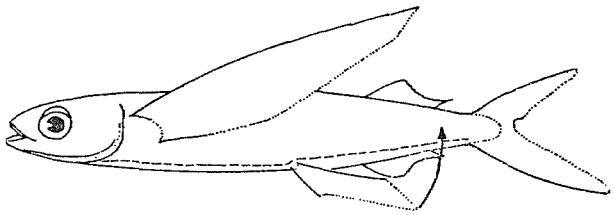
Exocoetus volitans



Parexocoetus brachypterus



Fodiator acutus



Hirundichthys rondeletii

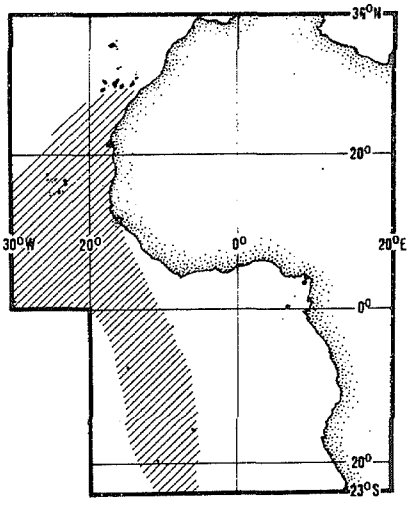
SIZE :

Maximum: about 18 cm standard length.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

An oceanic species, found throughout most of the tropical and subtropical Atlantic. Reported from off Western Sahara to Senegal, near the coast; oceanic records extend to the southern boundary of the area. Also occurs in the Indian and Pacific Oceans.

Pelagic in surface waters, capable of leaping out of the water and gliding for long distances above the surface.



PRESENT FISHING GROUNDS :

Not known to be a commercial species, but like other flyingfishes, caught accidentally in purse seines, driftnets, pelagic trawls, etc., and utilized locally (fresh, dried salted, smoked or reduced to fishmeal); occasional catches are especially reported from Ivory Coast and Senegal.

EXOC Fod 1

1981

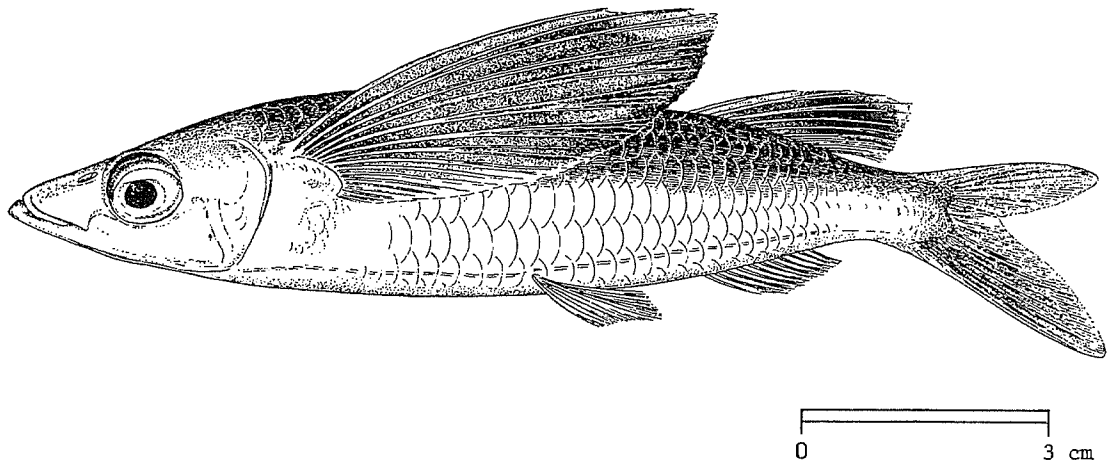
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : EXOCOETIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Fodiator acutus (Valenciennes, in Cuv. & Val., 1846)

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES:

FAO : En - Sharpchin flyingfish
Fr - Exocet bécune
Sp - Volador picudo

NATIONAL :

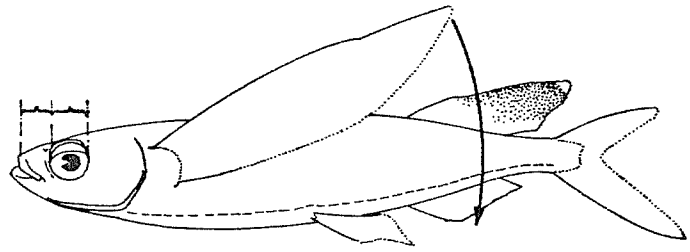
DISTINCTIVE CHARACTERS :

Body elongate, deep, compressed, rounded ventrally. Snout longer than eye, pointed. Dorsal and anal fins set far back on body, their bases short; dorsal fin high, middle rays the longest; pectoral fins strikingly long, about 50% of standard length or shorter; pelvic fins abdominal, relatively short, not reaching anal fin origin.

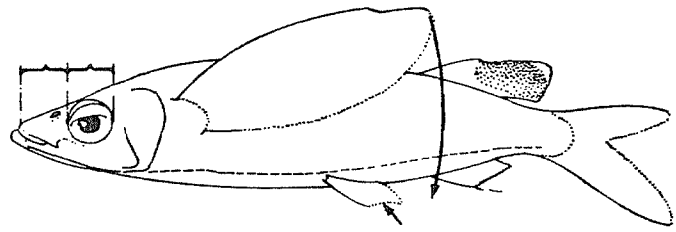
Colour: dark above, pale below, the dark colour usually iridescent blue or green in life; dorsal fin with much black pigment; pectoral fins primarily grey.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

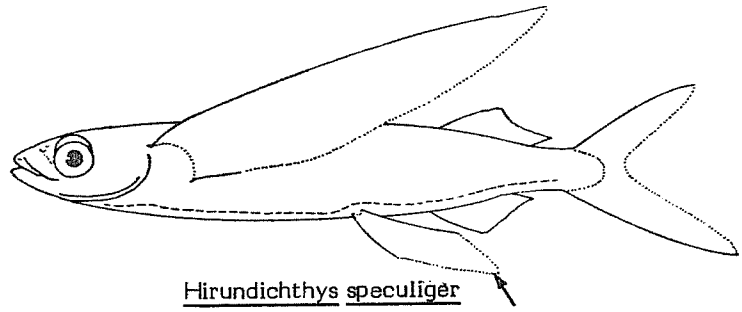
All other species of Exocoetidae: snout equal to or shorter than eye, blunt, rounded; pectoral fins 55% of standard length or longer. Furthermore, pelvic fins long, extending well beyond anal fin origin in all except Exocoetus and Parexocoetus species.



Parexocoetus brachypterus



Fodiator acutus



Hirundichthys speculiger

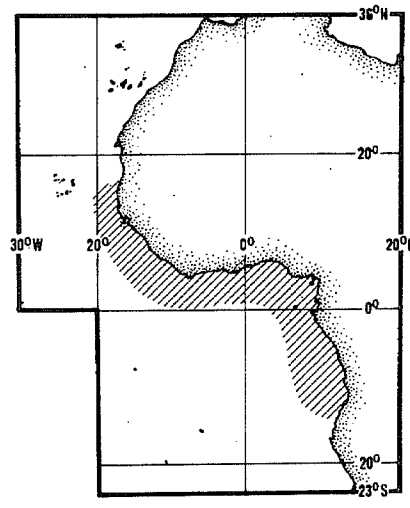
SIZE:

Maximum: 15 cm standard length.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Found off the West African coast from Senegal to Angola. Occurs also in the eastern tropical Pacific, and perhaps off northeastern South America.

Pelagic in surface waters, capable of leaping out of the water and gliding for long distances above the surface.



PRESENT FISHING GROUNDS:

Not known to be a commercial species, but like other flyingfishes, caught accidentally in purse seines, driftnets, pelagic trawls, etc., and utilized locally (fresh, dried salted, smoked or reduced to fishmeal).

EXOC Hir 1

1981

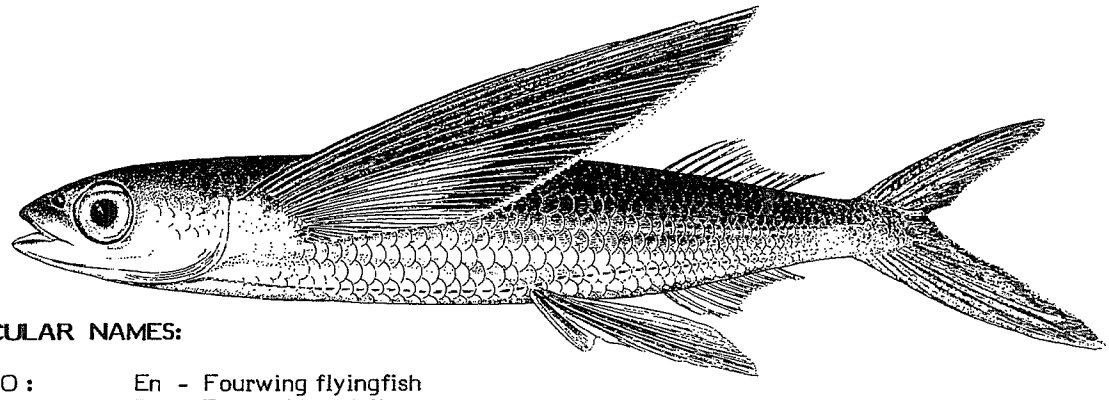
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : EXOCOETIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

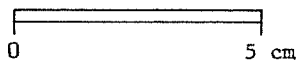
Hirundichthys affinis (Günther, 1866)

OTHER SCIENTIFIC NAMES STILL IN USE : None, but often misidentified as H. speculiger



VERNACULAR NAMES:

FAO : En - Fourwing flyingfish
Fr - Exocet hirondelle
Sp - Volador golondrina



NATIONAL :

DISTINCTIVE CHARACTERS :

Body elongate and thick, somewhat flattened ventrally. Snout shorter than eye, blunt; palatine teeth (on roof of mouth) usually absent. Dorsal and anal fins set far back on body, their bases short; dorsal fin low, rays at anterior end the longest; anal fin origin slightly before, or 1 or 2 rays behind dorsal fin origin; pectoral fins strikingly long, 60 to 70% of standard length, only first ray unbranched; pelvic fins abdominal, large, reaching well beyond anal fin origin. More than 25 scale rows across back in front of dorsal fin (predorsal scales).

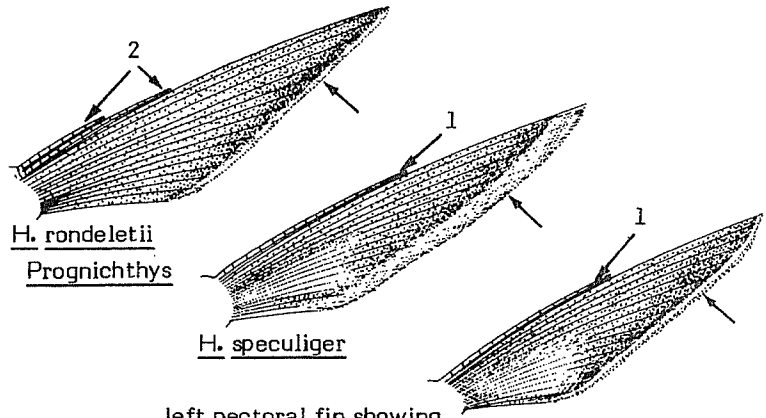
Colour: dark above, pale below, the dark colour usually iridescent blue or green in life; dorsal fin colourless or only slightly pigmented; pectoral fins dark with a pale basal triangle and a narrow white margin (on trailing edge when extended).

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Hirundichthys speculiger: pectoral fins also with a pale basal triangle, but with a broad white margin (narrow in H. affinis); palatine teeth usually present.

H. rondeletii: first two pectoral fin rays unbranched; pectoral fins without a pale basal triangle.

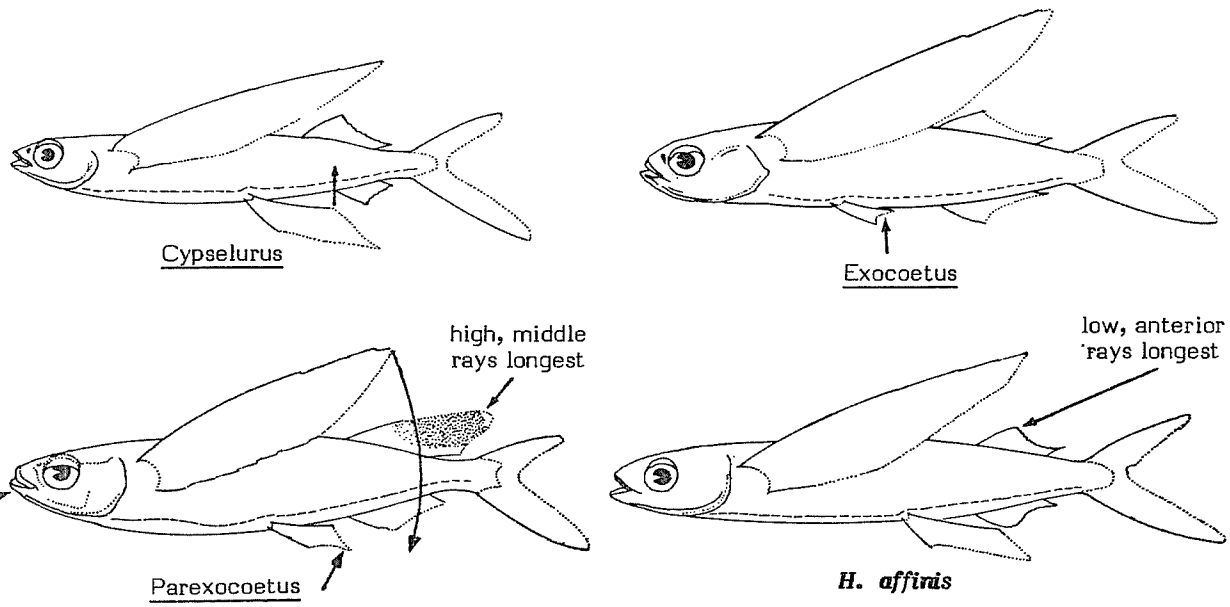
Prognichthys gibbifrons: first two pectoral fin rays unbranched; fewer than 25 predorsal scales; anal fin origin 3 or more rays behind dorsal fin origin.



left pectoral fin showing unbranched rays (numbers) and pigmentation

Cypselurus species: dorsal fin with 2 to 5 more rays than anal fin (equal number of rays in both fins or 1 more anal than dorsal fin ray in H. affinis).

All other species of Exocoetidae: pelvic fins short, not reaching, or barely reaching (Parexocoetus) anal fin origin. Furthermore, pectoral fins considerably shorter and dorsal fin high, with middle rays the longest and much black pigment in Fodiator and Parexocoetus; snout pointed, much longer than eye in Fodiator.



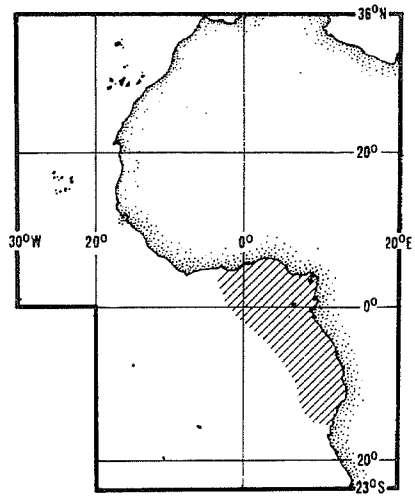
SIZE :

Maximum: about 25 cm standard length.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Off West Africa, found near the coast from Ghana to Angola, if records in the literature are correct. These records could refer to H. speculiger and need confirmation. Elsewhere, it occurs in the Western Atlantic.

Pelagic in nearshore surface waters; capable of leaping out of the water and gliding for long distances above the surface.



PRESENT FISHING GROUNDS :

Not known to be a commercial species, but like other flyingfishes, caught accidentally in purse seines, driftnets, pelagic trawls, etc., and utilized locally (fresh, dried salted, smoked or reduced to fishmeal).

EXOC Hir 3

1981

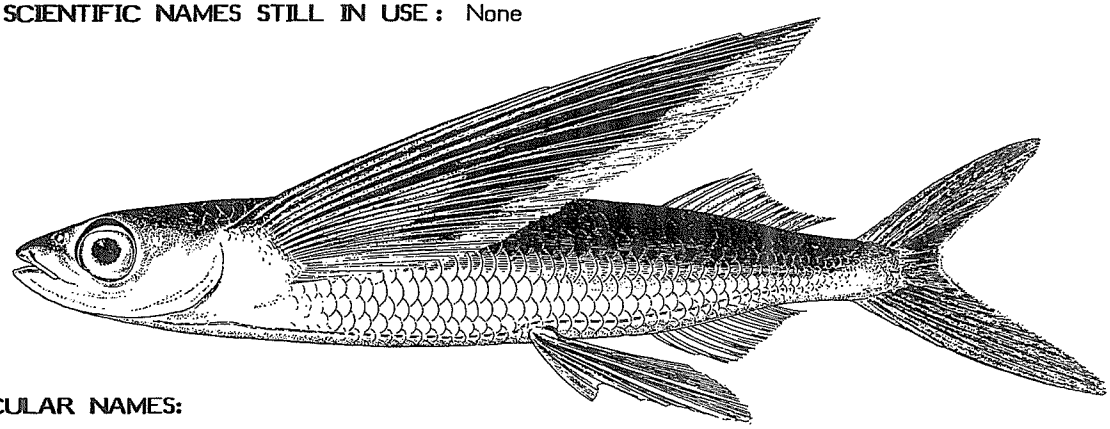
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : EXOCOETIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

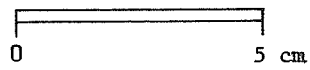
Hirundichthys speculiger (Valenciennes, in Cuv. & Val., 1846)

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES:

FAO : En - Mirrorwing flyingfish
Fr - Exocet miroir
Sp - Volador espejo



NATIONAL :

DISTINCTIVE CHARACTERS :

Body elongate and thick, somewhat flattened ventrally. Snout shorter than eye, blunt; palatine teeth (on roof of mouth) usually present. Dorsal and anal fins set far back on body, their bases short; dorsal fin low, rays at anterior end the longest; anal fin origin slightly before, or 1 or 2 rays behind dorsal fin origin; pectoral fins strikingly long, 65 to 75% of standard length, only first ray unbranched; pelvic fins abdominal, large, reaching well beyond anal fin origin. More than 25 scale rows across back in front of dorsal fin (predorsal scales).

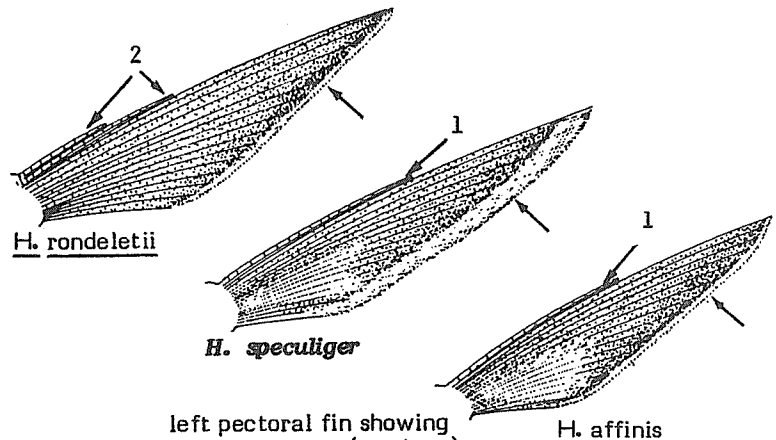
Colour: dark above, pale below, the dark colour usually iridescent blue or green in life; dorsal fin colourless or only slightly pigmented; pectoral fins dark with a pale basal triangle and a wide white margin (on trailing edge when extended).

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Hirundichthys affinis: pectoral fins with a narrow white margin; palatine teeth usually absent.

H. rondeletii: first two pectoral fin rays unbranched; pectoral fins with a narrow white outer margin and without a pale basal triangle.

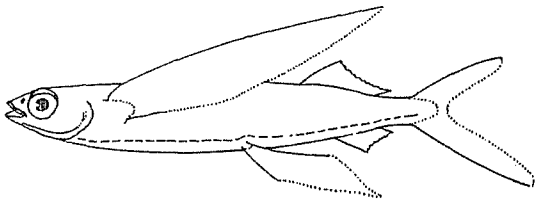
Prognichthys gibbifrons: first two pectoral fin rays unbranched; fewer than 25 predorsal scales; anal fin origin 3 or more rays behind dorsal fin origin.



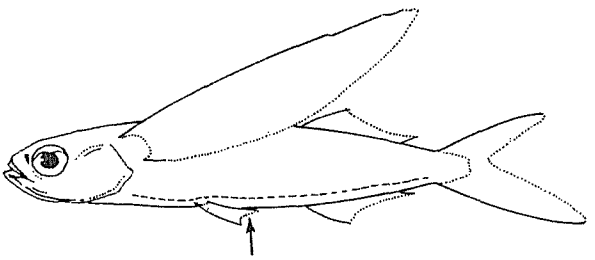
left pectoral fin showing unbranched rays (numbers) and pigmentation

Cypselurus species: dorsal fin with 2 to 5 more rays than anal fin (equal number of rays in both fins or 1 more anal than dorsal fin rays in H. speculiger).

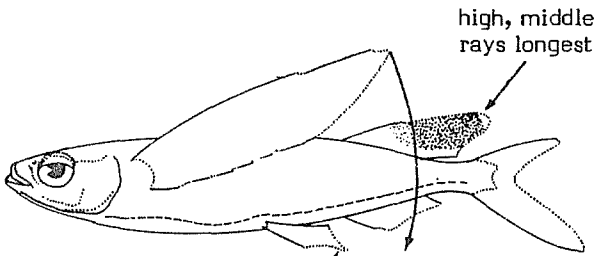
All other species of Exocoetidae: pelvic fins short, not reaching, or barely reaching (Parexocoetus) anal fin origin. Furthermore, pectoral fins considerably shorter and dorsal fin high, with middle rays the longest and much black pigment in Fodiator and Parexocoetus; snout pointed, much longer than eye in Fodiator.



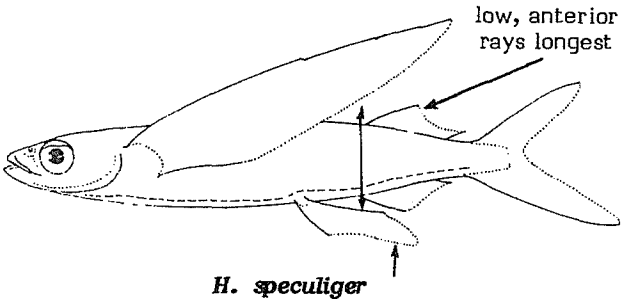
Cypselurus



Exocoetus



Parexocoetus



H. speculiger

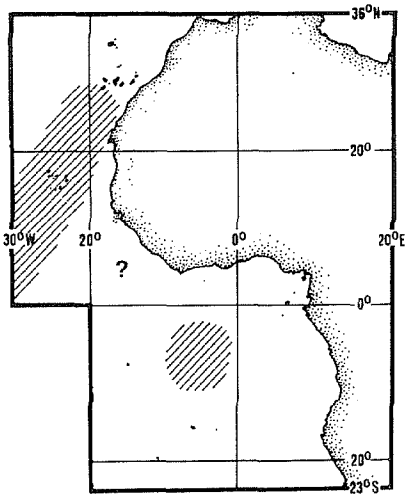
SIZE :

Maximum: about 25 cm standard length.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Tropical and subtropical Atlantic, seldom found near the coast, unless records of H. affinis from Ghana to Angola prove to be H. speculiger.

Pelagic in oceanic surface waters; capable of leaping out of the water and gliding for long distances above the surface.



PRESENT FISHING GROUNDS :

Not known to be a commercial species, but like other flyingfishes, caught accidentally in purse seines, driftnets, pelagic trawls, etc., and utilized locally (fresh, dried salted, smoked or reduced to fishmeal).

EXOC Par 1

1981

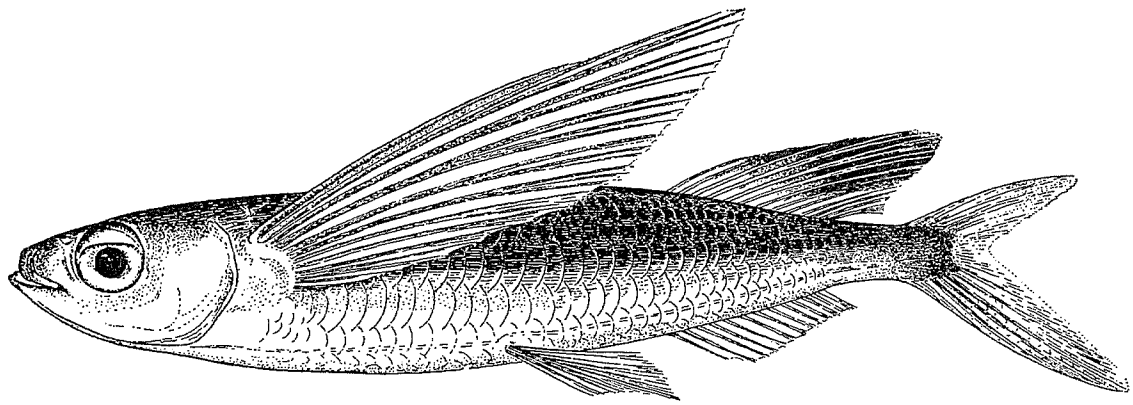
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : EXOCOETIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Parexocoetus brachypterus (Richardson, 1846)

OTHER SCIENTIFIC NAMES STILL IN USE : None. May be referred to subspecies P. b. hillianus (Gosse, 1851)



VERNACULAR NAMES:

FAO : En - Sailfin flyingfish
Fr - Exocet voilier
Sp - Volador aletón

NATIONAL :

0 3.5 cm

DISTINCTIVE CHARACTERS :

Body elongate, somewhat compressed, rounded ventrally. Greatest depth of body 17 to 20%, greatest width 11 to 13% of standard length. Head length 23 or 24% of standard length. Bony interorbital width less than 1/3 of head length; snout shorter than eye, blunt; eye diameter about 1/3 of head length. Dorsal and anal fins set far back on body, their bases short; dorsal fin high, middle rays the longest reaching past fleshy part of tail when pressed down; anal fin with 13 or 14 rays; pectoral fins strikingly long, about 55 to 60% of standard length; pelvic fins abdominal, relatively short, barely or not reaching anal fin origin.

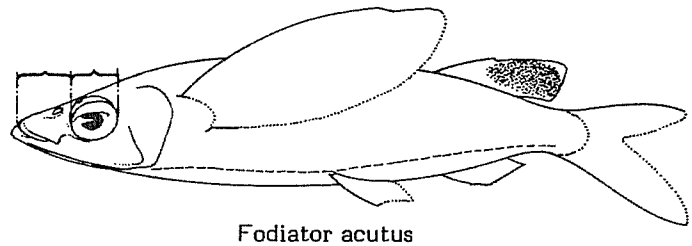
Colour: dark above, pale below, the dark colour usually iridescent blue or green in life; dorsal fin with much black pigment; pectoral fins mainly transparent.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

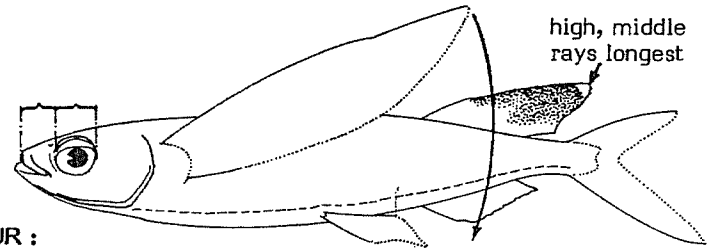
Parexocoetus mento atlanticus: body deeper and wider, its greatest depth 20 to 22%, its greatest width 15% of standard length (17 to 20, and 11 to 13%, respectively, in P. brachypterus); head a little longer and wider, its length 24 to 26% of standard length (23 to 24% in P. brachypterus); bony interorbital width greater than 1/3 of head length (less than 1/3 in P. brachypterus); eye diameter larger, greater than 1/3 of head length; pectoral fins shorter, 51 to 53% of standard length (55 to 60% in P. brachypterus); 11 or 12 anal fin rays (13 or 14 in P. brachypterus).

Fodiator acutus: snout pointed, longer than eye; pectoral fins shorter, about 50% of standard length (55 to 60% in Parexocoetus).

All other species of Exocoetidae: pectoral fins longer than 60% of standard length; dorsal fin low, rays at anterior end the longest, with or without a black spot. Furthermore, all except Exocoetus species have pelvic fins long, reaching well beyond origin of anal fin.



Fodiator acutus



Parexocoetus brachypterus

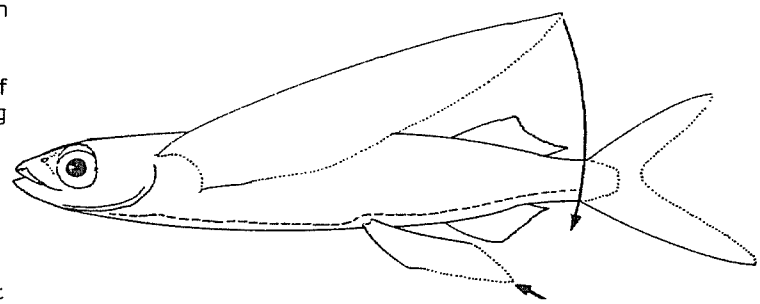
SIZE :

Maximum: about 16 cm standard length.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Off the West African coast, found from Gabon to Angola. Elsewhere, in the Western Central Atlantic.

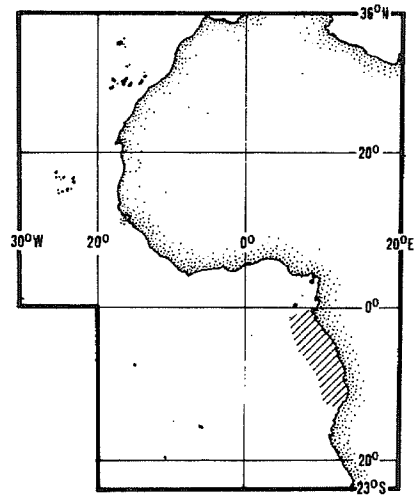
Pelagic in surface waters, capable of leaping out of the water and gliding for long distances above the surface.



Hirundichthys speculiger

PRESENT FISHING GROUNDS :

Not known to be a commercial species, but like other flyingfishes, caught accidentally in purse seines, driftnets, pelagic trawls, etc., and utilized locally (fresh, dried salted, smoked or reduced to fishmeal).



EXOC Par 2

1981

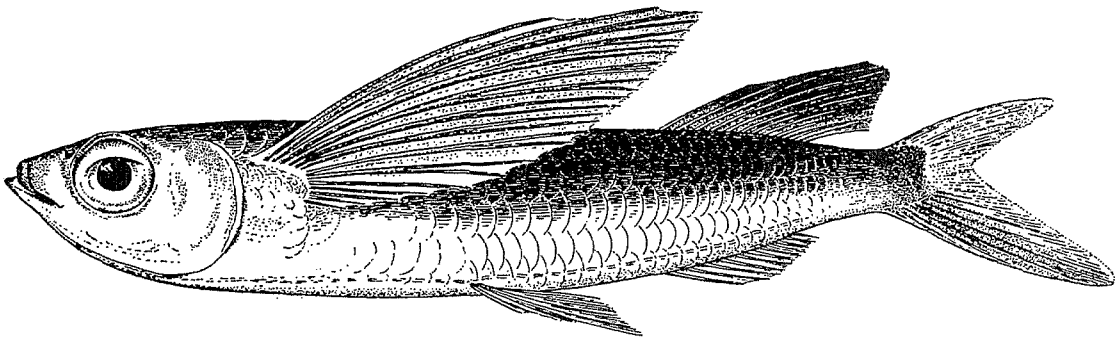
FAO SPECIES IDENTIFICATION SHEETS

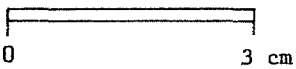
FAMILY : EXOCOETIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Parexocoetus mento atlanticus Bruun, 1933

OTHER SCIENTIFIC NAMES STILL IN USE : None





VERNACULAR NAMES:

FAO : En - African sailfin-flyingfish
Fr - Exocet volier africain
Sp - Volador aletón africano

NATIONAL :

DISTINCTIVE CHARACTERS :

Body elongate, somewhat compressed, rounded ventrally. Greatest depth of body 20 to 22%, greatest width 15% of standard length. Head length 24 to 26% of standard length. Bony interorbital width greater than 1/3 of head length. Dorsal and anal fins set far back on body, their bases short; dorsal fin high, middle rays the longest, not reaching end of fleshy part of tail when pressed down; anal fin with 11 or 12 rays; pectoral fins strikingly long, about 51 to 53% of standard length; pelvic fins abdominal, relatively short, barely or not reaching anal fin origin.

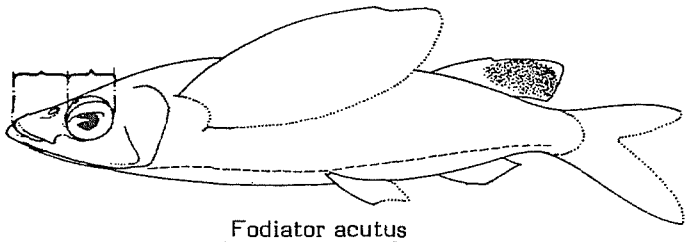
Colour: dark above, pale below; dorsal fin with much black pigment; pectoral fins mainly transparent.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Parexocoetus brachypterus: body less deep and not as wide, greatest depth 17 to 20%, greatest width 11 to 13% of standard length (20 to 22% and 15% respectively in P. m. atlanticus); head shorter and not as wide, its length 23 or 24% of standard length (24 to 26% in P. m. atlanticus); bony interorbital width less than 1/3 of head length; eye diameter smaller, equal to or less than 1/3 of head length; pectoral fins longer, 55 to 60% of standard length (51 to 53% in P. m. atlanticus); 13 or 14 anal rays (11 or 12 in P. m. atlanticus).

Fodiator acutus: snout pointed, longer than eye; pectoral fins shorter, about 50% of standard length (55 to 60% in Parexocoetus).

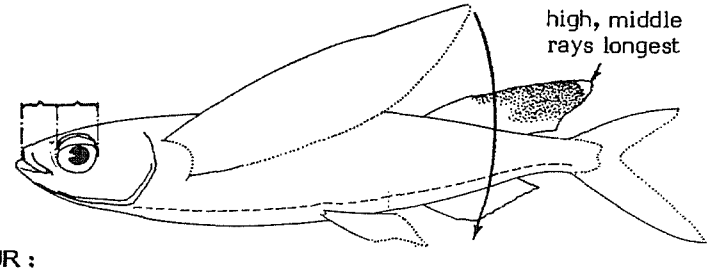
All other species of Exocoetidae: pectoral fins longer than 60% of standard length; dorsal fin low, rays at anterior end the longest, with or without a black spot. Furthermore, all except Exocoetus species have pelvic fins long, reaching well beyond origin of anal fin.



Fodiator acutus

SIZE :

Maximum: unknown; the only two specimens known are smaller than 7.5 cm.

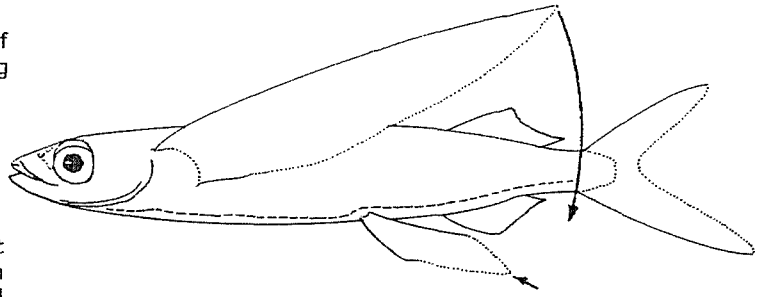


Parexocoetus

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Known only from off Mauritania.

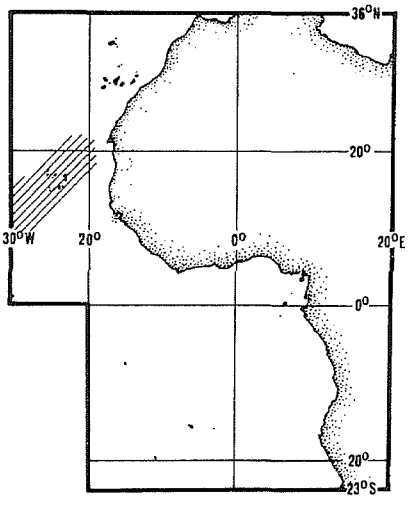
Pelagic in surface waters, capable of leaping out of the water and gliding for long distances above the surface.



Hirundichthys speculiger

PRESENT FISHING GROUNDS :

Not known to be a commercial species, but like other flyingfishes, caught accidentally in purse seines, driftnets, pelagic trawls, etc., and utilized locally (fresh, dried salted, smoked or reduced to fishmeal).



EXOC Prog 1

1981

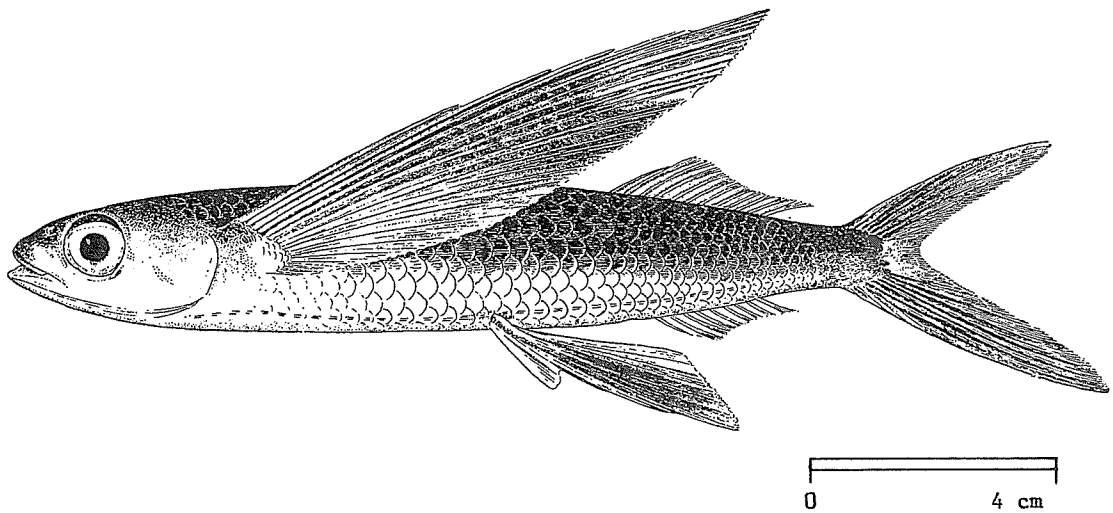
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : EXOCOETIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Prognichthys gibbifrons (Valenciennes, in Cuv. & Val., 1846)

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES:

FAO : En - Bluntnose flyingfish
Fr - Exocet jibeux
Sp - Volador jorobado

NATIONAL :

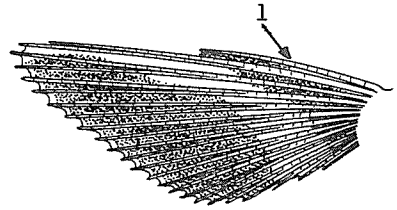
DISTINCTIVE CHARACTERS :

Body elongate, thick, somewhat flattened ventrally. Snout shorter than eye, blunt. Dorsal and anal fins set far back on body, their bases short; dorsal fin low, rays at anterior end the longest; pectoral fins strikingly long, 60 to 70% of standard length, first two rays unbranched; pelvic fins abdominal, large, reaching well beyond anal fin origin; anal fin origin 3 or more rays behind dorsal fin origin. Fewer than 25 scale rows across back in front of dorsal fin (predorsal scales).

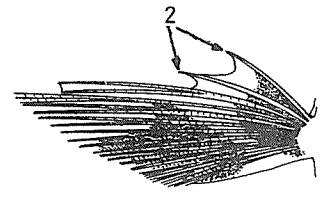
Colour: dark above, pale below, the dark colour usually iridescent blue or green in life; dorsal fin colourless or only slightly pigmented; pectoral fins light grey or transparent with darker central portion.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Cypselurus species: only the first pectoral fin ray unbranched (first two rays unbranched in Prognichthys); more than 25 predorsal scales (less than 25 in Prognichthys).



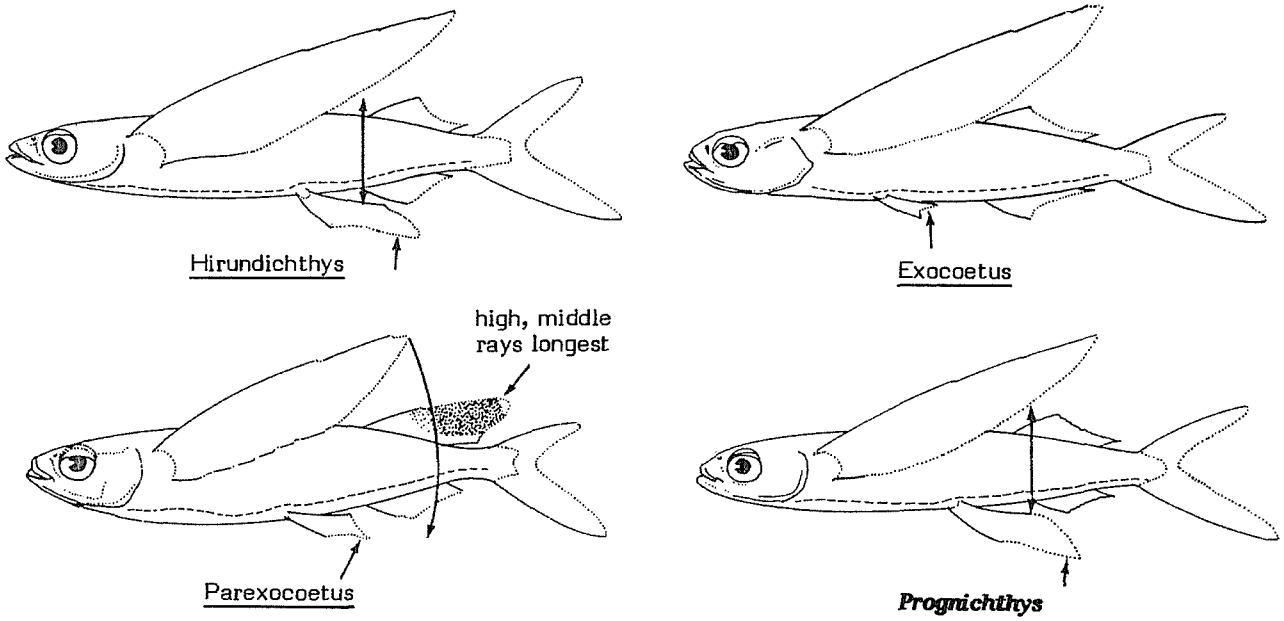
Cypselurus



Prognichthys

Hirundichthys species: anal fin origin before, or only 1 or 2 rays behind dorsal fin origin (3 or more rays behind dorsal fin origin in P. gibbifrons); more than 25 predorsal scales. Furthermore, only first pectoral fin ray unbranched in H. affinis and H. speculiger.

All other species of Exocoetidae: pelvic fins short, not reaching, or barely reaching (Parexocoetus) anal fin origin. Furthermore, pectoral fins considerably shorter and dorsal fin high, with middle rays the longest and much black pigment in Fodiator and Parexocoetus; snout pointed, much longer than eye in Fodiator.



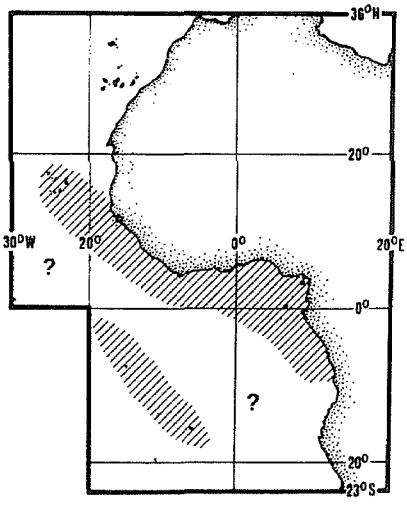
SIZE :

Maximum: about 20 cm standard length.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Found near the coast of West Africa from Senegal to Angola, as well as in the open South Atlantic. Its offshore occurrence is not well known. Also present in the Western Atlantic.

Pelagic in surface waters, capable of leaping out of the water and gliding for long distances above the surface.



PRESENT FISHING GROUNDS :

Not known to be a commercial species, but like other flyingfishes, caught accidentally in purse seines, driftnets, pelagic trawls, etc., and utilized locally (fresh, dried salted, smoked or reduced to fishmeal).

EXOC Hir 2

1981

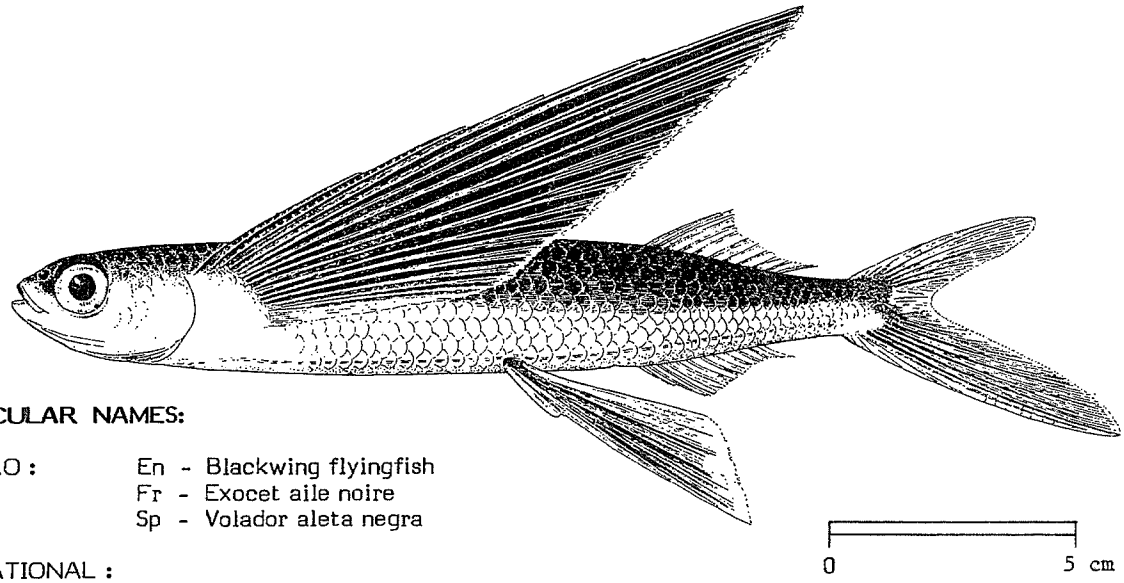
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : EXOCOETIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Hirundichthys rondeletii (Valenciennes, in Cuv. & Val., 1846)

OTHER SCIENTIFIC NAMES STILL IN USE : Danichthys rondeletii (Valenciennes, in Cuv. & Val., 1846)



0 5 cm

VERNACULAR NAMES:

FAO : En - Blackwing flyingfish
Fr - Exocet aile noire
Sp - Volador aleta negra

NATIONAL :

DISTINCTIVE CHARACTERS :

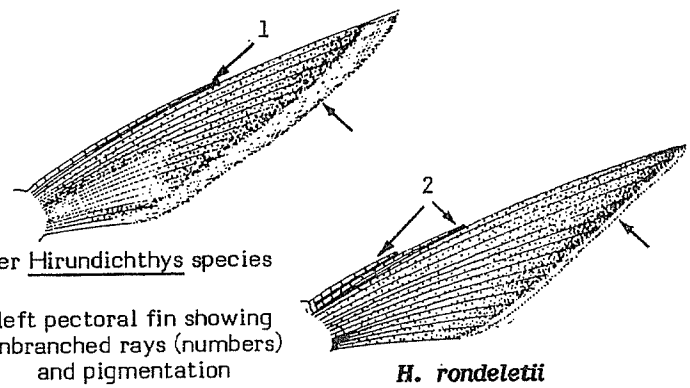
Body elongate and thick, somewhat flattened ventrally. Snout shorter than eye, blunt; palatine teeth (on roof of mouth) usually absent. Dorsal and anal fins set far back on body, their bases short; dorsal fin low, rays at anterior end the longest; anal fin origin slightly before, or 1 or 2 rays behind dorsal fin origin; pectoral fins strikingly long, 70 to 80% of standard length, first two rays unbranched; pelvic fins abdominal, large, reaching well beyond anal fin origin. More than 25 scale rows across back in front of dorsal fin (predorsal scales).

Colour: dark above, pale below, the dark colour usually iridescent blue or green in life; dorsal fin colourless or only slightly pigmented; pectoral fins dark with a narrow white margin (on trailing edge when extended), but without a pale basal triangle.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Other Hirundichthys species: only the first ray of pectoral fins unbranched (first two rays unbranched in H. rondeletii), and a pale basal triangle on pectoral fins; also, white margin of pectoral fin broad and palatine teeth usually present in H. speculiger.

Prognichthys gibbifrons: fewer than 25 predorsal scales; anal fin origin 3 or more rays behind dorsal fin origin.



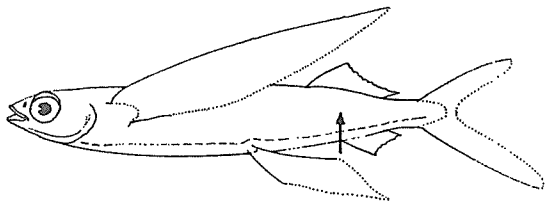
other Hirundichthys species

left pectoral fin showing unbranched rays (numbers) and pigmentation

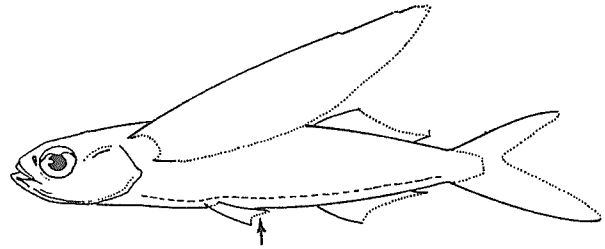
H. rondeletii

Cypselurus species: dorsal fin with 2 or more rays than anal fin (equal number of rays in both fins or 1 to 2 more anal than dorsal fin rays in H. rondeletii).

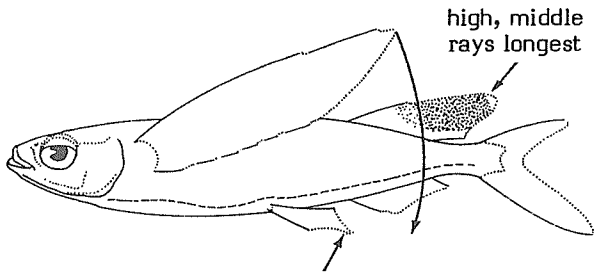
All other species of Exocoetidae: pelvic fins short, not reaching or barely reaching (Parexocoetus) anal fin origin. Furthermore, pectoral fins considerably shorter and dorsal fin high, with middle rays the longest and much black pigment in Fodiator and Parexocoetus; snout pointed, much longer than eye in Fodiator.



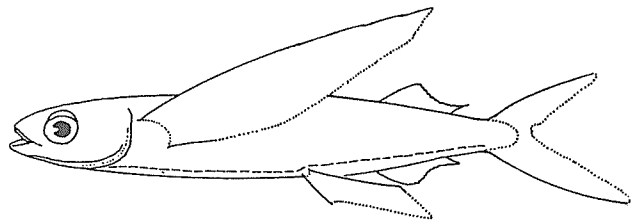
Cypselurus



Exocoetus



Parexocoetus



H. rondeletii

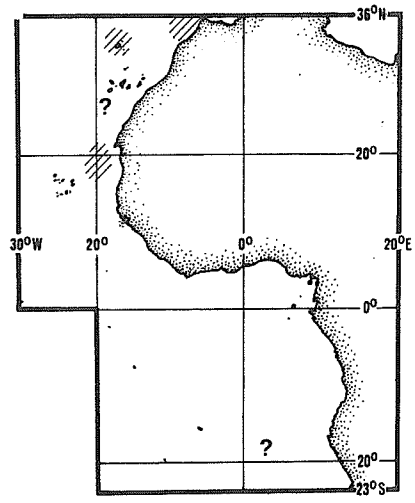
SIZE :

Maximum: about 25 cm standard length.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Off West Africa, so far recorded only from Gibraltar to Mauritania, but might be expected off Angola. Occurs across the Atlantic north of about 25°N, probably also south of about 25°S.

Pelagic in oceanic surface waters; capable of leaping out of the water and gliding for long distances above the surface.



PRESENT FISHING GROUNDS :

Not known to be a commercial species, but like other flyingfishes, caught accidentally in purse seines, driftnets, pelagic trawls, etc., and utilized locally (fresh, dried salted, smoked or reduced to fishmeal).

FIST

1981

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

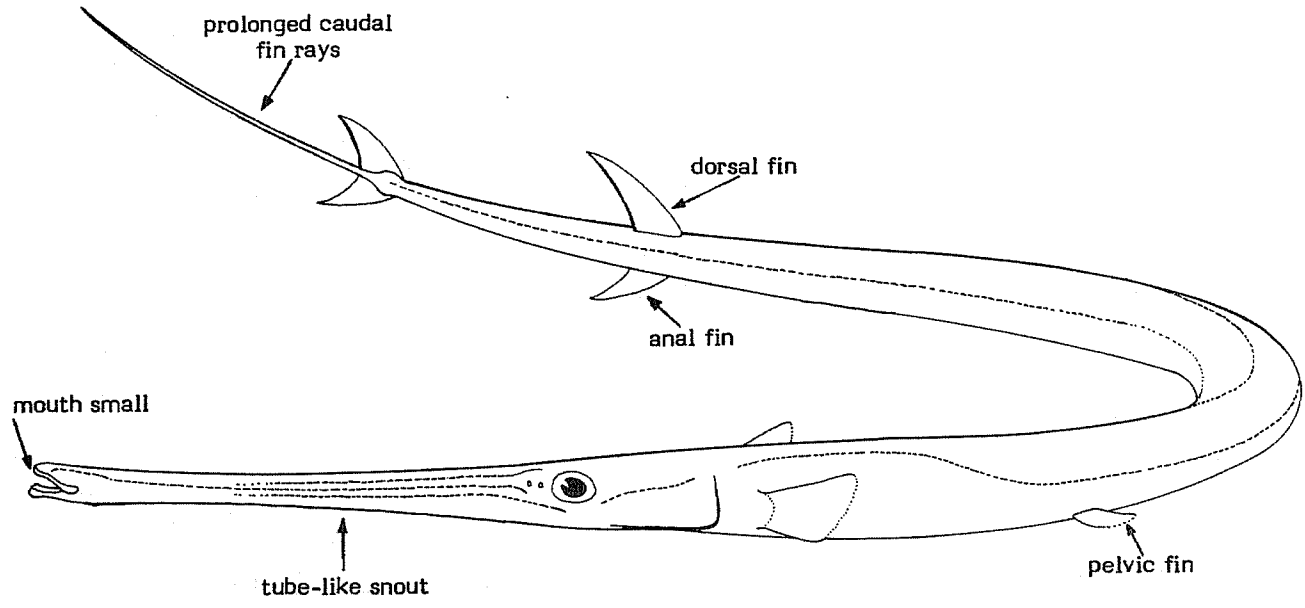
FISTULARIIDAE

Cornetfishes, flutemouths

Body elongate and depressed. Mouth small, at end of a long tubular snout, hexagonal in cross section; teeth in jaws small. Dorsal and anal fins short-based and opposite, with 14 to 16 segmented (soft) rays; pectoral fins with 15 to 17 rays; pelvic fins small and abdominal, with 6 rays. Lateral line arched, running anteriorly along back, then bending downward on side and continuing posteriorly onto an elongate filament produced by the middle 2 caudal fin rays, the line composed of tube-shaped ossifications that gradually take the form of long bony shields sometimes bearing sharp spines. Body of juveniles covered with rows of small spinules which are retained in the adults of only one Eastern Atlantic species (F. petimba); a row of elongate bony plates may be present along dorsal and ventral midlines of body just anterior to dorsal and/or anal fin. Total number of vertebrae 76 to 87, with the first 4 elongate and fused.

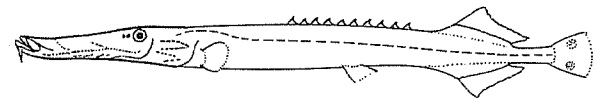
Colour: variable with the species; either red to orange-brown above and silvery below, or brownish-olive above, lighter below, with a series of blue spots on back and snout.

Large fishes, reaching up to about 2 m in total length. F. petimba is typically found in coastal areas over soft bottoms, usually at depths greater than 10 m. F. tabacaria is most often seen in seagrass beds and coral reefs. Cornetfishes feed on small fishes and shrimps. Although not important in the commercial fishery of the area, they are frequently taken in trawls and by various types of artisanal gear and may appear in local fish markets. Although edible, they are most often used for fishmeal.



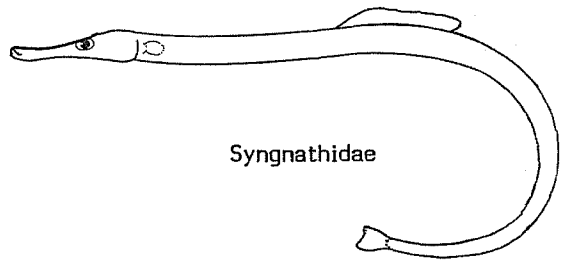
SIMILAR FAMILIES OCCURRING IN THE AREA:

Aulostomidae: no caudal filament; barbel present on lower jaw; body compressed rather than depressed; distinct separate spines anterior to soft dorsal fin.



Aulostomidae

Syngnathidae: smaller; body covered with armour; anal fin reduced or absent; caudal filament absent.

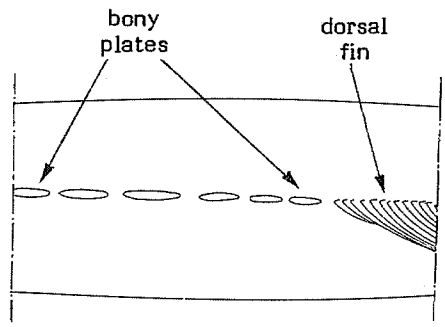


Syngnathidae

KEY TO SPECIES OCCURRING IN THE AREA:

1 a. A row of elongate bony plates embedded in skin along midline of back anterior to dorsal fin (Fig. 1); posterior lateral-line ossifications ending in a sharp spine; immaculate red or brown above ..... Fistularia petimba

1 b. No elongate bony plates along midline of back; posterior lateral-line ossifications without a spine; rows of blue spots on back, sides and snout ..... Fistularia tabacaria



sector of back in front of dorsal fin

Fig. 1

LIST OF SPECIES OCCURRING IN THE AREA:

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

Fistularia petimba Lacepède, 1803	FIST Fist 1
Fistularia tabacaria Linnaeus, 1758	FIST Fist 2

Prepared by R.A. Fritzsche, Department of Biology, The University of Mississippi, University, Mississippi, U.S.A.

FIST Fist 1
1981

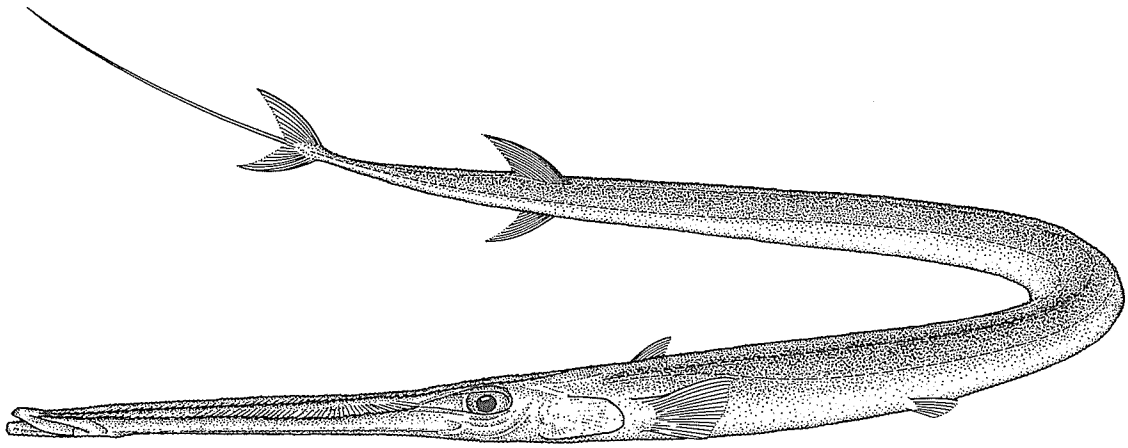
FAO SPECIES IDENTIFICATION SHEETS

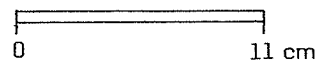
FAMILY : FISTULARIIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Fistularia petimba Lacepède, 1803

OTHER SCIENTIFIC NAMES STILL IN USE : Fistularia serrata Cuvier, 1817
Fistularia villosa Klunzinger, 1871





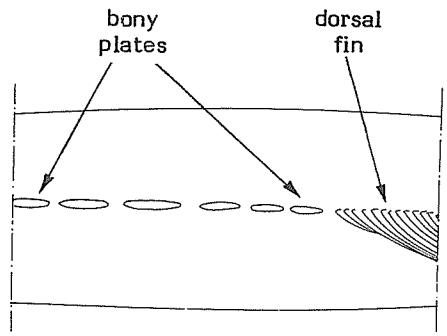
VERNACULAR NAMES:

FAO : En - Red cornetfish
Fr - Cornette rouge
Sp - Corneta colorada

NATIONAL :

DISTINCTIVE CHARACTERS :

Body elongate and depressed. Mouth at end of a long, tubular snout, hexagonal in cross section; teeth in jaws small; ridges on snout with antrorse (forward-pointing) serrations, the upper ridges parallel; interorbital space narrow and nearly flat. Dorsal and anal fins short-based and opposite, with 14 to 16 segmented (soft) rays; pectoral fins with 15 or 16 rays; pelvic fins small and abdominal, with 6 rays. Lateral line arched, running anteriorly almost along middle of back, then bending down to middle of sides and continuing posteriorly onto an elongate filament produced by the middle 2 caudal fin rays; posterior lateral-line ossifications bearing sharp, retrorse (backward-pointing) spines. A row of elongate bony plates present on midlines of body just anterior to dorsal and/or anal fin; spinules in skin well developed at all sizes. Vertebrae 76, the first 4 elongate and fused.



sector of back in front of dorsal fin

Colour: in life red to orange-brown above, silvery below; vertical fins also have an orange cast.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

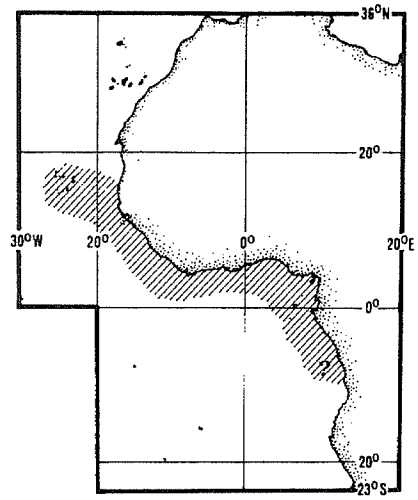
Fistularia tabacaria: no elongate bony plates along midline of back; posterior lateral line ossifications without spines; rows of blue spots on back and snout.

SIZE:

Maximum: 200 cm; common to 100 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

In the Eastern Atlantic, from the Cape Verde Islands southward to about Zaire or Angola. Also in the western tropical Atlantic, Indo-West Pacific and Hawaii.



Found in coastal areas over soft bottoms, usually at depths greater than 10 m.

Feeds on small fishes and shrimps.

PRESENT FISHING GROUNDS:

No special fishery, but caught frequently in bottom trawls and in artisanal fisheries.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught with bottom trawls, gillnets and line gear.

Utilized fresh, dried salted or smoked, but more often reduced to fishmeal. Apparently not consumed in some countries (i.e. Ivory Coast).

FIST Fist 2

1981

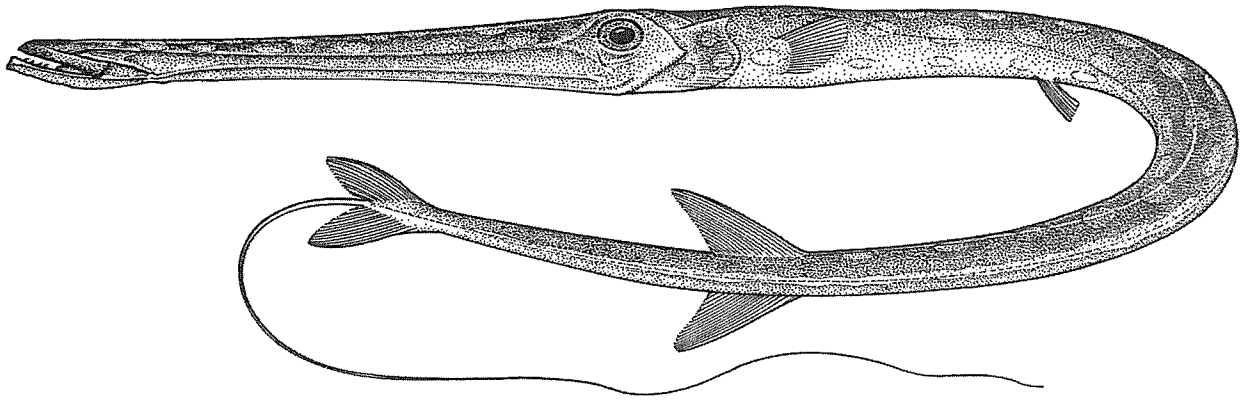
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : FISTULARIIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Fistularia tabacaria Linnaeus, 1758

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES:

FAO : En - Bluespotted cornetfish
Fr - Cornette à taches bleues
Sp - Corneta

NATIONAL :

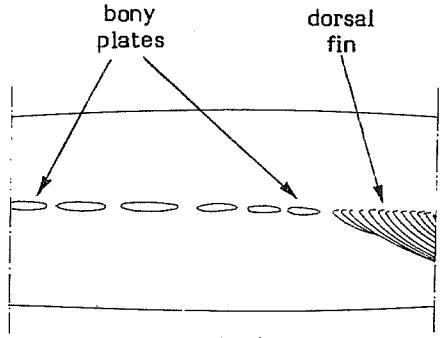
DISTINCTIVE CHARACTERS :

Body elongate and depressed. Mouth at end of a long, tubular snout, hexagonal in cross section; teeth in jaws small; ridges on snout smooth in adults, the upper ridges parallel; interorbital space narrow with a smooth depression. Dorsal and anal fins short-based and opposite, with 14 to 16 segmented (soft) rays; pectoral fins with 15 or 16 rays; pelvic fins small and abdominal, with 6 rays. Lateral line arched, running anteriorly almost along middle of back, then bending down to side and continuing posteriorly onto an elongate filament produced by the middle 2 caudal fin rays; posterior lateral line ossifications without spines. Body covered in juveniles with rows of small spinules which become obsolete in adults. Vertebrae 87, the first 4 elongate and fused.

Colour: in life brownish above, lighter below, but general pattern variable with environment; a series of pale blue spots running on midline of back from head to dorsal fin and row of pale blue spots on either side often coalescing into a solid line posteriorly, lateral to the mid-dorsal row; two lateral rows of blue spots on snout.

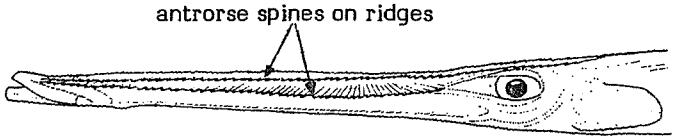
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Fistularia petimba: elongate bony plates embedded in skin along midline of back; posterior lateral line ossifications ending in a short spine; immaculate red or brown above, without blue spots.



sector of back in front of dorsal fin

F. petimba

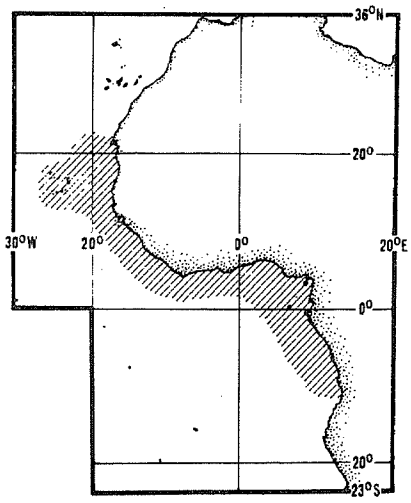


F. petimba

SIZE :

Maximum: about 180 cm; common to 100 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :



In the Eastern Atlantic, from about Cape Blanc southward to Angola. Also found in the Western Central Atlantic.

Most common in seagrass beds and coral reefs in shallow water.

Feeds on small fishes and shrimps.

PRESENT FISHING GROUNDS :

No special fishery, but taken frequently in trawls and artisanal fisheries.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Caught with bottom trawls, gillnets and line gear.

Utilized fresh, dried salted or smoked, but more often reduced to fishmeal. Apparently not consumed in some countries (i.e. Ivory Coast).

GADI

1981

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

GADIDAE

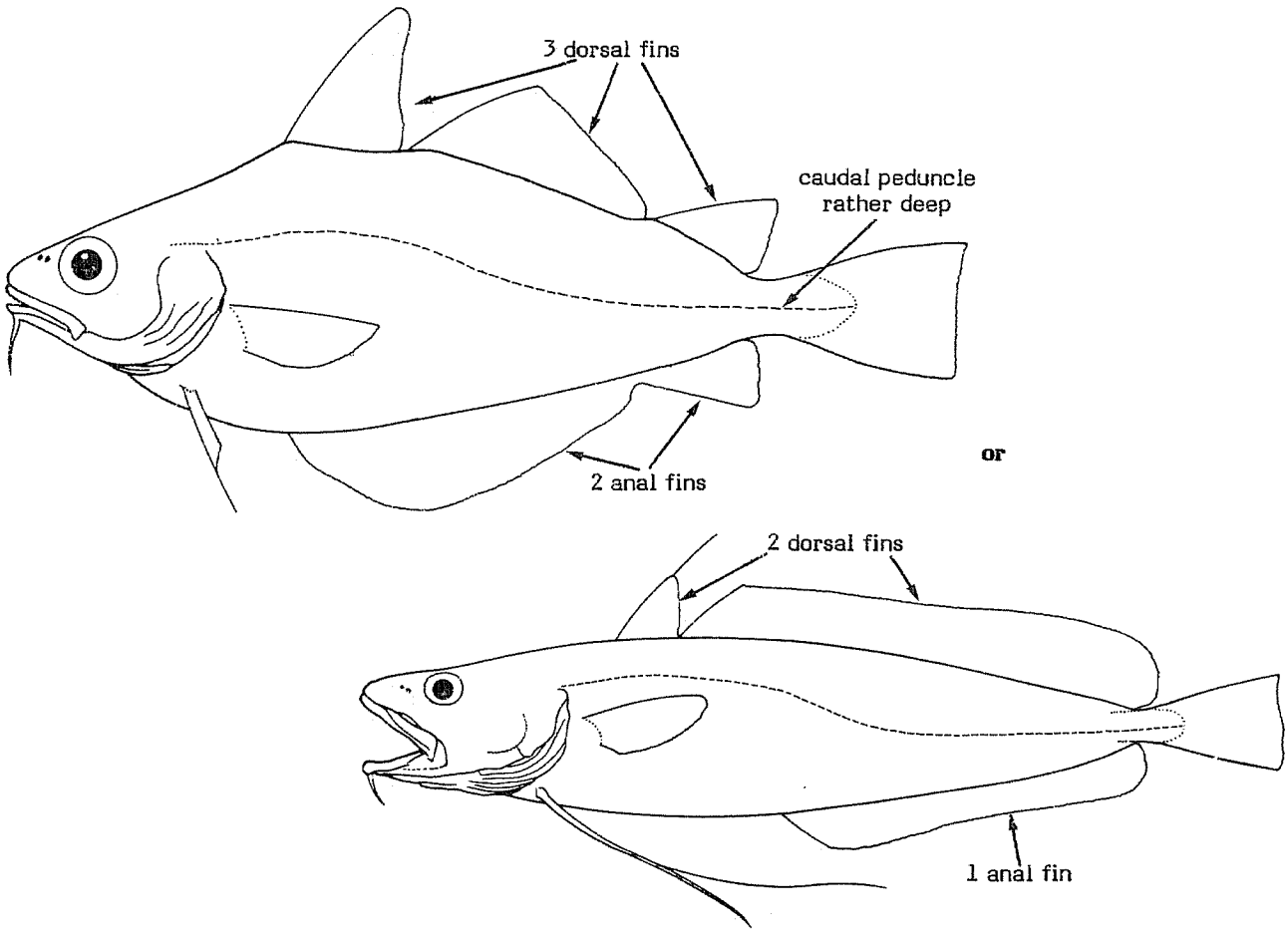
(Moridae and Merlucciidae are included in this family by some ichthyologists, but these families are treated separately here)

Cods and codlings

Body fusiform to elongate; caudal peduncle relatively deep. Most species with a well developed tooth patch on head of vomer (roof of mouth); chin barbel present in most species. Fins lacking spines; 1, 2 or 3 dorsal fins and 1 or 2 anal fins; pelvic fins thoracic, widely separated; caudal fin separate from dorsal and anal fins. Small cycloid scales on the body and head.

Colour: generally drab, tan to dark brown, but some species silvery or with dark blotches.

In the area, fishes living on or near the bottom as adults, except for the pelagic Gadiculus. Early stages of all, so far as known, are pelagic. Depth distribution ranges from tide pools for some Gaidropsarus species to an extreme of 1 300 m for Phycis.



SIMILAR FAMILIES OCCURRING IN THE AREA:

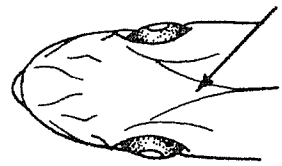
Merlucciidae: a V-shaped ridge on top of the head, with its apex at the nape.

Moridae: caudal peduncle relatively narrow; anterior paired projections of swimbladder attached to a thin membranous area at the rear of cranium (not attached in Gadidae).

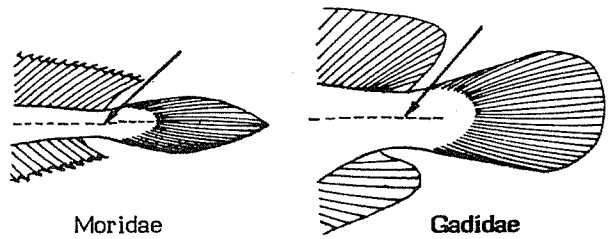
Macrouridae: no caudal fin.

Ophidiidae: caudal fin joined to dorsal and anal fins; pelvic fins close together placed far forward under the eye in some species.

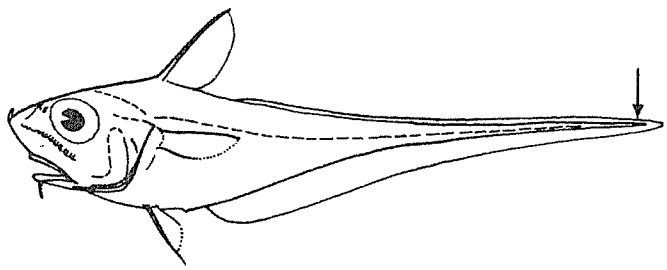
Ateleopodidae: no scales; no free caudal fin; a single dorsal fin placed far forward on the body.



Merlucciidae
head viewed from above

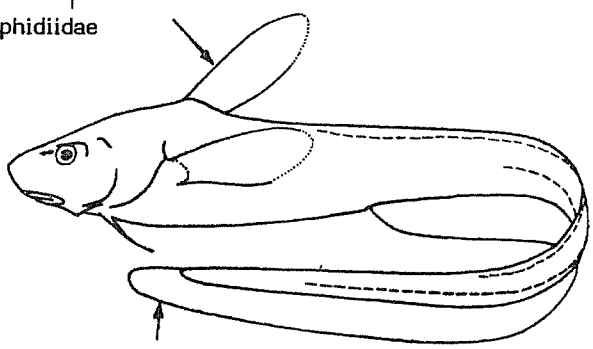


Moridae **Gadidae**
caudal peduncle

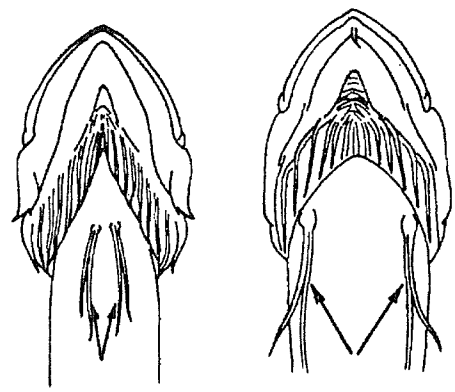


Macrouridae

Ophidiidae



Ateleopodidae



Ophidiidae **Gadidae**
underside of head

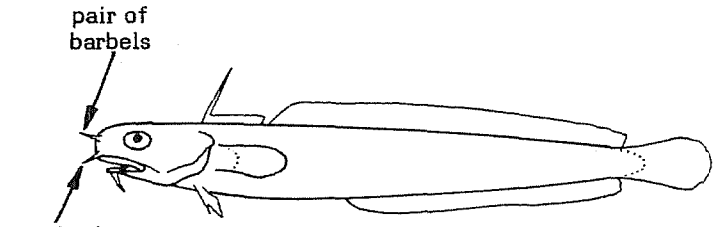
KEY TO GENERA OCCURRING IN THE AREA:

1 a. One anal fin

2 a. Barbels present on snout and chin; anterior part of dorsal fin formed by a series of very short, hair-like rays set in a groove, preceded by 1 longer ray (Figs. 1,2)

3 a. Three barbels on snout (Fig. 1) ..... Enchelyopus

3 b. Two barbels on snout (Fig. 2) ..... Gaidropsarus

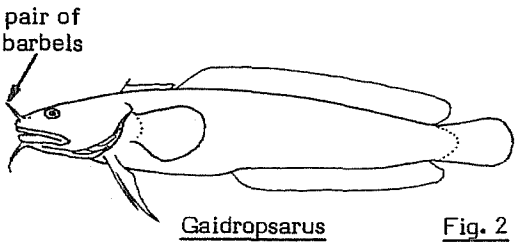


Enchelyopus Fig. 1

2 b. Barbels absent from snout, present on chin; dorsal fin(s) differently conformed

4 a. Pelvic fins with 2 rays in each (Fig. 3) ..... Phycis

4 b. Pelvic fins with 6 rays in each (Fig. 4) ..... Molva



Gaidropsarus Fig. 2

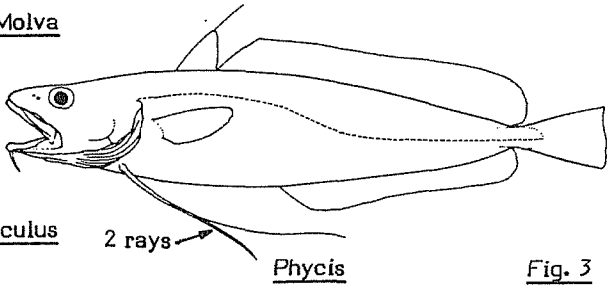
1 b. Two anal fins

5 a. First anal fin with a short base, about equal in length to the second dorsal fin base, under which it begins (Fig. 5) ..... Gadiculus

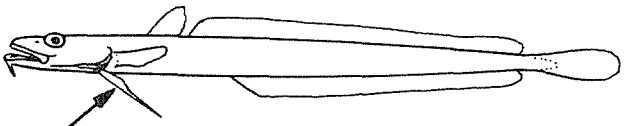
5 b. First anal fin long-based, longer than second dorsal fin base, beginning under or ahead of first dorsal fin (Figs. 6,7)

6 a. Chin barbel present; third dorsal fin immediately behind second dorsal fin (Fig. 6) ..... Trisopterus

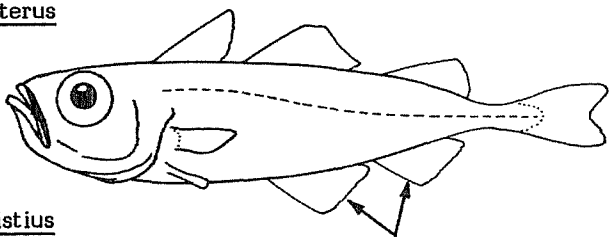
6 b. No chin barbel; third dorsal fin separated from second dorsal fin by a long space equal to or longer than the second dorsal fin base (Fig. 7) ..... Micromesistius



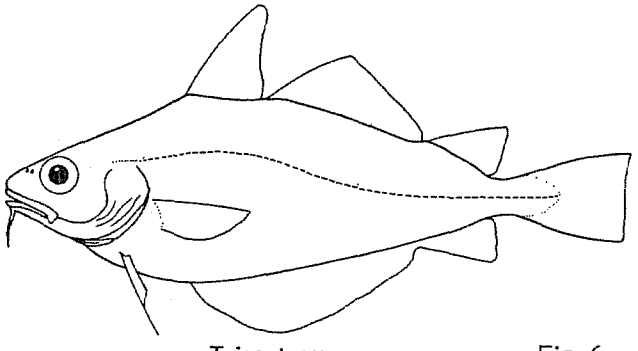
Phycis Fig. 3



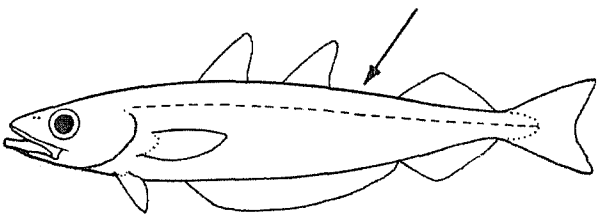
Molva Fig. 4



Gadiculus Fig. 5



Trisopterus Fig. 6



Micromesistius Fig. 7

LIST OF SPECIES OCCURRING IN THE AREA:

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

Enchelyopus cimbrius (Linnaeus, 1766)	
Gadiculus argenteus Guichenot, 1850	
Gaidropsarus granti (Regan, 1903)	
Gaidropsarus guttatus (Collett, 1890)	
Micromesistius poutassou (Risso, 1826)	GADI Microm 1
Molva macrophthalma (Rafinesque, 1810)	
Phycis blennoides (Brünnich, 1768)	GADI Phyc 1
Phycis phycis (Linnaeus, 1766)	GADI Phyc 2
Trisopterus luscus (Linnaeus, 1758)	GADI Triso 2
Trisopterus minutus (Linnaeus, 1758)	

Prepared by D.M. Cohen, NMFS Systematics Laboratory, NOAA, National Museum of Natural History, Washington, D.C., U.S.A.

Part of the original illustrations provided by author

GADI Microm 1

1981

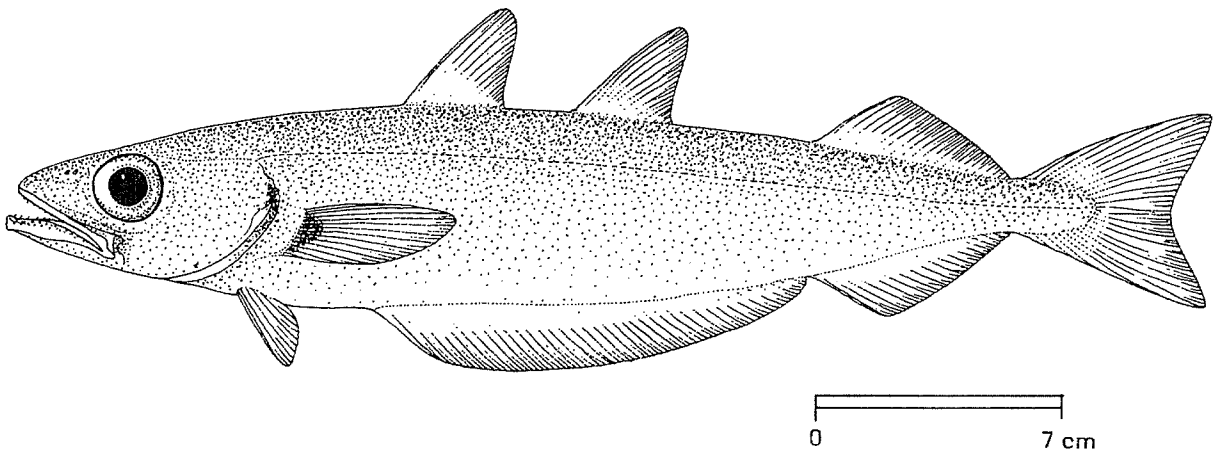
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : GADIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Micromesistius poutassou (Risso, 1826)

OTHER SCIENTIFIC NAMES STILL IN USE : Gadus poutassou (Risso, 1826)



VERNACULAR NAMES:

FAO : En - Blue whiting
Fr - Merlan bleu
Sp - Bacaladilla

NATIONAL :

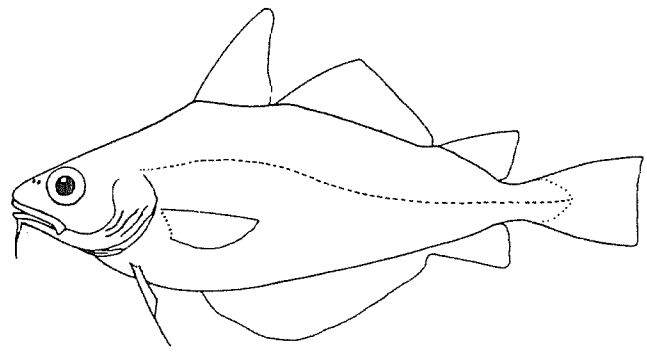
DISTINCTIVE CHARACTERS :

Body slender and relatively elongate. No barbel on chin; head of vomer (on roof of mouth) with only 1 or 2 teeth on each side; no spines in fins; 3 dorsal fins, a long space between the second and the third; 2 anal fins, the first with a long base beginning under origin of first dorsal fin and ending under origin of third dorsal; pelvic fins with 6 rays.

Colour: blue-grey, paler on belly; often a dark blotch at bases of pectoral fins.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

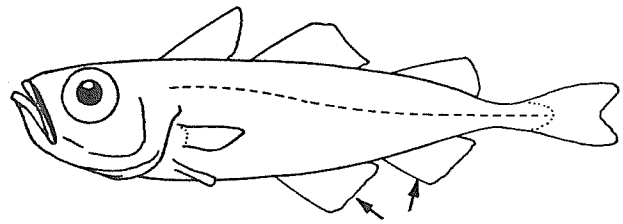
Trisopterus species: dorsal fins close together; chin barbel present.



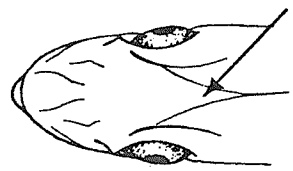
Trisopterus

Gadiculus argenteus: first anal fin with a short base, about equal in length to second dorsal fin base under which it begins.

Other gadoid fishes in the area: 1 or 2 dorsal fins. Furthermore, a V-shaped ridge on top of head in Merlucciidae and caudal peduncle relatively narrow in Moridae.



Gadiculus



Merlucciidae
head viewed from above

SIZE :

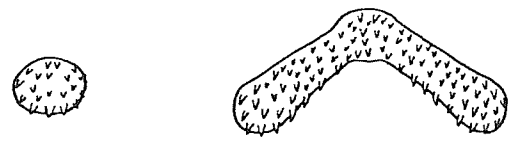
Maximum: 42 cm; common to about 30 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

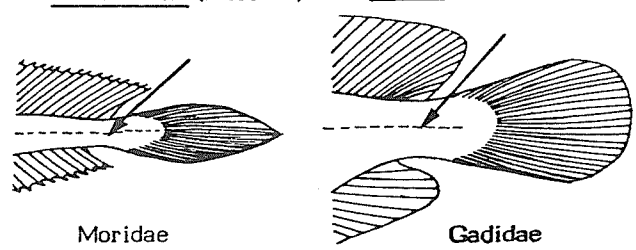
In the area, from Gibraltar southward to Cape Bojador. Northward extending into the Mediterranean and along the Atlantic coast of Europe up to Iceland, the Barents Sea, Greenland, and occasionally, to the northeast coast of the U.S.A.

A meso- to benthopelagic species, usually occurring at depths of 100 to about 400 m. Often in large schools; found only at oceanic salinities.

Feeds mainly on small fishes such as myctophids, and on pelagic crustaceans.



Laemonema (Moridae) Phycis (Gadidae)



Moridae Gadidae

caudal peduncle

PRESENT FISHING GROUNDS :

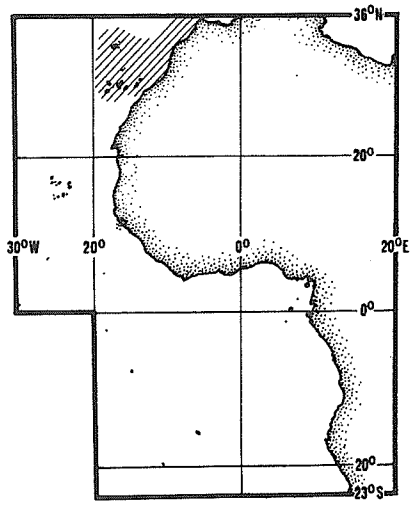
Taken in deeper shelf waters and along the upper slope throughout its range.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

The catch reported from the area in 1978 totalled 4 500 tons.

Caught with bottom trawls.

Marketed fresh locally, but most of the catch is reduced to fishmeal; the flesh is excellent, but spoils easily.



GADI Phyc 1

1981

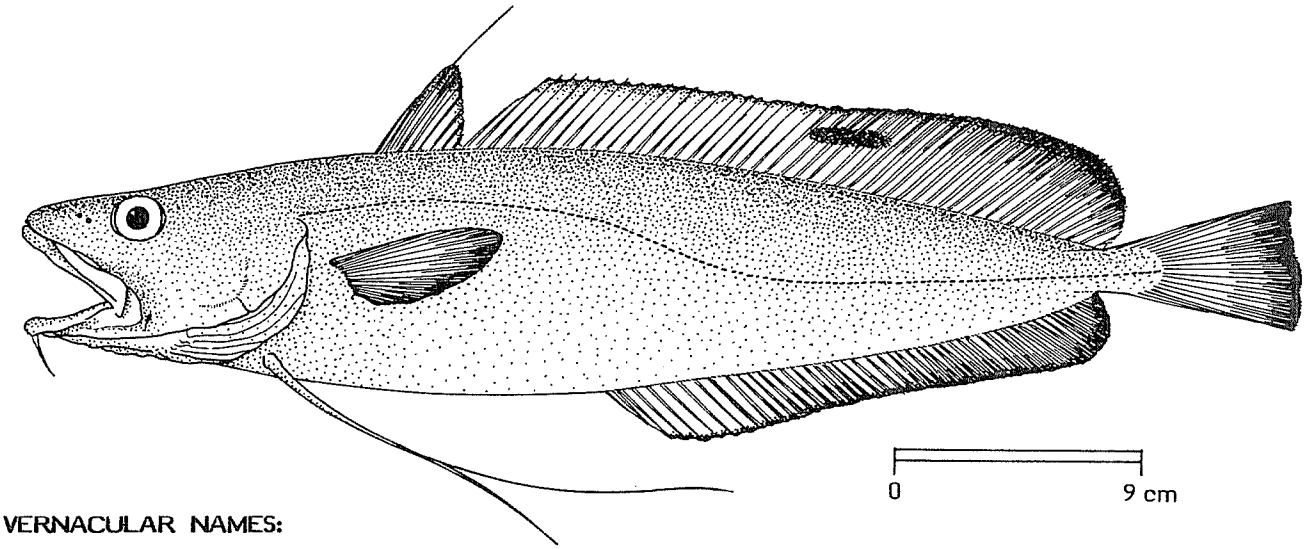
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : GADIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Phycis blennoides (Brünnich, 1768)

OTHER SCIENTIFIC NAMES STILL IN USE : Phycis blennioides (incorrect spelling)



VERNACULAR NAMES:

FAO : En - Greater forkbeard
Fr - Phycis de fond
Sp - Brótola de fango

NATIONAL :

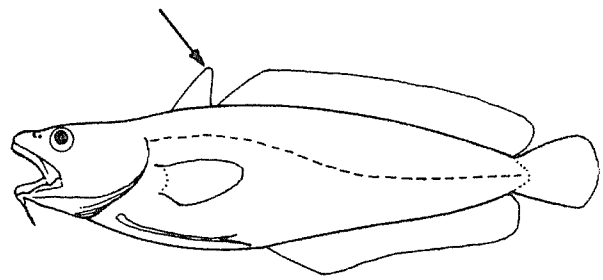
DISTINCTIVE CHARACTERS :

Body moderately elongate. Chin barbel present; head of vomer (roof of mouth) with a broadly V-shaped tooth plate. No spines in fins; 2 dorsal fins- the first with a slightly elongated filament and a short base, the second long-based; a single long-based anal fin; pelvic fins long and filamentous, 2 rays in each, extending well beyond anal fin origin. Scale rows between first dorsal and lateral line 5 or 6.

Colour: light brown to grey-pink, the belly pale; vertical fins with dusky margins, often a dark spot at mid-length of second dorsal.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Phycis phycis: body deeper; no elongate filament in first dorsal fin; pelvic fins reaching only slightly if at all beyond anal fin origin; scale rows between first dorsal and lateral line 11 or more.



Phycis phycis

Molva macrophthalma: body much more elongate; pelvic fins with 6 rays.

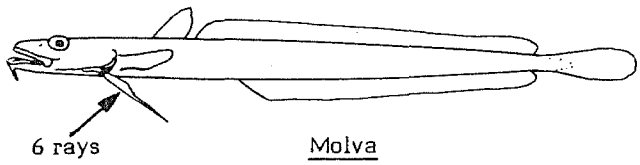
Enchelyopus and Gaidropsarus species: body more elongate; barbels present on snout (in addition to chin barbel); anterior part of dorsal fin formed by a series of short hair-like rays set in a groove, preceded by 1 longer ray.

Other species of Gadidae in the area: 3 dorsal and 2 anal fins.

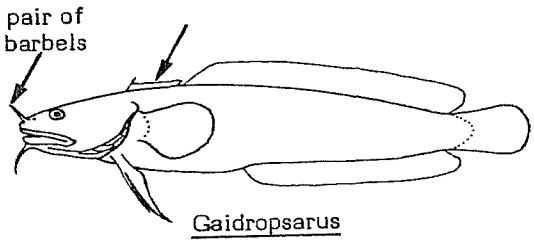
Species of Merlucciidae: a V-shaped ridge on top of head; pelvic fins with 6 rays.

Laemonema species: head of vomer (on roof of mouth) with a small round tooth patch or none at all.

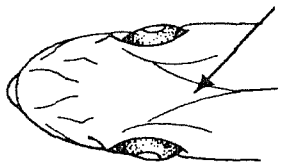
Species of Moridae: caudal peduncle relatively narrow. Furthermore, Physiculus, Bromisculus, Gadella, Mora and Lepidion with 5 or more rays in pelvic fins.



Molva

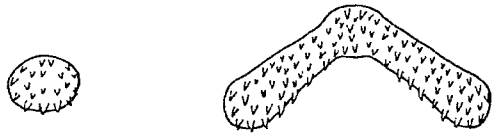


Gaidropsarus

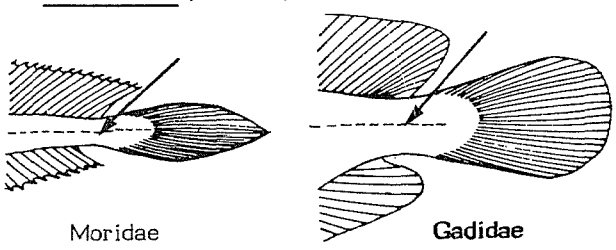


Merlucciidae

head viewed from above



Laemonema (Moridae) *Phycis* (Gadidae)



Moridae Gadidae

caudal peduncle

SIZE :

Maximum: 80 cm; common to 45 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

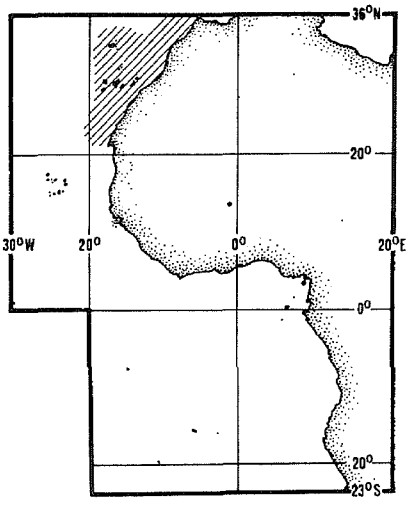
In the area, from Gibraltar southward to Cape Blanc, including offlying islands. Northward extending into the Mediterranean and along the Atlantic coast of Europe up to Norway and Iceland (68°N).

A benthopelagic species occurring on sand and mud bottoms mostly at 100 to 300 m, but taken as deep as 800 m.

Feeds on fishes and crustaceans.

PRESENT FISHING GROUNDS :

Taken by offshore trawlers throughout its range.



CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

The catch from the area reported in 1978 totalled 120 t (1977: 590 t).

Caught with bottom trawls.

Marketed fresh.

GADI Phyc 2

1981

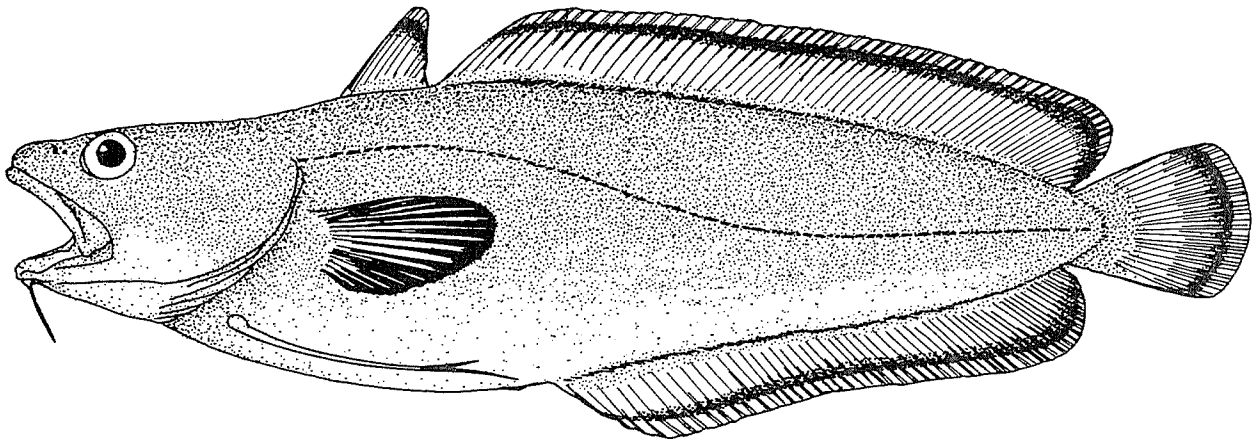
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : GADIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Phycis phycis (Linnaeus, 1766)

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES:

FAO : En - Forkbeard
Fr - Phycis de roche
Sp - Brótola de roca

NATIONAL :

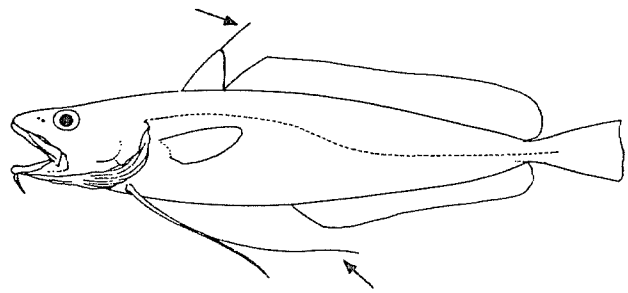
DISTINCTIVE CHARACTERS :

Body relatively deep. Chin barbel present; head of vomer (on roof of mouth) with a broadly V-shaped tooth patch. No spines in fins; 2 dorsal fins, the first with a short base and lacking an elongated filament, the second long-based; a single, long-based anal fin; pelvic fins long and filamentous, 2 rays in each, reaching slightly to about, or slightly beyond anal fin origin. Scale rows between first dorsal and lateral line 11 or more.

Colour: dark to reddish brown, somewhat paler ventrally. Vertical fins dark distally but with a pale margin.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Phycis blennoides: a somewhat elongated filament in first dorsal fin; pelvic fins reaching well beyond anal fin origin; scale rows between first dorsal and lateral line 5 or 6.



Phycis blennoides

Molva macrophthalma: body much more elongate; pelvic fins with 6 rays.

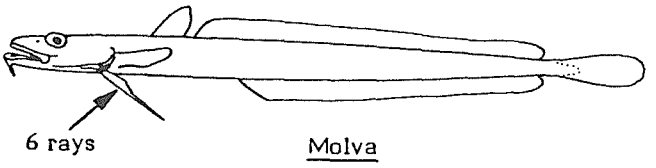
Enchelyopus and Gaidropsarus species: body more elongate; barbels present on snout (in addition to chin barbel); anterior part of dorsal fin formed by a series of short hair-like rays set in a groove, preceded by 1 longer ray.

Other species of Gadidae in the area: 3 dorsal and 2 anal fins.

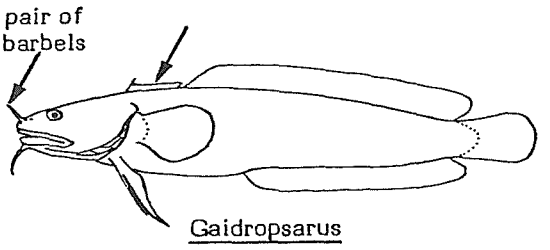
Species of Merlucciidae: a V-shaped ridge on top of head; pelvic fins with 6 rays.

Laemonema species: head of vomer (on roof of mouth) with a small round tooth patch or none at all.

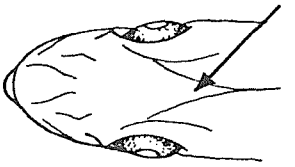
Species of Moridae: caudal peduncle relatively narrow. Furthermore, Physiculus, Bromisculus, Gadella, Mora and Lepidion with 5 or more rays in pelvic fins.



Molva



Gaidropsarus



Merlucciidae

head viewed from above

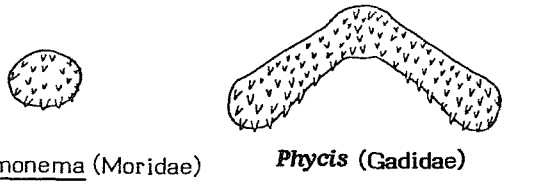
SIZE :

Maximum: at least 65 cm; common to about 40 cm.

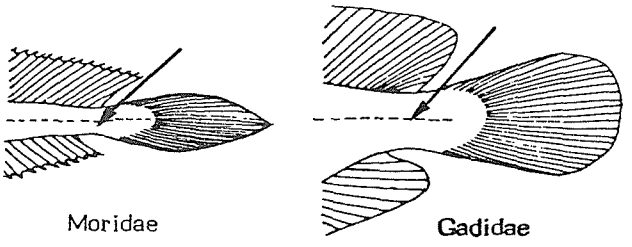
GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

In the area, from Gibraltar southward to Cape Verde, including offlying islands. Northward extending into the Mediterranean and along the Atlantic coast of Europe up to the Bay of Biscay and the Azores.

A benthopelagic species, most common on hard bottoms at 100 to 200 m but sometimes taken at greater depths.



Laemonema (Moridae) *Phycis* (Gadidae)

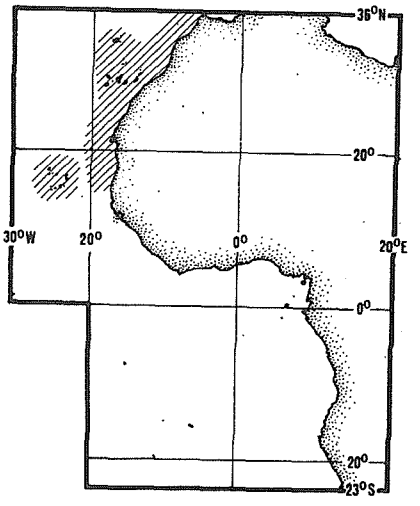


Moridae Gadidae

caudal peduncle

PRESENT FISHING GROUNDS :

Taken occasionally as bycatch by offshore trawlers throughout its range, but apparently not abundant enough in the area to support a special fishery.



CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Caught with bottom trawls.

Marketed fresh.

GADI Triso 2

1981

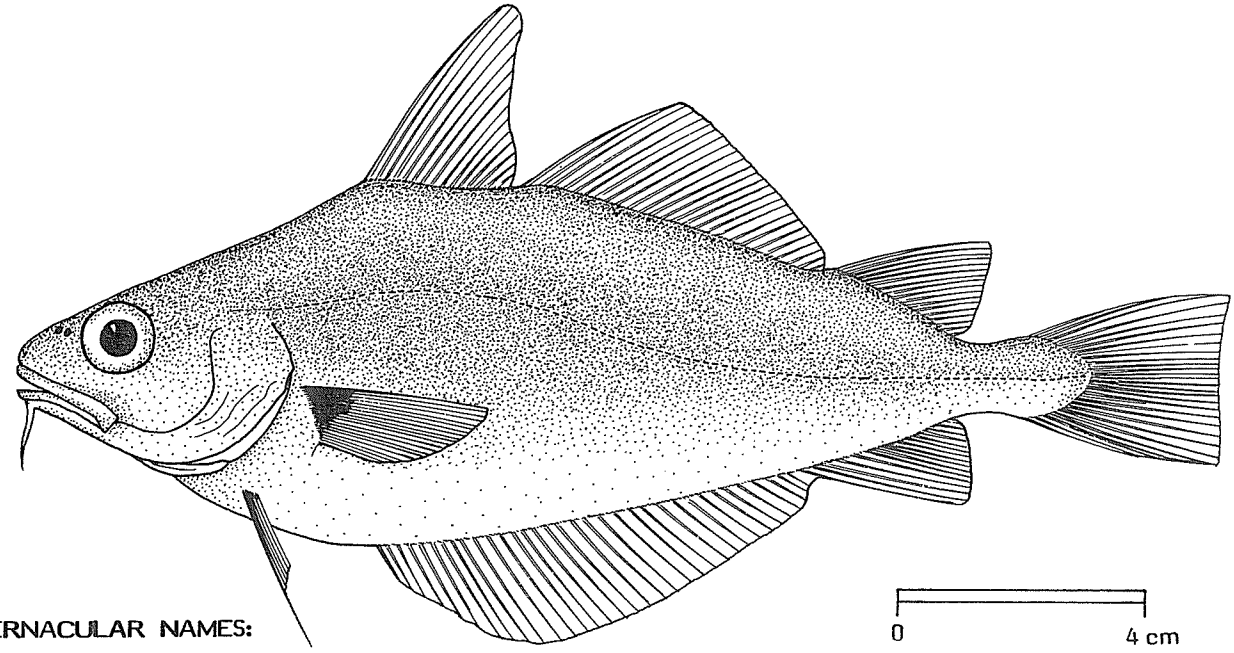
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : GADIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Trisopterus luscus (Linnaeus, 1758)

OTHER SCIENTIFIC NAMES STILL IN USE : Gadus luscus Linnaeus, 1758



VERNACULAR NAMES:

FAO : En - Pouting (= Bib)
Fr - Tacaud commun
Sp - Faneca

NATIONAL :

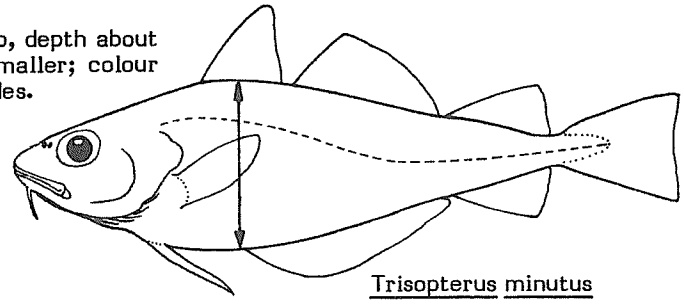
DISTINCTIVE CHARACTERS :

Body deep, about three and one-half times in total length. A chin barbel present. No spines in fins; 3 dorsal fins, all close together; 2 anal fins; pelvic fins with 6 rays.

Colour: back reddish-brown, sides blue-grey shading to silvery; in life with 4 or 5 broad, darker, vertical bars across sides; lateral line yellow; a dusky blotch at upper part of pectoral fin bases.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Trisopterus minutus: body less deep, depth about 4 times in total length; scales much smaller; colour not reddish, and no vertical bars across sides.

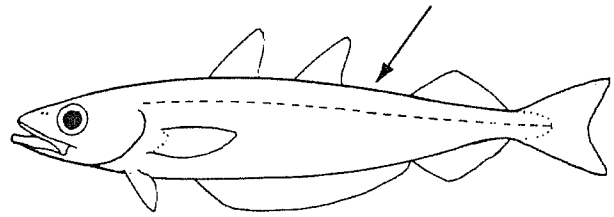


Trisopterus minutus

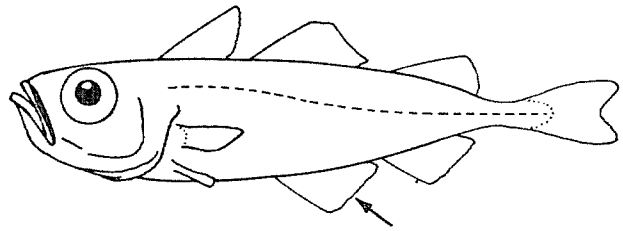
Micromesistius poutassou: dorsal fins widely separate; no chin barbel.

Gadiculus argenteus: first anal fin with a short base, about equal in length to second dorsal fin base under which it begins.

Other gadoid fishes in the area: 1 or 2 dorsal fins. Furthermore, a V-shaped ridge on top of head in Merlucciidae and caudal peduncle relatively narrow in Moridae.



Micromesistius



Gadiculus

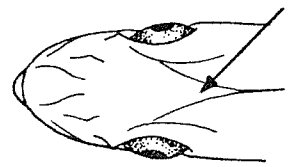
SIZE :

Maximum: 45 cm; common to 20 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

In the area, from Gibraltar southward to about 25°N. Northward extending into the western Mediterranean and along the Atlantic coasts of Europe up to the British Isles and Skagerrak.

A benthopelagic species occurring on the outer shelf, but moving in to depths of 50 m or less for spawning.

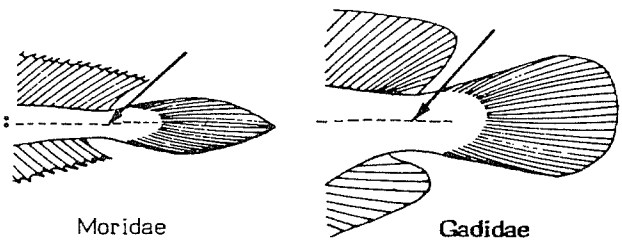


Merlucciidae

head viewed from above

PRESENT FISHING GROUNDS :

Taken in deeper shelf waters and the upper slope throughout its range.



Moridae **Gadidae**

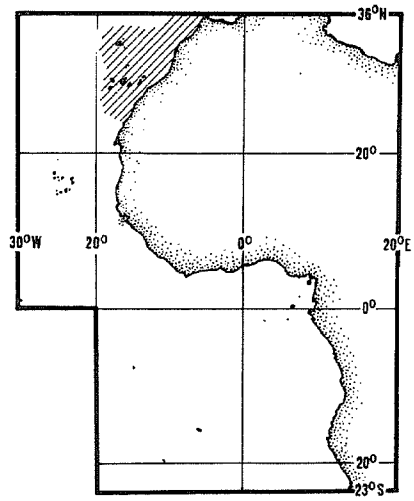
caudal peduncle

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

The catch reported from the area in 1978 totalled 760 t (1977: 1 000 t).

Caught mainly with bottom trawls; also with bottom longlines.

Marketed fresh.



GEMP

1981

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

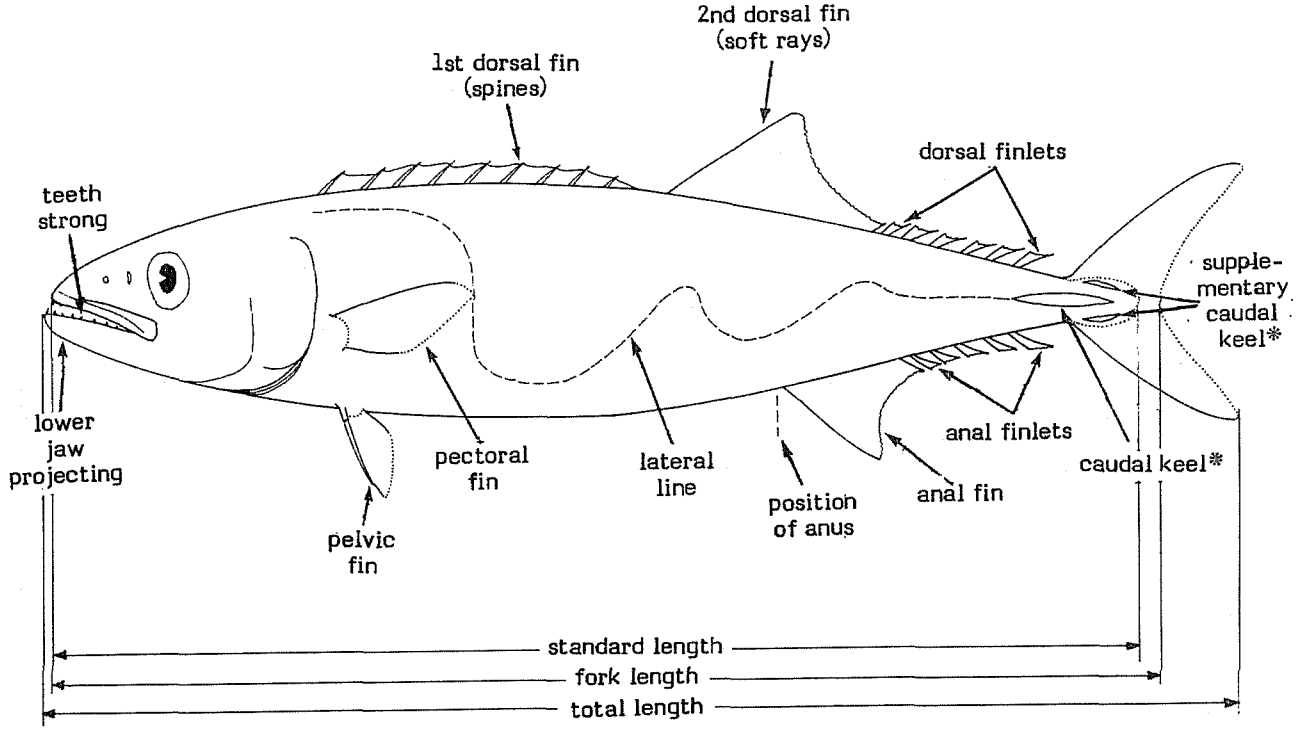
GEMPYLIDAE

Snake mackerels, 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 single spine with only a few or no soft rays; caudal fin moderate in size, always forked; caudal fin rays usually firmly attached only to distal portion of caudal skeleton complex; 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, Diplospinus and Paradiplospinus (more than 48).

Colour: back usually brown or dark brown, rarely blue-brown, lower sides and belly sometimes silvery (some species are almost uniform in colour); fins usually darker; no distinct marks or blotches on body.

Large, fast-moving, carnivorous, oceanic 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 Eastern Central Atlantic species, but some of them are frequently taken as by-catch in the tuna longline fishery. The flesh is edible, but oily in some species.



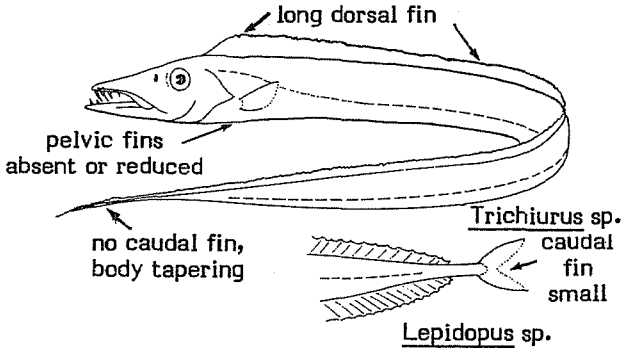
* Lepidocybium only

SIMILAR FAMILIES OCCURRING IN THE AREA :

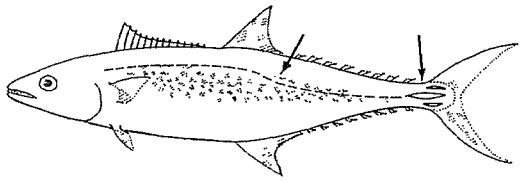
Trichiuridae (including Lepidopidae): a single and very long dorsal fin, running almost the entire length of body; no dorsal or anal finlets; caudal fin either very small and forked or body tapering to a point; pelvic fins reduced to a scale-like spine, or absent.

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); usually 7 or 8 dorsal and anal finlets present (less than 7 in Gempylidae, except in Thyrsites and occasionally in Gempylus).

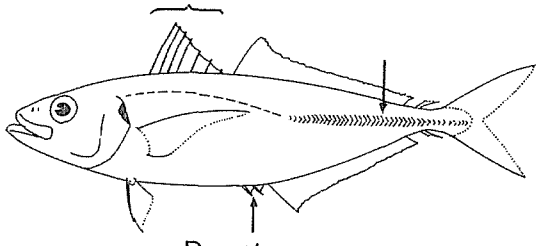
Carangidae: base of first dorsal fin shorter than that of second; 2 detached spines usually visible in front of anal fin (but present also in the gempylid genus Nealotus); scutes often present along lateral line; dorsal and anal finlets only present in Decapterus, Elagatis and Oligoplites; mouth slightly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



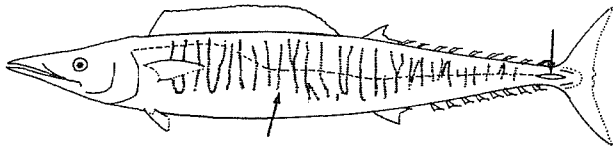
Trichiuridae



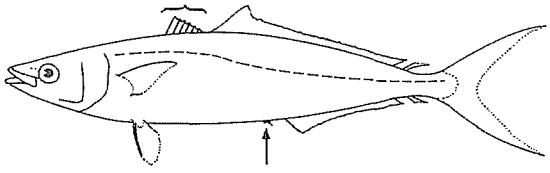
Scomberomorus sp.



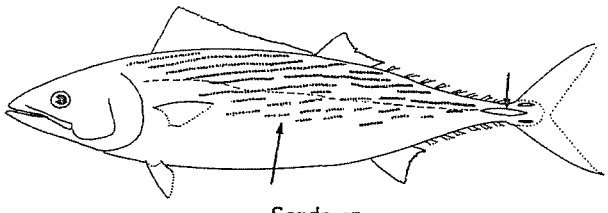
Decapterus sp.



Acanthocybium sp.

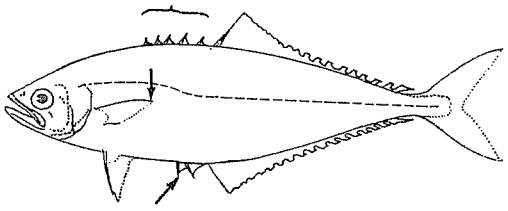


Elagatis sp.



Sarda sp.

Scombridae



Oligoplites sp.

Carangidae

KEY TO ADULTS OF GENERA OCCURRING IN THE AREA*:

1 a. Body extremely elongate, more than 6 times longer than head; first dorsal fin elements more than 60

2 a. Anus situated not far behind middle of body; dorsal fin spines 30 to 34, dorsal soft rays 36 to 42; anal spines 2, anal soft rays 29 to 42; pelvic fins small but present (Fig. 1) ..... Diplospinus

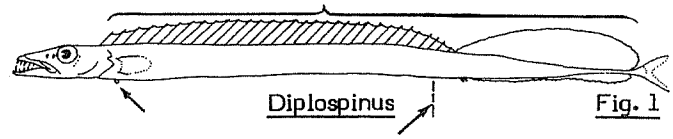


Fig. 1

2 b. Anus situated far behind middle of body; dorsal fin spines 36 to 39, dorsal soft rays 28 to 33; anal spines 2, anal soft rays 25 to 30; pelvic fins absent in adults (Fig. 2) ..... Paradiplospinus

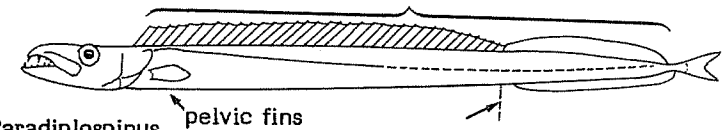


Fig. 2

1 b. Body short to elongate (but not extremely so), less than 6 times longer than head; first dorsal fin elements less than 60

3 a. Caudal peduncle on either side with a large keel and two small supplementary keels above and below, 8 or 9 dorsal fin spines; lateral line single, very markedly sinuous but obscure (Fig. 3) ..... Lepidocybium

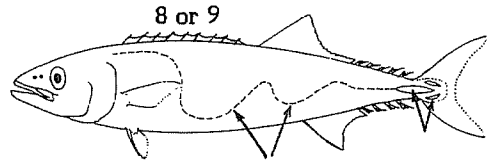


Fig. 3

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

4 a. A rigid scaly keel on belly; body rough; scales interspersed with sinuous bony tubercles (Fig. 4); lateral line single but obscure (Fig. 5) ..... Ruvettus

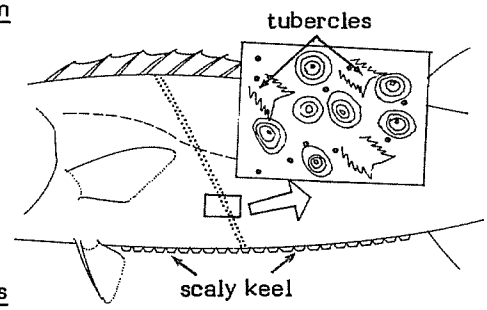


Fig. 4

4 b. No scaly keel on belly, body smooth; scales small, cycloid, not interspersed with tubercles; lateral line obvious

5 a. Pelvic fins well developed, with 1 spine and 5 soft rays

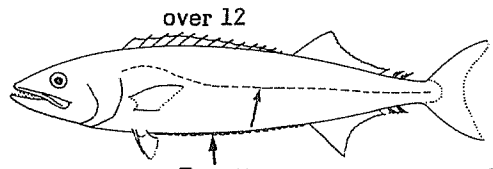


Fig. 5

6 a. A dermal process on tip of each jaw; usually 2 dorsal and anal finlets (Fig. 6) ..... Nesiarchus

6 b. No dermal process on tip of jaws; 5 to 7 dorsal and anal finlets (Fig. 7) ..... Thyrsites

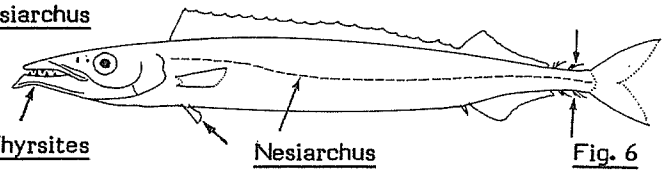


Fig. 6

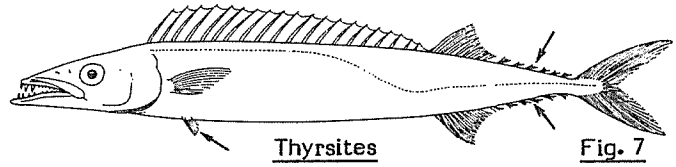
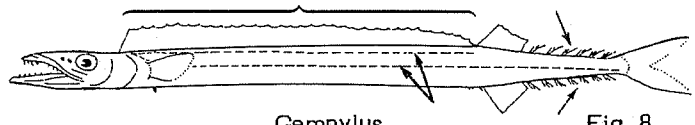


Fig. 7

* Revisional work on genera of Gempylidae is highly needed. This key follows a traditional conception tentatively for present practical use

5 b. Pelvic fins reduced, with 1 spine and a few small soft rays

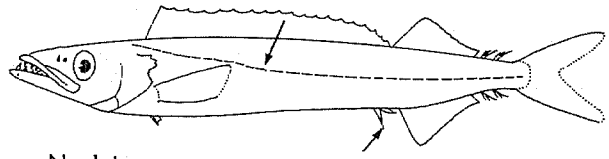
7 a. Body elongate; 5 to 7 dorsal and anal finlets; about 30 dorsal fin spines; lateral line double (Fig. 8) ..... Gempylus



Gempylus Fig. 8

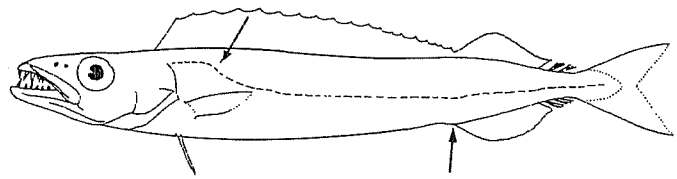
7 b. Body moderately elongate; usually 2 dorsal and anal finlets; about 20 dorsal fin spines; lateral line single

8 a. A dagger-shaped spine followed by a minute free spine in front of anal fin; lateral line fairly straight (Fig. 9) ..... Nealotus



Nealotus Fig. 9

8 b. No free spines in front of anal fin; lateral line curved abruptly downward above pectoral fin (Fig. 10) ..... Promethichthys



Promethichthys Fig. 10

LIST OF SPECIES OCCURRING IN THE AREA:

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

Diplospinus multistriatus Maul, 1948	
Gempylus serpens Cuvier, 1829	
Lepidocybium flavobrunneum (Smith, 1849)	GEMP Lepid 1
Nealotus tripes Johnson, 1865	
Nesiarchus nasutus Johnson, 1862	
Paradiplospinus gracilis (Brauer, 1906)	
Promethichthys prometheus (Cuvier, 1832)	GEMP Prom 1
Ruvettus pretiosus Cocco, 1829	GEMP Ruv 1
Thyrsites atun (Euphrasen, 1791)	GEMP Thyrs 1

Prepared by I. Nakamura, Fisheries Research Station, Kyoto University, Maizuru, Kyoto, Japan

GEMP Lepid 1

1983

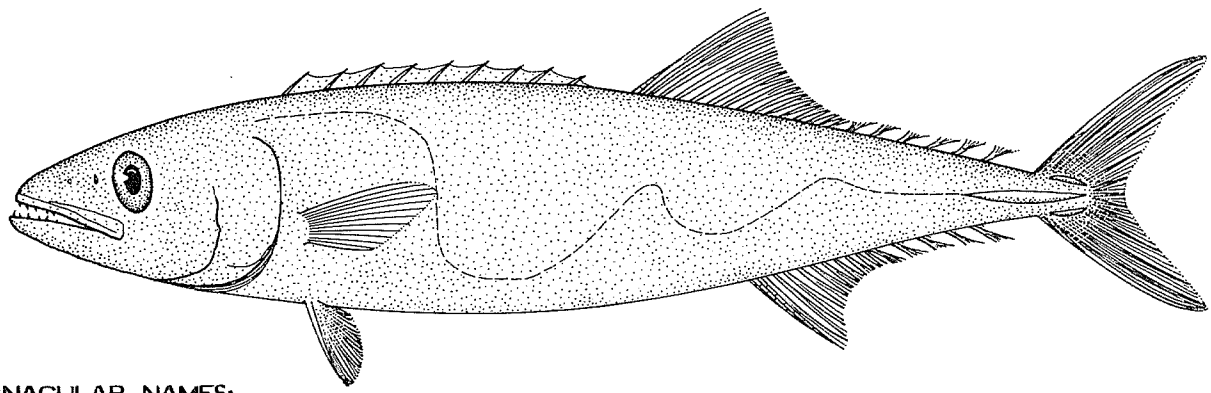
FAO SPECIES IDENTIFICATION SHEETS

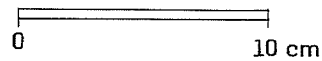
FAMILY : GEMPYLIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Lepidocybium flavobrunneum (Smith, 1849)

OTHER SCIENTIFIC NAMES STILL IN USE : Xenogramma carinatum Waite, 1904
Nesogrammus thompsoni Fowler, 1923
Lepidocybium flavo-brunneum:Munro, 1949





VERNACULAR NAMES:

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

NATIONAL :

DISTINCTIVE CHARACTERS :

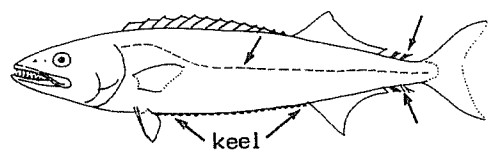
Body moderately elongate and slightly compressed. Teeth conical and recurved, in a single row in both jaws, those in lower jaw larger and wider apart, the two anterior pairs in upper jaw canine-like; teeth also present on vomer and palatines (roof of mouth). First dorsal fin very low, with 8 or 9 spines, well separated from second dorsal fin which has 16 to 18 soft rays followed by 4 to 6 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.

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

lateral line canal and scales surrounded by a network of tubules

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.

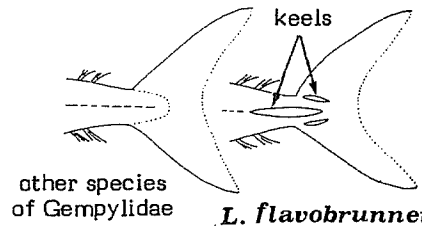


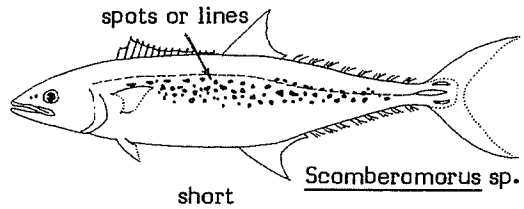
Ruvettus pretiosus

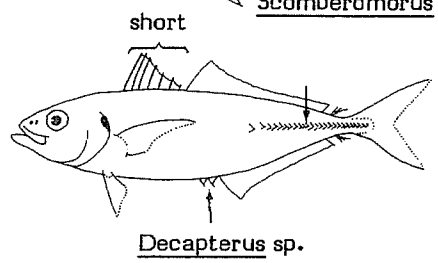
Other species of Gempylidae: no caudal keels, more than 12 dorsal fin spines, lateral line not markedly sinuous.

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 11 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) or only 1 dorsal and 1 anal finlet (Elagatis and Decapterus).







SIZE :

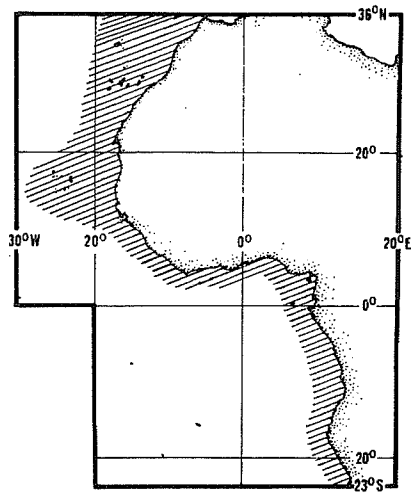
Maximum: 200 cm standard length and at least 45 kg body weight; common to 150 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Distributed throughout the area. Elsewhere of worldwide but apparently discontinuous distribution in tropical and subtropical (sometimes temperate) waters.

Epi- and mesopelagic, 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 by-catch 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; occasionally with pelagic trawls.

Utilized mainly for fishmeal and oil. Also, marketed frozen, and prepared as fish cake in Japan. Flesh very oily, may have purgative properties.

GEMP Prom 1

1981

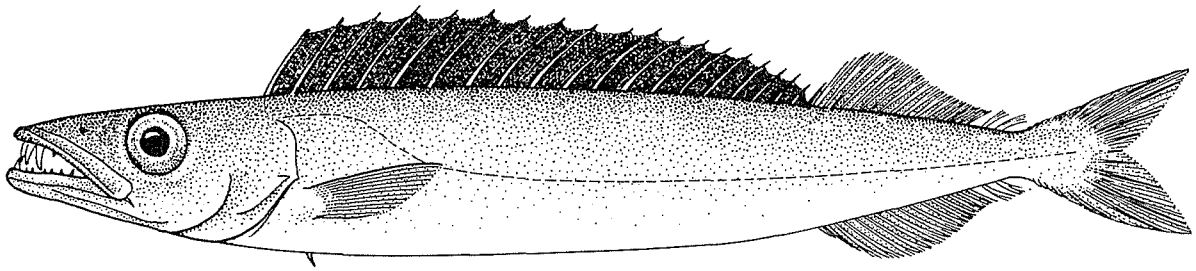
FAO SPECIES IDENTIFICATION SHEETS

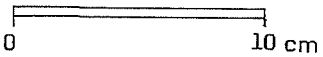
FAMILY : GEMPYLIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Promethichthys prometheus (Cuvier, 1832)

OTHER SCIENTIFIC NAMES STILL IN USE : None





VERNACULAR NAMES:

FAO : En - Promethean escolar
Fr - Escolier clair
Sp - Escolar prometeo

NATIONAL :

DISTINCTIVE CHARACTERS :

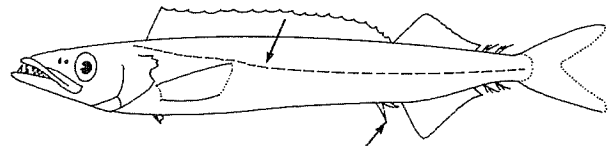
Body elongate and compressed. Snout rather short, twice as long as eye diameter; 4 to 6 fangs in upper jaw near tip of snout and canine-like strong uniserial lateral teeth in both jaws; small teeth on palatines (roof of mouth). First dorsal fin moderately elevated, its middle part highest, with 17 to 19 spines; second dorsal fin with 18 to 21 soft rays, followed by 2 finlets; anal fin with 15 or 16 soft rays preceeded by 2 minute spines and followed by 2 finlets; pectoral fins rather long, with about 14 rays; pelvic fins reduced to a spine and sometimes a rudimental soft ray, becoming shorter with growth; caudal fin rather small and weakly forked; no keels on caudal peduncle. Lateral line single, starting from upper margin of opercle, curving down abruptly from below about 4th dorsal fin spine to below 7th spine, thereafter running almost straight along middle of body to near caudal fin base. Scales thin, cycloid (smooth) and easily shed. Intermuscular bones visible through skin.

Colour: body dark brown with violet reflections, fading to dull brown after death; first dorsal fin membrane black, other fins blackish brown.

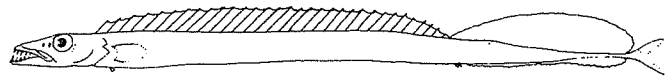
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Nealotus tripes (the most similar species): dagger-shaped spines in front of anal fin, the second often embedded; lateral line oblique but fairly straight.

Other species of Gempylidae: body extremely elongated in Paradiplospinus gracilis, Diplospinus multistriatus and Gempylus serpens; pelvic fins well developed in Lepidocybium flavobrunneum, Ruvettus pretiosus, Nesiarchus nasutus and Thyrsites atun. Furthermore, 5 or more dorsal and anal finlets in Gempylus, Lepidocybium and Thyrsites.



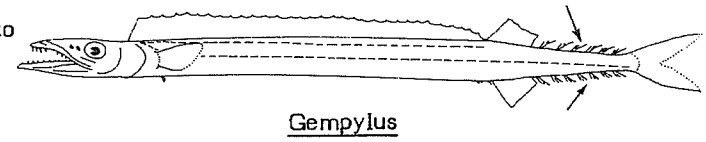
Nealotus tripes



Diplospinus

SIZE:

Maximum: 50 cm standard length; common to 40 cm.



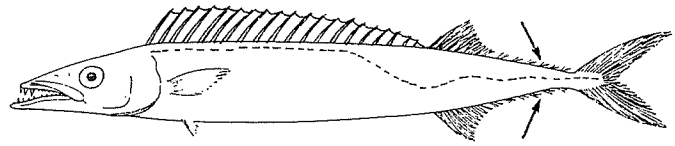
Gempylus

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Widely distributed in tropical and temperate waters of the Atlantic, Western Indian and Western and Central Pacific Oceans; within the area, more common in the Gulf of Guinea and around Madeira.

Benthopelagic in about 100 to 800 m depth.

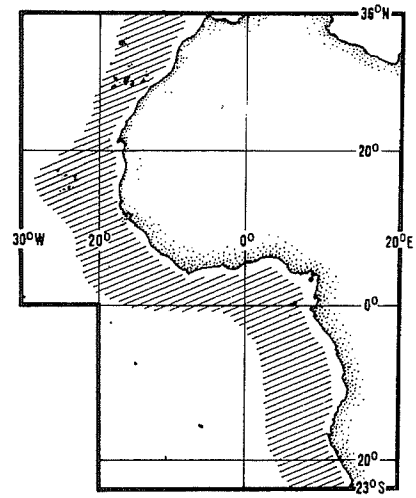
Feeds on a wide variety of fishes, crustaceans and cephalopods.



Thyrsites

PRESENT FISHING GROUNDS:

No special fishery for this species, but sometimes appearing as by-catch in deep water bottom trawl hauls.



CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught mainly with bottom trawls as by-catch.

Marketed mostly frozen or iced, prepared as fish cake in Japan.

GEMP Ruv 1

1981

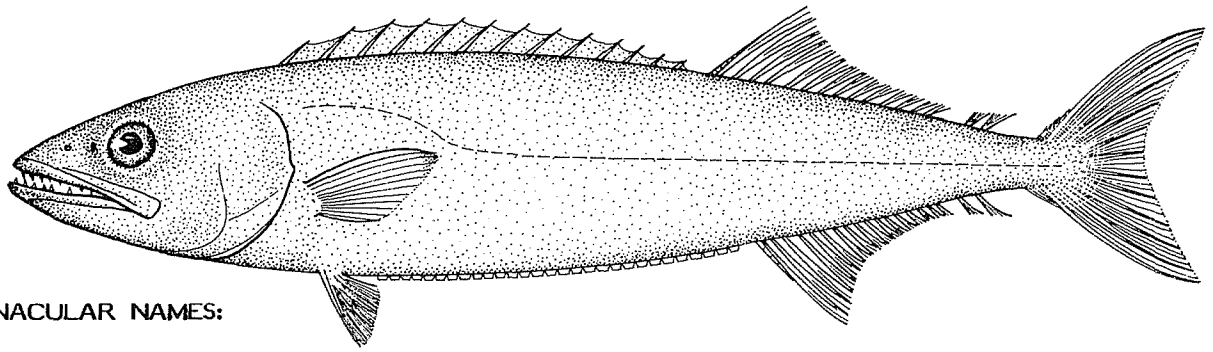
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : GEMPYLIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Ruvettus pretiosus Cocco, 1829

OTHER SCIENTIFIC NAMES STILL IN USE : Ruvettus tydemani Weber, 1913
Ruvettus whakari Griffin, 1927



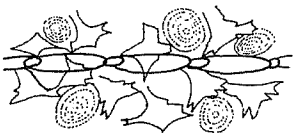
VERNACULAR NAMES:

FAO : En - Oilfish
Fr - Rouvet
Sp - Escolar clavo (= Escolar)

NATIONAL :

DISTINCTIVE CHARACTERS :

Body moderately elongate and slightly compressed, belly keeled between pelvic fins and anus. A single series of strong teeth in both jaws, with canine-like teeth in front; strong teeth also present on vomer and palatines (roof of mouth). First dorsal fin low, with 13 to 15 spines, second dorsal fin with 15 to 18 soft rays followed by 2 finlets; anal fin with 15 to 18 soft rays followed by 2 finlets; pectoral fins with about 15 soft rays; pelvic fins well developed, with 1 spine and 5 soft rays; caudal fin rather small and forked; no keels on caudal peduncle. Lateral line single, often obscure due to peculiar bony tubercles and small scales covering lateral line canal. Scales cycloid, interspersed with rows of sharp bony tubercles.

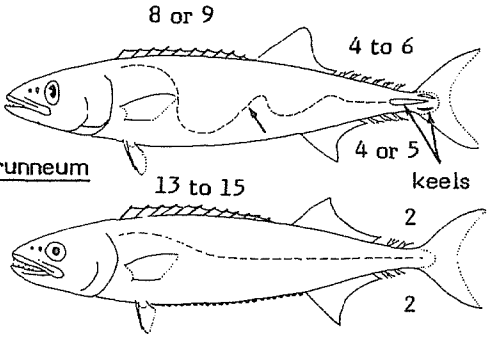


lateral line canal covered with bony tubercles and scales

Colour: body uniformly violet or purplish brown when alive, fading to dull brown after death; tips of pectoral and pelvic fins black; margins of second dorsal and anal fins white in young.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Lepidocybium flavobrunneum: 8 or 9 dorsal fin spines (13 to 15 in Ruvettus pretiosus); no scaly keel on belly; scales not interspersed with tubercles; lateral line very markedly sinuous, keels present on caudal peduncle and 4 to 6 dorsal and 4 or 5 anal finlets (2 dorsal and anal in Ruvettus pretiosus).

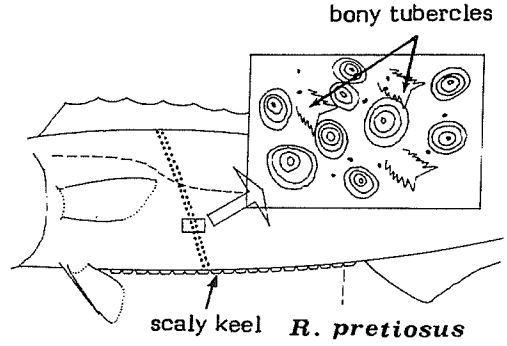


R. pretiosus

Other gempylid species: no scaly keel on belly; body smooth, scales not interspersed with spinous, bony tubercles.

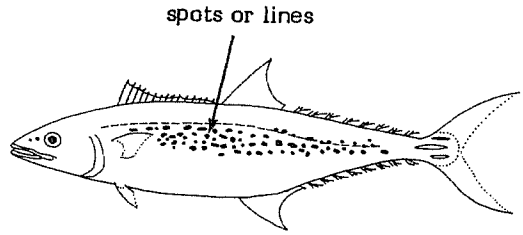
Acanthocybium, Scomberomorus, Sarda and other similar scombroid fishes: keels present on caudal peduncle; also, back blue or blue-grey, with bars, spots or other dark markings; 7 or 8 dorsal and anal finlets (2 in R. pretiosus).

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, scutes present along lateral line in Decapterus.



SIZE :

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



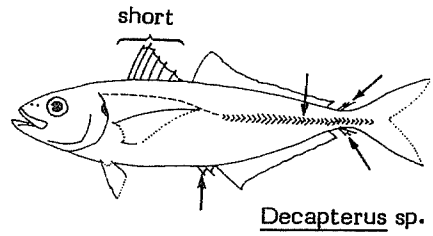
Scomberomorus sp.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Widely distributed in tropical and temperate seas of the world. Within the area more abundant in the Gulf of Guinea and around Madeira.

Bentho-pelagic, mostly over the continental shelf, sometimes oceanic, down to depths of 200 m or more (reported even from 800 m depth).

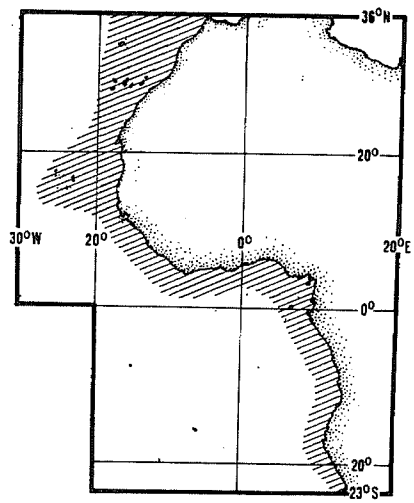
Feeds on a wide variety of fishes, crustaceans and cephalopods.



Decapterus sp.

PRESENT FISHING GROUNDS :

No special fishery, but appearing as by-catch 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; also with bottom trawls.

Utilized fresh and for fishmeal and oil. Also, marketed frozen and prepared as .fish cake in Japan. Flesh very oily, with purgative properties.

GEMP Thyrs 1

1981

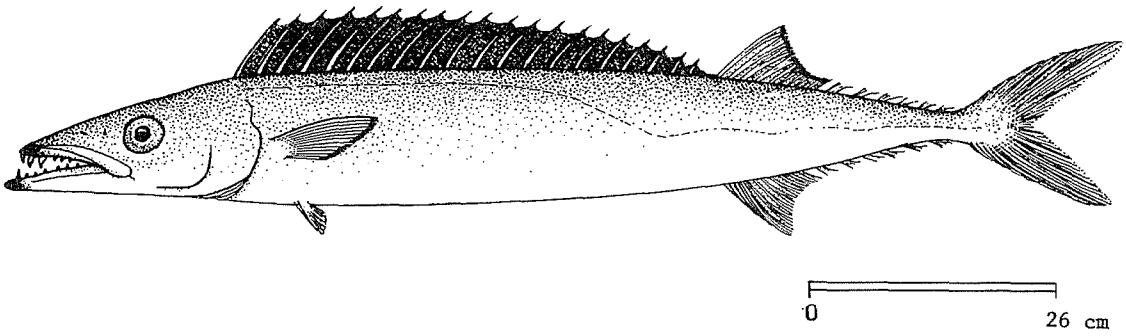
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : GEMPYLIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Thyrsites atun (Euphrasen, 1791)

OTHER SCIENTIFIC NAMES STILL IN USE : Leionura atun (Euphrasen, 1791)
Leionura atun dentatus (Bloch & Schneider, 1801)



VERNACULAR NAMES:

FAO : En - Snoek
Fr - Escolier
Sp - Sierra

NATIONAL :

DISTINCTIVE CHARACTERS :

Body elongate and fairly compressed. Mouth large; several fangs in upper jaw near tip of snout and small, uniserial lateral canine-like teeth irregularly spaced in both jaws; small uniserial teeth on palatines (roof of mouth). First dorsal fin rather high and long, with 18 to 20 spines; second dorsal fin as large as anal fin, both fins with 10 to 12 soft rays preceeded by a spine and followed by 6 or 7 finlets; pectoral fins moderately long and situated low, with 14 or 15 soft rays; pelvic fins small, but well developed, with a spine and 5 soft rays; caudal fin of moderate size and deeply forked. No caudal keels. Lateral line single, running close to upper profile below most of first dorsal fin, curving down from below about 16th spine to end of first dorsal fin, thereafter running in slight undulations along midline of body to near caudal fin base. Scales thin, cycloid (smooth) and easily shed. Intermuscular bones visible through skin.

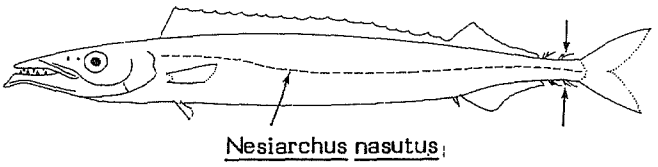
Colour: steel blue or dark blue above, brilliant silver below, pelvic fin semi-transparent, other fins tinged with black.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

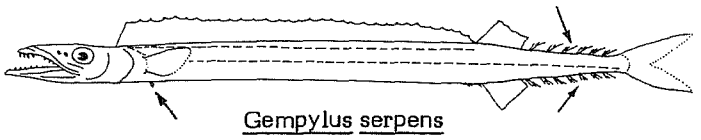
Nesiarchus nasutus: 2 dorsal and anal finlets (6 or 7 in T. atun); a dermal process at tip of each jaw; lateral line oblique but nearly straight.

Gempylus serpens: body extremely elongate, first dorsal fin long, with about 30 spines (18 to 20 in T. atun); pelvic fins much reduced; lateral line double.

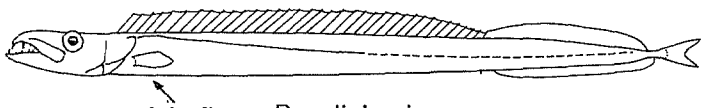
Other species of Gempylidae: pelvic fins much reduced or absent and either 2 or no dorsal and anal finlets (Paradiplospinus gracilis, Diplospinus multistriatus, Nealotus tripes and Promethichthys prometheus); body deep, 8 to 15 dorsal fin spines and caudal keels (Lepidocybium flavobrunneum) or a scaly keel on belly (Ruvettus pretiosus).



Nesiarchus nasutus



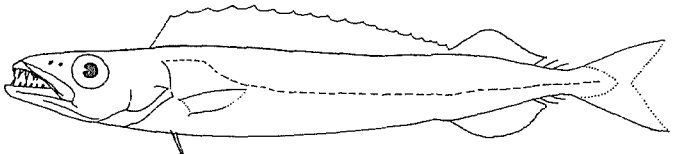
Gempylus serpens



pelvic fins absent — Paradiplospinus

SIZE:

Maximum: about 200 cm standard length; common to 140 cm.



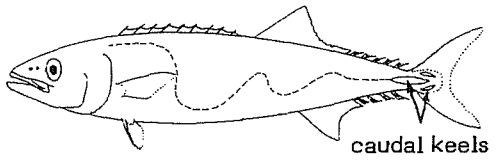
pelvic fins reduced — Promethichthys

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Widely distributed in temperate and cold areas influenced by subantarctic waters of the southern hemisphere. Within the area, it is restricted to the southern region, off Angola and Namibia.

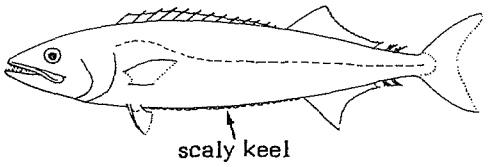
Mesopelagic in near shore waters down to depths of 200 m or more (possibly to 500 m), usually migrating to the surface at night.

Feeds on a wide variety of fishes (chiefly pelagic species), crustaceans (chiefly euphausiids) and cephalopods.



caudal keels

Lepidocybium

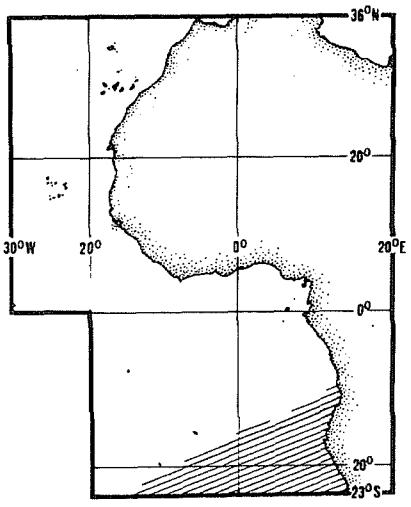


scaly keel

Ruvettus

PRESENT FISHING GROUNDS:

Within the area, the waters off Angola and Namibia, but no special fishery. An important commercial fish in southern Australia, New Zealand, South Africa and southern areas of South America.



CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught mainly with pelagic and bottom trawls and by trolling.

Utilized mainly for fishmeal and oil, but also marketed frozen, iced; salted or smoked.

GERR

1981

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

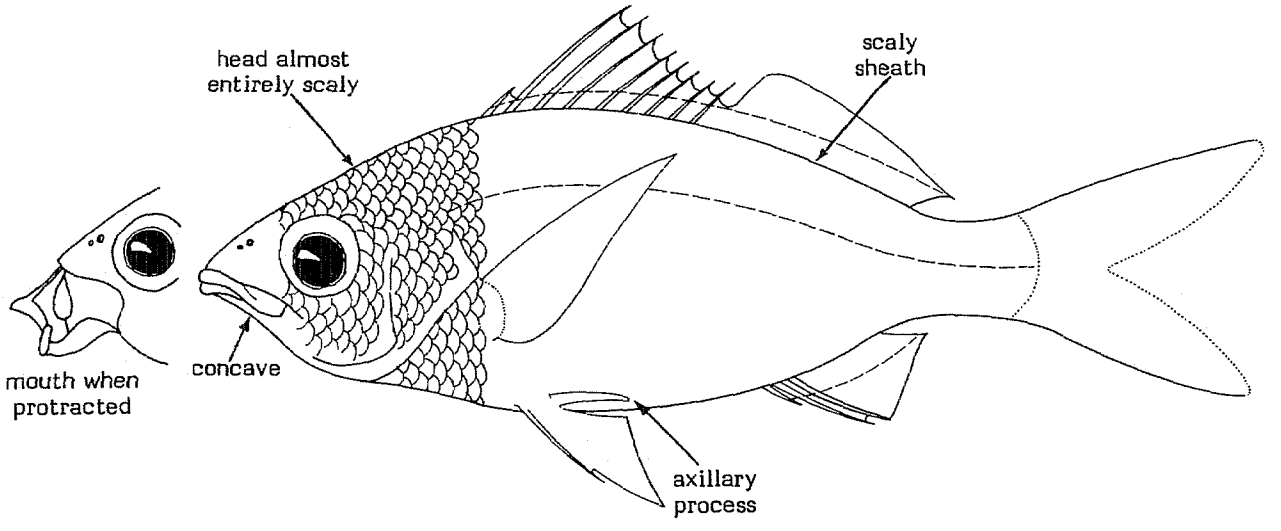
GERREIDAE

Mojarras

Body oblong and compressed. Snout pointed; interorbital region as well as anterior part of lower head profile, concave; mouth strongly protrusible, pointing downward when protracted; small, villiform teeth in both jaws, none on roof of mouth. A single, long dorsal fin, its spiny and soft portions about equal in length; second dorsal fin spine always much higher than first; dorsal and anal-fin bases with a high scaly sheath into which the fins can be folded; pectoral fins long and pointed; pelvic fin origin below or somewhat behind pectoral fin base and bearing a long, scale-like axillary process; caudal fin deeply forked. Most of head and body covered with conspicuous shiny scales.

Colour: head and body usually silvery with glittering scales, but dark grey or olive green when viewed from above; often with faint markings, such as spots or lines.

Small to medium-sized fishes (to 25 cm total length) living in coastal waters of all warm seas, some species enter brackish water or even freshwater. They are found predominantly over mud and sand bottoms in mangrove areas, where they feed on small bottom-dwelling organisms.



SIMILAR FAMILIES OCCURRING IN THE AREA:

No other family has the following combination of characters that characterizes the *mojarras*: ground colour predominantly silvery, mouth strongly protrusible, teeth villiform, present only in jaws; anterior part of lower head profile as well as interorbital region concave.

Centracanthidae: mouth also strongly protractile, but not pointing downward when protracted; dorsal fin (in West African representatives) scarcely notched; two of the West African species have a large black blotch on caudal peduncle, and the third is bright red and occurs in deeper waters.

KEY TO GENERA OCCURRING IN THE AREA*:

1 a. Body with dark longitudinal stripes and often vertical bars; anal with 8 rays ..... Gerres

1 b. Body without stripes or bars; anal with 7 rays ..... Eucinostomus

LIST OF SPECIES OCCURRING IN THE AREA:

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

Eucinostomus melanopterus Bleeker, 1863 **	GERR Euci 4
Gerres nigri Günther, 1859	GERR Gerr 5

Prepared by C. Roux, Ichtyologie générale et appliquée, Muséum d'Histoire Naturelle, Paris, France, (Family sheet based on Western Central Atlantic material prepared by J.E. Randall)

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*The generic nomenclature of this family is still poorly understood; some authors use only one genus, Gerres, for both West African species

**It is not sure whether the two forms described as E. melanopterus from the Eastern and Western Atlantic are really the same species. A world revision of the family, at generic and specific level, is certainly needed

GERR Euci 4

1981

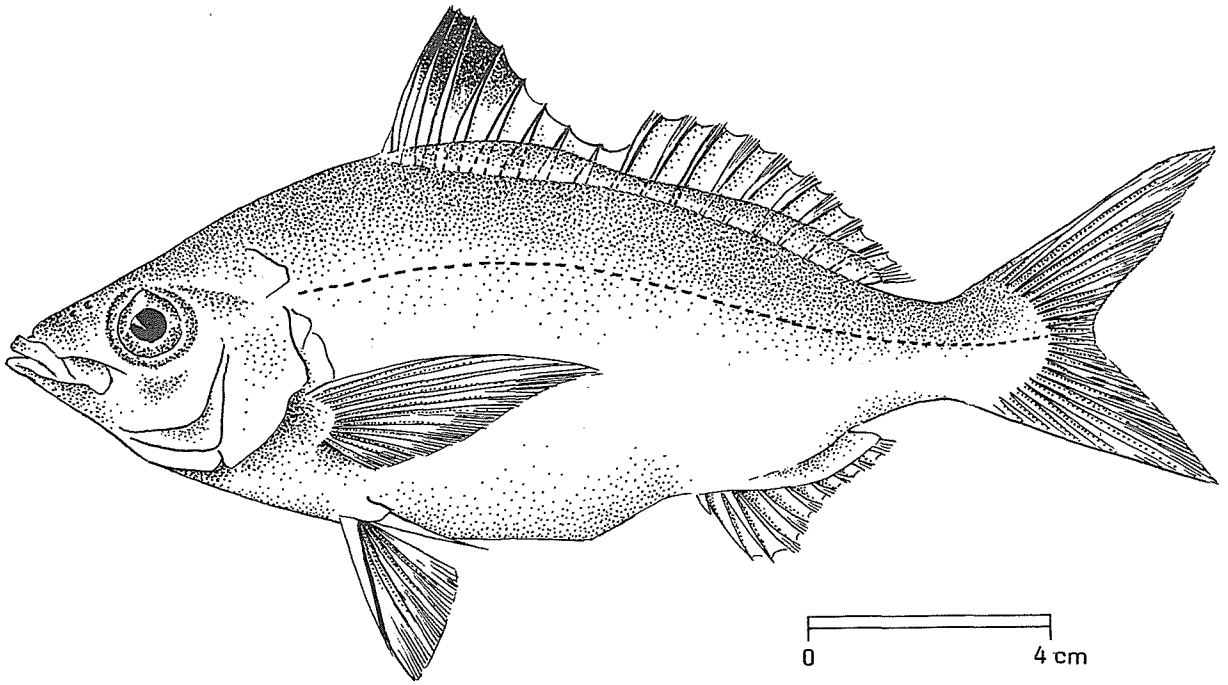
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : GERREIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Eucinostomus melanopterus (Bleeker, 1863)

OTHER SCIENTIFIC NAMES STILL IN USE : Gerres melanopterus Bleeker, 1863



VERNACULAR NAMES:

FAO : En - Flagfin mojarra
Fr - Blanche drapeau
Sp - Mojarrita de ley

NATIONAL :

DISTINCTIVE CHARACTERS :

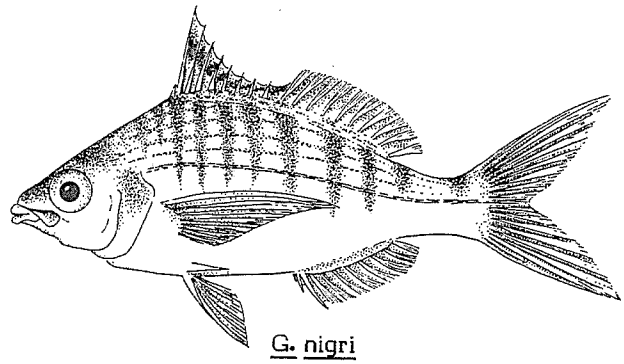
Body oblong and compressed, its depth contained 2.7 to 3.1 times in standard length. Head contained 3 to 3.4 times in standard length; snout pointed, slightly shorter than (juveniles) or as long as (adults) eye; mouth strongly protrusible, the maxilla reaching backward to, or slightly beyond anterior eye margin; villiform teeth present in both jaws, but absent on roof of mouth; nostrils contiguous placed nearer to eye than to tip of snout. Dorsal fin continuous, deeply notched, with 9 spines and 10 soft rays, the first one very short; anal fin with 3 spines and 7 soft rays; tips of pectoral fins just reaching to first dorsal soft ray and falling short of anal fin origin; caudal fin deeply forked. Scales cycloid (soft to touch); lateral line with 42 scales to caudal base and 4 to 7 on latter; 4 or 5 scales above and 8 or 9 below lateral line.

Colour: back olive, sides silvery; a black blotch on tip of dorsal fin; tips of pelvic fins often also black.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Gerres nigri: body with longitudinal dark stripes and often with vertical bars; no distinct black blotch at tip of dorsal fin; nostrils placed midway between eye and tip of snout; tips of pectoral fins reaching beyond anal fin origin.

Brachydeuterus auritus (Family Pomadasyidae): head not pointed, mouth not strongly protrusible; 12 dorsal fin spines (9 in E. melanopterus).



G. nigri

SIZE:

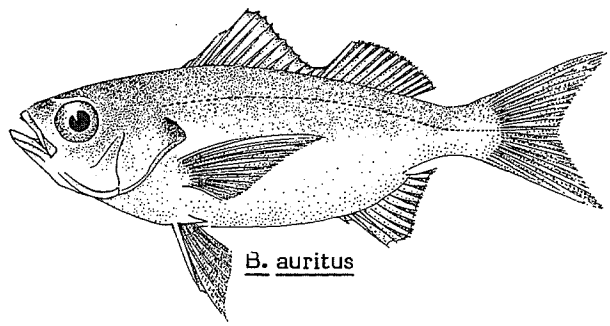
Maximum: 23 cm; common to 15 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

In the area reported from Senegal to Angola. Also present in the Western Central Atlantic.

A coastal species, found on sand and mud bottoms, rarely beyond 25 m depth; enters estuaries and coastal lagoons; often forming sizeable schools.

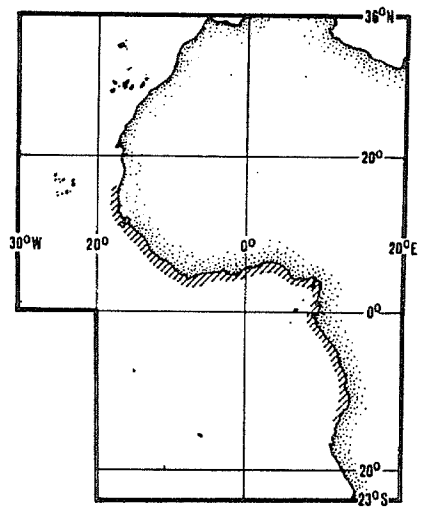
Feeds on small bottom-dwelling animals, particularly worms.



B. auritus

PRESENT FISHING GROUNDS:

Taken by artisanal and trawl fisheries throughout its range.



CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught with beach seines, set nets, trawls and handlines.

Marketed fresh and smoked, occasionally reduced to fishmeal.

GERR Gerr 5

1981

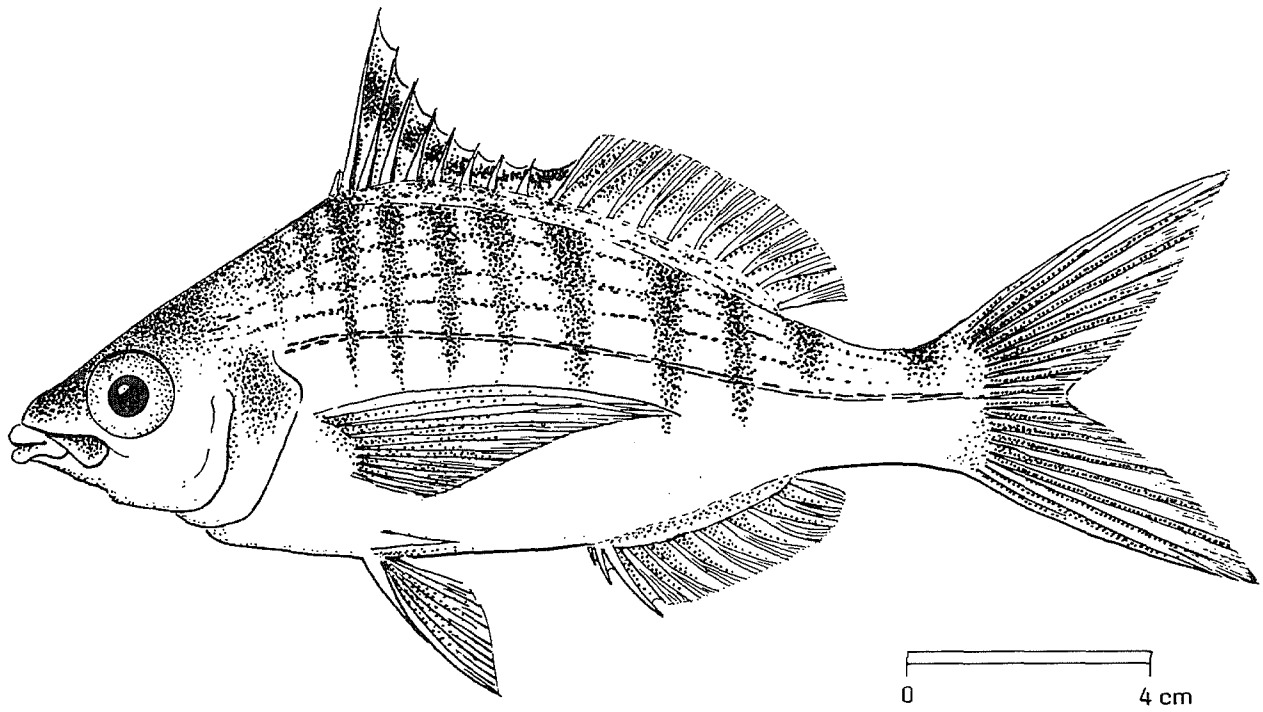
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : GERREIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Gerres nigri Günther, 1859

OTHER SCIENTIFIC NAMES STILL IN USE : Gerres octactis Bleeker, 1863



VERNACULAR NAMES:

FAO : En - Guinean striped mojarra
Fr - Friture rayée
Sp - Mojarra guineana

NATIONAL :

DISTINCTIVE CHARACTERS :

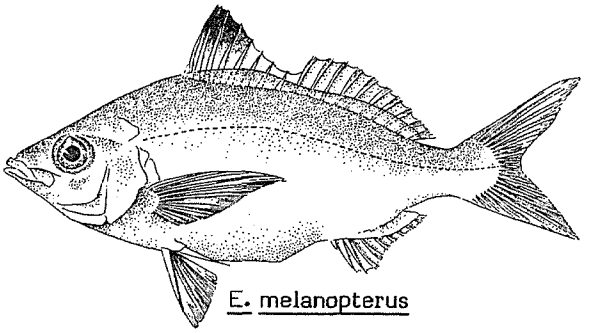
Body oblong and compressed, its depth contained about 2.6 times in standard length. Head contained about 3.4 times in standard length; snout pointed, shorter than eye diameter; mouth strongly protrusible, the maxilla reaching backward slightly beyond anterior margin of eye; villiform teeth present in both jaws, but absent on roof of mouth; nostrils contiguous, placed midway between eye and tip of snout. Dorsal fin continuous, moderately notched, with 9 spines and 10 soft rays, the first spine very short; anal fin with 3 spines and 8 soft rays; tips of pectoral fins extending beyond first dorsal soft ray and anal fin origin. Scales large, cycloid (soft to touch), 42 in lateral line; 5 scales above and 11 below lateral line.

Colour: back olive brownish, sides silvery with longitudinal dark stripes and often also vertical bars; no distinct blotch on tip of dorsal fin; in juveniles, there may be 2 longitudinal series of black spots on dorsal fin.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Eucinostomus melanopterus: body without longitudinal dark stripes and bars; a distinct black blotch present on tip of dorsal fin; nostrils placed nearer to eye than to tip of snout; tips of pelvic fins falling short of anal fin origin.

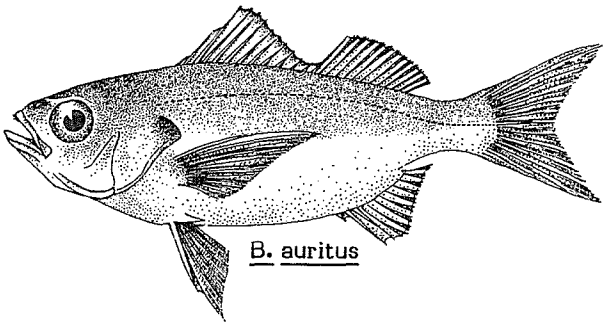
Brachydeuterus auritus (Family Pomadasyidae): head not pointed; mouth not strongly protrusible; 12 dorsal fin spines (9 in G. nigri).



E. melanopterus

SIZE:

Maximum: 20 cm; common to 15 cm.



B. auritus

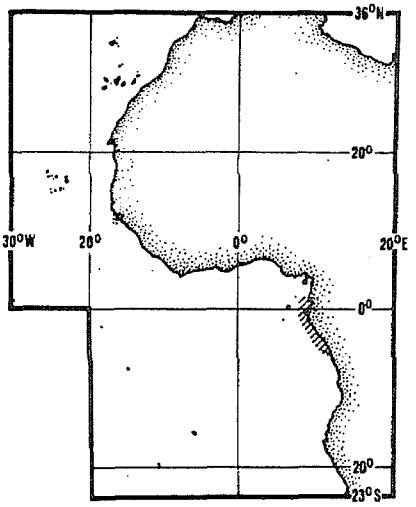
GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Reported from Guinea to Congo.

A coastal species, found on sand and mud bottoms to about 60 m depth; also enters estuaries and coastal lagoons, often forming schools.

PRESENT FISHING GROUNDS:

Taken by artisanal and trawl fisheries throughout its range.



CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught with fixed bottom nets, trawls and on line gear.

Marketed fresh and smoked.

GOBII

1981

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

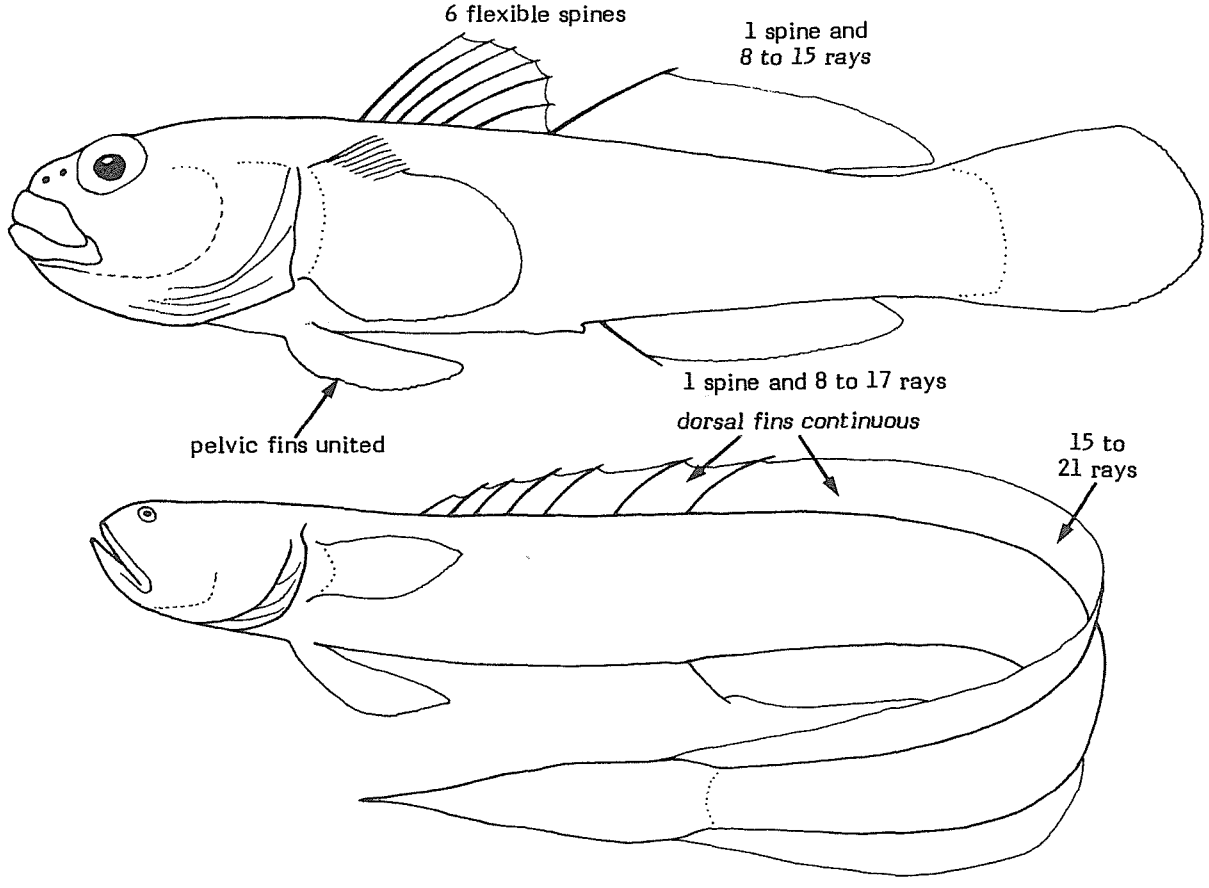
GOBIIDAE

Gobies

Small to medium-sized fishes (between 5 and 36 cm in length) with a cylindrical, more or less compressed body. Head rounded and depressed, eyes usually close together. Two dorsal fins, the first with 6 flexible spines, *the second with 1 spine and 8 to 15 branched rays (but dorsal fins continuous and with 15 to 21 rays in the elongate* representatives of the genus Gobioides); anal fin with 1 spine and 8 to 17 branched rays; pelvic fins typically united into a disc or, if separated, still connected by a low transverse membrane between their bases; second dorsal fin base much longer than distance from its posterior end to caudal fin base; no lateral-line canal along midline of body.

Colour: variable, fawn or olive with mottling, to dark; some species with vertical or horizontal striping.

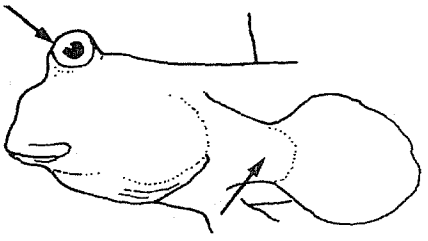
Gobies are bottom-living on fine deposits to stony grounds or in intertidal rock pools, from offshore marine to freshwater habitats. None of the Eastern Central Atlantic species is of significant commercial importance, but larger individuals of quite a number of species from brackish water, taken in cast-net, weir, or baskets, are sold in local markets; gobies caught by offshore trawling are reduced to fishmeal and oil.



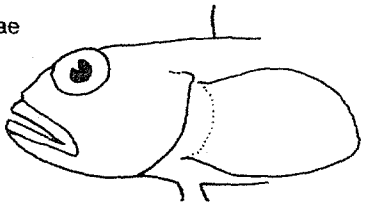
SIMILAR FAMILIES OCCURRING IN THE AREA:

Eleotridae: second dorsal fin base shorter than distance from its posterior end to caudal fin base; pelvic fins separated, without an intervening transverse membrane between their bases; usually found in brackish or fresh waters.

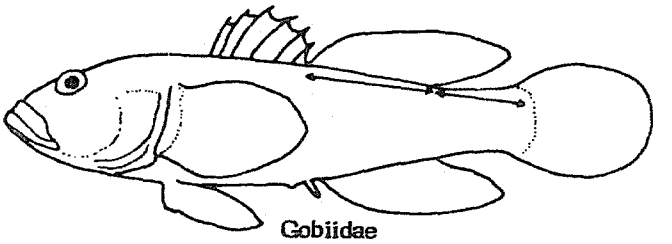
Periophthalmidae: eyes prominent, above dorsal profile of head, with a lower eyelid fold; pectoral fins with muscular bases; pelvic fins connected only between bases; mud-skipping on estuarine flats at low tide.



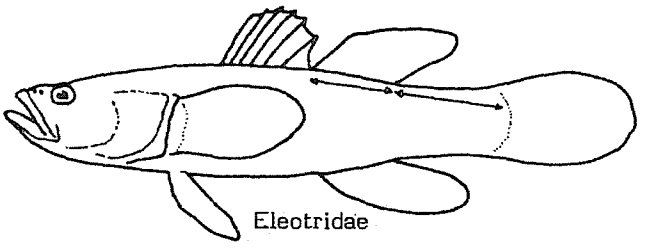
Periophthalmidae



Gobiidae



Gobiidae



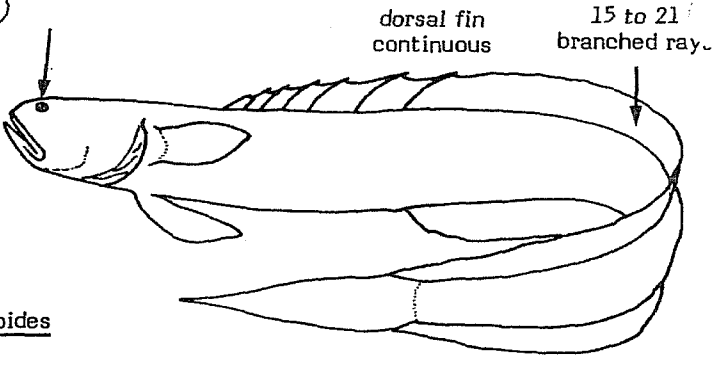
Eleotridae

KEY TO GENERA OCCURRING IN THE AREA:

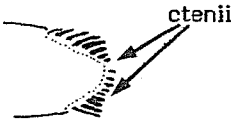
1 a. Dorsal fins continuous; eyes small, not more than one-tenth of head length; dorsal branched rays 15 to 21 (Fig. 1); on sand and mud, in brackish and inshore waters; size to 36 cm ..... Gobioides

1 b. Two separate dorsal fin; eyes larger than one-tenth of head length; second dorsal branched rays 8 to 15; size to 27 cm

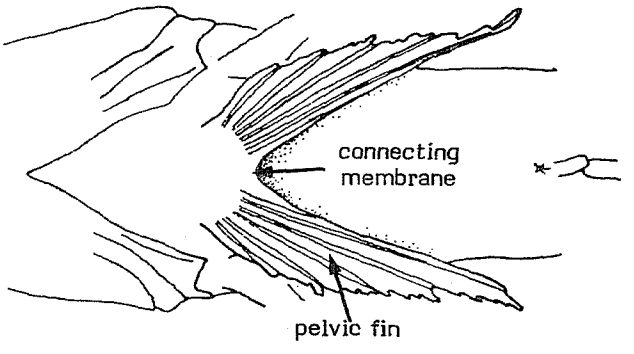
2 a. Pelvic fins almost separate, connected by a low membrane between their bases (Fig. 2); uppermost and lowermost scales of caudal fin base with more or less elongate lateral ctenii (Fig. 3); small marine species



Gobioides Fig. 1



scale from upper corner of caudal fin base Fig. 3



underside of body before anus Fig. 2

3 a. Cheek with two vertical rows of papillae below the longitudinal row b; a canal (op) above opercle (Fig. 4); size to 4.5 cm ..... Wheelerigobius

3 b. Cheek with 1 vertical row of papillae below anterior end of row b; no canal above opercle (Fig. 5); size to 3.7 cm .. Vanneaugobius

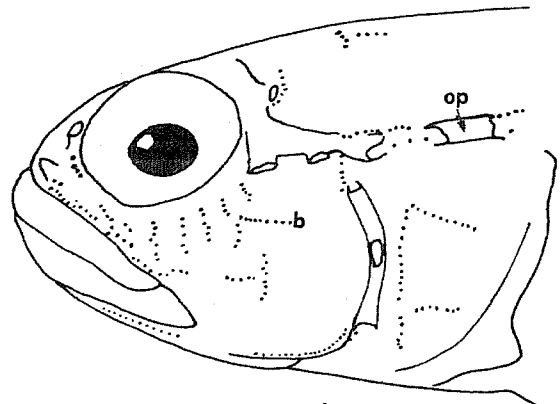
2 b. Pelvic fins united for at least half the fin length, usually forming a disc with an anterior transverse membrane (Fig. 6); scales at base of caudal fin without elongate lateral ctenii

4 a. Papillae on cheek in vertical as well as longitudinal rows; no longitudinal row along lower edge of eye (Fig. 7)

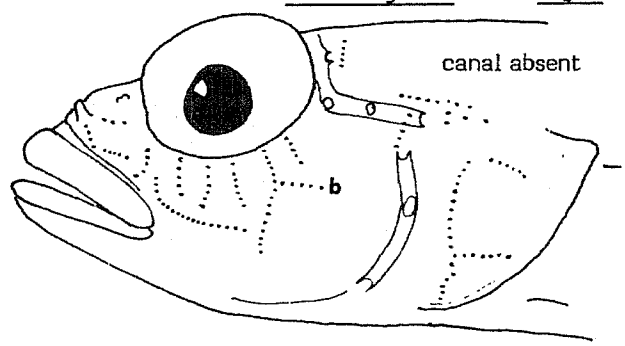
5 a. Lower longitudinal row (d) of cheek papillae extending rearwards behind last lower vertical row (Fig. 8)

6 a. Scales on cheek present; tongue bilobed (Fig. 9a); mouth inferior; scales in lateral series 30 to 32; on sand, in or about reefs and rocks; size to 6.5 cm ..... Gnatholepis

6 b. Scales on cheek absent; tongue rounded (Fig. 9b); mouth oblique; caudal fin pointed



Wheelerigobius Fig. 4



Vanneaugobius Fig. 5

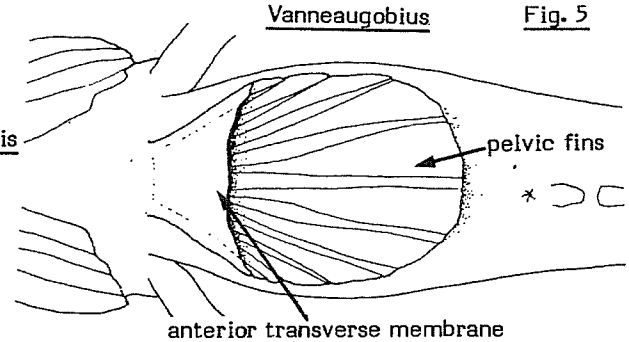


Fig. 6

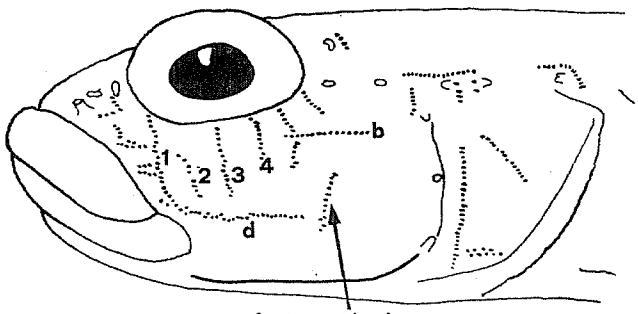


Fig. 7

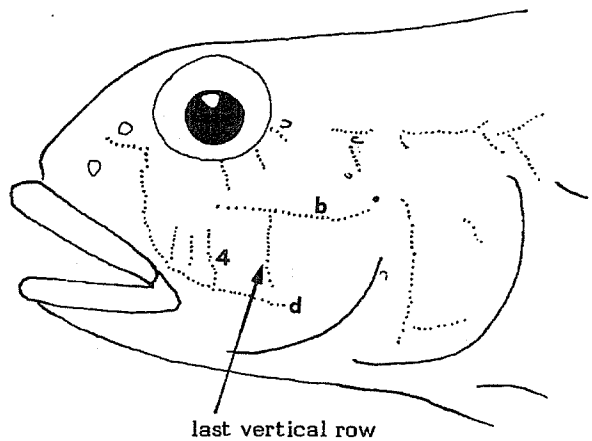
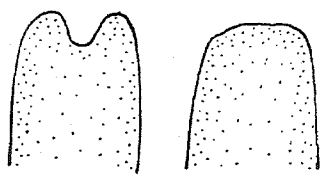


Fig. 8



a Gnatholepis b Ctenogobius, Gobionellus

tongue

Fig. 9

7 a. Upper longitudinal row b of cheek papillae extending forwards to above fourth (4) vertical row (Fig. 8); nape naked; about 35 scales in lateral series; second dorsal fin with 1 spine and 11 rays, anal fin with 1 spine and 12 rays; size to 6 cm ..... Ctenogobius

7 b. Upper longitudinal row of cheek papillae (b) extending forwards to second (2) vertical row (Fig. 10); scales present before first dorsal fin; about 60 to 63 scales in lateral series; second dorsal fin with 1 spine and 13 rays; anal fin with 1 spine and 14 rays; inshore and estuarine; size to 12 cm ..... Gobionellus

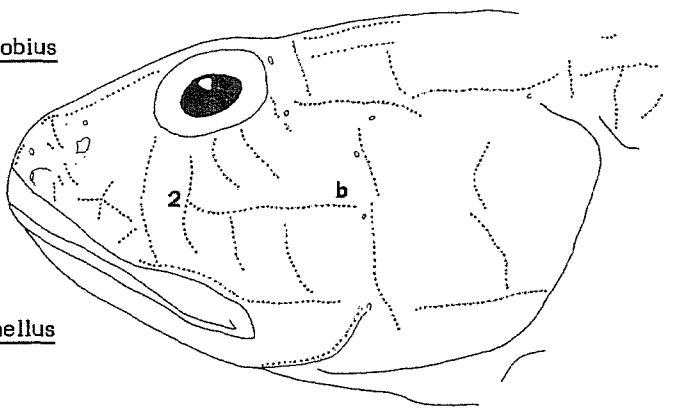


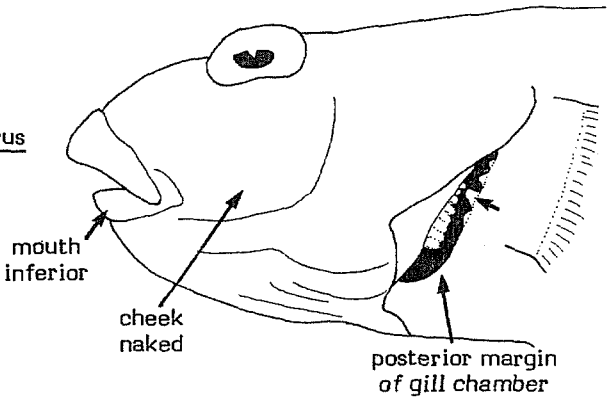
Fig. 10

5 b. Lower longitudinal row (d) of cheek papillae ending at or before last lower vertical row (Fig. 7)

8 a. Posterior margin of gill chamber with fleshy processes; mouth inferior, lower jaw shorter than upper; cheek naked (Fig. 11); scales in lateral series 60 to 70; brackish- and freshwater; size to 26.5 cm ..... Chonophorus

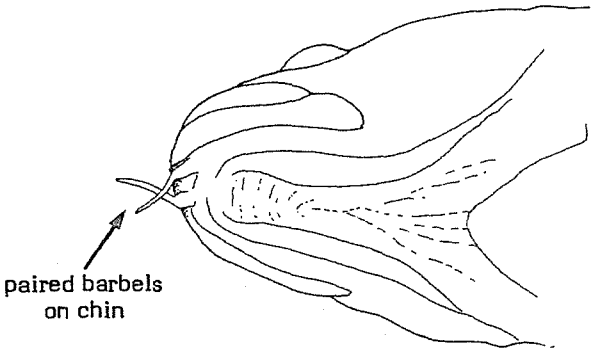
8 b. Rear border of gill chamber smooth; mouth usually oblique, or, if horizontal, cheek scaled

9 a. Chin with paired barbels or fleshy lobes (Fig. 12); inshore marine to freshwaters; size to 13 cm ..... Nematogobius



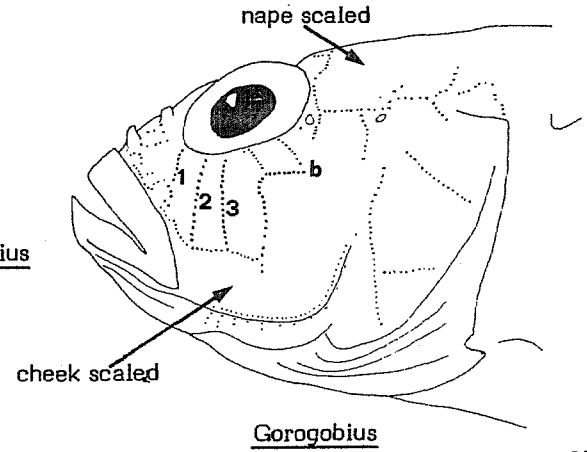
Chonophorus Fig. 11

9 b. Chin without processes



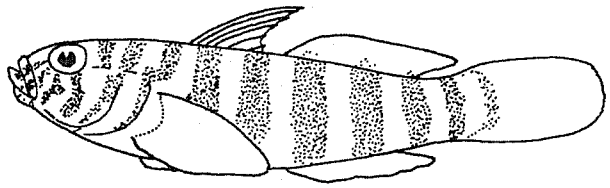
Nematogobius Fig. 12

10 a. Cheek with 3 vertical rows of papillae (1 to 3) *before upper longitudinal row b, and* 1 lower vertical row below anterior end of row b (Fig. 13); nape and cheek scaled; body with 29 to 33 scales in lateral series; coloration of wide, sharply demarcated, dark stripes, 6 behind pectoral fin base (Fig. 14); inshore marine, among rocks and in rock pools; size to 4 cm ..... Gorogobius



Gorogobius Fig. 13

10 b. Cheek with 4 vertical rows of papillae before upper longitudinal row b; 2 lower vertical rows below row b (Fig. 7); body sometimes with narrow vertical dark bars; *scales in lateral series 32 to 67*

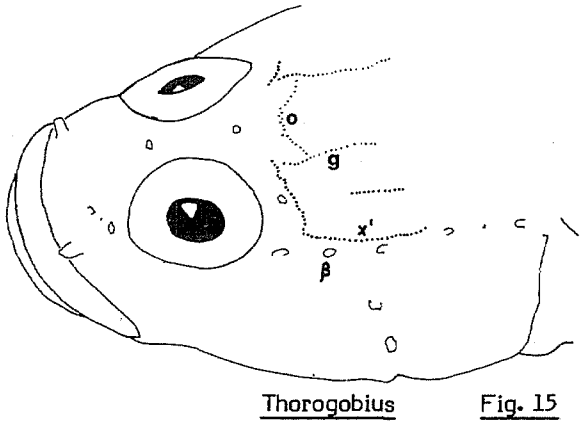


Gorogobius Fig. 14

11 a. Nape naked; uppermost pectoral rays only partly or not free from membrane

12 a. Longitudinal papillae row x' extends anteriorly beyond canal pore β ; dorsal row g ends anterior to row o (Fig. 15); head and body with orange spots or first dorsal fin with elongate rays; pectoral fin rays not free from membrane; offshore sand and mud to sublittoral rock faces; size to 12 cm ..... Thorogobius

12 b. Longitudinal row x' ends behind canal pore β ; row g ends opposite row o (Fig. 16); body with vertical bars or blotches; uppermost pectoral rays partly free from membrane (as Fig. 17); inshore and intertidal, entering estuaries; size to 14 cm ..... Caffrogobius



Thorogobius Fig. 15

11 b. Nape scaled; uppermost pectoral rays more or less free from membrane (Fig. 17)

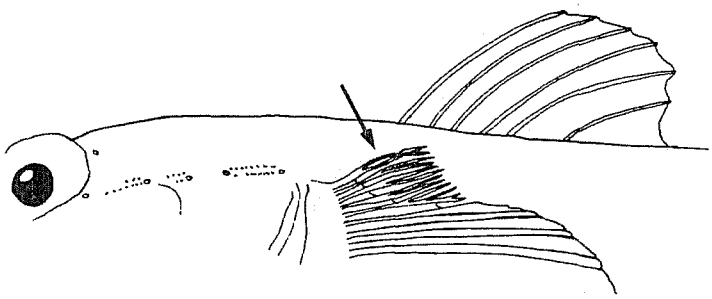
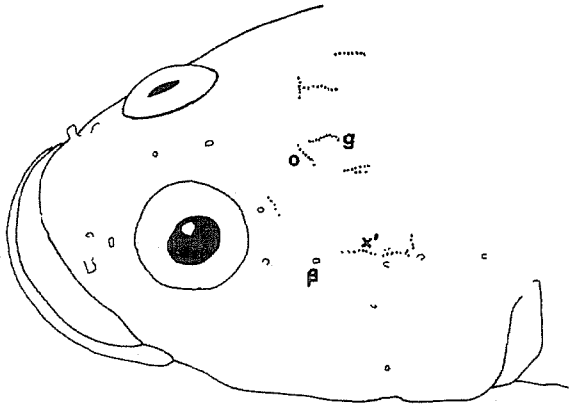


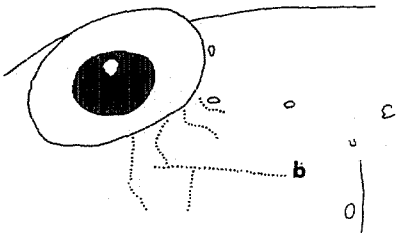
Fig. 17



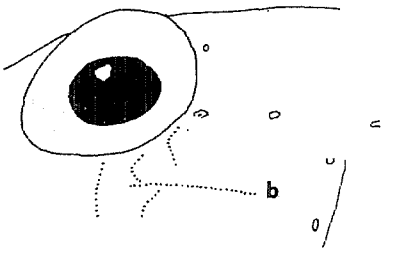
Caffrogobius Fig. 16

13 a. Cheek with 3 vertical or oblique rows of papillae from eye margin to above longitudinal row b (Fig. 18); cheek scaled, at least in upper rear corner; intertidal; size to 15 cm ..... Mauligobius

13 b. Cheek with 2 vertical or oblique rows of papillae from eye margin to above longitudinal row b (Fig. 19); cheek rarely scaled; inshore, intertidal and estuarine; typically to 18 cm (even 27 cm) ..... Gobius



Mauligobius Fig. 18



Gobius Fig. 19

4 b. Papillae on cheek in longitudinal rows, including row a around at least rear lower edge of eye (Fig. 20)

14 a. Cheek row b long, forwards to below at least middle or anterior part of pupil (Fig. 20) (if below middle, no head canals, Fig. 22); caudal fin pointed (Fig. 21)

15 a. Head canals present, and no interorbital papillae (Fig. 20); scales in lateral series 30 to 35; body with series of short dark vertical marks below lateral midline (Fig. 21); intertidal, brackish and fresh waters; size to 15 cm ..... Porogobius

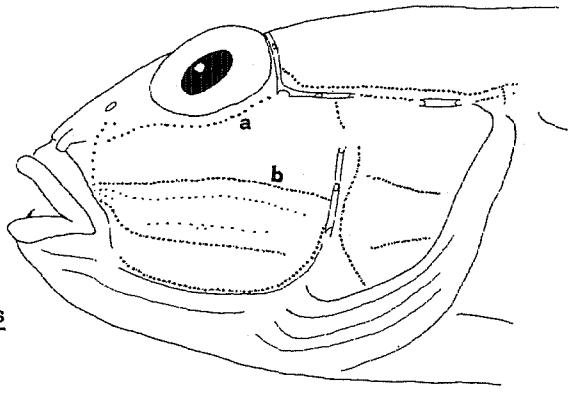
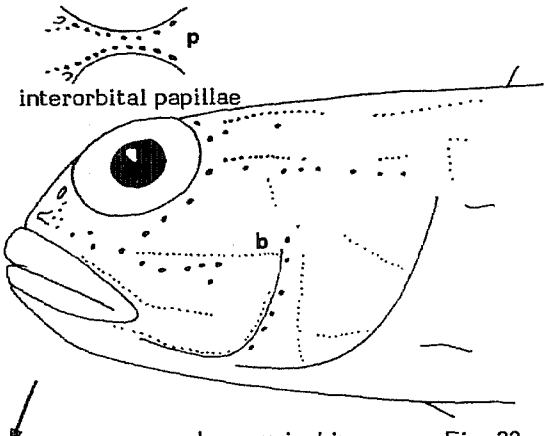
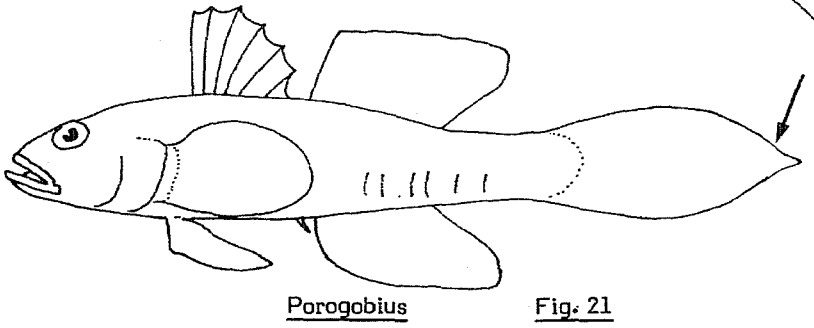


Fig. 20

15 b. No head canals; rows of interorbital papillae present (Fig. 22); scales in lateral series 25 to 28; body striped or spotted; offshore, on mud or sand; size to 11 cm ..... Lesueurigobius



Lesueurigobius Fig. 22

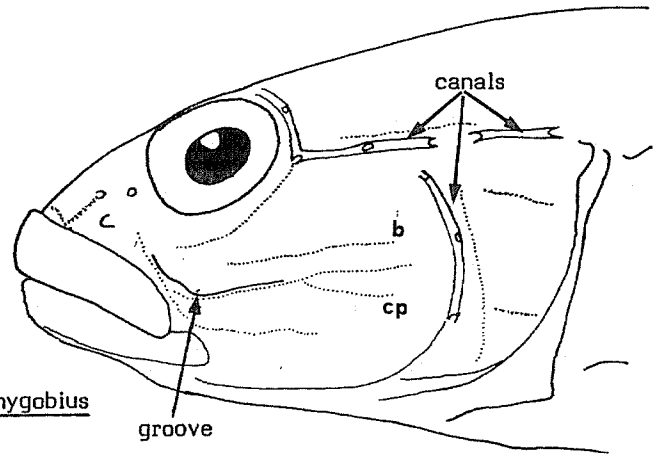


Porogobius Fig. 21

14 b. Cheek row b shorter, forwards to below rear part of eye, or, if below middle of eye, head canals and free pectoral rays present (Fig. 23)

16 a. Cheek row cp of several papillae in series (Fig. 23)

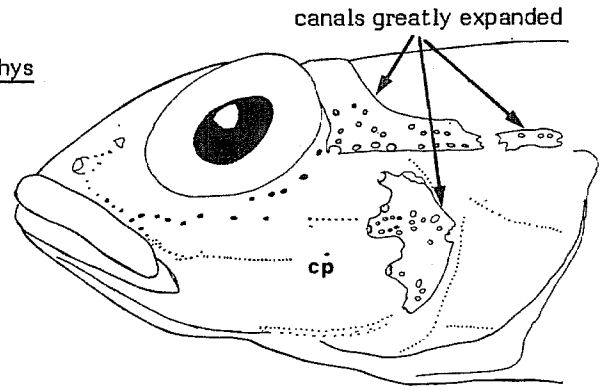
17 a. Uppermost pectoral rays free from membrane (as Fig. 17); cheek with groove (Fig. 23); scales in lateral series 33 to 45; sublittoral, intertidal, and estuarine; size to 15 cm ..... Bathygobius



Bathygobius Fig. 23

17 b. Uppermost pectoral rays within fin membrane; cheek lacking groove; scales in lateral series 23 to 27; brackish to freshwater; size to 6 cm ..... Yongeichthys

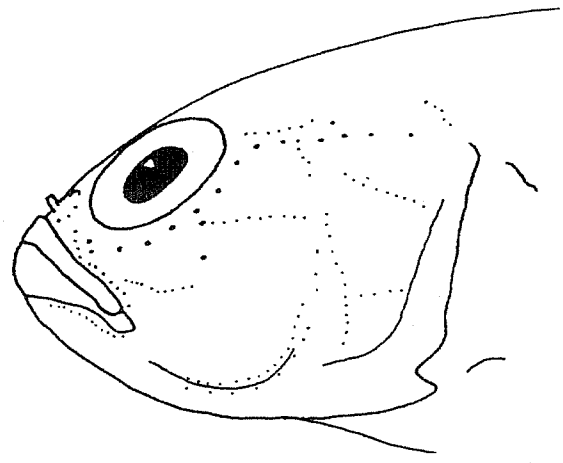
16 b. Cheek row cp represented by 1 or 2 papillae (Fig. 24); no free pectoral rays



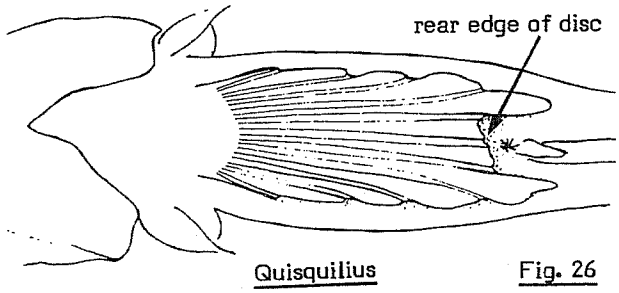
Deltentosteus Fig. 24

18 a. Head canals greatly expanded, with numerous pores (Fig. 24); pelvic disc complete; scales in lateral series 33 to 35; marine, sand or muddy sand; size to 8 cm ..... Deltentosteus

18 b. No head canals (Fig. 25); pelvic disc without anterior transverse membrane, and rear edge deeply emarginate (Fig. 26); scales in lateral series 27 to 32; inshore reefs and rocks; size small ..... Quisquilius



Quisquilius Fig. 25



Quisquilius Fig. 26

LIST OF SPECIES OCCURRING IN THE AREA*

Bathygobius casamancus (Rochebrune, 1880)
Bathygobius soporator (Valenciennes, 1837)

Caffrogobius nudiceps (Valenciennes, 1837)
Caffrogobius saldanha (Barnard, 1927)

Chonophorus lateristriga (Duméril, 1858)

Ctenogobius lepturus (Pfaff, 1933)

Deltentosteus quadrimaculatus (Valenciennes, 1837)

Gnatholepis thompsoni (Jordan, 1904)

Gobioides africanus (Giltay, 1935)
Gobioides ansorgii Boulenger, 1909

Gobionellus occidentalis (Boulenger, 1909)

Gobius cobitis Pallas, 1811
Gobius cruentatus Gmelin, 1789
Gobius niger Linnaeus, 1758
Gobius paganellus Linnaeus, 1758
Gobius rubropunctatus Delais, 1951
Gobius senegambiensis Metzselaar, 1919

Gorogobius nigricinctus (Delais, 1951)

Lesueurigobius heterofasciatus Maul, 1971
Lesueurigobius koumansi (Norman, 1935)
Lesueurigobius sanzoi (De Buen, 1918)
Lesueurigobius suerii (Risso, 1810)

Mauligobius maderensis (Valenciennes, 1837)
Mauligobius nigri (Günther, 1861)

Nematogobius ansorgii Boulenger, 1910
Nematogobius bibarbatus (von Bonde, 1923)
Nematogobius brachynemus Pfaff, 1933
Nematogobius maindroni (Sauvage, 1879)

Porogobius schlegelii (Günther, 1861)

Quisquilius sp. (to be described by C.E. Dawson & C.R. Robins)

Thorogobius angolensis (Norman, 1935)
Thorogobius ephippiatus (Lowe, 1839)

Vanneaugobius pruvoti (Fage, 1907)

Wheelerigobius maltzani (Steindachner, 1882)

Yongeichthys thomasi (Boulenger, 1916)

Prepared by P.J. Miller, Zoology Department, The University, Bristol, BS8 1UG, U.K.

* Several undescribed species known, and other records of doubtful status

GONOST

1981

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

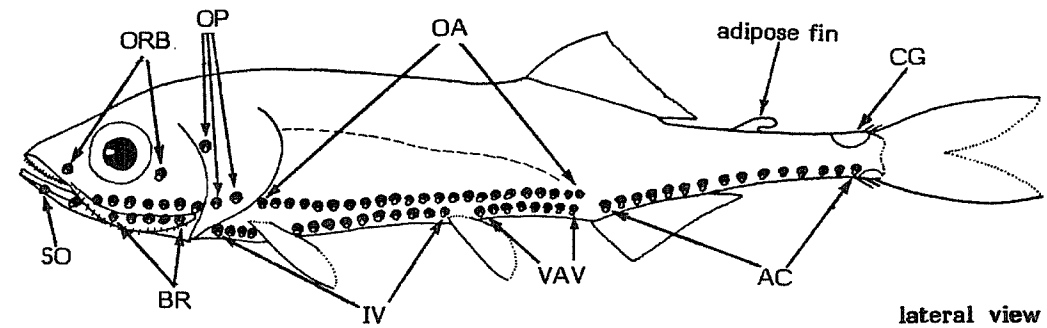
GONOSTOMATIDAE

Bristlemouths

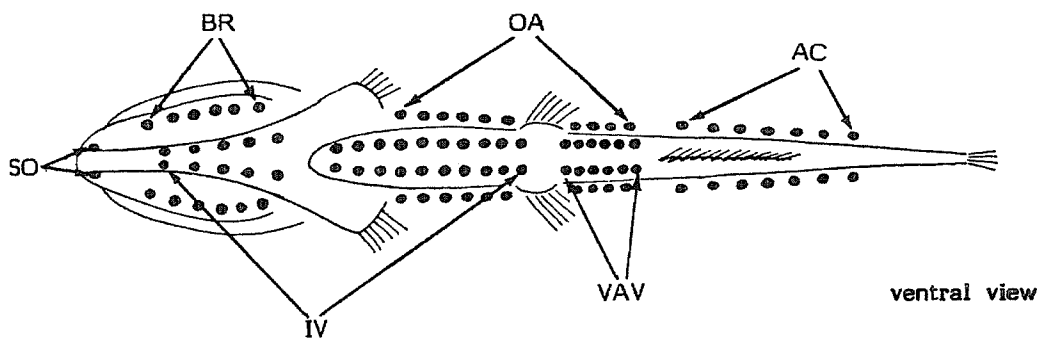
Small compressed fishes, rarely exceeding 25 cm in length. Head without barbels; mouth large, with teeth present in jaws; gill openings very wide; gillrakers usually well developed. Positions of dorsal, anal, and pelvic fins variable; pectoral fins low on body; dorsal adipose fin present on many species. Scales, if present, large and easily removed. Photophores (light organs) present on all species except Cyclothone obscura: one or more on the head, always a series on branchiostegal membrane, and one or more lengthwise rows on body; other patches of luminous tissue may also be present on head and/or body.

Colour: depending on the species, either uniformly dark brown or black, often with silvery iridescence on body and cheeks, or translucent white with scattered black chromatophores (pigment spots).

All species are mesopelagic to bathypelagic, but many exhibit diel vertical migrations, and some are found in the upper 50 m of water at night, and may be incidentally taken in various types of fishing gear. At present they are of no commercial importance.



lateral view

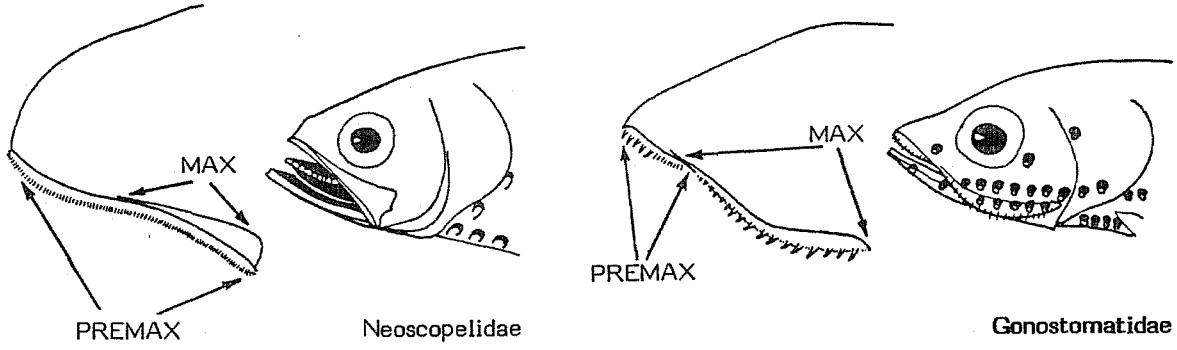


ventral view

AC ventral series posterior to anal fin origin
BR on the branchiostegal membranes
CG on procumbent caudal rays
IV preventral photophores of the ventral series
OA lateral series
OP opercular photophores
ORB situated close to the eye
SO pair near symphysis of lower jaw
VAV ventral series between ventral fins and anal fin origin

SIMILAR FAMILIES OCCURRING IN THE AREA:

Myctophidae and Neoscopelidae: somewhat similar in body shape and also bearing light organs, but maxilla (MAX) completely excluded from the gape by the premaxilla (PREMAX).



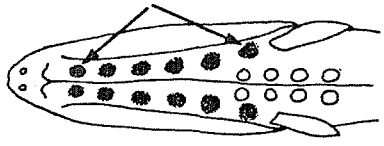
KEY TO GENERA OCCURRING IN THE AREA*:

1 a. BR 8 or more; serial photophores separate, not grouped in common glands

2 a. Photophores present on isthmus (Fig. 1); IV 20 or more

3 a. More than 2 rows of photophores on body; no adipose fin (Figs. 2 to 4)

4 a. Lateral-line area with a row of small photophores extending unto caudal fin (Fig. 2) ..... Diplophos



head viewed from below Fig. 1

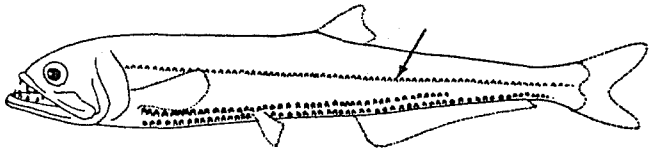


Fig. 2

4 b. Lateral-line area not marked by a row of photophores

5 a. Trunk slightly longer than tail; origin of dorsal fin about in middle of body *length* (Fig. 3) ..... Yarrella

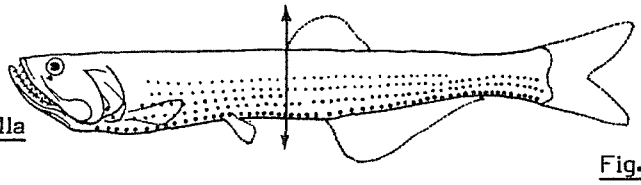


Fig. 3

5 b. Trunk much shorter than tail; origin of dorsal fin well in advance of middle of body (Fig. 4) ..... Triplophos

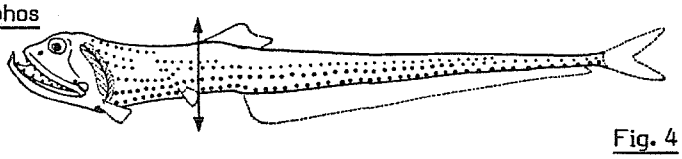


Fig. 4

3 b. Only 2 rows of photophores on body; adipose fin present

6 a. ORB 1, close to front of eye (Fig. 5) ..... Polymetme

6 b. ORB 2, one close to front of eye, the other close to its hind margin or below centre (Figs. 6,7)

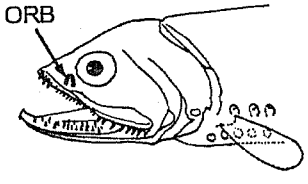


Fig. 5

*All abbreviations refer to photophores (see code)

7 a. Eye normal (not tubular); pelvic fins in advance of dorsal fin origin (Figs. 6 to 8)

8 a. Origin of anal fin beneath dorsal fin (Figs. 6,7) or close behind a vertical from its last rays; BR 8 to 9; OA 19 to 25 (Fig. 8)

9 a. Origin of anal fin beneath middle or anterior portion of dorsal fin; anterior ORB larger than posterior one; AC 19 to 21 (Fig. 6) ..... Pollichthys

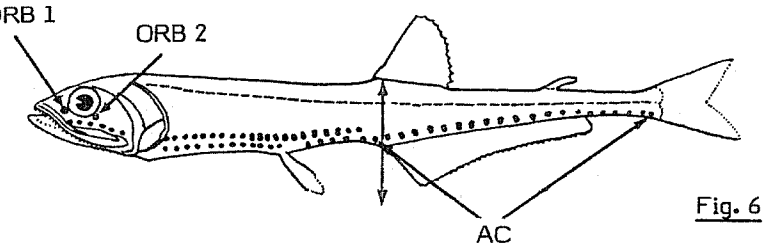


Fig. 6

9 b. Origin of anal fin beneath middle or end of dorsal fin; ORB's equal in size, or posterior one larger; AC 12 to 16 (Fig. 7) ..... Vinciguerria

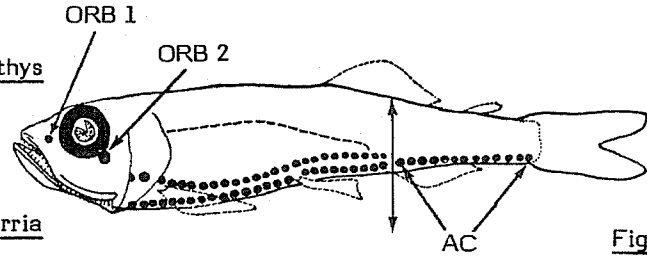


Fig. 7

8 b. Origin of anal fin well behind end of dorsal fin; BR 14 to 18; OA 29 to 34 (Fig. 8) ..... Photichthys

7 b. Eye tubular; ventral fins behind dorsal fin origin; BR 11 to 12; IV 25 to 28; VAV 9 to 14; AC 12 to 14; OA 23 to 31 (Fig. 9) ..... Ichthyococcus

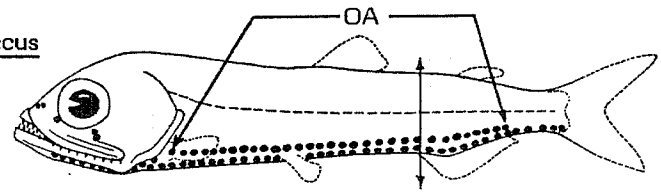


Fig. 8

2 b. No photophores on isthmus (Fig. 10)

10 a. Dorsal fin origin opposite or behind anal fin origin (Fig. 13); no pseudobranchiae*

11 a. Body with at least 2 row of photophores, or photophores inconspicuous; luminous glands (CG) usually present on procumbent caudal rays; adipose fin present or absent

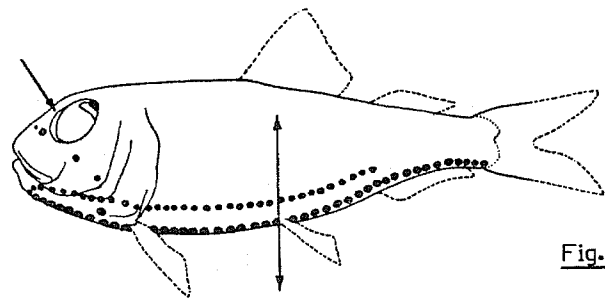
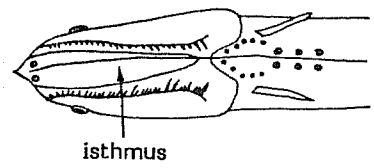


Fig. 9



head viewed from below

Fig. 10

*Gill-like structures on inner surface of gill cover

12 a. Maxilla with a series of well separated, relatively long slender teeth, and short teeth in the interspaces (Fig. 11a); eyes moderate to small (Fig. 12a); OA 11 to 12; SO present (except in G. bathyphilum) ..... Gonostoma

12 b. Maxilla with a series of close-set teeth, increasing in size posteriorly (Fig. 11b); eyes very small (Fig. 12b); OA 6 to 10 (except absent in C. obscura); SO absent ..... Cyclothone

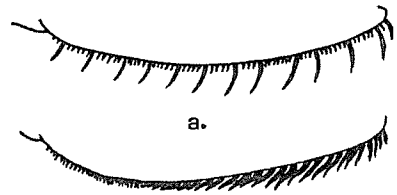


Fig. 11
teeth on maxilla (upper jaw)

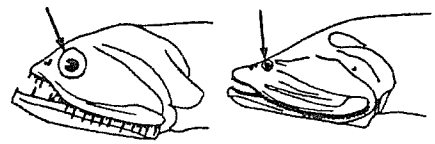


Fig. 12

11 b. Body with a single row of conspicuous photophores; no CG; SO present; BR 11 to 13; no adipose fin (Fig. 13) ..... Bonapartia

10 b. Dorsal fin origin slightly in advance of anal fin origin; pseudobranchiae* present; body with only one row of large, conspicuous, somewhat irregular photophores; SO absent; BR 9 to 12; adipose fin present (Fig. 14) ..... Margrethia

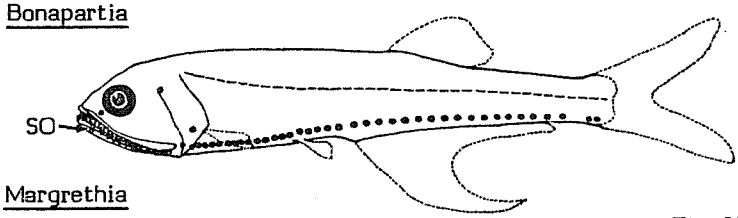


Fig. 13

1 b. BR photophores 6; at least some of the serial photophores grouped together in common glands, appearing as black or silvery bands; photophores present on isthmus (Figs. 15 to 18)

13 a. AC's in 3 to 6 groups of 2 to 4 small photophores each; IV: 3+4 on isthmus, 16 or 17 on abdomen (total 23 or 24); VAV 4 or 5 (Fig. 15) ..... Valenciennellus

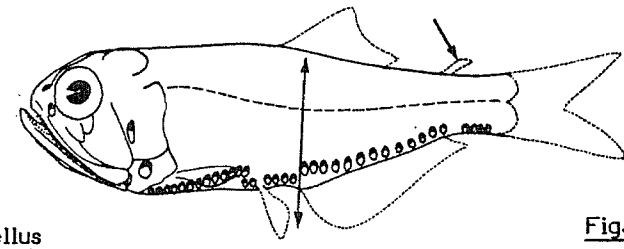


Fig. 14

13 b. AC's in 2 or 3 groups of 5 or more photophores each; IV: 6, rarely 7 on isthmus, 10 to 13 on abdomen (total 16 to 19); VAV 6 to 8, or joined to anterior group of AC (Argyripnus)

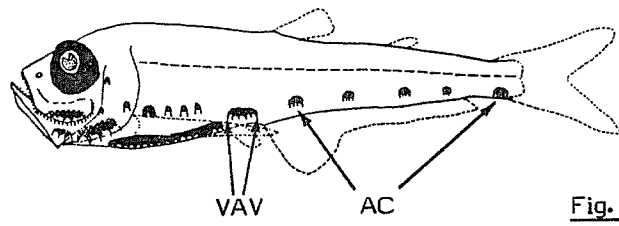


Fig. 15

* Gill-like structures on inner surface of gill cover

14 a. Anus about halfway between pelvic fin bases and anal fin, or nearer to anal; dorsal fin origin about middle of body length; SO absent; lower posterior OP greatly enlarged (Fig. 16) ..... Argyripnus

14 b. Anus near anal fin; dorsal fin origin well behind middle of body length; SO present; lower posterior OP not enlarged; IV: 6+12 or 13 (total 18 or 19); OA 9 rarely 10; adipose fin well developed (Fig. 17) ..... Maurolicus

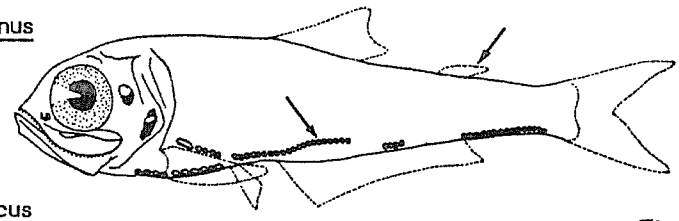


Fig. 16

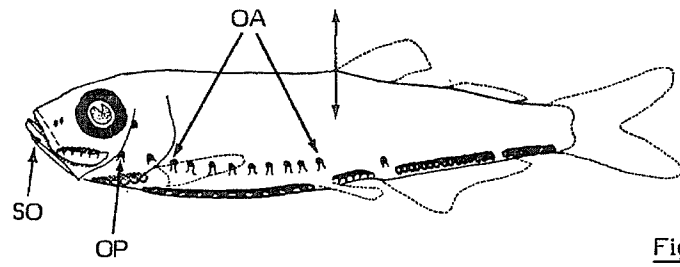


Fig. 17

LIST OF SPECIES OCCURRING IN THE AREA:

Argyripnus atlanticus Maul, 1952

Bonapartia pedaliota Goode & Bean, 1896

Cyclothone acclinidens Garman, 1899
Cyclothone alba Brauer, 1906
Cyclothone braueri Jespersen & Tåning, 1926
Cyclothone livida Brauer, 1906
Cyclothone microdon (Günther, 1878)
Cyclothone obscura Brauer, 1906
Cyclothone pallida Brauer, 1906
Cyclothone pseudopallida Mukacheva, 1964
? * Cytlothone pygmaea Jespersen & Tåning, 1926

? Diplophos maderensis (Johnson, 1890)
Diplophos taenia Günther, 1873

Gonostoma atlanticum Norman, 1930
Gonostoma bathyphilum (Vaillant, 1888)
Gonostoma denudatum Rafinesque, 1810
Gonostoma elongatum Günther, 1878

Ichthyococcus ovatus (Cocco, 1838)
Ichthyococcus polli Blache, 1963

Margrethia obtusirostra Jespersen & Tåning, 1919

Maurolicus muelleri (Gmelin, 1788)

? Photichthys argenteus Hutton, 1872

---

* Species known from the Mediterranean, but possibly occurring also in the area

Pollichthys mauli (Poll, 1953)

Polymetme corythaeola (Alcock, 1898)

Triplophos hemingi (McArdle, 1901)

Valenciennellus tripunctulatus (Esmark, 1871)

Vinciguerria attenuata (Cocco, 1838)
Vinciguerria nimbaria (Jordan & Williams, 1895)
Vinciguerria poweriae (Cocco, 1838)

Yarrella blackfordi Goode & Bean, 1896

Prepared by G.W. Bond, Department of Biology, Fitchburg State College, Fitchburg, Massachusetts, U.S.A.

GRAMMIST

1981

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

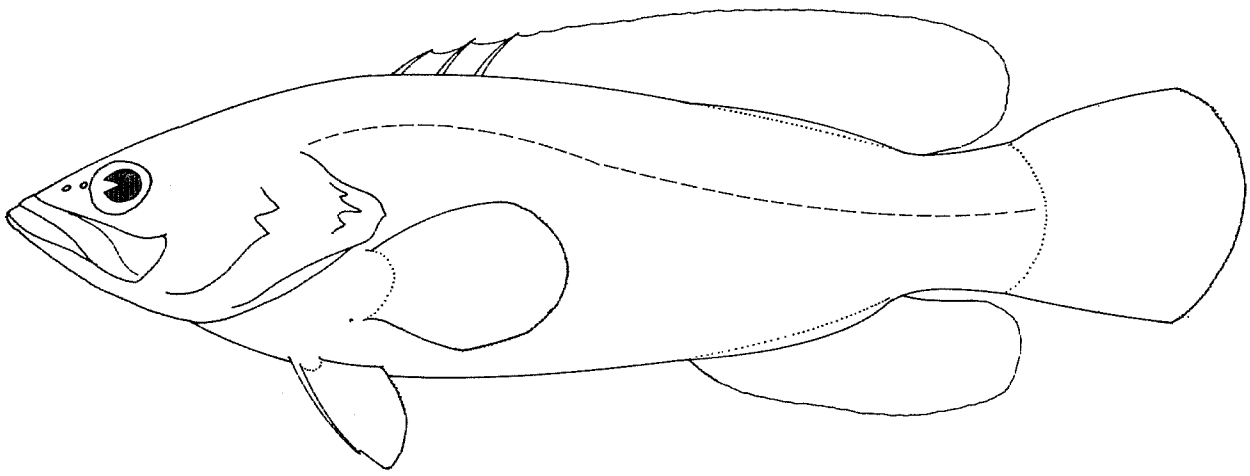
GRAMMISTIDAE

Soapfishes

Oblong, compressed, bass-like or grouper-like fishes. Head profile slightly concave to moderately convex; mouth moderately large, with thick lips; teeth villiform, in bands in both jaws and on roof of mouth (vomer and palatines); two pairs of nasal openings, nasal organ vertically elongated; opercle with 3 spines, its entire upper edge bound to the skull by a membrane; upper portion of preopercular margin with 1 to 3 spines. Dorsal fin single, usually fleshy, with 3 or 4 spines; anal fin with no spines; pelvic fins inserted in advance of the pectorals; inner pelvic fin rays attached to abdomen by a membrane. Lateral line single, complete; lateral line pores conspicuous on preopercular margin and in the area emcompassed by the lower lips. Scales with concentric rings, embedded in the skin.

Colour: blotched or spotted.

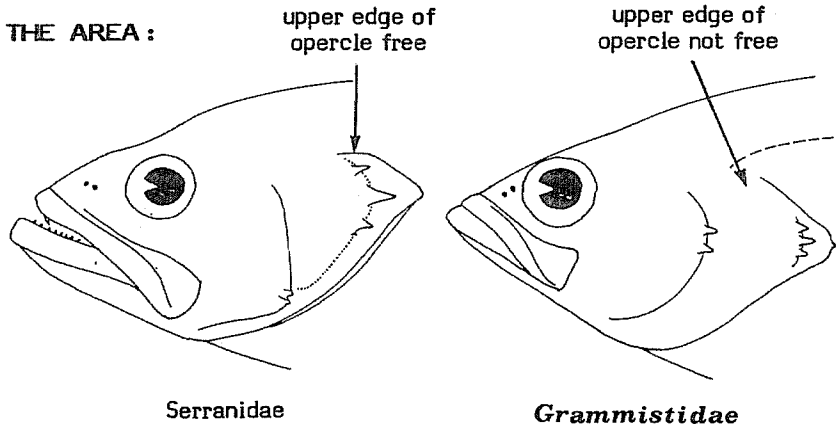
Soapfishes are small to medium-sized fishes (to about 32 cm in total length in Fishing Area 34). They inhabit shallow coastal areas in clear water near reefs and on a wide range of substrates and in water of varying quality. Both species live in holes and crevices of reefs. The soapfishes are named for the slimy mucus on their bodies which produces foam when the fish is handled. None of the Eastern Central Atlantic species is of significant commercial importance, but the larger and more abundant Rypticus saponaceus is consumed in some localities when caught.



SIMILAR FAMILIES OCCURRING IN THE AREA :

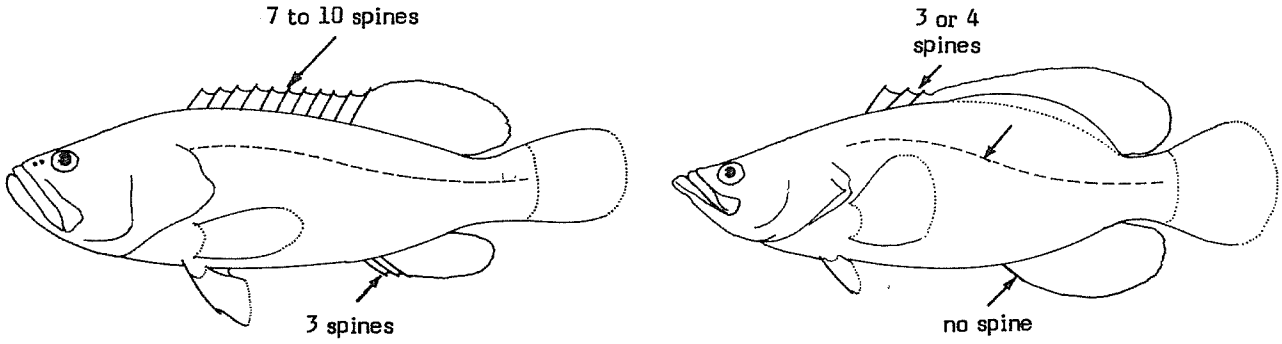
Other bass-like or grouper-like families: upper edge of preopercle free (fused to head in Grammistidae). Furthermore:

Serranidae: 7 to 10 dorsal fin spines (3 or 4 in Rypticus); always 3 anal fin spines (none in Rypticus).



Serranidae

Grammistidae



Serranidae

Rypticus

LIST OF SPECIES OCCURRING IN THE AREA :

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

Rypticus saponaceus (Bloch & Schneider, 1801) GRAMMIST Rypt 1
Rypticus subbifrenatus Gill, 1861

Prepared by W.R. Courtenay, Jr., Florida Atlantic University, Boca Raton, Florida, U.S.A.

GRAMMIST Rypt 1

1981

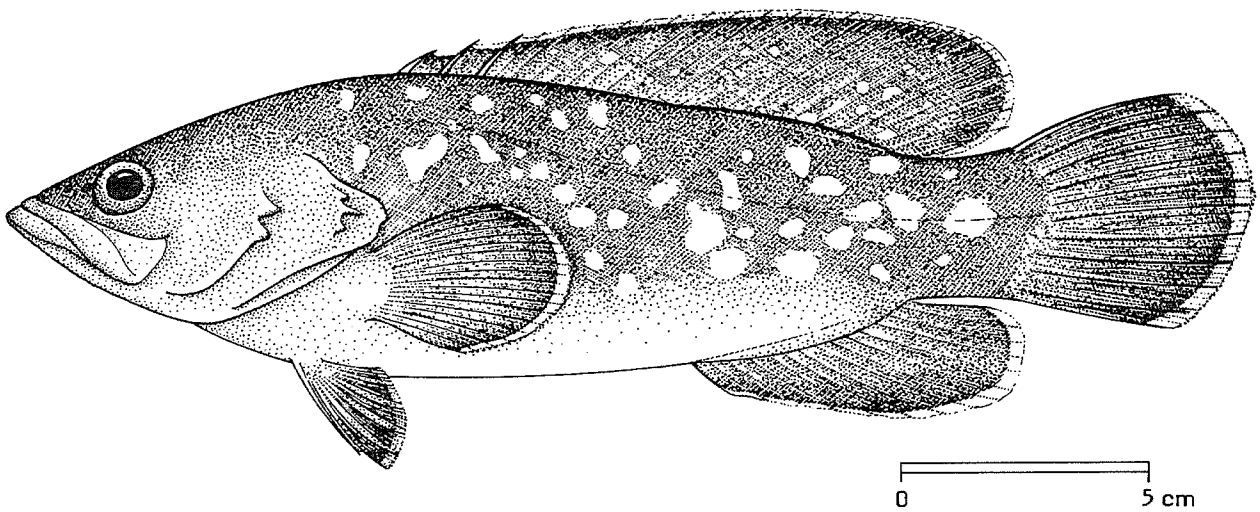
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : GRAMMISTIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Rypticus saponaceus (Bloch & Schneider, 1801)

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES:

FAO : En - Greater soapfish
Fr - Grand savon
Sp - Jabonero

NATIONAL :

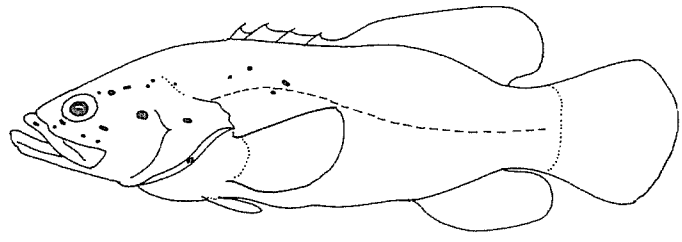
DISTINCTIVE CHARACTERS :

Body elongate and compressed, its depth contained 3 to 3.3 times in standard length. Head small and pointed, its upper profile nearly straight in young but becoming moderately concave in larger adults; mouth rather large, with thick lips; teeth villiform in bands in both jaws and on roof of mouth (vomer and palatines); entire upper edge of preopercle bound to the skull by a membrane; 3 well developed spines on opercle and 2 on upper margin of preopercle. Vertical fins fleshy basally, especially in adults; dorsal fin single, low anteriorly and steadily increasing in height backward, with 3 spines and 23 to 25 soft rays; anal fin without spines and 15 soft rays; pectoral fins rounded; pelvic fins inserted in advance of the pectorals, their inner rays attached to abdomen by a membrane; caudal fin rounded. Lateral line single and complete; lateral line pores conspicuous on preopercular margin and the area encompassed by the lower lips. Scales with concentric rings, embedded in the skin.

Colour: adults are grey or brownish grey, lighter below; often with a fine dark pattern of lines which becomes reticulate on fins; pale spots about the size of the pupil or smaller on body and less numerous on dorsal fin, many of these spots merging; a pale mid-dorsal band often present on head, particularly in young. However, juvenile individuals may have dark spots on a pale background.

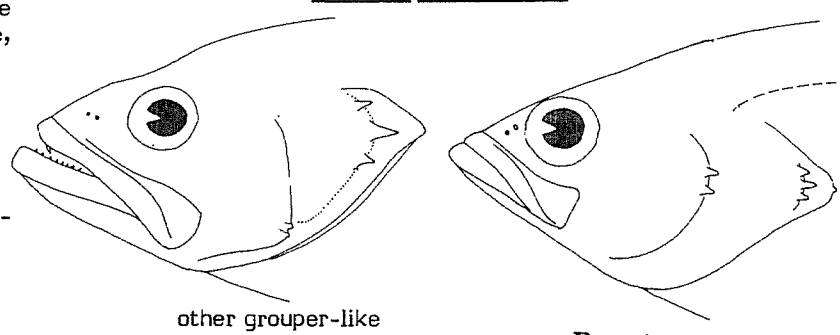
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Rypticus subbifrenatus: maximum size smaller, to about 13 cm; background body colour pale olive green to pale brown-red, head and belly white to pale cream, with dark red-brown to black spots on body and head (only on anterior body and head in individuals longer than 10 cm).



Rypticus subbifrenatus

Other bass-like or grouper-like fishes: upper edge of preopercle free, not bound to skull by a membrane.



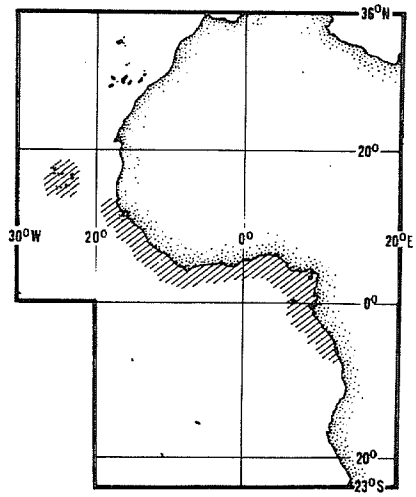
other grouper-like fishes

SIZE:

Maximum: to about 32 cm; common to 25 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Rypticus



Reported to occur off St. Helena, Ascension and Cape Verde Islands and from Senegal to Congo; also found in the Western Central Atlantic.

Inhabits shallow water (to about 50 m depth) on bottoms of eroded limestone or mixed sand and rocks as well as around reefs. This fish secretes copious mucus which makes its surface slimy and when disturbed the slime turns into a soapy foam. The mucus has been shown to contain a toxic protein.

PRESENT FISHING GROUNDS:

Shallow waters throughout its range.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught mainly in traps and by hook and line.

Consumed locally fresh and smoked, but not highly esteemed as foodfish, mainly because of its slime.

HEMIR

1981

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

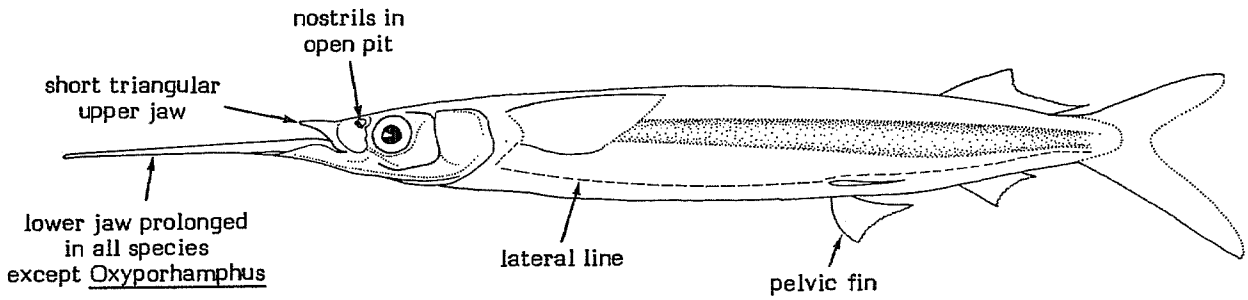
HEMIRAMPHIDAE

Halfbeaks

Elongate fishes with a prolonged lower jaw (except in Oxyporhamphus micropterus) and a short triangulr upper jaw. Nostrils in a pit anterior to the eyes. No spines in fins; dorsal and anal fins posterior in position; pelvic fins in abdominal position, with 6 soft rays; pectoral fins usually short. Lateral line running down from pectoral fin origin and then backward along ventral margin of body. Scales moderately large, cycloid (smooth), easily detached.

Colour: these fishes live at the surface and are protectively coloured for this mode of life by being green or blue on the back and silvery white on the sides and ventrally. Tip of the lower jaw bright red or orange in most species.

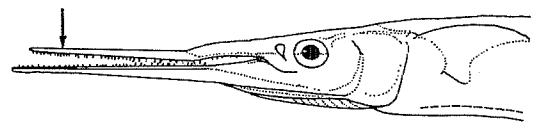
Most species are marine, but some inhabit freshwaters; omnivorous, feeding on floating sea grass, crustaceans and small fishes. They are prone to leap and skitter at the surface and one offshore species, Euleptorhamphus velox leaps out of the water and glides like a flying fish. Although at present these fishes are not of great commercial importance, most species are regularly found in local markets. The flesh is excellent and halfbeaks are utilized as food in many parts of the world. They are mainly caught with seines and pelagic trawls and utilized fresh, dried salted, smoked and for fishmeal and oil.



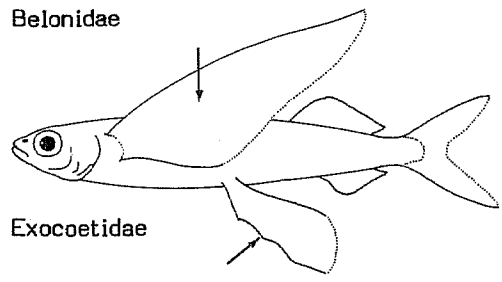
SIMILAR FAMILIES OCCURRING IN THE AREA:

Belonidae (needlefishes): both upper and lower jaws elongated and armed with needle-sharp teeth.

Exocoetidae (flyingfishes): lack the prolonged lower jaw characteristic of most halfbeaks; pectoral fins or both pectoral and pelvic fins enlarged and used for aerial gliding.



Belonidae



Exocoetidae

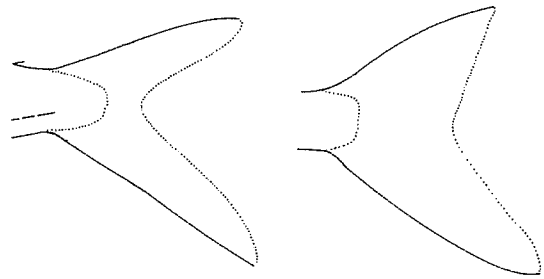
KEY TO GENERA OCCURRING IN THE AREA*:

1 a. Dorsal fin rays 21 to 25; anal fin rays 19 to 24; pectoral fins very long; pectoral fin rays usually 7 to 9 ..... Euleptorhamphus

1 b. Dorsal fin rays 12 to 16; anal fin rays 10 to 18; pectoral fins short; pectoral fin rays 9 to 12

2 a. Caudal fin deeply forked (Fig. 1a); scales absent on snout; preorbital ridge absent (Fig. 2a); anal fin rays usually 10 to 13 ..... Hemiramphus

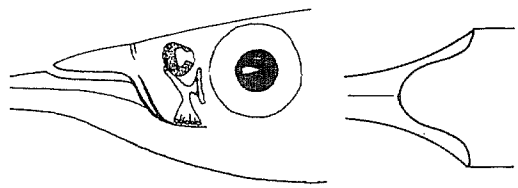
2 b. Caudal fin slightly forked (Fig. 1b); scales present on snout; preorbital ridge well developed (Fig. 2b); anal fin rays usually 14 to 17 ..... Hyporhamphus



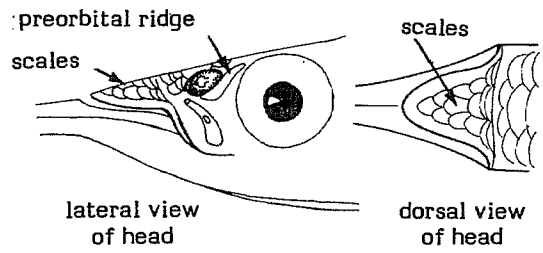
a. Hemiramphus b. Hyporamphus

caudal fin

Fig. 1



a. Hemiramphus



b. Hyporamphus

Fig. 2

LIST OF SPECIES OCCURRING IN THE AREA:

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

Euleptorhamphus velox Poey, 1868

Hemiramphus balao LeSueur, 1823	HEMIR Hemir 1
Hemiramphus brasiliensis (Linnaeus, 1758)	HEMIR Hemir 3
Hyporhamphus picarti (Valenciennes, 1846)	HEMIR Hypor 2

Oxyporhamphus micropterus similis Bruun, 1935

Prepared by B.B. Collette, NMFS Systematics Laboratory, NOAA, Washington D.C., U.S.A.

Species illustrations provided by author

*Out of about 12 genera and 75 species in the family, only 5 species belonging to 4 genera, occur in the Eastern Central Atlantic

HEMIR Hemir 1

1981

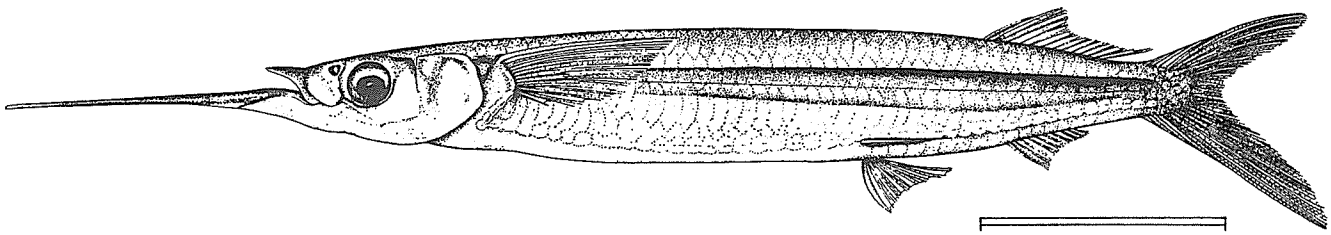
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : HEMIRAMPHIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Hemiramphus balao LeSueur, 1823

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES:

FAO : En - Balao halfbeak
Fr - Demi-bec balaou
Sp - Agujeta balajú

NATIONAL :

DISTINCTIVE CHARACTERS :

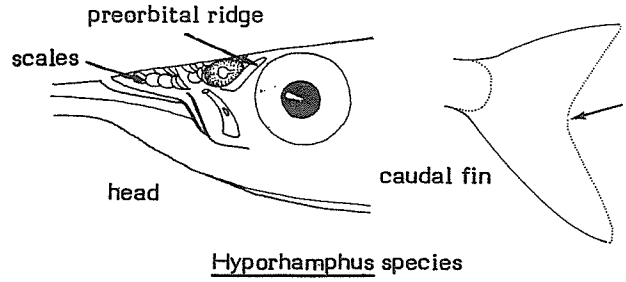
An elongate fish with a greatly prolonged beak-like lower jaw. Upper jaw short, triangular and scaleless; preorbital ridge (bony ridge under nostril) absent. Total number of gill rakers on first gill arch 31 to 39 (average 34.5 to 37.2), 7 to 10 on upper and 22 to 29 on lower limb of arch. No spines in fins; dorsal fin rays 11 to 15, usually 13 or 14; anal fin rays 10 to 13, usually 11 or 12; pectoral fins long, reaching beyond anterior margin of nasal pit when folded forward, and with 10 to 12, usually 11, rays; caudal fin deeply forked, lower lobe much longer than upper.

Colour: dark bluish above, silvery white below. Beak black with fleshy red tip; upper lobe of caudal fin bluish-violet with red tip, lower lobe bluish.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Hemiramphus brasiliensis: pectoral fin much shorter, barely reaching to posterior margin of nasal pit (reaching beyond anterior margin in He. balao), contained 5.3 to 6.7 times in standard length (4.5 to 5.4 times in He. balao); more anal fin rays, usually 12 or 13 (usually 11 or 12 in He. balao); adults with reddish orange upper caudal fin lobe (bluish-violet in He. balao).

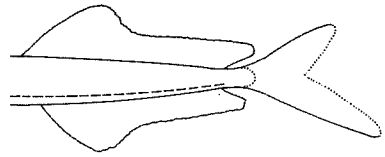
Hyporhamphus species: upper jaw covered with scales (scaleless in Hemiramphus) preorbital ridge present (absent in Hemiramphus); caudal fin slightly forked (deeply forked with lower lobe much longer than upper in Hemiramphus); more anal fin rays, 13 to 18 (10 to 14 in Hemiramphus).



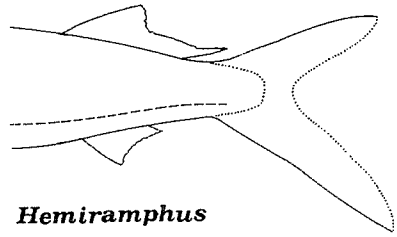
Hyporhamphus species

Euleptorhamphus species: bases of dorsal and anal fins much longer, fins with many more rays (21 to 25 in dorsal and 19 to 24 in anal fin).

All other fishes with similar body shape: lower jaw never greatly prolonged beyond the upper jaw.



Euleptorhamphus species



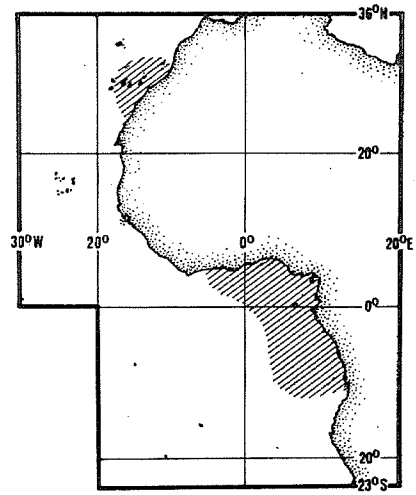
Hemiramphus

SIZE :

Maximum: to at least 40 cm total length; about 28 cm standard length (from tip of upper jaw to base of caudal fin); common to 35 cm total length.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

In the Eastern Atlantic, from the Canary Islands and from Ivory Coast southward to Luanda, Angola. Also found in the Western Atlantic from off New York southward through the Gulf of Mexico and Caribbean Sea to Santos, Brazil.



An inshore, surface-dwelling fish forming sizeable schools.

Food is composed largely of zooplankton, particularly copepods, decapods, siphonophores, and polychaetes.

PRESENT FISHING GROUNDS :

Inshore waters throughout its range.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species. Usually taken along with Hemiramphus brasiliensis.

Caught with beach and purse seines and pelagic trawls.

Utilized fresh, dried salted, and for fishmeal and oil.

HEMIR Hemir 3

1981

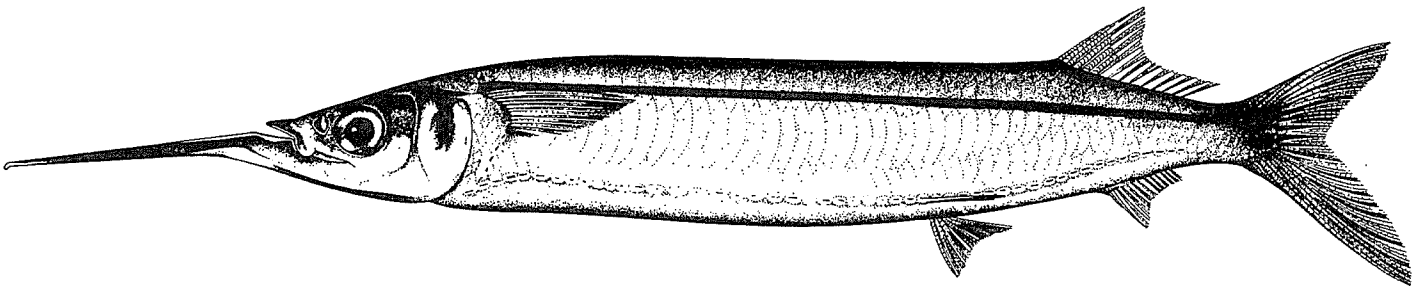
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : HEMIRAMPHIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Hemiramphus brasiliensis (Linnaeus, 1758)

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES:

FAO : En - Ballyhoo halfbeak
Fr - Demi-bec de Brésil
Sp - Agujeta brasileña

NATIONAL :

DISTINCTIVE CHARACTERS :

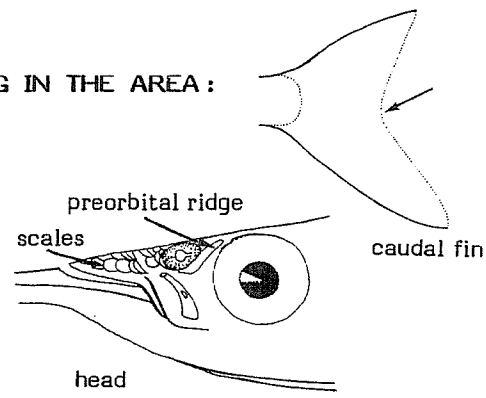
An elongate fish with a greatly prolonged beak-like lower jaw. Upper jaw short, triangular and scaleless; preorbital ridge (bony ridge under nostril) absent. Total number of gill rakers on first gill arch 28 to 36 (average 32.8), 7 to 10 on upper and 20 to 26 on lower limb of arch. No spines in fins; dorsal fin rays 12 to 15, usually 13 or 14; anal fin rays 12 to 14, usually 13; pectoral fins short, not reaching to nasal pit when folded forward and with 10 to 12, usually 11, rays; caudal fin deeply forked, lower lobe much longer than upper.

Colour: dark bluish/green above, silvery white below. Beak black with fleshy red tip; entire upper lobe of caudal fin yellowish orange, lower lobe dusky.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

He. balao: pectoral fin very long, reaching beyond anterior margin of nasal pit when folded forward (barely reaching posterior margin of nasal pit in He. brasiliensis), contained 4.5 to 5.4 times in standard length (5.3 to 6.4 times in He. brasiliensis); anal fin rays fewer, usually 11 or 12 (usually 12 or 13 in He. brasiliensis); adults with bluish violet upper caudal fin lobe (yellowish orange in He. brasiliensis).

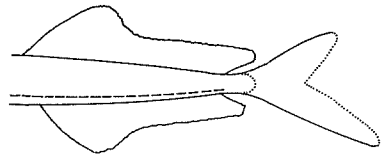
Hyporhamphus species: upper jaw covered with scales (scaleless in Hemiramphus); preorbital ridge present (absent in Hemiramphus); caudal fin slightly forked (deeply forked, with lower lobe much longer than upper in Hemiramphus); more anal fin rays, 13 to 18 (10 to 14 in Hemiramphus).



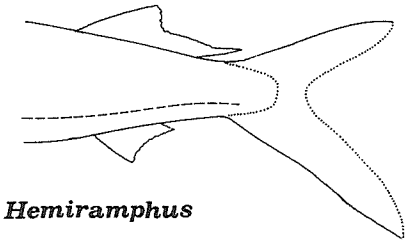
Hyporhamphus species

Euleptorhamphus species: bases of dorsal and anal fins much longer, fins with many more rays (21 to 25 in dorsal and 19 to 24 in anal fin)

All other fishes with similar body shape: lower jaw never greatly prolonged beyond the upper jaw.



Euleptorhamphus species



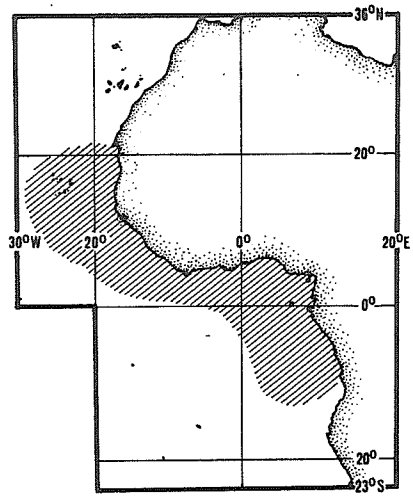
Hemiramphus

SIZE :

Maximum: at least 40.5 cm total length; 35 cm standard length (from tip of upper jaw to base of caudal fin); common to 35 cm total length.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

In the Eastern Atlantic, from the Cape Verde Islands and Dakar southward to Luanda, Angola. Also found in the Western Atlantic from Woods Hole, Massachusetts southward through the Gulf of Mexico and Caribbean Sea to Rio de Janeiro.



An inshore, surface-dwelling fish forming sizeable schools.

Adults feed mostly on seagrasses, smaller fish on planktonic decapods, copepods and siphonophores.

PRESENT FISHING GROUNDS :

Inshore waters throughout its range.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species. Usually taken along with Hemiramphus balao.

Caught with set nets, beach seines, pelagic trawls and on line gear.

Utilized fresh, smoked, dried salted and for fish-meal and oil.

HEMIR *Hypor* 2

1981

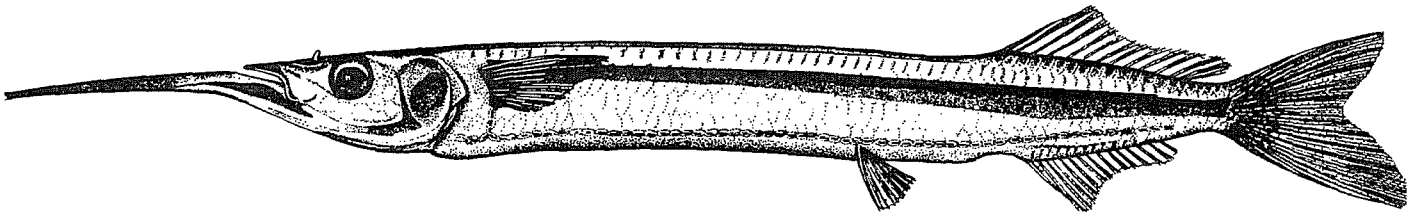
FAO SPECIES IDENTIFICATION SHEETS

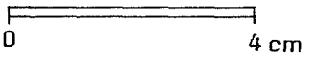
FAMILY : HEMIRAMPHIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Hyporhamphus picarti (Valenciennes, 1846)

OTHER SCIENTIFIC NAMES STILL IN USE : Hyporhamphus unifasciatus (Ranzani, 1842) misidentification





VERNACULAR NAMES:

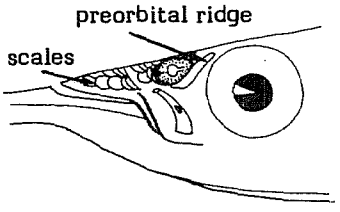
FAO : En - African halfbeak
Fr - Demi-bec africain
Sp - Agujeta africana

NATIONAL :

DISTINCTIVE CHARACTERS :

An elongate fish with a greatly prolonged beak-like lower jaw. Upper jaw short, triangular and scaly; preorbital ridge (bony ridge under nostril) present. Total number of gill rakers on first gill arch 28 to 36 (average 32.0), 7 to 11 on upper and 18 to 25 on lower limb of arch. No spines in fins; dorsal fin rays 13 to 16, usually 15; anal fin rays 13 to 17, usually 15 or 16; pectoral fins short, not reaching to nasal pit when folded forward and with 10 to 12, usually 11, rays; caudal fin emarginate to slightly forked.

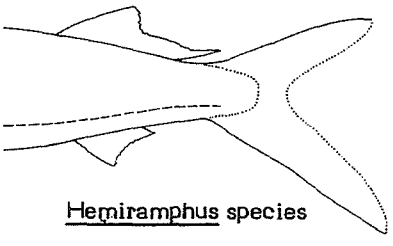
Colour: greenish above, silvery white below; 3 distinct narrow black lines along middle of back from head to dorsal fin; fleshy tip of beak red; caudal fin pale, dark-edged.



head

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

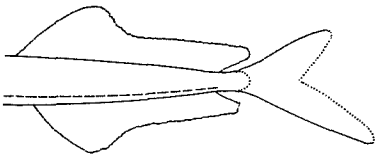
Hemiramphus species: upper jaw without scales (scaly in Hy. picarti); preorbital ridge absent (present in Hy. picarti); fewer anal fin rays, 10 to 14 (13 to 17 in Hy. picarti); caudal fin deeply forked, lower lobe much longer than the upper (emarginate to slightly forked in Hy. picarti).



Hemiramphus species

Euleptorhamphus species: bases of dorsal and anal fins much longer, fins with many more rays (21 to 25 in dorsal and 19 to 24 in anal fin).

All other fishes with similar body shape: lower jaw never greatly prolonged beyond the upper jaw.



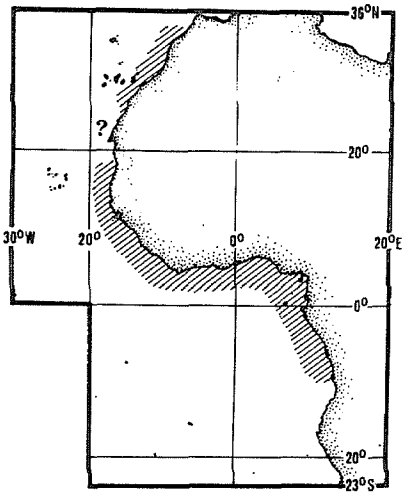
Euleptorhamphus species

SIZE :

Maximum: to about 18 cm total length; about 14 cm standard length (from tip of upper jaw to base of caudal fin); common to 10 cm standard length.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

In the Eastern Atlantic from Morocco and Dakar southward along the coast of the Gulf of Guinea to Luanda, Angola. Also known from the southern shores of the Mediterranean Sea.



An inshore schooling species, frequently entering estuaries.

Omnivorous, feeding on algae as well as on small animal organisms.

PRESENT FISHING GROUNDS :

Inshore waters throughout its range.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Caught with beach seines and pelagic trawls.

Utilized fresh, dried salted and for fishmeal and oil.

HOLOC

1981

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

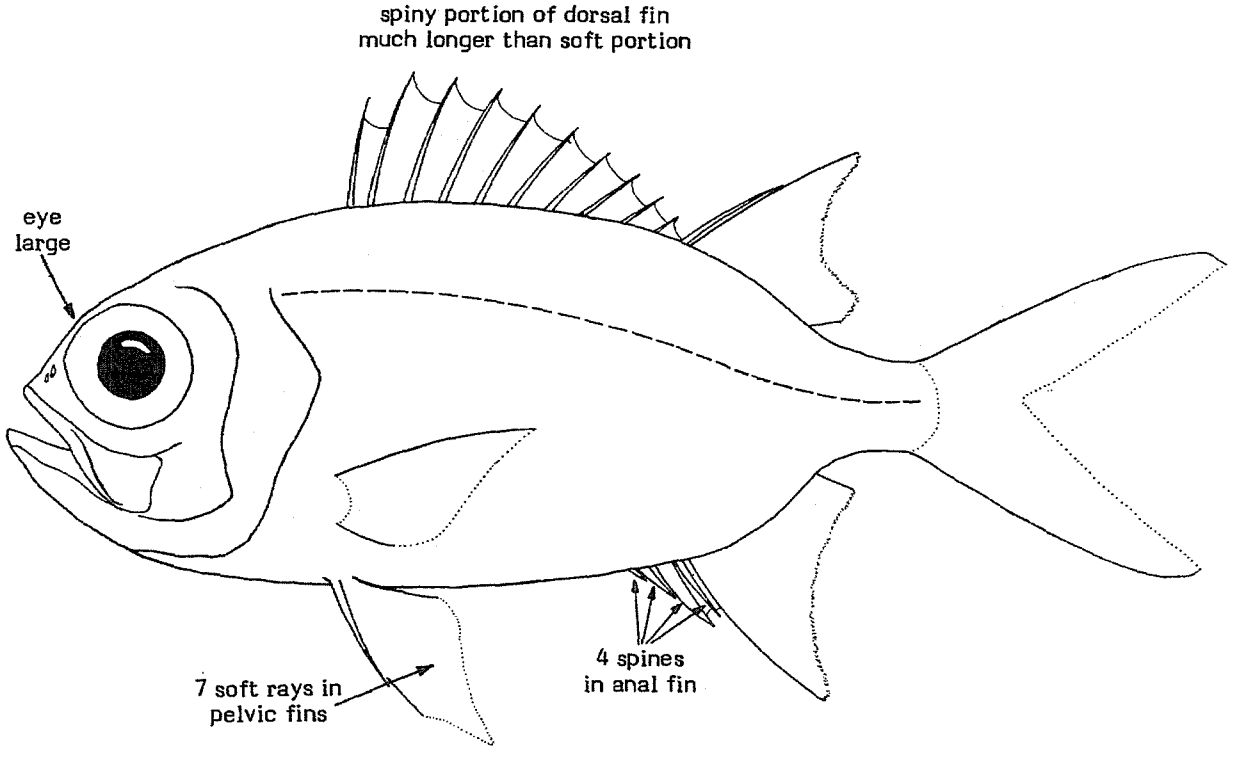
HOLOCENTRIDAE

Squirrelfishes, soldierfishes

Body elongate, laterally compressed, caudal peduncle slender. Head with upper profile rounded; mucous channels only moderately developed; edges of membrane bones of head usually serrate or with spines; eyes large; mouth nearly horizontal, the upper jaw protrusible; 2 supramaxillae present; teeth in jaws minute, in bands, enlarged near symphysis (point of junction of the two halves of either jaw); teeth present on roof of mouth (on vomer and palatines in all, but also on ectopterygoids in Holocentrus and Adioryx). Dorsal fin base long, extending over most of the back, the base of spiny portion 3 or 4 times that of soft portion; number of spines in dorsal fin 11 or 12; pelvic fins with 1 spine and 7 soft rays; anal fin spines always 4, the third enlarged in Holocentridae; caudal fin forked, with 17 branched rays. Lateral line complete. No ventral scutes; scales of body smooth or with ridges, posterior margin with spines; scales of lateral line not enlarged.

Colour: generally reddish.

The majority of squirrelfishes live in association with coral reefs in shallow tropical waters. Some, like Adioryx hastatus, also occur on rocky reefs at greater depths (to about 210 m) and others are deep-water species (to 500 m) found mainly on sandy or muddy bottoms. Although apparently never very abundant, some of the larger squirrelfishes may occur regularly in local markets.

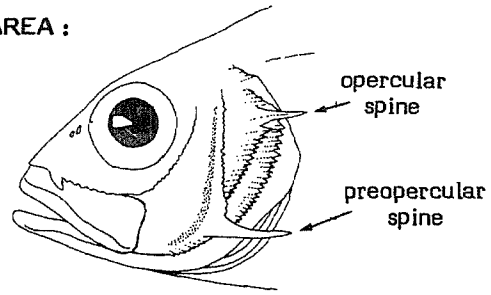


SIMILAR FAMILIES OCCURRING IN THE AREA:

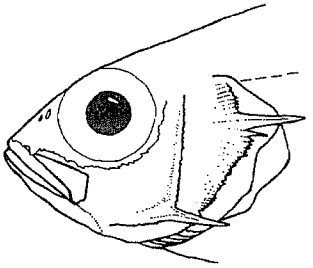
The bony edges and spines on head, in combination with the large eyes, the very long spinous portion (as compared to the soft portion) of the dorsal fin, the presence of 4 spines in the anal fin and of 7 soft rays in the pelvic fins, readily distinguishes the squirrelfishes from other fish families occurring in the area.

KEY TO SUBFAMILIES AND SPECIES OCCURRING IN THE AREA:

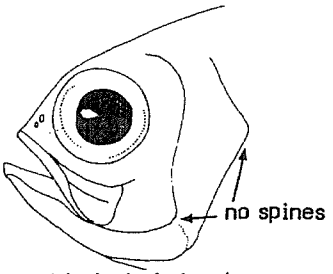
1 a. Preopercle with a sharp angle and a strong spine, much longer than broad (Fig. 1a,b); 10 or 11 spines (usually 11) in anterior portion of dorsal fin, none in posterior portion; 10 or fewer segmented (soft) rays in anal fin ..... Subfamily Holocentrinae



a. Holocentrus ascensionis



b. Adioryx hastatus

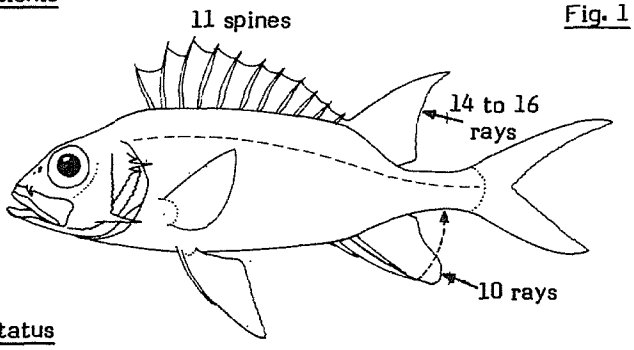


c. Myripristis jacobus

Fig. 1

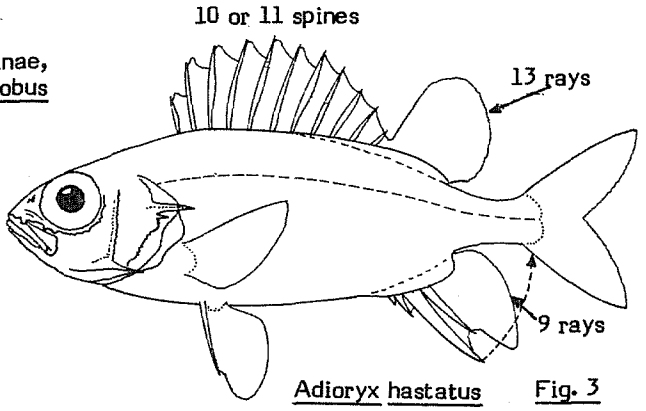
2 a. Spine on opercle shorter than that on preopercle (Fig. 1a); total gill rakers on first arch 23 or 24 (including rudiments and the raker at angle of arch); 14 to 16 segmented (soft) rays in posterior portion of dorsal fin, the anterior rays elongate; third anal fin spine, not reaching, when folded back, to base of caudal fin; 10 soft anal fin rays; upper lobe of caudal fin notably longer than lower lobe (Fig. 2) ..... Holocentrus ascensionis

2 b. Spine on opercle equal to, or longer than that on preopercle (Fig. 1b); total gill rakers on first arch 17 to 21; 13 segmented (soft) rays in posterior portion of dorsal fin, none of them elongate; third anal fin spine reaching, when folded back, to base of caudal fin; 9 anal soft rays; lobes of caudal fin nearly equal in length (Fig. 3) ..... Adioryx hastatus

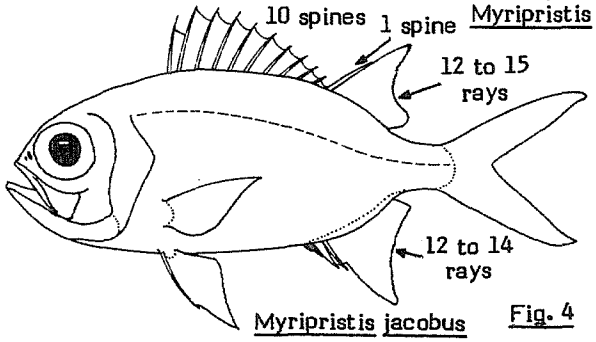


Holocentrus ascensionis Fig. 2

1 b. Preopercle crescentric, without a spine (Fig. 1c); 10 spines in anterior portion of dorsal fin and always 1 spine in posterior portion; anal fin rays 12 to 14 (Fig. 4) ..... Subfamily Myripristinae, Myripristis jacobus



Adioryx hastatus Fig. 3



Myripristis jacobus Fig. 4

LIST OF SPECIES OCCURRING IN THE AREA:

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

Subfamily Holocentrinae

Adioryx hastatus (Valenciennes, 1829)	HOLOC Adio 1
Holocentrus ascensionis (Osbeck, 1765)	HOLOC Holoc 1

Subfamily Myripristinae

Myripristis jacobus Cuvier, 1829	HOLOC Myrip 1

Prepared by D.W. Greenfield, Department of Biological Sciences, Northern Illinois University, DeKalb, Illinois, U.S.A.

HOLOC Adio 1

1981

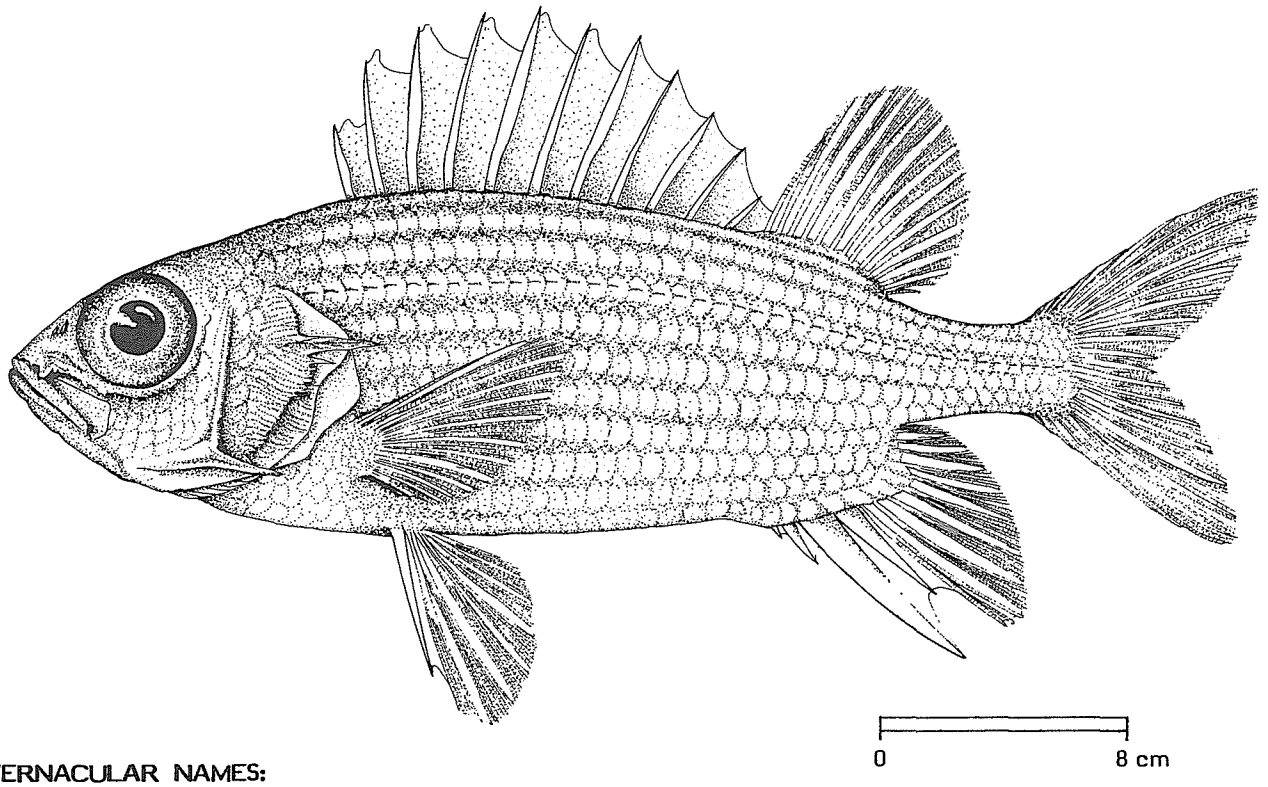
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : HOLOCENTRIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Adioryx hastatus (Valenciennes, 1829)

OTHER SCIENTIFIC NAMES STILL IN USE : Holocentrus hastatus Valenciennes, 1829



VERNACULAR NAMES:

FAO : En - Red squirrelfish
Fr - Marignan rouge
Sp - Candil africano

NATIONAL :

DISTINCTIVE CHARACTERS :

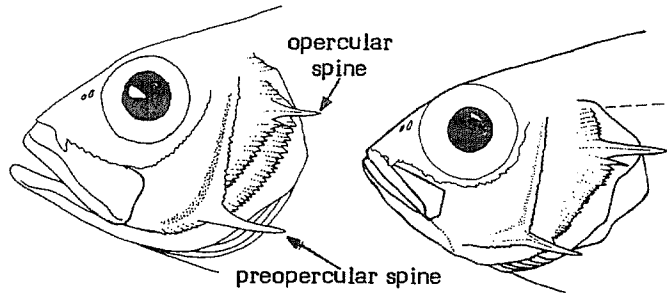
A large species with a moderately compressed, relatively slender, oblong body; caudal peduncle slender and long. Edges of membrane bones of head serrate and spiny; particularly conspicuous are 2 strong spines on sides of head, the upper (opercular) being equal to, or longer than the lower (preopercular); nasal and lachrymal bones each with a strong spine extending anteriorly over upper lip; total gill rakers on first arch 17 to 21. Anterior portion of dorsal fin with 11 (rarely 10) spines, posterior portion of fin with 13 soft rays, none of them elongate; anal fin with 4 spines followed by 9 soft rays; third anal fin spine long, reaching, when folded back, to base of caudal fin; lobes of caudal fin about equal in length. Tube-bearing, lateral-line scales 39 to 43.

Colour: body entirely red, with light longitudinal lines; dorsal surface of head and back darker red.

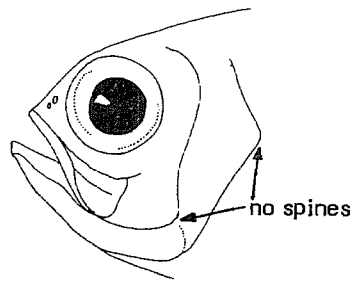
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Holocentrus ascensionis: opercular spine shorter than preopercular spine; 14 to 16 soft rays in posterior portion of dorsal fin, the anterior rays elongate (13, none elongate, in A. hastatus); third anal fin spine not reaching, when folded back, to base of caudal fin; 10 soft anal fin rays (9 in A. hastatus); upper lobe of caudal fin notably longer than lower lobe.

Myripristis jacobus: preopercle crescentric without a spine; 10 spines in anterior portion and 1 spine in posterior portion of dorsal fin; 12 to 14 soft anal fin rays.



Holocentrus ascensionis *Adioryx hastatus*



Myripristis jacobus

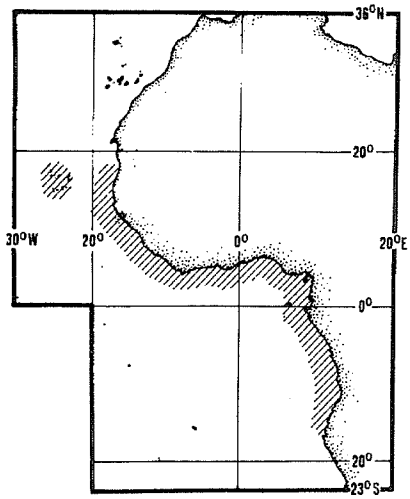
SIZE:

Maximum: at least to 46 cm standard length.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Along the West African coast at least from Senegal southward to Angola, including the Cape Verde Islands. Outside the area, reported from off Portugal.

Inhabits rocky and coral reef areas, from about 30 to 200 m depth.



PRESENT FISHING GROUNDS:

Taken mainly in artisanal fisheries.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught mainly in traps, and set nets, occasionally with trawls.

Marketed mostly fresh or smoked.

HOLOC Holoc 1

1981

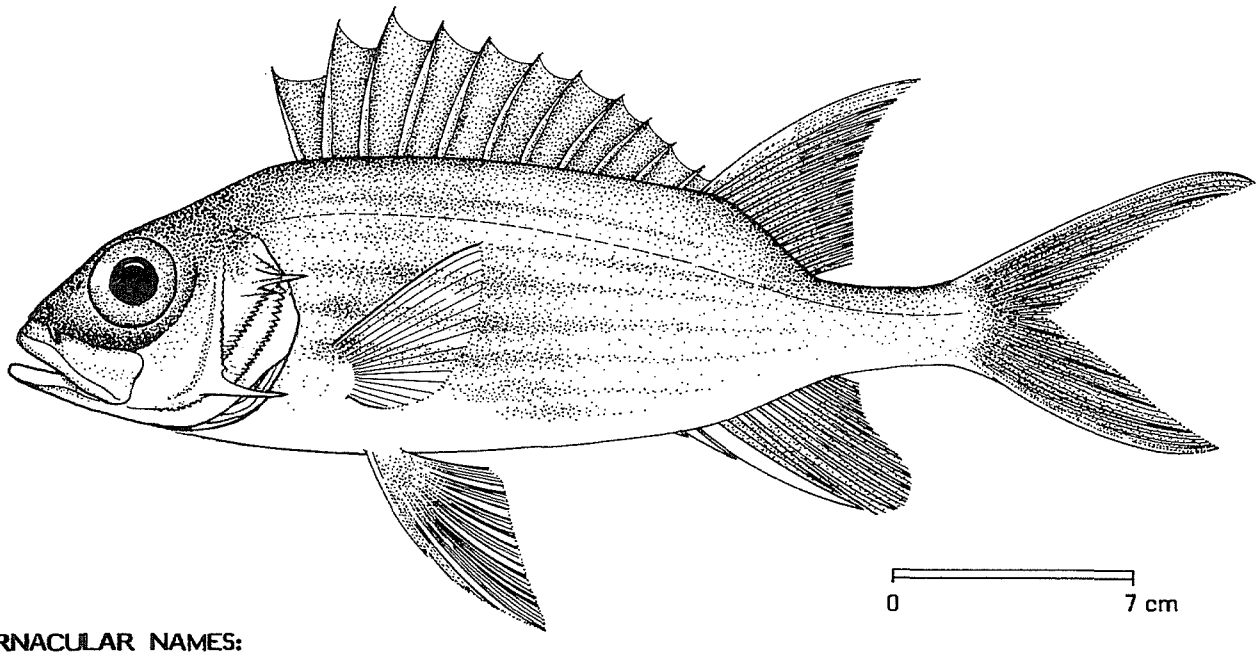
FAO SPECIES IDENTIFICATION SHEETS

FAMILY: HOLOCENTRIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Holocentrus ascensionis (Osbeck, 1765)

OTHER SCIENTIFIC NAMES STILL IN USE: None



VERNACULAR NAMES:

FAO: En - Squirrelfish
Fr - Marignan coq
Sp - Candil gallito

NATIONAL:

DISTINCTIVE CHARACTERS:

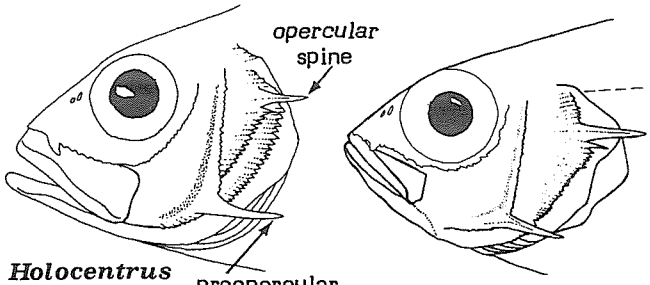
A large species with a moderately compressed, relatively slender, oblong body; caudal peduncle slender and long. Edges of membrane bones of head serrate and spiny; particularly conspicuous are 2 strong spines on side of head, the upper (opercular) being clearly shorter than the lower (preopercular); upper jaw long, extending to or beyond posterior margin of pupil; total gill rakers on first arch 23 or 24. Anterior portion of dorsal fin with 11 spines, posterior portion of fin with 14 to 16 soft rays; anal fin with 4 spines followed by 10 soft rays; anterior soft dorsal fin rays and upper caudal fin rays elongate. Tube-bearing lateral-line scales 46 to 50, rarely 51.

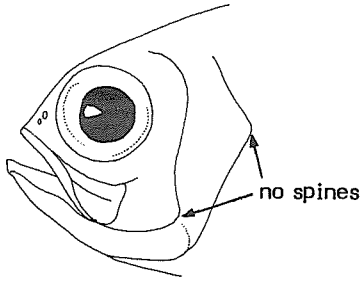
Colour: back and upper sides reddish with golden reflections; 2 dark greenish stripes following scale intersections on upper sides, fading posteriorly; stripes broader, less distinct, pink to white on lower scale rows; lower sides, belly and breast white. Snout and top of head dark red; upper portion of maxilla white; a white streak diagonally across cheek, lower jaw white; iris bright red near pupil, distal margin blackish. Dorsal fin spines yellowish or yellowish green; interspinal membranes green to greenish brown adjacent to spines and basally; margin of membrane red; soft dorsal fin rays pink; outer caudal fin rays white, the rest pink; first three anal fin spines white, fourth spine and soft rays pink; pectoral fins pink, upper edge of first two rays darker red; pelvic fin spine and anterior margin of first ray white, other pelvic fin rays pink.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Adioryx hastatus: opercular spine equal to, or longer than preopercular spine; 13 segmented (soft) rays in posterior portion of dorsal fin, none of them elongate (14 to 16 in H. ascensionis); third anal fin spine reaching, when folded back, to base of caudal fin; 9 anal soft rays (10 in H. ascensionis); lobes of caudal fin nearly equal in length; lateral line scales 39 to 43 (46 to 51 in H. ascensionis).

Myripristis jacobus: preopercle crescentic, without a spine; 10 spines in anterior portion, and 1 spine in posterior portion of dorsal fin (11 spines in anterior portion and none in posterior portion, in H. ascensionis); 12 to 14 soft anal fin rays.





Myripristis jacobus

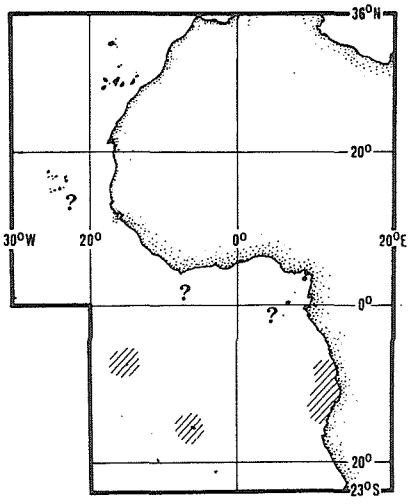
SIZE:

Maximum: at least 34.5 cm standard length; reported to reach 61 cm total length in the literature.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Within the area, recorded from St. Helena and Ascension Islands and from Angola, but possibly more wide-spread along the African coast. Also, in the Western Atlantic from North Carolina, to Santos, Brazil.

Found in shallow coral reefs as well as in offshore deeper waters to more than 90 m depth. A nocturnal species, hiding by day in deep crevices or under coral ledges; at night, it usually feeds away from the reef over sand and grass beds, taking mainly crabs, shrimps and other small crustaceans.



PRESENT FISHING GROUNDS:

Taken mainly in artisanal fisheries.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught mainly in traps, and with set nets; occasionally with trawls.

Marketed mostly fresh or smoked.

HOLOC Myrip 1

1981

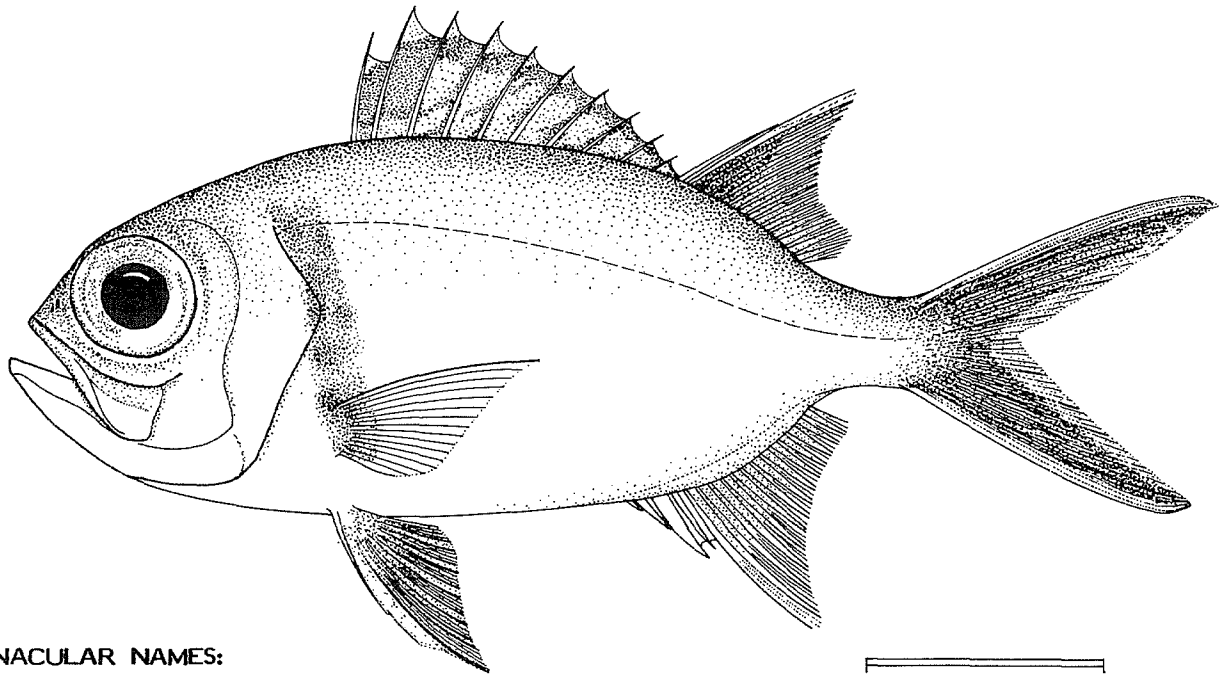
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : HOLOCENTRIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Myripristis jacobus Cuvier, 1829

OTHER SCIENTIFIC NAMES STILL IN USE : None



0 4 cm

VERNACULAR NAMES:

FAO : En - *Blackbar soldierfish*
Fr - Marignan mombin
Sp - Candil colorado

NATIONAL :

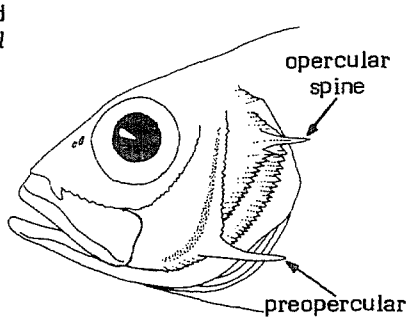
DISTINCTIVE CHARACTERS :

A large species with a moderately compressed, relatively deep, oblong body. Anterior profile triangular; eyes very large; bones of head smooth except for their usually finely serrate margins; no spine on preopercle, opercle, or preorbital bone; total gill rakers on first arch 29 to 33, usually 31. Anterior portion of dorsal fin with 10 spines, posterior portion of fin with 1 spine followed by 12 to 15 soft rays, usually 14; anal fin with 4 spines followed by 12 to 14 soft rays, usually 13. Scales present on the membranes between the rays of soft dorsal and anal fins, covering over one-half of the fin length; tube-bearing lateral-line scales 33 to 37, usually 35.

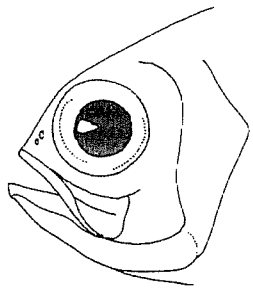
Colour: head and back reddish orange above, shading into a more silverish colour with a tinge of pink below; reddish black pigment on post-temporal, supracleithrum, cleithrum, posterior margin of opercle, and opercular flap, giving the appearance of a broad rectangular bar which runs from the upper end of gill opening to pectoral fin base. Central portion of membranes between first two dorsal fin spines reddish orange, with white on distal and basal portions; membranes of remaining dorsal fin spines reddish orange only on distal portions; anterior border of pelvic fins, soft dorsal and anal fins, and caudal fin white, with a darker band of reddish orange directly posterior to the white edge.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Adioryx and Holocentrus species: opercle and preopercle each with a strong spine; 10 or fewer anal fin rays (12 to 14 in M. jacobus).



Holocentrus sp.



M. jacobus

SIZE:

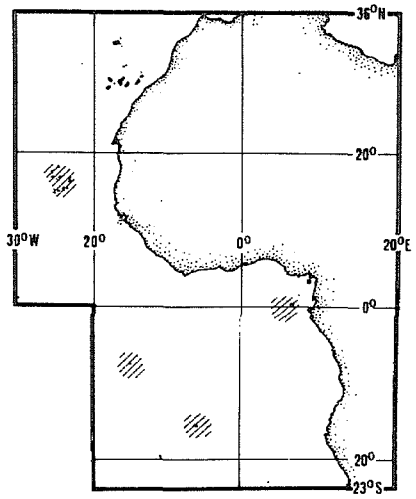
Maximum: 21.6 cm in standard length.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Within the area, it occurs around the Cape Verde, Ascension, St. Helena and Sao Tomé islands.

Found in shallow coral reefs and offshore waters to depths of about 90 m. A nocturnal species aggregating around coral and deeper rocky reefs.

Feeds at night, predominantly on planktonic organisms.



PRESENT FISHING GROUNDS:

Taken mainly in artisanal fisheries.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught mainly in traps and set nets; occasionally with trawls.

Marketed mostly fresh or smoked.

ISTIO

1981

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

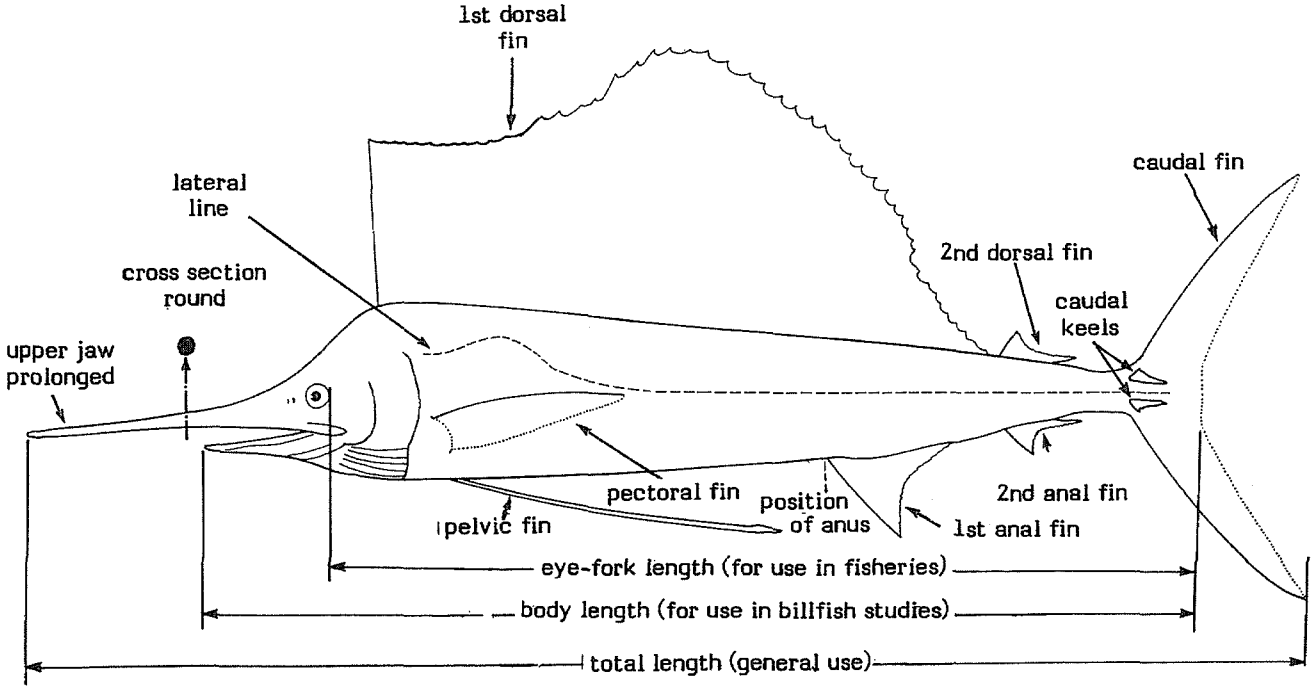
ISTIOPHORIDAE

Billfishes (spearfishes, marlins and sailfishes)

Body elongate and more or less compressed. Upper jaw prolonged into a long spear which is round in cross section. Mouth not protrusible, with fine, rasp-like teeth on both jaws; gill openings wide, gill membranes united but free from isthmus; no rakers on gill arches, gill filaments reticulated. Dorsal fins two, close together, the first much larger than the second; anal fins also two, the second much smaller than the first and similar in size and shape to second dorsal fin; the first dorsal and anal fins can both be folded back into grooves; pectoral fins falcate; pelvic fins can be folded into a groove and consist of 2 or 3 rays united with a spine; caudal fin large, strong and forked, with a pair of keels on either side at base. Lateral line always well visible except in large specimens of Makaira species. Body covered with more or less imbedded, narrow and pointed scales. Vertebrae 24 (12 + 12 or 11 + 13).

Colour: back and upper sides blue (sometimes dark), lower sides and belly silvery white. In some species there are horizontally aligned spots or longitudinal lines on body and/or black spots on the first dorsal-fin membrane.

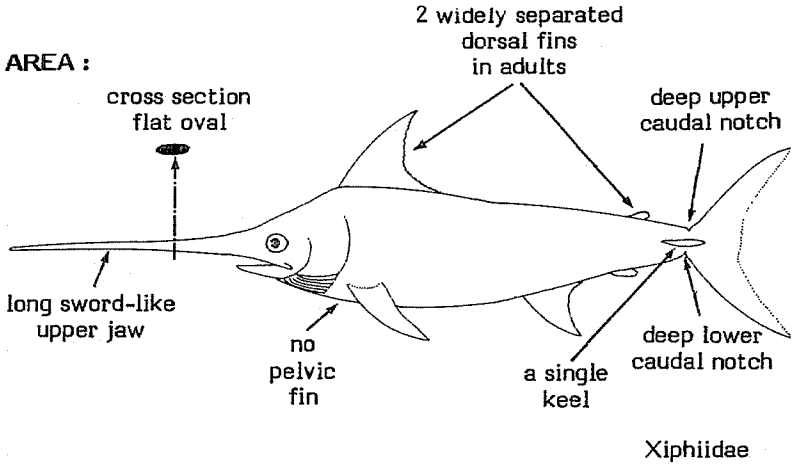
Billfishes are primarily inhabitants of warm seas, usually the upper layers of water above the thermocline, but during the summer months they follow schools of smaller fishes into temperate areas. In general terms, the migration of billfishes involves seasonal movements into temperate or cold waters for feeding and back to warm waters for spawning. Being among the largest and swiftest fishes of the oceans, they perform considerable, sometimes transoceanic, migrations. All billfishes are of some commercial value throughout the world (high commercial value in Japanese markets) and provide excellent food. Most of the species are exploited commercially by longline fleets and all are regarded as excellent game fish by sportsfishermen. The total reported catch of billfishes from Fishing Area 34 in 1977 was about 10 000 t (commercial fisheries only), most of which (6 900 t in 1977) was taken by Ghana.



FAO Sheets ISTIOPHORIDAE Fishing Areas 34, 47 (in part)

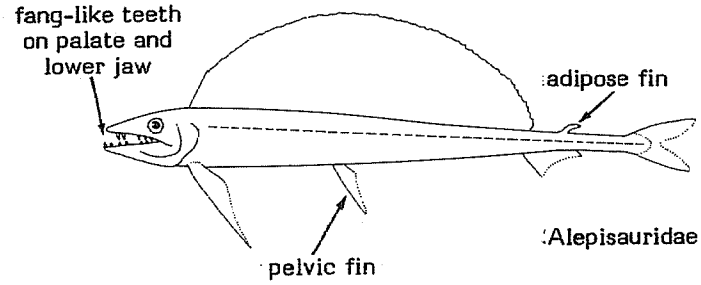
SIMILAR FAMILIES OCCURRING IN THE AREA:

Xiphiidae: upper jaw prolonged like in the billfishes, but shaped as a sword rather than a spear, its cross section flat-oval (round in Istiophoridae); pelvic fins absent; a single, strong keel on either side of caudal fin base (2 keels in Istiophoridae); a deep notch on both the upper and lower profiles of caudal peduncle (shallow notch in Istiophoridae); vertebrae 26 (24 in Istiophoridae). Adults are further characterized by the two well separated dorsal fins, the absence of teeth in the jaws and of scales on body, and by the fact that the lateral line is not visible externally.



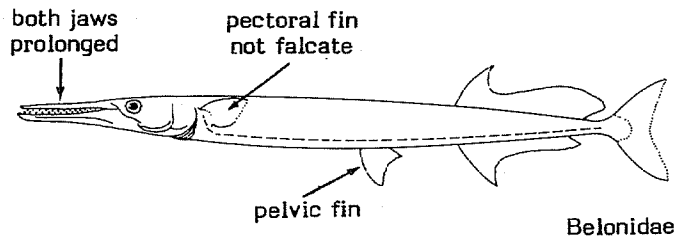
Xiphiidae

Alepisauridae: somewhat similar to sailfishes (species of Istiophorus) in general appearance, but easily distinguished by their jelly-like body, the absence of prolonged jaws, of keels at base of caudal fin and of scales on body, the presence of fang-like teeth and an adipose fin (instead of a rayed second dorsal fin), and the insertion of the pelvic fins far behind the pectorals.



Alepisauridae

Belonidae: large representatives may be somewhat similar to small spearfishes or marlins (species of Tetrapturus or Makaira), with the first dorsal fin folded into a groove, but they have both jaws prolonged, the dorsal and anal fins both single and similar in size and shape, pectoral fins not falcate except in Ablennes, and pelvic fins inserted far behind the pectorals.

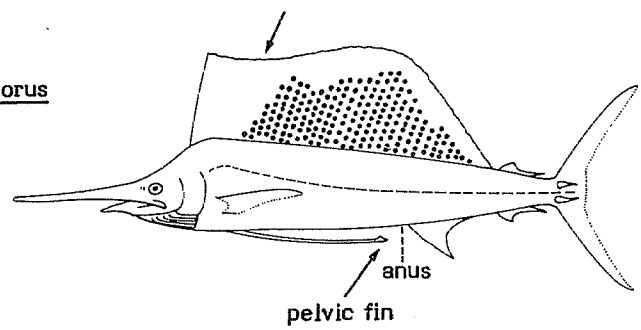


Belonidae

KEY TO ADULTS OF GENERA OCCURRING IN THE AREA:

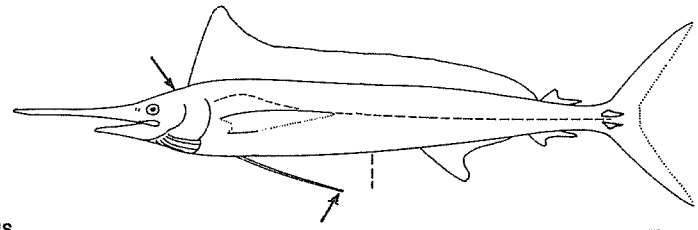
1 a. First dorsal fin sail-like, considerably higher than body depth at level of mid-body; pelvic-fin rays very long (almost reaching to anus), with a well developed membrane (Fig. 1) ..... Istiophorus

1 b. First dorsal fin not sail-like, only slightly higher or lower than body depth at level of mid-body; pelvic fins not as long (far from reaching to anus), with a moderately developed membrane (Figs. 2 and 3)



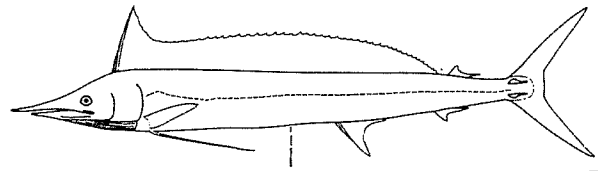
Istiophorus albicans Fig. 1

2 a. Anterior part of first dorsal fin slightly higher than, or nearly equal to, body depth; profile of head between preorbital region and origin of first dorsal fin nearly flat (fig. 2 to 4) to slightly elevated (Fig. 5); body strongly compressed ..... Tetrapturus

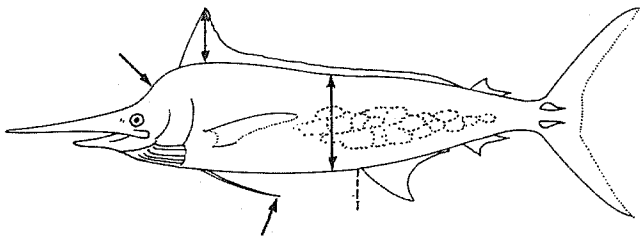


Tetrapturus pfluegeri Fig. 2

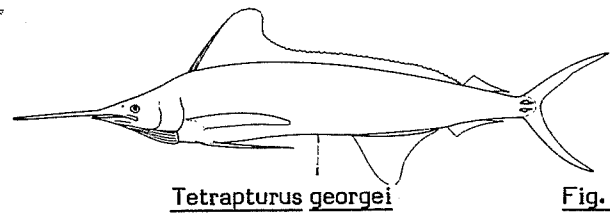
2 b. Anterior part of dorsal fin lower than body depth; profile of head between preorbital region and origin of first dorsal fin steeply elevated (Figs. 6,7); body not strongly compressed ..... Makaira



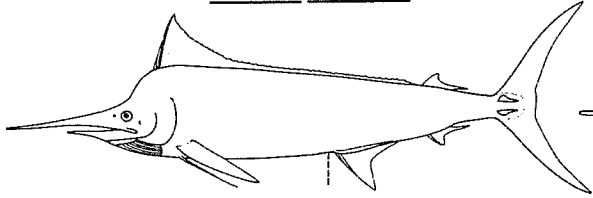
Tetrapturus angustirostris Fig. 3



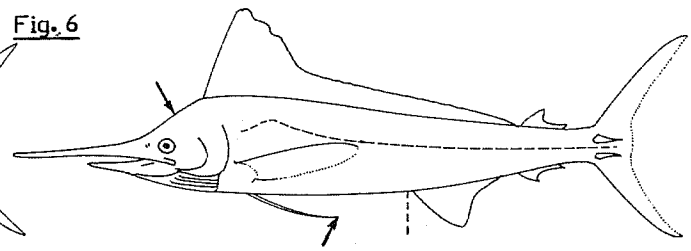
Makaira nigricans Fig. 6



Tetrapturus georgei Fig. 4



Makaira indica Fig. 7



Tetrapturus albidus Fig. 5

LIST OF SPECIES OCCURRING IN THE AREA*:

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

Istiophorus albicans (Latreille, 1804)	ISTIO Istio 1
Makaira indica (Cuvier, 1831)**	ISTIO Mak 2
Makaira nigricans Lacepède, 1803	ISTIO Mak 1
Tetrapturus albidus Poey, 1860	ISTIO Tetra 1
Tetrapturus angustirostris Tanaka, 1915**	ISTIO Tetra 3
Tetrapturus georgei Lowe, 1840	ISTIO Tetra 4
Tetrapturus pfluegeri Robins & de Sylva, 1963	ISTIO Tetra 2

Prepared by I. Nakamura, Fisheries Research Station, Kyoto University, Maizuru, Kyoto, Japan

*The status of the so-called hatchet marlin, Tetrapturus sp. is not yet resolved

**Both Makaira indica and Tetrapturus angustirostris are believed that they have their spawning grounds and principal pupulations only in the Indo-Pacific. Recently some stray individuals of both species were recorded in the area

ISTIO Istio 1

1981

FAO SPECIES IDENTIFICATION SHEETS

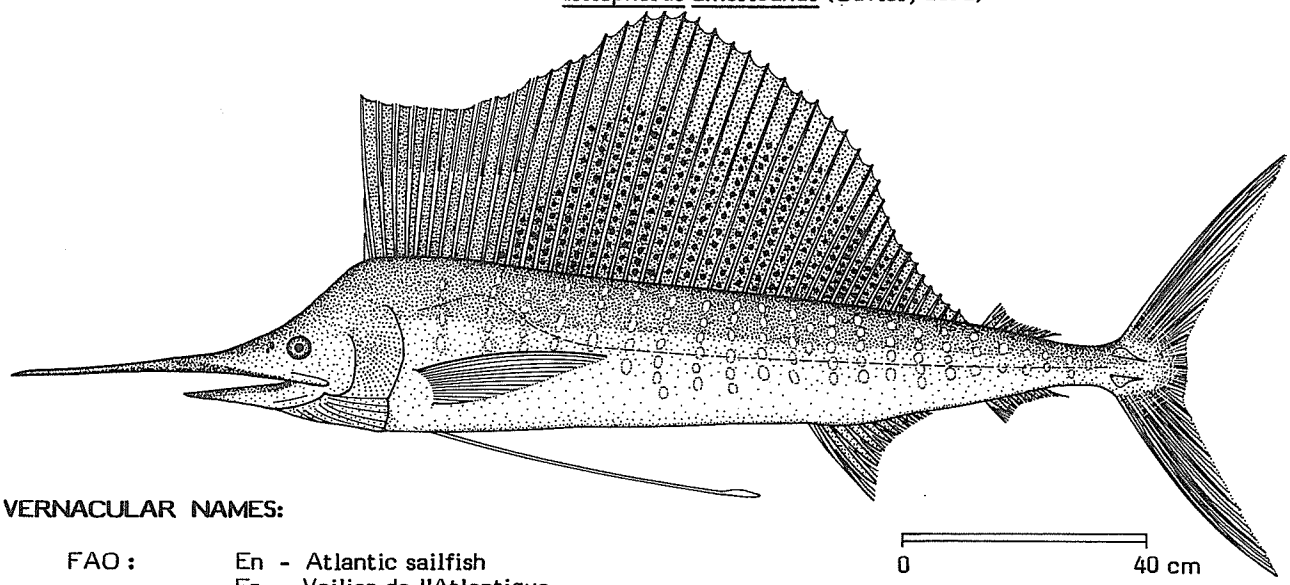
FAMILY : ISTIOPHORIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Istiophorus albicans (Latreille, 1804)

(often listed as Istiophorus platypterus (Shaw & Nodder, 1791)*

OTHER SCIENTIFIC NAMES STILL IN USE : Histiophorus albicans (Latreille, 1804)
Histiophorus americanus Cuvier, 1832
Istiophorus americanus (Cuvier, 1832)



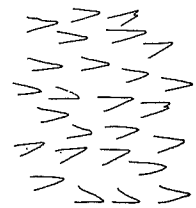
VERNACULAR NAMES:

FAO : En - Atlantic sailfish
Fr - Voilier de l'Atlantique
Sp - Pez vela del Atlántico

NATIONAL :

DISTINCTIVE CHARACTERS :

Body elongate, much compressed. Upper jaw prolonged into a rather slender spear which is round in cross section. Two dorsal fins, the first large, sail-like, considerably higher than body depth throughout most of its length, with 42 to 47 rays, the second small, with 6 or 7 rays; two separated anal fins, with 11 to 15 (1st) and 6 or 7 (2nd) rays respectively; pectoral fins falcate with 17 to 20 rays; pelvic fins very long, almost reaching to anus and consisting of 1 spine and 2 or 3 soft rays. Lateral line visible, curved above pectoral fin, then almost straight to tail. Anus close to origin of first anal fin. Body covered with rather sparsely imbedded scales, each with a blunt point. Vertebrae 24 (12 + 12). Pelvic fins and caudal fin of young longer than those of Indo-Pacific sailfish.



scales

Colour: body dark blue dorsally, brown-blue laterally, silvery white ventrally; first dorsal fin membrane blue-black, covered with many small black spots; other fins brown-black; about 20 vertical bars consisting of several small pale blue spots on sides of body.

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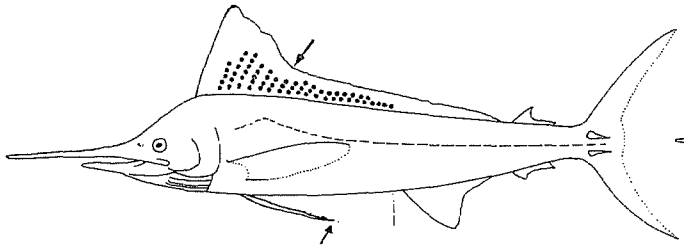
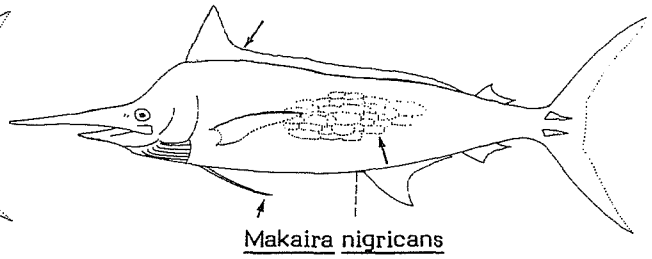
*This name has been used recently by those who recognize a single, cosmopolitan species of sailfish. The present author prefers to retain the traditional usage of I. platypterus for the Indo-Pacific sailfish and I. albicans for the Atlantic sailfish, because he considers that the data presently available do not permit to establish with certainty whether the two forms are conspecific, subspecies or distinct species

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

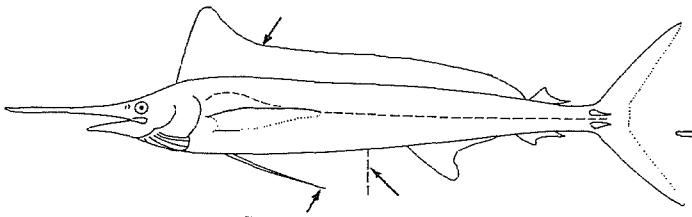
Other species of Istiophoridae: dorsal fin not sail-like, its anterior part at most slightly higher than body depth (Tetrapturus species) or lower (Makaira species) and much lower posteriorly; pelvic fins much shorter, far from reaching to the anus. Also, anus placed well in front of first anal fin in Tetrapturus angustirostris and T. pfluegeri, body not strongly compressed in Makaira species and lateral line system reticulated in Makaira nigricans.



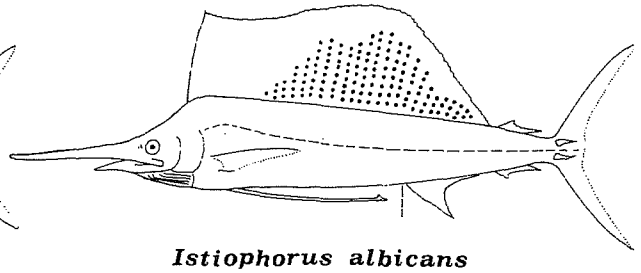
Tetrapturus albidus



Makaira nigricans



Tetrapturus pfluegeri



Istiophorus albicans

SIZE:

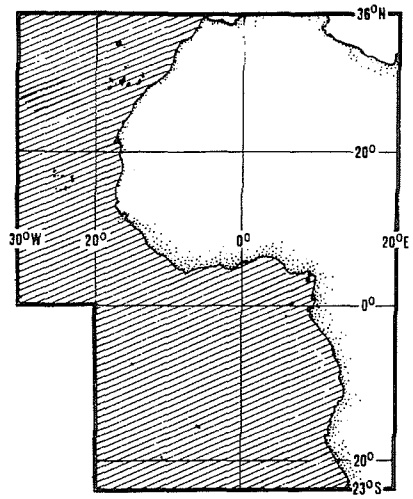
Maximum: about 3 m total length and 60 kg body weight (compared to 100 kg body weight of the Indo-Pacific sailfish); common to 2.5 m.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Throughout tropical and subtropical (sometimes temperate) waters of the Atlantic Ocean. In the area densely distributed in waters close to coasts and islands in the Gulf of Guinea.

Epipelagic and primarily oceanic, but more coastal than most other billfishes; highly migratory, usually found above the thermocline.

Feeds on a wide variety of fishes (mackerels, tunas, jacks, herrings, needlefishes, flyingfishes, mullets and other small pelagic fishes), crustaceans and cephalopods. The bill is generally thought to be used for attacking the prey and many cases of attacks on boats are recorded.



PRESENT FISHING GROUNDS:

Commercial longline fishing grounds near shore throughout the Atlantic Ocean. Within Fishing Area 34, especially in the Gulf of Guinea and sportfishing grounds along the coast from Dakar into the Gulf of Guinea.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

The catch reported for this species within the area was around 7 500 t (6 895 taken by Ghana).

Caught mainly with longlines (commercial fishing boats) and by trolling (sportsfishermen); also occasionally with set nets, purse seines and pelagic trawls.

Marketed mostly frozen or iced; also smoked; prepared as sashimi (sliced raw fish) and fish cakes in Japan.

ISTIO Mak 1

1981

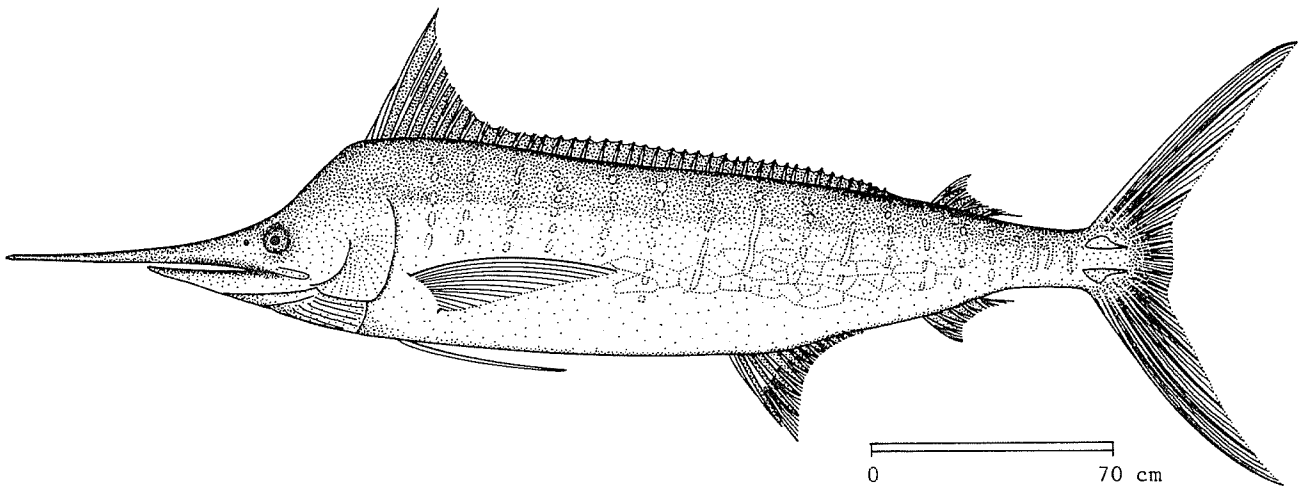
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : ISTIOPHORIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Makaira nigricans Lacepède, 1803

OTHER SCIENTIFIC NAMES STILL IN USE : Makaira ampla (Poey, 1860)



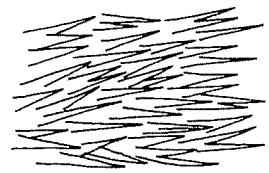
VERNACULAR NAMES:

FAO : En - Blue marlin
Fr - Makaire bleu
Sp - Aguja azul

NATIONAL :

DISTINCTIVE CHARACTERS :

Body elongate, not strongly compressed. Upper jaw prolonged into a stout spear which is round in cross section; nape (head profile between preorbital region and origin of first dorsal fin) very steep. Two dorsal fins, the first long (41 to 43 rays) and low posteriorly, the second small with 6 or 7 rays; height of anterior part of first dorsal fin smaller than body depth; two separated anal fins with 13 to 15 (1st) and 6 or 7 (2nd) rays, respectively; pectoral fins falcate, not rigid, folded back against sides of body, with 18 to 21 rays; pelvic fins shorter than pectorals, consisting of 1 spine and 2 soft rays. Lateral line system reticulated, hard to see in large specimens. Anus close to origin of first anal fin. Body covered with densely imbedded scales each ending in 1 or 2 long acute spines. Vertebrae 24 (11 + 13).



scales

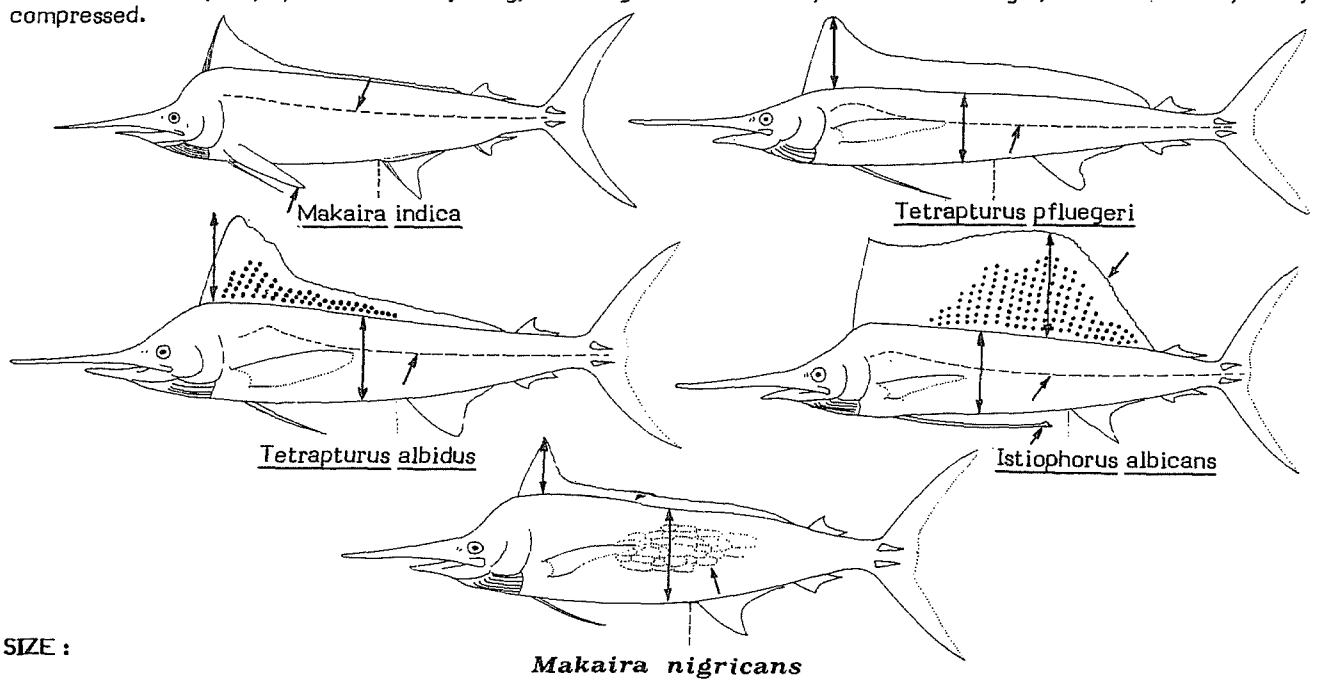
Colour: body dark blue to chocolate-brown dorsally, silvery white ventrally; first dorsal fin membrane blue-black, usually unspotted; other fins brown-black; about 15 vertical bars consisting of pale blue spots on body.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Makaira indica: pectoral fins rigid, not folded back against sides of body; lateral line single, not reticulated.

Tetrapturus species: body strongly compressed; anterior part of first dorsal fin nearly equal to, or slightly greater than body depth; nape nearly flat in all species except T. albidus; lateral line not reticulated; also, posterior part of dorsal fin rather high throughout its length in T. angustirostris and T. pfluegeri, and position of anus well in front of first anal fin in all except T. albidus.

Istiophorus albicans: first dorsal fin sail-like, its height much greater than body depth, covered with numerous black spots; pelvic fins very long, reaching almost to anus; lateral line single, not reticulated; body compressed.

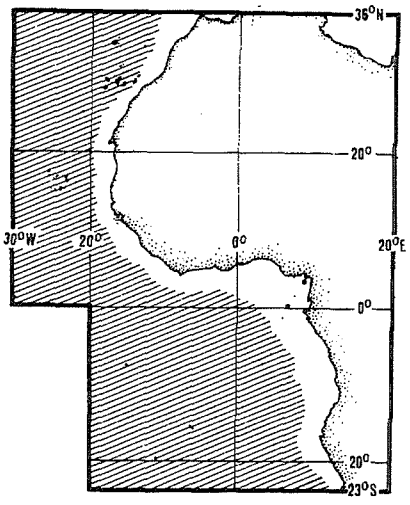


Makaira nigricans

SIZE:

Maximum: about 4 m total length; common to 3.5 m; heaviest recorded 581.5 kg body weight.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:



Throughout tropical and subtropical (sometimes temperate) waters of the Atlantic Ocean. Straying northward at least to the Gulf of Maine. Within the area, rather abundant between April and October in the Gulf of Guinea, but more sparsely distributed between November and March.

Epipelagic and oceanic, highly migratory, usually found above the thermocline.

Feeds on a wide variety of fishes (chiefly pelagic species including blackfin tuna and frigate mackerel), crustaceans and cephalopods.

PRESENT FISHING GROUNDS:

A commercial surface longline fishery in the Gulf of Guinea between April and October.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

The catches reported for this species within the area totalled 600 t (400 t taken by Cuba) in 1977.

Caught mainly with longlines (commercial fishing boats) and by trolling (sportsfishermen); also with drift nets and purse seines.

Marketed mostly frozen; also fresh and dried salted; prepared as "sashimi" (sliced raw fish) in Japan.

ISTIO Mak 2

1981

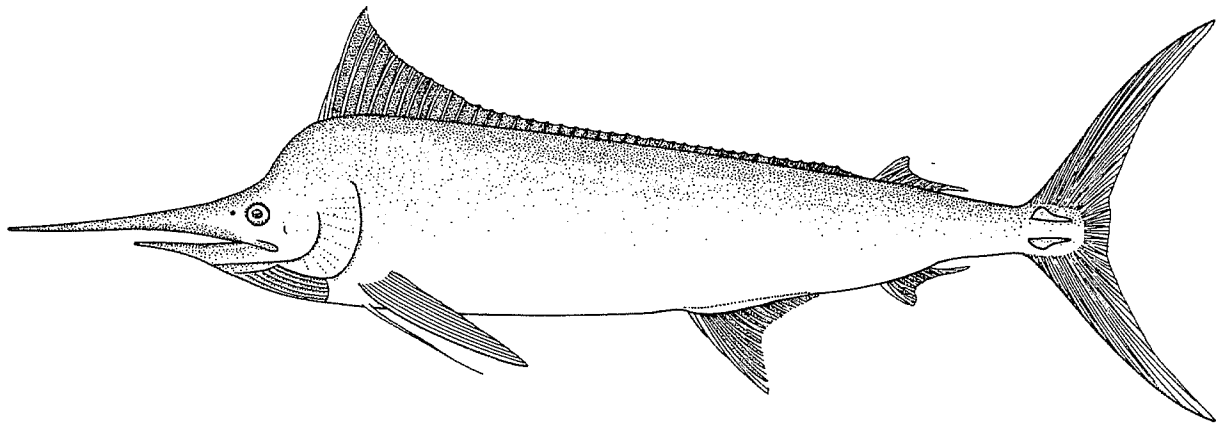
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : ISTIOPHORIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Makaira indica (Cuvier, 1831)

OTHER SCIENTIFIC NAMES STILL IN USE : Makaira marlina Jordan & Hill, 1926
Istiompax marlina (Jordan & Hill, 1926)
Istiompax indicus (Cuvier, 1831)

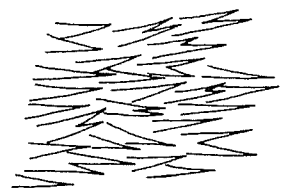


0 75 cm

VERNACULAR NAMES:

FAO : En - Black marlin
Fr - Makaire noir
Sp - Aguja negra

NATIONAL :



scales

DISTINCTIVE CHARACTERS :

Body elongate, not strongly compressed. Upper jaw prolonged into a stout spear; nape (head profile between preorbital region and origin of first dorsal fin) very steep. Two dorsal fins, the first long (38 to 42 rays) and low posteriorly; the second small, with 6 or 7 rays; height of anterior part of first dorsal fin smaller than body depth; two separated anal fins with 13 or 14 (1st) and 6 or 7 (2nd) rays respectively; pectoral fins falcate with 19 or 20 rays, rigid, not foldable back against sides of body; pelvic fins shorter than pectorals, consisting of 1 spine and 2 soft rays. Lateral line single, curved above pectoral fin, then almost straight to tail, obscure in larger specimens. Anus close to origin of first anal fin. Body covered by densely embedded scales, each with 1 or 2 long acute spines. Vertebrae 24 (11 + 13).

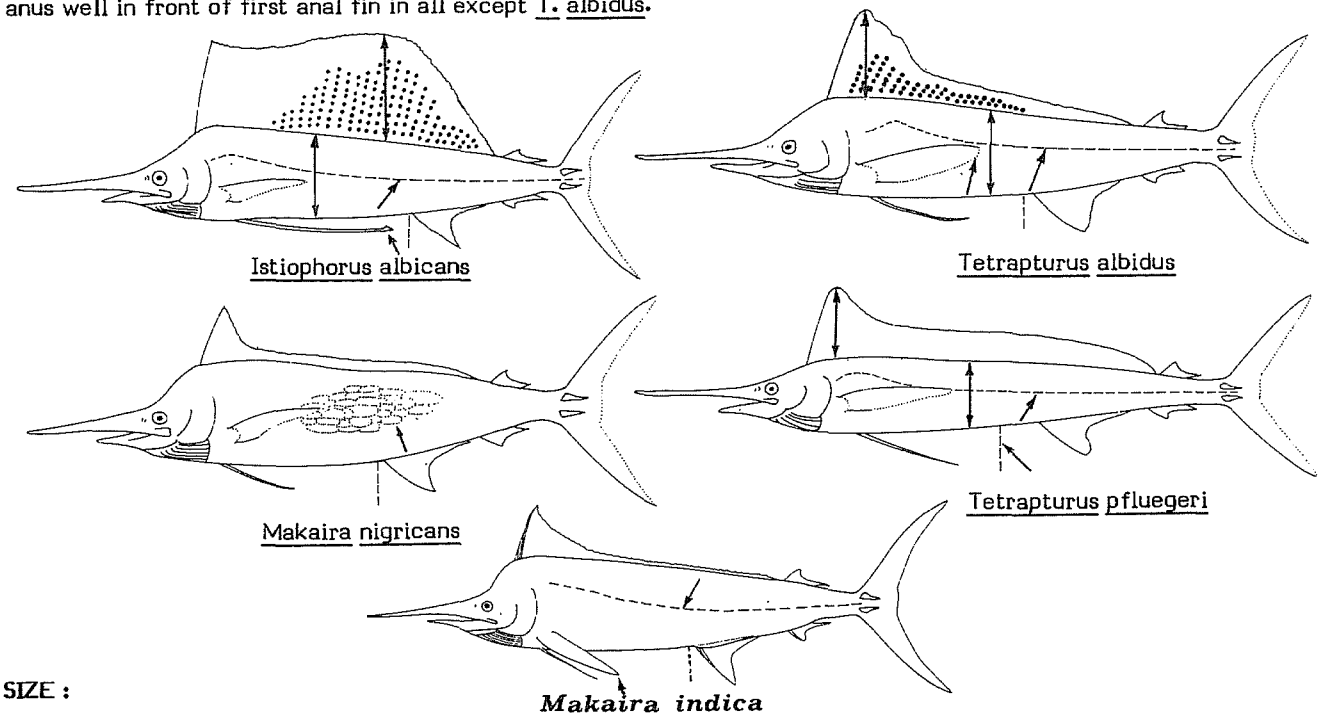
Colour: body dark blue dorsally, silvery white ventrally; first dorsal fin membrane blue-black, usually unspotted; other fins brown-black; no markings or dots on sides of body; after death, the body turns a greyish white, therefore the name "Shirokajiki" (white marlin) used in Japan; live specimens with darker body generally named "black marlin".

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Istiophorus albicans: first dorsal fin sail-like, its height much greater than body depth, covered with numerous black spots; pelvic fins very long, reaching almost to anus; pectoral fins not rigid, folded back against sides of body; body compressed; nape not steeply elevated.

Makaira nigricans: pectoral fins not rigid, folded back against sides of body; lateral line system reticulated.

Tetrapturus species: body strongly compressed; anterior part of first dorsal fin nearly equal to, or slightly greater than body depth; nape nearly flat in all species except T. albidus; lateral line not reticulated; also, posterior part of dorsal fin rather high throughout its length in T. angustirostris and T. pfluegeri, and position of anus well in front of first anal fin in all except T. albidus.

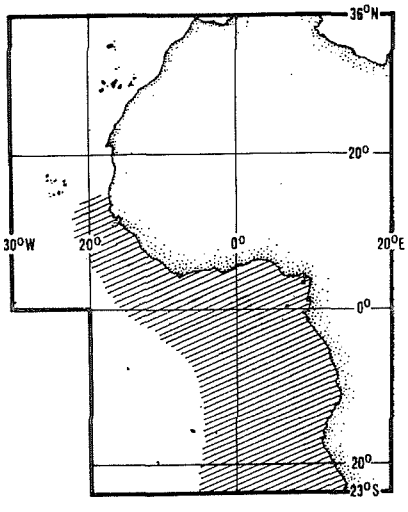


SIZE:

Maximum: about 4.6 m total length and 700 kg body weight; common to 3.8 m.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Throughout the tropical and subtropical (sometimes temperate) waters of the Indo-Pacific, where the spawning grounds and the principal populations occur. However, some stray individuals sometimes come into the Atlantic and may appear in Fishing Area 34. Densely distributed in waters close to coasts and islands.



Epipelagic usually above the thermocline often moving toward the shore, but primarily oceanic and highly migratory.

Feeds on a wide variety of fishes (chiefly pelagic species), crustaceans and cephalopods.

PRESENT FISHING GROUNDS:

No special fishery in the area.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught mainly on surface longlines.

Marketed mostly frozen or iced; prepared as "sashimi" (sliced raw fish) in Japan.

ISTIO Tetra 1

1981

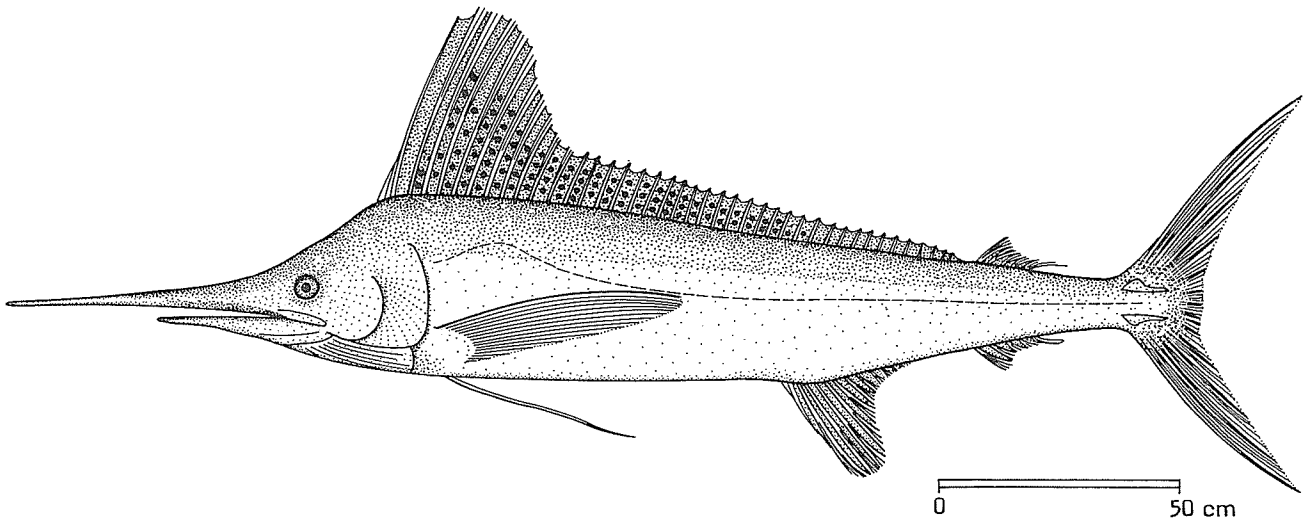
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : ISTIOPHORIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Tetrapturus albidus Poey, 1860

OTHER SCIENTIFIC NAMES STILL IN USE : Makaira albida (Poey, 1860)
Lamontella albida (Poey, 1860)



VERNACULAR NAMES:

FAO : En - White marlin
Fr - Makaire blanc
Sp - Aguja blanca

NATIONAL :

DISTINCTIVE CHARACTERS :

Body elongate, compressed. Upper jaw prolonged into a spear which is round in cross section; nape slightly elevated. Two dorsal fins, the first long (36 to 46 rays) and low posteriorly, the second small with 5 or 6 rays; height of anterior part of first dorsal fin nearly equal to body depth; two separated anal fins with 12 to 17 (1st) and 5 or 6 (2nd) rays respectively; pectoral fins falcate with 18 to 21 rays; pelvic fins nearly equal to pectorals in length, consisting of 1 spine and 2 soft rays; tips of first dorsal, first anal and pectoral fins rounded. Lateral line visible, curved above pectoral fin, then almost straight to tail. Anus close to origin of first anal fin. Body covered with densely imbedded, elongate scales, each ending in a single acute point. Vertebrae 24 (12 + 12).

scales

Colour: body dark blue to chocolate-brown dorsally, brownish-silvery-white laterally, silvery white ventrally; first dorsal fin membrane blue-black, covered with many small black spots; other fins brown-black; usually no bars or spots on body (few exceptions).

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

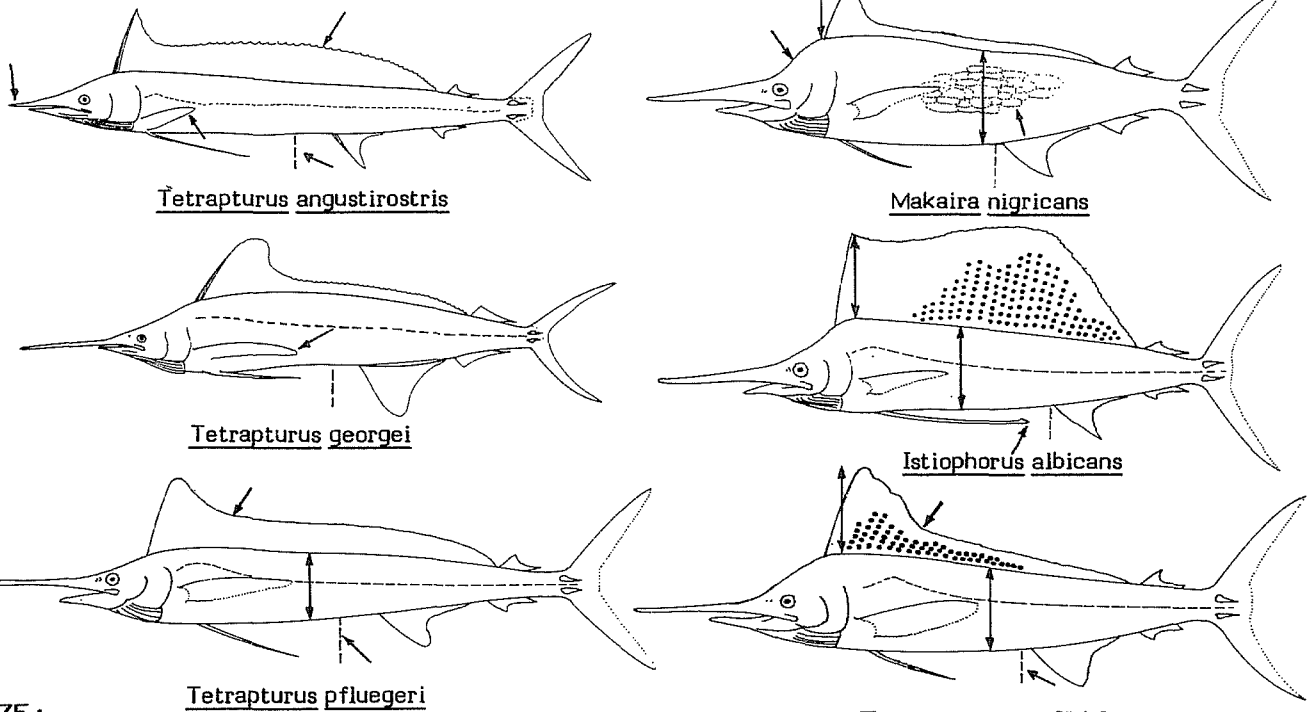
Tetrapturus angustirostris: height of first dorsal fin almost equal throughout its length; pectoral fins short with pointed tips; anus far apart from first anal fin origin; snout short.

Tetrapturus georgei: first dorsal fin unspotted; anus moderately far from first anal fin origin (distance about half the height of first anal fin); scales round, each with several points (a single point in T. albidus).

Tetrapturus pfluegeri: first dorsal fin not as low posteriorly, usually unspotted; anus placed well in front of origin of first anal fin; scales ending in several points.

Makaira species: height of anterior part of dorsal fin smaller than body depth; body not strongly compressed; nape very steep. Furthermore, pectoral fins rigid, not foldable backward against sides in M. indica and lateral line system reticulated in M. nigricans.

Istiophorus albicans: first dorsal fin sail-like, its height much greater than body depth; pelvic fins very long, reaching almost to anus; body with vertical bars.



Tetrapturus angustirostris

Makaira nigricans

Tetrapturus georgei

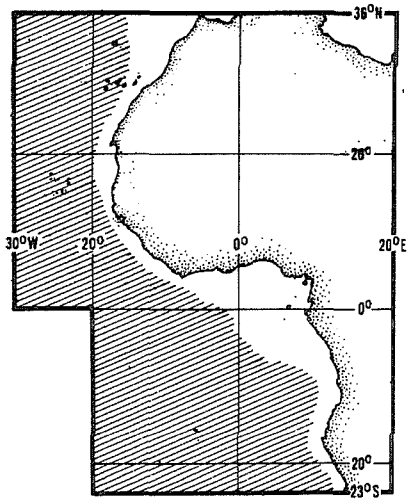
Istiophorus albicans

Tetrapturus pfluegeri

SIZE:

Maximum: about 3 m total length and 80 kg body weight; common to 2.5 m.

Tetrapturus albidus



GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Throughout tropical and subtropical (sometimes temperate) waters of the Atlantic Ocean straying northward to Nova Scotia. Within the area rather abundant between June and October off Angola, and sparsely distributed in the Gulf of Guinea throughout the year.

Epipelagic, oceanic, highly migratory, usually found above the thermocline.

Feeds on a wide variety of fishes (herring, anchovies, etc.), crustaceans and cephalopods.

PRESENT FISHING GROUNDS:

A commercial surface longline fishery off Angola between June and October.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

The total reported catch from Fishing Area 34 in 1977 was about 200 tons (mainly Korea),

Caught mainly with longlines (commercial fishing boats) and by trolling (sportsfishermen).

Marketed mostly frozen; prepared as "sashimi" (sliced raw fish) in Japan.

ISTIO Tetra 2

1981

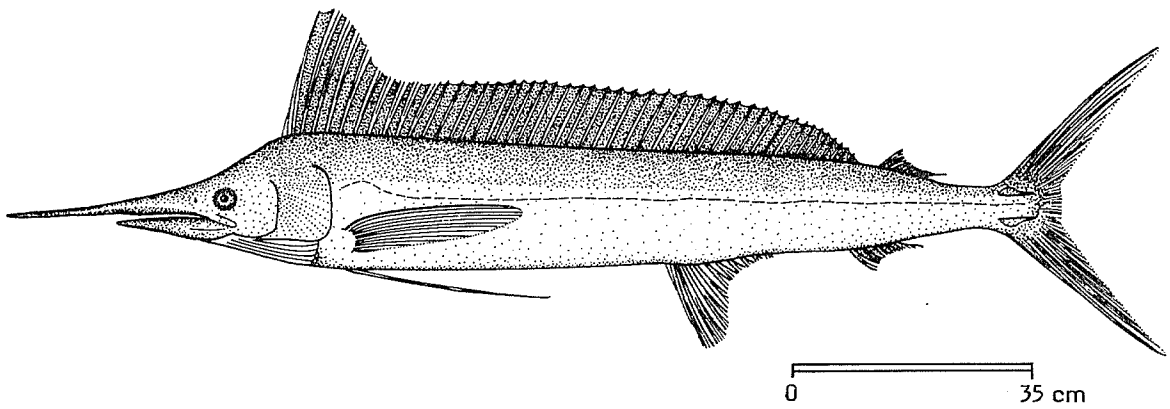
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : ISTIOPHORIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Tetrapturus pfluegeri Robins & de Sylva, 1963

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES:

FAO : En - Longbill spearfish
Fr - Makaire bécune
Sp - Aguja picuda

NATIONAL :

DISTINCTIVE CHARACTERS :

Body elongate, much compressed. Upper jaw prolonged into a rather slender spear which is round in cross section; nape nearly flat. Two dorsal fins, the first long (44 to 50 rays) and rather high throughout its length, the second small with 6 or 7 rays; height of anterior part of first dorsal fin slightly greater than body depth; two separated anal fins with 13 to 17 (1st) and 6 or 7 (2nd) rays respectively; pectoral fins falcate with 17 to 21 rays; pelvic fins slightly longer than pectorals consisting of 1 spine and 2 soft rays. Lateral line visible, curved above pectoral fin, then almost straight to tail. Anus well in front of origin of first anal fin. Body covered with densely imbedded scales ending in several points. Vertebrae 24 (12 + 12).

scales

Colour: body dark blue dorsally, brownish-silvery-white laterally, silvery white ventrally; first dorsal fin membrane blue-black, unspotted; other fins brown-black; no bars or spots on body (few exceptions).

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

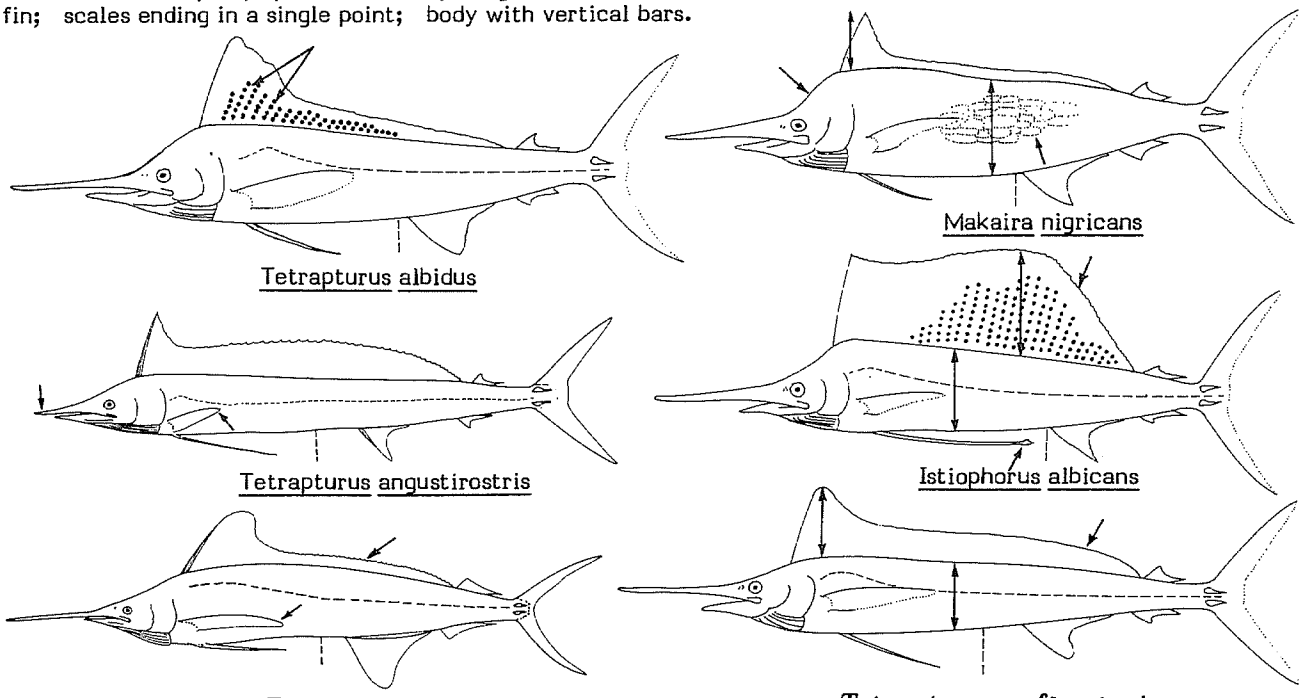
Tetrapturus albidus: first dorsal fin spotted, much lower posteriorly; anus placed close to origin of first anal fin; scales with a single point (several points in T. pfluegeri).

Tetrapturus angustirostris: pectoral fins short; snout short.

Tetrapturus georgei: anus moderately far from anal fin origin (distance about half the height of first anal fin); posterior part of first dorsal fin lower; scales round.

Makaira species: height of anterior part of dorsal fin smaller than body depth; body not strongly compressed; nape very steep; anus placed close to origin of first anal fin. Furthermore, pectoral fins rigid, not foldable backward against sides in M. indica, and lateral line system reticulated in M. nigricans.

Istiophorus albicans: first dorsal fin sail-like, its height much greater than body depth, covered with numerous black spots; pelvic fins very long, almost reaching to anus; anus placed close to origin of first anal fin; scales ending in a single point; body with vertical bars.



Tetrapturus albidus

Makaira nigricans

Tetrapturus angustirostris

Istiophorus albicans

Tetrapturus georgei

SIZE :

Maximum: about 2 m standard length and about 30 kg body weight; common to 1.6 m.

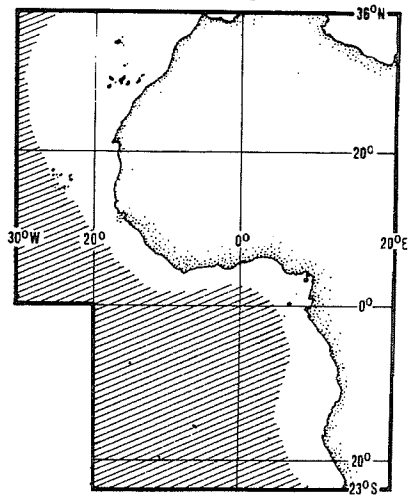
GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Throughout tropical and subtropical (sometimes temperate) waters of the Atlantic Ocean; chiefly distributed in offshore waters.

Epipelagic and oceanic, probably highly migratory, usually found above the thermocline.

Probably feeds on a wide variety of fishes (chiefly pelagic species), crustaceans and cephalopods.

Tetrapturus pfluegeri



PRESENT FISHING GROUNDS :

Commercial longline fishing grounds offshore in the Atlantic Ocean; no special fishery in the area.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species; it is reported by the Japanese together with sailfish catches.

Caught with longlines as by-product of commercial longliners for tunas.

Marketed mostly frozen; prepared as fish cakes and "sashimi" (sliced raw fish) in Japan.

ISTIO Tetra 3

1981

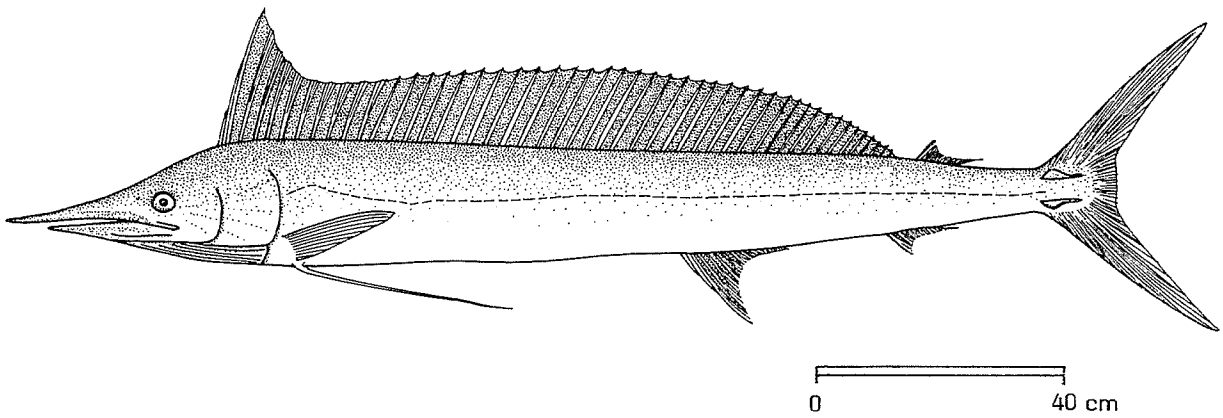
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : ISTIOPHORIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Tetrapturus angustirostris Tanaka, 1915

OTHER SCIENTIFIC NAMES STILL IN USE : None



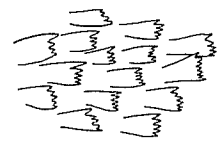
VERNACULAR NAMES:

FAO : En - Shortbill spearfish
Fr - Makaire à rostre court
Sp - Marlín trompa corta

NATIONAL :

DISTINCTIVE CHARACTERS :

Body elongate, much compressed. Upper jaw prolonged into a short spear; nape not elevated. Two dorsal fins, the first long (47 to 50 rays), its posterior part rather high throughout its length; second dorsal fin small, with 6 or 7 rays; height of anterior part of first dorsal fin slightly greater than body depth; two separated anal fins with 12 to 15 (1st) and 6 or 7 (2nd) rays respectively; pectoral fins short with 18 or 19 rays; pelvic fins longer than pectoral fins, with 1 spine and 2 soft rays; tip of first dorsal, first anal and pectoral fins pointed. Lateral line single, visible, curved above pectoral fin, then almost straight to tail. Anus well in front of origin of first anal fin. Body covered with densely embedded scales, each elongate ending in several points. Vertebrae 24 (12 + 12).



scales

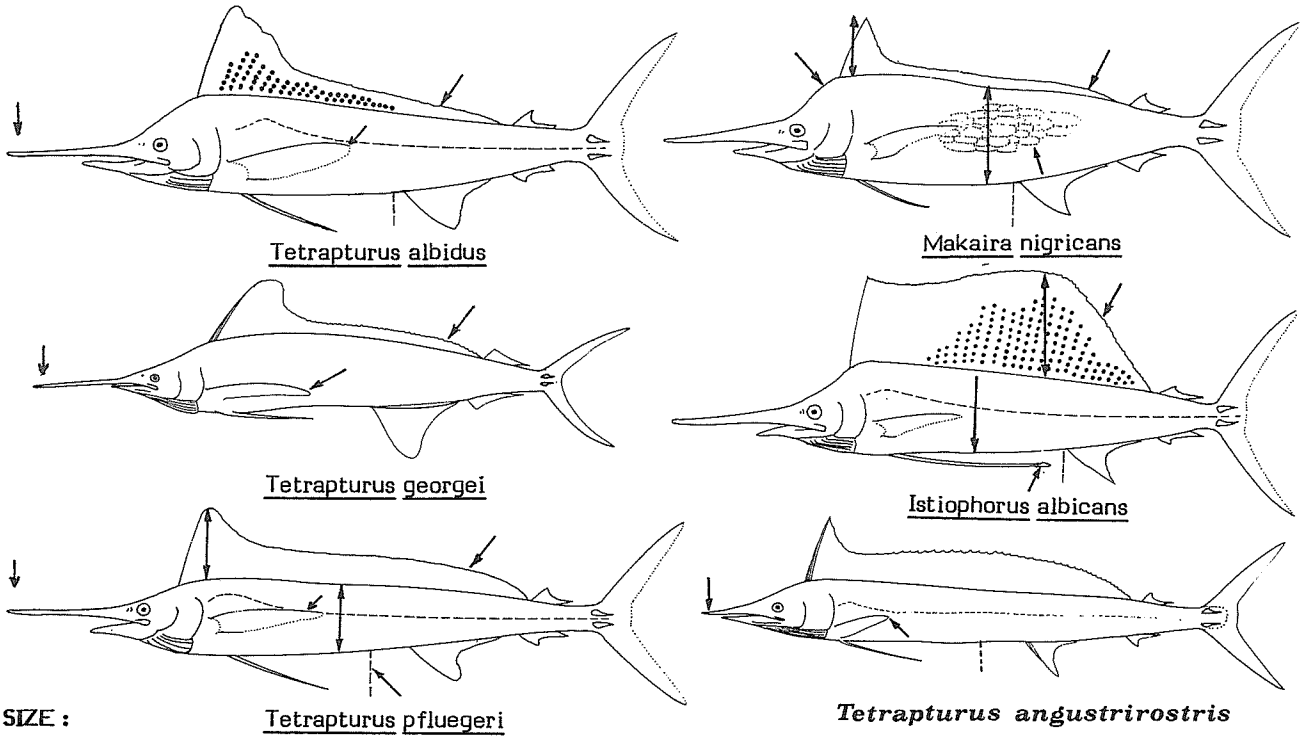
Colour: body dark blue dorsally, brownish silvery white laterally, silvery white ventrally; first dorsal fin membrane blue-black without spots; other fins brown-black; no bars or spots on body.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Tetrapturus species: spear as well as pectoral fins distinctly longer. Furthermore: posterior part of first dorsal fin lower in T. georgei and T. albidus; tip of first dorsal fin rounded in T. pfluegeri; position of anus close to origin of first anal fin and spots usually present on first dorsal fin in T. albidus.

Makaira species: height of anterior part of dorsal fin smaller than body depth; body not strongly compressed; nape very steep; anus placed close to origin of first anal fin. Furthermore, pectoral fins rigid, not foldable backward against sides in M. indica, and lateral line system reticulated in M. nigricans.

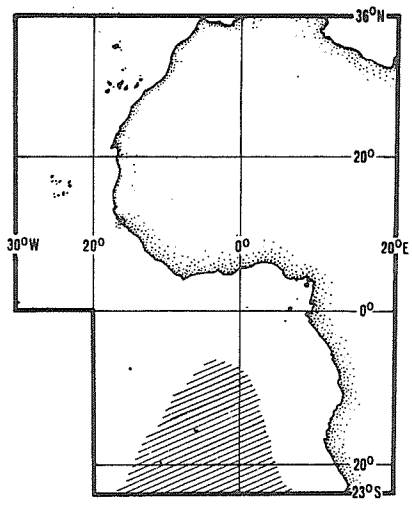
Istiophorus albicans: first dorsal fin sail-like, its height much greater than body depth, covered with numerous black spots; pelvic fins very long, almost reaching to anus; anus placed close to origin of first anal fin; scales ending in a single point; body with vertical bars.



SIZE:

Maximum: about 2.5 m total length and about 40 kg body weight; common to 2 m.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:



Throughout tropical and subtropical (sometimes temperate) waters of the Indo-Pacific where the spawning grounds and the principal populations occur. However, some stray individuals of this species sometimes come into the Atlantic Ocean, (one published record for the Gulf of Guinea). Chiefly distributed in oceanic waters, seldom approaching the shore.

Epipelagic and highly oceanic, usually above the thermocline.

Feeds on a wide variety of fishes (mainly pelagic species including dolfins, sauries, flyingfishes, needlefishes, and pilotfishes), crustaceans and cephalopods.

PRESENT FISHING GROUNDS:

No fishing grounds in the area.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught mainly with surface longlines.

Marketed mostly frozen, usually prepared as fish cakes.

ISTIO Tetra 4

1981

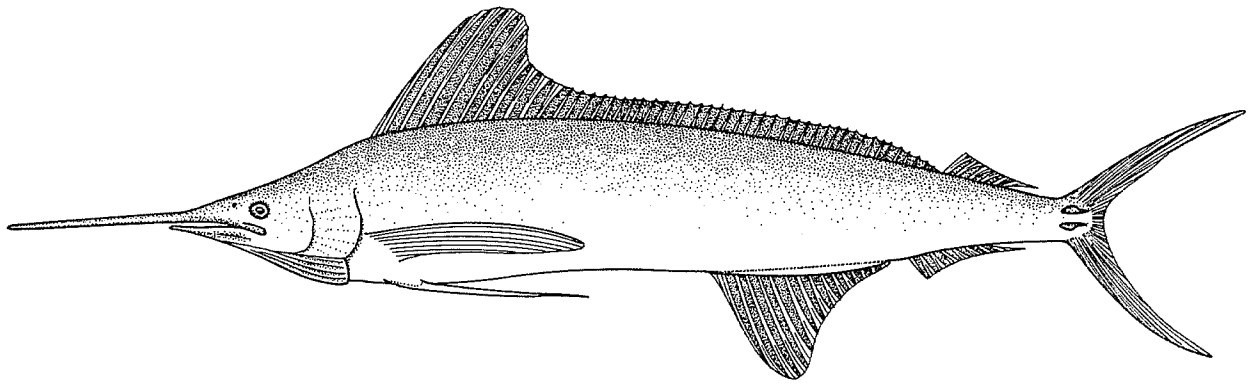
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : ISTIOPHORIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Tetrapturus georgei Lowe, 1840

OTHER SCIENTIFIC NAMES STILL IN USE : Tetrapturus georgii Lowe, 1840
Makaira georgii Jordan & Everman, 1926



VERNACULAR NAMES:

FAO : En - Roundscale spearfish
Fr - Makaire épée
Sp - Marlín peto

NATIONAL :

DISTINCTIVE CHARACTERS :

Body elongate, compressed. Upper jaw prolonged into a rather slender spear, round in cross section; nape slightly elevated. Two dorsal fins, the first long (43 to 48 rays) and low posteriorly, the second small, with 6 or 7 rays; height of anterior part of first dorsal fin slightly greater than body depth; two separated anal fins with 14 to 16 (1st) and 6 or 7 (2nd) rays respectively; pectoral fins falcate and long, with 19 or 20 rays; pelvic fins subequal to pectoral fins. Lateral line single. Anus moderately far anterior to anal fin origin, (distance about half the height of first anal fin). Body covered with densely embedded scales, each round with several points, not pungent like those of all other istiophorids. Vertebrae 24 (12 + 12).

scales

Colour: body dark blue above, silvery white below; first dorsal fin membrane blue-black without spots; other fins brown-black; usually no bars or spots on body.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

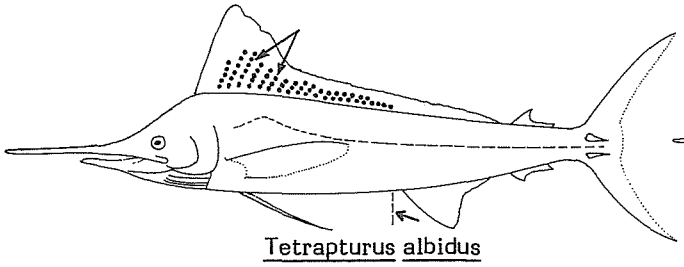
Tetrapturus albidus: dorsal fin spotted; anus close to origin of first anal fin; scales elongate, each with a single point.

Tetrapturus angustirostris: snout short; height of posterior part of first dorsal fin almost equal throughout its length; pectoral fins short; anus more apart from origin of first anal fin.

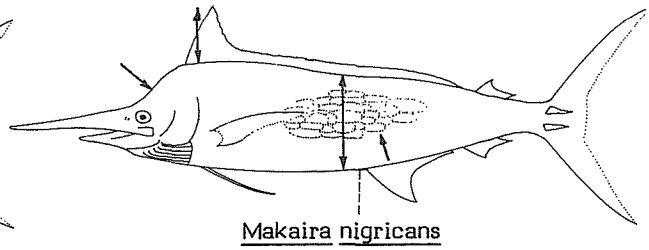
Tetrapturus pfluegeri: first dorsal fin not as low posteriorly; anus more apart from origin of first anal fin.

Makaira species: height of anterior part of dorsal fin smaller than body depth; body not strongly compressed; nape very steep; anus placed close to origin of first anal fin. Furthermore, pectoral fins rigid, not foldable backward against side in M. indica, and lateral line system reticulated in M. nigricans.

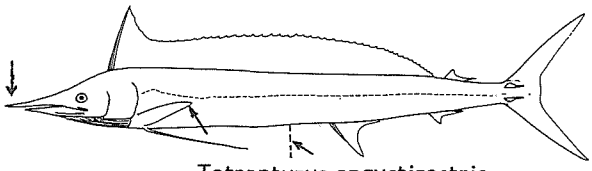
Istiophorus albicans: first dorsal fin sail-like, its height much greater than body depth, covered with numerous black spots; pelvic fins very long, almost reaching to anus; anus placed close to origin of first anal fin; scales ending in a single point; body with vertical bars.



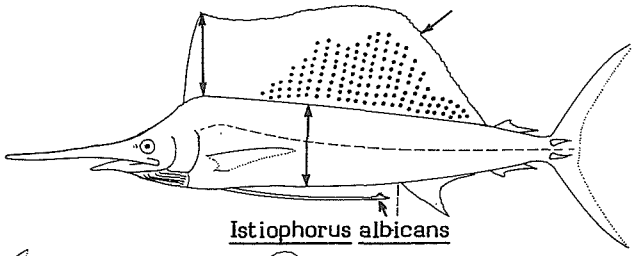
Tetrapturus albidus



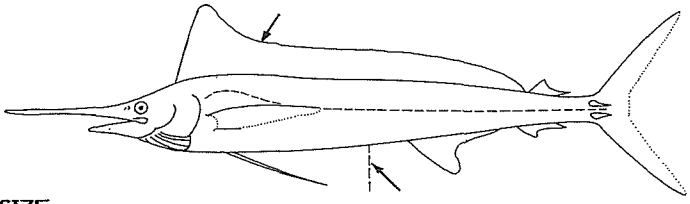
Makaira nigricans



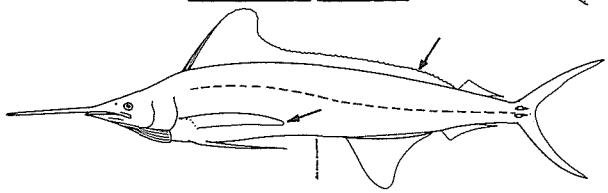
Tetrapturus angustirostris



Istiophorus albicans



Tetrapturus pfluegeri

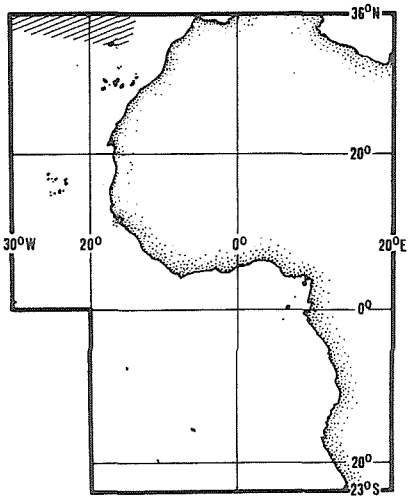


Tetrapturus georgei

SIZE :

Maximum: about 2 m standard length; common to 1.6 m.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :



Known from Sicily, the Straits of Gibraltar and the adjacent Atlantic Ocean off southern Portugal; hence, its occurrence in the northern part of Fishing Area 34 is likely; a recently redescribed, rare species.

Epipelagic and oceanic, usually found above the thermocline.

Probably feeds on a wide variety of fishes, crustaceans and cephalopods.

PRESENT FISHING GROUNDS :

No special fishing grounds.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Caught mainly with surface longlines and by trolling.

Marketed mostly frozen or iced.

KUH

1981

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

KUHLIIDAE

(Duleidae of some authors)

Daras

A single species in the area; see species sheet for:

Parakuhlia macrophthalmus (Osorio, 1894) KUH Para 1

Prepared by G.R. Allen, Western Australian Museum, Perth, Australia

KUH Para 1

1981

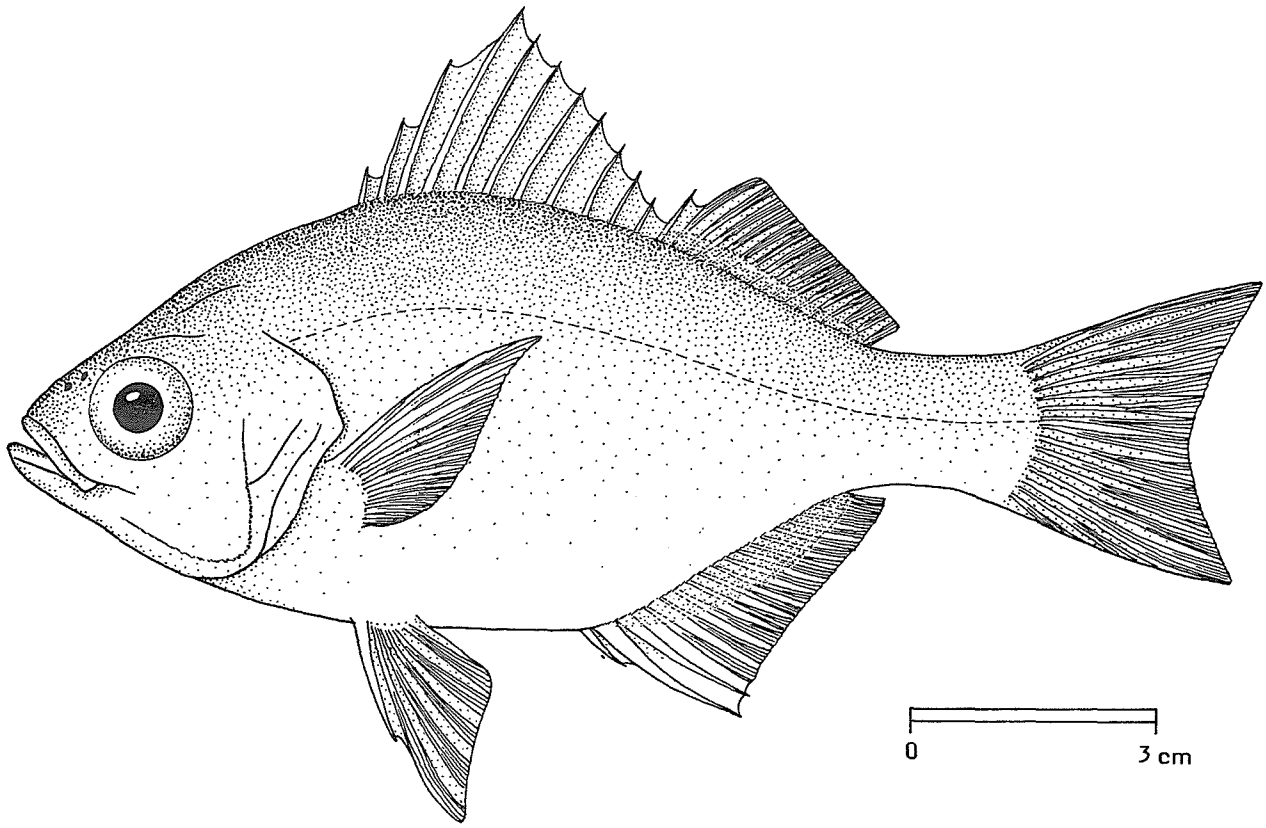
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : KUHLIIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Parakuhlia macrophthalmus (Osorio, 1894)

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES:

FAO : En - Dara
Fr - Crocro à gros yeux
Sp - Dara

NATIONAL :

DISTINCTIVE CHARACTERS :

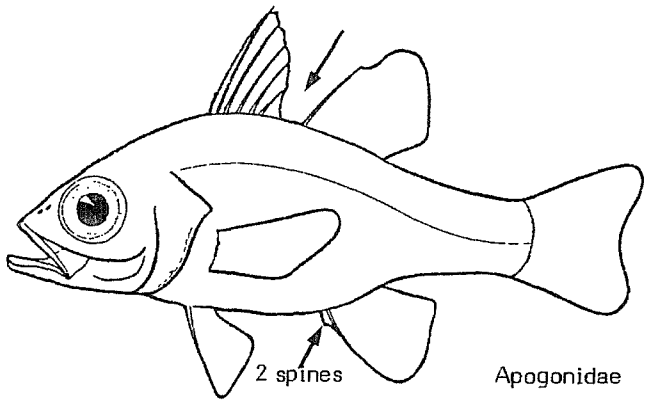
Body ovate, moderately deep and laterally compressed. Dorsal profile of head relatively steep, slightly concave over eye; eye large, snout short and blunt; mouth oblique, lower jaw protruding slightly; maxilla reaches to about level with front of eye; teeth in villiform bands in jaws and on vomer, palatines toothless. Dorsal fin deeply notched in middle, with 11 spines in anterior section, and 1 spine and 15 or 16 soft rays posteriorly; anal fin with 3 spines and 16 soft rays, base of soft dorsal fin slightly shorter than base of anal fin; pectoral rays 17, pointed at tip and reaching to level of posterior dorsal fin spines; caudal fin slightly emarginate. Scales moderate sized, 50 or 51 in lateral line.

Colour: mainly silvery, slightly darker on dorsal surface.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Species of Apogonidae: dorsal fin completely divided, with 6 or 7 spines in anterior section and 1 spine and 8 to 10 soft rays posteriorly; scales large, usually 25 or less in lateral line (except about 45 in deep-water dwelling Epigonus); anal fin with 2 spines and 8 or 9 soft rays.

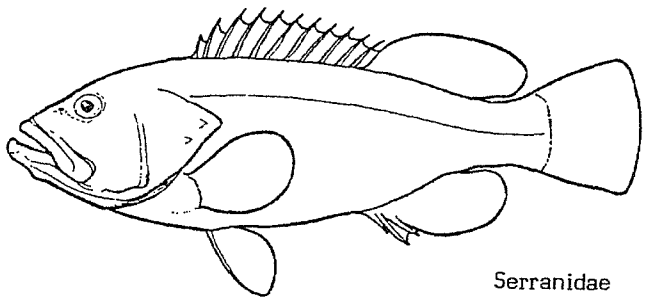
Species of Serranidae: base of anal fin shorter than that of soft dorsal fin; most Eastern Central Atlantic species without a deep notch in middle of dorsal fin.



Apogonidae

SIZE :

Maximum: 20 cm; common to 15 cm.


Serranidae

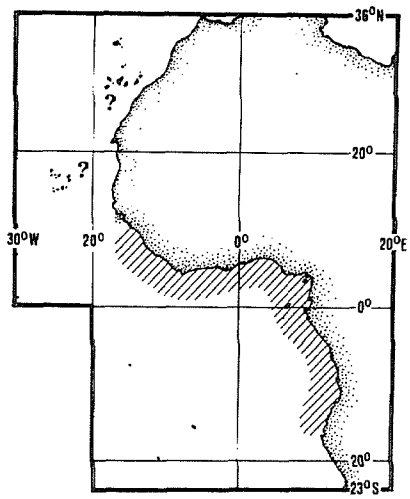
GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

West African coast mainly in the Gulf of Guinea, but may be expected to occur throughout the area.

This species is an inshore dweller, frequenting rocky coast and beaches to depths of 20 m.

PRESENT FISHING GROUNDS :

Inshore waters.



CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species which is not considered to be of commercial importance.

Caught mainly with set nets, beach seines, or on hook and line.

Marketed fresh; eaten fried or smoked.

KYPH

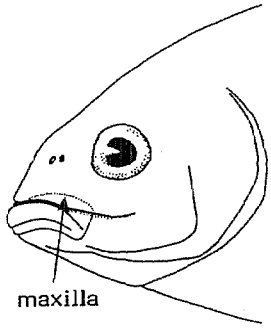
1981

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

KYPHOSIDAE

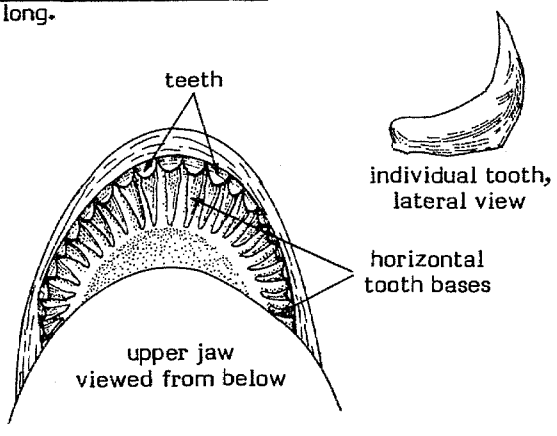
Sea chubs

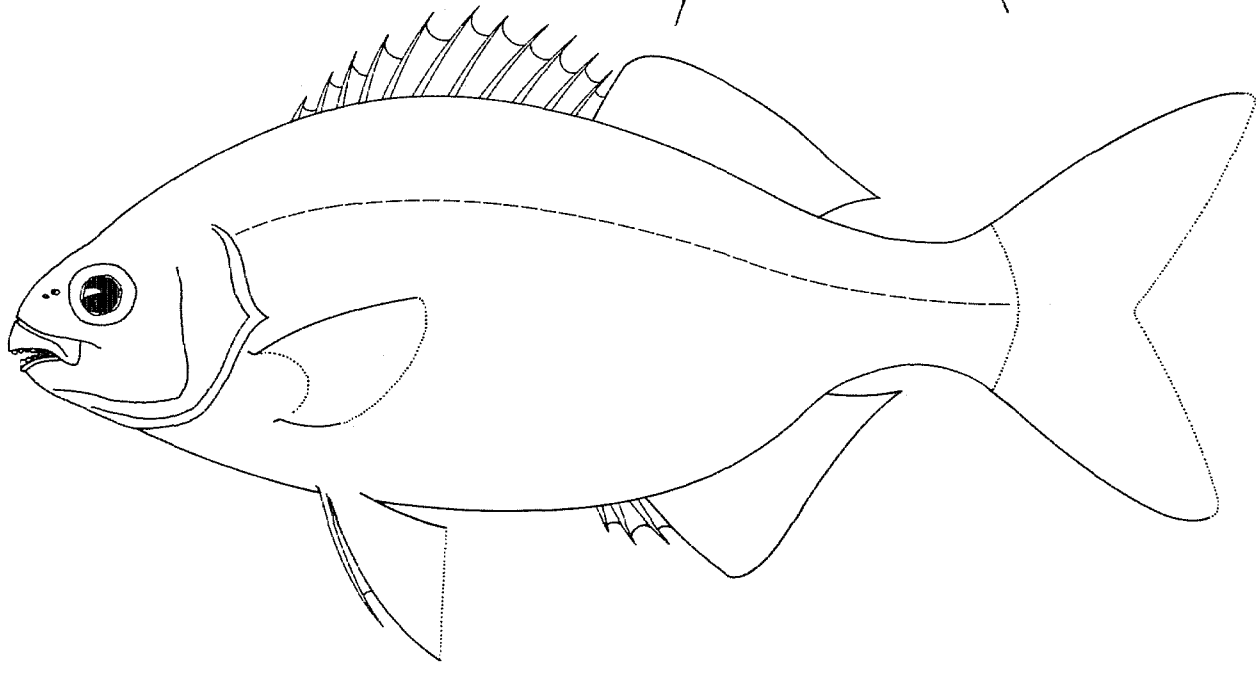


Comparatively deep-bodied, oval fishes. Head short, with a blunt snout; mouth small, horizontal, the maxilla not or only just, reaching to below eye and slipping under edge of the preorbital bone; each jaw with a regular row of close-set, strong, incisor-like, round-tipped teeth of a peculiar hockey-stick shape, with their bases set horizontally, resembling a radially striated bony plate inside mouth; a narrow band of villiform teeth behind this row; fine teeth also on roof of mouth. A single, continuous dorsal fin in both Eastern Central Atlantic species, its spinous portion depressible into a scaly groove; 3 spines in anal fin; pectoral fins short, about equal in length to pelvic fins or even shorter; caudal fin moderately forked. Scales rather small, thick, ctenoid (rough to touch) covering also fins (except spinous portion of dorsal) and most of head, except snout. Digestive tract very long.

Colour: rather drab, usually with yellowish and/or bluish stripes; may exhibit a pale-spotted phase.

Sea chubs are shallow-water schooling fishes; adults are found near shore over rocky bottoms, while small juveniles are primarily pelagic. They feed mainly on plants (therefore their long digestive tract). The flesh is generally reported to be palatable, though apparently not highly valued (occasionally said to be bad-flavoured). These fishes are apparently uncommon in this area.



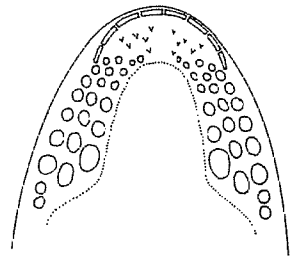


SIMILAR FAMILIES OCCURRING IN THE AREA:

All other families: other teeth in jaws not hockey-stick shaped, their bases not set horizontally resembling a radially striated bony plate inside mouth. Further distinguishing characters of similar families are the following:

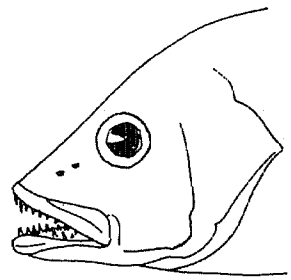
Sparidae: head usually larger; molar-like teeth present at sides of jaws; pectoral fins long (short in Kyphosidae); no scales in suborbital area or on dorsal and anal fins.

Lutjanidae: mouth larger; jaw teeth conical and sharp, sometimes a few enlarged and canine-like, irregularly set, usually in a few rows; pectoral fins long and pointed.



Sparidae (Archosargus)

upper jaw viewed from below



Lutjanidae

KEY TO GENERA OCCURRING IN THE AREA:

Kyphosus only.

LIST OF SPECIES OCCURRING IN THE AREA:

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

Kyphosus incisor (Cuvier, 1831)	KYPH Kyph 1
Kyphosus sectatrix (Linnaeus, 1766)	KYPH Kyph 2

Prepared by T. Sgano, 3-17-3 Shinohara-higashi, Yokohama, Japan

Draft material reviewed by J.E. Randall, B. Bishop Museum, Honolulu, Hawaii, U.S.A.

KYPH Kyph 1

1981

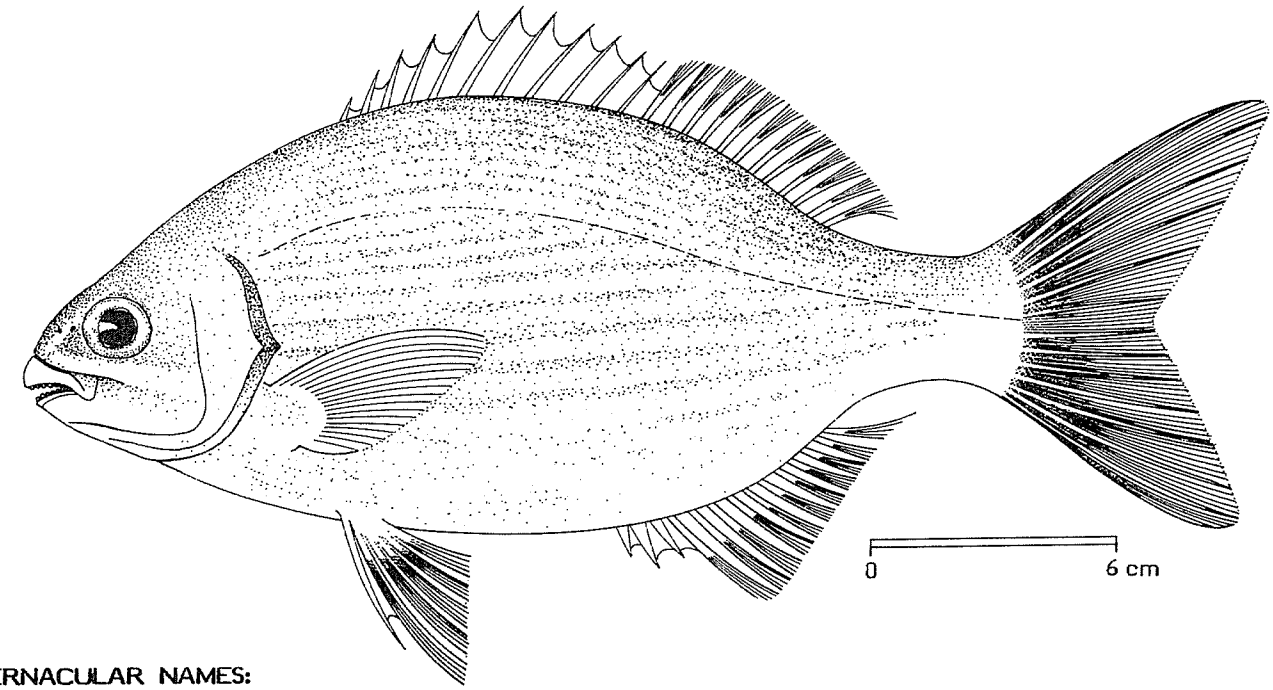
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : KYPHOSIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Kyphosus incisor (Cuvier, 1831)

OTHER SCIENTIFIC NAMES STILL IN USE : None



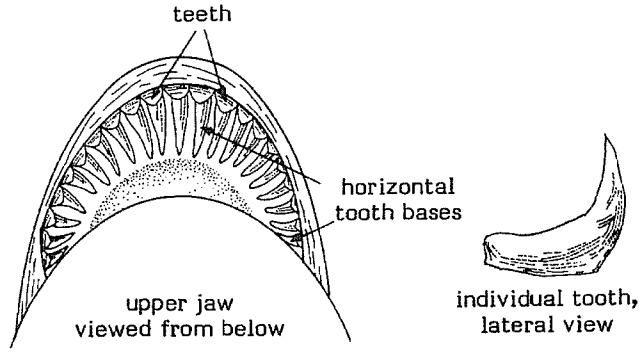
VERNACULAR NAMES:

FAO : En - Yellow sea chub
Fr - Calicagère jaune
Sp - Chopa amarilla

NATIONAL :

DISTINCTIVE CHARACTERS :

Body rather deep, head short, mouth small and horizontal, the maxilla slipping under the edge of the preorbital bone; each jaw with a regular row of close-set, strong, incisor-like, round-tipped teeth of a peculiar hockey-stick shape, their bases set horizontally, resembling a radially striated bony plate inside mouth; behind this row, a narrow band of villiform teeth; fine teeth also on roof of mouth and tongue; gillrakers on lower limb of anterior gill arch 19 to 22. A single, continuous dorsal fin with 11 spines and 13 to 15 (usually 14) soft rays; anal fin with 3 spines and 12 or 13 (usually 13) soft rays; pectoral fins short. Scales small, ctenoid (rough to touch), covering most of head (except snout) and all fins, except for spinous portion of dorsal; scales on lateral line 54 to 62.



Colour: grey with longitudinal brassy stripes on body and 2 brassy horizontal bands on head; opercular membrane slightly pigmented.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Kyphosus sectatrix: counts of soft fin rays, gillrakers and lateral-line scales lower; 11 to 13 (usually 12) soft dorsal rays, 10 to 12 (usually 11) soft anal rays, 16 to 18 gillrakers on lower limb on anterior gill arch (19 to 22 in K. incisor), scales on lateral line 51 to 58 (54 to 62 in K. incisor); also yellowish stripes dull and upper part of opercular membrane blackish.

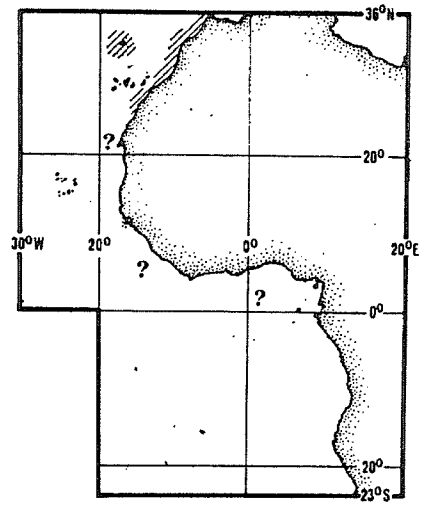
Fishes of other families: outer teeth in jaws not hockey-stick shaped, their bases not set horizontally resembling a radially striated bony plate inside mouth.

SIZE:

Maximum: 67 cm; common to 45 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

In the area at least off Morocco, and around Madeira. Often confused with K. sectatrix. Possibly ranging further south. Elsewhere found in the Western Central Atlantic.



Inhabits shallow coastal waters, especially over rocky bottoms.

Feeds mostly on algae.

PRESENT FISHING GROUNDS:

Inshore waters, but apparently nowhere abundant.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught mainly on hook and line and with set nets.

Marketed fresh.

KYPH Kyph 2

1981

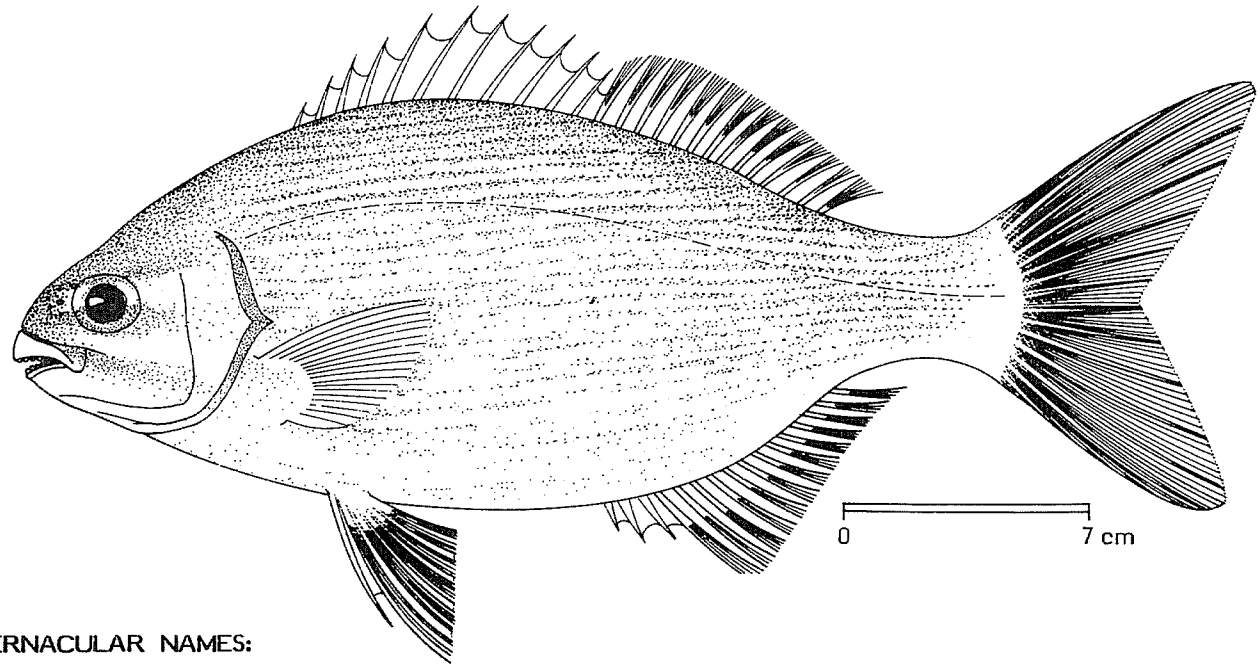
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : KYPHOSIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Kyphosus sectatrix (Linnaeus, 1758)

OTHER SCIENTIFIC NAMES STILL IN USE : None



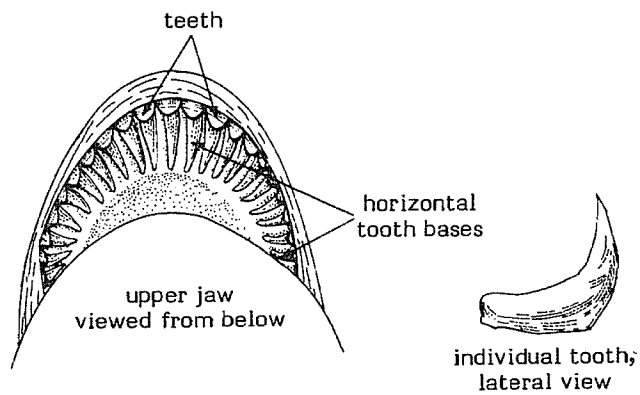
VERNACULAR NAMES:

FAO : En - Bermuda sea chub
Fr - Calicagère blanche
Sp - Chopa blanca

NATIONAL :

DISTINCTIVE CHARACTERS :

Body rather deep, head short, mouth small and horizontal, the maxilla slipping under the edge of the preorbital bone; each jaw with a regular row of close-set, strong, incisor-like, round-tipped teeth of a peculiar hockey-stick shape, their bases set horizontally, resembling a radially striated bony plate inside mouth; behind this row, a narrow band of villiform teeth; fine teeth also on roof of mouth and tongue; gillrakers on lower limb of anterior gill arch 16 to 18. A single, continuous dorsal fin with 11 spines and 11 to 13 (usually 12) soft rays; anal fin with 3 spines and 10 to 12 (usually 11) soft rays; pectoral fins short. Scales small, ctenoid (rough to touch) covering most of head (except snout) and all fins except for spinous portion of dorsal; scales on lateral line 51 to 58.



Colour: grey, with dull longitudinal yellowish stripes on body and 2 dull yellow horizontal bands on head, both beginning on snout, the lowermost running under eye to edge of preopercle; upper part of opercular membrane blackish. The young may display pale spots nearly as large as eye on head, body and fins.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Kyphosus incisor: counts of soft fin rays, gillrakers and lateral-line scales higher: 13 to 15 (usually 14) soft dorsal rays, 12 or 13 (usually 13) soft anal rays, 19 to 22 gillrakers on lower limb of anterior gill arch (16 to 18 in K. sectatrix), scales on lateral line 54 to 62 (51 to 58 in K. sectatrix); also, yellow stripes somewhat brighter and opercular membrane not as dark.

Fishes of other families: outer teeth in jaws not hockey-stick shaped, their bases not set horizontally resembling a radially striated bony plate inside mouth.

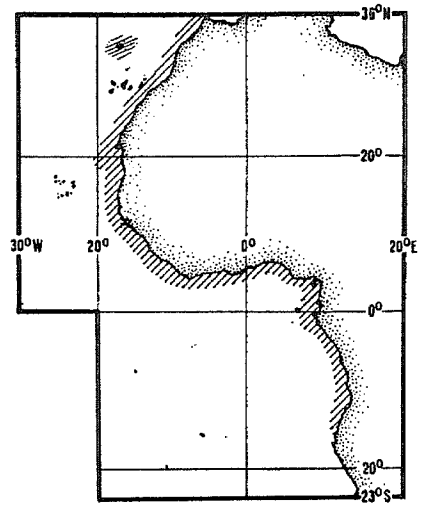
SIZE:

Maximum: 76 cm; common to 50 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Present around Madeira and along the West coasts of Africa from Morocco to at least the Gulf of Guinea. Elsewhere, in the Mediterranean and the Western Central Atlantic. Inhabits shallow coastal waters.

Feeds on plants, primarily on benthic algae.



PRESENT FISHING GROUNDS:

Inshore waters, but apparently not abundant.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught mainly on hook and line; and with set nets.

Marketed fresh.

LABR

1981

FAO SPECIES IDENTIFICATION SHEETS

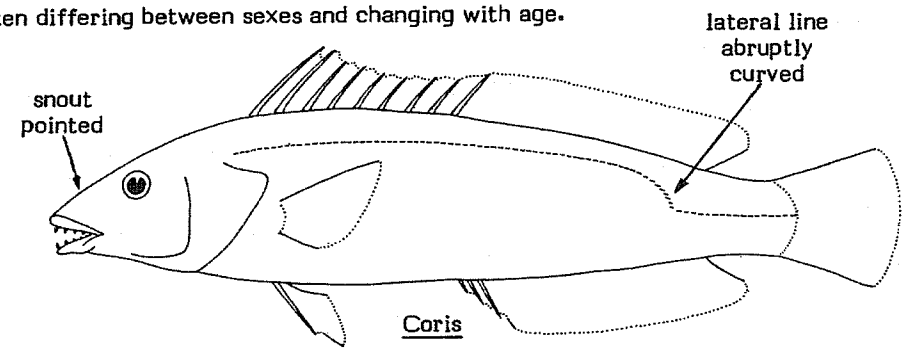
FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

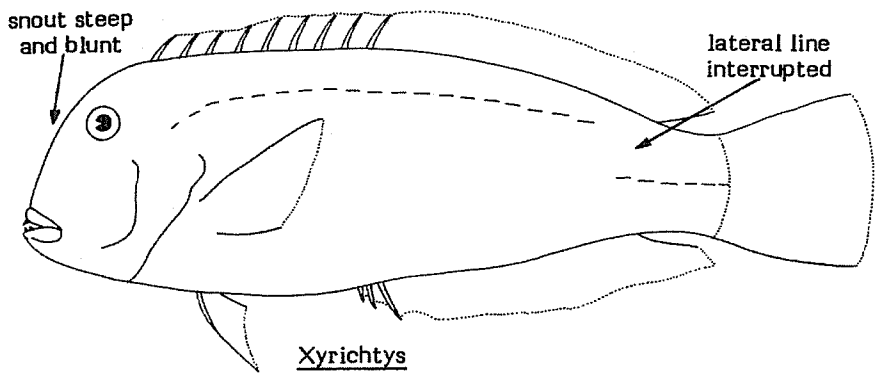
LABRIDAE

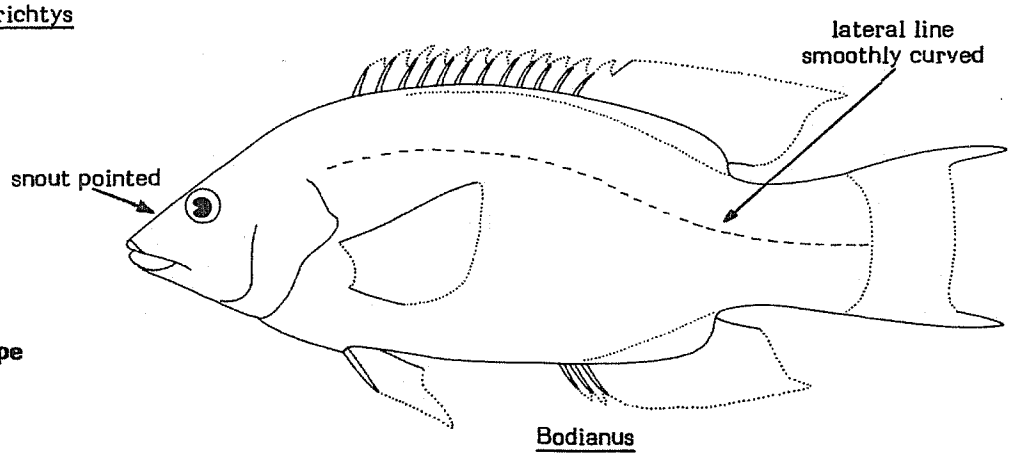
Wrasses, hogfishes, razorfishes

Wrasses are quite variable in size, shape and coloration. Body slightly to moderately compressed laterally. Mouth terminal, often with thick lips; jaws protrusible; teeth in jaws separate, caniniform, the anteriormost one or two pairs usually enlarged and directed forward; pharyngeal teeth at base of throat strong. A single, continuous dorsal fin with weak spines; spines and anterior fin rays usually of similar length. Scales of moderate to large size, cycloid (smooth to touch); lateral line smoothly arched or with an abrupt curve below soft portion of dorsal fin, either continuous or interrupted on caudal peduncle.

Colour: generally bright, often differing between sexes and changing with age.





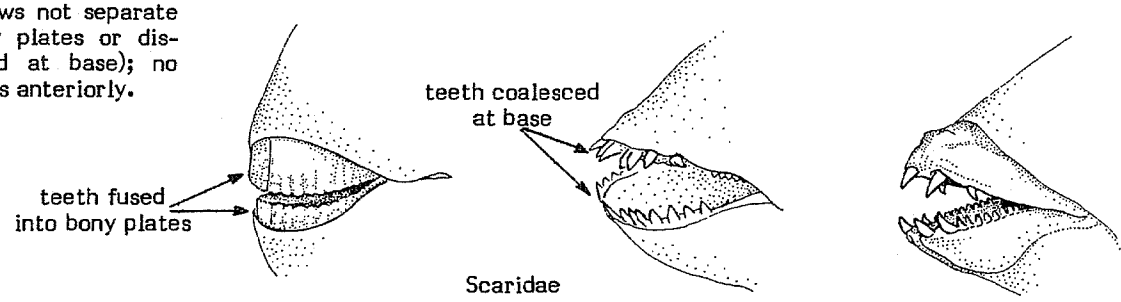


labrids of different shape

Eastern Atlantic forms are common in both warm and cool waters at shallow to moderate depths (from the shore to at least 120 m). They occur in a variety of habitats ranging from bare sand and rock to grass and seaweed beds or coral reefs, but are rare in muddy areas. Wrasses are active in daytime, while they bury in the sand or sleep in rocky shelters at night. They feed mostly on bottom-dwelling invertebrates; juveniles of some species have been reported to remove ectoparasites from larger fishes. Most wrasses exhibit some type of sex change (hermaphroditism), the normal occurrence being a transformation from female to male; a modification in colour pattern is often associated with change in sex, as well as with sexual maturation, the large, brightly coloured individuals in big-sized species invariably being males. These fishes normally swim solely with their pectoral fins, giving individuals an appearance of dragging their tails. Although many wrasses are too small to have commercial value, the larger species are excellent foodfishes. Members of this family are often taken in bottom trawls and by various artisanal gear, though, none of the species seems to be the object of a special fishery.

SIMILAR FAMILIES OCCURRING IN THE AREA:

Scaridae: mouth not protrusible, teeth in jaws not separate (fused into bony plates or distinctly coalesced at base); no prominent canines anteriorly.



KEY TO GENERA OCCURRING IN THE AREA:

1 a. Less than 10 spines in dorsal fin; lateral line abruptly curved or interrupted below soft portion of dorsal fin (Figs. 1,2)

2 a. Lateral line continuous (Fig. 1)

3 a. Dorsal fin spines 8; lateral-line scales less than 30 ..... Thalassoma

3 b. Dorsal fin spines 9; lateral-line scales more than 70 ..... Coris

2 b. Lateral line interrupted (Fig. 2)

4 a. 12 branched, segmented rays in dorsal and anal fins; lateral-line scales 29 ..... Xyrichtys

4 b. 10 branched, segmented rays in dorsal and anal fins; lateral-line scales 23 ... Doratonotus

1 b. More than 10 spines in dorsal fin; lateral line smoothly curved throughout its length (Fig. 3)

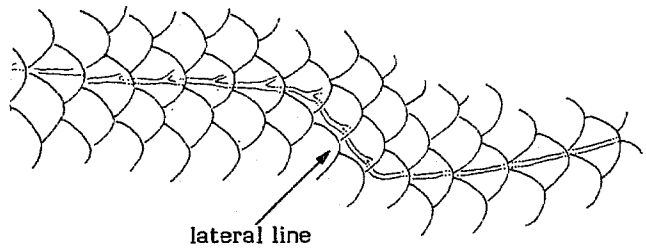


Fig. 1

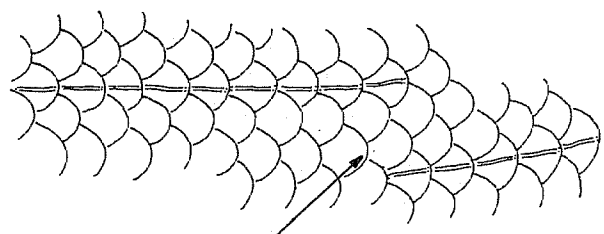


Fig. 2

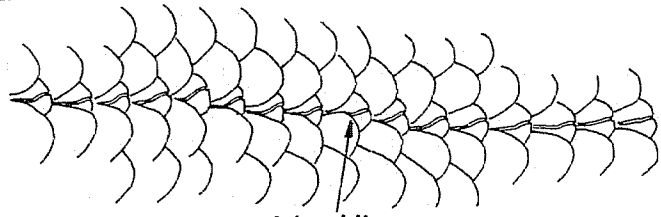


Fig. 3

5 a. Anal fin spines 4 to 6

6 a. Lateral-line scales 33 to 37; total dorsal fin elements (spines + soft rays) 24 to 26 .. Centrolabrus

6 b. Lateral-line scales approximately 45; total dorsal fin elements 29 ..... Acantholabrus

5 b. Anal fin spines 3

7 a. Upper jaw with a prominent, recurved posterior canine (Fig. 4)

8 a. Dorsal fin spines 12; branched, segmented anal fin rays 12 (rarely 11 or 13) ..... Bodianus

8 b. Dorsal fin spines 14 to 17; branched, segmented anal fin rays 8 to 10 (rarely 11) ..... Lappanella

7 b. Upper jaw without a prominent, recurved posterior canine

9 a. Jaw teeth in 2 or 3 rows (Fig. 5) ..... Ctenolabrus

9 b. Jaw teeth in a single row (Fig. 6)

10 a. Lateral-line scales 43 to 55 ..... Labrus

10 b. Lateral-line scales 30 to 35 ..... Symphodus

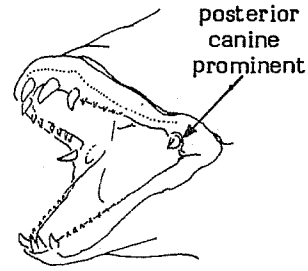


Fig. 4

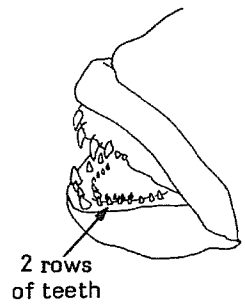


Fig. 5

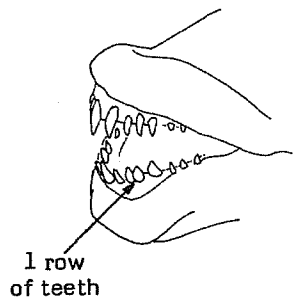


Fig. 6

LIST OF SPECIES OCCURRING IN THE AREA:

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

Acantholabrus palloni (Risso, 1810)	
Bodianus insularis Gomon & Lubbock, 1980	LABR Bod 3
Bodianus scrofa (Valenciennes, 1839)	LABR Bod 4
Bodianus speciosus (Bowdich, 1825)	LABR Bod 5
Centrolabrus trutta (Lowe, 1833)	
Coris julis (Linnaeus, 1758)	LABR Cor 1
Ctenolabrus rupestris (Linnaeus, 1758)	
Doratonotus megalepis (Günther, 1862	
Labrus bergylta Ascarius,1767	
Labrus bimaculatus Linnaeus,1758	
Labrus merula Linnaeus, 1758	
Labrus viridis Linnaeus, 1758	
Lappanella fasciata (Cocco, 1833)	
Lappanella guineensis Bauchot, 1969	
Symphodus bailloni (Valenciennes, 1839)	
Symphodus cinereus (Bonnaterre, 1788)	
Symphodus mediterraneus (Linnaeus, 1758)	
Symphodus melops (Linnaeus, 1758)	
Symphodus roissali (Risso, 1810)	
Symphodus tinca (Linnaeus, 1758)	
Thalassoma ascensionis (Quoy & Gaimard, 1835)	
Thalassoma pavo (Linnaeus, 1758)	
Xyrichtys blanchardi (Cadenat & Marchal, 1963)	
Xyrichtys novacula (Linnaeus, 1758)	LABR Xyr 1 (= LABR Hemip 1 of W.C. Atlantic)
Xyrichtys sanctaehelenae (Günther, 1968)	

Prepared by M. Gomon, National Museum of Victoria, Melbourne, Victoria, Australia

Illustrations provided by author

LABR Bod 3

1981

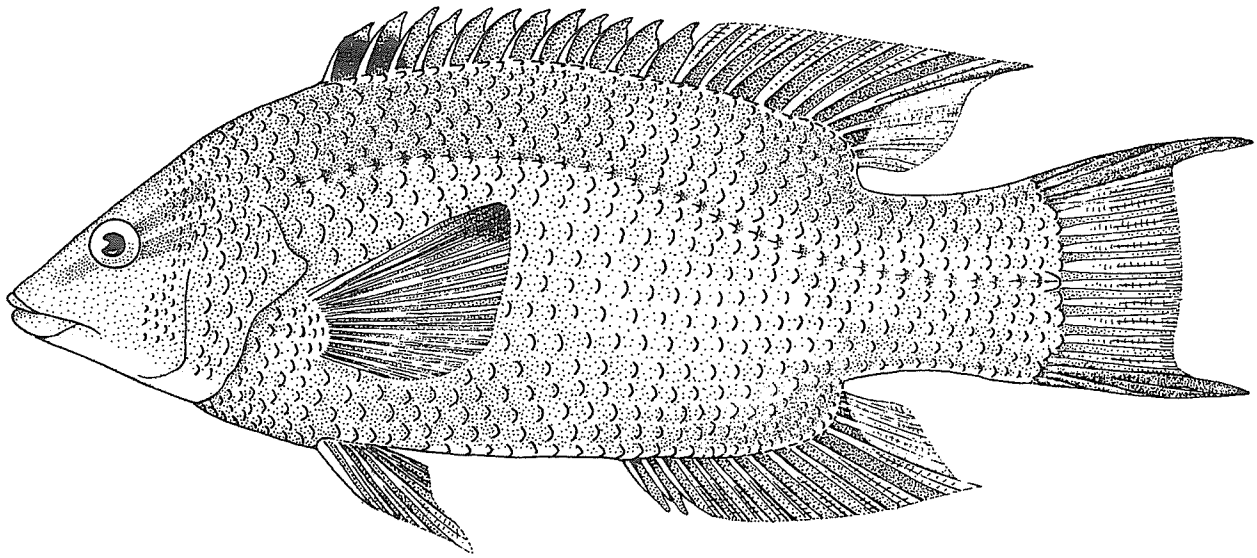
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : LABRIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Bodianus insularis Gomon & Lubbock, 1980

OTHER SCIENTIFIC NAMES STILL IN USE : None



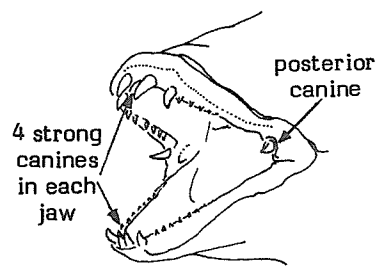
VERNACULAR NAMES:

FAO : En - Island hogfish
Fr - Pourceau des îles
Sp - Vieja isleña

NATIONAL :

DISTINCTIVE CHARACTERS :

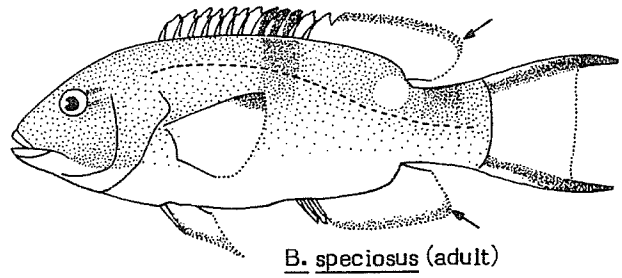
Body moderately deep. Dorsal profile of head nearly straight; tip of snout forming an acute angle; jaws prominent, each with 4 strong canines anteriorly and a large curved canine on each side at rear of upper jaw. Dorsal fin continuous, with 12 spines and 10 soft rays, the spines and anterior soft rays of similar length; posterior tips of dorsal and anal fins pointed, each forming an elongate filament that often extends beyond the scaly caudal fin base in adults; pectoral fins with 2 unbranched and 14 (rarely 15) branched rays; pelvic fins slightly filamentous in adults; upper and lower corners of caudal fin forming filamentous lobes in adults. Lateral line smoothly curved, uninterrupted, with 33 or 34 pored scales; scales extending onto bases of dorsal and anal fins.



Colour: adults are bright red, each body scale on posterior side of head with a bluish spot; chin white; dorsal and anal fins with dark blue margins; a black spot between first few dorsal fin spines, and a blackish blotch at tip of pectoral fins. Very large individuals are mostly dark grey to black; juveniles, brilliant yellow.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

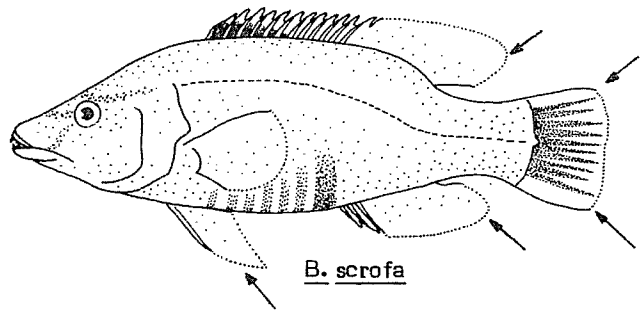
Bodianus speciosus: posterior tips of dorsal and anal fins not filamentous, not extending much, if at all, beyond posterior edge of scaly caudal fin base; branched pectoral fin rays usually 15 (14 rarely 15 in B. insularis); juveniles with a large black spot on dorsal fin immediately posterior to last spine, replaced in adults by a black bar on back below last few dorsal fin spines.



B. speciosus (adult)

Bodianus scrofa: posterior tips of dorsal, anal, caudal and pelvic fins without filaments; branched pectoral fin rays usually 15 (usually 14 in B. insularis); lateral line scales 46 to 50 (33 or 34 in B. insularis).

Other genera of Labridae: either more or fewer than 12 dorsal fin spines.



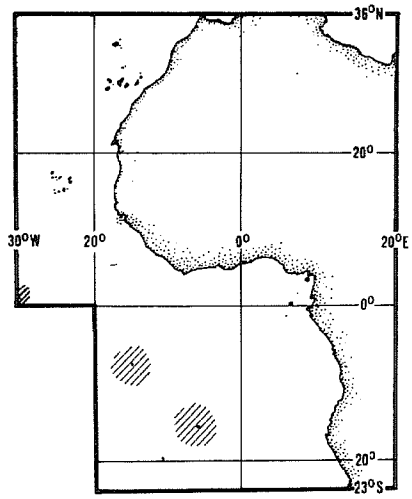
B. scrofa

SIZE :

Maximum: to 33 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Known from Ascension, St. Helena, and St. Paul Rocks.



This species has been taken in areas of rock and rubble bottom associated with sand.

So far, recorded from 12 to 25 m depth.

PRESENT FISHING GROUNDS :

Not taken in sizeable quantities.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Caught incidentally in local artisanal fisheries.

Marketable fresh.

LABR Bod 4

1981

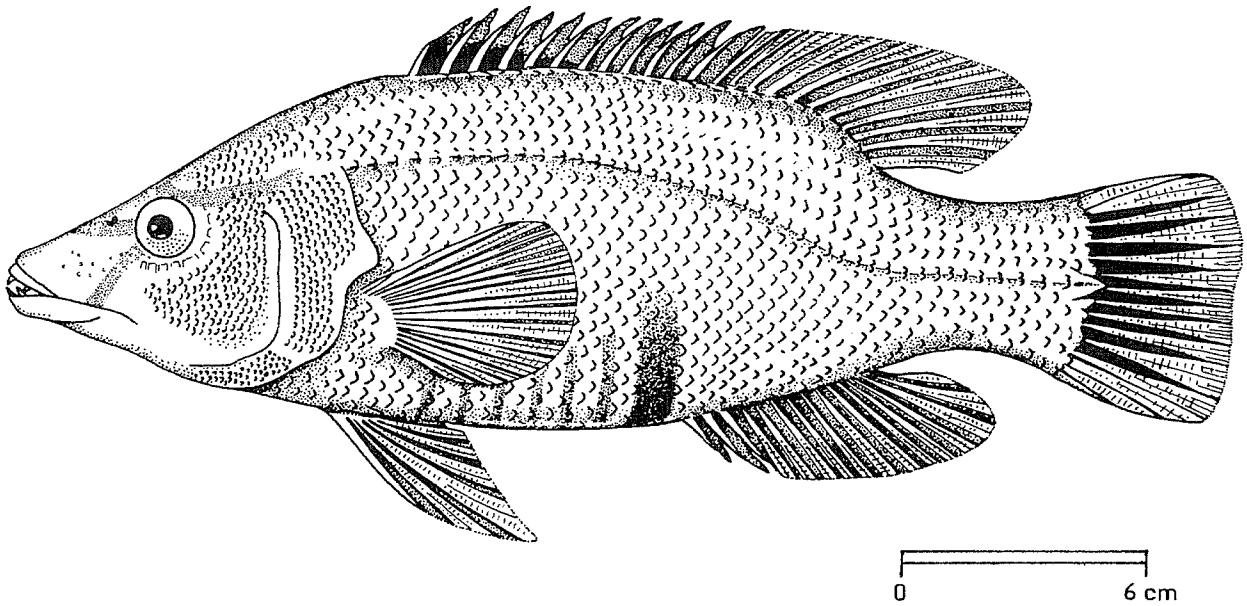
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : LABRIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Bodianus scrofa (Valenciennes, 1839)

OTHER SCIENTIFIC NAMES STILL IN USE : Pseudolepidaplois scrofa



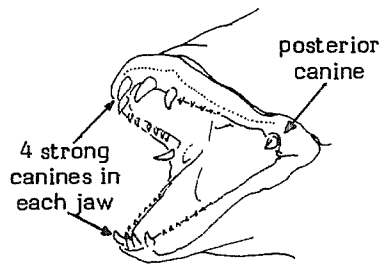
VERNACULAR NAMES:

FAO : En - Barred hogfish
Fr - Pourceau
Sp - Vieja

NATIONAL :

DISTINCTIVE CHARACTERS :

Body of moderate depth. Dorsal profile of head nearly straight, tip of snout forming an acute angle; jaws prominent, each with 4 strong canines anteriorly and a large curved canine on each side at rear of upper jaw. Dorsal fin continuous, with 12 spines and 10 soft rays, the spines and anterior soft rays of similar length, posterior ends of dorsal and anal fins rounded, not reaching to posterior edge of scaly caudal fin base; pectoral fins with 2 unbranched and 15 (rarely 16) branched rays; pelvic fins not filamentous; upper and lower corners of caudal fin usually rounded, not forming filamentous lobes in adults. Lateral line smoothly curved, uninterrupted, with 46 to 50 pored scales; scales extending onto bases of dorsal and anal fins.



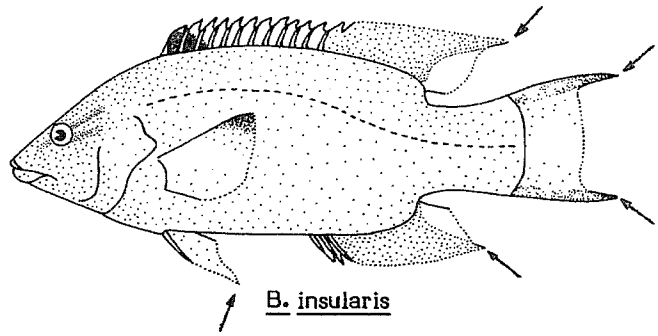
Colour: adults are red, with one black and several dusky bars ventrally on sides; dorsal fin red anteriorly, yellow posteriorly, with a blackish spot between the first 3 or 4 spines; middle of caudal fin yellow with black longitudinal streaks on membranes. Juveniles with dusky vermiculations on body.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

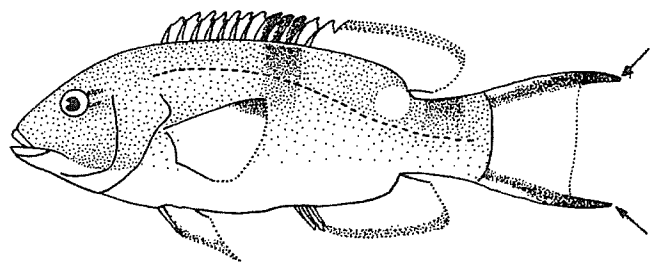
Bodianus insularis: posterior tips of dorsal, anal, caudal and pelvic fins filamentous in adults; branched pectoral fin rays usually 14 (usually 15 in B. scrofa); lateral-line scales 33 or 34 (46 to 50 in B. scrofa).

Bodianus speciosus: posterior tips of caudal and pelvic fins filamentous in adults; juveniles with a large black spot on dorsal fin immediately posterior to last spine, replaced in adults by a black bar on back below the last few dorsal fin spines; lateral-line scales 33 or 34.

Other genera of Labridae: either more or fewer than 12 dorsal fin spines.



B. insularis



B. speciosus (adult)

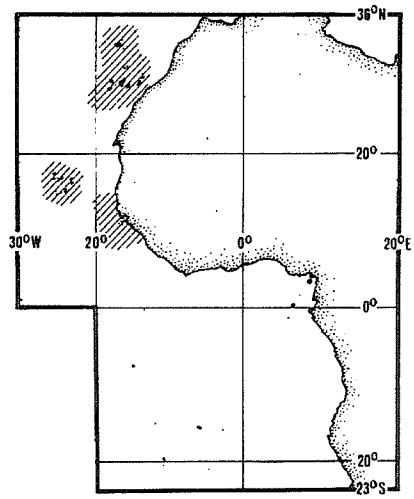
SIZE:

Maximum: 43 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Occurring around Madeira, the Canaries, the Cape Verde Islands and apparently along the African coast in the Cape Verde region; outside the area it ranges to the Azores Islands.

Prefers rocky bottoms in shallow to moderately deep waters (20 to 100 m).



PRESENT FISHING GROUNDS:

Apparently not fished in sizeable quantities.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Taken almost exclusively on hook and line, rarely in nets.

Marketable fresh.

LABR Bod 5

1981

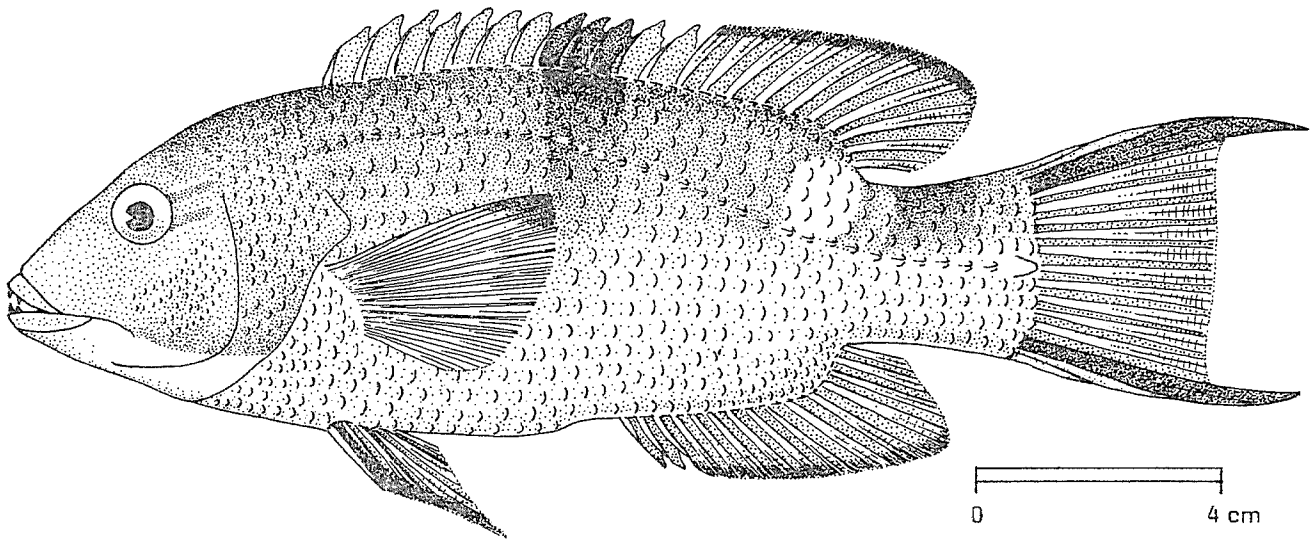
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : LABRIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Bodianus speciosus (Bowdich, 1825)

OTHER SCIENTIFIC NAMES STILL IN USE : Diastodon speciosus Bowdich, 1825



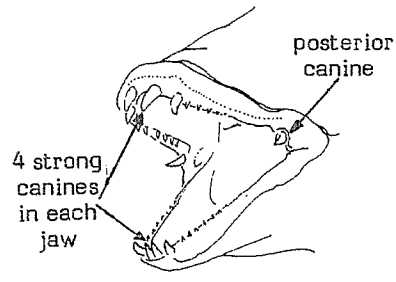
VERNACULAR NAMES:

FAO : En - Blackbar hogfish
Fr - Pourceau dos noir
Sp - Vieja lomonegro

NATIONAL :

DISTINCTIVE CHARACTERS :

Body moderately deep. Dorsal profile of head rather straight, more curved in very large individuals; tip of snout forming an acute angle; jaws prominent, each with 4 strong canines anteriorly and a large curved canine on each side at rear of upper jaw. Dorsal fin continuous, with 12 spines and 10 soft rays, the spines and anterior soft rays of similar length; posterior tip of fin rounded to pointed, not forming a filament in adults; rear tips of dorsal and anal fins barely reaching to or beyond posterior edge of scaly caudal fin base in largest specimens; pectoral fins with 2 unbranched and 15 (rarely 14 or 16) branched rays; pelvic fins somewhat filamentous in adults; upper and lower corners of caudal fin forming filamentous lobes in adults. Lateral line smoothly curved, uninterrupted, with 33 or 34 pored scales; scales extending onto bases of dorsal and anal fins.



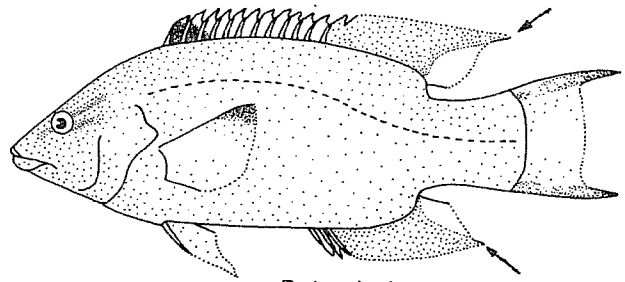
Colour: adults are red, with a violet-tinged black bar on back below the last few dorsal fin spines; a whitish spot present below last soft rays of dorsal fin in all but very large adults; lower sides of head and body yellowish white to white; cheeks with numerous small orange spots; dorsal and anal fins red, with blackish margins; pectoral fins tipped with black. Juveniles purplish, with bright yellow on head and a large black spot on dorsal fin immediately behind last spine.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

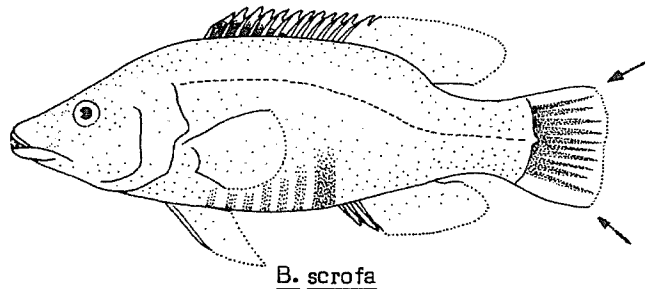
Bodianus insularis: posterior tips of dorsal and anal fins filamentous in adults, often extending beyond posterior edge of scaly caudal fin base; branched pectoral fin rays usually 14 (15, rarely 14 or 16 in B. speciosus); no prominent black bar or spot on back below last dorsal fin spines.

Bodianus scrofa: posterior tips of caudal and pelvic fins not filamentous; lateral-line scales 46 to 50 (33 or 34 in B. speciosus).

Other genera of Labridae: either more or fewer than 12 dorsal fin spines.



B. insularis



B. scrofa

SIZE:

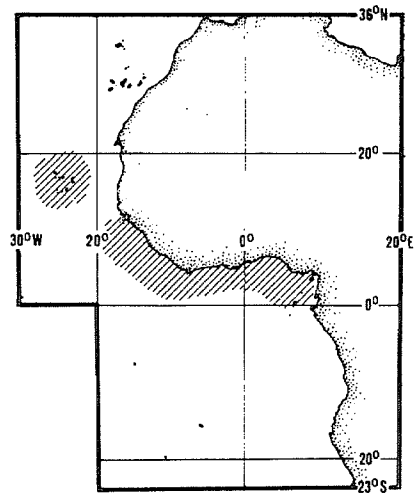
Maximum: 48 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Occurs from Cameroon to Guinea along the African coast, and around the Cape Verde Islands.

Prefers areas associated with rocky cover, but is also caught in eel grass beds.

Taken between 1 and 75 m depth.



PRESENT FISHING GROUNDS:

Coastal waters down to about 70 m depth.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Taken in trawls (as bycatch) and on hook and line; also caught in traps and with spears (divers).

Marketed fresh.

LABR Cor 1
1981

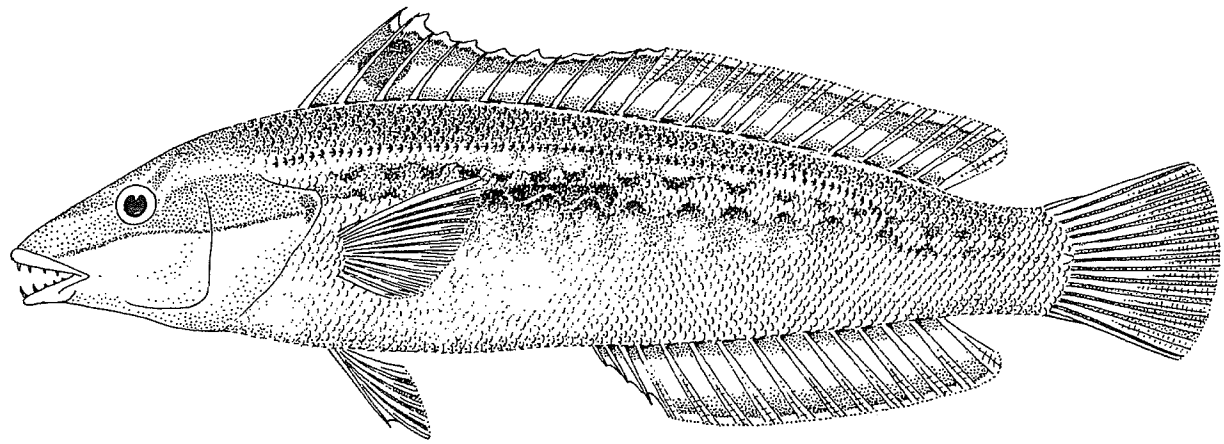
FAO SPECIES IDENTIFICATION SHEETS

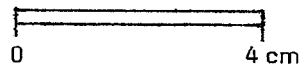
FAMILY : LABRIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Coris julis (Linnaeus, 1758)

OTHER SCIENTIFIC NAMES STILL IN USE : None





VERNACULAR NAMES:

FAO : En - Rainbow wrasse
Fr - Girelle
Sp - Julia

NATIONAL :

DISTINCTIVE CHARACTERS :

Body moderately narrow. Dorsal profile of head only slightly curved; tip of snout forming an acute angle; a single pair of enlarged canines anteriorly in each jaw; posterior canines absent. Dorsal fin continuous, with 9 spines and 12 soft rays, the first few spines of large individuals longer than succeeding spines; no other spines or rays in any of the fins especially elongate. Lateral line uninterrupted, but bent abruptly downward below posterior end of dorsal fin, with 73 to 80 pored scales.

Colour: body greenish to reddish brown with a broad yellow midlateral stripe; underside whitish. Large individuals with a black and orange spot on the elongate anterior dorsal fin spines, as well as a black mark behind the pectoral fin; lateral stripe more orange and irregularly shaped in larger fishes.

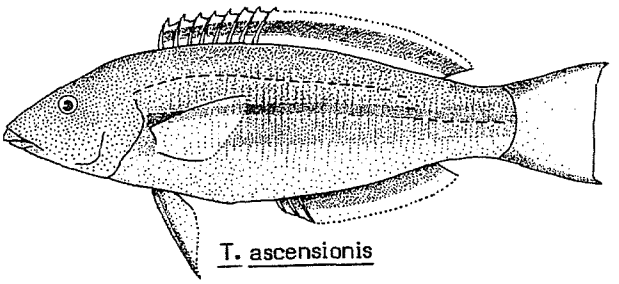
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Thalassoma ascensionis and T. pavo: dorsal fin spines 8 (9 in C. julis); lateral-line scales 27 to 29 (73 to 80 in C. julis); anterior spines not elongate in large individuals. Uppermost and lowermost rays of caudal fin forming filamentous lobes in adults of T. pavo.

Other genera of Labridae: lateral line either smoothly curved or interrupted.

SIZE:

Maximum: 25 cm total length.



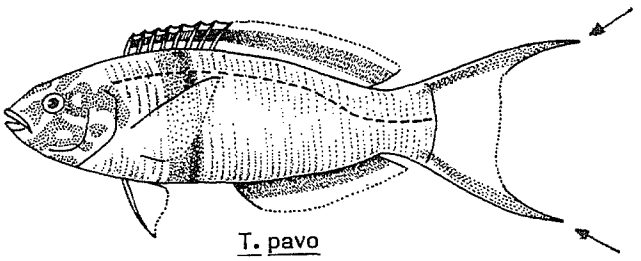
T. ascensionis

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Occurs throughout the area north of Cape Lopez, including Madeira and the Canary Islands, but not St. Helena and Ascension. It is also present in the Mediterranean, around the Azores and along the European coast northward to the southern edge of the British Isles.

Most common in shallow rocky areas and along the edges of sea grass beds (depth range from 1 to 120 m).

Feeds mainly on small crustaceans and molluscs.



T. pavo

PRESENT FISHING GROUNDS:

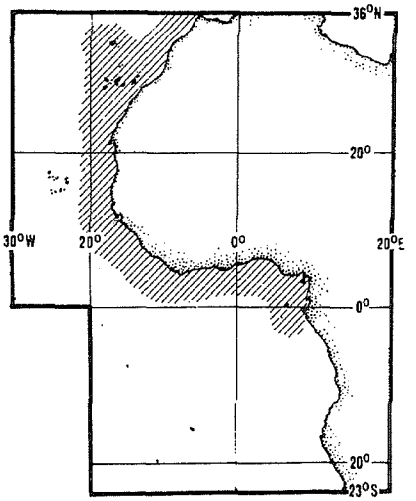
Taken all along the coast but not in sizeable quantities.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Taken on hook and line, in trawls and by spear guns (divers).

Marketed fresh.



LABR Xyr 1

1981

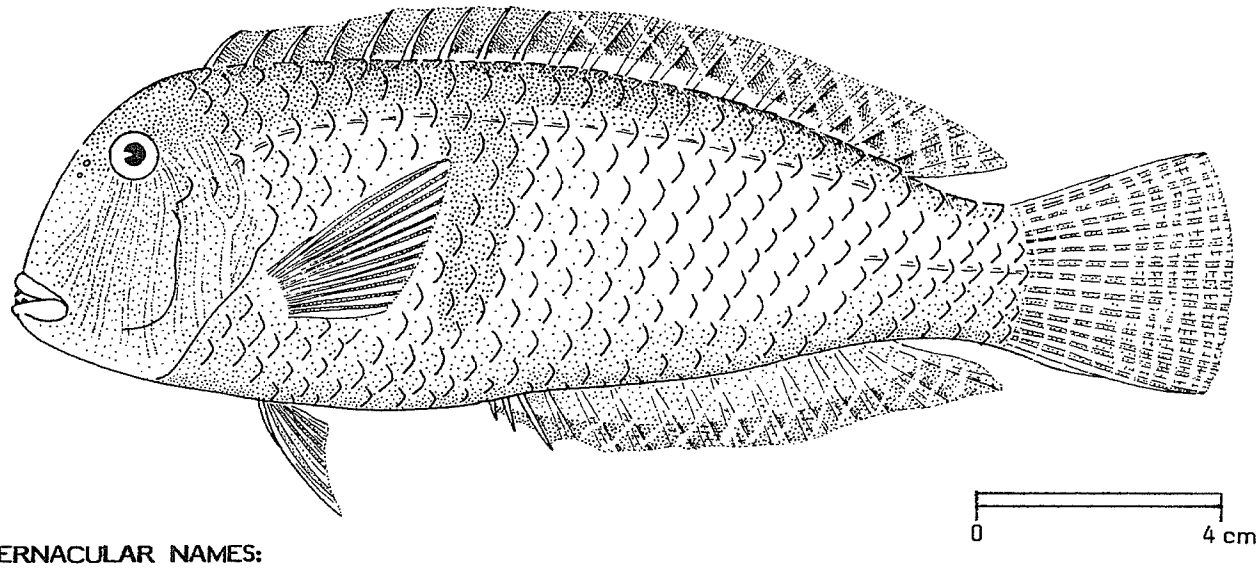
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : LABRIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Xyrichtys novacula (Linnaeus, 1758)

OTHER SCIENTIFIC NAMES STILL IN USE : Xyrichthys psittacus (Linnaeus, 1766)
Hemipteronotus novacula (Linnaeus, 1758)



VERNACULAR NAMES:

FAO : En - Pearly razorfish
Fr - Donzelle lame
Sp - Doncella cuchilla (= Raó)

NATIONAL :

DISTINCTIVE CHARACTERS :

Body deep, strongly compressed. Dorsal profile of head rounded; edge of snout blade-like, nearly vertical in adults; a single pair of enlarged canines present anteriorly in each jaw; posterior canines absent. Dorsal fin continuous, originating on top of head close behind eyes, with 9 spines (first 2 more flexible than others) and 12 soft rays; none of the fins with particularly elongate spines or rays. Lateral line with 29 pored scales, interrupted posteriorly, a separate rear portion positioned mid-laterally on caudal peduncle. Sides of head below and behind eyes mostly naked; scales not extending onto bases of dorsal and anal fins.

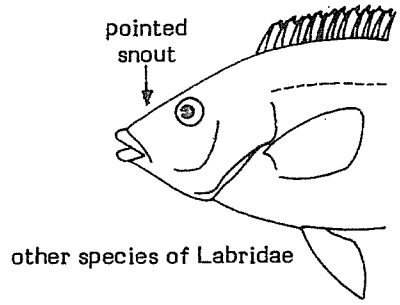
Colour: back of large individuals dull green, sides orangish with a blue mark on each scale; a vertical red bar present on sides just posterior to pectoral fins; a number of alternating blue and orange vertical lines on head below and behind eye; alternating wavy blue and orange oblique lines also located posteriorly on dorsal and anal fins; similar vertical lines present on caudal fin. Lines on fins less prominent in very large individuals.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

All other species of Labridae: snout rather pointed and dorsal fin originating above or only slightly in advance of pectoral fin bases.

Coryphaenidae: adults of much larger size; scales tiny; pectoral fins falcate; caudal fin lunate; lateral line uninterrupted.

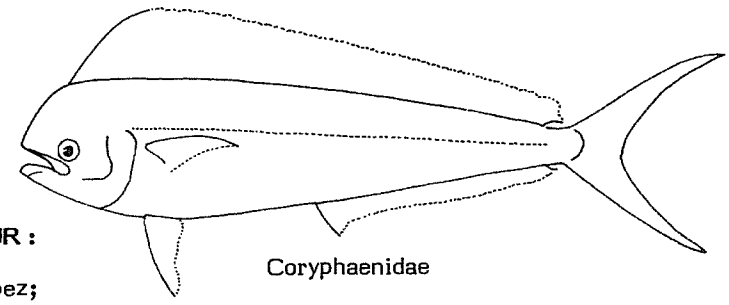
Branchiostegidae: scales small; lateral line uninterrupted, with 63 to 96 pored scales (29 in X. novacula); dorsal fin originating above pectoral fin base.



other species of Labridae

SIZE:

Maximum: 25.5 cm

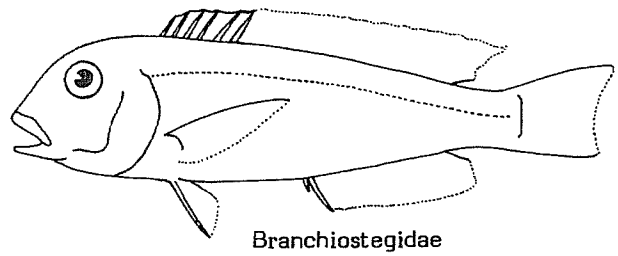

Coryphaenidae

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Occurs throughout the area north of Cape Lopez; present also in the Mediterranean and in the tropical Western Atlantic.

Inhabits clear water areas with sandy bottoms, often associated with patches of grass or coral rubble. The species is found at depth ranging from 1 to 90 m. Individuals escape capture by diving into the bottom.

Feeds mostly on molluscs; also on crabs and shrimps.


Branchiostegidae

PRESENT FISHING GROUNDS:

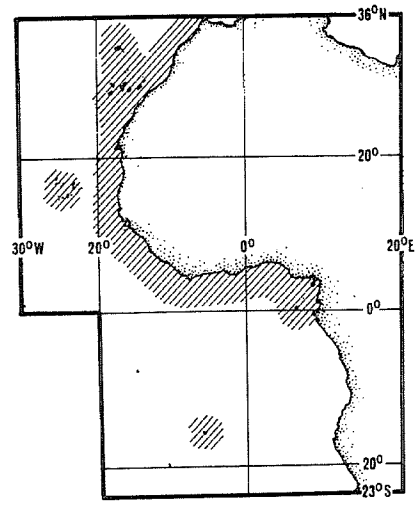
Coastal waters down to about 60 m depth.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught mainly on hook and line; also with spear guns (divers), rarely with trawls.

Marketed fresh.



LAMPR

1981

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

LAMPRIDIDAE

Opahs

A single species in the area: see species sheet for:

Lampris guttatus (Brünnich, 1788) LAMPR Lamp 1

Prepared by H.A. Oelschläger, Joh. Wolfgang Goethe-Universität, Zentrum der Morphologie, Frankfurt a.M., Federal Republic of Germany

Based on a W.C. Atlantic identification sheet prepared by B.B. Collette, NMFS Systematics Laboratory, NOAA, National Museum of Natural History, Washington, D.C., U.S.A.

LAMPR Lamp 1

1981

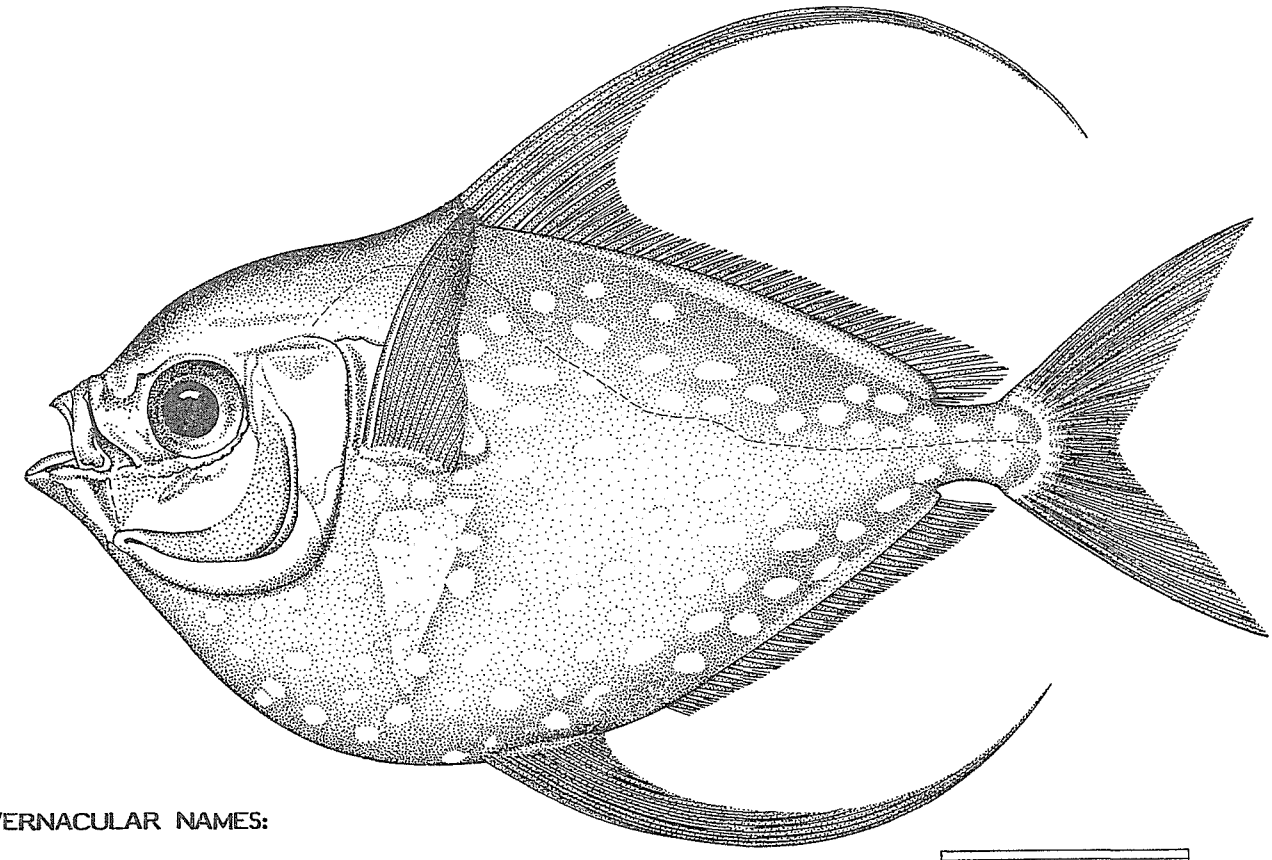
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : LAMPRIDIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Lampris guttatus (Brünnich, 1788)

OTHER SCIENTIFIC NAMES STILL IN USE : Lampris regius (Bonnaterre, 1788)
Lampris luna (Gmelin, 1789)



0 24 cm

VERNACULAR NAMES:

FAO : En - Opah
Fr - Opah
Sp - Opa

NATIONAL :

DISTINCTIVE CHARACTERS :

A large, deep, compressed and oval-shaped fish. Mouth small and toothless. Dorsal and anal fins long and single, the first with a high anterior lobe; pectoral fins long and sickle-shaped, placed high on sides, their bases horizontal; pelvic fins large and placed on ventral margin of body, posterior to pectoral fin origin; caudal fin moderately forked; caudal peduncle narrow, circular in cross section. Lateral line strongly arched over pectoral fin base. Body covered with small, smooth, cycloid scales.

Colour: head golden green, back grey to steel-blue, sides silvery with round white spots; belly silvery with a pink to purple tinge; all fins scarlet red.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

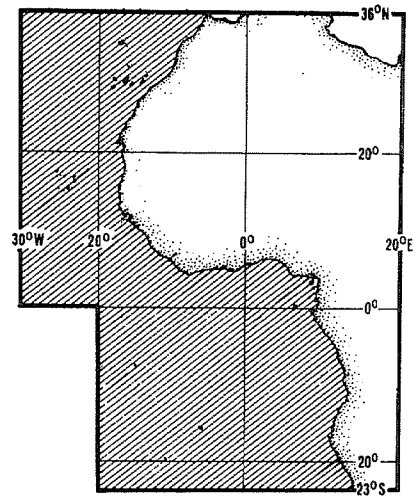
No other larger marine fish has the typical body shape, wing-like pectoral fins and the distinctive colour pattern of Lampris guttatus.

SIZE:

Maximum: at least 185 cm (weight: 220 to 270 kg); common to 120 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Worldwide in tropical and temperate waters; probably scattered occurrence throughout the area. Rather common around Madeira and the Canary Islands.



Comparatively uncommon; found from the surface to depths of about 200 m; apparently solitary, mainly an inhabitant of temperate water, but wandering far north in summer months. Normal cruising is accomplished by pectoral swimming. The shoulder girdle is massive and gives attachment to large red adductor and abductor muscles.

Feeds chiefly on cuttlefishes, crustaceans, shellfishes, herrings and mackerels.

PRESENT FISHING GROUNDS:

Taken incidentally in offshore waters, especially as bycatch in tuna fisheries.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not collected for this species.

Caught with longlines or trawls.

An excellent foodfish, flesh red, tender, full of oil and of delicate flavour. Occasionally marketed fresh or smoked.

LETH

1981

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

LETHRINIDAE

Emperors, scavengers

A single species in the area; see species sheets for:

Lethrinus atlanticus Valenciennes, *1830* *LETH Leth 8*

Prepared by C. Roux, Ichtyologie Générale et Appliquée, Müséum National d'Histoire Naturelle, Paris, France

LETH Leth 8

1981

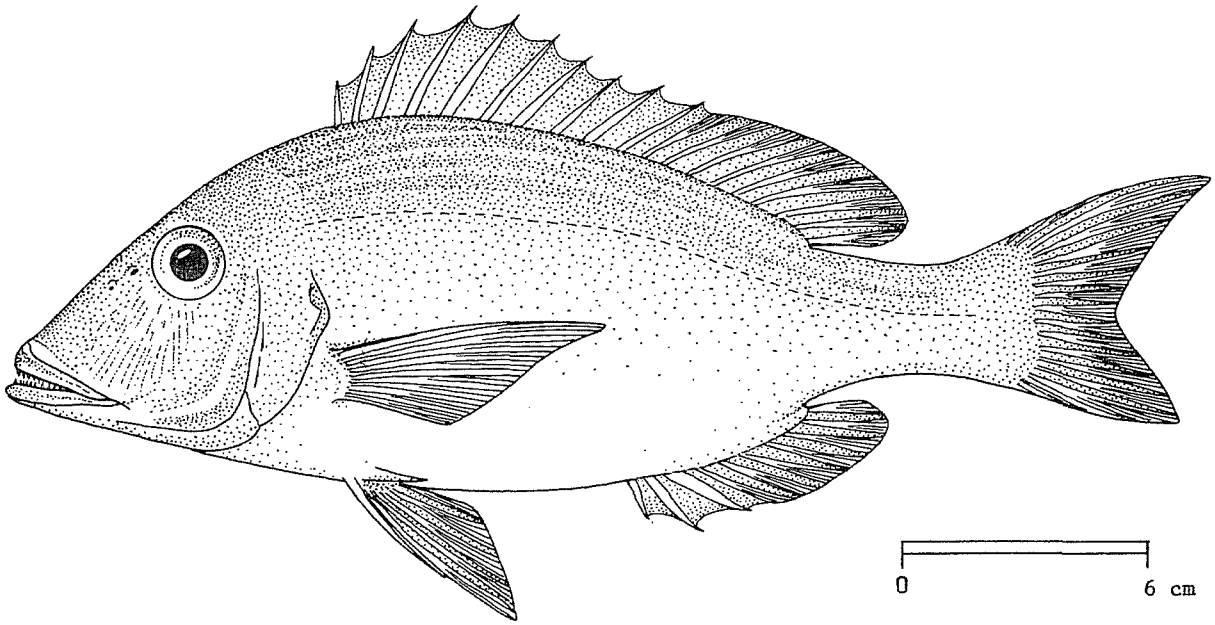
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : LETHRINIDAE

FISHING AREAS
34, 47 (*in part*)
(E.C. Atlantic)

Lethrinus atlanticus Valenciennes, 1830

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES:

FAO : En - Atlantic emperor
Fr - Empereur atlantique
Sp - Emperador atlántico

NATIONAL :

DISTINCTIVE CHARACTERS :

Body oblong and compressed, its depth contained 2.6 times in standard length. Head large, 2.8 times in standard length; snout long and pointed, about twice the length of eye diameter; interorbital space strongly convex, cheek and preopercle naked, the latter not serrated at hind edge; mouth very large, horizontal, with thick, fleshy lips; maxilla extending backward to anterior margin of eye; both jaws with villiform teeth set in bands and flanked by a larger outer row including one pair of canines in front and 9 molars laterally; palate toothless; gillrakers knoblike, 5 upper and 7 lower on first gill arch. Dorsal fin continuous, scarcely notched, with 10 spines and 9 soft rays; the spinous part being slightly longer than the soft portion; anal fin with 3 spines and 7 soft rays; pectoral fins long and pointed; pelvic fins thoracic, with 1 spine and 5 soft rays plus an axyllary process; caudal fin forked. Scales finely ctenoid; head scaleless, except for a few scales in the postorbital region, just above preopercle; 45 scales in lateral line.

Colour: pink and olive green, sometimes with brownish tints; cheeks marked with a network of fine reticulations just below eye.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Species of Sparidae: cheek scaled; hind edge of preopercle never serrated; dorsal fin with 10 to 13 spines and 9 to 16 soft rays (10 spines and 9 soft rays in L. atlanticus).

Species of Lutjanidae (genus Lutjanus): teeth present on roof of mouth; cheek and preopercle usually scaled; dorsal fin with 12 to 15 soft rays.

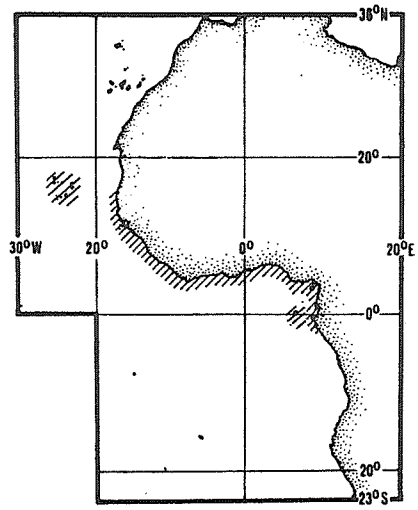
SIZE:

Maximum: at least to 50 cm; common to 30 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

West African coasts, at least from Senegal to Gabon, but probably ranging somewhat further north and south; also known from the Cape Verde, Principe, Sao Tomé and Rôlas Islands.

Inhabits shallow coastal waters to about 50 m depth.



PRESENT FISHING GROUNDS:

Coastal waters throughout its range, rather abundant off Senegal, particularly in winter.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught with bottom trawls, set nets, purse seines and on line gear.

Marketed fresh, smoked and dried salted; occasionally reduced to fishmeal.

LOBOT

1981

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

LOBOTIDAE

Tripletails

A single species in the area - see species sheet for:

Lobotes surinamensis (Bloch, 1790) LOBOT Lobot 1

Prepared by C.L. Smith, Department of Ichthyology, The American Museum of Natural History, New York, U.S.A.

LOBOT Lobot 1

1981

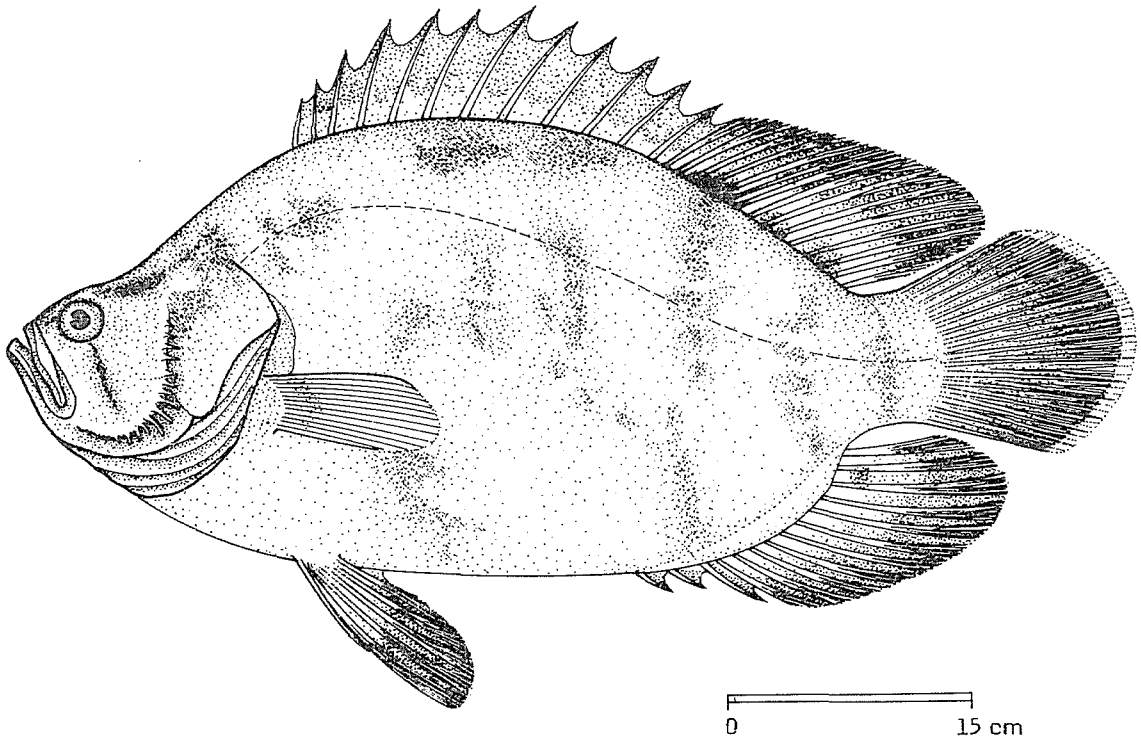
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : LOBOTIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Lobotes surinamensis (Bloch, 1790)

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES:

FAO : En - Atlantic tripletail
Fr - Croupia roche
Sp - Dormilona

NATIONAL :

DISTINCTIVE CHARACTERS :

A compressed, deep-bodied perch-like fish with the dorsal and anal fins rounded and symmetrical so that with the tail they appear to be a single three-lobed fin. Head dish-shaped, interorbital space wide, about 3½ times in head length (at 13 cm standard length) upper profile concave; eye relatively small; no subocular shelf; preopercle with strong dentations along its margin; mouth large, oblique, upper jaw protractile; maxilla not slipping under preorbital bone when mouth is closed; no teeth on roof of mouth.. Dorsal fin single, without a pronounced notch, with 12 spines and 15 or 16 segmented (soft) rays; anal fin with 3 spines and 11 segmented rays; bases of soft dorsal and anal fins scaled; pectoral fins shorter than pelvic fins.

Colour: varying shades of yellow brown to dark brown with ill defined spots and mottling. The young are often quite yellow, becoming darker with age.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

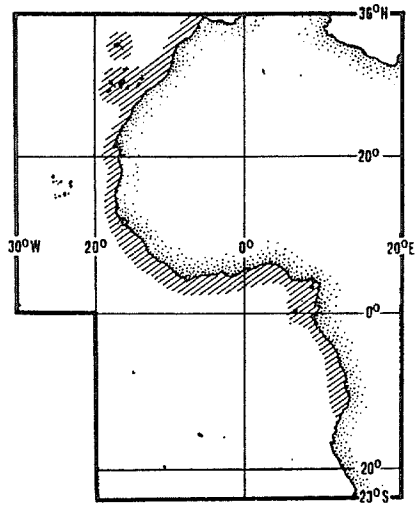
The typical shape of the body and vertical fins easily distinguish the tripletail from all other species. In some regards it resembles the groupers (Serranidae) but these usually have teeth on the roof of mouth and always a well-developed subocular shelf.

SIZE :

Maximum: over 100 cm; common to 50 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

In the area, from the Straits of Gibraltar to at least the Gulf of Guinea. Northward extending into the Mediterranean. A cosmopolitan species found in all warm seas.



A sluggish offshore fish that often floats on its side near the surface in the company of floating objects, occasionally drifting into shallow water. The young resemble leaves.

PRESENT FISHING GROUNDS :

Taken incidentally throughout its range, but apparently nowhere abundant.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Caught with haul seines, gillnets and on line gear.

Marketed fresh. The flesh is said to be of excellent quality.

LOPH

1981

FAO SPECIES IDENTIFICATION SHEETS

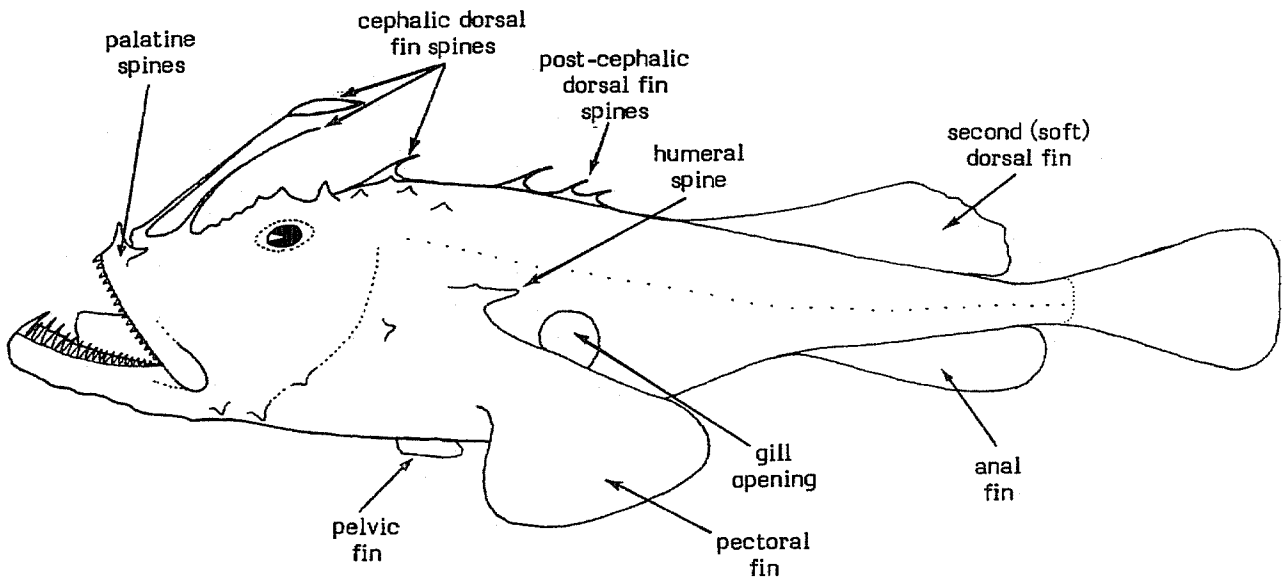
FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

LOPHIIDAE

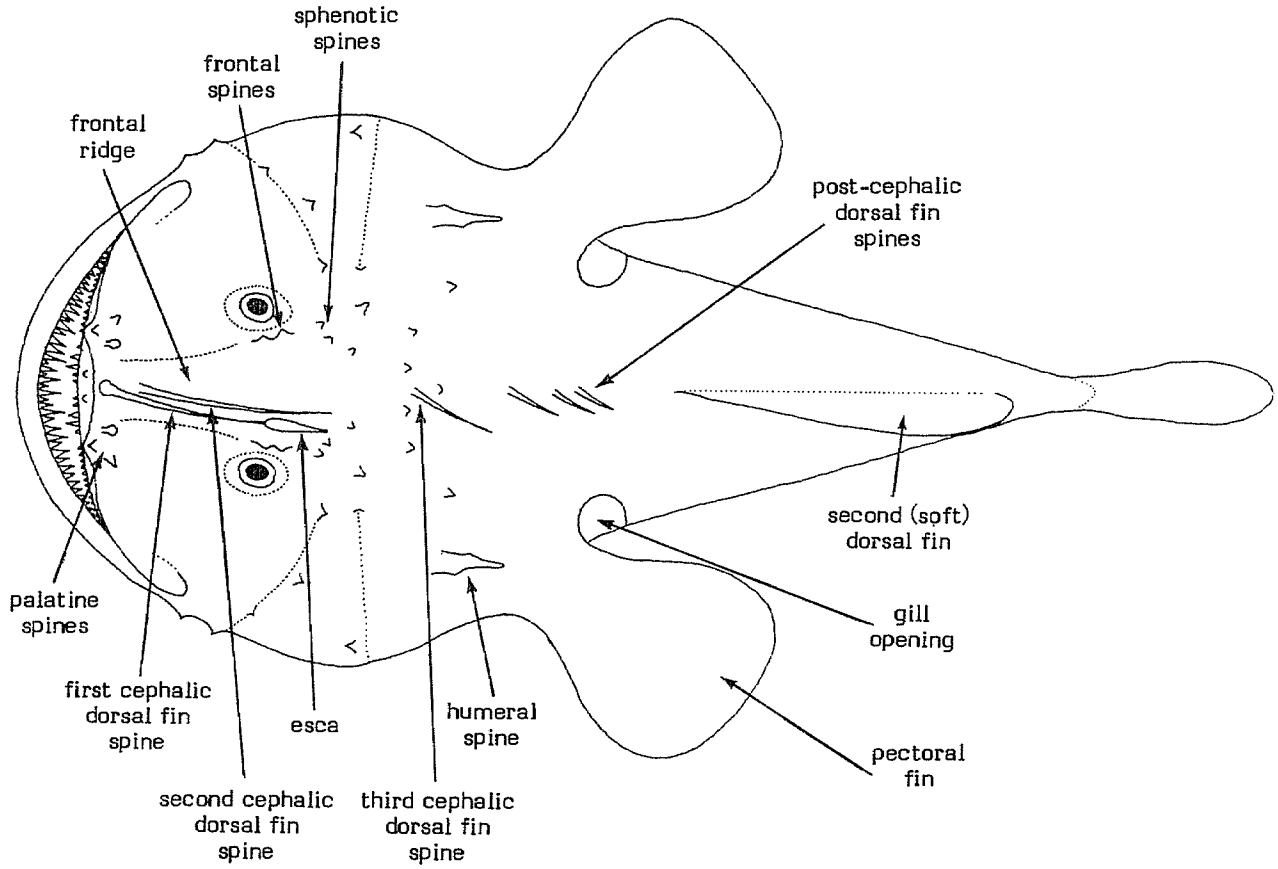
Anglerfishes

Head and anterior part of body much depressed and very broad, posterior portion of body tapering. Head rounded, bearing numerous sharp spines and ridges on dorsal and lateral surfaces, the most conspicuous of which are the following: one very large, prominent spine or group of spines immediately anterior to each pectoral fin base (humeral spines); one pair of sharp prominent spines on either side of snout, immediately behind mouth (palatine spines); a bony ridge above eyes with 2 or 3 short spines (frontal spines), and 2 bony ridges on snout running forward from eyes (frontal ridges); interorbital space slightly concave. Mouth very large and wide, upper jaw protractile and the lower projecting, both bearing numerous long, sharp, depressible teeth; gill openings fairly large, low in pectoral fin axil, sometimes extending forward in front of pectoral fin base. Two separate dorsal fins, the first composed of 2 to 3 isolated slender spines on head (cephalic spines), and the second of 1 to 3 spines (often connected by a membrane, at least in juveniles) at the level of pectoral fins (post-cephalic spines); the first 2 cephalic spines are located at anterior end of snout, the foremost modified into an angling apparatus, usually bearing a fleshy appendage (esca) at tip; the third cephalic spine, when present, is located at level of humeral spines; pectoral fin rays unbranched, terminating in small fleshy filaments; pelvic fins on ventral surface of head, anterior to pectoral fins; anal fin with 6 to 11 soft rays, below second dorsal fin; caudal fin with 8 rays, the 2 outer rays unbranched. Lateral line present, but usually indistinct. Skin smooth, naked, often with fleshy flaps on head and/or body (well visible only when fish is immersed in fluid).

Colour: dorsal surface usually uniform light to dark brown or grey (changing with substrate), lighter on ventral surface; distinctive markings present in some species.



lateral view



dorsal view

Lophiid anglerfishes are benthic. Within the area, they inhabit the outer shelf and upper slope waters at depths ranging from 50 to about 800 m.

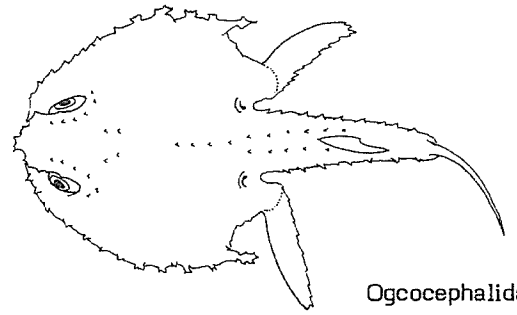
SIMILAR FAMILIES OCCURRING IN THE AREA:

Ogcocephalidae: fishing lure small, placed in a depression between snout tip and mouth; head broader and more strongly depressed, devoid of long, slender dorsal fin spines; mouth very small, without long and sharp teeth.

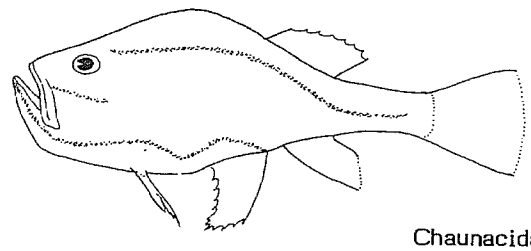
Chaunacidae: body rounded, not flattened; head cuboid, devoid of long, slender dorsal fin spines; mouth large, but without long, sharp teeth; skin loose, covered with small spiny scales; lateral line conspicuous; colour deep pink or reddish.

Antennariidae: body short, globose, slightly compressed; teeth small, villiform.

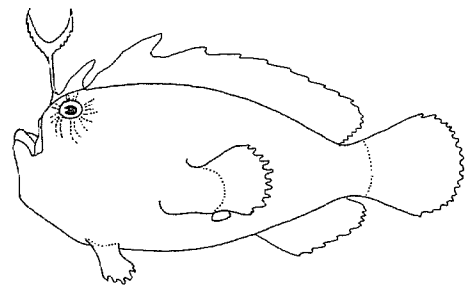
Bathypelagic anglerfish families: no pelvic fins; second and third dorsal fin spines greatly reduced or absent; also, body shape different.



Ogcocephalidae



Chaunacidae

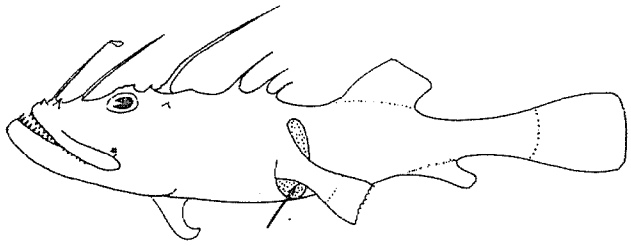


Antennariidae

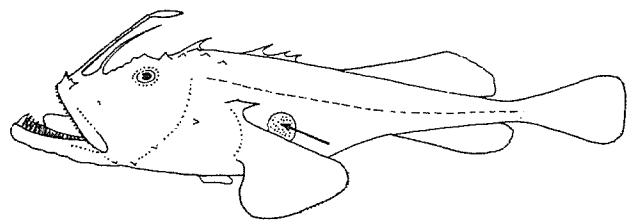
KEY TO GENERA OCCURRING IN THE AREA:

1 a. Gill openings extending in front of pectoral fin bases (Fig. 1); soft dorsal fin rays 8; anal fin rays 6; pectoral fin rays 13 to 16; sphenotic with single spine; vertebrae 19 ..... Lophiodes

1 b. Gill openings not extending in front of pectoral fin bases (Fig. 2); soft dorsal fin rays 9 to 12; anal fin rays 8 to 10; pectoral fin rays 19 to 28; sphenotic with two spines; vertebrae 26 to 31 ..... Lophius



Lophiodes Fig. 1



Lophius Fig. 2

LIST OF SPECIES OCCURRING IN THE AREA :

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

Lophiodes kempi (Norman, 1935)	LOPH Lophio 1
Lophius budegassa Spinola, 1807	LOPH Lophiu 4
Lophius piscatorius Linnaeus, 1758*	
Lophius upsicephalus Smith, 1849**	
Lophius vaillanti Regan, 1903	LOPH Lophiu 5
Lophius vomerinus Valenciennes, 1837**	

Prepared by J.H. Caruso, Department of Biology, Lafayette College, Easton, Pennsylvania, U.S.A.

Original main species illustrations provided by author

*Presence in Fishing Area 34 doubtful

**May occur in southern part of area south of Cape Fria

LOPH Lophio 1

1981

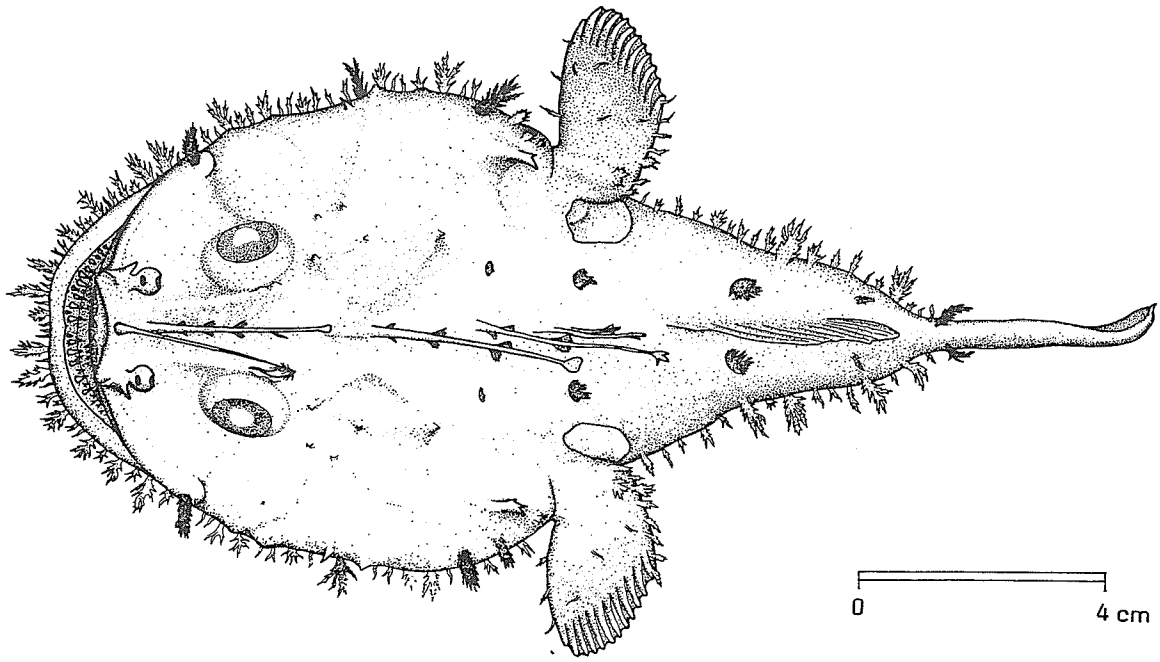
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : LOPHIIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Lophiodes kempi (Norman, 1935)

OTHER SCIENTIFIC NAMES STILL IN USE : Chirolophius kempi Norman, 1935



VERNACULAR NAMES:

FAO : En - Longspine African angler
Fr - Baudroie épineuse
Sp - Rape africano

NATIONAL :

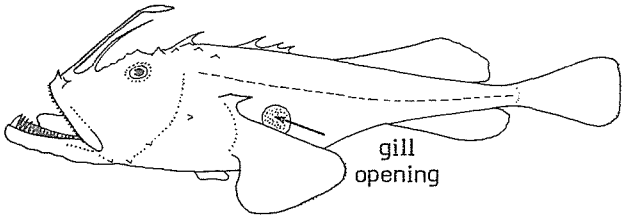
DISTINCTIVE CHARACTERS :

Head and anterior part of body broad and depressed, bearing numerous flattened, fleshy tendrils; posterior portion of body tapering. Head with numerous sharp spines on dorsal and lateral surfaces; humeral spines (in front of pectoral fin bases) well developed, with 3 or more large sharp spines radiating upward; inner sphenotic spines (behind eyes) well developed, outer sphenotic spines reduced to low, rounded knobs; frontal ridges (anterior to eyes) smooth; gill openings extending in front of pectoral fin bases. First dorsal fin consisting of 3 isolated spines on head (cephalic spines) and a group of 3 shorter spines behind the head (post-cephalic spines); first cephalic spine modified into an angling apparatus and bearing a well developed fleshy appendage (esca) at tip; second to sixth dorsal spines with scattered fleshy tendrils; third and fourth dorsal spines long, length of third much greater than least distance between sphenotic spines; second (soft) dorsal fin with 8 rays; anal fin with 6 rays; pectoral fins with 13 to 16 rays.

Colour: dorsal surface uniform dark brown, ventral surface slightly lighter; ventral surface of pectoral fins darker distally, ray tips pale.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

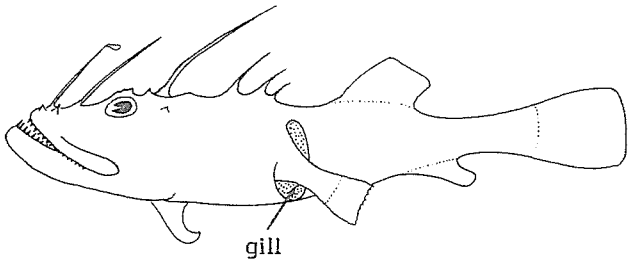
Lophius species: gill openings below and behind, but not extending in front of pectoral fin bases; inner and outer sphenotic spines well developed; more rays in soft dorsal (9 to 12), anal (8 to 10), and pectoral (19 to 28) fins.



Lophius

SIZE :

Maximum: 30 cm; common to 20 cm.



Lophiodes

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

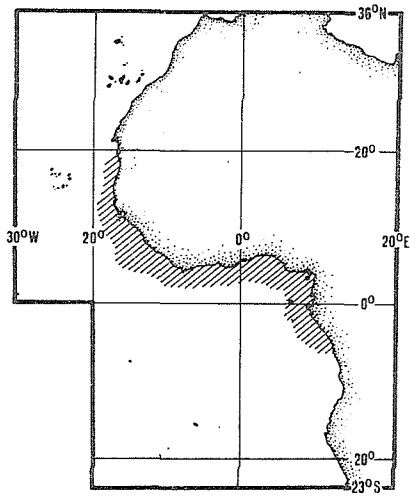
Known only from eastern tropical Atlantic between 20°N and 5°S latitudes.

An exclusively benthic species; inhabits outer shelf and upper slope waters between 50 and 400 m.

Feeds mainly on fishes.

PRESENT FISHING GROUNDS :

Continental shelf and upper part of the slope.



CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Caught with pelagic and bottom trawls.

Utilized fresh, frozen and for fishmeal and oil.

LOPH Lophiu 4

1981

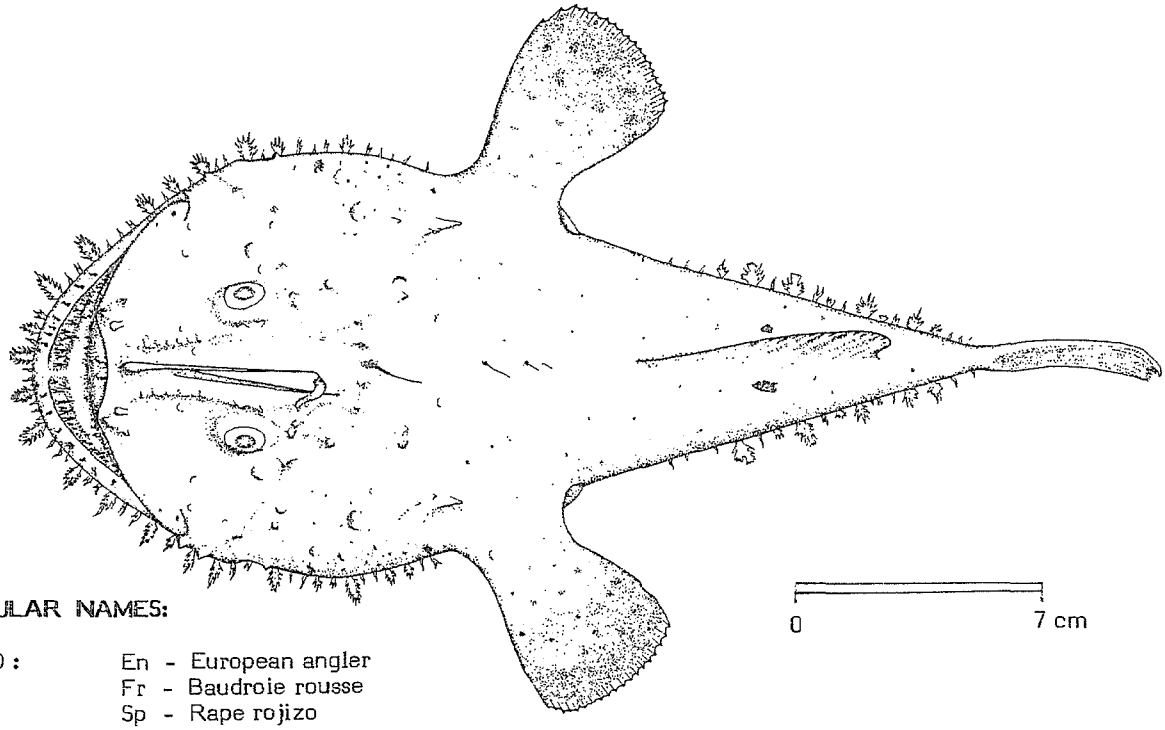
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : LOPHIIDAE

FISHING AREA 34
(E Central Atlantic)

Lophius budegassa Spinola, 1807

OTHER SCIENTIFIC NAMES STILL IN USE : None, but often confused with L. piscatorius whose presence in the area is still doubtful



VERNACULAR NAMES:

FAO : En - European angler
Fr - Baudroie rousse
Sp - Rape rojizo

NATIONAL :

DISTINCTIVE CHARACTERS :

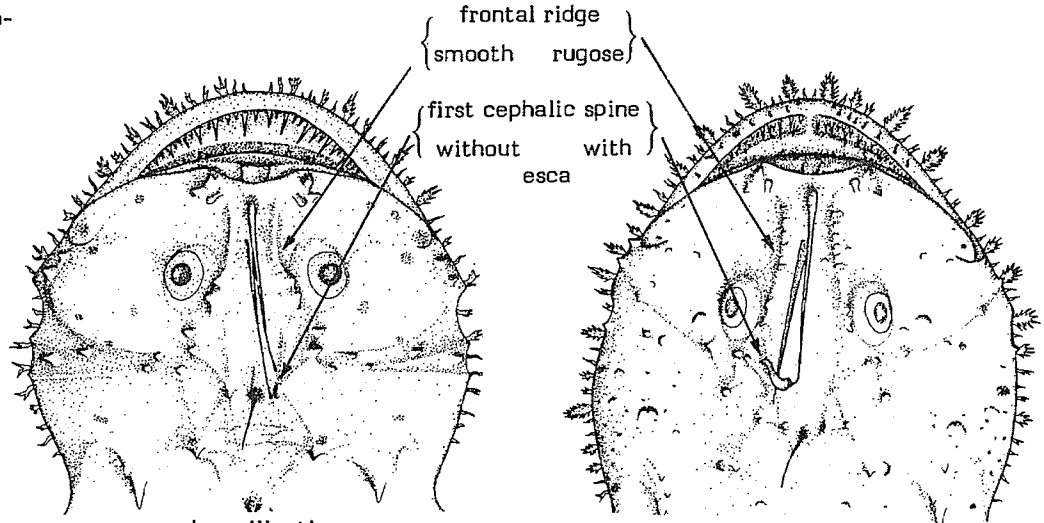
Head and anterior part of body very broad and much depressed, posterior part of body tapering. Head with numerous sharp spines on dorsal and lateral surfaces; humeral spines (in front of pectoral fin bases) long, straight, well developed, occasionally with 2 smaller spines arising from sides; inner and outer sphenotic spines well developed; frontal ridges (anterior to eyes) rugose; gill openings below and behind pectoral fin bases. First dorsal fin consisting of 3 isolated spines on head (cephalic spines) and a group of 3 short slender spines behind head (post-cephalic spines); first cephalic spine modified into an angling apparatus and bearing a well developed fleshy appendage (esca) at tip; second dorsal spine darkly pigmented, bearing small tendrils; length of exposed portion of third spine less than distance between sphenotic spines; post-cephalic spines with dark pigment at bases; second (soft) dorsal fin with 9 or 10 rays; anal fin with 8 or 9 rays; pectoral fin with 22 to 26 rays.

Colour: dorsal surface uniform grey or brown above, frequently with scattered, small, dark rings; ventral surface light tan; distal third of ventral surface of pectoral fins becoming abruptly darker, forming a dark band.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Lophius vaillanti: frontal ridges smooth; first dorsal spine without fleshy tab at tip; dorsal spines devoid of tendrils; distal half of pectoral fins becoming gradually darker.

Lophiodes kempi: gill openings extending below, behind, and in front of pectoral fin bases; inner sphenotic spines well developed, outer reduced to low rounded knobs; fewer rays in soft dorsal (8), anal (6), and pectoral (13 to 16) fins.

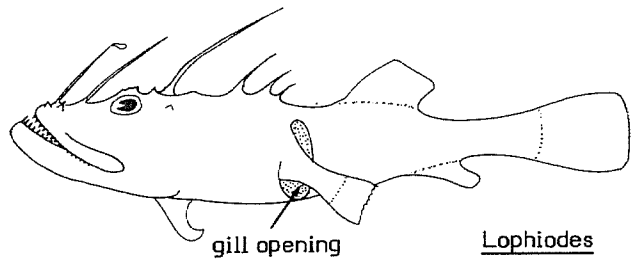


L. vaillanti — *L. budegassa*

SIZE:

Maximum: 100 cm; common to 35 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:



Lophiodes

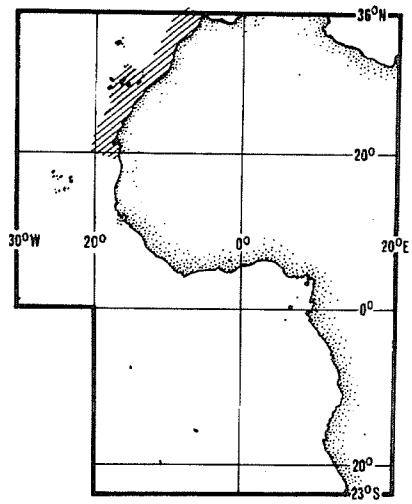
In the area it occurs from the Straits of Gibraltar to Mauritania; northward extending into the Mediterranean and Eastern North Atlantic to the British Isles.

An exclusively benthic species; occurs from near the shoreline to about 500 m depth.

Feeds mainly on fishes.

PRESENT FISHING GROUNDS:

Continental shelf and upper parts of the slope.



CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught with trawls.

Utilized fresh, frozen, and for fishmeal and oil.

LOPH Lophiu 5

1981

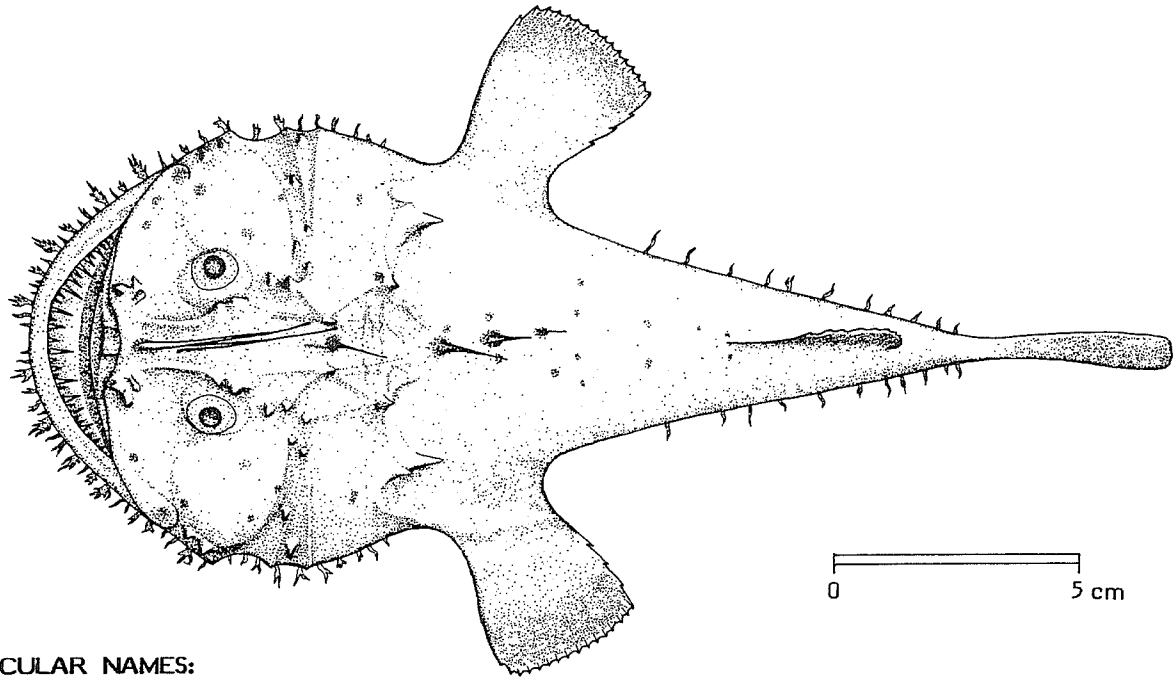
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : LOPHIIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Lophius vaillanti Regan 1903

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES:

FAO : En - Shortspine African angler
Fr - Baudroie africaine
Sp - Rape africano

NATIONAL :

DISTINCTIVE CHARACTERS :

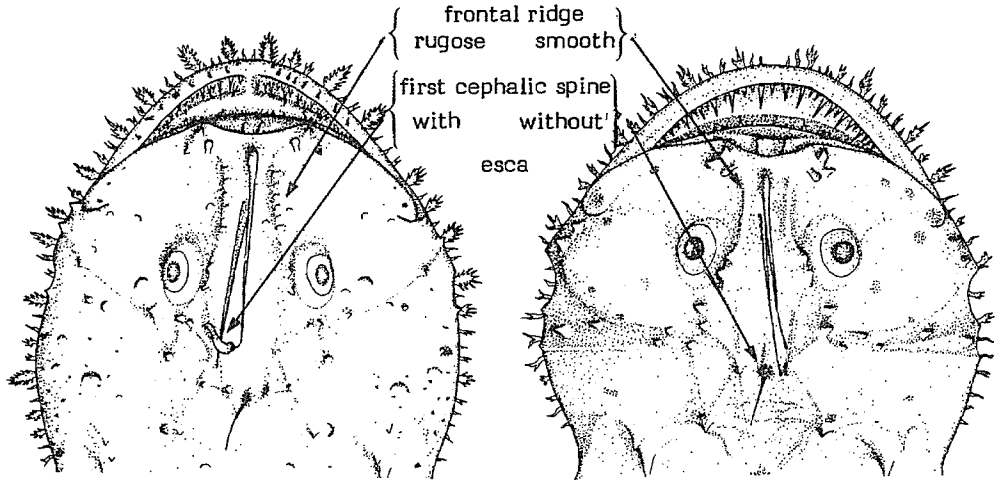
Head and anterior part of body very broad and much depressed, posterior part of body tapering. Head with numerous sharp spines on dorsal and lateral surfaces; humeral spines (in front of pectoral fin bases) long, straight, well developed, occasionally with 2 smaller spines arising from sides; inner and outer sphenotic spines well developed; frontal ridges (anterior to eyes) smooth; gill openings below and behind pectoral fin bases. First dorsal fin consisting of 3 isolated spines on head (cephalic spines) and a group of 3 short slender spines behind head (post-cephalic spines); all dorsal spines, including first, devoid of fleshy tendrils; first cephalic spine terminating in simple, rounded, pigmented tip; dorsal spines 3 to 6 slender and very short, length of exposed portion of third less than least distance between frontal spines (medial to eyes); post-cephalic spines with dark pigment at bases; second (soft) dorsal fin with 10 or 11 rays; anal fin with 8 to 10 rays; pectoral fins with 19 to 24 rays.

Colour: uniform dark brown above and below, dorsal surface occasionally with scattered, diffuse, dark spots; distal half of ventral surface of pectoral fins becoming gradually darker; all fin rays with pale tips.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Lophius budegassa: frontal ridges rugose; first dorsal spine with fleshy tab at tip; dorsal spines with minute tendrils; second dorsal spine darkly pigmented; distal third of ventral surface of pectoral fins with a dark band.

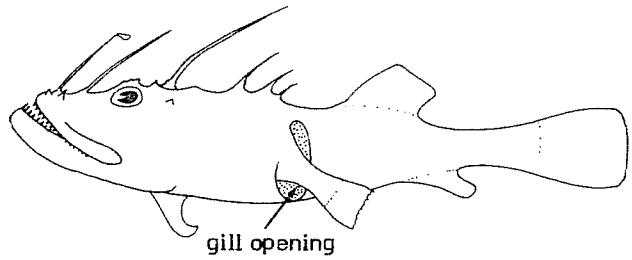
Lophiodes kempi: gill openings extending below, behind, and in front of pectoral fin bases; inner sphenotic spines well developed, outer reduced to low, rounded knobs, fewer rays in soft dorsal (8), anal (6), and pectoral (13 to 16) fins.



L. budegassa — *L. vaillanti*

SIZE :

Maximum: 50 cm; common to 25 cm.



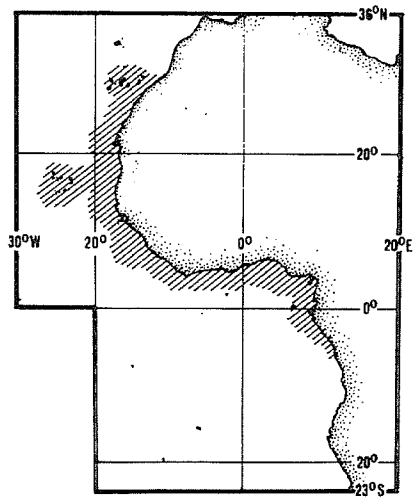
Lophiodes

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Known only from the Eastern Atlantic between 30°N and 5°S latitudes.

An exclusively benthic species; inhabits upper slope waters between 200 and 800 m depth.

Feeds mainly on fishes.



PRESENT FISHING GROUNDS :

Edge of continental shelf and upper parts of the slope.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

LUT

1981

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

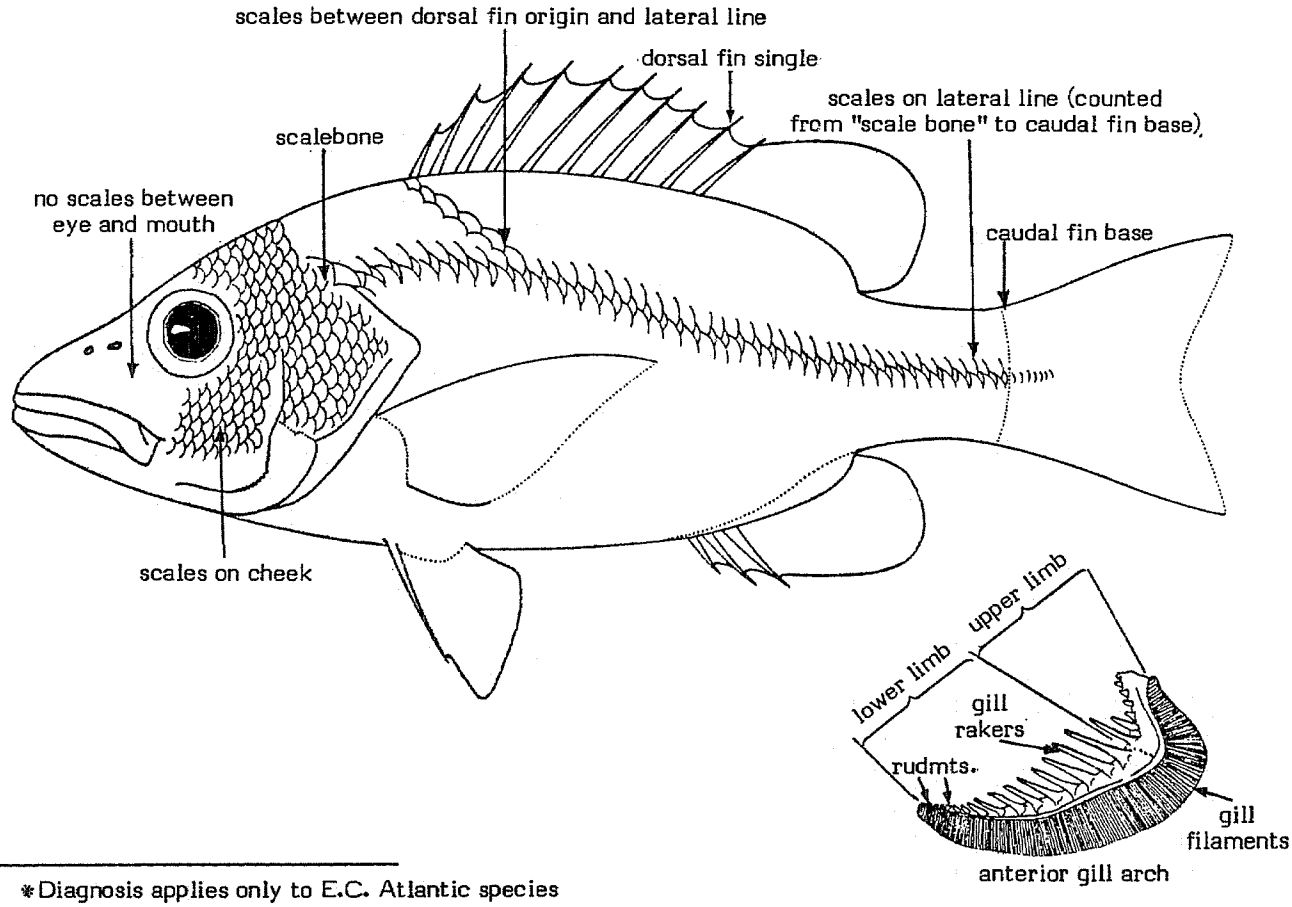
LUTJANIDAE*

Snappers

Perch-like fishes, oblong in shape, moderately compressed. Head large, usually triangular with a pointed snout; mouth terminal and fairly large, slightly protrusible; maxilla broadest posteriorly, sliding (at least partly) under the preorbital bone for the greater part of its upper edge; 2 nostrils on each side; no enlarged pores on chin; anterior part of head (snout and preorbital area) without scales; scales present on cheek and on gill cover; preopercle usually serrate; gill membranes separate, free from isthmus; jaw teeth usually in a few rows, conical and sharp (some species have well developed canines) but molars always absent; teeth usually present on roof of mouth (vomer and palatines). Dorsal fin single without a deep notch, with 10 to 12 spines and 9 to 15 soft rays; pelvic fins with 1 spine and 5 soft rays, set under the pectoral fins; anal fin slightly shorter than soft portion of dorsal fin, with 3 spines and 7 to 9 soft rays; caudal fin forked, lunate, emarginate or truncate. Body covered with small or moderate ctenoid scales (rough to touch).

Colour: variable, but often dark grey to brown or blackish and whitish ventrally.

Mostly demersal species common in tropical, less common on subtropical-temperate areas, ranging from shallow coastal waters to considerable depths (continental slope). Some species are found in brackish estuaries and may enter rivers, especially in their juvenile stage; also may be found in hypersaline lagoons. Some species may form aggregations. All snappers are predators, usually active at night, dawn, and dusk, feeding mainly on demersal



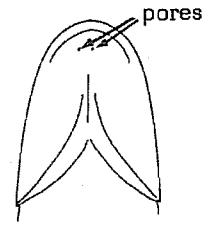
*Diagnosis applies only to E.C. Atlantic species

organisms, including crustaceans and fishes, sometimes also cuttlefish and worms. All species of this family are commercially exploited; although separate statistics (and biological data) by species are not available. The catch of snappers reported from the area in 1978 slightly exceeded 21 000 t. The flesh is highly esteemed for its delicate taste, although some species (particularly in the Indo-Pacific region) have occasionally been reported to cause poisoning (ciguatera).

SIMILAR FAMILIES OCCURRING IN THE AREA:

Pomadasyidae: no teeth on roof of mouth; scales present between mouth and eye and on snout; chin with conspicuous pores.

Sparidae: molar-like teeth laterally in jaws in many species; no teeth on roof of mouth, edge of preopercle smooth; 6 branchiostegal rays (7 in Lutjanidae); distal end of premaxilla overlapping maxilla laterally (medial to maxilla in Lutjanidae).

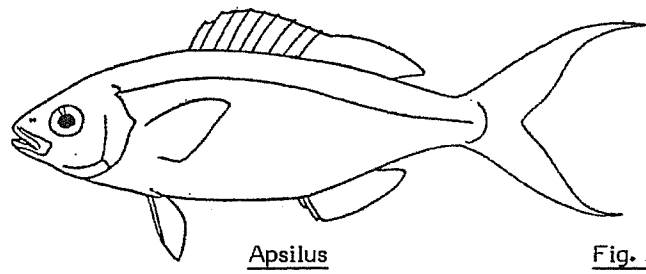


Pomadasyidae
underside of head

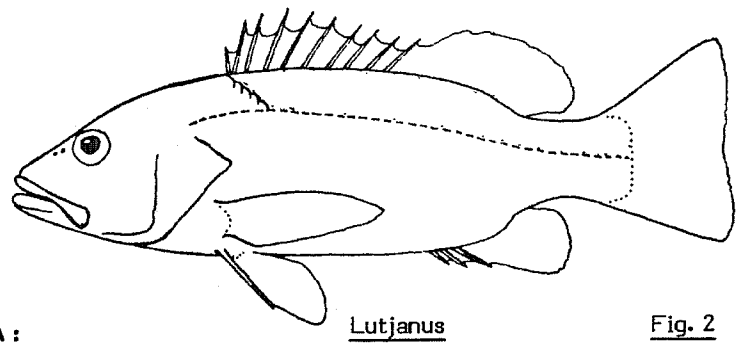
KEY TO GENERA OCCURRING IN THE AREA:

1 a. Caudal fin deeply forked (Fig. 1); no scales on dorsal and anal fins; scales small, about 65 in lateral line ..... Apsilus

1 b. Caudal fin truncate or slightly emarginate (Fig. 2); scales on dorsal and anal fins; scales moderate, about 50 or less in lateral line ..... Lutjanus



Apsilus Fig. 1



Lutjanus Fig. 2

LIST OF SPECIES OCCURRING IN THE AREA:

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

Apsilus fuscus Valenciennes, 1830	LUT Apsi 2
Lutjanus agennes Bleeker, 1863	LUT Lut 24
Lutjanus dentatus (Dumeril, 1858)	LUT Lut 25
Lutjanus endecacanthus Bleeker, 1863 (= L. modestus, Bleeker, 1863)	LUT Lut 26
Lutjanus fulgens (Valenciennes, 1830)	LUT Lut 27
Lutjanus goreensis (Valenciennes, 1830)	LUT Lut 28

Prepared by G.R. Allen, Western Australian Museum, Perth, Western Australia

LUT Apsi 2

1981

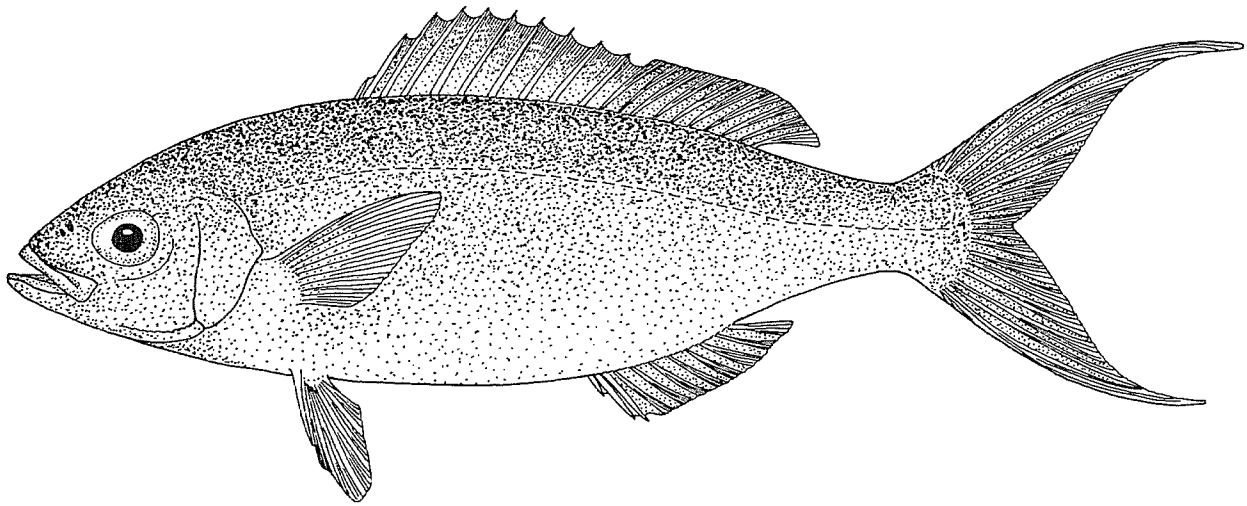
FAO SPECIES IDENTIFICATION SHEETS

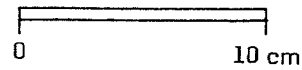
FAMILY : LUTJANIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Apsilus fuscus Valenciennes, 1830

OTHER SCIENTIFIC NAMES STILL IN USE : None





VERNACULAR NAMES:

FAO : En - African forktail snapper
Fr - Vivaneau fourche (d'Afrique)
Sp - Pargo tijera

NATIONAL :

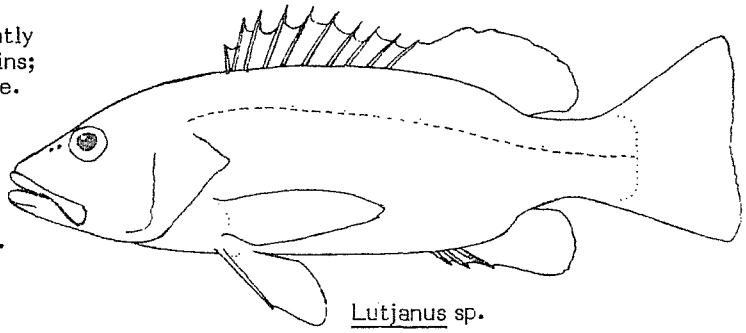
DISTINCTIVE CHARACTERS :

Body moderately elongate, fusiform and compressed. Maxilla extending posteriorly to below front of eye; teeth in jaws all villiform, no enlarged canines; teeth also present on vomer and palatines (roof of mouth); interorbital space broad and convex. Dorsal and anal fins scaleless; none of dorsal and anal rays noticeably elongated; dorsal fin continuous, not incised at junction of soft and spiny portions, with 10 spines and 10 soft rays; anal fin with 3 spines and 8 soft rays; pectoral fins shorter than head and not reaching level of anal fin; caudal fin strongly forked. Scales in lateral line about 64 to 68.

Colour: generally brown, lighter on ventral surface.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Lutjanus species: caudal fin truncate or slightly emarginate; scales present on dorsal and anal fins; scales moderate in size, about 50 or less in lateral line.



Lutjanus sp.

SIZE :

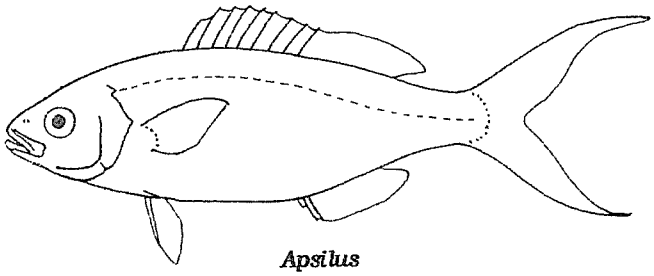
Maximum: 75 cm; common from 50 to 60 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Tropical and subtropical coast of West Africa from Mauritania southward. Also in the Western Indian Ocean.

Inhabits depths between 30 and 300 m.

Feeds on small fishes, squids, and crustaceans.



Apsilus

PRESENT FISHING GROUNDS :

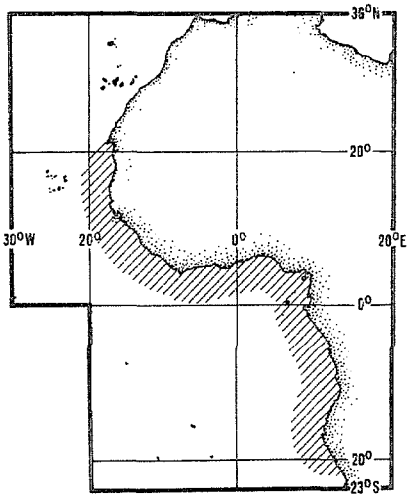
Deep coral and rock reefs.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species. The combined catch of snappers from the area exceeded 21 000 t in 1978.

Caught with handlines, set nets, and bottom trawls.

Marketed mainly fresh.



LUT Lut 24

1981

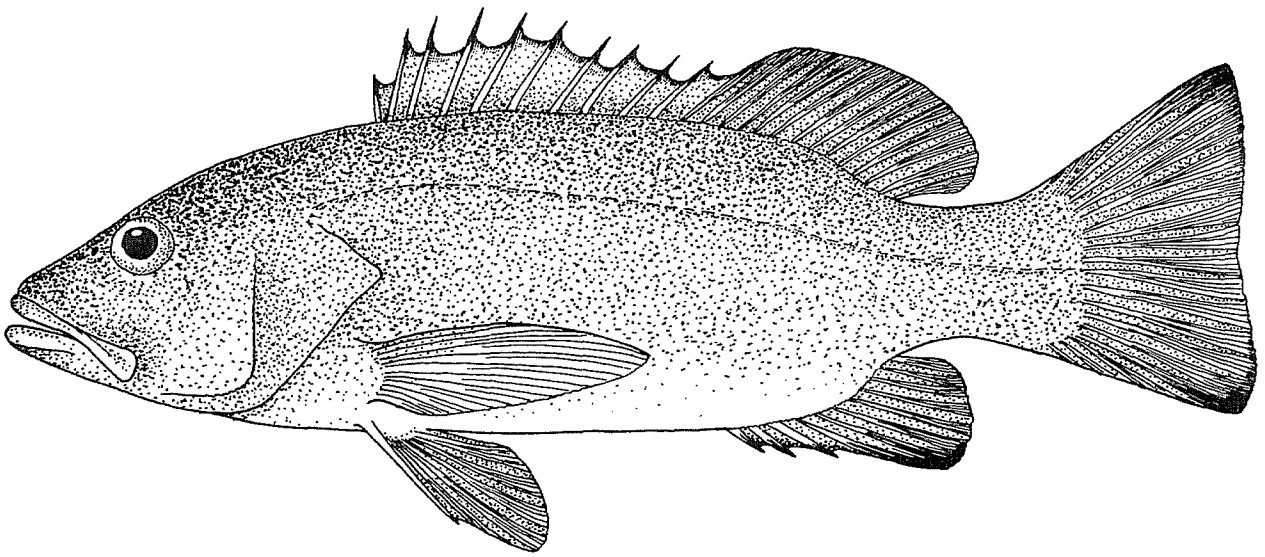
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : LUTJANIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Lutjanus agennes Bleeker, 1863

OTHER SCIENTIFIC NAMES STILL IN USE : Lutjanus modestus Bleeker, 1863



VERNACULAR NAMES:

FAO : En - African red snapper
Fr - Vivaneau africain rouge
Sp - Pargo colorado africano

NATIONAL :

DISTINCTIVE CHARACTERS :

Body relatively deep for the genus. Head pointed, dorsal profile of forehead somewhat angular; preorbital bone broad; maxilla extending nearly to mid-eye level; vomerine teeth in a triangular patch sometimes with a short median extension posteriorly; about 7 well formed (i.e. excluding rudiments) gill rakers on first gill arch. Dorsal fin with 10 spines and 13 or 14 soft rays; anal fin with 3 spines and 8 soft rays. Scales moderate-sized, about 43 to 48 in lateral line; longitudinal scale rows on upper back parallel to lateral line; 4 longitudinal scale rows above lateral line (below middle of spinous dorsal fin); 5 or 6 scale rows on cheek.

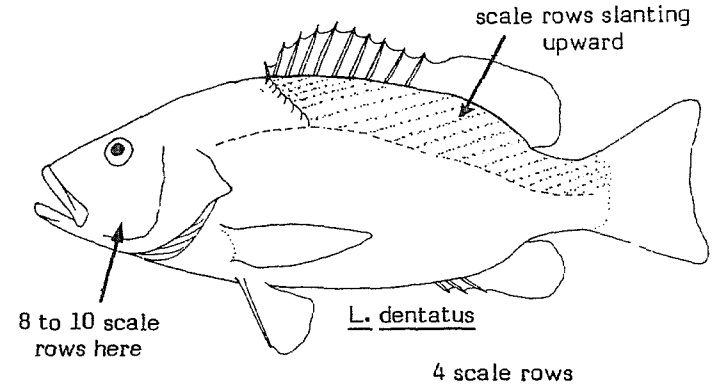
Colour: reddish-brown or slightly orange dorsally grading to whitish ventrally, tips of pelvic fins very dark; juveniles with series of about 6 to 8 vertical rows of small white spots or narrow bars on sides.

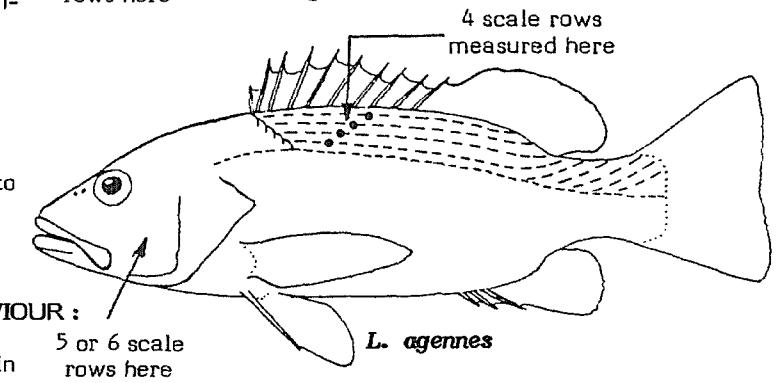
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Lutjanus dentatus and L. endecacanthus: longitudinal scale rows above lateral line slanting upward (parallel to lateral line in L. agennes); cheek with 8 to 10 scale rows (5 or 6 in L. agennes).

L. fulgens: 16 well formed gillrakers on first gill arch (7 to 9 in L. agennes); preorbital bone narrow, less than 1/2 of eye width (about 3/4 of eye width or more in L. agennes).

L. goreensis: vomerine tooth patch with an elongate median extension posteriorly; a blue longitudinal band below eye usually present.





SIZE:

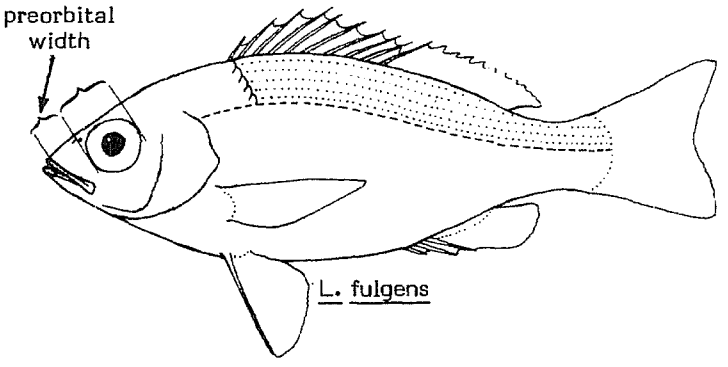
Maximum: to at least 75 cm; common to 50 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Known only from the West African coast in the region between Senegal and Angola.

Occurs on rocky bottoms and coral reefs. Also common in brackish lagoons and found in rivers, particularly the juveniles.

Feeds mainly on fishes and crustaceans.



PRESENT FISHING GROUNDS:

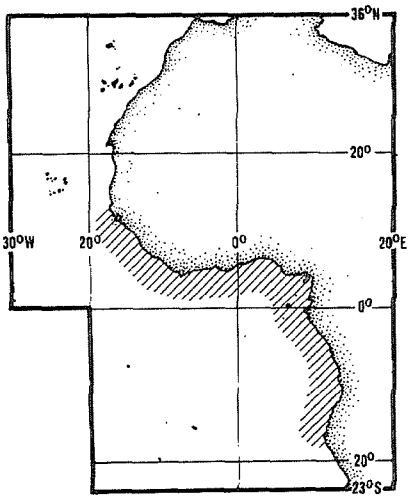
Shallow inshore waters.

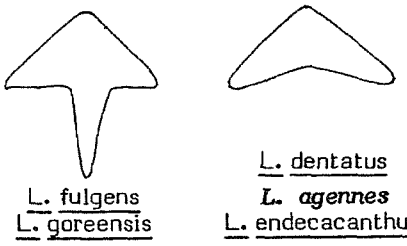
CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species. The combined catch of snappers from the area exceeded 21 000 t in 1978.

Caught with handlines and fixed bottom nets.

Marketed mainly fresh.





L. fulgens
L. goreensis

L. dentatus
L. agennes
L. endecacanthus

vomerine teeth

LUT Lut 25

1981

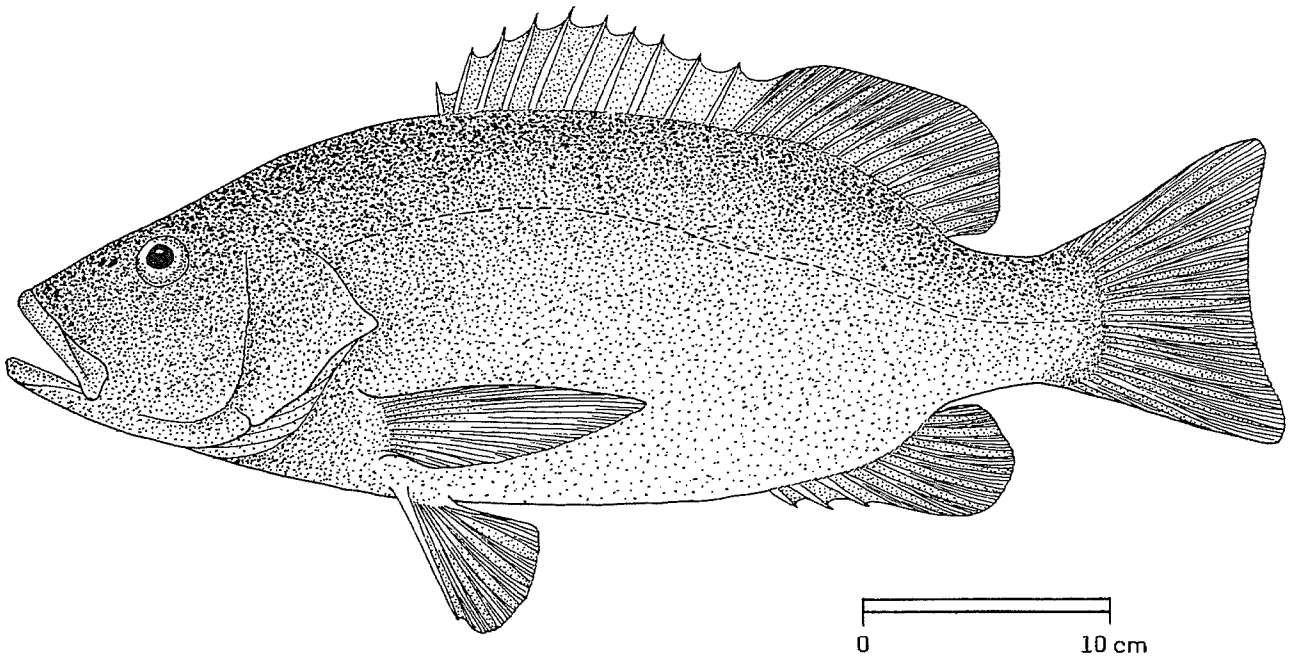
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : LUTJANIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Lutjanus dentatus (Dumeril, 1858)

OTHER SCIENTIFIC NAMES STILL IN USE : Lutjanus eutactus Bleeker



VERNACULAR NAMES:

FAO : En - African brown snapper
Fr - Vivaneau brun (d'Afrique)
Sp - Pargo marrón africano

NATIONAL :

DISTINCTIVE CHARACTERS :

Body relatively deep for the genus. Head slightly rounded, snout somewhat blunt, dorsal profile curving gently; preorbital bone broad; maxilla extending to about mid-eye level or beyond; vomerine teeth in a ⋀ - shaped patch; about 7 well formed (i.e. excluding rudiments) gill rakers on first gill arch. Dorsal fin with 10 spines and 13 or 14 soft rays; anal fin with 3 spines and 8 soft rays. Scales moderate-sized, about 46 to 48 in lateral line; longitudinal scale rows above lateral line rising obliquely (i.e. slanting toward dorsal profile); 4½ or 5 longitudinal scale rows above lateral line (below middle of spinous dorsal fin); 9 or 10 scale rows on cheek.

Colour: smoky-grey dorsally and whitish or pink ventrally; juveniles with series of alternating light and dark bars of about equal widths on sides.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

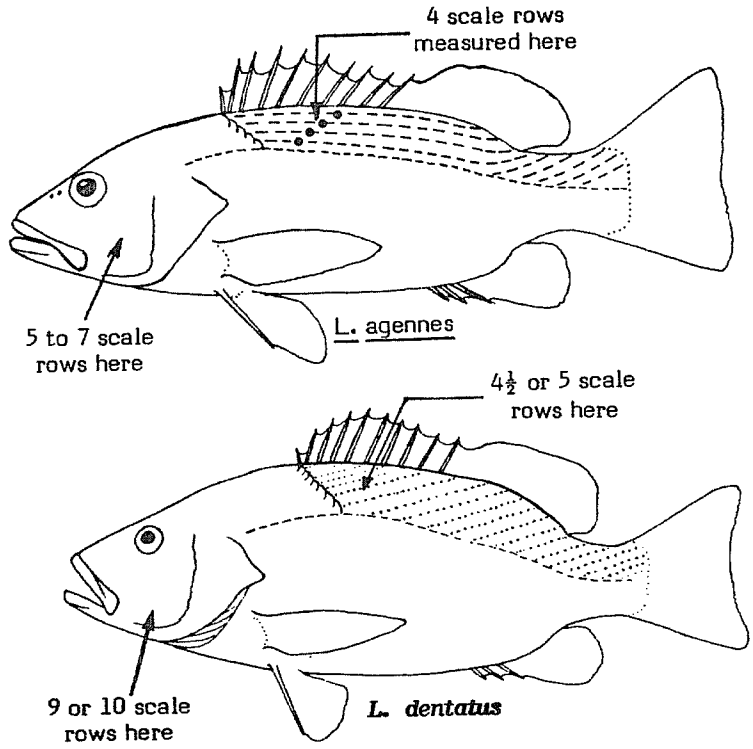
Lutjanus agennes, L. fulgens, and L. goreensis: longitudinal scale rows on upper back running parallel to lateral line, at least on anterior portion or body (slanting upward in L. dentatus); cheek with 5 to 7 scale rows (8 to 10 in L. dentatus). Furthermore:

L. agennes: about 11 scales between anus and lateral line (13 or 14 in L. dentatus).

L. fulgens: body more slender; preorbital bone narrow, less than 1/2 of eye width (about 3/4 eye width or more in L. dentatus); vomerine tooth patch with an elongate medial extension posteriorly.

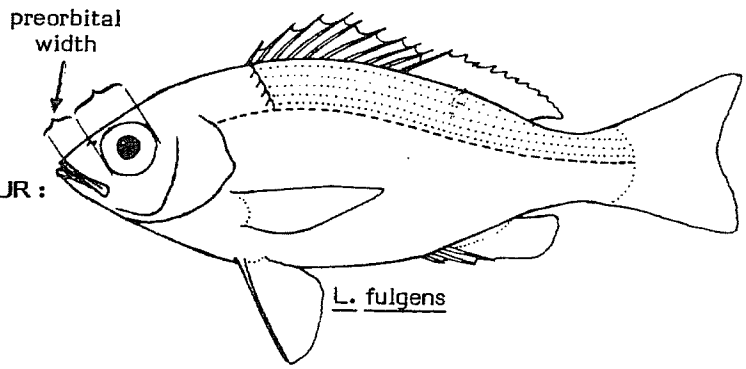
L. goreensis: vomerine tooth patch with an elongate median extension posteriorly; a blue longitudinal band usually present.

L. endecacanthus: 6 scale rows above lateral line; maximum body depth 35 to 43% of standard length (30 to 36%, usually under 35% in L. dentatus); snout more pointed (relatively blunt and rounded in L. dentatus); pelvic and anal fins very dark brown to blackish (tan to medium brown in L. dentatus).



SIZE:

Maximum: 70 cm, possibly larger; common to 50 cm.

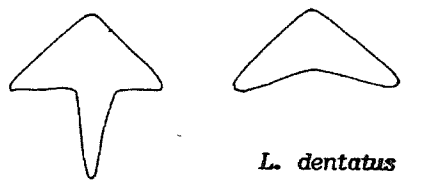


GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Known only from the West African coast, primarily in the Gulf of Guinea.

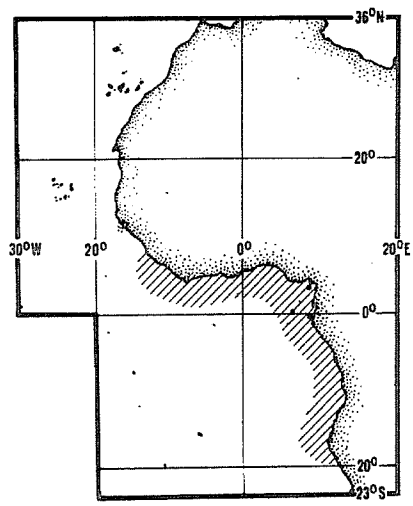
Occurs on rocky bottoms and coral reefs. Also common in brackish lagoons and sometimes in rivers.

Feeds on fishes and crustaceans.



PRESENT FISHING GROUNDS:

Shallow inshore waters.



CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species. The combined catch of snappers from the area exceeded 21 000 t in 1978.

Caught with handlines and fixed bottom nets.

Marketed mainly fresh.

LUT Lut 26

1981

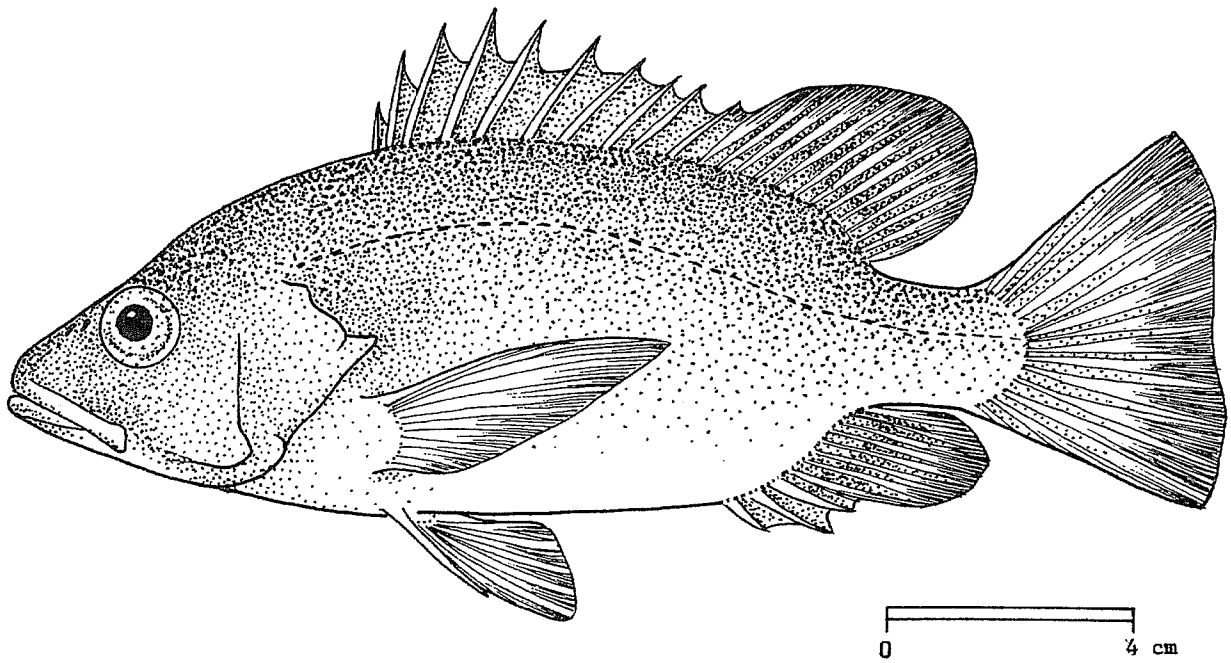
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : LUTJANIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Lutjanus endecacanthus Bleeker, 1863

OTHER SCIENTIFIC NAMES STILL IN USE : Lutjanus modestus Bleeker, 1863



VERNACULAR NAMES:

FAO : En - Guinea snapper
Fr - Vivaneau de Guinée
Sp - Pargo de Guinea

NATIONAL :

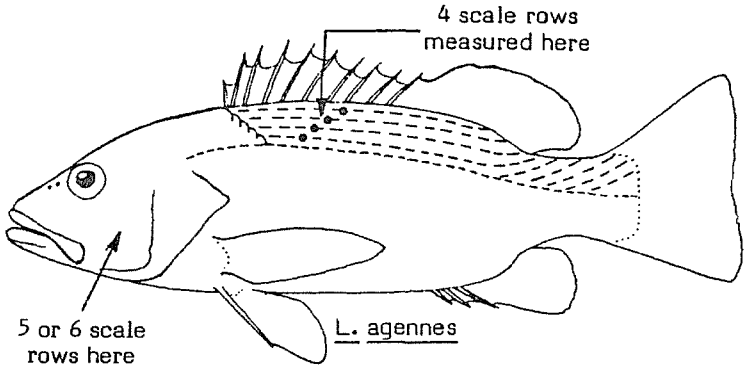
DISTINCTIVE CHARACTERS :

Body moderately deep for the genus. Head pointed, dorsal profile somewhat angular; preorbital bone broad; maxilla level with front part of eye; vomerine teeth usually in triangular patch, occasionally with a short posterior extension medially; about 7 or 8 well formed (i.e. excluding rudiments) gillrakers on first gill arch. Dorsal fin with 10 spines (holotype has aberrant count of 11 spines) and 13 or 14 soft rays; anal fin with 3 spines and 8 soft rays. Scales moderate-sized, about 46 to 48 in lateral line; longitudinal scale rows above lateral line rising obliquely (i.e. slanting toward dorsal profile); about 6 longitudinal scale rows above lateral line (below middle of spinous dorsal fin); about 8 to 10 scale rows on cheek.

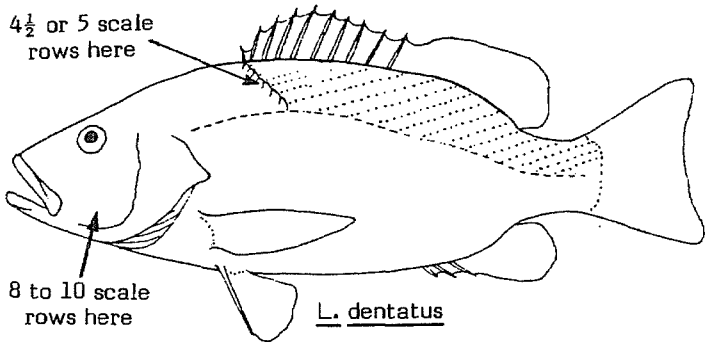
Colour: brown to dark brown, darkest on upper back and grading to silvery white on ventral portion; scales below lateral line frequently with pale centres forming longitudinal stripes (one per scale row); dorsal, anal, caudal, and pelvic fins mainly dark brown; juveniles (below about 20 cm standard length) frequently with a series of 6 to 8 vertical rows of small white spots on sides and a pair of blue lines on cheek below eye.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Lutjanus agennes: 4 longitudinal scale rows above lateral line (6 in L. endecacanthus); cheek with 5 or 6 scale rows (8 to 10 in L. endecacanthus); longitudinal scale rows on upper back running parallel to lateral line, at least on anterior part of body (slanting upward in L. endecacanthus).



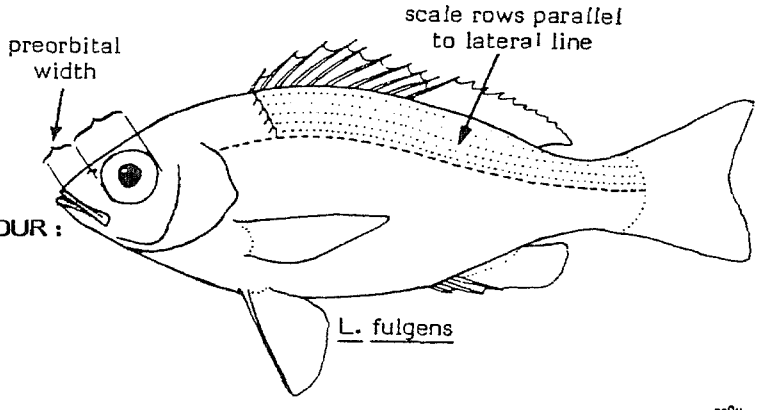
L. dentatus: 4½ or 5 longitudinal scale rows above lateral line (6 in L. endecacanthus); maximum body depth about 30 to 36% of standard length (35 to 43% in L. endecacanthus); snout relatively blunt (more pointed in L. endecacanthus); pelvic and anal fins tan to medium brown (very dark brown to blackish in L. endecacanthus).



L. fulgens and L. goreensis: longitudinal scale rows on upper back running parallel to lateral line; cheek with 5 to 7 scale rows; vomerine tooth patch with an elongate medial extension posteriorly. Furthermore:

L. fulgens: body more slender; preorbital bone narrow, less than 1/2 of eye width (about equal to eye width in L. endecacanthus); vomerine tooth patch with an elongate medial extension posteriorly.

L. goreensis: a blue longitudinal band below eye usually present in specimens of all sizes.



SIZE:

Maximum: largest known specimen 20 cm, but probably attains a larger size.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Known only from the West African coast between Ghana and the Congo River mouth.

Occurs on rocky bottoms and coral reefs. Also found in brackish lagoons and sometimes in rivers.

Feeds on fishes and crustaceans.

PRESENT FISHING GROUNDS:

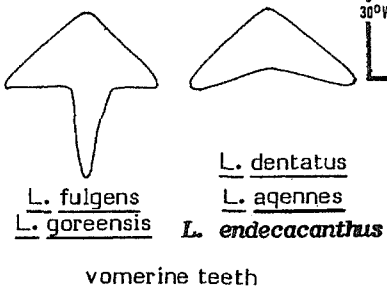
Shallow inshore waters.

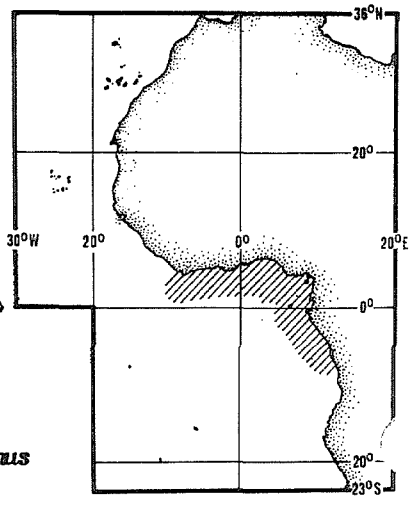
CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species. The combined catch of snappers from the area exceeded 21 000 t in 1978.

Caught with handlines and fixed bottom nets.

Marketed mainly fresh.





LUT Lut 27

1981

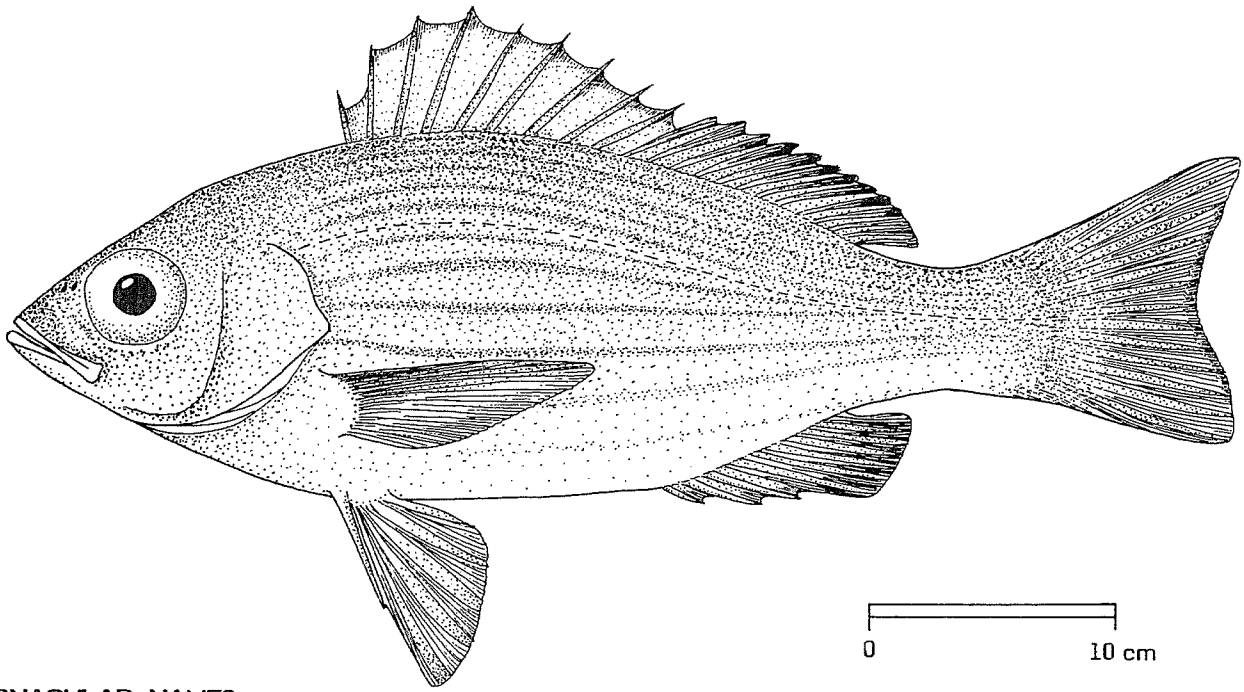
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : LUTJANIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Lutjanus fulgens (Valenciennes, 1830)

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES:

FAO : En - Golden African snapper
Fr - Vivaneau doré
Sp - Pargo dorado africano

NATIONAL :

DISTINCTIVE CHARACTERS :

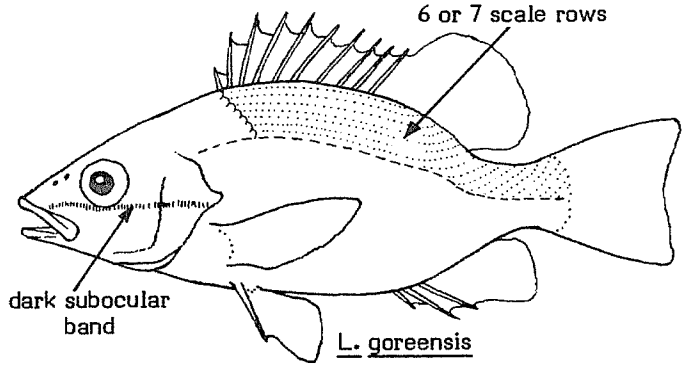
Body moderately slender for the genus. Head relatively blunt compared with other Lutjanus; snout short, much less than eye diameter; eye very large, preorbital bone very narrow, its width less than 1/2 of eye diameter; maxilla extending to about mid-eye level; vomerine teeth in a triangular patch with pronounced posterior extension medially. Dorsal fin with 10 spines and 13 or 14 soft rays; anal fin with 3 spines and 8 soft rays; about 16 well formed (i.e. excluding rudiments) gill rakers on first gill arch. Scales moderate-sized, about 43 to 46 in lateral line; longitudinal scale rows on upper back parallel to lateral line; $4\frac{1}{2}$ or 5 longitudinal scale rows above lateral line (below middle of spinous dorsal fin); 5 scale rows on cheek.

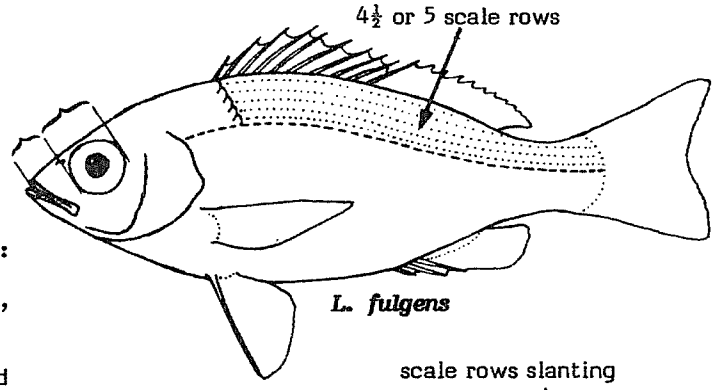
Colour: generally vivid pink with golden longitudinal bands (one per scale row) on sides.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Lutjanus agennes, L. goreensis and L. endecacanthus: body deeper; 7 to 9 well formed gill rakers on first gill arch (about 16 in L. fulgens); snout longer, about equal to, or longer than eye diameter; preorbital bone wider, about 3/4 of eye diameter or more (1/2 of eye diameter in L. fulgens). Furthermore, a dark longitudinal band below eye and 6 or 7 scale rows above lateral line in L. goreensis.

Other Lutjanus species: longitudinal scale rows on upper back above lateral line slanting upwards toward dorsal profile; 7 to 9 well formed gill rakers on first gill arch; snout longer, about equal to, or longer than eye diameter; preorbital bone wider, about 3/4 of eye diameter or more.





SIZE:

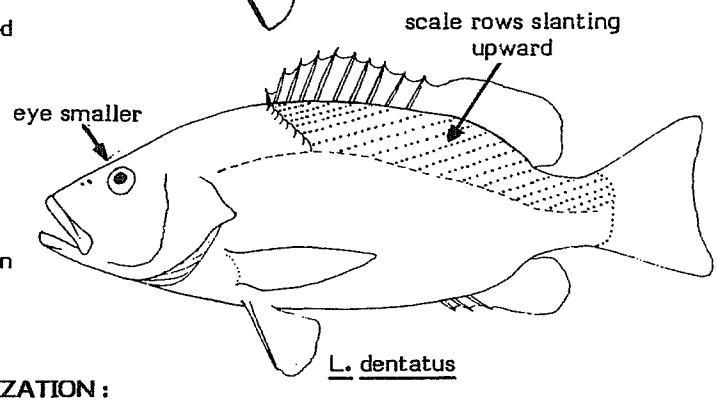
Maximum: 60 cm; common to 50 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Known only from the West African coast, primarily in the Gulf of Guinea.

Occurs on rocky bottoms at moderate depths and also found in deeper offshore trawling grounds.

Feeds on fishes and crustaceans



PRESENT FISHING GROUNDS:

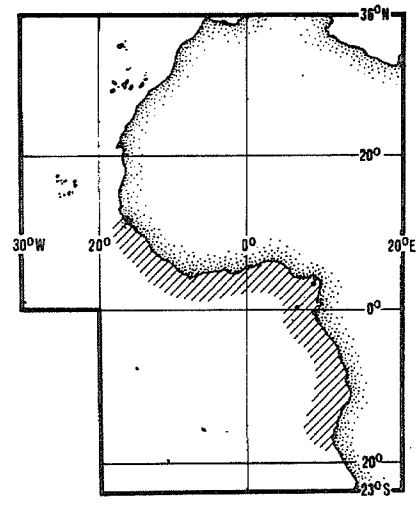
Inshore reefs and offshore trawling grounds down to at least 150 m depth.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species. The combined catch of snappers from the area exceeded 21 000 t in 1978.

Caught with handlines and trawl nets.

Marketed mainly fresh.



LUT Lut 28

1981

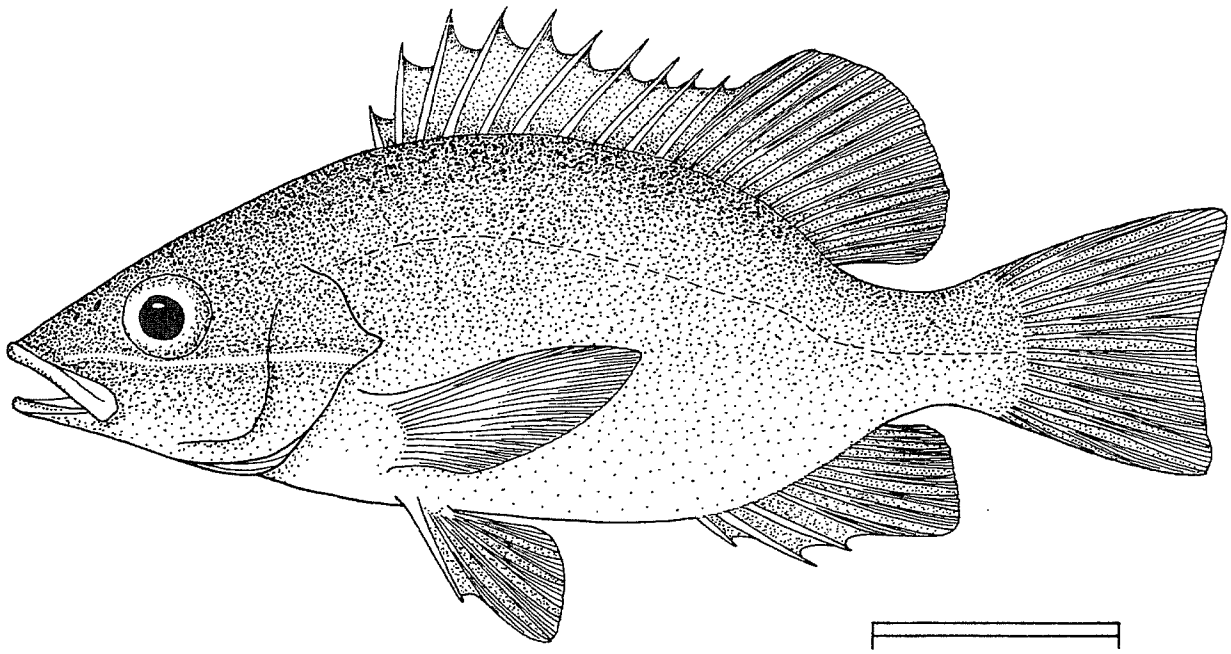
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : LUTJANIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Lutjanus goreensis (Valenciennes, 1830)

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES:

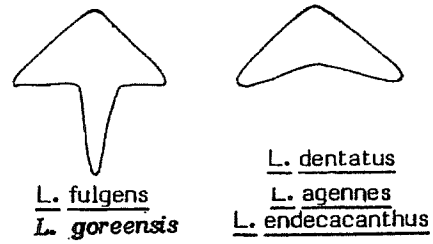
FAO : En - Gorean snapper
Fr - Vivaneau de Goré
Sp - Pargo de Gorea

NATIONAL :

DISTINCTIVE CHARACTERS :

Body relatively deep for the genus. Head pointed, its dorsal profile steep; eye large; preorbital bone broad; maxilla extending to about mid-eye level; vomerine teeth in a triangular patch with a pronounced posterior extension medially. Dorsal fin with 10 spines and 14 soft rays; anal fin with 3 spines and 8 soft rays; about 7 or 8 well formed gill rakers on first gill arch. Scales moderate-sized, about 43 to 46 in lateral line; longitudinal scale rows on upper back parallel to lateral line; 5 to 7 longitudinal scale rows above lateral line (below middle of spinous dorsal fin); 5 or 6 scale rows on cheek.

Colour: vivid pink grading to whitish on ventral portion with a narrow blue subocular band, or row of broken spots; small specimens from inshore areas brownish.

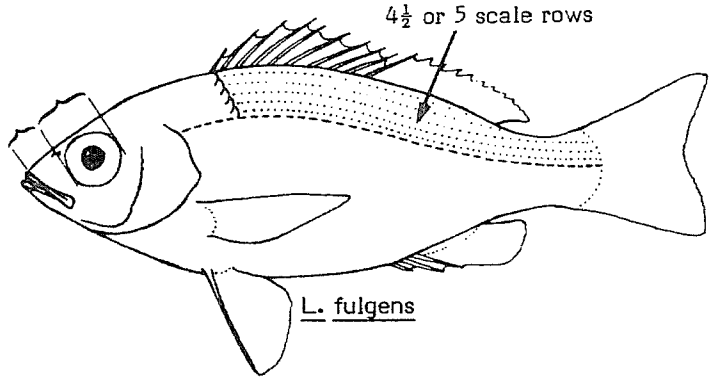


vomerine teeth

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

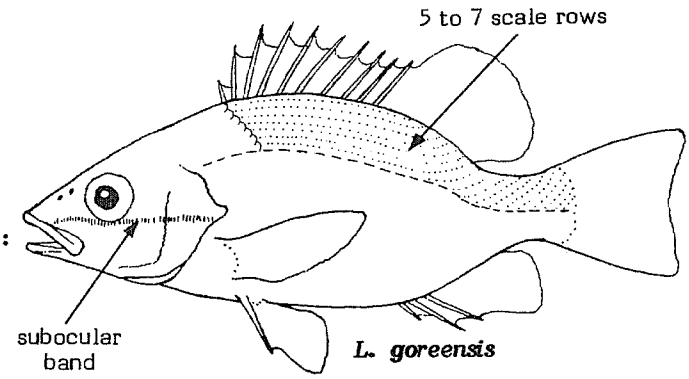
Other Lutjanus species: none has the dark subocular band characteristic of L. goreensis (except a pair of narrow blue lines sometimes present below eye in juvenile endecacanthus); only L. fulgens shares the pronounced posterior extension or the vomerine tooth patch.

L. fulgens: body less deep; about 16 well formed gill rakers on first gill arch; snout short, much less than eye diameter (equal to, or greater than eye diameter in L. goreensis); preorbital bone narrower, its width less than 1/2 eye diameter (3/4 eye diameter or more in L. goreensis); $4\frac{1}{2}$ or 5 scale rows above lateral line.



SIZE:

Maximum: 80 cm; common to 60 cm.

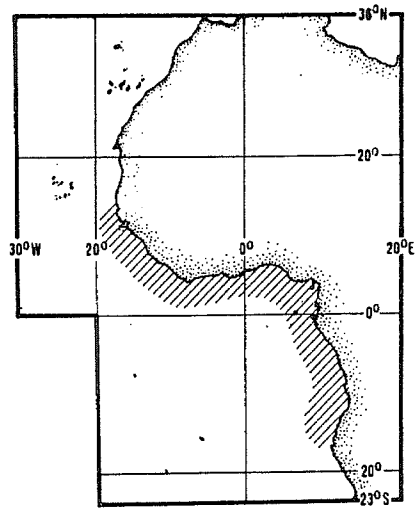


GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Known only from the West African coast, primarily the Gulf of Guinea and Cape Verde Islands.

Occurs on rocky bottoms and in the vicinity of coral reefs. The young are frequently encountered in coastal waters, particularly estuaries and sometimes in rivers.

A voracious predator feeding mainly on fishes and bottom-dwelling invertebrates.



PRESENT FISHING GROUNDS:

Mainly inshore areas to depths of about 70 m.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species. The combined catch of snapper from the area exceeded 21 000 t in 1978.

Caught with handlines, fixed bottom nets, and trawl nets.

Marketed mainly fresh.

MACROR

1981

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

MACRORAMPHOSIDAE

Snipefishes

A single species in the area; see species sheet for:

Macroramphosus scolopax (Linnaeus, 1758) MACROR Macror 1

Prepared by A. Wheeler, British Museum (Natural History), London, U.K.

Draft material revised by S. Ehrich, Institut für Seefischerei, Hamburg, Federal Republic of Germany

MACROR Macror 1

1981

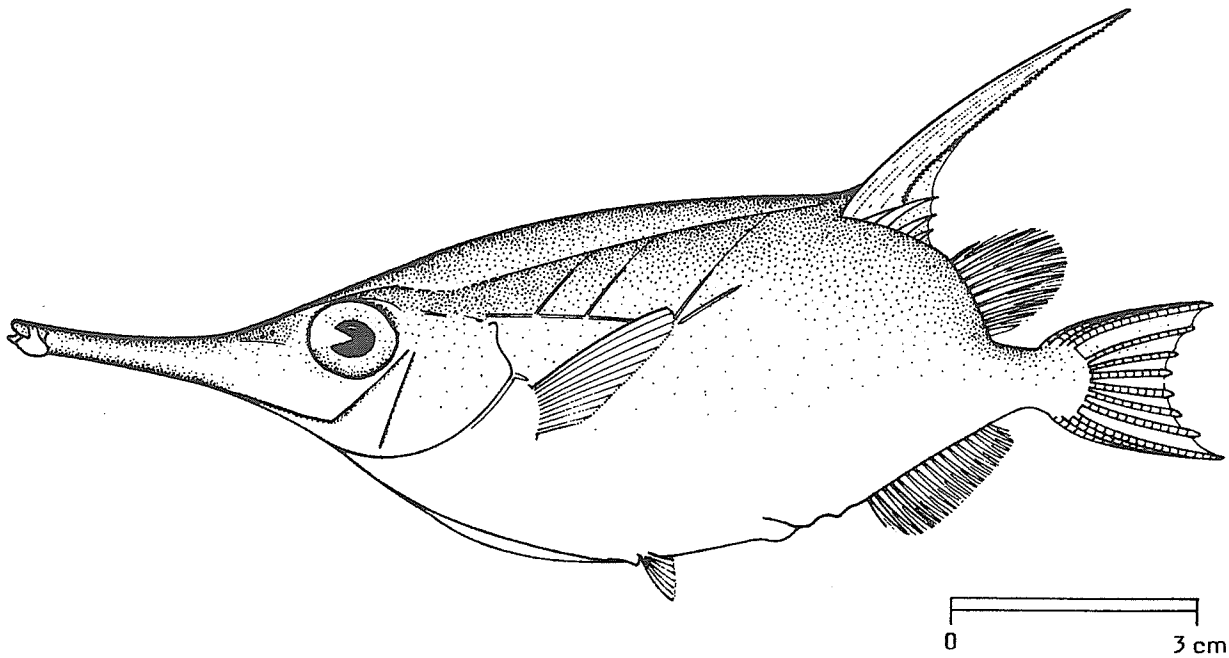
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : MACRORAMPHOSIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Macroramphosus scolopax (Linnaeus, 1758)

OTHER SCIENTIFIC NAMES STILL IN USE : Macroramphosus gracilis (Lowe, 1839)
Macrorhamphosus velitaris (Pallas, 1776)



VERNACULAR NAMES:

FAO : En - Longspine snipefish
Fr - Bécasse de mer
Sp - Trompetero

NATIONAL :

DISTINCTIVE CHARACTERS :

Body elongate and compressed. Head elongate, the snout produced as a slender tube (28.6 to 40% of standard length); mouth small and terminal; eyes lateral, large, their diameter contained about 4.5 times in snout. First dorsal fin with second spine large (8.6 to 38.9% of standard length) and serrate on rear margin, other spines stout but short; second dorsal and anal fins with short, slender rays. Scales, small, finely toothed giving the body a "sandpapery" feel.

Colour: adults pinkish or reddish above; larvae and juveniles silvery, the back bluish black.

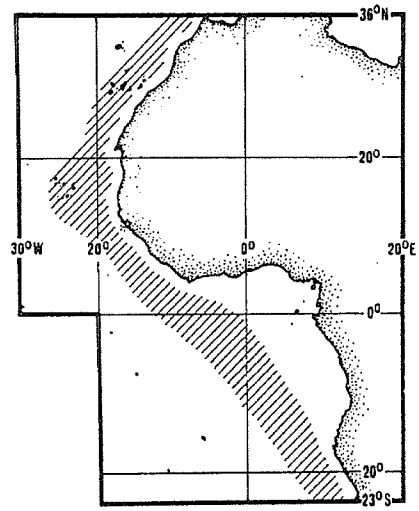
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Members of the families Caproidae, Oreosomatidae and Zeidae: all have deep, compressed bodies but large jaws and relatively short snouts.

SIZE :

Maximum: about 20 cm; common to 14 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :



Present throughout the area, including offlying islands; northward extending into the Mediterranean and along the Atlantic coast of Europe up to Norway. Elsewhere, along the east coast of the U.S.A. off the Greater Antilles, in the Southwestern Atlantic, the Southwestern Indian Ocean and Western Pacific; probably worldwide.

Gregarious; adults occur close to bottom, exceeding a depth of 500 m (normally 50 to 150 m depth); juveniles to about 10 cm are epipelagic in oceanic waters.

Adults feed on bottom and pelagic invertebrates; juveniles feed on pelagic invertebrates, mainly copepods.

PRESENT FISHING GROUNDS :

Taken by trawl fisheries, usually between 100 and 370 m depth; of increasing commercial importance in recent years.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

The catch reported for the area in 1978 totalled about 9 600 t (U.S.S.R. only), but actual catches are doubtless larger.

Taken mainly in bottom trawls.

Chiefly used for fishmeal and oil.

MACROUR

1981

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

MACROURIDAE

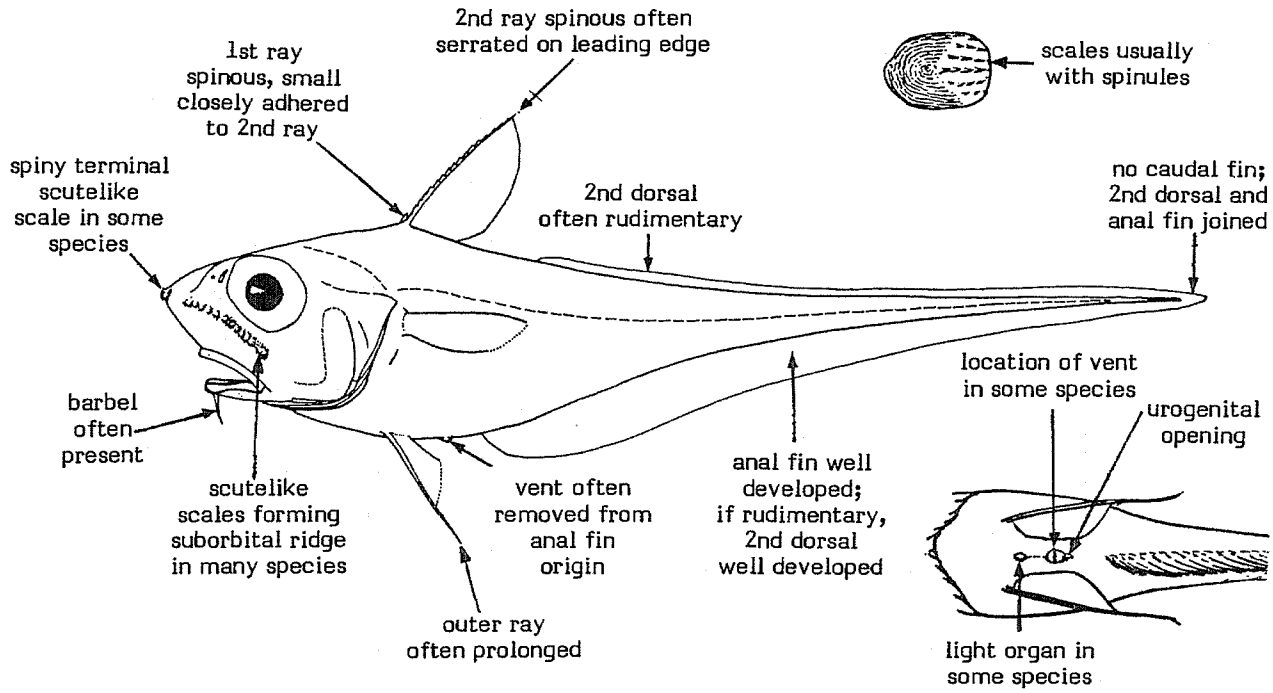
(sometimes Coryphaenoididae and Macrouroididae, in part, in literature)

Grenadiers

Trunk short, moderately compressed; tail greatly elongated, tapering to a point that usually lacks a caudal fin*. Head shape compressed, rounded or cylindrical, with a bluntly rounded to sharply pointed snout; mouth terminal to inferior, small to moderate in size; chin barbel usually present; eyes moderate to very large in most; teeth on premaxilla and mandible only, none on roof of mouth; arrangement variable, in single row to broad villiform band, sometimes with outer series enlarged; gillrakers tubercular in most, long and slender in some; branchiostegal rays 6 or 7. Dorsal fins two except in Macrouroidinae with one; first dorsal with the 2 anteriormost rays spinous except in Trachyrincus and Macrouroidinae; first ray often minute and closely appressed to base of long second ray; second dorsal and anal fins long, usually with more than 80 rays, both fins meet at tip of tail; pectoral fins narrow-based, positioned relatively high on trunk; pelvic fins narrow-based, thoracic to almost jugular in position, with 5 to 15 rays**, outer ray often prolonged. Vent (or anus) closer to pelvic fins than to anal fin in some species; a light organ sometimes present on ventral midline of abdomen. Scales cycloid, but exposed field of each scale often covered with spinules, which are sometimes arranged in ridgelike rows; a stout, terminal, scutelike scale at tip of snout in some species; ridgelike rows of coarse, scutelike scales sometimes present on head.

Colour: usually grey, brown, or blackish, sometimes with a blue or violet tinge; some silvery along sides.

Deep-sea fishes, almost all benthopelagic in habit, found primarily at upper continental slope depths of 250 to 2 000 m, but a few species recorded from below 5 000 m. Distribution of family worldwide, except in high Arctic waters; species most numerous in tropics.



*Trachyrincus has a small caudal fin; other species may develop what appears to be a caudal fin when the tail tip is broken off and the dorsal and anal rays overgrow the broken end

**Applies to Atlantic species only

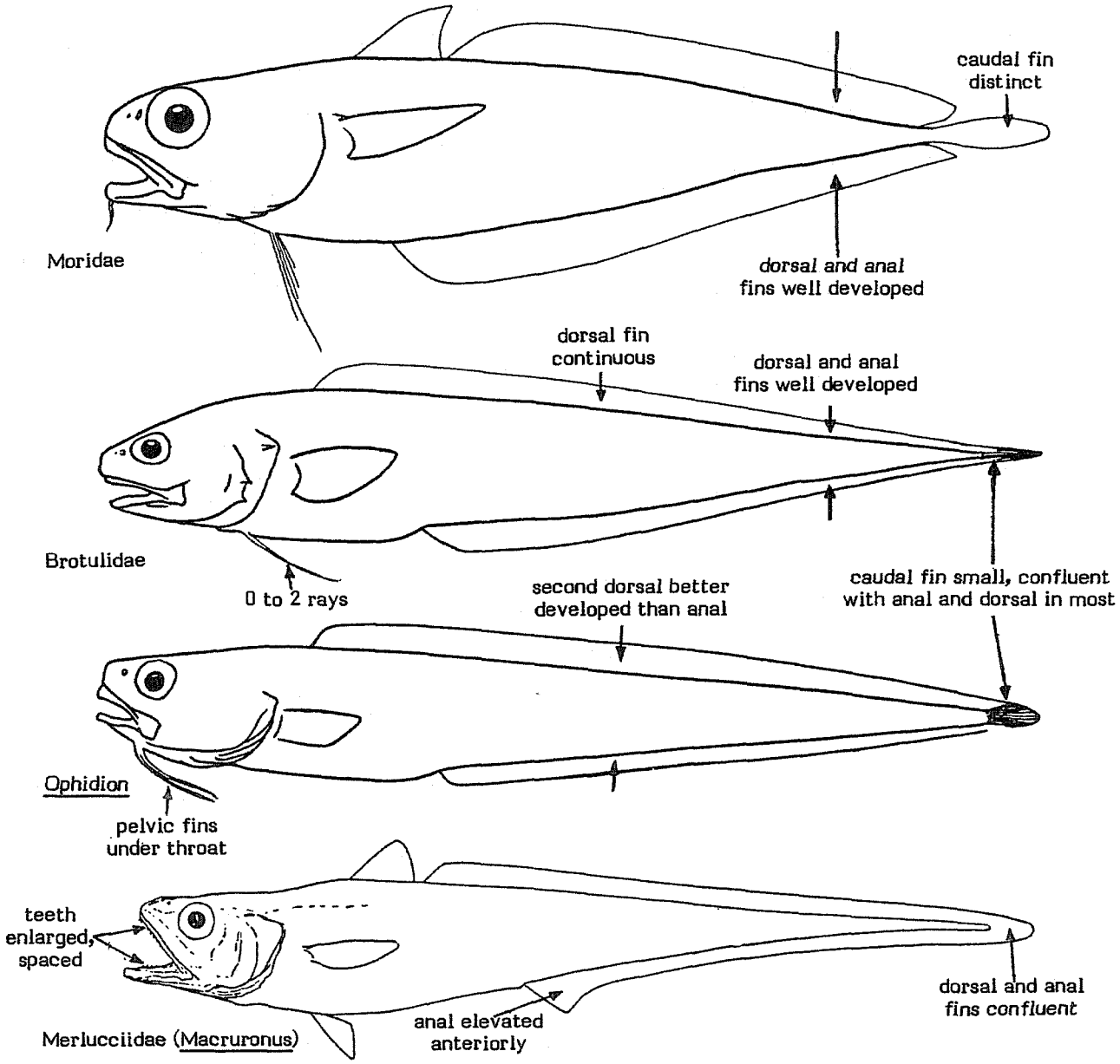
At present of rather limited economic importance in Eastern Central Atlantic Area except as incidental catch by trawlers working in deep waters. A few species are taken in sufficient numbers to be used for fishmeal in the area.

SIMILAR FAMILIES OCCURRING IN THE AREA:

Moridae: a small but distinct caudal fin; both anal and second dorsal fins well developed, not confluent around tip of tail.

Ophidiidae (including Brotulidae): a small caudal fin often joined to dorsal and anal fins; one continuous dorsal fin; no spinous dorsal fin rays; pelvic fins located far forward under throat; fewer than 5 pelvic fin rays.

Merlucciidae (Macruronus only): mouth terminal with large, spaced teeth in a single row; teeth on head of vomer; second dorsal fin better developed than anal fin, anterior portion of anal fin elevated; body silvery; trunk long, distance from isthmus to anal fin origin more than twice the head length.



KEY TO GENERA OCCURRING IN THE AREA:

1 a. One continuous dorsal fin, anterior portion not elevated; pelvic fins small, with 5 rays (Fig. 1), or absent.

2 a. Pelvic fins present ..... Squalogadus

2 b. Pelvic fins absent ..... Macrouroides

1 b. Two dorsal fins, the first elevated; pelvic fins with 6 to 15 rays

3 a. Second dorsal fin better developed than anal fin and starting close behind first dorsal (Fig. 2); gillrakers on first arch slender, not tubercular (Fig. 3a)

4 a. Snout long, pointed, and covered with stout, spinous scales; mouth inferior; body scales spinous; a distinct row of keeled, scutelike scales below dorsal fins and another row above anal fin; post-temporal fossa present (Fig. 4) ..... Trachyrincus

4 b. Snout rounded, not projecting beyond large terminal mouth; all scales of body unmodified and without spinules; no post-temporal fossa present

5 a. Chin barbel long, well developed (Fig. 5a) ..... Gadomus

5 b. Chin barbel rudimentary or absent (Fig. 5b) ..... Bathygadus

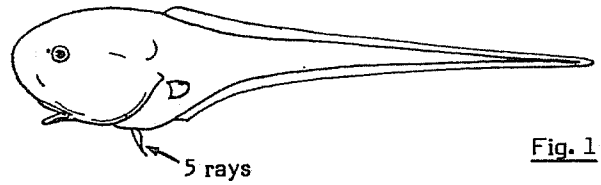


Fig. 1

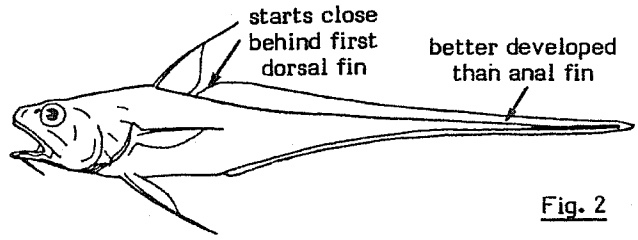


Fig. 2

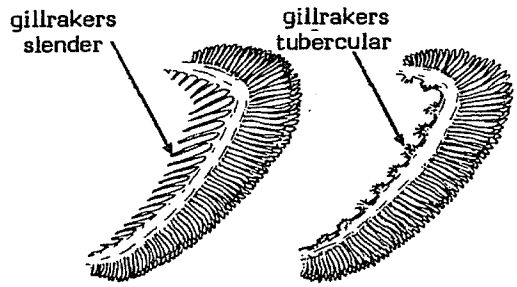


Fig. 3

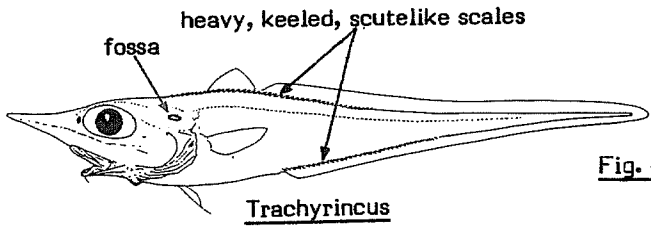


Fig. 4

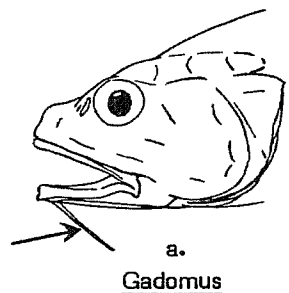
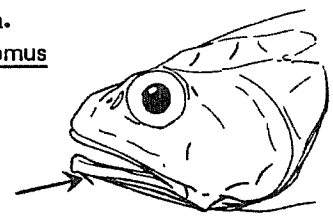


Fig. 5



3 b. Anal fin better developed than second dorsal, which is separated from first dorsal by a distinct gap (Fig. 6); all gill rakers tubercular (Fig. 3b)

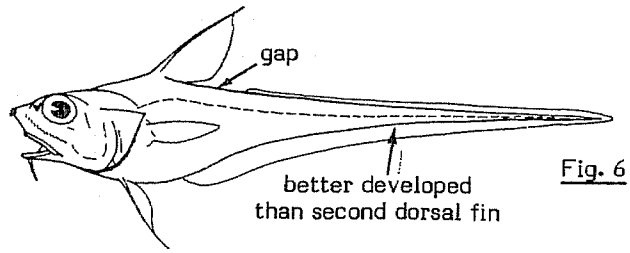


Fig. 6

6 a. Vent located immediately anterior to anal fin, not separated from fin by a broad margin of naked black skin (Fig. 7)

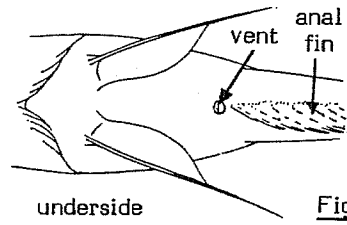


Fig. 7

7 a. A distinct row of stout, spiny scales forming a continuous ridge from tip of snout to angle of preopercle (Fig. 8); spinous ray of dorsal fin smooth (rarely with a few small denticulations near tip); in some species a broad area of scaleless black skin on midline of belly or chest (Fig. 9); 7 pelvic fin rays ..... Coelorinchus

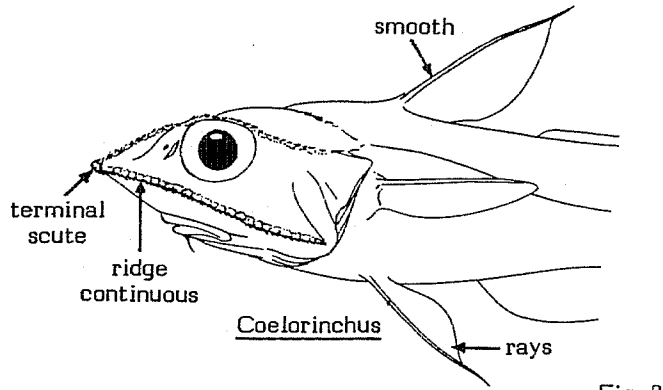


Fig. 8

7 b. Second spinous ray of dorsal fin serrated (Fig. 10) or smooth; if smooth, head without stout, scutelike ridges; scaly ridges on head absent or well developed, but never one running continuously from tip of snout to angle of preopercle; either scaleless fossa absent or 2 small, round, lens-like structures present, one on chest anterior to pelvic fins, the other immediately before vent (Fig. 11); 7 to 14 pelvic fin rays

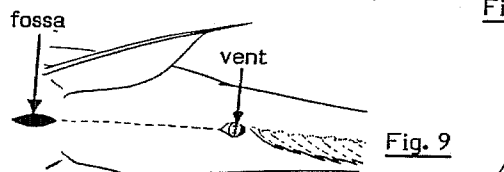


Fig. 9

8 a. Head covering membranous (Fig. 12), almost transparent; a circular lens-like structure before vent and on chest anterior to pelvic fin bases (Fig. 11); dorsal spine usually smooth; sides silvery with black striations on isthmus and abdomen; branchiostegal rays 7 ..... Hymenocephalus

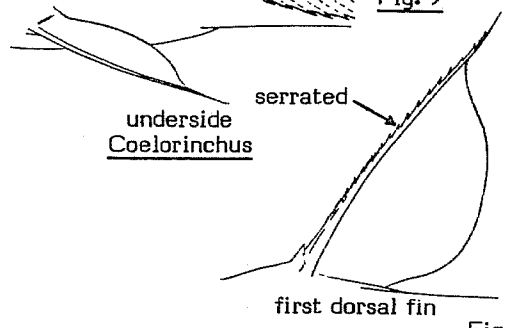


Fig. 10

8 b. Head covering thick, opaque; no lens-like structures on ventral midline; dorsal spine serrated; no black striations on body; branchiostegal rays 6..... Coryphaenoides

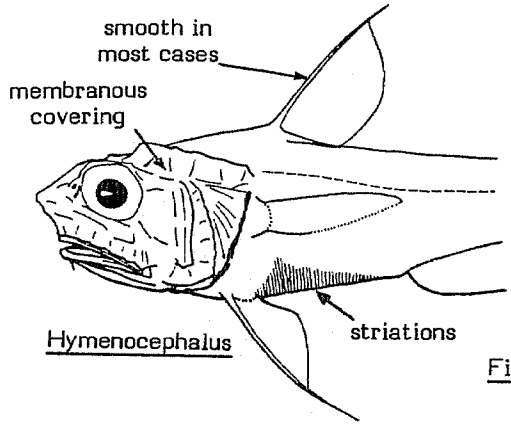


Fig. 12

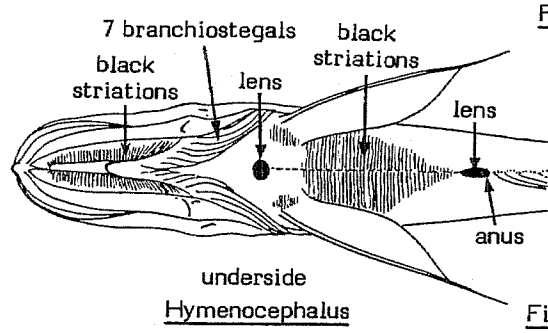


Fig. 11

6 b. Vent separated from origin of anal fin by a broad margin of naked skin (Fig. 13) or by several rows of scales (Fig. 20)

9 a. Vent and urogenital opening surrounded by a broad margin of black naked skin, the entire region closely abutting origin of anal fin (Fig. 13); no accessory fossa anterior to vent region

10 a. Chin barbel absent; species bathypelagic

11 a. Fanglike teeth in jaws; large pores on head (Fig. 14) ..... Odontomacrurus

11 b. No enlarged teeth; no large pores on head (Fig. 15) ..... Mesobius

10 b. Chin barbel present; species benthopelagic

12 a. Spinous ray of dorsal fin smooth (Fig. 16) pelvic fin rays 7 ..... Trachonurus

12 b. Spinous ray of dorsal fin serrated; pelvic fin rays 6 to 12

13 a. Pelvic fin rays 6 or 7; chin barbel moderate in size, 14 to 20 percent of head length (Fig. 17) ..... Paracetonurus

13 b. Pelvic fin rays 8 to 12; chin barbel minute, less than 10 percent of head length

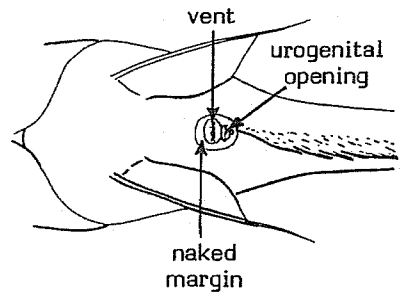
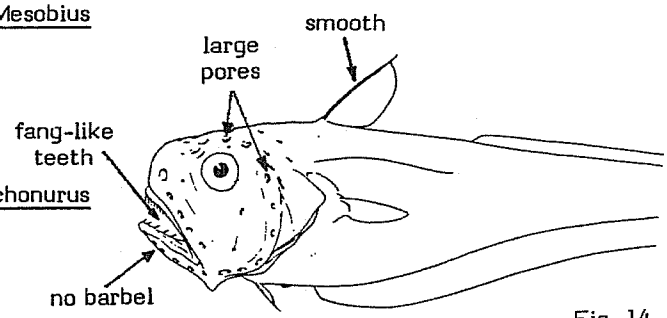
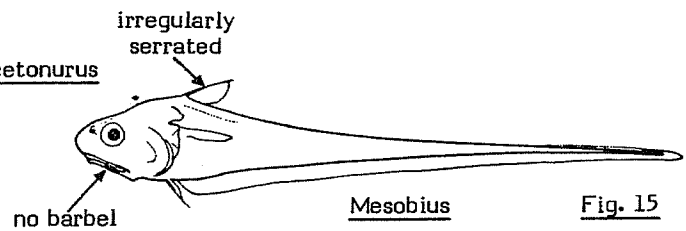


Fig. 13



Odontomacrurus

Fig. 14



Mesobius

Fig. 15

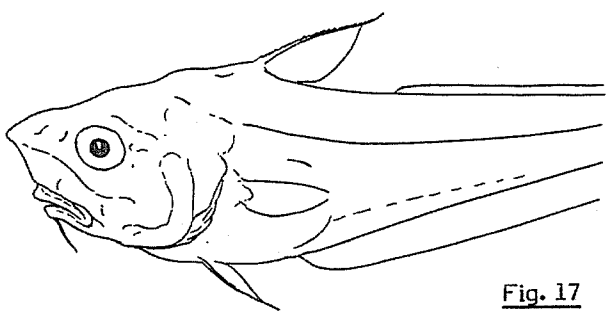
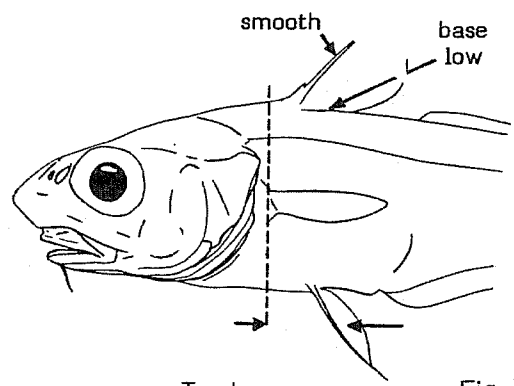


Fig. 17

Paracetonurus



Trachonurus

Fig. 16

14 a. Head globose, expanded and soft (Fig. 18); chin barbel minute, usually shorter than length of posterior nostril; 6 to 10 pelvic fin rays

15 a. Scales non-imbricate (not overlapping), in a mosaic-like pattern on body; no distinctly enlarged series of scales along each side of second dorsal fin ..... Echinomacrurus

15 b. Scales imbricate, in uniform, diagonal, cross-hatched rows on body; a distinctly enlarged series of scales along each side of second dorsal-fin base (Fig. 19) ..... Cetonurus

14 b. Head compact, firm, not expanded; chin barbel longer than length of posterior nostril; pelvic fin rays 11 or 12 (Fig. 20) ..... Sphagemacrurus

9 b. Vent region distinctly separated from anal fin origin by several scale rows; vent usually closer to insertion of pelvic fins than to origin of anal fin (Fig. 21)

16 a. Teeth in lower jaw large, caninelike, in a single row laterally (Fig. 22) ..... Malacocephalus

16 b. Teeth in lower jaw small, in two or more rows or in a narrow band

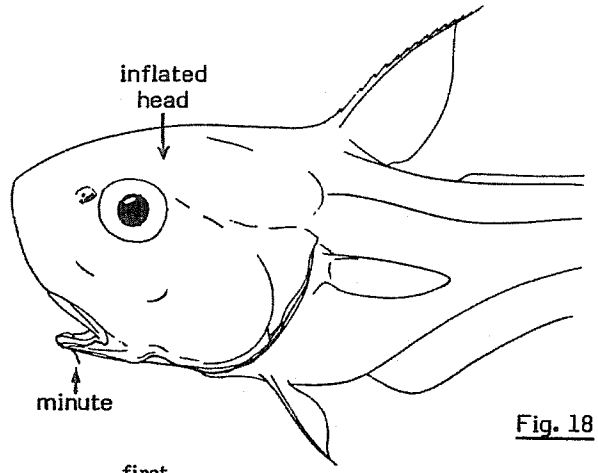
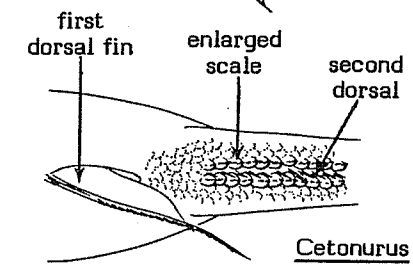
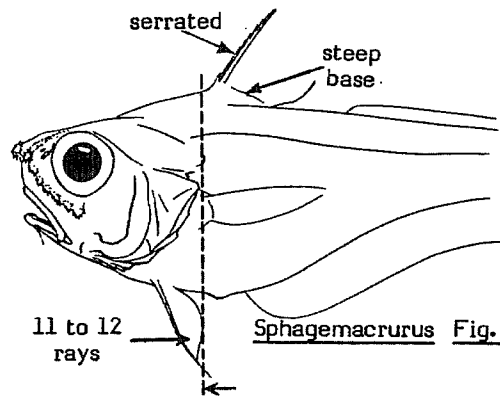


Fig. 18



upper side

Cetonurus Fig. 19



Sphagemacrurus Fig. 20

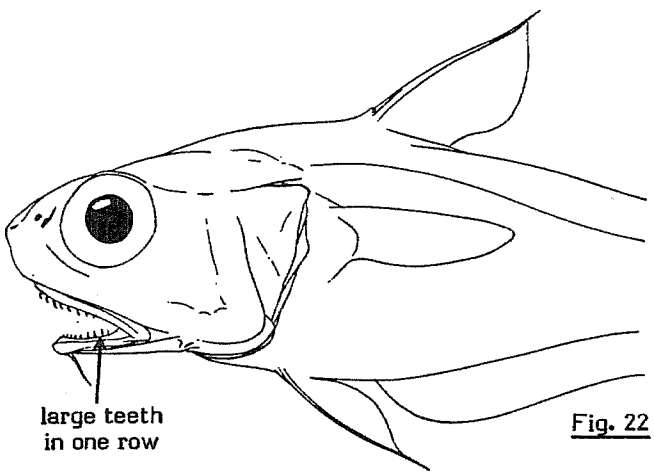
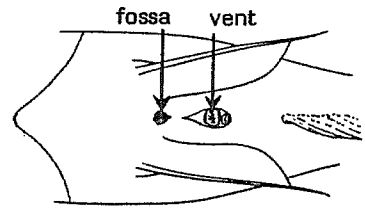


Fig. 22

Malacocephalus

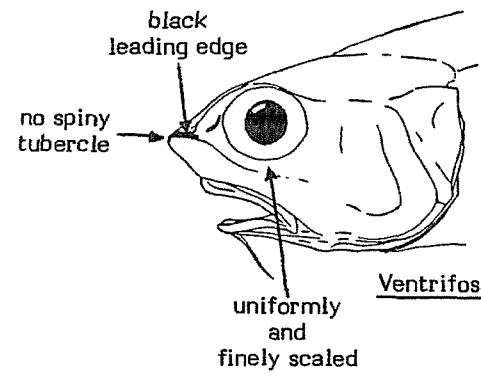


underside

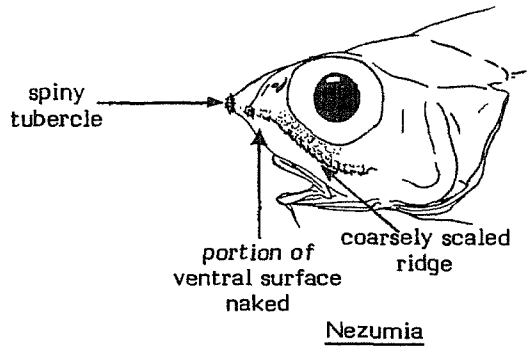
Fig. 21

17 a. Snout and suborbital region completely and uniformly covered with small, finely spinulated scales; no tubercular scales at lateral and terminal angles of snout; leading edge of snout usually black (Fig. 23) ..... Ventrifossa*

17 b. Snout and suborbital region incompletely scaled on ventral surfaces; strong, coarse, scutelike scales along suborbital ridge; a tubercular scute at lateral and terminal angles of snout; leading edge of snout not marked with a black streak (Fig. 24) ..... Nezumia



Ventrifossa Fig. 23



Nezumia Fig. 24

LIST OF SPECIES OCCURRING IN THE AREA:

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

BATHYGADINAE

Bathygadus favosus Goode & Bean
Bathygadus macrops Goode & Bean
Bathygadus melanobranchus Vaillant

Gadomus arcuatus (Goode & Bean)
Gadomus dispar (Vaillant)
Gadomus longifilis (Goode & Bean)

TRACHYRINCINAE

Trachyrincus scabrus (Rafinesque, 1810) MACROUR Trac 1

MACROUROIDINAE

Macrouroides inflaticeps Smith & Radcliffe

Squalogadus modificatus Gilbert & Hubbs

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* Author does not recognize any species of this genus from Eastern Central Atlantic waters, but representatives may be expected, as they are found in bordering waters to the south and west

FAO Sheets | MACROURIDAE | Fishing Areas 34, 47 (in part)

MACROURINAE

Cetonurus globiceps (Vaillant M.S) (Filhol)	
Coelorinchus coelorhincus (Risso, 1810)	MACROUR Coel 1
Coelorinchus fasciatus (Günther, 1878)	
Coelorinchus occa Goode & Bean, 1843	
Coryphaenoides armatus (Hector)	
Coryphaenoides carapinus Goode & Bean, 1843	
Coryphaenoides guentheri (Vaillant)	
Coryphaenoides macrocephalus (Maul)	
Coryphaenoides marshalli Iwamoto	
Coryphaenoides mediterranea (Giglioli)	
Coryphaenoides profundicola (Nybelin)	
Coryphaenoides thelestomus Maul	
Coryphaenoides zaniophorus (Vaillant)	
Echinomacrurus mollis (Roule)	
Hymenocephalus gracilis Gilbert & Hubbs	
Hymenocepahlus italicus Giglioli	
Malacocephalus laevis (Lowe, 1843)	MACROUR Mal 1
Malacocephalus occidentalis Goode & Bean, 1843	MACROUR Mal 2
Mesobius antipodum Hubbs & Iwamoto	
Nezumia aequalis (Günther, 1878)	MACROUR Nez 1
Nezumia africana (Iwamoto)	
Nezumia bairdii (Goode & Bean, 1843)	
Nezumia duodecim Iwamoto	
Nezumia longebarbatus (Roule & Angel)	
Nezumia micronychodon Iwamoto	
Nezumia milleri Iwamoto	
Nezumia sclerorhynchus (Valenciennes)	
Odontomacrurus murrayi Norman	
Paracetonurus flagellicauda (Koefoed)	
Sphagemacrurus hirundo (Collette)	
Trachonurus villosus (Günther, 1878)	

Prepared by T. Iwamoto, Department of Ichthyology, California Academy of Sciences, San Francisco, California, U.S.A.

MACROUR Coel 1

1981

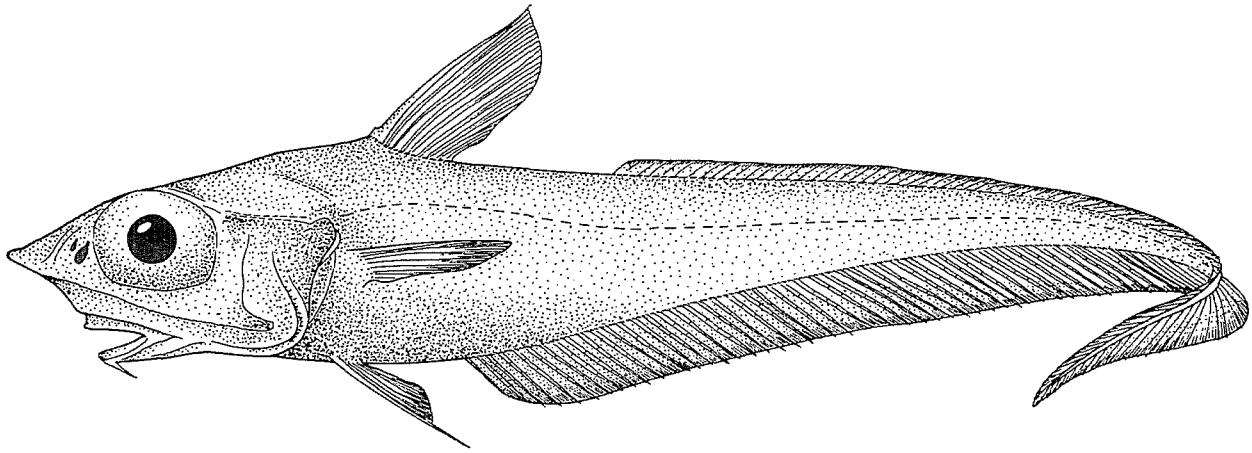
FAO SPECIES IDENTIFICATION SHEETS

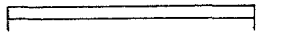
FAMILY : MACROURIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Coelorinchus coelorhincus (Risso, 1810)

OTHER SCIENTIFIC NAMES STILL IN USE : Coelorhynchus coelorhynchus (Risso, 1810)
Coelorhincus laville Risso, 1809*





VERNACULAR NAMES:

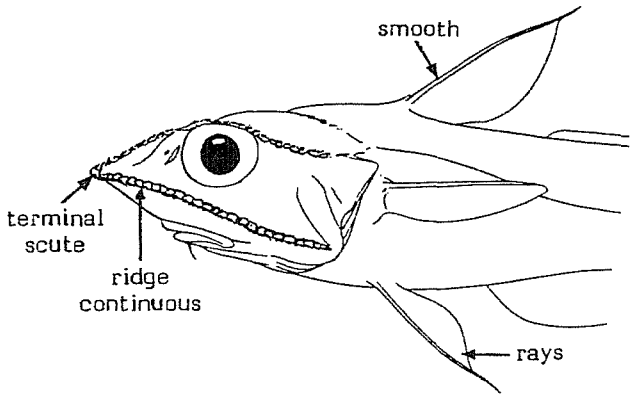
FAO : En - Hollowsnout grenadier
Fr - Grenadier raton
Sp - Granadero acorazado (= Ratón)

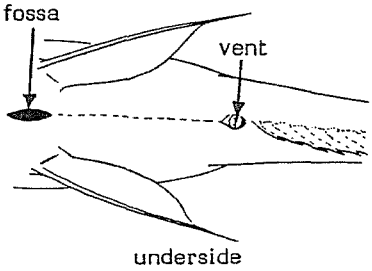
NATIONAL :

DISTINCTIVE CHARACTERS :

Mouth small, subterminal; snout pointed, divided into dorsal and ventral halves by a stout spiny ridge which extends from snout tip to angle of preopercle; tip of snout with a spiny trifurcate scute; orbits large, about equal to or larger than postorbital length; most of ventral surfaces of head scaled. Vent (anus) immediately before anal fin; a large oval or diamond-shaped, black, naked fossa on midline of chest. Spinous dorsal fin ray smooth; pelvic fins with 7 rays.

Colour: tawny to swarthy. Fins dusky to blackish; anal fin sometimes with a dark longitudinal stripe or distal margin blackish.





* This would appear to be the correct name, but it has been little used

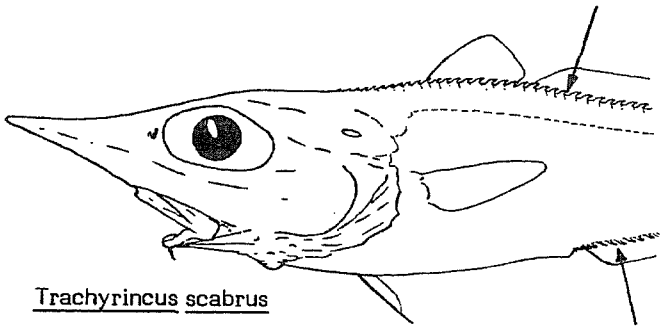
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Coelorinchus fasciatus: ventral surfaces of head naked; naked fossa immediately before anus.

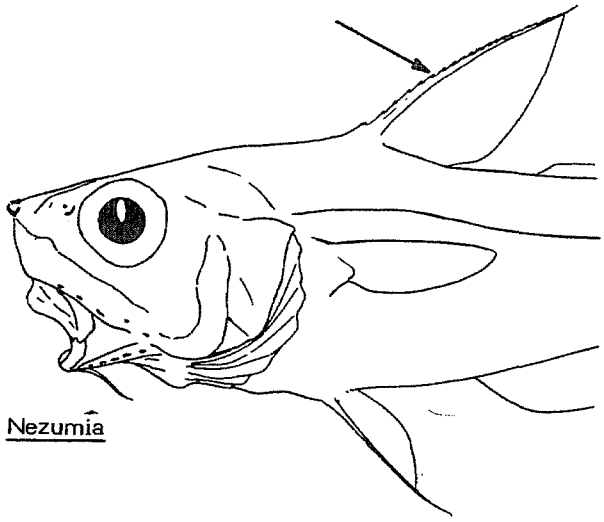
C. occa: ventral surfaces of head naked; no naked fossa midventrally on abdomen or chest.

Trachyrincus scabrus: a row of enlarged, keeled, scute-like scales along bases of dorsal and anal fins.

Nezumia species: a serrated spinous dorsal ray; anus remote from origin of anal fin, usually closer to bases of pelvic fins.



Trachyrincus scabrus



Nezumia

SIZE:

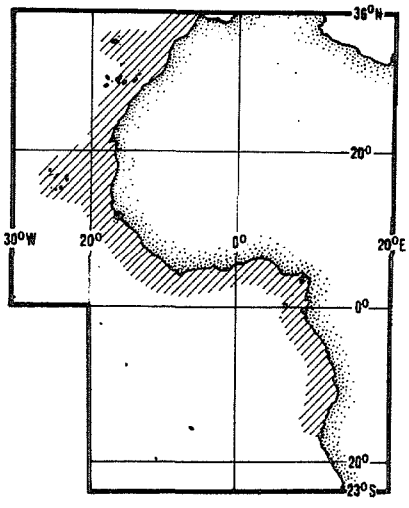
Maximum: about 38 cm; common to 30 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

This species occurs throughout the area. Five subspecies are recognized, 3 from the Eastern Central Atlantic: subspecies coelorinchus (southern Norway to the vicinity of Cape Verde Islands); geronimo (Gulf of Guinea to vicinity of Moçamedes, Angola); and polli (off Kunene R., Angola, and South West Africa).

Found at depths from 140 to about 630 m, but most common between 200 to 500 m.

Feeds primarily on bottom-living invertebrates.



PRESENT FISHING GROUNDS:

Taken as bycatch by offshore trawlers throughout its range; reported to be abundant in some localities.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught with bottom trawls.

Mostly reduced to fishmeal and oil.

MACROUR Mal 1

1981

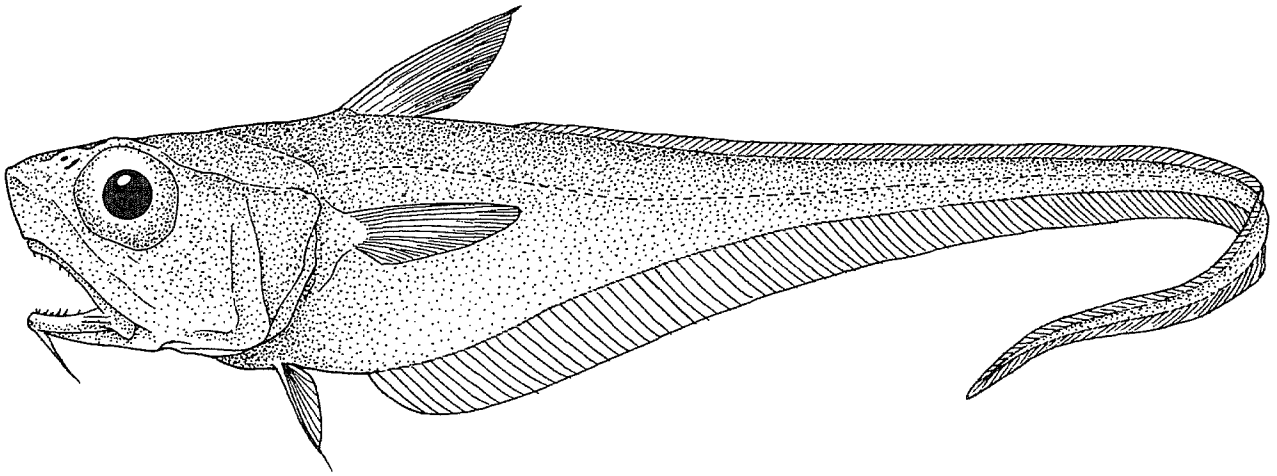
FAO SPECIES IDENTIFICATION SHEETS

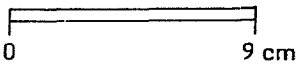
FAMILY : MACROURIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Malacocephalus laevis (Lowe, 1843)

OTHER SCIENTIFIC NAMES STILL IN USE : None





VERNACULAR NAMES:

FAO : En - Softhead grenadier
Fr - Grenadier barbu
Sp - Abámbolo de bajura

NATIONAL :

DISTINCTIVE CHARACTERS :

Mouth large, subterminal; lower jaw with a single row of distinctly enlarged, widely spaced teeth; upper jaw with 2 rows of teeth, the outer series the larger; barbel on chin shorter than least width of interorbital space; ridges of head smooth, not armed with stout, spiny, scutelike scales. A smooth spinous dorsal finray; pelvic fins with 9 rays. Anus between pelvic fins; a large, naked, bean-shaped depression on midline between bases of pelvic fins. Scales of head and body all small, finely spinulated; rows of scales along lowermost branchiostegal rays.

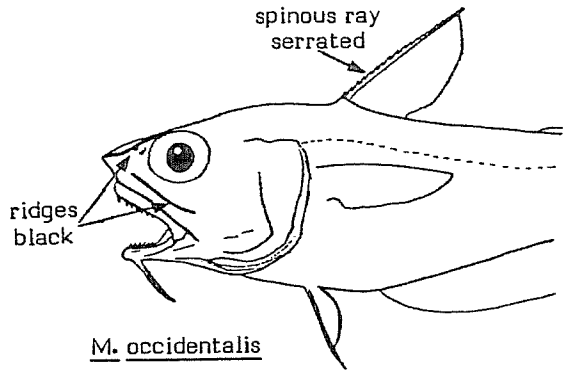
Colour: brownish to greyish black overall; a hazy silvery cast on ventral two-thirds of head and body; ridges of head not black.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

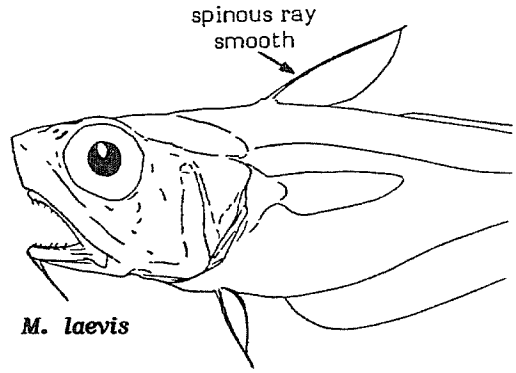
Malacocephalus occidentalis: spinous dorsal fin ray serrated; 8 pelvic fin rays (9 in M. laevis); upper jaw teeth on a band; lower jaw teeth only slightly enlarged; edges of snout and suborbital black.

Nezumia species: a ridgelike row of stout, spiny scales along suborbital bones; lower jaw teeth in a narrow to broad band, not enlarged; a stout, spiny, tubercular scute at tip (and usually lateral angles) of snout.

Ventrifossa species: spinous dorsal fin ray serrated; lower jaw teeth in a narrow band; no rows of scales on branchiostegal rays in most species; a small, round to oval depression between pelvic fin bases.



M. occidentalis



M. laevis

SIZE :

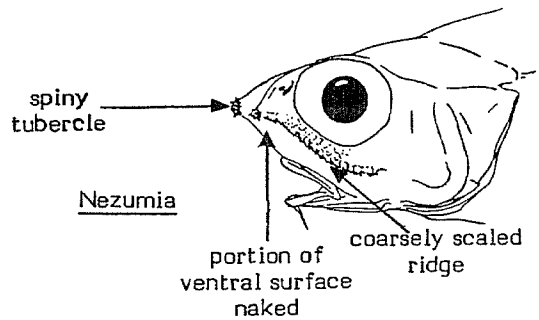
Maximum: to about 55 cm; common to 40 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Present throughout the area. Found in tropical to temperate slope waters of the Atlantic and Indian oceans; probably also widespread in the Pacific where other nominal species have been synonymized with it.

A fish of upper continental slopes from about 250 m to about 750 m depth.

Feeds primarily on fishes and natant crustaceans.



PRESENT FISHING GROUNDS :

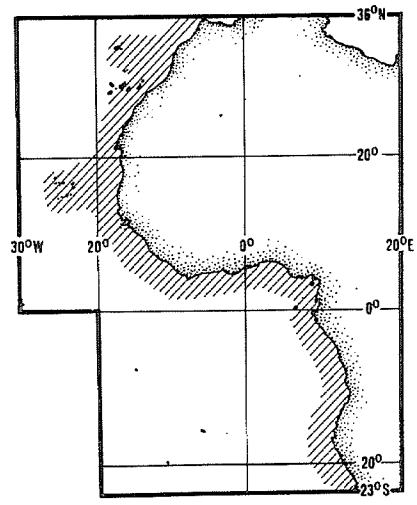
Taken as bycatch by offshore trawlers throughout its range.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Caught with bottom trawls.

Mostly used for fishmeal and oil.



MACROUR Mal 2

1981

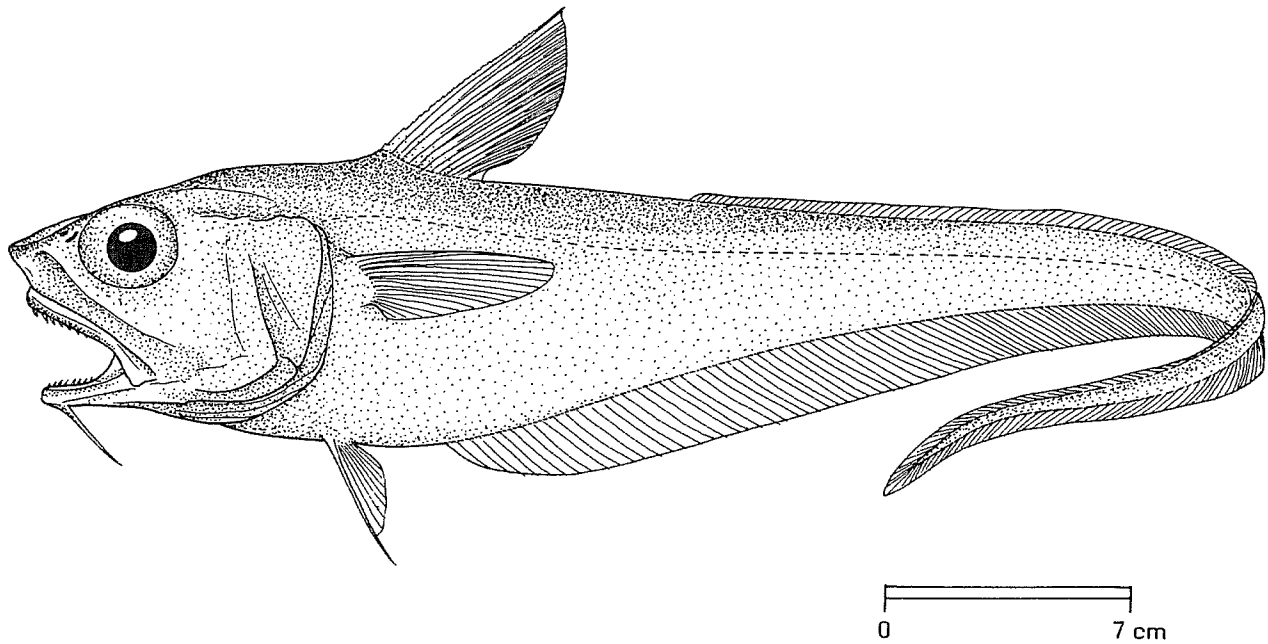
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : MACROURIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Malacocephalus occidentalis Goode & Bean, 1885

OTHER SCIENTIFIC NAMES STILL IN USE : Ventrifossa occidentalis (Goode & Bean, 1885)
Macruroplus violaceus (not of Zugmayer, 1911)



VERNACULAR NAMES:

FAO : En - Western softhead grenadier
Fr - Grenadier scie
Sp - Abámbolo

NATIONAL :

DISTINCTIVE CHARACTERS :

Mouth large, subterminal; lower jaw with a single row of slightly enlarged teeth; upper jaw with an outer row of enlarged teeth and an inner band of small teeth; barbel on chin longer than least width of interorbital space; ridges of head smooth, not armed with stout, spiny, scute-like scales. A serrated spinous dorsal ray; pelvic fin with 8 rays. Anus between pelvic fins; a prominent, naked, oval to bean-shaped depression on midline between bases of pelvic fins. Scales of head and body all small, finely spinulated; rows of scales along lowermost branchiostegal rays.

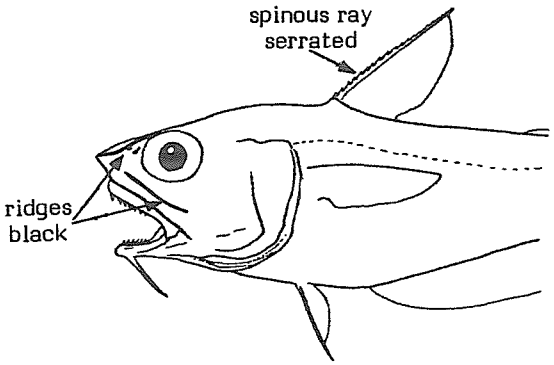
Colour: greyish black dorsally; silvery on ventral four-fifths of head and body. Leading and dorsolateral edges of snout and suborbital streaked with black.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

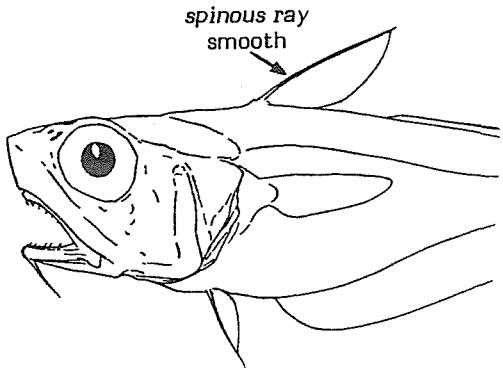
Malacocephalus laevis: spinous dorsal ray smooth; 9 pelvic fin rays (8 in M. occidentalis); 2 rows of teeth in upper jaw; lower jaw teeth distinctly enlarged; no black margins on snout and suborbital.

Nezumia species: a ridge-like row of stout, spiny scales along suborbital bones; lower jaw teeth in a narrow to broad band, not enlarged; a stout, spiny tubercular scute at tip (and usually lateral angles) of snout

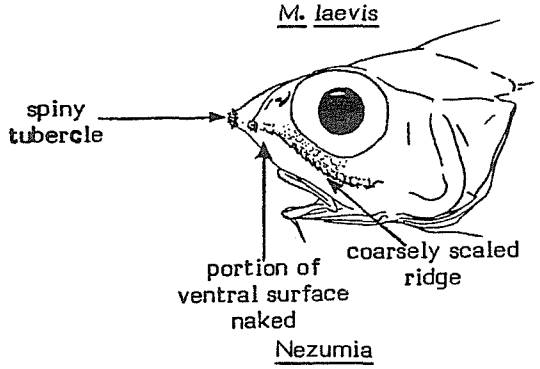
Ventrifossa species: lower jaw teeth in a narrow band; no rows of scales on branchiostegal rays in most; a small, round to oval depression between pelvic fin bases.



M. occidentalis



M. laevis



Nezumia

SIZE:

Maximum: to about 45 cm; common to 35 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

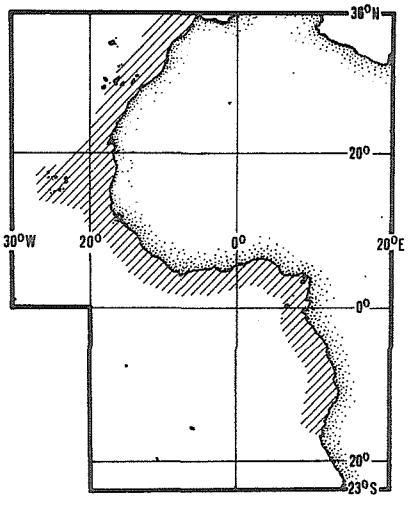
Found in tropical to temperate slope waters throughout the area except, perhaps Madeira, the Canary Islands and the extreme south of the area; in the Western Atlantic from the Grand Banks to Brazil.

Depth range from 140 to about 580 m off African waters; from about 350 to 550 m in the Western Atlantic.

Feeds primarily on fishes and natant crustaceans.

PRESENT FISHING GROUNDS:

Taken as bycatch by offshore trawlers throughout its range.



CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught with bottom trawls.

Mostly used for fishmeal and oil.

MACROUR Nez 1

1981

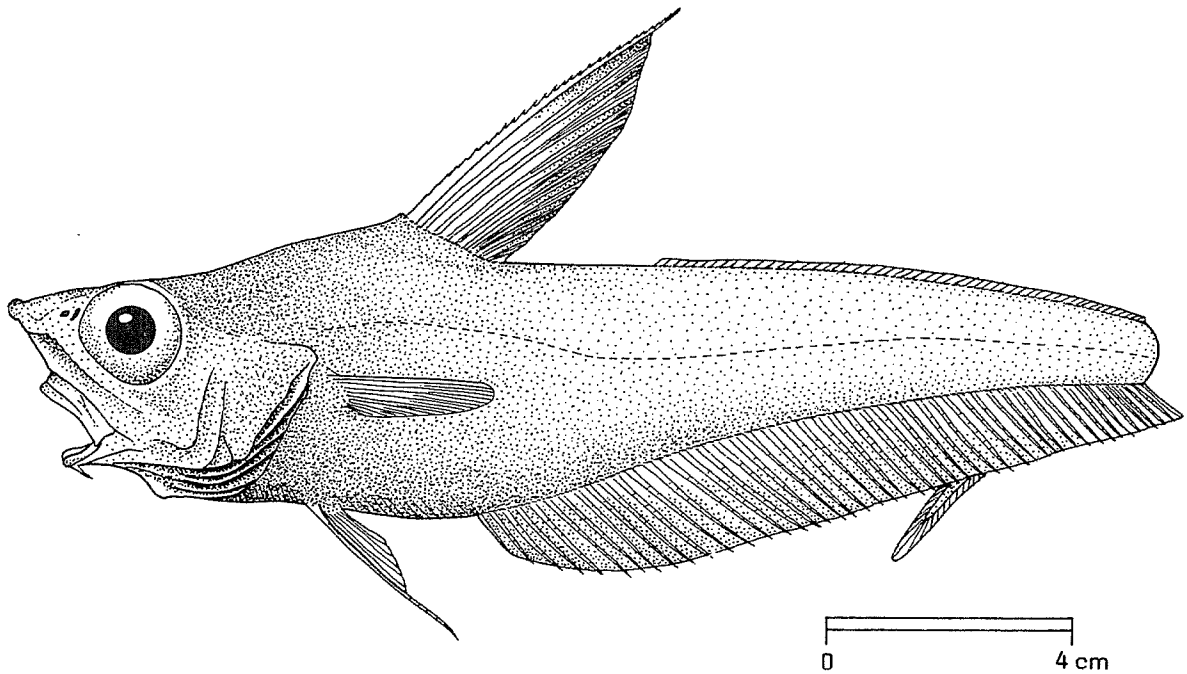
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : MACROURIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Nezumia aequalis (Günther, 1878)

OTHER SCIENTIFIC NAMES STILL IN USE : Macruroplus serratus (Lowe, 1843) (nomen dubium)
Nezumia serratus (Lowe, 1843) (nomen dubium)



VERNACULAR NAMES:

FAO : En - Smooth grenadier
Fr - Grenadier lisse
Sp - Granadero liso

NATIONAL :

DISTINCTIVE CHARACTERS :

Mouth rather small, subterminal, less than 2.5 times in head length; teeth of jaws small, in moderately wide bands; upper jaw with an outer row of slightly enlarged teeth; orbit moderately large, the snout 1.5 to 1.8 times in orbit diameter; ridges of head armed with stout, spiny, scute-like scales; a coarse tubercular scute at tip and lateral angles of snout; usually, 8 or 9 gillrakers of lower limb of outer gill arch. A serrated spinous dorsal finray; pelvic fins with 8 or 9 rays. Anus between pelvic fins; a small, naked oval depression on midline between bases of pelvic fins. Scales of body with lanceolate to shield-shaped spinules covering exposed fields.

Colour: usually bluish to violet predominating around trunk region, greyish to brownish dorsally on head and on tail, blackish ventrally on trunk and head. First dorsal fin black distally, paler basally.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Nezumia sclerorhynchus and N. longebarbatus: scales of body with conical spinules; scales lacking on entire ventral surface of snout and on most of anterior portion of lower jaw, pores of lateral line system prominent in these areas.

N. micronychodon: 10 to 12 gillrakers on lower limb of outer gill arch (8 or 9 in N. aequalis).

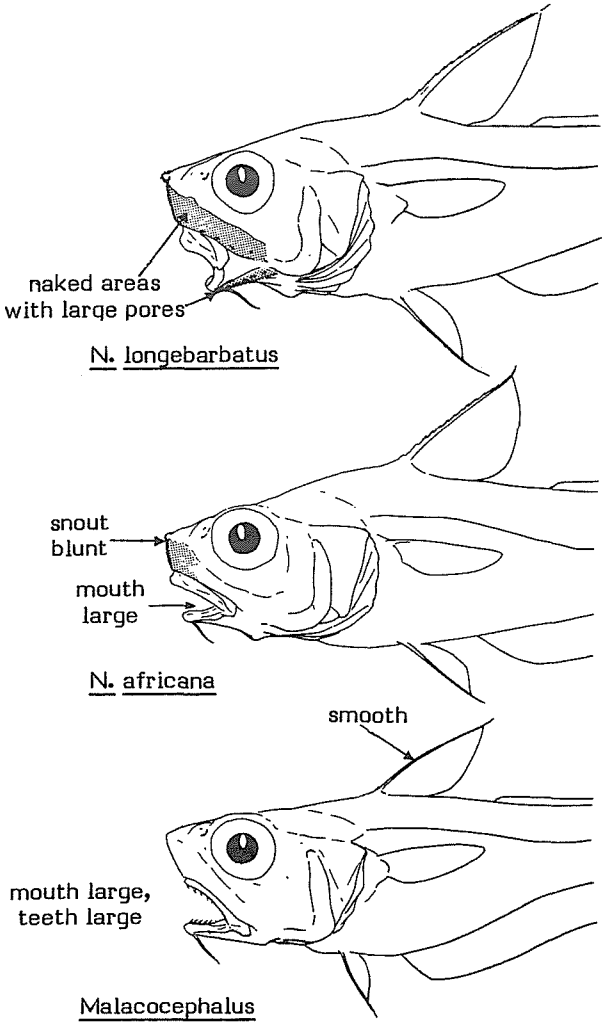
N. africana: mouth larger, 2.5 times in head length (less than 2.5 times in N. aequalis); snout blunt.

N. duodecim: usually 12 pelvic fins rays (8 or 9 in N. aequalis).

N. milleri: snout length 2 times in orbit diameter (1.5 to 1.8 times in N. aequalis).

N. bairdii: 7 pelvic fin rays; black pigment on first dorsal fin limited to membrane between second spinous ray and first branched ray.

Malacocephalus species: mouth large, with lower jaw teeth enlarged and in a single series.



SIZE:

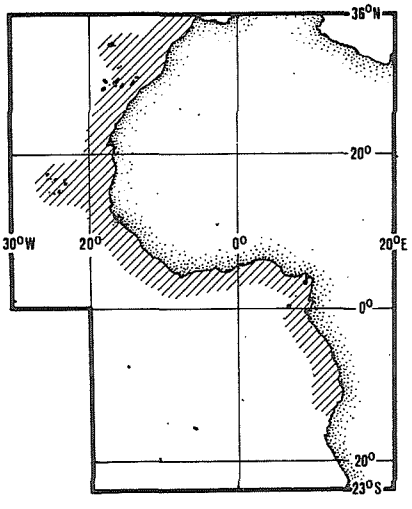
Maximum: about 30 cm; common to 25 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

In the area, from Gibraltar to southern Angola. Widespread in slope waters of the North Atlantic; in the eastern Atlantic, reaching northward to the Faroe Banks.

Most common in depths of 200 to 1 000 m, although much greater extremes have been recorded.

Feeds primarily on bottom-living invertebrates.



PRESENT FISHING GROUNDS:

Taken as bycatch by offshore trawlers throughout its range.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught with bottom trawls.

Mostly reduced to fishmeal and oil.

MACROUR Trac 1

1981

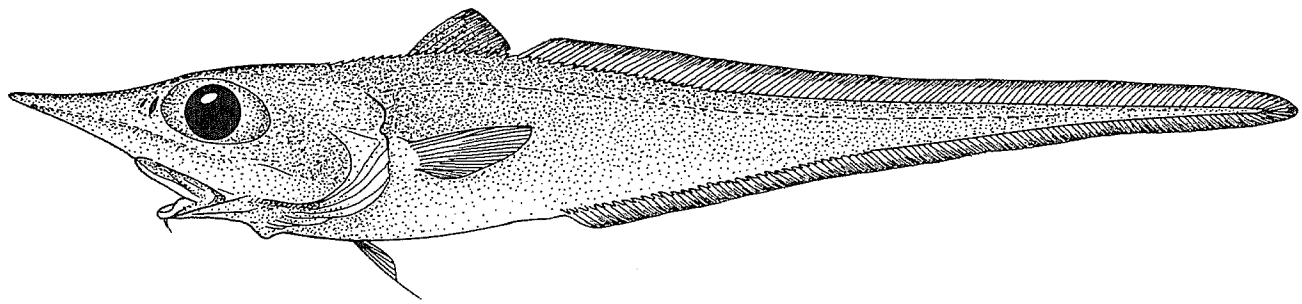
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : MACROURIDAE

FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

Trachyrincus scabrus (Rafinesque, 1810)

OTHER SCIENTIFIC NAMES STILL IN USE : Trachyrincus trachyrincus*
Trachyrincus anonyme Giorna, 1809



VERNACULAR NAMES:

FAO : En - Roughsnout grenadier
Fr - Grenadier à nez rude
Sp - Abámbolo de cantil

NATIONAL :

DISTINCTIVE CHARACTERS :

Mouth moderately large, inferior; snout long, pointed, depressed, divided into dorsal and ventral halves by a rather sharp, stout ridge which extends to just posteriad of orbits; teeth in both jaws in villiform bands, none enlarged; orbits large, about equal to postorbital length; a scaleless "post-temporal" fossa in occipital region, otherwise head completely covered by elongated scales which have spinules arranged in longitudinal rows; gillrakers slender, not tubercular; outer gill slit not restricted by folds of skin along upper and lower extent. Vent (anus) immediately before anal fin. First full ray of dorsal fin segmented, not prolonged; second dorsal fin originating close behind first dorsal and of moderate height, equal to or higher than anal fin. A row of enlarged, keeled, scute-like scales along each side of dorsal and anal fins; these scales diminish in size posteriorly; 20 to 30 dorsal scutes behind a vertical line through anus and no scutes before anus.

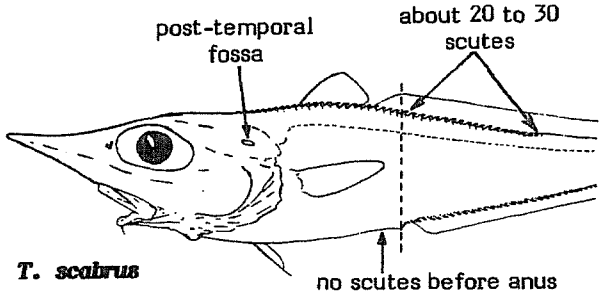
Colour: brown to grey-brown.

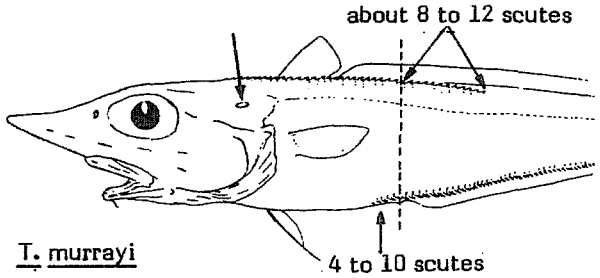
* This has most often been recognized as the correct name, but Rafinesque's work appears to predate by a few months that of Risso in which T. trachyrincus was used

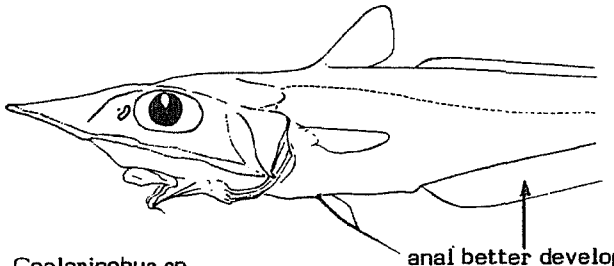
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Trachyrincus murrayi (species found near northern border of Eastern Central Atlantic and may be expected to stray into area): usually only about 18 to 22 dorsal scutes behind vertical line through anus; 4 to 10 scutes preceding anus.

Coelorinchus species: 6 branchiostegal rays; no fossa in post-temporal region; no rows of keeled scute-like scales along dorsal and anal fins; anal fin better developed than the dorsal.







SIZE:

Maximum: at least 55 cm; common to 40 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

In the area, from Gibraltar to the Cape Verde Islands; northward extending into the Mediterranean and along the Atlantic coast of Europe to Ireland.

Inhabits slope waters at depths between 400 and 1 500 m.

PRESENT FISHING GROUNDS:

Taken as bycatch by offshore trawlers throughout its range.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught with bottom trawls.

Mostly reduced to fishmeal and oil.