FAO SPECIES IDENTIFICATION SHEETS
FOR FISHERY PURPOSES

EASTERN CENTRAL ATLANTIC
FISHING AREA 34 AND PART OF 47



VOLUME
VI

Canada
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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 VI

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Shrimps and Prawns

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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

SHRIMPS & PRAWNS

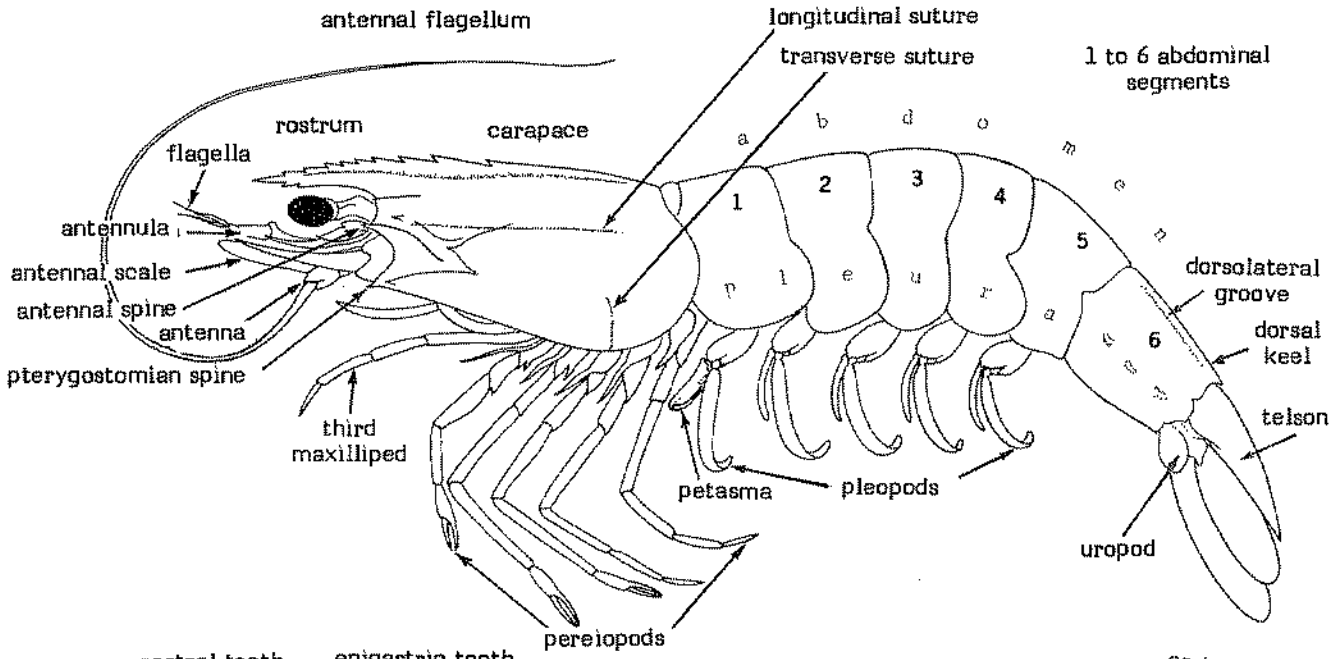
TECHNICAL TERMS AND PRINCIPAL MEASUREMENTS USED

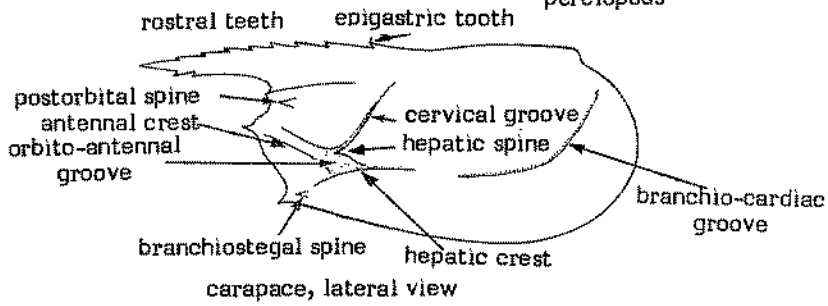
FAO Sheets

SHRIMPS AND PRAWNS

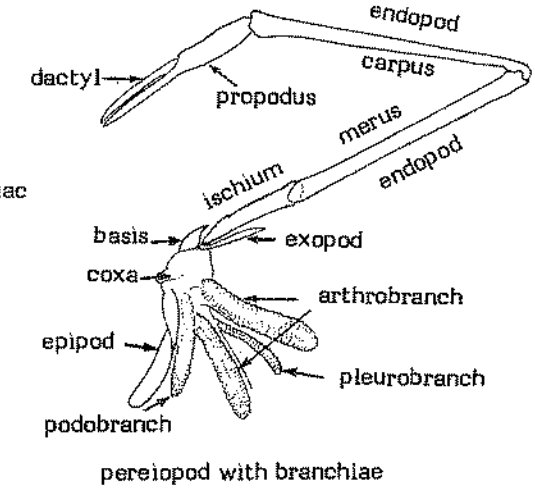
Fishing Areas 34, 47 (in part)

TECHNICAL TERMS

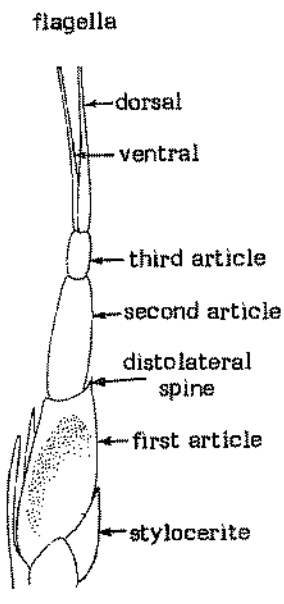




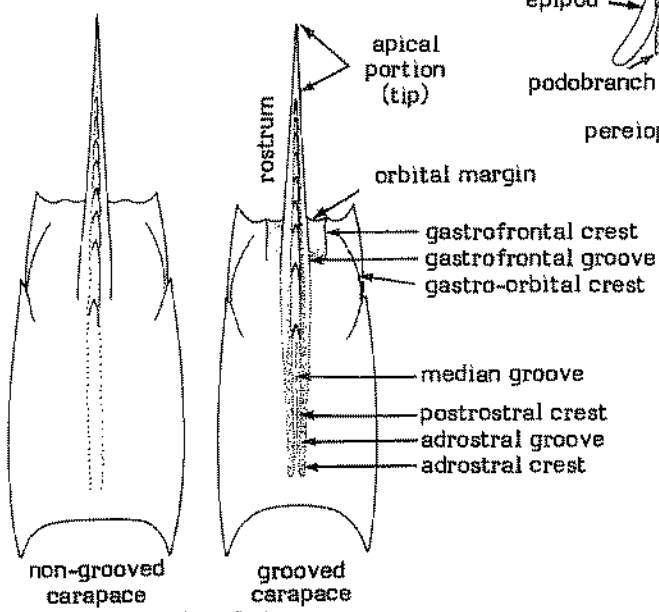
carapace, lateral view



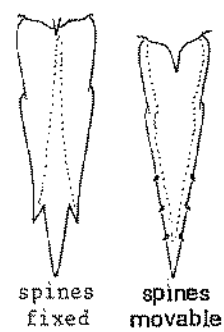
pereiopod with branchiae



antennule



carapace, dorsal view



types of spined telsons

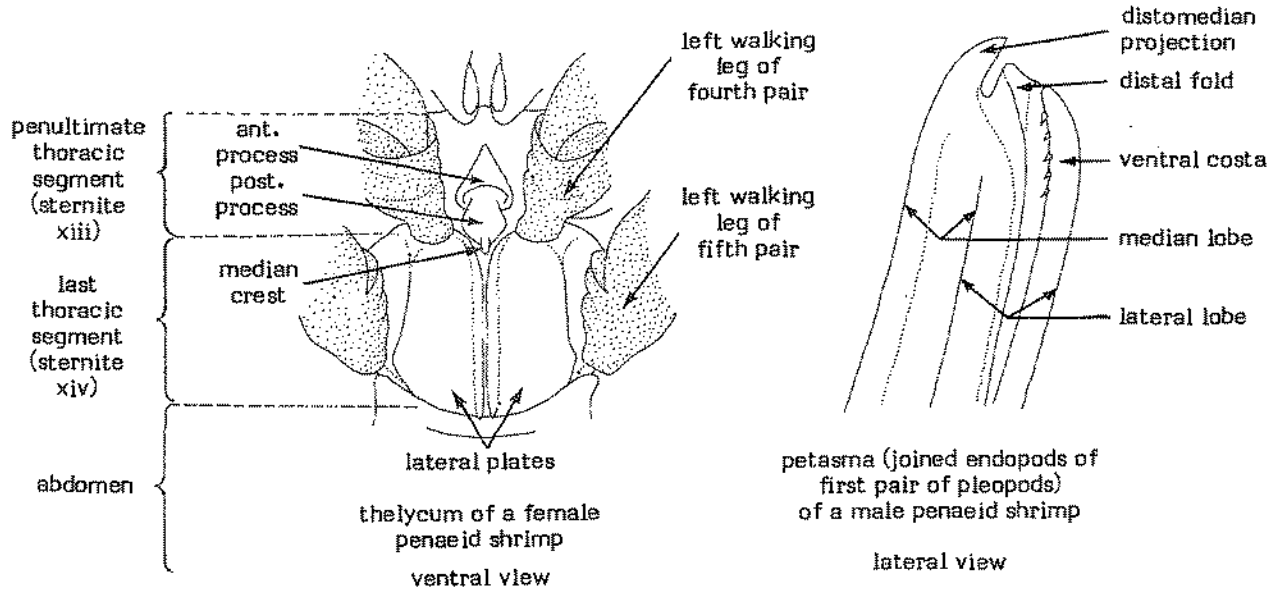
GENERAL REMARKS

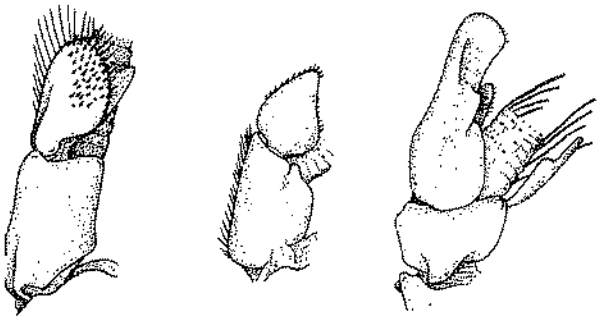
The shrimps constitute a large group of crustaceans varying in size from a few mm to about 35 cm long. Although nearly 2 500 species are known, only slightly less than 300 are of economic interest, and of these about 100 comprise most of the annual world shrimp catches (about 1 450 000 tons, 1978). The body of the shrimps is almost always laterally compressed, the rostrum usually compressed and toothed, and the abdomen long, longer than the carapace or head. The antennules, or first pair of feelers in most species bear a small scale or spine, the stylocerite, at their bases, and the antennal scales (scaphocerites) of the second pair of feelers, or antennae, are generally large and platelike. The pereiopods or legs are usually slender, but in some species, a single leg or pair of legs may be stout and some pereiopods end in pincers. The pleopods or abdominal appendages used for swimming, are well developed and, except in a few species, present on all five anterior abdominal segments.

Shrimps are widely distributed, occurring in marine, brackish, and freshwaters from the equator to the polar regions. Although the majority of the marine species occupy shallow or moderately deep water, some are found at depths of nearly 5 700 m; however, most of the commercial shrimps are taken on the continental shelves at depths less than 100 m. In the entire Eastern Atlantic, only five deepwater shrimps are exploited commercially and taken by trawlers at depths ranging from 250 to 800 m. Many shrimps are pelagic but the majority by far are benthic, living on a large variety of bottoms such as rock, mud, peat, sand, fragments of shells or mixtures of these materials. In addition, some species frequent coral reefs, and a few live in sponges and other invertebrates.

In most shrimps, the sexes are separate but certain species, such as Pandalus borealis, commonly first undergo a male phase and later are transformed into females. The paired reproductive organs are situated on each side and just below the heart: in the females the ovaries (which may extend posteriorly along the entire length of the abdomen) are connected by oviducts to openings on the basal article of the third pair of pereiopods. In the male, the spermiducts lead from the testes to terminal ampoules which open on, or adjacent to, the basal article (coxa) of the last pair of pereiopods.

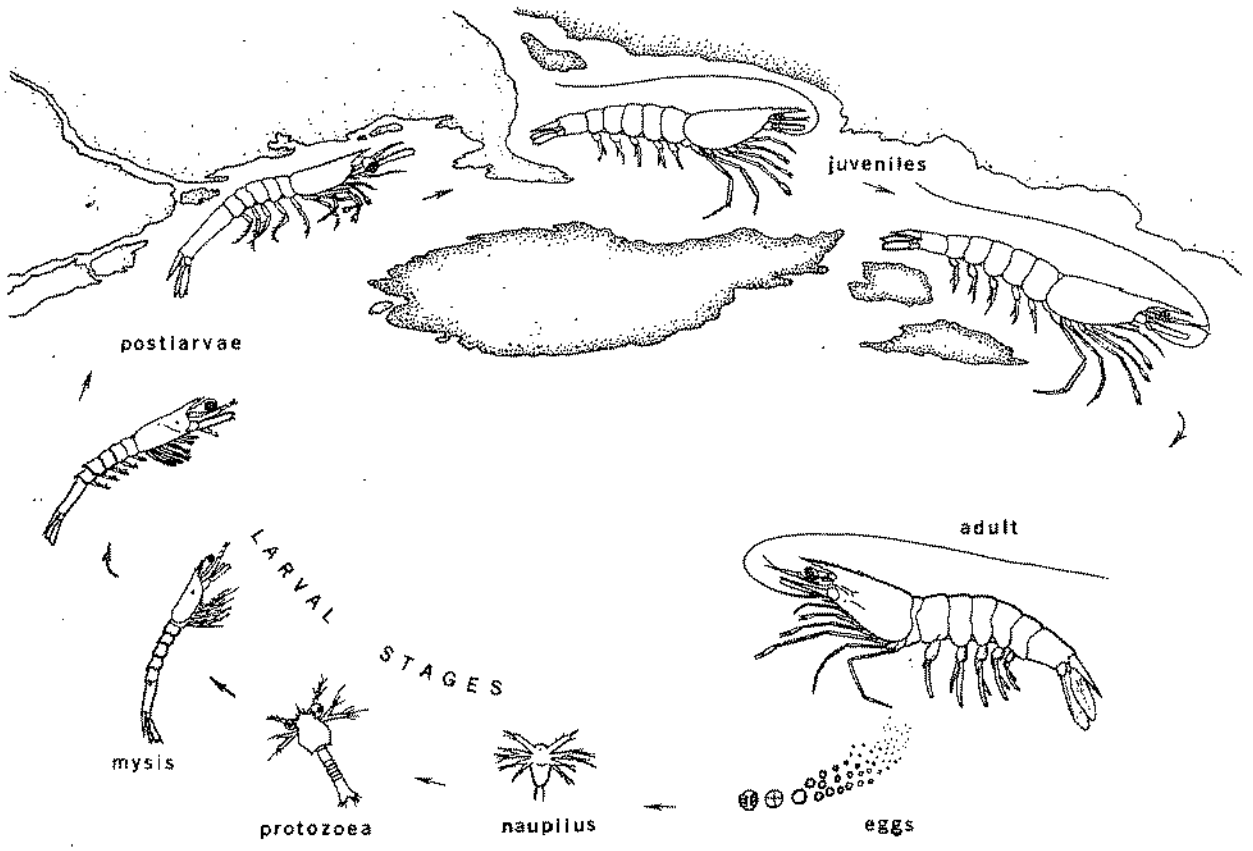
In some penaeidean shrimps the females possess sperm receptacles on the ventral side of the last thoracic segment (between the last pairs of pereiopods), where the males deposit the sacs carrying the sperm (spermatophores), whereas in others the females exhibit protuberances and grooves for the attachment of such sacs. Either genital modification is called the thelycum, and there the sperm remains until the eggs are released. In the males of Penaeidae there is a petasma formed by the longitudinally folded endopods of the first pair of pleopods. Most male shrimps bear an appendix masculina, a lappet borne on the endopod of the second pair of pleopods, the presence or absence of which constitutes a ready means for distinguishing males from females. In many shrimps an appendix interna (slender rod or blade) occurs adjacent to the appendix masculina; among carideans such a structure is also present on the third, fourth and fifth pairs of pleopods of both sexes.





various types of appendices masculinae
on endopods of second pair of pleopods

In the stenopodidean and caridean shrimps the female carries the eggs after extrusion, masses of them being fastened to the pleopods where they remain until they hatch at a relatively advanced larval stage or as juveniles. In contrast, in the penaeideans the eggs are not retained by the female, but released directly into the water, and the larvae undergo an extensive metamorphosis, the first part of a complex life cycle, which may require both oceanic and brackish waters. For example, the members of the genus Penaeus, the most valuable commercial shrimps, spawn offshore at depths of about 10 to 80 m. Eggs hatch within a few hours, releasing very small, simple larvae, the nauplii, the first of usually 11 larval stages, which include 5 nauplii, 3 protozoeae and 3 mysis.



Life-cycle of shrimps of the genus Penaeus

The larvae are planktonic and carried by currents toward the shore where they arrive as postlarvae; this occurs about 3 weeks after hatching when the animals are about 6 to 14 mm long and shrimplike in appearance. The postlarvae invade inshore, brackish waters, abandon their planktonic way of life and become bottom dwellers living in shallow littoral areas. In these rich nursery grounds they grow rapidly, develop into juveniles, and as size increases, move gradually back toward the mouths of bays or estuaries, where they become subadults. Soon the shrimps migrate offshore, continue growing, and finally, as adults, reach the spawning grounds, where the mature females spawn and the cycle is repeated; most shrimps in these grounds are less than a year old. However, the life cycle is more complex in some caridean freshwater shrimps: the mature females migrate toward the sea (or to mouths of estuaries) where they release the larvae which then migrate back to the rivers. Penaeidean shrimps are very prolific; for example, a single female of Penaeus setiferus, may produce as many as 500 000 eggs. Carideans, in contrast, produce a much smaller number - correlated with the fact that the females carry their eggs until hatching.

Most of the commercial species in the Eastern Central Atlantic belong to 4 penaeidean families: Solenoceridae, Aristeidae, Penaeidae and Sicyoniidae, and 6 caridean ones: Nematocarcinidae, Pasiphaeidae, Palaemonidae, Hippolytidae, Pandalidae and Crangonidae. The penaeideans are exploited mainly in tropical and subtropical waters, and the carideans in warm as well as temperate seas. The shrimp catch reported from (the enlarged) Fishing Area 34 in 1977 totalled about 28 000 tons (heads-on).

LIST OF FAMILIES OCCURRING IN THE AREA :

Code numbers are given for those families for which Identification sheets are included

PENAEIDEA

Solenoceridae	SOLENO
Aristeidae	ARIST
Penaeidae	PEN
Sicyonlidae	SICYON
Sergestidae	

STENOPODIDEA

Stenopodidae	

CARIDEA

Oplophoroidae	
Nematocarcinidae	NEMAT
Stylodactylidae	
Pasiphaeidae	PASI
Bresiliidae	
Disciadidae	
Eugonatonotidae	
Rhynchocinetidae	
Campylonotidae	
Palaemonidae	PALAEM
Gnathophyllidae	
Psalidopodidae	
Alpheidae	
Ogyrididae	
Hippolytidae	HIPPOL
Processidae	
Pandalidae	PANDL
Physetocarididae	
Glyphocrangonidae	
Crangonldae	CRANG

Adapted from I. Pérez-Farfante, in Fischer, (ed.): FAO Species Identification Sheets for Fishery Purposes, W.C.Atlantic, Fishing Area 31, 1978, by J.P. Lagardère, Antenne de la Station Marine d'Endoume, C.R.E.O., La Rochelle, France

Draft material reviewed by A. Crosnier, O.R.S.T.O.M., Paris, France and L.B. Holthuis, Rijksmuseum Van Natuurlijke Historie, Leiden, The Netherlands

ARIST

1981

FAO SPECIES IDENTIFICATION SHEETS

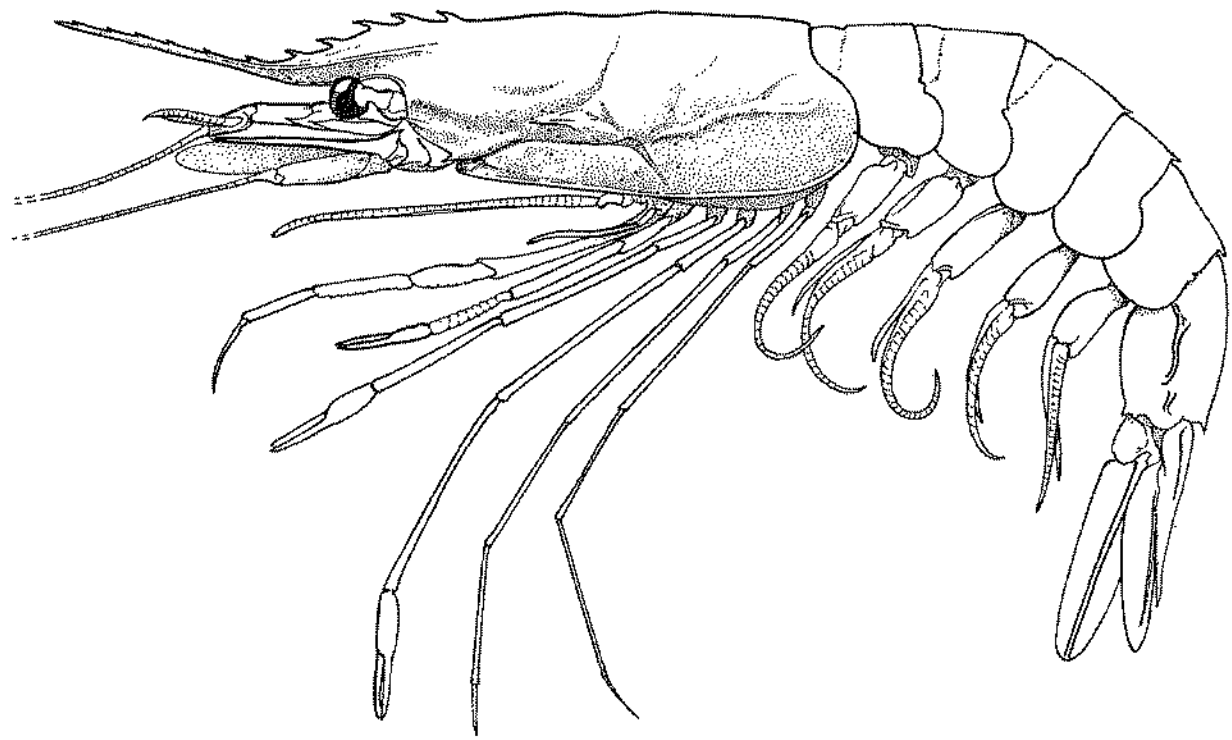
FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

ARISTEIDAE

Aristeid shrimps

Rostrum either short or long and needle-like. Eyestalks always with a tubercle at the middle of their inner margins or near base of cornea. Carapace without postorbital spines; cervical grooves long, extending almost to dorsal midline of carapace. Endopods of second pair of pleopods bearing (in males) an appendix masculina and an appendix interna, but no lateral projection. Two well developed arthrobranchs on penultimate thoracic segment. Telson with movable spines.

The species in this family usually inhabit deep waters. Some of them are actively fished because of their large size and high commercial value.



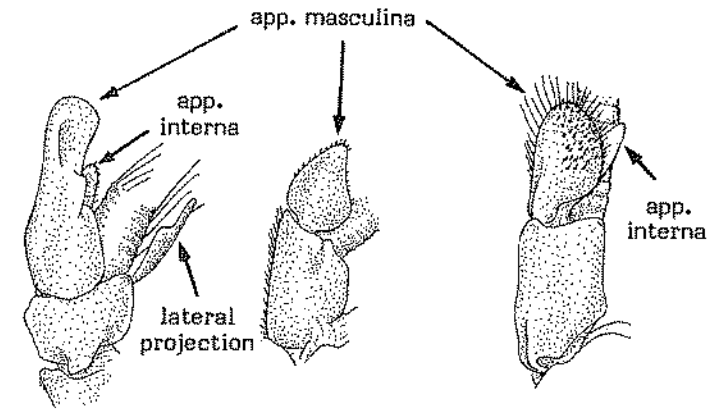
SIMILAR FAMILIES OCCURRING IN THE AREA:

Solenocerldae: postorbital spines present on carapace; endopods of second pair of pleopods (in males) with an appendix masculina, an appendlx interna and a lateral projection; telson with a fixed spine on each side of tip.

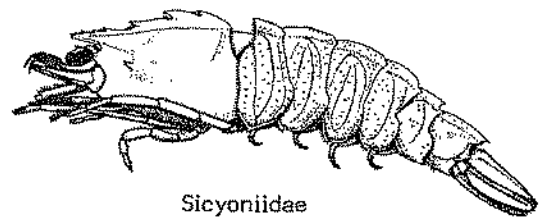
Penaeidae: eyestalks without tubercles on inner margins; cervical grooves short, ending well below dorsal midline of carapace; endopods of second pair of pleopods (in males) with an appendix masculina only; a single, well developed arthrobranch on base of penultimate thoracic segment (concealed under the carapace).

Sicyoniidae: body thick, stony in appearance, integument calcified; cervical grooves faint or absent; abdomen with deep grooves and numerous tubercles; third and fourth pairs of pleopods single-branched; endopods of second pair of pleopods (in males) with an appendix masculina only; a single, well developed arthrobranch on penultimate thoracic segment.

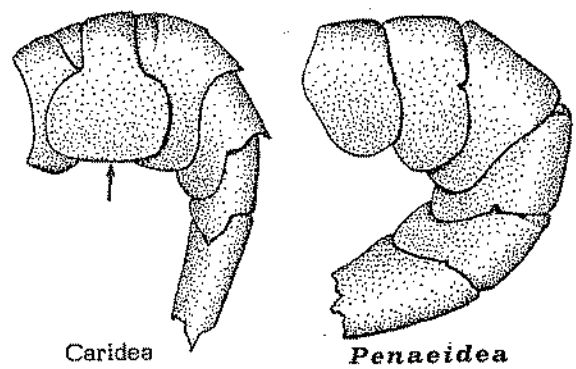
Caridean shrimps: pleura of second abdominal segment overlapping those of first and third segments; no pincers on third pair of perelopods.



endopod of second pleopod in male



Sicyoniidae



abdomen

KEY TO GENERA OCCURRING IN THE AREA:

1 a. Upper antennular flagellum long

2 a. At least the fifth and the sixth abdominal segments keeled dorsally

3 a. Dactyls of fourth and fifth pairs of pereiopods normal

3 b. Dactyls of fourth and fifth pairs of pereiopods very long and multiarticulated

2 b. Only the sixth abdominal segment keeled dorsally

4 a. Podobranchs present on third pair of maxillipeds and on three anterior pairs of pereiopods; telson with more than one pair of mobile spines ..... Bentheogennema

4 b. No podobranchs on third pair of maxillipeds or on pereiopods; telson with a single pair of mobile spines ..... Gennadas

1 b. Upper antennular flagellum short

5 a. Hepatic spine present ..... Aristaeomorpha

5 b. Hepatic spine absent

6 a. No epipods on fourth pair of pereiopods; keels on carapace faint ..... Aristeus

6 b. Epipods present on fourth pair of pereiopods; keels on carapace very conspicuous ..... Plesiopenaeus

LIST OF SPECIES OCCURRING IN THE AREA:

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

Aristaeomorpha foliacea (Risso, 1827)	ARIST Aris 1
Aristeus antennatus (Risso, 1816)	ARIST Arist 1
Aristeus varidens Holthuis, 1952	ARIST Arist 4
Bentheogennema intermedia (Bate, 1888)	
Benthesicymus bartletti Smith, 1882	
Benthesicymus brasiliensis Bate, 1881	
Benthesicymus hjorti Sund, 1920	
Benthesicymus iridescens Bate, 1881	
Benthonectes filipes Smith, 1885	
Gennadas bouvieri Kemp, 1909	
Gennadas brevirostris Bouvier, 1905	
Gennadas elegans (Smith, 1882)	
Gennadas scutatus Bouvier, 1906	
Gennadas talismani Bouvier, 1906	
Gennadas tinayrei Bouvier, 1906	
Gennadas valens (Smith, 1884)	
Plesiopenaeus armatus (Bate, 1881)	
Plesiopenaeus edwardsianus (Johnson, 1867)	ARIST Plesio 1

Prepared by J.P. Lagardère, Antenne de la Station Marine d'Endoume, C.R.E.O., La Rochelle France. Illustrations prepared by Messrs. Gaillard (Laboratoire de Zoologie du Muséum des Sciences Naturelles, Paris) and Opic (O.R.S.T.O.M., Paris)

Draft text and illustrations revised by A. Crosnier (Paris, France) and L.B. Holthuis (Leiden, The Netherlands)

ARIST Aris 1
1981

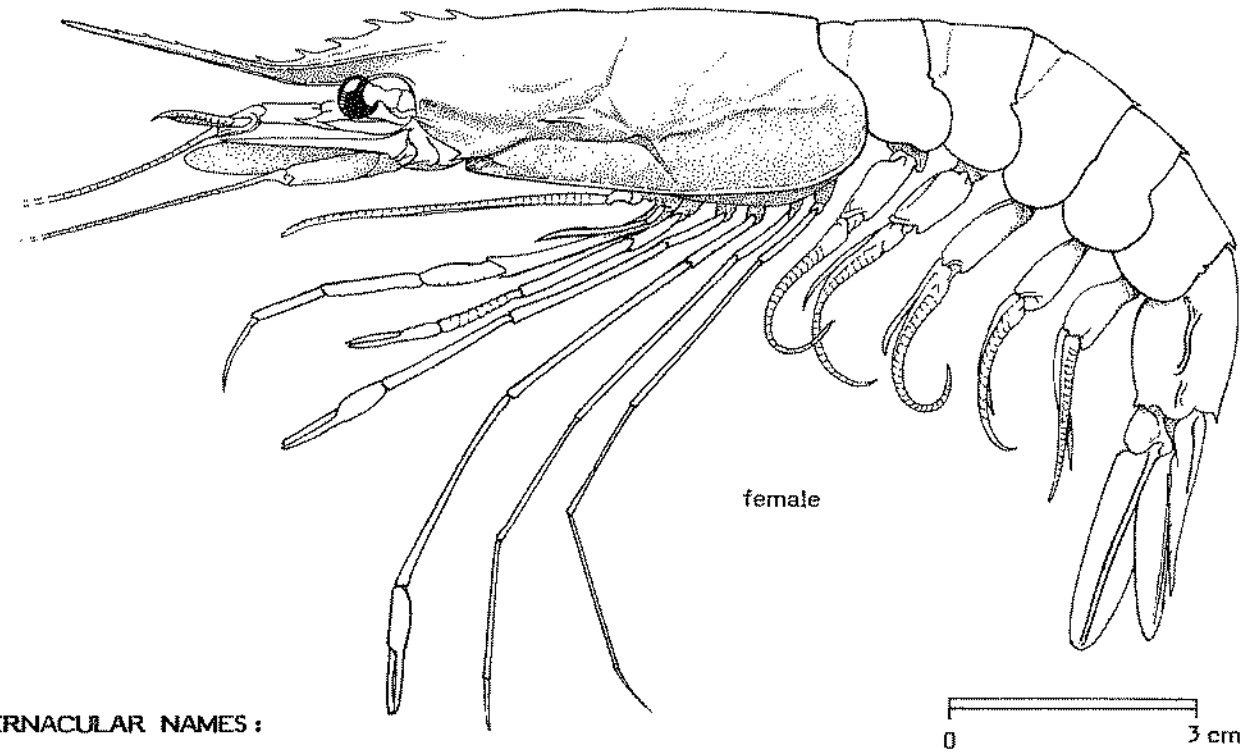
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : ARISTEIDAE

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

Aristaeomorpha foliacea (Risso, 1827)

OTHER SCIENTIFIC NAMES STILL IN USE : None

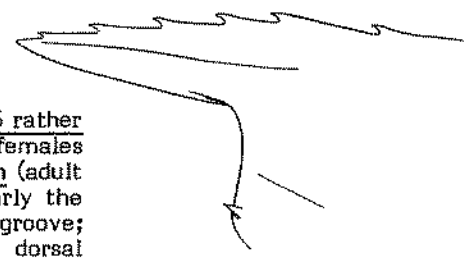


VERNACULAR NAMES :

FAO: En - Giant red shrimp
Fr - Gambon rouge
Sp - Gamba española

NATIONAL:

DISTINCTIVE CHARACTERS :


rostrum of male

Rostrum either long and bent upward, its dorsal margin bearing 5 or 6 rather stout teeth along its base, and some small denticles extending almost to tip (females and young males), or much shorter and bearing only the 5 or 6 basal teeth (adult males). Grooves and crests on carapace rather well developed, particularly the dorsal keel (postrostral crest), the antennal crest and the branchiocardiac groove; antennal and hepatic spines present. Abdomen slightly keeled along the dorsal midline of third segment, the keel becoming strongly developed on the following 3 segments (4 to 6); on all of the above 4 abdominal segments the keel ends posteriorly in a sharp point.

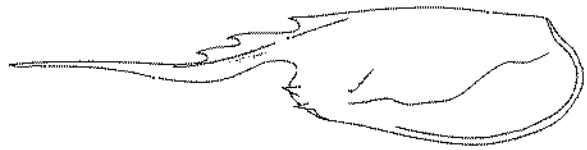
Colour: wine red with darker violet reflections on upper side of carapace.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Aristeus antennatus: rostrum with only 3 teeth at base (5 or 6 in A. foliacea); carapace smooth, without hepatic spine.

Aristeus varidens: only 3 dorsal teeth at base of rostrum; carapace slightly keeled but without hepatic spine; hind margin of third abdominal segment without a sharp point; colour nacreous white and violet.

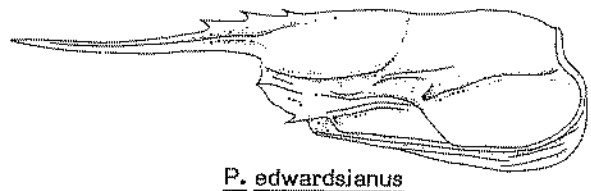
Plesiopenaeus edwardsianus: only 3 dorsal teeth at base of rostrum; carapace strongly keeled but without hepatic spine; exopods of second pair of maxillipeds very long and plumose (feathery); dorsal keel on abdomen starting from the second segment backward; colour bright red.



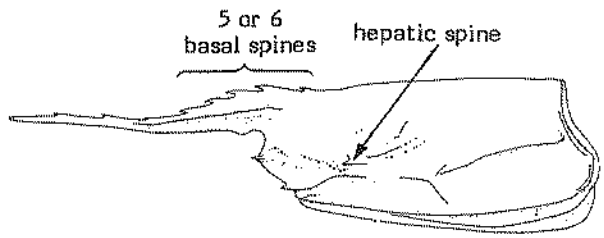
A. antennatus



A. varidens



P. edwardsianus



A. foliacea

SIZE:

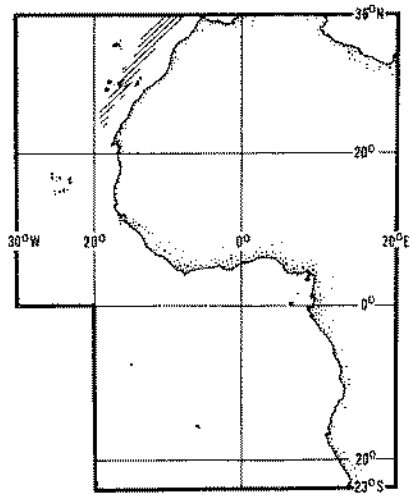
Maximum total length 22 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Found along the coasts of Morocco and South-western Sahara.

Although the nature of the substrate is apparently not a determining factor of its occurrence, this species is usually caught on muddy and sandy bottoms of the continental slope, (beds of Isidella elongata), most frequently at depths between 400 and 600 m. It seems to have preference for water around 13.5°C. The reproduction period is rather long, with a peak in summer.

A carnivorous species, feeding mainly on euphausiids and other species of crustaceans (mainly Decapoda Natantia).



PRESENT FISHING GROUNDS:

Trawlable grounds of the continental slope along the coasts of Morocco and Southwestern Sahara.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species. The estimated catch in 1977 was about 100 t.

Caught only with bottom trawls.

Marketed fresh or frozen.

ARIST Arist 1
1981

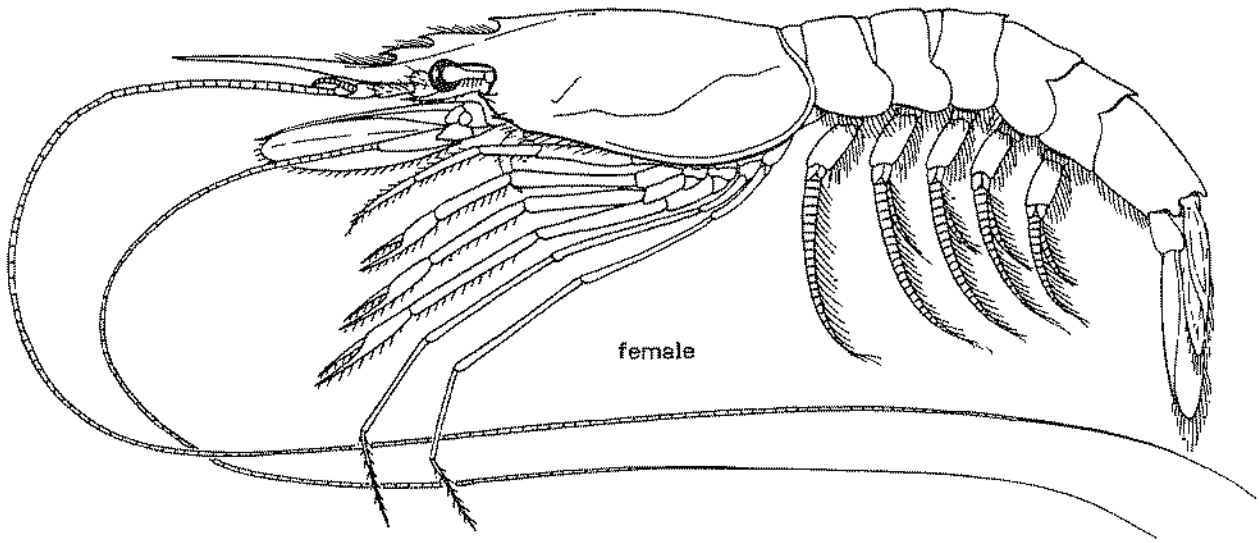
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : ARISTEIDAE

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

Aristeus antennatus (Risso, 1816)

OTHER SCIENTIFIC NAMES STILL IN USE : None





VERNACULAR NAMES :

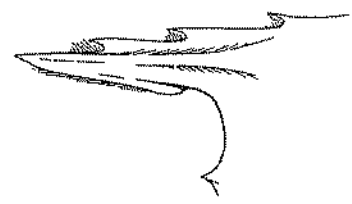
FAO: En - Blue and red shrimp
Fr - Crevette rouge
Sp - Gamba rosada

NATIONAL:

DISTINCTIVE CHARACTERS :

Rostrum with 3 dorsal teeth, short in males, but long, upward-bent and pointed in females. Carapace smooth, without an hepatic spine. Median dorsal keel on abdomen rudimentary on posterior half of segment 3 ending in a small, sharp tooth; the keel complete and much more conspicuous on segments 4 to 6, with the posterior tooth strong in segments 4 and 5, and somewhat reduced in segment 6. Exopods of second pair of maxillipeds short, barely reaching the distal end of endopod; carpus of fifth pair of pereiopods clearly longer than merus.

Colour: nacreous pink profusely interspread with violet on the dorsal regions of carapace and around the joints of abdominal segments.



rostrum of male

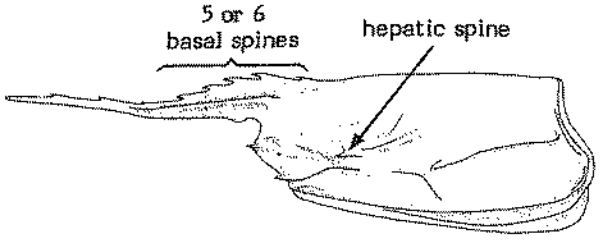
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Aristaeomorpha foliacea: more than 5 dorsal teeth at base of rostrum; hepatic spine present on carapace; colour uniform red.

Aristeus varidens: hind margin of third abdominal segment without a sharp median tooth; carapace slightly keeled; carpus of fifth pair of pereiopods slightly shorter than, or equal to, merus; colour nacreous white and violet.

Plesiopenaeus edwardsianus: carapace strongly keeled; exopods of second pair of maxillipeds elongated and feathery; dorsal keel present from the second abdominal segment backward; colour bright red.

Other species of shrimps: upper antennular flagellum long (short in Aristeus).



A. foliacea



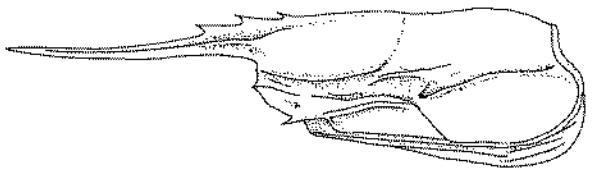
A. varidens

SIZE:

Maximum total length: 22 cm.



A. antennatus



P. edwardsianus

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

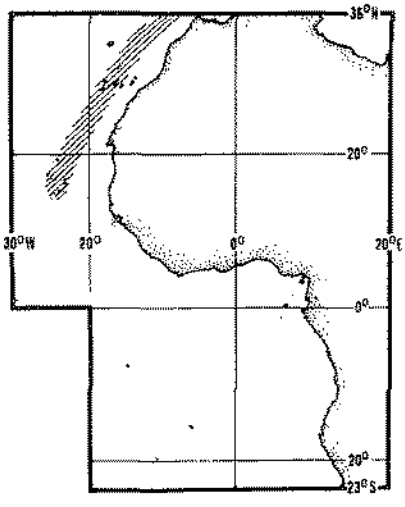
Within the area, this species occurs from the coast of Morocco to the Cape Verde Islands. Outside the area, it is present in the Mediterranean, extending northward up to Portugal.

Inhabits muddy bottoms on the continental slope, usually at depths between 400 and 800 m, at temperatures of around 13°C. Spawning takes place in summer.

The food consists of small benthic invertebrates, mainly crustaceans and polychaetes; also feeds on carrion.

PRESENT FISHING GROUNDS:

Continental slope along Morocco and South-western Sahara. Although the species is rather common, it seems to be nowhere abundant.



CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught with bottom trawls; trap fishing has not yielded satisfactory results.

Marketed fresh and frozen.

ARIST Arist 4

1981

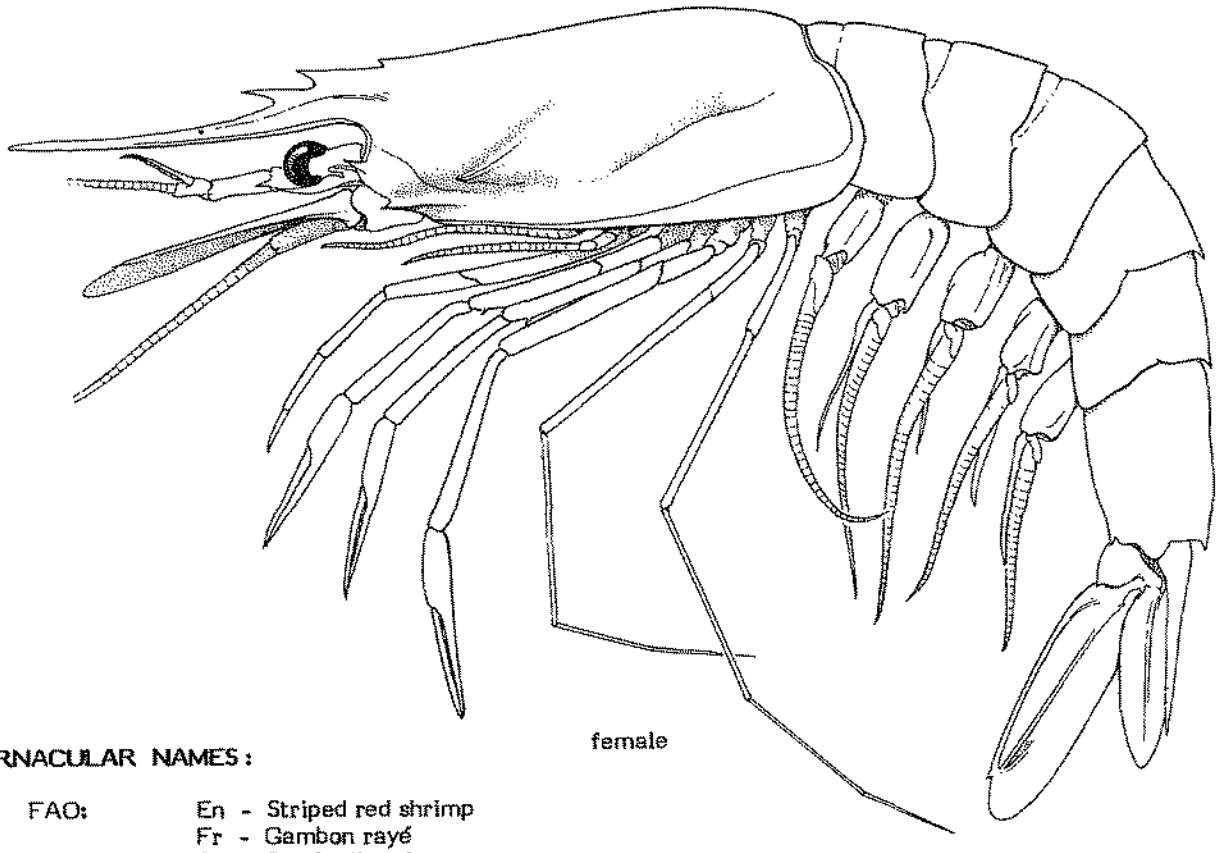
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : ARISTEIDAE

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

Aristeus varidens Holthuis, 1952

OTHER SCIENTIFIC NAMES STILL IN USE : None



female

VERNACULAR NAMES :

FAO: En - Striped red shrimp
Fr - Gambon rayé
Sp - Gamba listada

NATIONAL:



DISTINCTIVE CHARACTERS :

Rostrum with 3 dorsal teeth at base; in males it may be either as long as in females, or rather short (apparently in older individuals). Carapace slightly keeled but without an hepatic spine. Hind edge of third abdominal segment smooth dorsally. Carpus of fifth pair of pereiopods slightly shorter than, or equal in length to the merus.

Colour: nacreous white with blotches, violet-blue around abdominal joints and on cephalothorax.

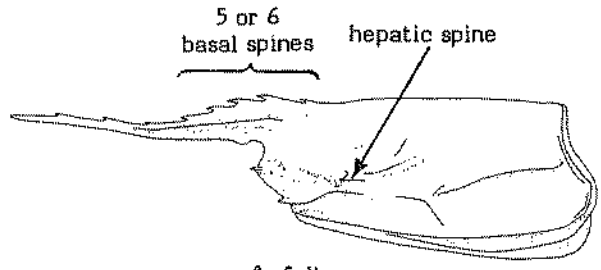
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Aristaeomorpha foliacea: more than 5 dorsal teeth at base of rostrum; hepatic spine present; colour uniformly red.

Aristeus antennatus: hind edge of third abdominal segment with a sharp median dorsal tooth; carapace smooth; carpus of fifth pair of perelopods clearly longer than the merus; colour nacreous pink and violet.

Plesiopenaeus edwardsianus: carapace strongly keeled; exopods of second pair of maxillipeds elongate and feathery; dorsal keel initiating from second abdominal segment backward; colour bright red.

Other species of shrimps: upper antennular flagellum long.

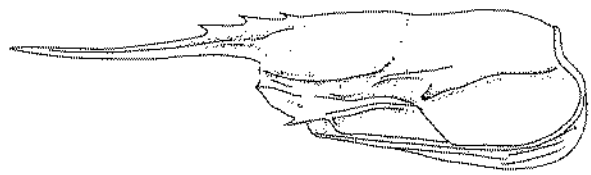


A. foliacea


A. antennatus

SIZE:

Maximum total length: 20 cm (females), 12 cm (males).


P. edwardsianus

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Known from Southwestern Sahara (24°N) southward to Angola (Cabinda) and Southwestern Africa (18°S).

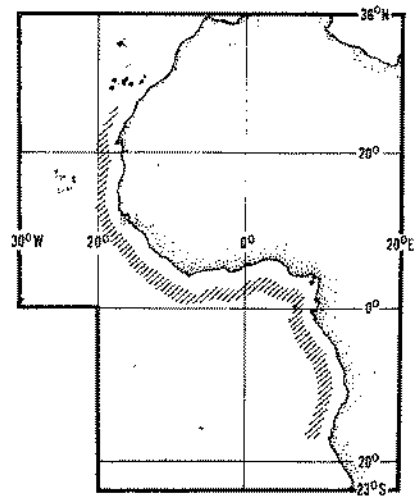
Young individuals are found at depths of 300 m and below, while adults occur between 400 and 600 m, on muddy bottoms. Best trawl yields are obtained at night, suggesting that the species may dig into the substrate by day. The life span is of about 2 years and reproduction begins at the end of the cold season.

Feeds on crustaceans, fishes and polychaete worms.


Aristeus varidens

PRESENT FISHING GROUNDS:

Continental slope off Senegal and Angola. This seems to be the most abundant of the deep-water shrimps off tropical West Africa.



CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught with bottom trawls.

Marketed mainly frozen.

ARIST Plesio 1

1981

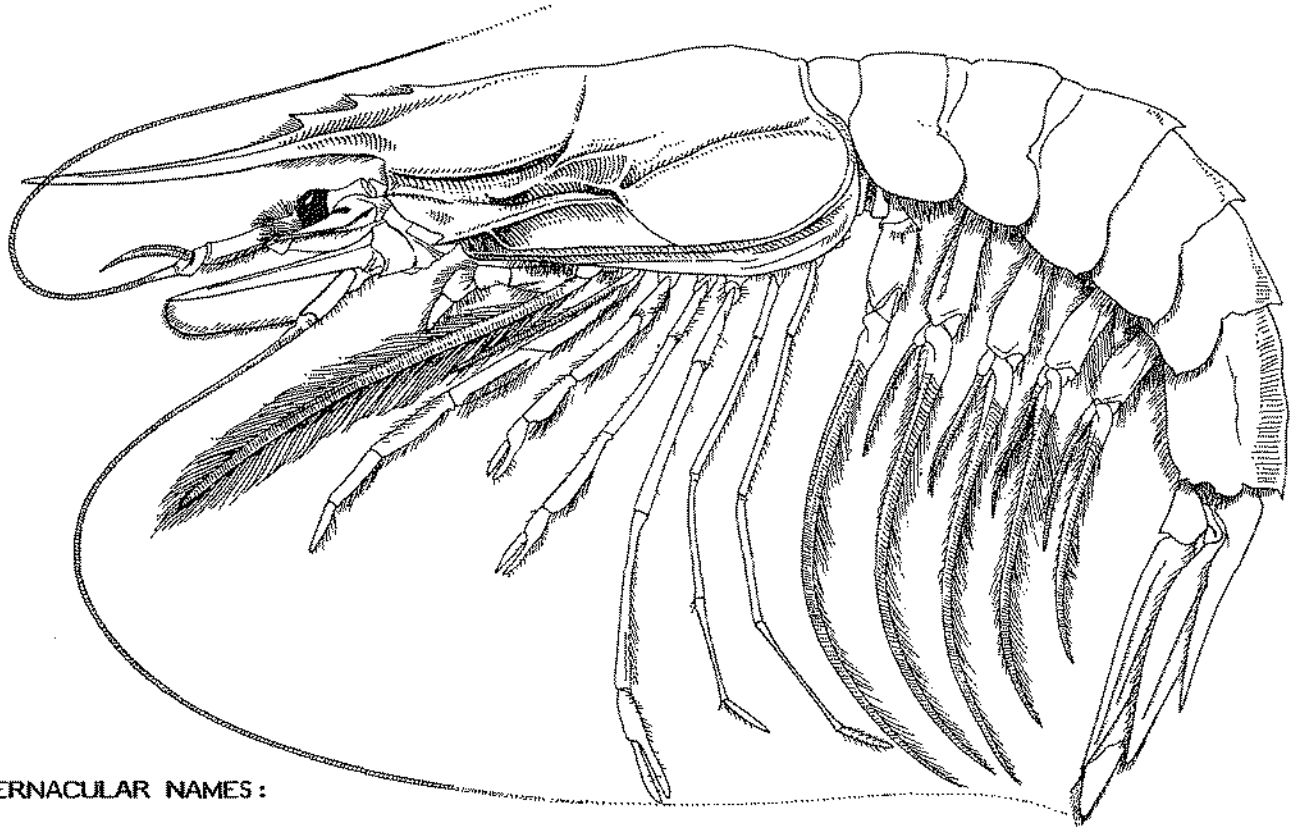
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : ARISTEIDAE

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

Plesiopenaeus edwardsianus (Johnson, 1867)

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES :

FAO: En - Scarlet shrimp
Fr - Gambon écarlat
Sp - Gamba carabinero

0 4 cm

NATIONAL:

DISTINCTIVE CHARACTERS :

Rostrum elongated and bent upward in females but short in adult males, with 3 dorsal teeth at base, the posterior one reduced and located on carapace, the two anterior ones on the convex portion of rostrum. Carapace with numerous conspicuous ridges, but without an hepatic spine. Abdomen with a longitudinal rudimentary ridge running mid-dorsally on the second segment, and a well developed ridge ending backward in a strong tooth on the four posterior segments. Exopods of second pair of maxillipeds about twice as long as the endopods, and fringed by a double row of long hair (setae) which give it a characteristic feathery appearance.

Colour: bright red, more intense on the carapace and the back of the abdomen.

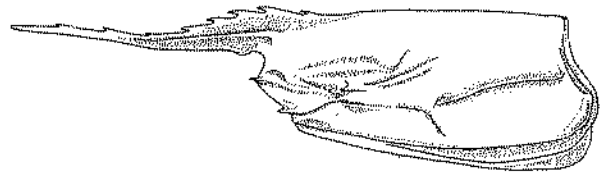
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Aristaeomorpha foliacea: more than 5 dorsal teeth at base of rostrum; hepatic spine present on carapace; colour uniform red.

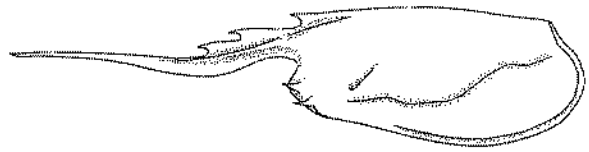
Aristeus antennatus: carapace smooth; carpus of fifth pair of pereiopods clearly longer than the merus (not longer than merus in P. edwardsianus); colour nacreous pink and violet.

Aristeus varidens: hind edge of third abdominal segment without a median dorsal tooth; carapace only slightly ridged; carpus of fifth pair of pereiopods slightly shorter than or as long as the merus; colour nacreous white and violet.

Other species of shrimps: upper antennular flagella long.



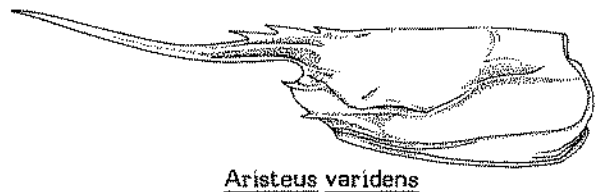
Aristaeomorpha foliacea



Aristeus antennatus

SIZE:

Maximum total length: 33 cm (females), 19 cm (males).



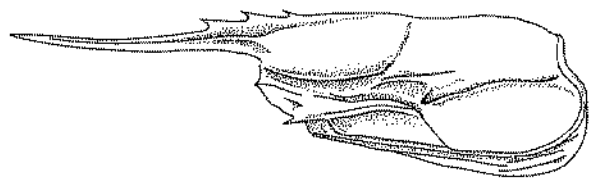
Aristeus varidens

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

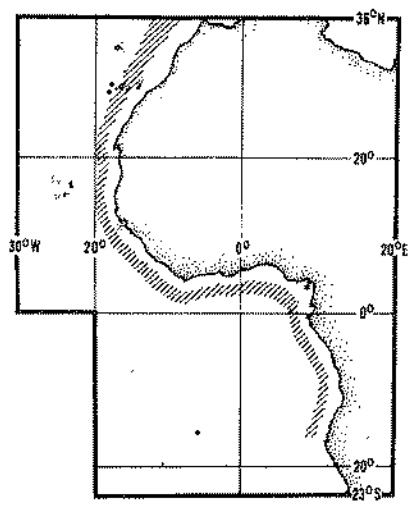
Found throughout the area, from Morocco to Angola.

Inhabits muddy bottoms of the continental slope. It is most frequently, and sometimes abundantly, found at depths between 400 and 900 m, preferring temperatures between 5 and 8°C.

A very active predator of other decapods (Pasiphaea sivado, Plesionika martia, Polycheles typhlops), fishes, and to a lesser extent, small crustaceans and cephalopods.



Plesiopenaeus edwardsianus



PRESENT FISHING GROUNDS:

Continental slope along the African coast.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics for this species are only reported by Spain (1 728 t in 1977, but only 58 t in 1978).

Caught with bottom trawls.

Marketed fresh and frozen.

CRANG

1981

FAO SPECIES IDENTIFICATION SHEETS

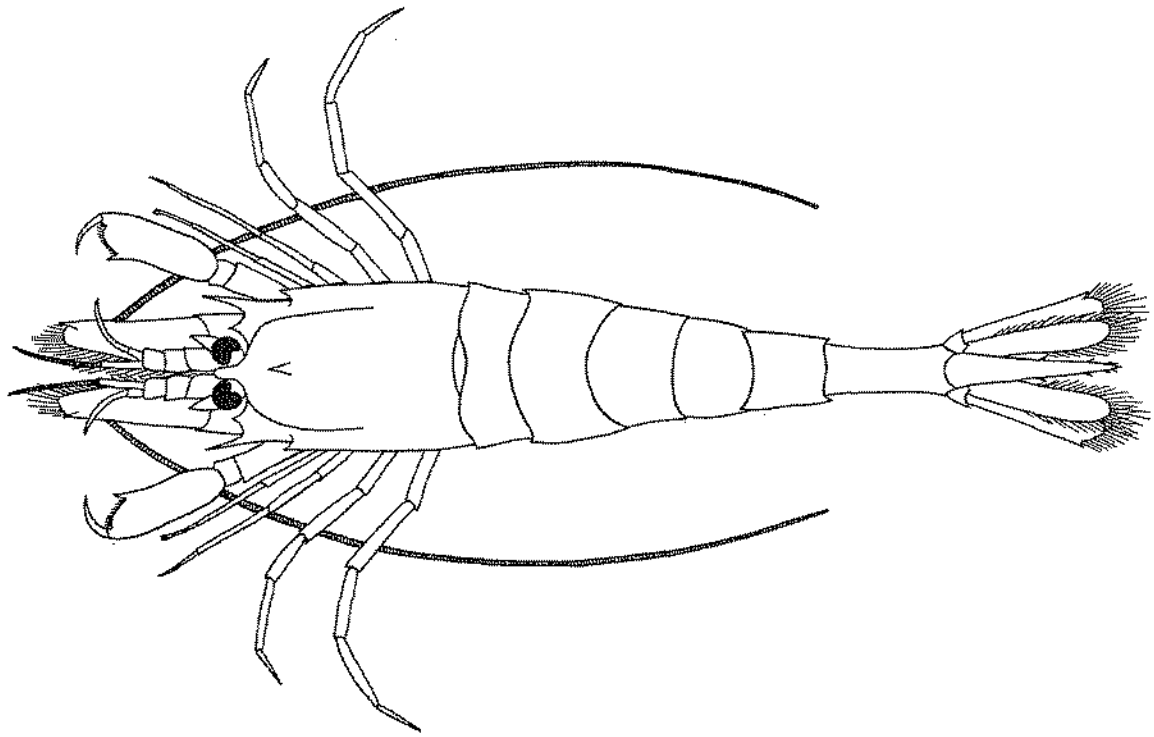
FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

CRANGONIDAE

Crangonid shrimps

As in the other families belonging to the Infraorder Caridea, the pleura of the second abdominal segment overlap those of first and third segments, and the third pair of pereiopods lack pincers. Body depressed. Rostrum, if present, generally short. First pair of pereiopods very strong, with incomplete pincers lacking the fixed finger.

Tiny to medium-sized shrimps, mostly from shallow waters, but some species occurring in depths well beyond 500 m.



SIMILAR FAMILIES OCCURRING IN THE AREA:

The crangonids are easily distinguished from other shrimp families exploited in the area by the distinctive characters underlined above.

FAO Sheets | CRANGONIDAE | Fishing Areas 34, 47 (in part)

LIST OF SPECIES OCCURRING IN THE AREA :

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

Crangon crangon (Linnaeus, 1758) CRANG Crang 1

Metacrangon jacqueti sp. bellmarleyi (Stebbing, 1914)

Pontocaris cataphracta (Olivi, 1792)
Pontocaris lacazei (Gourret, 1887)

Pontophilus aglyptus Crosnier, 1972
Pontophilus bidens Holthuis, 1951
Pontophilus challengeri Ortmann, 1893
Pontophilus gaillardi Crosnier, 1972
Pontophilus gracilis Smith, 1882
Pontophilus mbizi Holthuis, 1952
Pontophilus opici Crosnier, 1972
Pontophilus prionolepis Holthuis, 1952
Pontophilus sculptus (Bell, 1853)
Pontophilus spinosus (Leach, 1815)
Pontophilus talismani (Crosnier & Forest, 1973)
Pontophilus trispinosus (Hailstone, 1835)
Pontophilus wolfi Holthuis, 1951

Sabinea hystrix (A. Milne Edwards, 1881)

Prepared by J.P. Lagardère, Antenne de la Station Marine d'Endoume, C.R.E.O., La Rochelle, France.

Illustrations prepared by Messrs. Gaillard (Laboratoire de Zoologie du Muséum des Sciences Naturelles, Paris) and Opic (O.R.S.T.O.M., Paris)

Draft texts and illustrations revised by A. Crosnier (Paris, France) and L.B. Holthuis (Leiden, The Netherlands)

CRANG Crang 1

1981

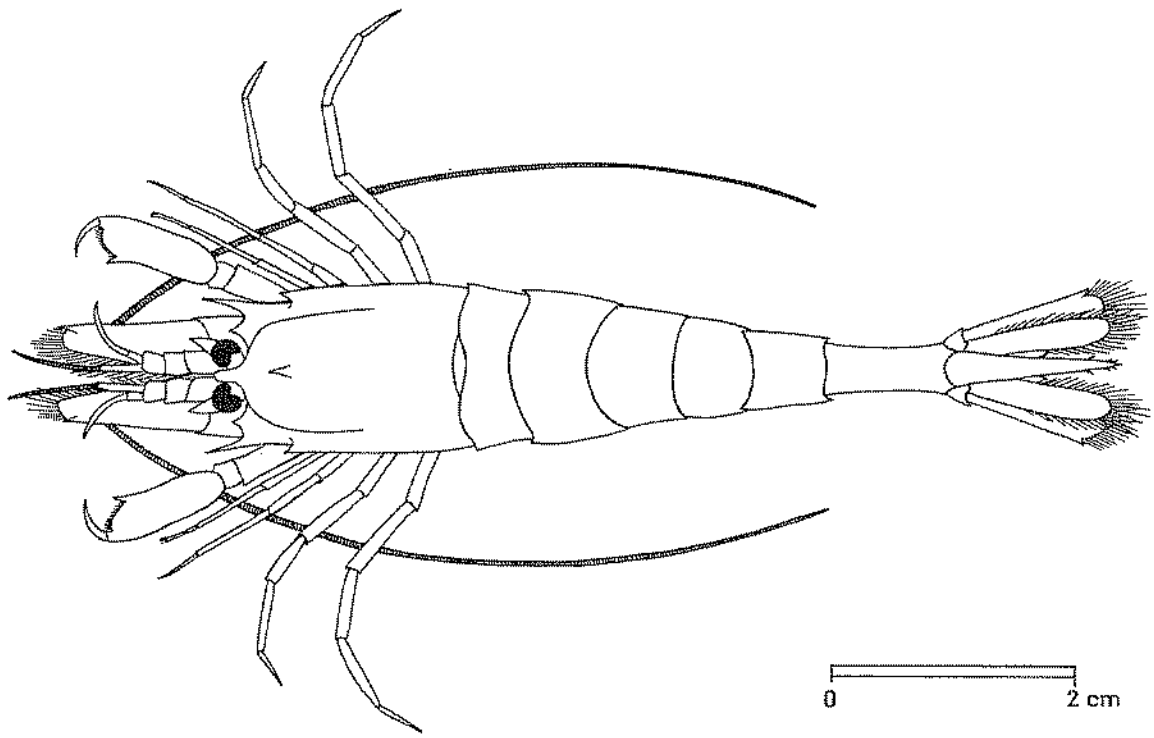
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : CRANGONIDAE

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

Crangon crangon (Linnaeus, 1758)

OTHER SCIENTIFIC NAMES STILL IN USE : Crangon vulgaris Fabricius, 1798



VERNACULAR NAMES:

FAO : En - Common shrimp
Fr - Crevette grise
Sp - Quisquilla

NATIONAL :

DISTINCTIVE CHARACTERS :

Body depressed (flattened dorso-ventrally). Viewed from above, the carapace is sub-rectangular bearing 3 spines (2 hepatic and 1 median) located on a transverse line through its anterior fourth; rostrum very short, rather broad at base, rounded at apex, not extending beyond the eyes which are short and globular; antennal scale (scaphocerite) with outer margin straight and ending in a strong tooth projecting beyond the anterior margin of the scale. Merus in first pair of pereiopods bearing a strong tooth on its inner margin.

Colour: a more or less dark uniform grey, sometimes slightly greenish or yellowish, with dark brown dots.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

The single median spine on the carapace as well as the characteristic shape of the antennal scale easily distinguish Crangon crangon from other species of Crangonidae occurring in the area.

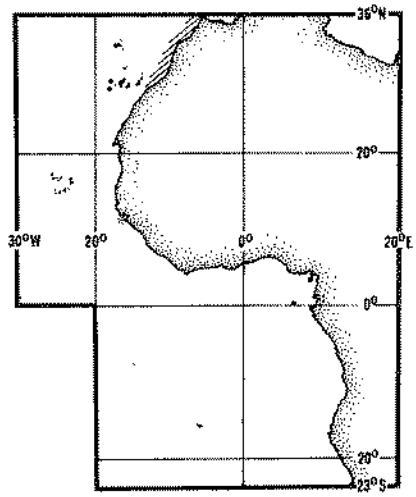
Shrimps belonging to other families exploited within the area have a laterally compressed body.

SIZE:

Maximum total length: 8.9 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

In the area it is found only along the coast of Morocco. Elsewhere, in the Mediterranean and the Black Sea and along the Atlantic coast of Europe up to the White Sea.



Usually found on fine sand or slightly muddy sand from the shore to about 50 m depth; within this depth range, the species carries out important seasonal migrations. Growth, sexual maturity, spawning and incubation periods are all strongly influenced by temperature and salinity changes and differ considerably from one geographic area to another. The number of eggs per female in each spawn varies from 1 500 to 15 000. The species lives five years at most but reaches commercial size after 2 years.

Feeds on small benthic organisms (small crustaceans, annelids and molluscs) as well as on discards from the fishery.

PRESENT FISHING GROUNDS:

Coastal waters near estuaries off Morocco.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

The catch reported for this species in the area totalled 18 280 t in 1978 (Spain only).

Caught mainly with bottom trawls.

Marketed fresh and cooked/frozen.

HIPPOL

1981

FAO SPECIES IDENTIFICATION SHEETS

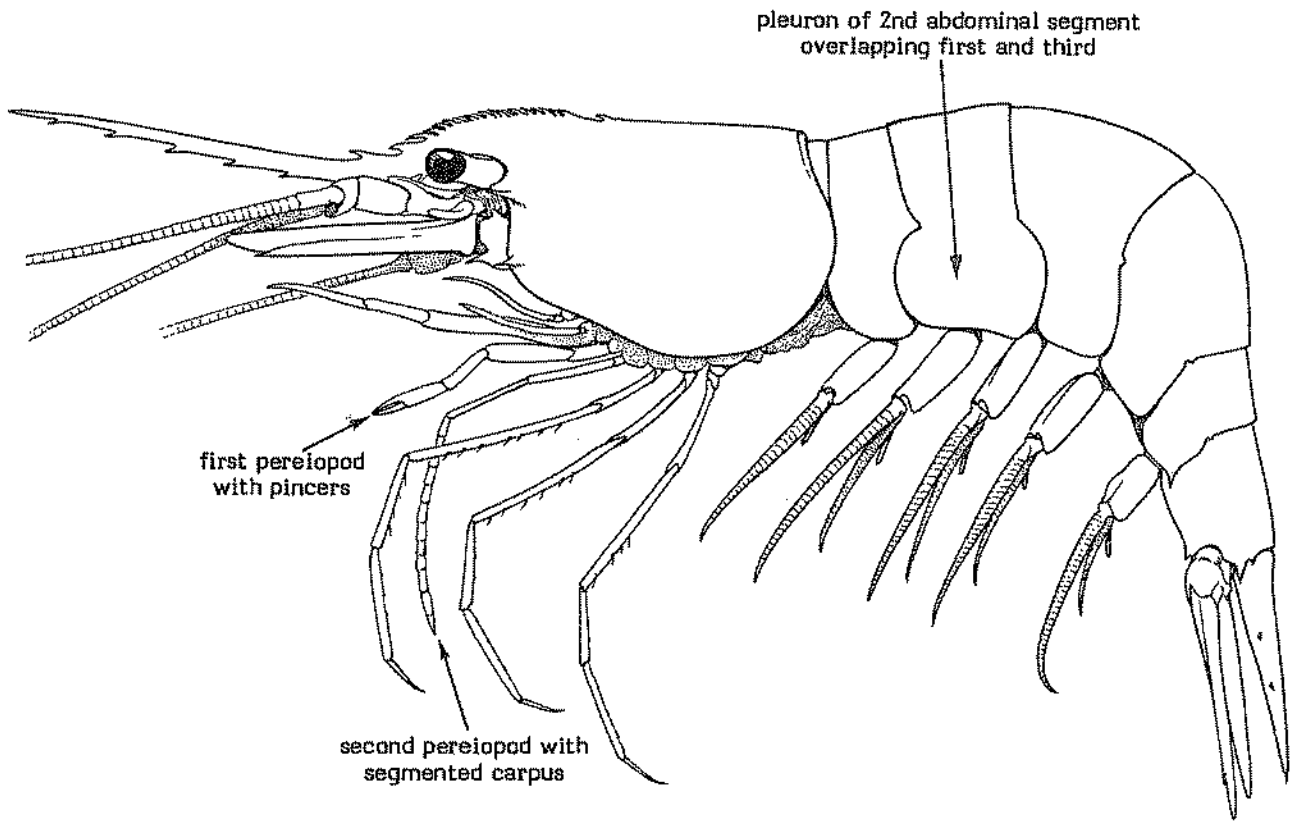
FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

HIPPOLYTIDAE

Cock shrimps

As in the other families belonging to the Infraorder Caridea, the pleura of the second abdominal segment overlap those of the first and third segments, and the third pair of pereiopods lack pincers. First pair of pereiopods ending in clearly distinct pincers and broader than second pair, but not considerably enlarged; carpus of second pair divided into several articles.

This family includes a good number of fairly small marine representatives; only one species from the West African coast is of some interest to fisheries.



SIMILAR FAMILIES OCCURRING IN THE AREA:

Nematocarcinidae: first 2 pairs of pereiopods similar, their carpus unsegmented, the following pairs notably elongate.

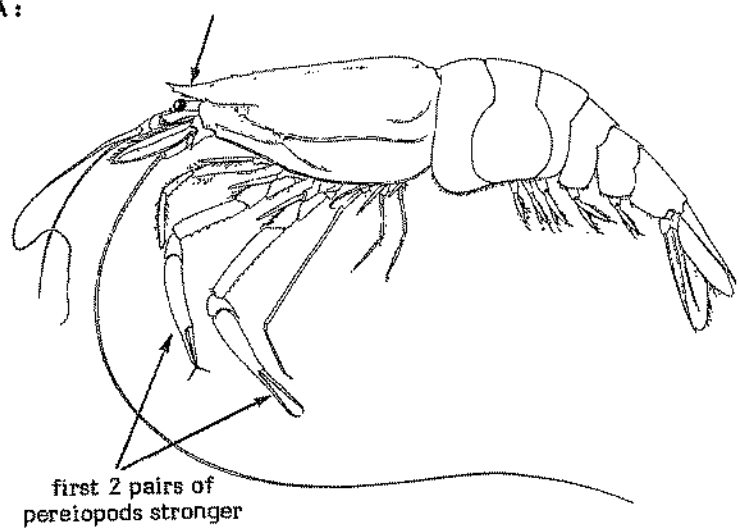
Pasiphaeidae: body strongly compressed; rostrum short; pereiopods of first 2 pairs much larger and stronger than those of following pairs.

Palaemonidae: first pair of pereiopods with small pincers; second pair much better developed and bearing strong pincers, their carpus unsegmented.

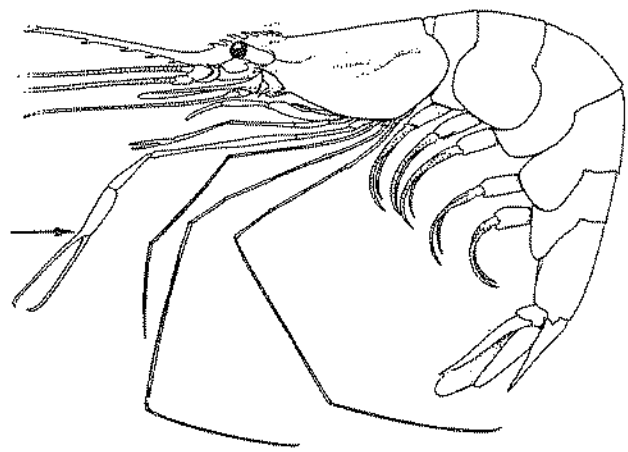
Pandalidae: first pair of pereiopods with very small or no pincers; carpus in second pair segmented.

Crangonidae: first pair of pereiopods very robust with incomplete pincers lacking the fixed finger; body depressed.

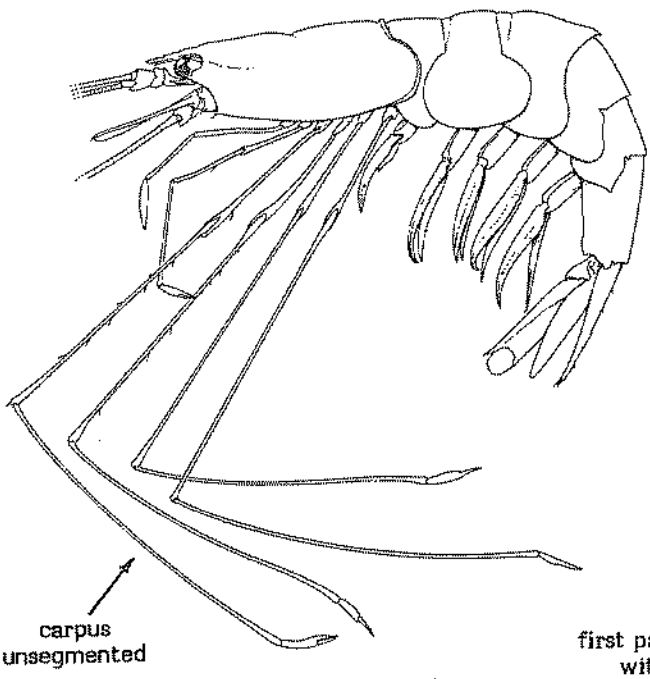
Penaeidean shrimps: pleura of second abdominal segment not overlapping those of first segment; the 3 first pairs of pereiopods ending in pincers.



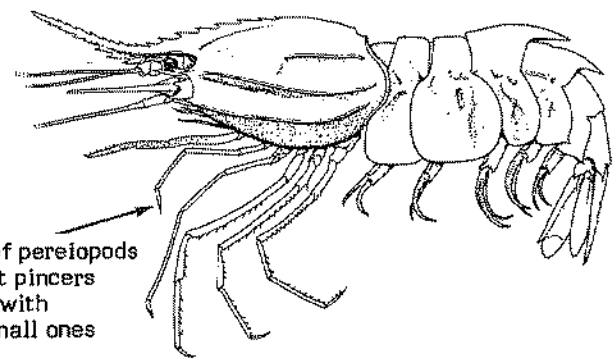
Pasiphaeidae



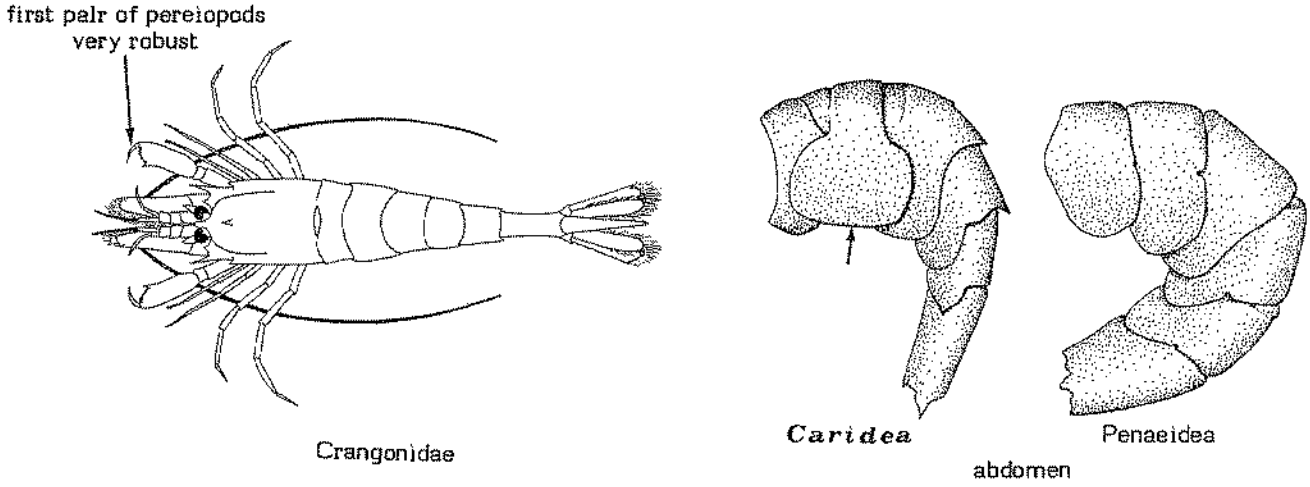
Palaemonidae



Nematocarcinidae



Pandalidae



LIST OF SPECIES OCCURRING IN THE AREA :

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

Bythocaris cosmetops Holthuis, 1951

Eualus lebourae Holthuis, 1951
Eualus gracilipes Crosnier & Forest, 1973

Exhippolysmata hastatoides (Balss, 1914) HIPPOL Exhip 3

Hippolysmata grabhami Gordon, 1953

Hippolyte coerulescens (Fabricius, 1775)
Hippolyte inermis Leach, 1815
Hippolyte leptocerus (Heller, 1863)
Hippolyte longirostris (Czerniavsky, 1868)
Hippolyte palliola Kensley, 1970

Latreutes fucorum (Fabricius, 1798)
Latreutes parvulus (Stimpson, 1866)

Ligur ensiferus (Risso, 1816)

Lysmata seticauda (Risso, 1816)
Lysmata stenolepis Crosnier & Forest, 1973
Lysmata uncicornis Holthuis & Maurin, 1952

Merhippolyte ancistrola Crosnier & Forest, 1973

Thoralus cranchii (Leach, 1817)

Trachycaris restricta (A. Milne Edwards, 1878)

Prepared by J.P. Lagardère, Antenne de la Station Marine d'Endoume, C.R.E.O., La Rochelle, France.

Illustrations prepared by Messrs. Gaillard (Laboratoire de Zoologie du Muséum des Sciences Naturelles, Paris) and Opic (O.R.S.T.O.M., Paris)

Draft texts and illustrations revised by A. Crosnier (Paris, France) and L.B. Holthuis (Leiden, The Netherlands)

HIPPOL Exhip 3

1981

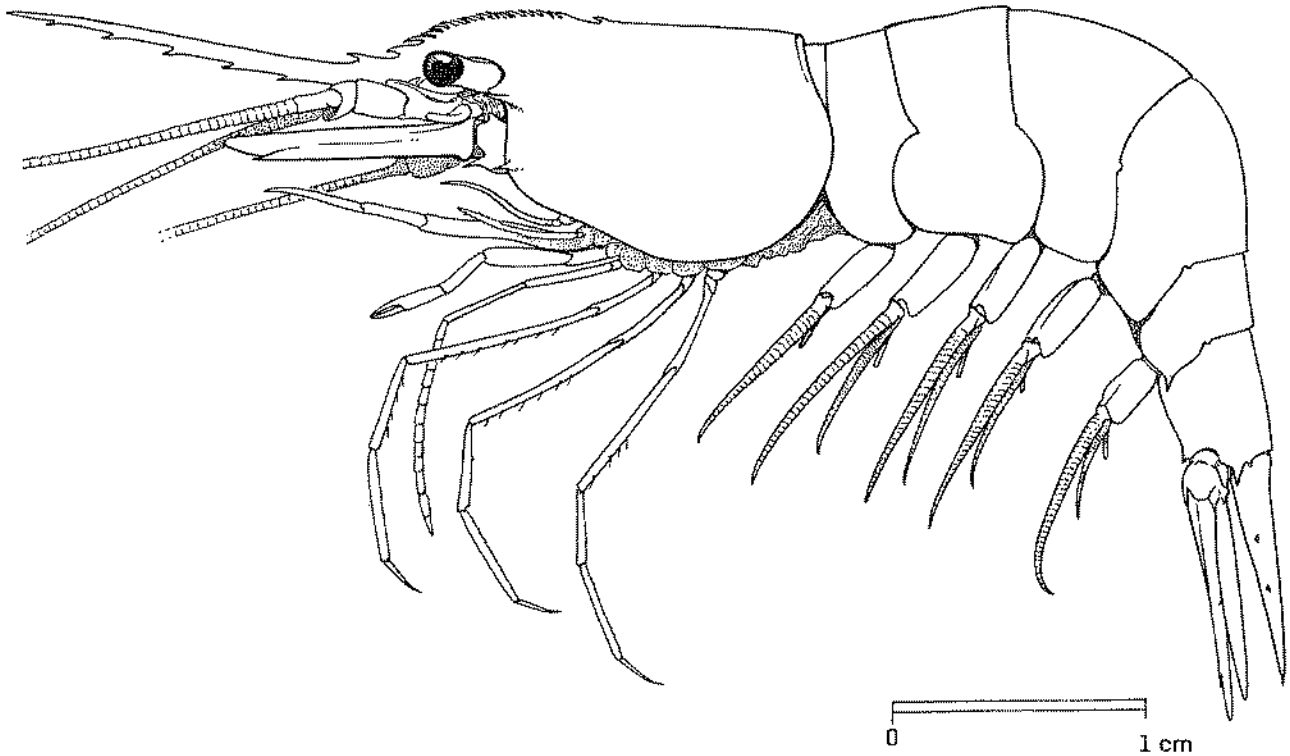
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : HIPPOLYTIDAE

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

Exhippolysmata hastatoides (Balss, 1914)

OTHER SCIENTIFIC NAMES STILL IN USE : Hippolysmata hastatoides Holthuis, 1947



VERNACULAR NAMES:

FAO : En - Companion shrimp
Fr - Bouc compagnon
Sp - Camarón compañero

NATIONAL :

DISTINCTIVE CHARACTERS :

Rostrum styliform, with a dorsal crest bearing 18 to 20 teeth increasing in size from back to front; the crest is followed by an isolated spine located just in front of a small tubercule; ventral margin of rostrum armed with 7 or 8 teeth; second pair of pereiopods slender, their carpus divided into 13 articles, the following pairs with mobile spines on the merus and a short dactyl. Telson ending in a pointed tip flanked by a movable spine on either side, its lateral margins with long hair and 2 pairs of movable spines.

Colour: whitish.

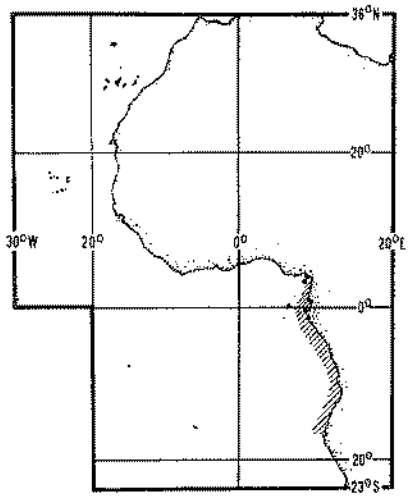
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Nematopalaemon hastatus (Family Palaemonidae): pincers present on the first 2 pairs of pereiopods (only on first pair in E. hastatoides) and carpus of second pair unsegmented.

SIZE :

Maximum total length: about 7 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :



West African coast from Sierra Leone to Angola.

Inhabits coastal and estuarine waters, to about 15 m depth on sand and mud bottoms.

PRESENT FISHING GROUNDS :

Coastal and estuarine areas.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species, but catches are doubtless very small, the species being only of limited local interest; in Nigeria it is reported to be caught in somewhat larger quantities (several hundred tons annually) combined with Nematopalaemon hastatus.

Caught mainly with beach seines.

Marketed fresh and smoked.

NEMAT

1981

FAO SPECIES IDENTIFICATION SHEETS

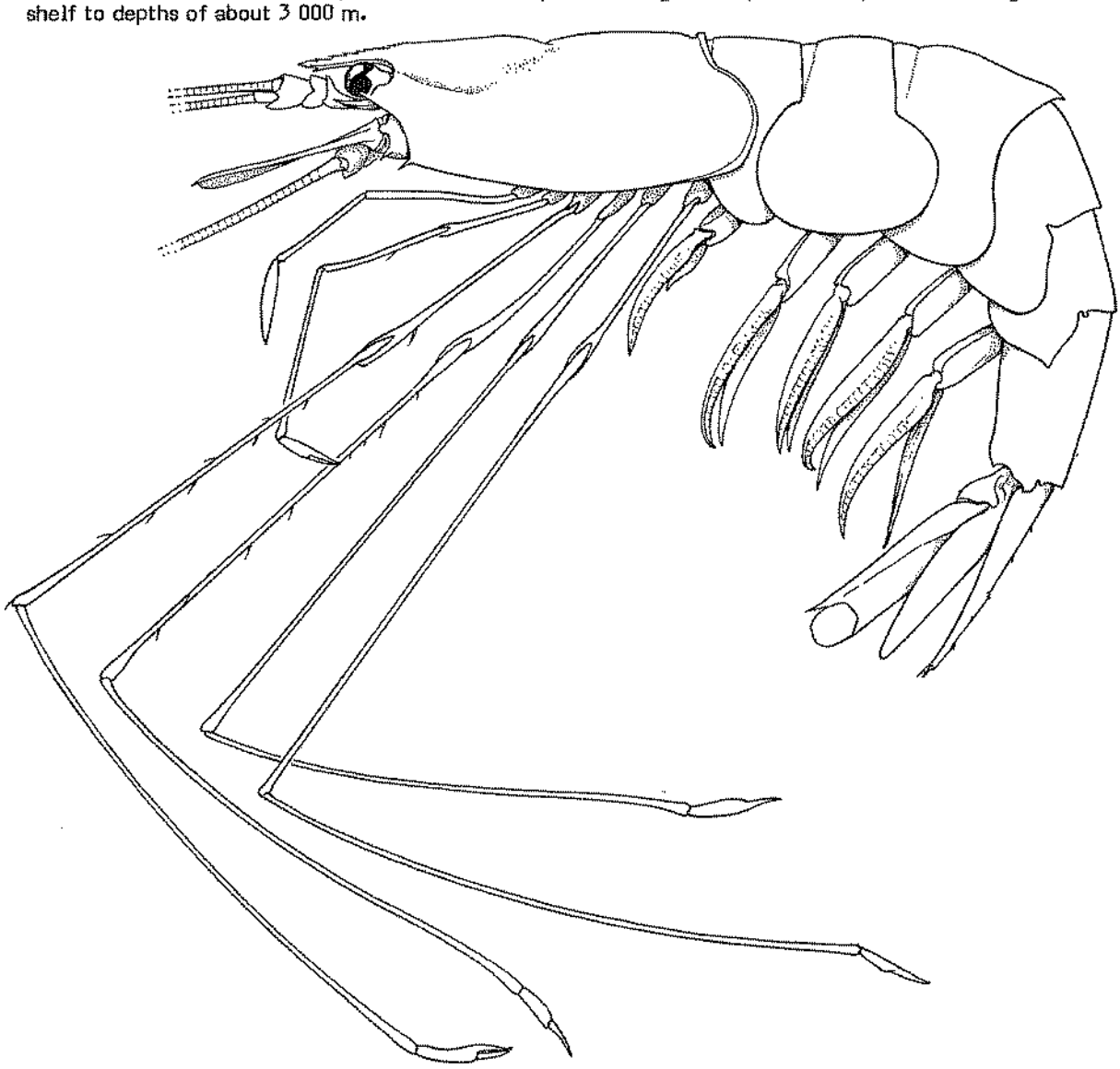
FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

NEMATOCARCINIDAE

Spider shrimps

As in the other families belonging to the Infraorder Caridea, the pleura of the second abdominal segment overlap those of first and third segments, and the third pair of pereiopods lack pincers. First two pairs of pereiopods similar, with an unsegmented carpus, and ending in pincers; last three pairs (sometimes also the second) extremely elongate; exopods present on pereiopods 1 to 4.

Small- to medium-sized, rather soft shrimps occurring in deeper waters, from the edge of the continental shelf to depths of about 3 000 m.



SIMILAR FAMILIES OCCURRING IN THE AREA:

Pasiphaeidae: body strongly compressed; first 2 pairs of pereiopods much larger and stronger than those of following pairs.

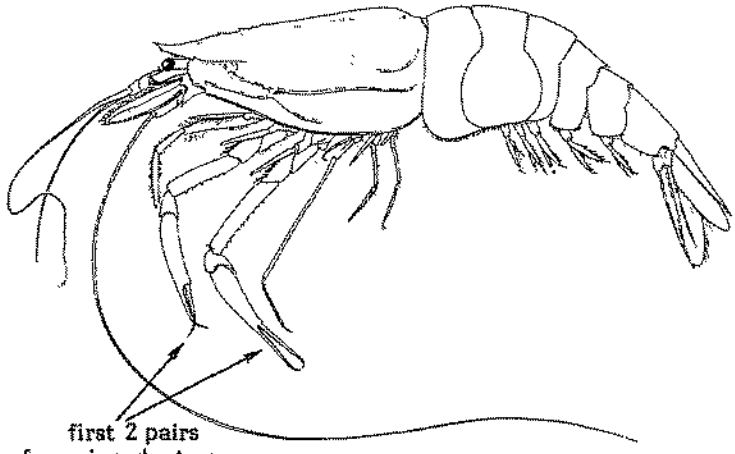
Palaemonidae: first pair of pereiopods with small pincers; second pair much better developed and bearing strong pincers.

Hippolytidae: first pair of pereiopods rather robust, ending in well developed pincers; carpus in second pair segmented.

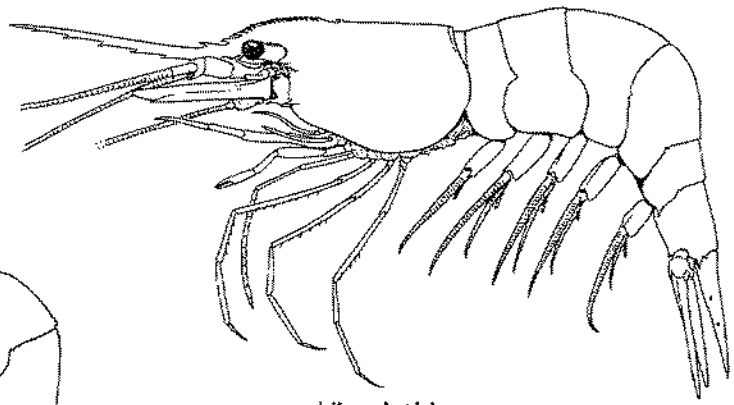
Pandalidae: pincers of first pair of pereiopods very small or absent; carpus in second pair segmented.

Crangonidae: first pair of pereiopods very robust with incomplete pincers lacking the fixed finger; body depressed.

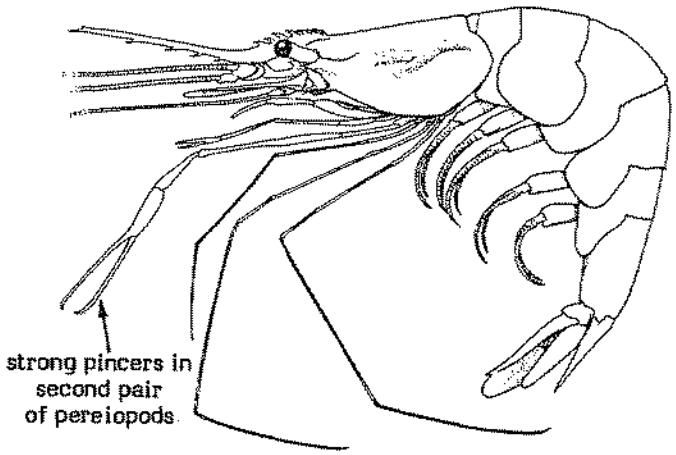
Penaeidean shrimps: pleura of second abdominal segment not overlapping those of first segment; the 3 first pairs of pereiopods ending in pincers.



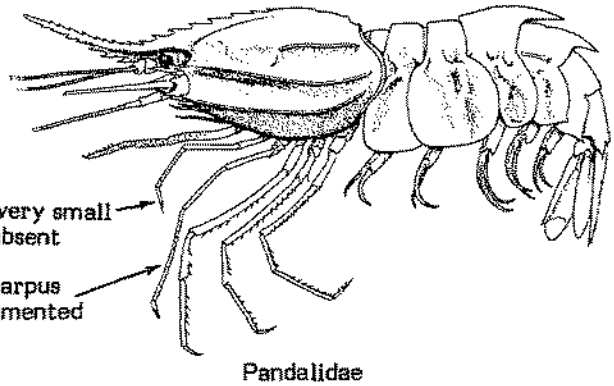
Pasiphaeidae



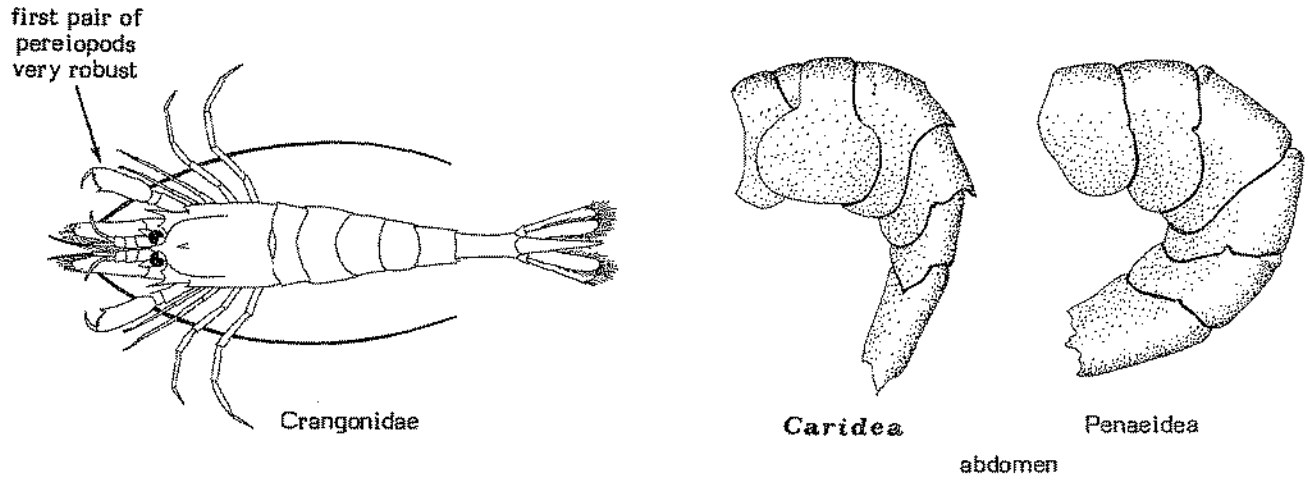
Hippolytidae



Palaemonidae



Pandalidae



LIST OF SPECIES OCCURRING IN THE AREA :

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

Nematocarcinus acanthitelsonis L.H. Pequegnat	
Nematocarcinus africanus Crosnier & Forest, 1973	NEMAT Nemat 1
Nematocarcinus ensifer (Smith, 1882)	
Nematocarcinus exilis (Bate, 1881)	
Nematocarcinus gracilipes Filhol, 1884	

Prepared by J.P. Lagardère, Antenne de la Station Marine d'Endoume, C.R.E.O., La Rochelle, France.

Illustrations prepared by Messrs. Gaillard (Laboratoire de Zoologie du Muséum des Sciences Naturelles, Paris) and Opic (O.R.S.T.O.M., Paris)

Draft texts and illustrations revised by A. Crosnier (Paris, France) and L.B. Holthuis (Leiden, The Netherlands)

NEMAT Nemat 1

1981

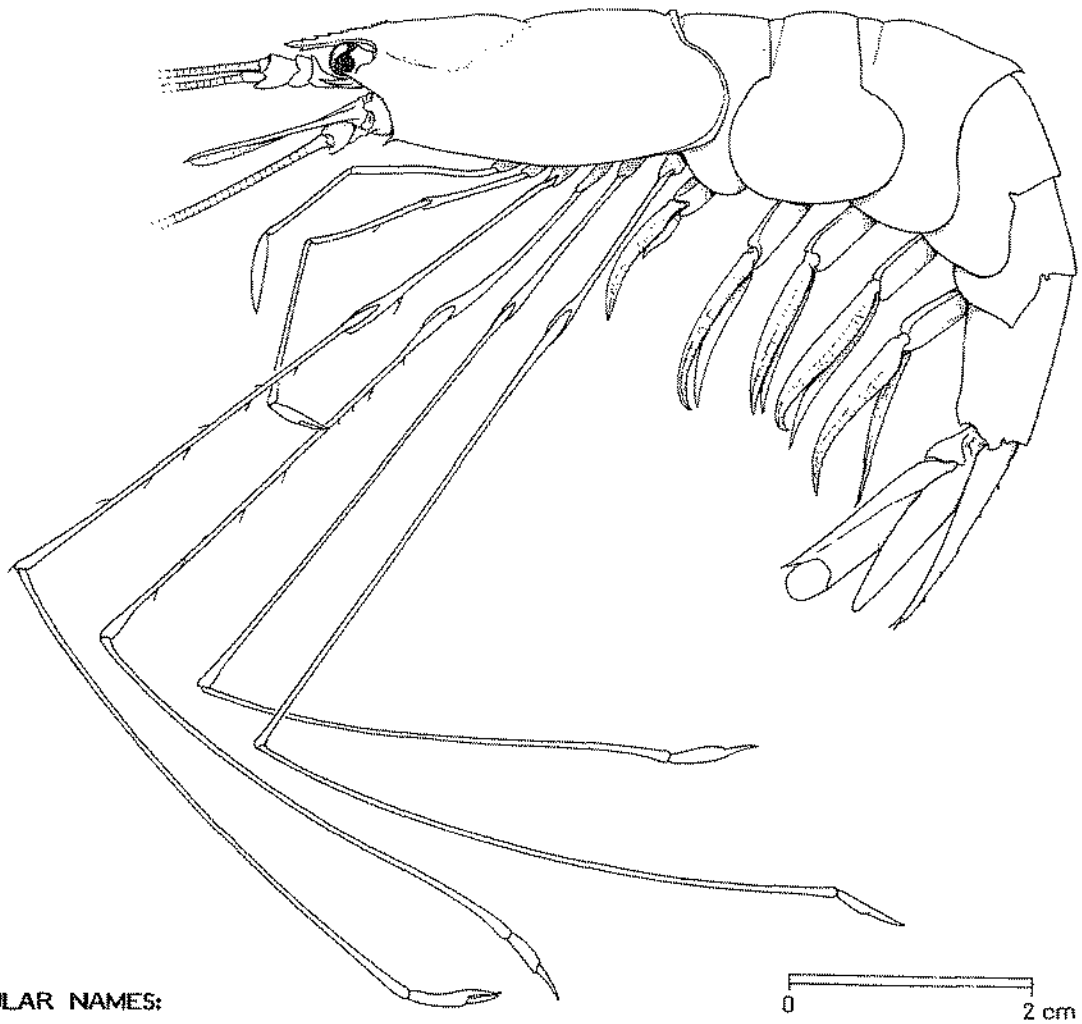
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : NEMATOCARCINIDAE

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

Nematocarcinus africanus Crosnier & Forest, 1973

OTHER SCIENTIFIC NAMES STILL IN USE : Nematocarcinus cursor A. Milne Edwards, 1881 sensu Holthuis, 1951



VERNACULAR NAMES:

FAO : En - African spider shrimp
Fr - Crevette araignée d'Afrique
Sp - Camarón araña africano

NATIONAL :

DISTINCTIVE CHARACTERS :

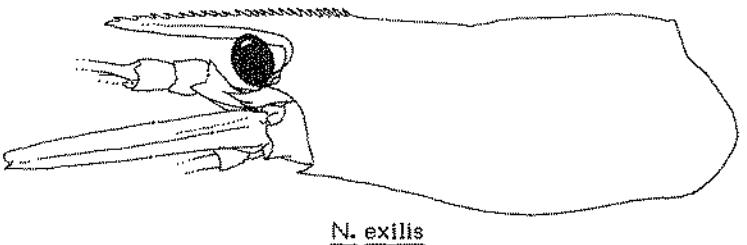
Dorsal margin of rostrum straight or slightly concave and armed with 12 to 18 teeth, 5 or 6 of which are postorbital; ventral margin with one strong tooth, sometimes followed by a second; tip slightly upward-pointing. First and second pairs of pereiopods symmetrical and bearing pincers; 4 last pairs extremely long, spider-like; pipods present on the first 4 pairs. Lower lobe of pleura of abdominal segment 5 bearing a strong tooth posteriorly, its posterior and lower margins forming a right angle. Telson a little longer than abdominal segment 6, bearing usually 2 distal spines and 7 or 8 spinules, one of which is located just behind the bases of distal spines.

Colour: pinkish red.

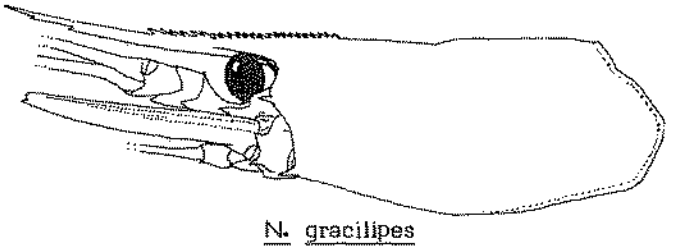
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Nematocarcinus exilis: tip of rostrum forward-pointing, its dorsal margin with more than 20 teeth (12 to 18 in N. africanus), ventral margin smooth (toothless); abdominal segment 3 dorsally with a rounded elevation running toward the fourth segment.

N. gracilipes: at least anterior fourth of upper margin of rostrum smooth, ventral margin armed with 1 to 4 teeth; a very faint and rounded postero-dorsal elevation on abdominal segment 3.



N. exilis



N. gracilipes

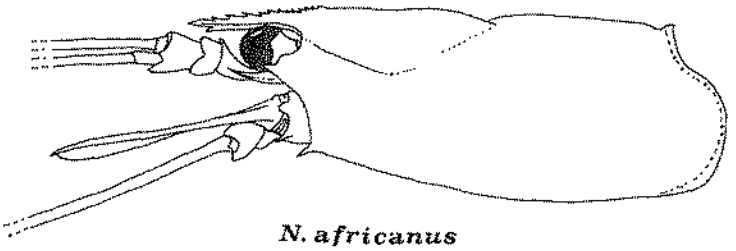
SIZE :

Maximum total length: 10.4 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Only West Africa, from Senegal to Angola.

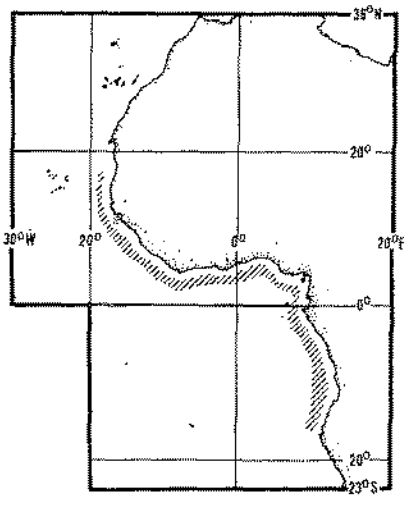
A predominantly benthic species inhabiting only muddy bottoms in cold waters (5 to 12°C). Its vertical distribution varies with size, the older individuals occurring in the deeper part of its range. Caught at depths between 200 and 700 m, but most abundant between 300 and 600 m.



N. africanus

PRESENT FISHING GROUNDS :

Experimentally fished on muddy bottoms of the continental slope. A commercial fishery for this species has not yet started, despite some promising results of experimental fishing operations (i.e. the R.V. OMBANGO obtained yields of 85 kg/h at 400 m depth off Congo and Angola using a shrimp trawl of 12 m headline).



CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Caught with bottom trawls.

Not yet marketed; a rather fragile species that will require some care in handling.

PALAEM

1981

FAO SPECIES IDENTIFICATION SHEETS

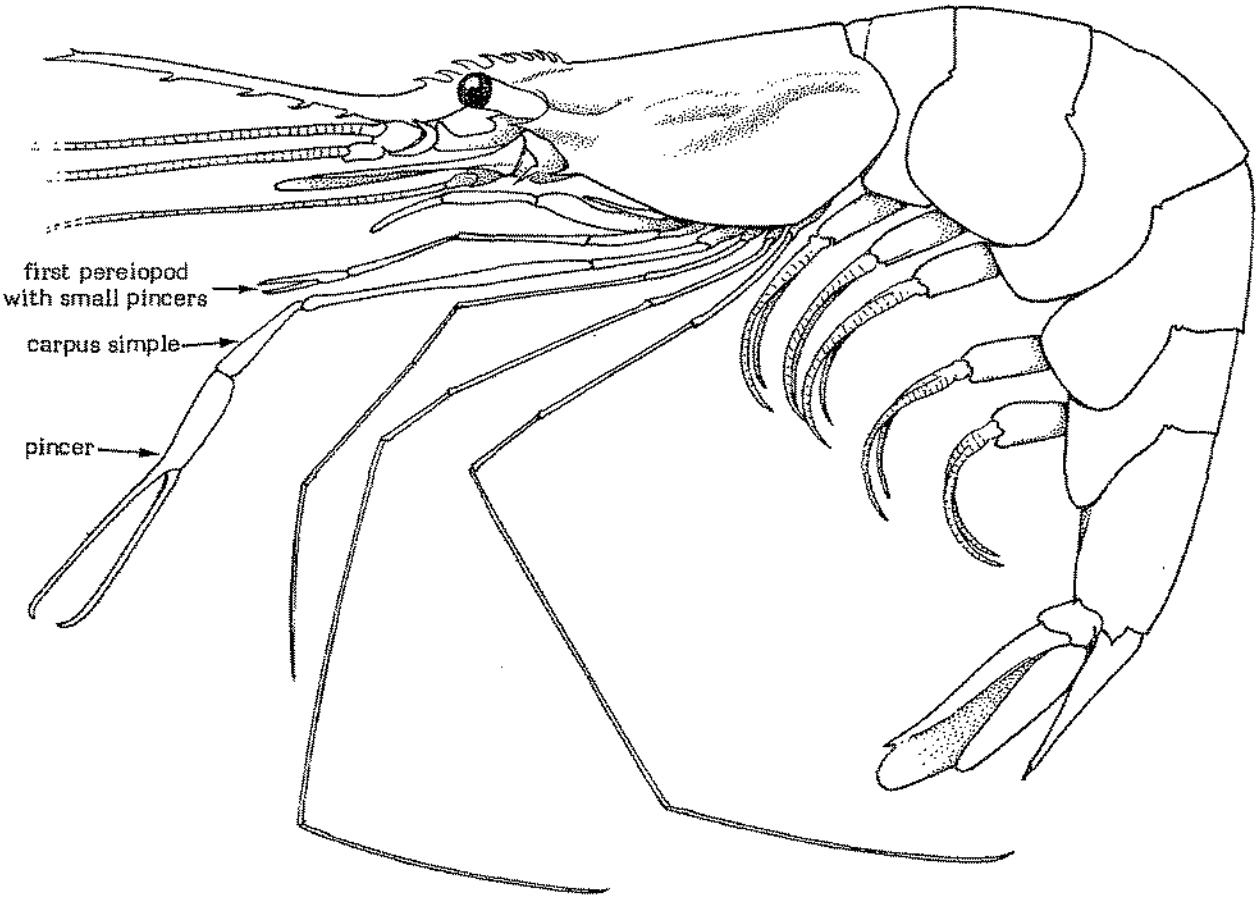
FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

PALAEMONIDAE

Palaemonid shrimps

As in the other families belonging to the Infraorder Caridea, the pleura of the second abdominal segment overlap those of the first and third segments, and the third pair of pereiopods lack pincers. First pair of pereiopods ending in small pincers; those of second pair more developed, ending in strong, robust pincers, their carpus simple (undivided).

This family includes marine as well as brackish-water and freshwater species. Up to now, only 2 West African marine species are of some interest to fisheries.



SIMILAR FAMILIES OCCURRING IN THE AREA:

Nematocarcinidae: pincers of first 2 pairs of pereiopods similar, the following pairs notably elongate.

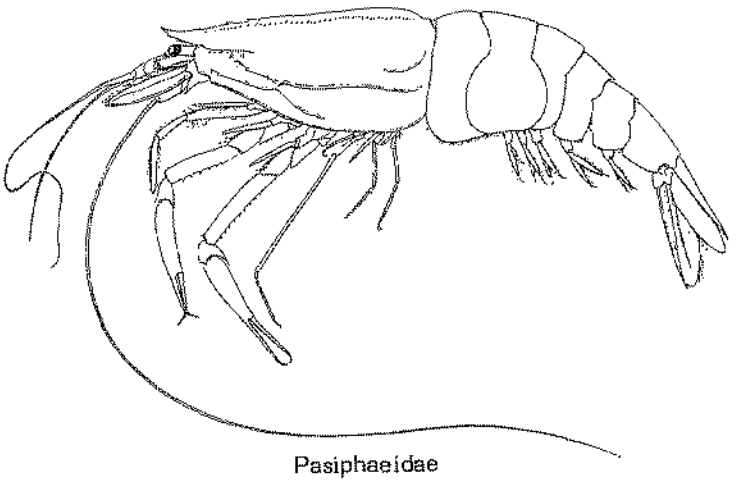
Pasiphaeidae: body strongly compressed; rostrum short; pereiopods of first 2 pairs much larger and stronger than those of following pairs.

Hippolytidae: first pair of pereiopods rather robust, ending in well developed pincers; carpus in second pair of pereiopods segmented.

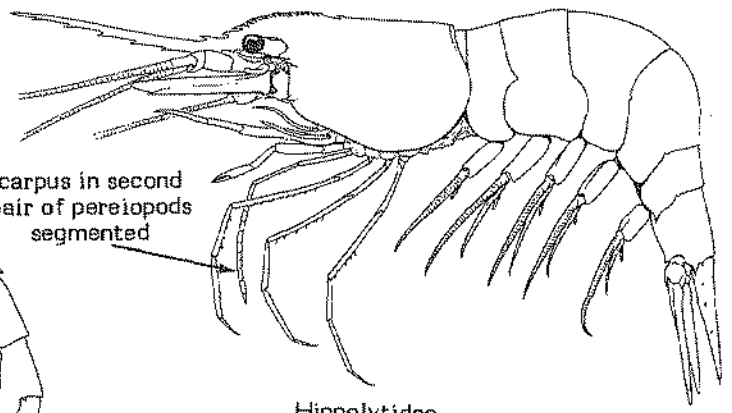
Pandalidae: first pair of pereiopods with very small or no pincers; carpus in second pair segmented.

Crangonidae: first pair of pereiopods very robust with incomplete pincers lacking the fixed finger; body depressed.

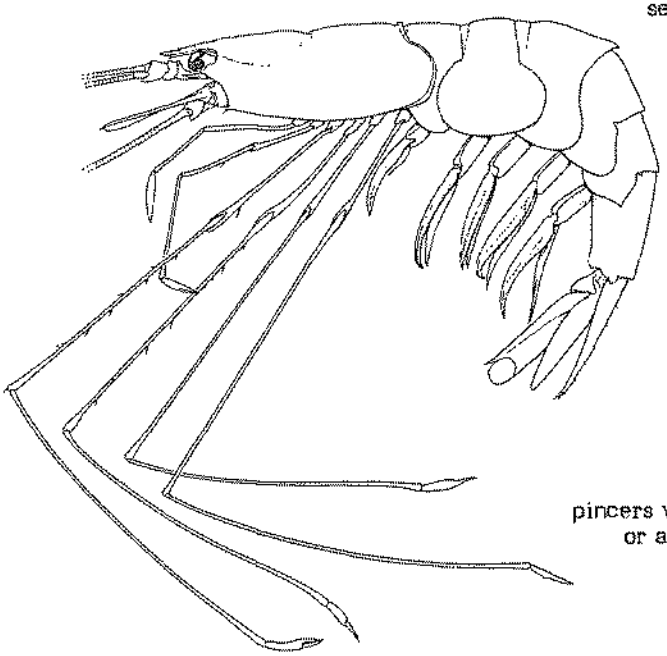
Penaeidean shrimps: pleura of second abdominal segment not overlapping those of first segment; the first 3 pairs of pereiopods ending in pincers.



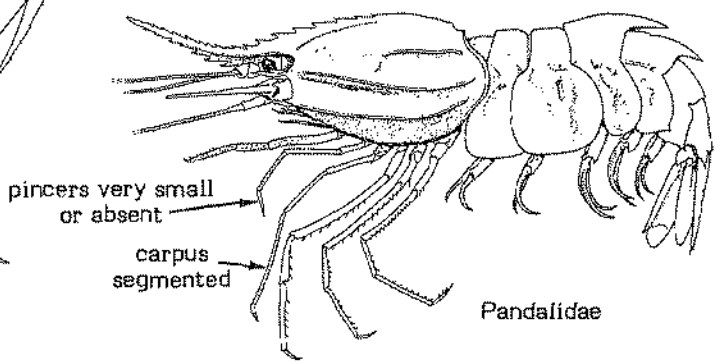
Pasiphaeidae



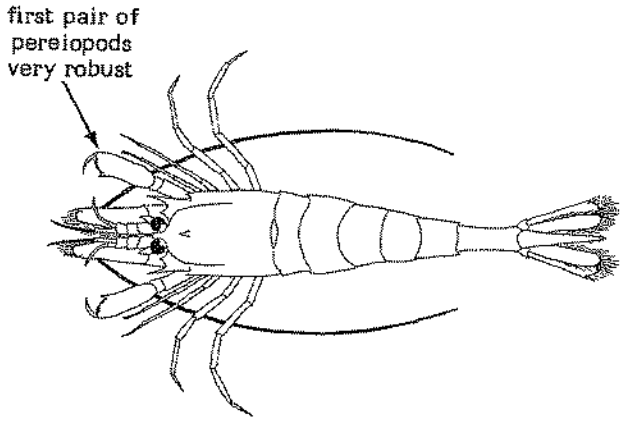
Hippolytidae



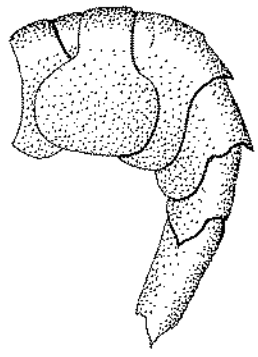
Nematocarcinidae



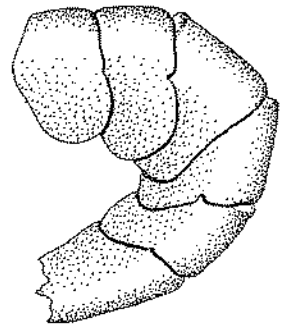
Pandalidae



Crangonidae



Caridea



Penaeidea

abdomen

LIST OF SPECIES OCCURRING IN THE AREA:

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

Balssia gasti (Balss, 1921)

Brachycarpus biunguiculatus (Lucas, 1849)

Nematopalaemon hastatus (Aurivillius, 1898) PALAEM Nemat 2

Palaemon elegans Rathke, 1837
Palaemon longirostris H. Milne Edwards, 1837
Palaemon maculatus (Thallwitz, 1892)
Palaemon serratus (Pennant, 1777) PALAEM Palaem 1
Palaemon xiphias Risso, 1816

Palaemonella atlantica Holthuis, 1951

Periclimenes platalea Holthuis, 1951
Periclimenes scriptus (Risso, 1822)

Pontonia flavomaculata Heller, 1864
Pontonia pinnophylax (Otto, 1821)

Typton spongicola Costa, 1844

Prepared by J.P. Lagardère, Antenne de la Station Marine d'Endoume, C.R.E.O., La Rochelle, France.

Illustrations prepared by Messrs. Gaillard (Laboratoire de Zoologie du Muséum des Sciences Naturelles, Paris) and Opic (O.R.S.T.O.M., Paris)

Draft texts and illustrations revised by A. Crosnier (Paris, France) and L.B. Holthuis (Leiden, The Netherlands)

PALAEM Nemat 2

1981

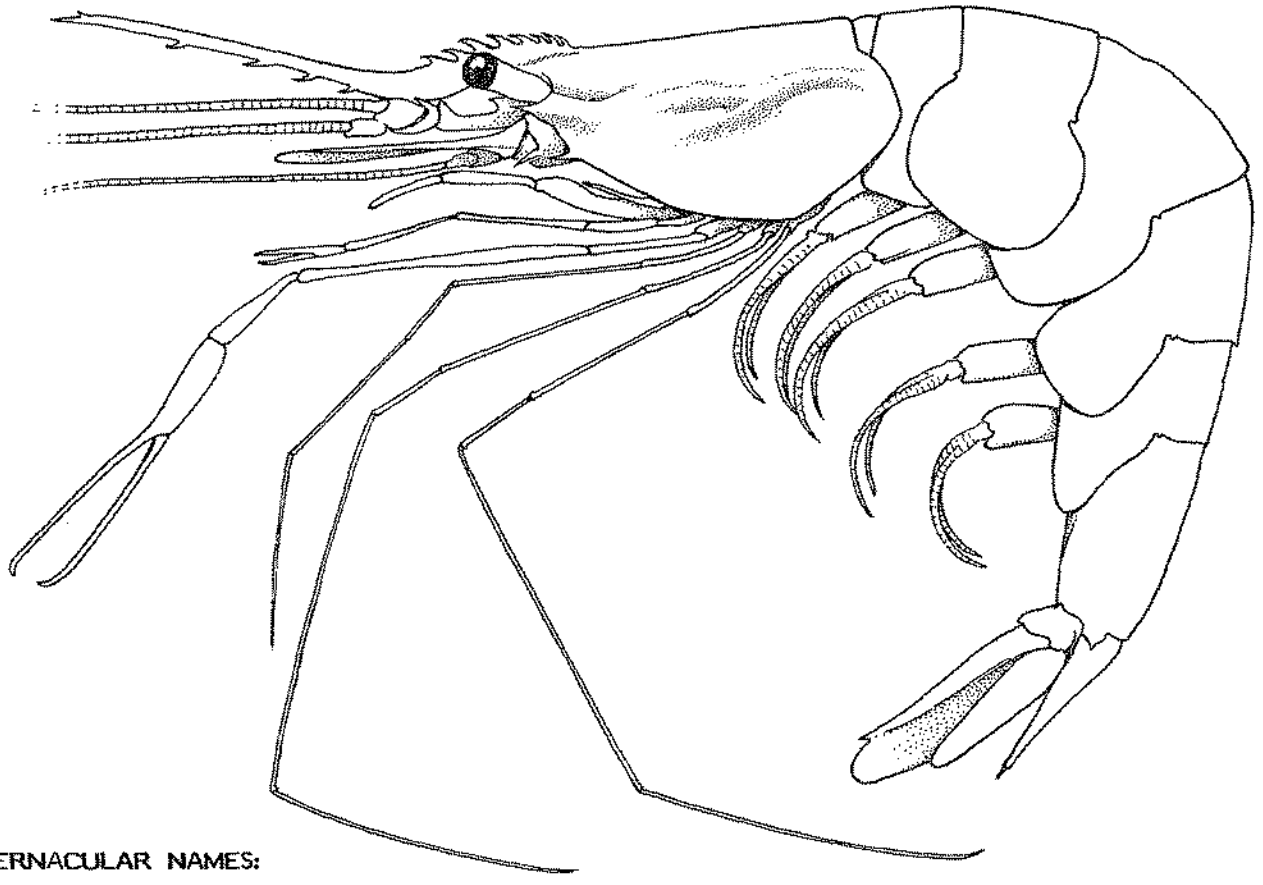
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : PALAEMONIDAE

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

Nematopalaemon hastatus (Aurivillius, 1898)

OTHER SCIENTIFIC NAMES STILL IN USE : Palaemon (Nematopalaemon) hastatus (Aurivillius, 1898)



0 1 cm

VERNACULAR NAMES:

FAO : En - Estuarine prawn
Fr - Bouquet étier
Sp - Camarón estuarino

NATIONAL :

DISTINCTIVE CHARACTERS :

Rostrum styliform bearing dorsally a group of 7 to 11 teeth on the basal crest, and one isolated tooth near the tip; its ventral margin armed with 3 to 11 teeth. Telson with a truncate tip bearing 2 large, movable spines, its lateral margins with 2 pairs of small spines.

Colour: whitish.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

The peculiar shape and ornamentation of the rostrum, as well as the conspicuously elongated pereiopods separate this species easily from other palaemonid shrimps occurring in the area.

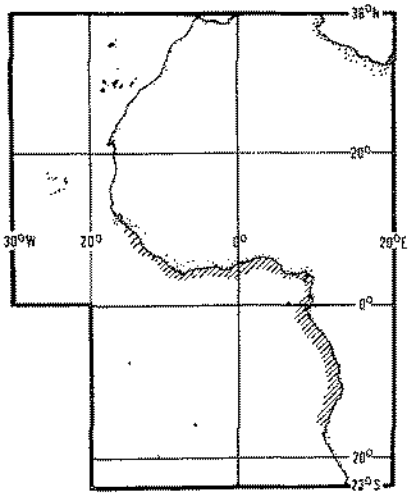
SIZE :

Maximum total length: 7.5 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Along the West African coast it has been reported from Senegal to Angola.

Found on sandy and muddy bottoms in estuarine as well as coastal marine waters to depths of about 50 m.



PRESENT FISHING GROUNDS :

Mainly estuarine and coastal waters of Nigeria.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Caught with seines (up to 500 kg per haul).

Sold dried salted and smoked in local markets.

PALAEM Palaem 1

1981

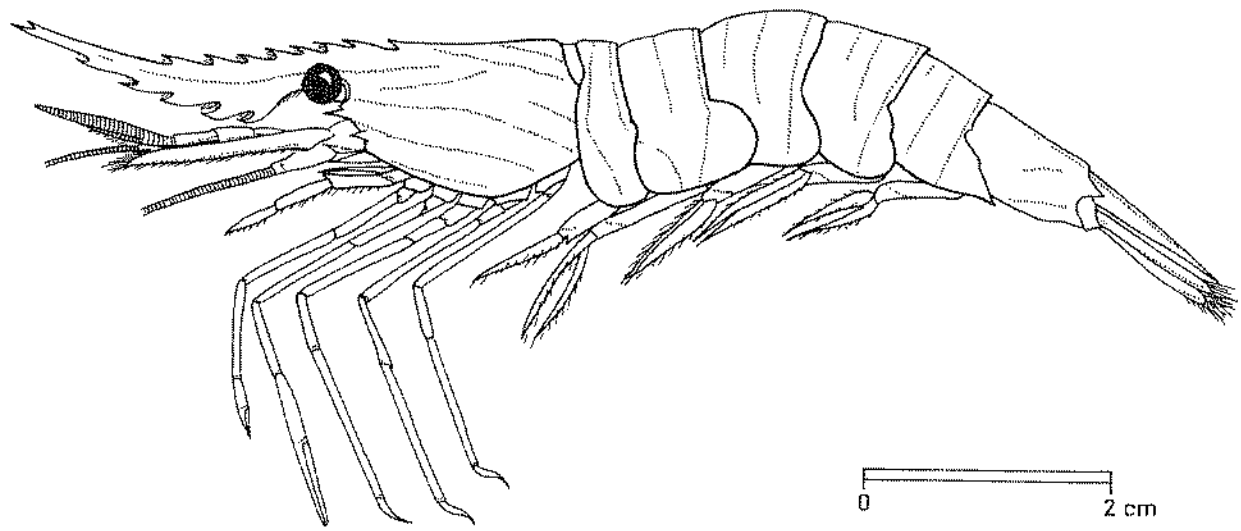
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : PALAEMONIDAE

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

Palaemon serratus (Pennant, 1777)

OTHER SCIENTIFIC NAMES STILL IN USE : Palaemon treillianus (Risso, 1826), H. Milne Edwards, 1837
Leander serratus (Pennant, 1777), Czerniavsky, 1884



VERNACULAR NAMES:

FAO : En - Common prawn
Fr - Bouquet (commun)
Sp - Camarón común

NATIONAL :

DISTINCTIVE CHARACTERS :

Rostrum elongated, often bent upward at tip in adults, the anterior third of its upper margin smooth, followed posteriorly by 7 to 11 teeth; ventral margin of rostrum with 4 to 6 teeth; dorsal antennular flagellum with a short unbranched part (8 articles), and 2 unequal whips, the shorter of which is about twice the length of the unbranched part and composed of 20 articles; mandibular palp usually of 3 articles; carpus of second pair of pereiopods shorter than the merus and the pincer; the propodus/carpus joint not reaching to anterior margin of antennular scale (scaphocerite).

Colour: pale pink, the carapace ornamented with longitudinal or oblique red lines; eyestalks, antennules, pereiopods and telson with red blotches.

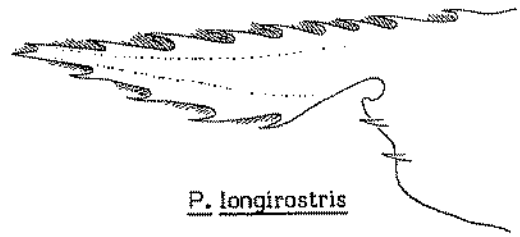
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Palaemon longirostris: rostrum with usually 8 to 10 dorsal teeth (7 to 11 in P. serratus); ventral rostral teeth 3 to 5 (4 to 6 in P. serratus); carpus in second pair of pereiopods equal to, or longer than, pincer.

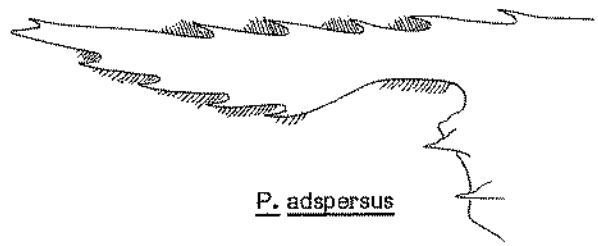
P. adspersus: rostrum with usually 5 or 6 dorsal teeth (rarely 7 or 8), only one of them postorbital (2 postorbital teeth in P. serratus), and 4 (rarely 3 or 5) ventral teeth; carpus in second pair of pereiopods longer than merus, but shorter than pincer.

P. xiphias: rostrum slender, extending well beyond tip of antennal scale; branchiostegal spine inserted well behind anterior carapace margin.

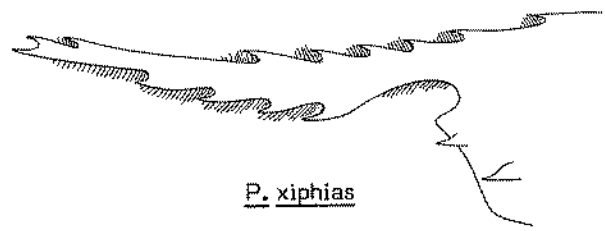
P. elegans: rostrum with 7 to 10 dorsal spines, 3 of them postorbital, and 3 or 4 ventral teeth; carpus in second pair of pereiopods longer than merus, but shorter than pincer; furthermore, fingers of this pincer short (one third of total length of pincer).



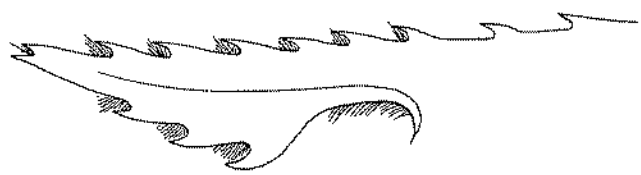
P. longirostris



P. adspersus



P. xiphias



P. elegans

SIZE :

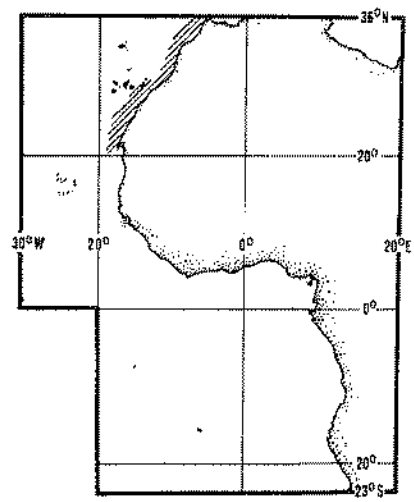
Maximum total length: 11 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

In the area, found from Morocco to Mauritania; northward extending into the Mediterranean and along the coasts of Europe up to Denmark.

Inhabits rocky as well as muddy bottoms in shallow waters to depths of about 40 m. It carries out migrations conditioned by temperature variations of its habitat. Spawning occurs from mid-November to the beginning of summer; most females spawn twice, each spawn comprising 1 500 to 4 500 eggs, this depending on the size of the female. The lifespan of the species is believed to be 5 or 6 years.

Omnivorous, feeding on seaweeds and small crustaceans.



PRESENT FISHING GROUNDS :

Littoral areas along the Moroccan coast.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species; apparently the annual catch is below 100 t.

Caught mainly with traps; also with bottom trawls.

Marketed fresh.

PANDL

1981

FAO SPECIES IDENTIFICATION SHEETS

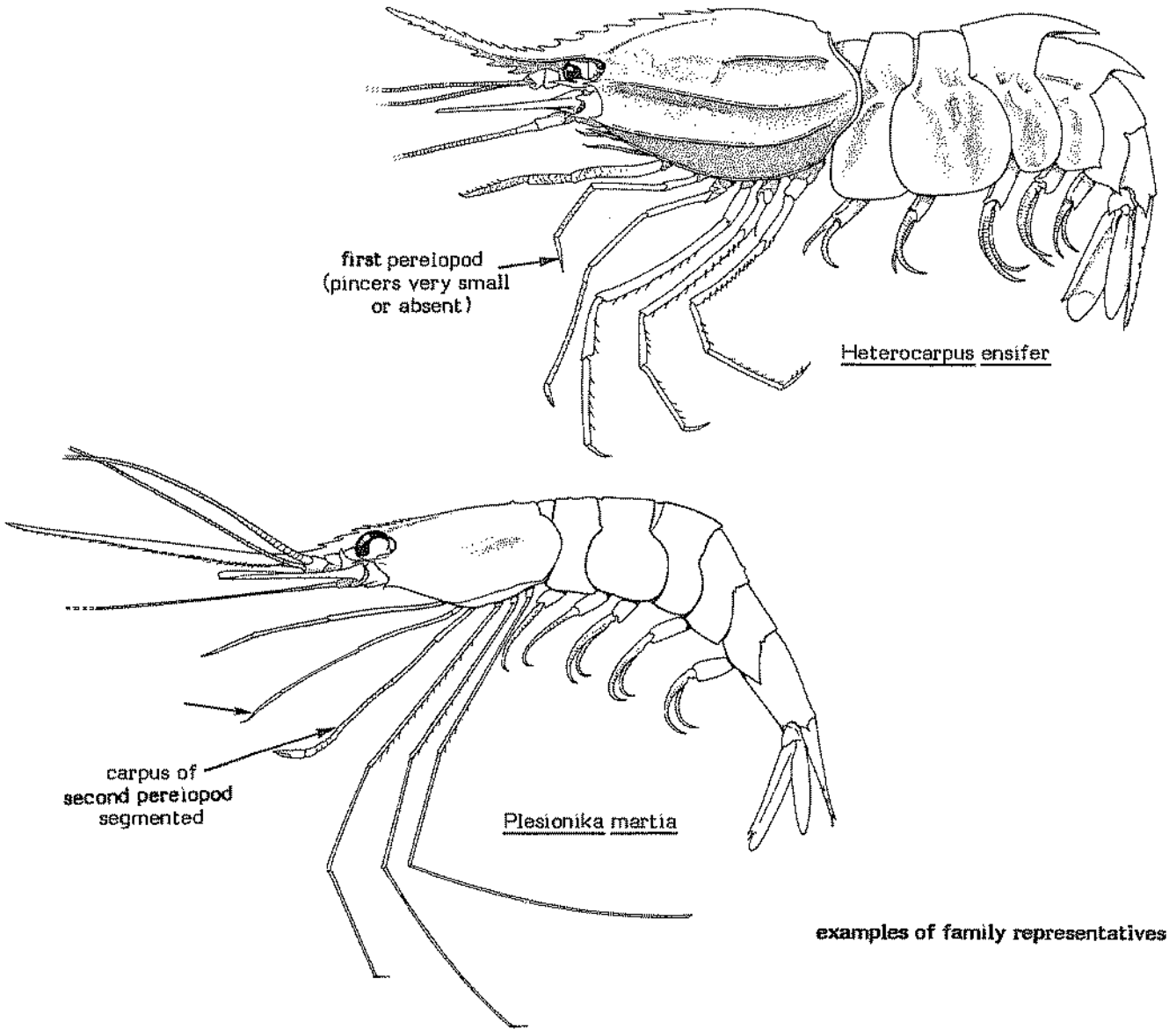
FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

PANDALIDAE

Pandalid shrimps

As in the other families belonging to the Infraorder Caridea, the pleura of the second abdominal segment overlap those of first and third segments, and the third pair of pereiopods lack pincers. Pincers in first pair of pereiopods very small or absent, carpus in second pair segmented.

This family includes a large number of marine species, most of them occurring in deep waters. Since they are generally of rather large size, many of them may be of interest to fisheries.



examples of family representatives

SIMILAR FAMILIES OCCURRING IN THE AREA:

Nematocarcinidae: first 2 pairs of pereiopods similar and ending in pincers, their carpus unsegmented; the following pairs extremely elongate.

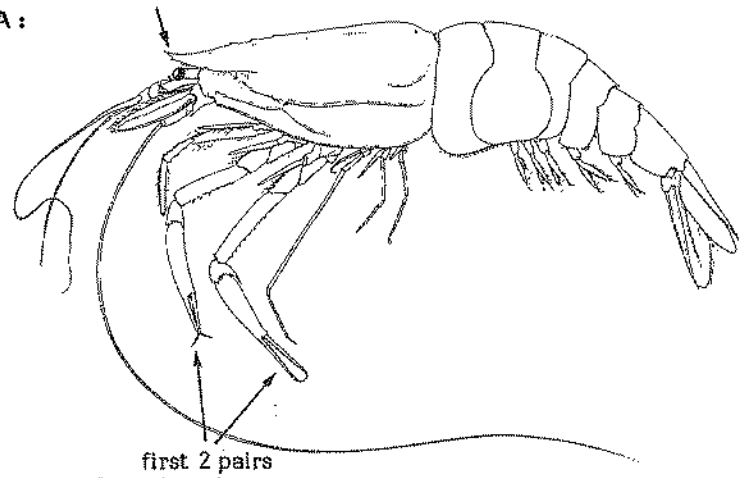
Pasiphaeidae: body strongly compressed; rostrum short; pereiopods of first 2 pairs much larger and stronger than those of following pairs.

Palaemonidae: first pair of pereiopods with small pincers; second pair much better developed and bearing strong pincers, their carpus unsegmented.

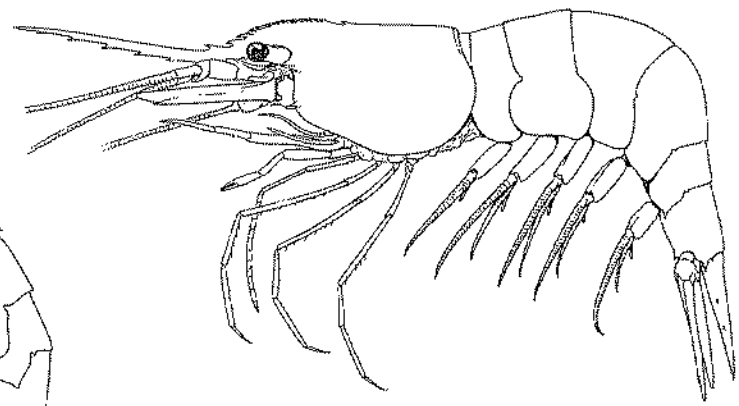
Hippolytidae: pereiopods of first pair rather robust, ending in well developed pincers.

Crangonidae: first pair of pereiopods very robust with incomplete pincers lacking the fixed finger; body depressed.

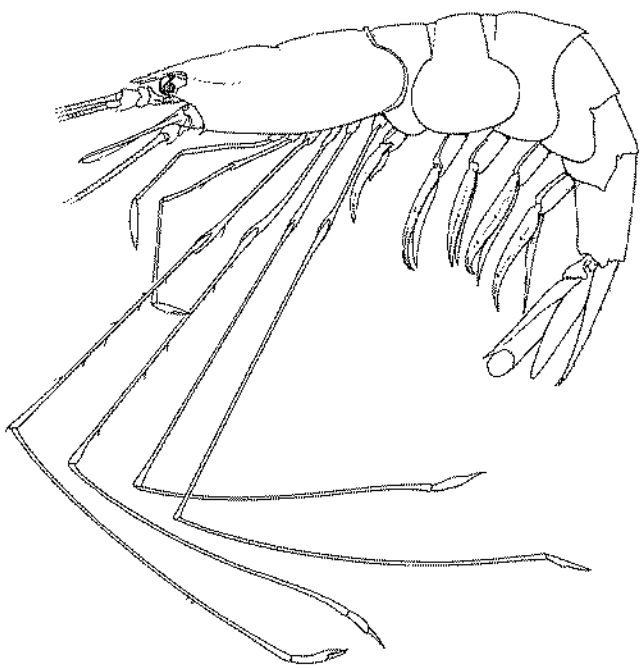
Penaeidean shrimps: pleura of second abdominal segment not overlapping those of first segment; the 3 first pairs of pereiopods ending in pincers.



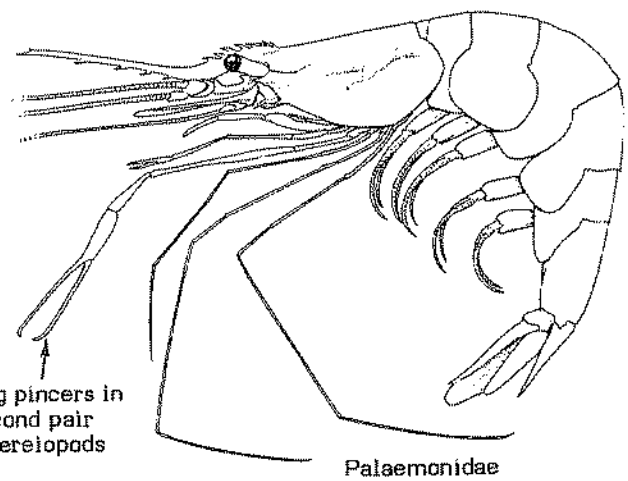
Pasiphaeidae



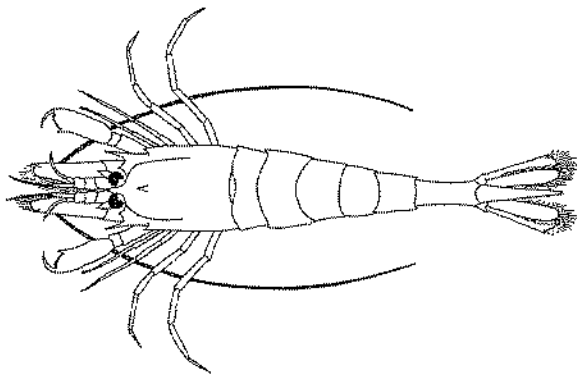
Hippolytidae



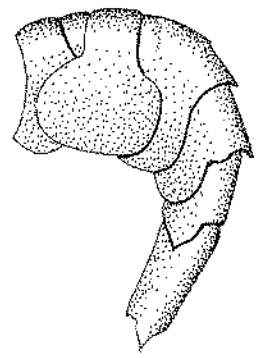
Nematocarcinidae



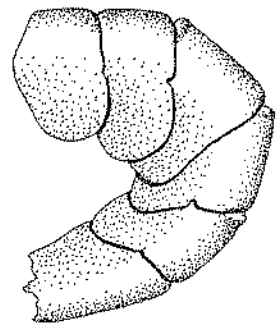
Palaemonidae



Crangonidae



Caridea



Penaeidea

abdomen

KEY TO GENERA OCCURRING IN THE AREA:

1 a. Carpus in second pair of pereiopods divided into 2 articles (Fig. 1) ..... Chlorotocus

1 b. Carpus in second pair of pereiopods divided into more than 3 articles

2 a. Longitudinal crests running through entire length of sides of carapace (Fig. 2) ..... Heterocarpus

2 b. No crests running through entire length of sides of carapace

3 a. Third maxilliped without exopod ..... Pandalina

3 b. Third maxilliped with exopod

4 a. First 4 pairs of pereiopods with epipods ..... Plesionika

4 b. Pereiopods without epipods ... Parapandalus

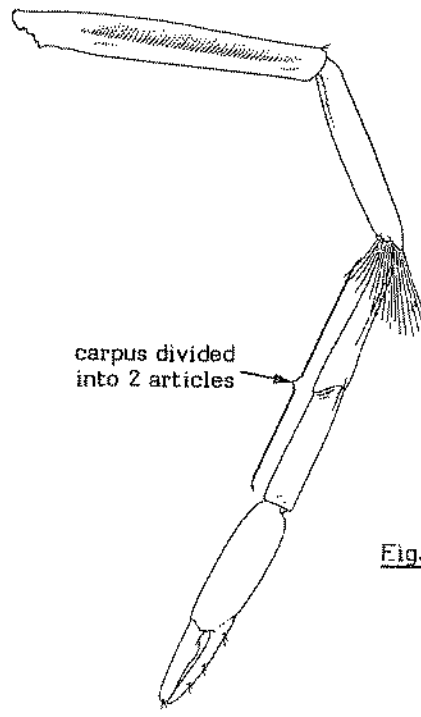
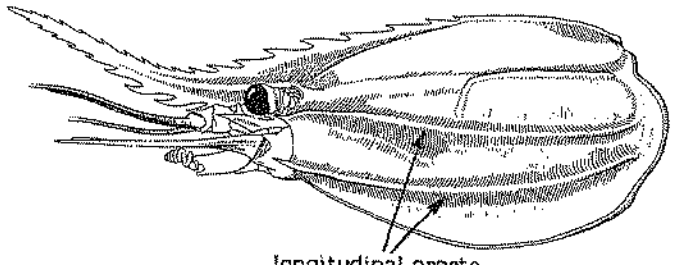


Fig. 1

Chlorotocus sp.

second pereiopod



Heterocarpus ensifer

Fig. 2

LIST OF SPECIES OCCURRING IN THE AREA :

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

Chlorotocus crassicornis (Costa, 1871)	
Heterocarpus ensifer A. Milne Edwards, 1881	PANDL Heter 2
Heterocarpus grimaldii A. Milne Edwards & Bouvier, 1900	
Heterocarpus laevigatus Bate, 1888	
Pandalina profunda Holthuis, 1946	
Parapandalus brevipes Crosnier & Forest, 1968	
Parapandalus narval (Fabricius, 1787)	PANDL Parapnd 1
Parapandalus richardi (Coutière, 1905)	
Plesionika acanthonotus (S.I. Smith, 1882)	
Plesionika carinata Holthuis, 1951	
Plesionika edwardsii (Brandt, 1851)	
Plesionika ensis (A. Milne Edwards, 1881)	
Plesionika gigliolii (Senna, 1903)	
Plesionika heterocarpus (Costa, 1871)	
Plesionika holthuisi Crosnier & Forest, 1968	
Plesionika martia (A. Milne Edwards, 1883)	PANDL Plesion 1
Plesionika rossignoli Crosnier & Forest, 1968	
Plesionika williamsi Forest, 1963	

Prepared by J.P. Lagardère, Antenne de la Station Marine d'Endoume, C.R.E.O., La Rochelle, France.

Illustrations prepared by Messrs. Gaillard (Laboratoire de Zoologie du Muséum des Sciences Naturelles, Paris) and Opic (O.R.S.T.O.M., Paris)

Draft texts and illustrations revised by A. Crosnier (Paris, France) and L.B. Holthuis (Leiden, The Netherlands)

PANDL Heter 2

1981

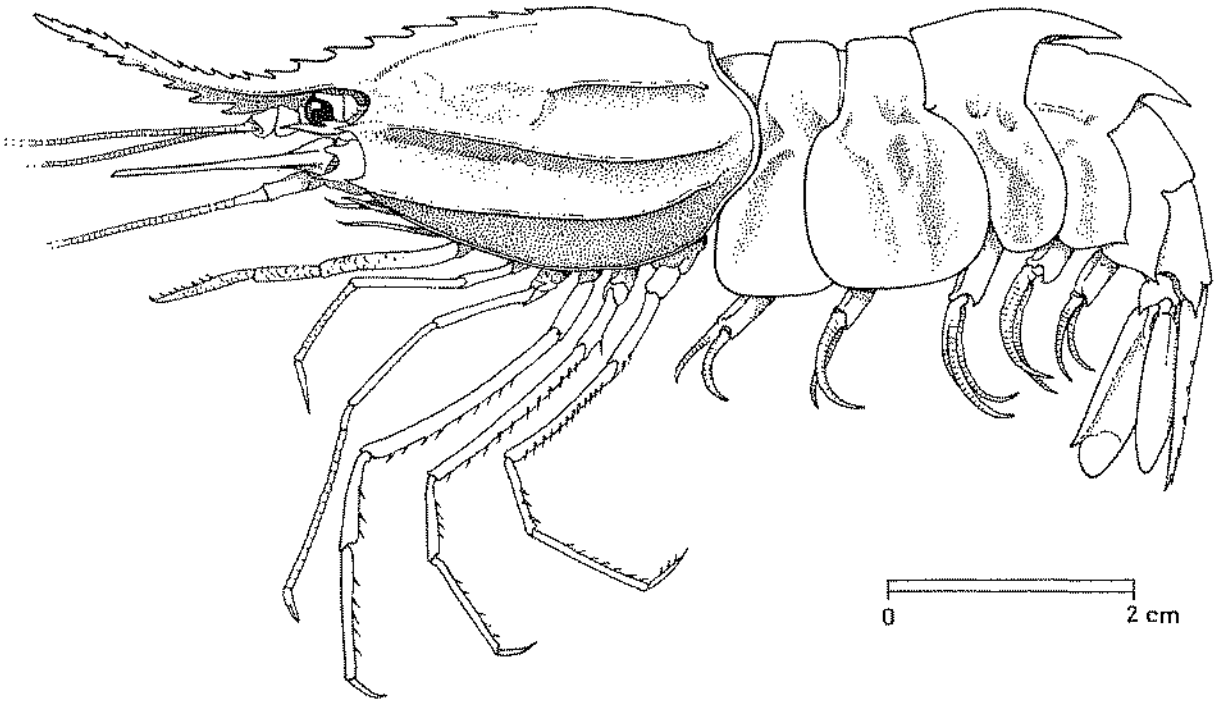
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : PANDALIDAE

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

Heterocarpus ensifer A. Milne Edwards, 1881

OTHER SCIENTIFIC NAMES STILL IN USE : Heterocarpus carinatus (Smith, 1882), Agassiz, 1888



VERNACULAR NAMES :

FAO:
En - Armed nylon shrimp
Fr - Crevette nylon armée
Sp - Camarón nailón armado

NATIONAL:

DISTINCTIVE CHARACTERS :

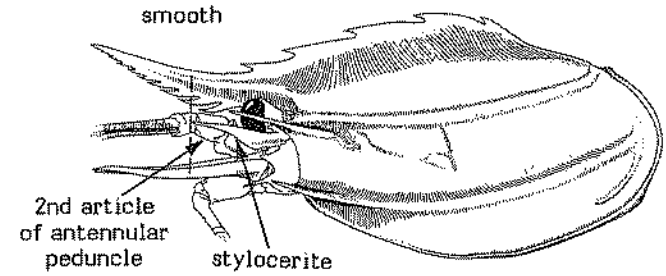
Rostrum well developed and toothed throughout its dorsal and ventral margins; number of teeth in Atlantic specimens usually ranging from 17 to 19 dorsal and 8 to 10 ventral (extreme variations 13 to 19 and 8 to 13, respectively). Carapace ornamented with 7 longitudinal crests, one of them mid-dorsal prolonging the rostrum and the other 6 lateral (3 on either side); upper lateral crest apparently terminating in the hepatic region, but in fact continuing forward - scarcely visible - to orbital margin, the other crests quite prominent throughout the length of carapace and ending, one at the antennal spine and the other at the branchiostegal spine. Stylocerite reaching anteriorly to middle of second article of antennular peduncle. A distinct mid-dorsal keel ending posteriorly in a strong tooth on abdominal segments 3 and 4.

Colour: general background nacreous pink with red blotches on carapace and on thoracic as well as abdominal appendages; ripe ovaries and eggs blue.

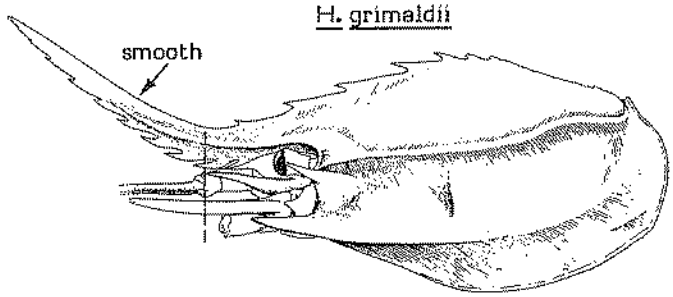
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Heterocarpus grimaldii and H. laevigatus: dorsal margin of rostrum toothed at base only, carapace with only 2 lateral crests, and stylocerite reaching to or extending slightly beyond anterior edge of second article of antennular peduncle. Furthermore, third abdominal segment with a moderate dorsal keel and a rounded posterior margin in H. laevigatus.

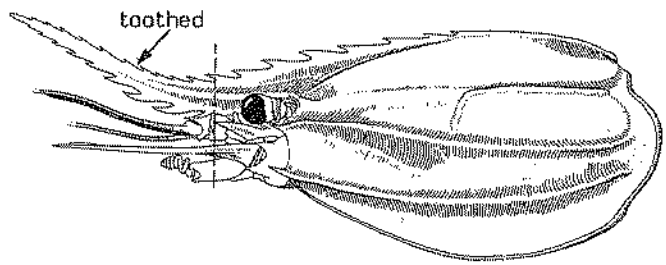
Other species of Pandalidae: carapace smooth or only slightly ridged.



H. grimaldii



H. laevigatus



H. ensifer

SIZE:

Maximum total length: 14.2 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

West African coast from Gibraltar to Congo (5°42'S).

Inhabits muddy bottoms on the deeper part of the continental shelf and on the slope, between 150 and about 900 m depth, but never forming dense populations. Berried females have been observed from March to August.

PRESENT FISHING GROUNDS:

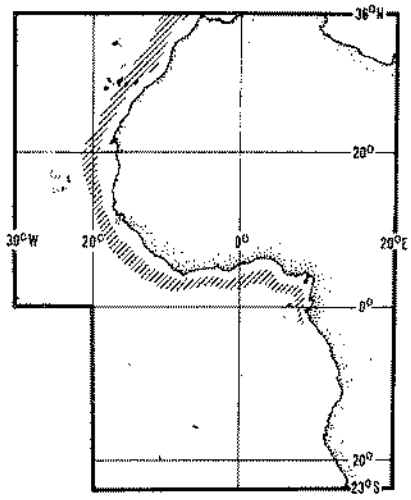
Mainly soft bottoms of the continental slope. This species is rather common but never very abundant; it may be of interest as bycatch in shrimp fisheries on the continental slope.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught with bottom trawls; it could possibly also be fished with traps.

Marketed fresh and frozen.



PANDL Parapnd 1

1981

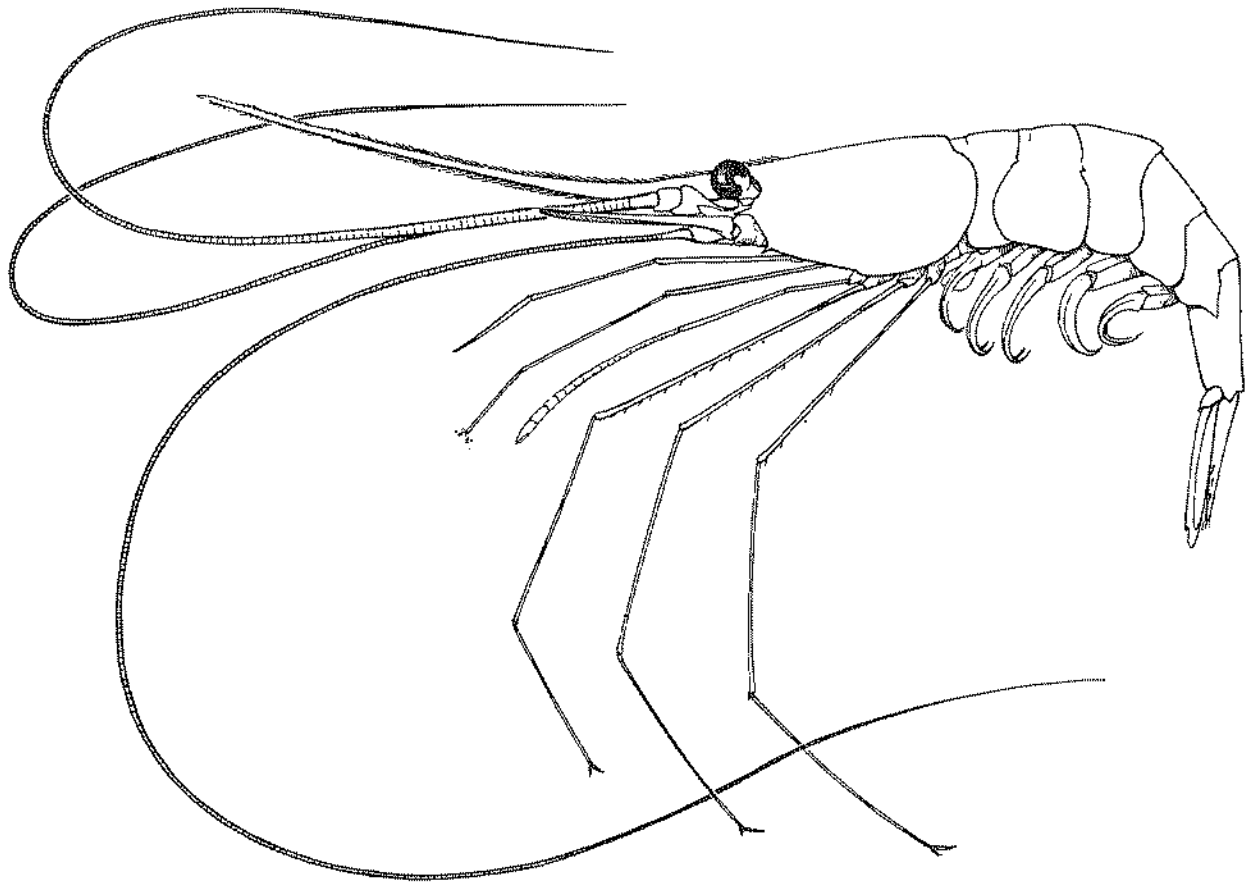
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : PANDALIDAE

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

Parapandalus narval (Fabricius, 1787)

OTHER SCIENTIFIC NAMES STILL IN USE : Parapandalus pristis (Risso, 1816)





VERNACULAR NAMES :

FAO: En - Narwal shrimp
Fr - Crevette narval
Sp - Camarón narval

NATIONAL:

DISTINCTIVE CHARACTERS :

Rostrum very long (twice the length of carapace), its dorsal margin entirely covered with over 40 close-set teeth, ventral margin with more than 40 teeth initiating at a certain distance of orbital margin; antennular and antennal flagella very long. Third maxilliped bearing an exopod; carpus in second pair of pereiopods divided into 22 articles; no epipods on pereiopods. Posterior edge of third abdominal segment smooth.

Colour: transparent whitish with well defined bright red stripes; 4 very characterstic yellow golden lines between the deeper red lines of back.

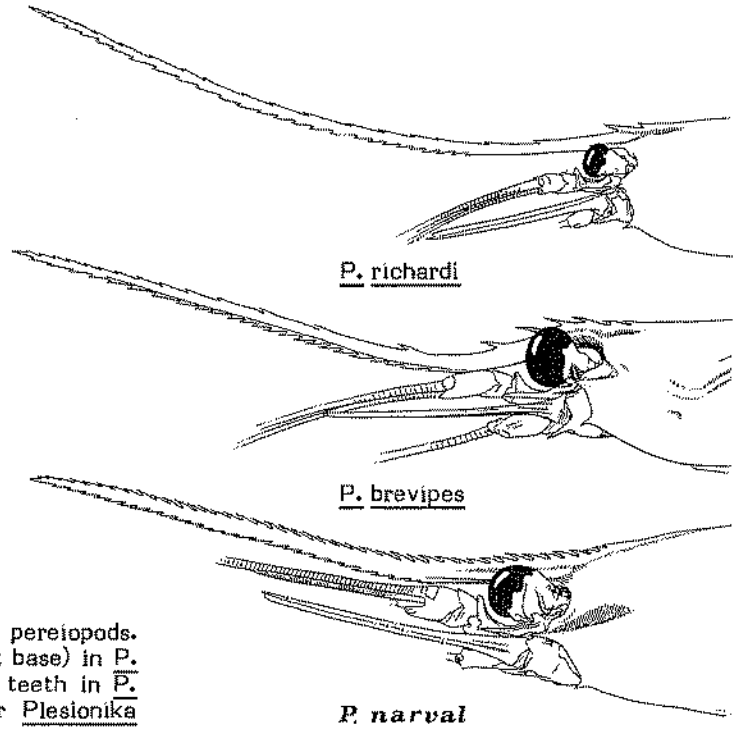
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

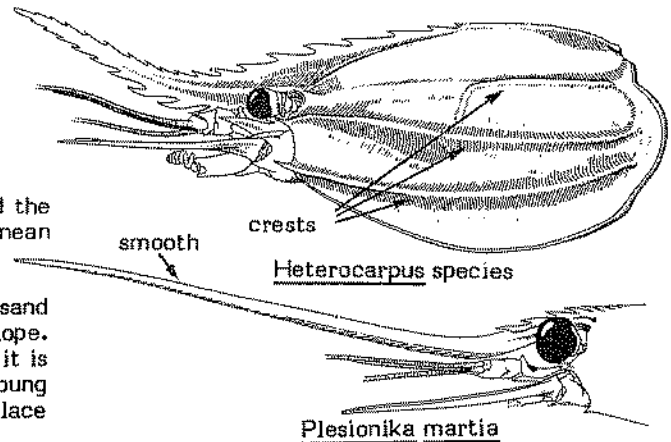
Parapandalus richardi: dorsal margin of rostrum with 20 rather well spaced teeth (40 in P. narval) starting posteriorly with a group of two more close-set teeth; ventral margin with 25 teeth (over 40 in P. narval); eyes small; carpus in second pair of pereiopods divided into 12 articles (22 in P. narval); posterior edge of third abdominal segment with a mid-dorsal spine.

P. brevipes: dorsal margin of rostrum with less than 30 teeth starting at base with a group of 6 (rarely 5 or 7); ventral margin with 25 to 30 teeth; eyes very large; carpus in second pair of pereiopods divided into 14 to 17 articles.

Heterocarpus species: several crests runnning along entire length of sides of carapace.

Plesionika species: epipods present on pereiopods. Furthermore, rostrum smooth dorsally (except at base) in P. martia and P. ensis, with only 33 to 35 dorsal teeth in P. edwardsii and considerably shorter in all other Plesionika species.





SIZE:

Maximum total length: 14.5 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Present throughout the area including Madeira and the Canary Islands; northward extending into the Mediterranean and to the Azores; southward extending to Angola.

Adults are benthic, inhabiting mud or muddy sand bottoms, often near rocky areas of the continental slope. Although the species may occur between 10 and 900 m, it is most frequently caught between 200 and 400 m. The young seem to lead a rather pelagic life. Spawning takes place during spring, from March to May.

PRESENT FISHING GROUNDS:

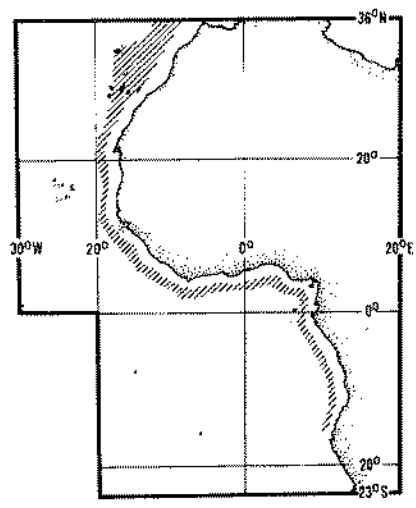
Upper regions of continental slope.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species, but the catches are probably rather low. However, this species may be of considerable commercial value since it sometimes forms important concentrations (fishtrawl hauls of 57 kg/h off Guinea-Bissau) and also because it can be easily fished with pots).

Caught with bottom trawls and traps.

Marketed mostly fresh?



PANDL Plesion 1

1981

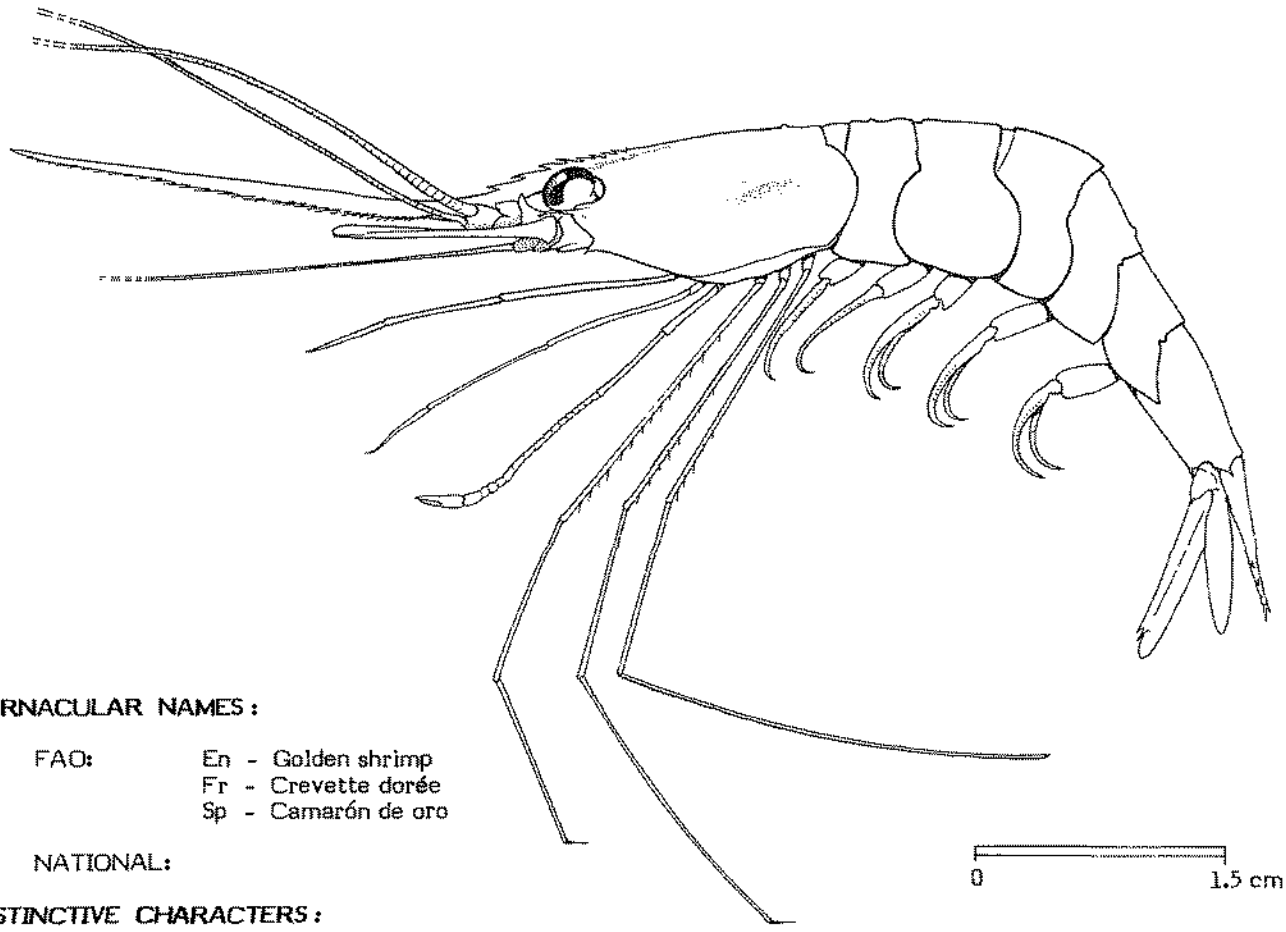
FAO SPECIES IDENTIFICATION SHEETS

FAMILY: PANDALIDAE

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

Plesionika martia (A. Milne Edwards, 1883)

OTHER SCIENTIFIC NAMES STILL IN USE: None



VERNACULAR NAMES:

FAO:
En - Golden shrimp
Fr - Crevette dorée
Sp - Camarón de oro

NATIONAL:

DISTINCTIVE CHARACTERS:

Rostrum slender and greatly elongated, its dorsal margin smooth except for a group of 7 or 8 (extreme range 5 to 10) teeth at base; ventral margin with 42 to 52 close-set teeth but smooth and hairy basally for a distance equal to length of antennal peduncle. A very weak crest running along either side of carapace. Pereiopods of second pair equal and symmetrical; those of fourth pair bearing an epipod. Posterior margin of third abdominal segment rounded mid-dorsally.

Colour: pinkish red; eggs blue.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

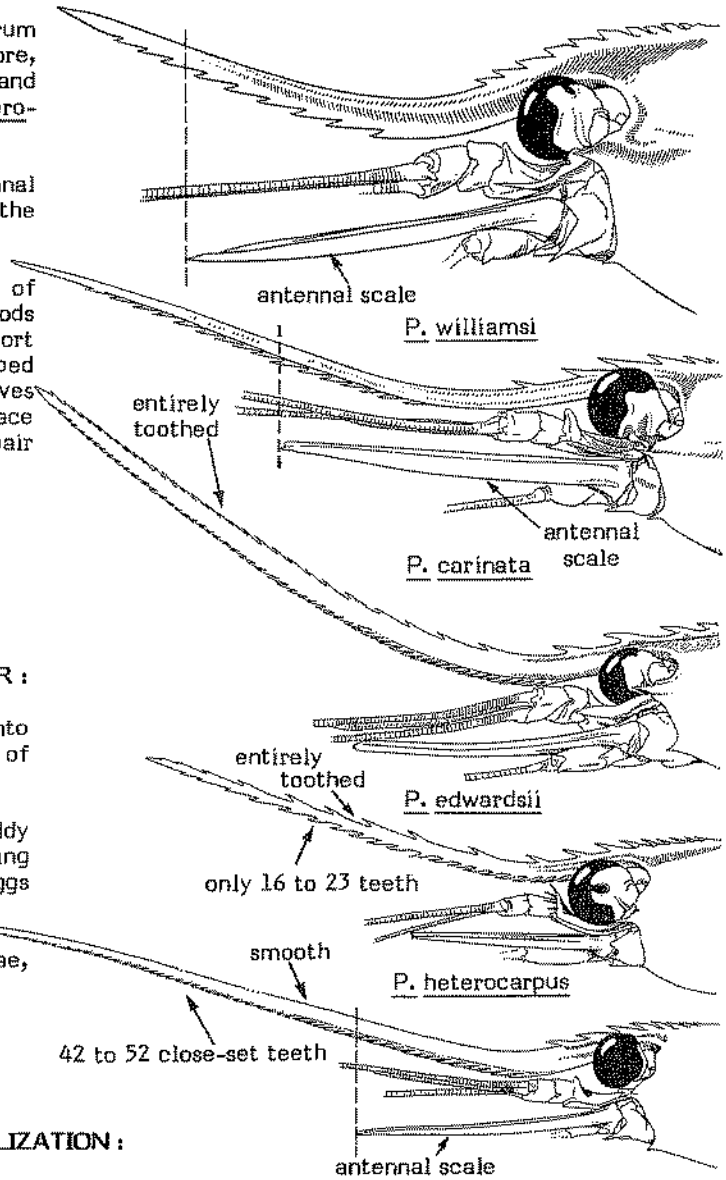
Plesionika acanthonotus, P. holthuisi and P. williamsi: rostrum shorter, distal end of antennal scale (scaphocerite) extending well beyond midpoint of rostrum (falling short of midpoint of rostrum in P. martia); 12 or *less teeth on ventral margin of rostrum* (42 to 52 in P. martia).

P. carinata and P. rossignoli: rostrum somewhat shorter, distal end of antennal scale reaching to about midpoint of rostrum or slightly further); only 11 to 16 teeth on ventral margin of rostrum; a well defined crest present on either side of carapace (more strongly developed in P. carinata). Furthermore, maximum size of P. rossignoli only 7 cm.

P. edwardsii and P. heterocarpus: rostrum toothed throughout its dorsal margin. Furthermore, ventral margin of rostrum with only 16 to 23 teeth and pereiopods of second pair strongly unequal in P. heterocarpus.

P. ensis: posterior margin of third abdomnal segment with a mid-dorsal spine overlapping the following segment.

Other species of Pandalidae: dorsal margin of rostrum toothed throughout its length and pereiopods lacking epipods (Parapandalus); rostrum very short (much shorter than antennal scale) and third maxilliped without exopod (Pandalina); longitudinal grooves running through entire length of sides of carapace (Heterocarpus); and carpus in pereiopods of second pair divided into 2 articles (Chlorotocus).



SIZE :

Maximum total length: 16.9 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Throughout the area; northward extending into the Mediterranean and along the Atlantic coasts of Europe up to Ireland, southward to South Africa.

A predominantly benthic species inhabiting muddy bottoms at depths between 300 and 700 m. Spawning takes place from March to November, number of eggs per female about 7 000.

Feeds chiefly on crustaceans (Pasyphaeidae, euphausiids) as well as on carrion.

PRESENT FISHING GROUNDS :

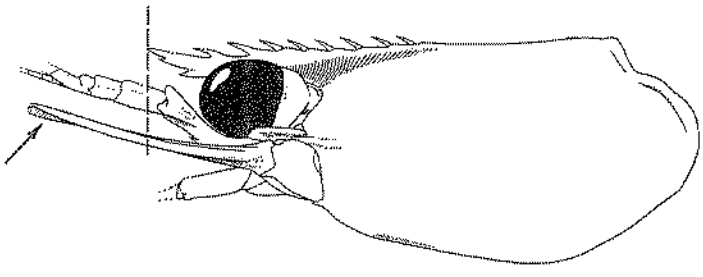
Continental slope from Morocco to Sahara.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species. Up to now, catches off West Africa have probably been very low and it is doubtful whether the species is sufficiently abundant to sustain a special fishery, although it will doubtless be of value as bycatch in deepsea shrimp fisheries in that area.

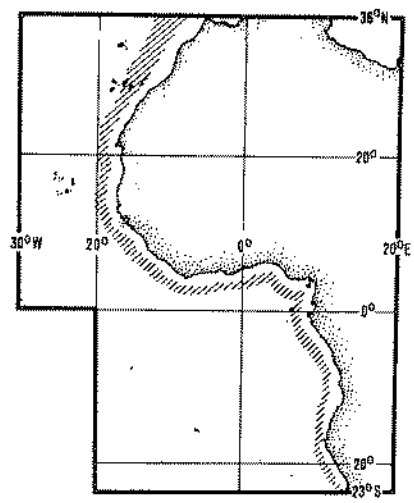
Caught with bottom and pelagic trawls.

Marketed fresh and frozen.



Pandalina

P. martia



PASI

1981

FAO SPECIES IDENTIFICATION SHEETS

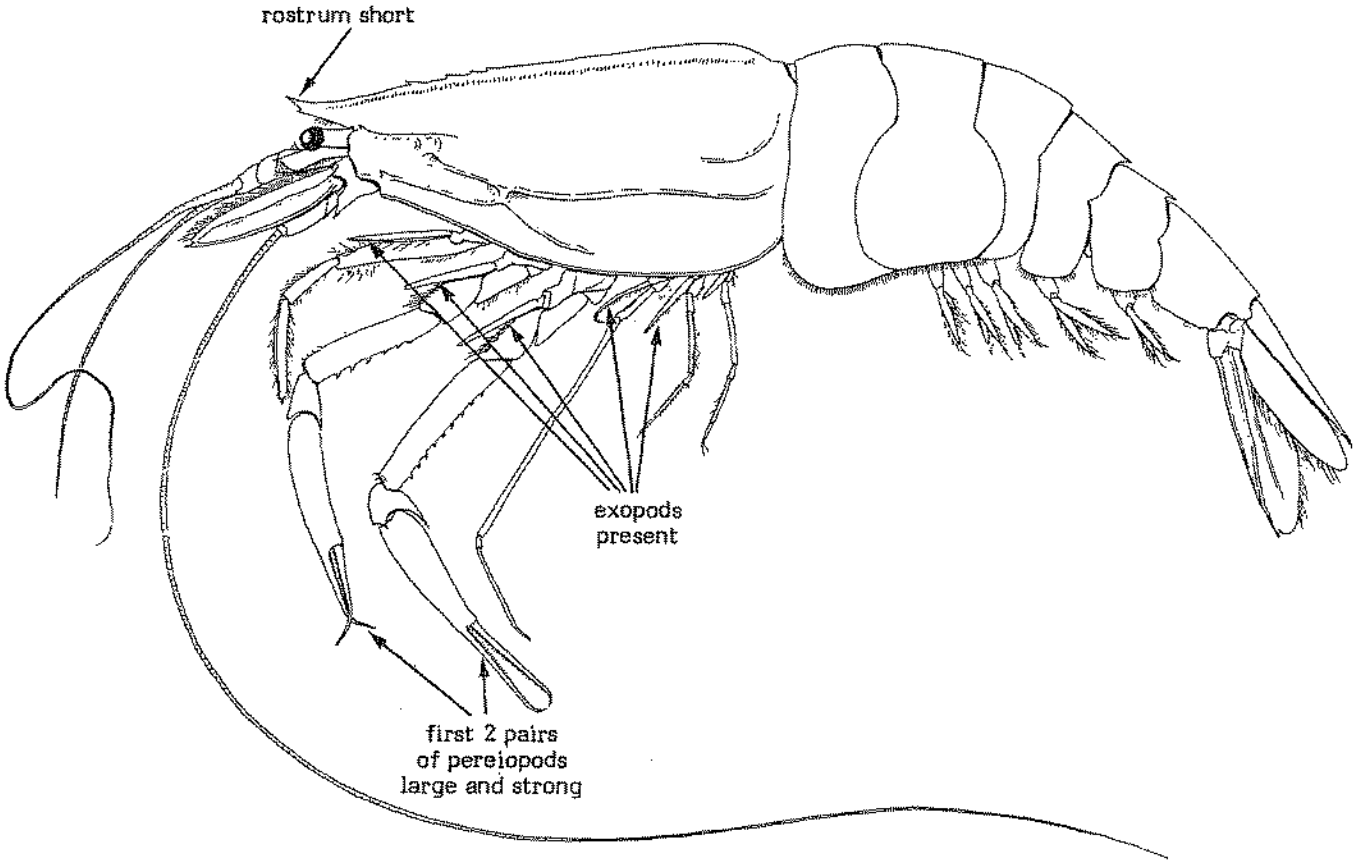
FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

PASIPHAEIDAE

Glass shrimps

As in other families belonging to the Infraorder Caridea, the pleura of the second abdominal segment overlap those of first and third segments, and the third pair of pereiopods lack pincers. Body strongly compressed; rostrum short. First two pairs of pereiopods larger and stronger than the three following pairs; exopods present, but epipods absent on all pereiopods.

This family includes several medium- to large-sized species mostly from the deeper waters of the continental slope. Many of the West African species are bentho- or meso-pelagic. The colour is often red or transparent (hence the name glass shrimps).



SIMILAR FAMILIES OCCURRING IN THE AREA:

Nematocarcinidae: first 2 pairs of pereiopods similar and slender; the following pairs extremely elongate.

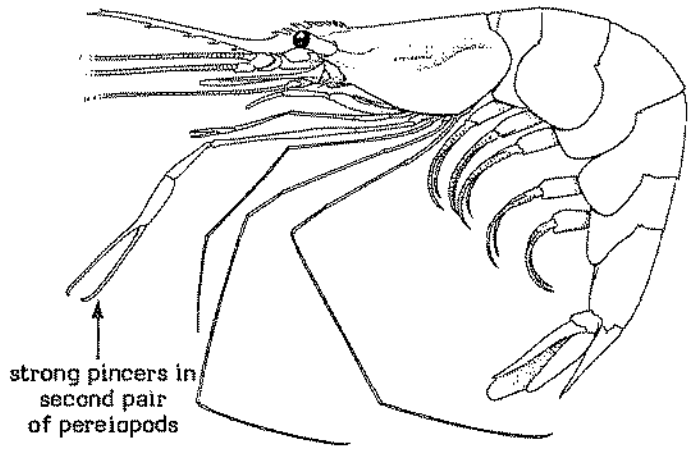
Palaemonidae: first pair of pereiopods with small pincers; second pair much better developed and bearing strong pincers.

Hippolytidae: first pair of pereiopods rather robust, ending in well developed pincers; carpus in second pair segmented.

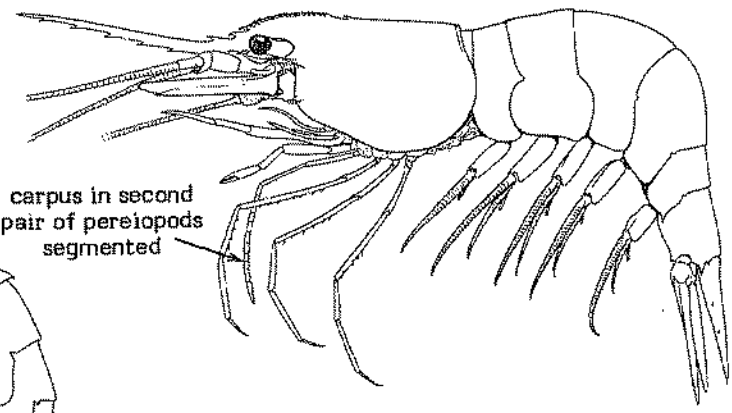
Pandalidae: pincers of first pair of pereiopods very small or absent; carpus in second pair segmented.

Crangonidae: first pair of pereiopods very robust with incomplete pincers lacking the fixed finger; body depressed.

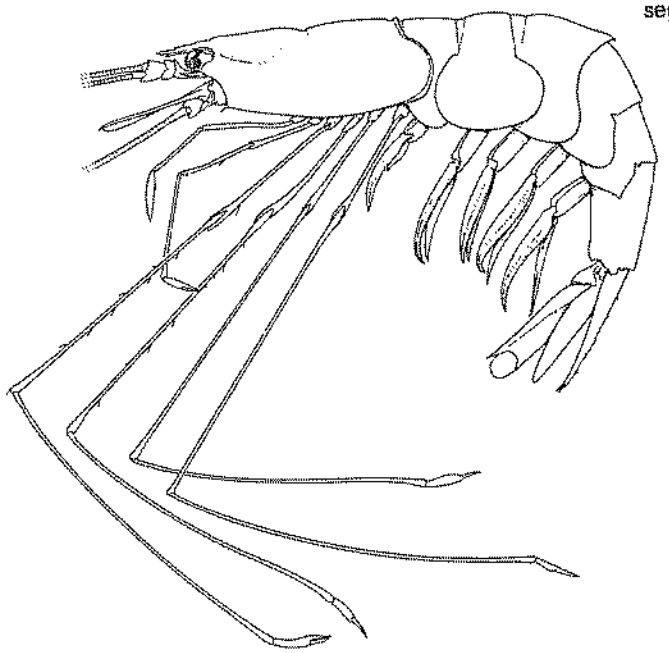
Penaeidean shrimps: pleura of second abdominal segment not overlapping those of first segment; the 3 first pairs of pereiopods ending in pincers.



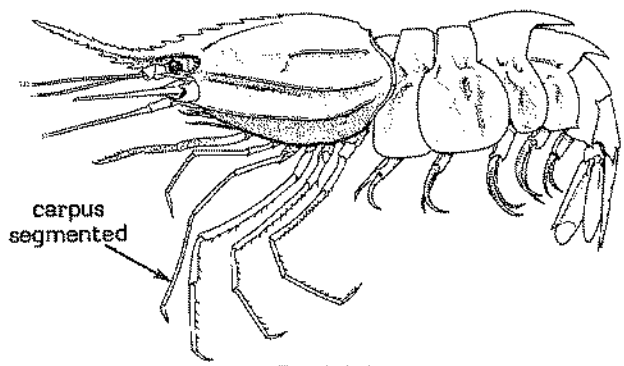
Palaemonidae



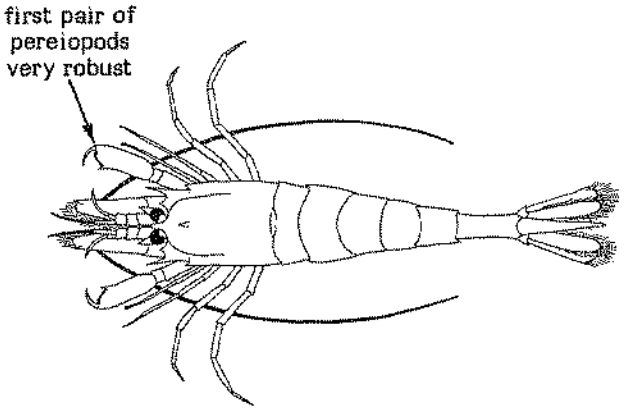
Hippolytidae



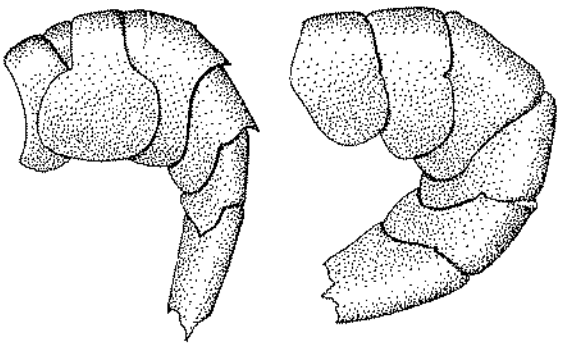
Nematocarcinidae



Pandalidae



Crangonidae



Caridea Penaeidea

abdomen

LIST OF SPECIES OCCURRING IN THE AREA :

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

Eupasiphae gilesi (Wood Mason, 1892)

Glyphus marsupialis Filhol, 1884 PASI Gly 1

Parapasiphae sulcatifrons Smith, 1884

Pasiphaea ecarina Crosnier, 1969
Pasiphaea hoplocerca Chace, 1940
Pasiphaea liocerca Chace, 1940
Pasiphaea multidentata Esmark, 1866
Pasiphaea semispinosa Holthuis, 1951
Pasiphaea sivado (Risso, 1816)
Pasiphaea tarda Krøyer, 1845

Psathyrocaris fragilis Wood Mason, 1893
Psathyrocaris infirma Alcock & Anderson, 1894

Prepared by J.P. Lagardère, Antenne de la Station Marine d'Endoume, C.R.E.O., La Rochelle, France.

Illustrations prepared by Messrs. Gaillard (Laboratoire de Zoologie du Muséum des Sciences Naturelles, Paris) and Opic (O.R.S.T.O.M., Paris)

Draft texts and illustrations revised by A. Crosnier (Paris, France) and L.B. Holthuis (Leiden, The Netherlands)

PASI Gly 1

1981

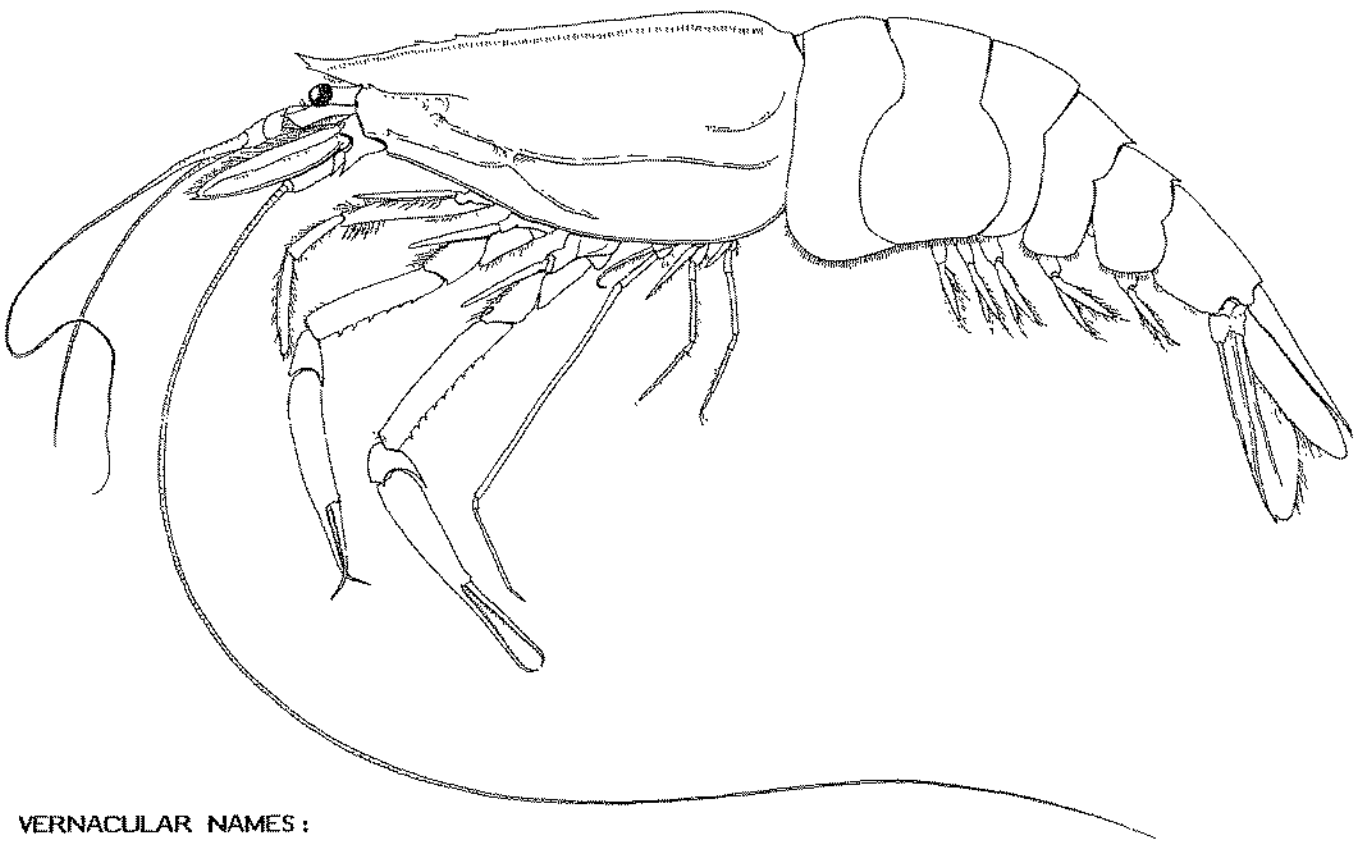
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : PASIPHAEIDAE

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

Glyphus marsupialis Filhol, 1884

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES :

FAO: En - Kangarou shrimp
Fr - Sivade kangourou
Sp - Camarón canguro

0 5 cm

NATIONAL:

DISTINCTIVE CHARACTERS :

Body compressed. Rostrum short, slightly curved upward, smooth dorsally and with a single tooth on ventral margin, prolonged posteriorly by a strong keel running to posterior margin of carapace and bearing 4 to 8 teeth that tend to disappear with age; sides of carapace ornamented with 2 spines (antennal and branchiostegal) and several round-edged crests forming a slightly oblique H-pattern. Palp of mandible composed of 1 or 2 articles; first 2 pairs of pereiopods robust ending in pincers with curved fingers; merus in first pair of pereiopods bearing 6 to 8 spines, in second pair, 7 to 9 spines. Abdominal segments 2 to 6 with a mid-dorsal keel which however is incomplete on segments 2 and 3. Integument thin.

Colour: uniform brilliant red.

OISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

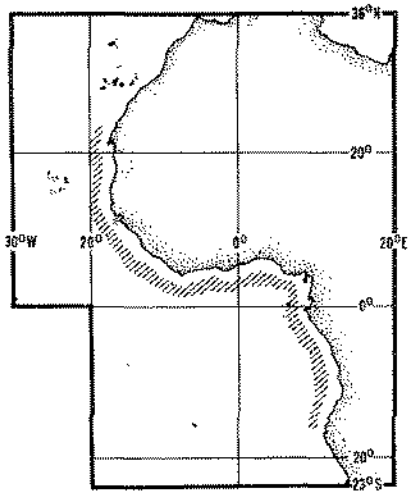
This species is easily distinguished from other glass shrimps liable to appear in trawl catches within the area by its stout body shape, the depth of its carapace and its beautiful uniform red colour.

SIZE:

Maximum total length: 16.7 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Found from Southwestern Sahara to Angola; not known from any other world area.



Inhabits waters over muddy sand bottoms of the continental slope between 500 and 1 100 m depth. Eggs very large and rather few (some tens per female).

Probably carnivorous, like other glass shrimps.

PRESENT FISHING GROUNDS:

Areas of the continental slope trawled for large deepwater shrimps.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species. Although it is never very abundant, the catch per unit effort is not negligible, and it can be expected to be a valuable complement as bycatch in the fishery for the large penaeid shrimps.

Caught with bottom trawls.

PEN

1981

FAO SPECIES IDENTIFICATION SHEETS

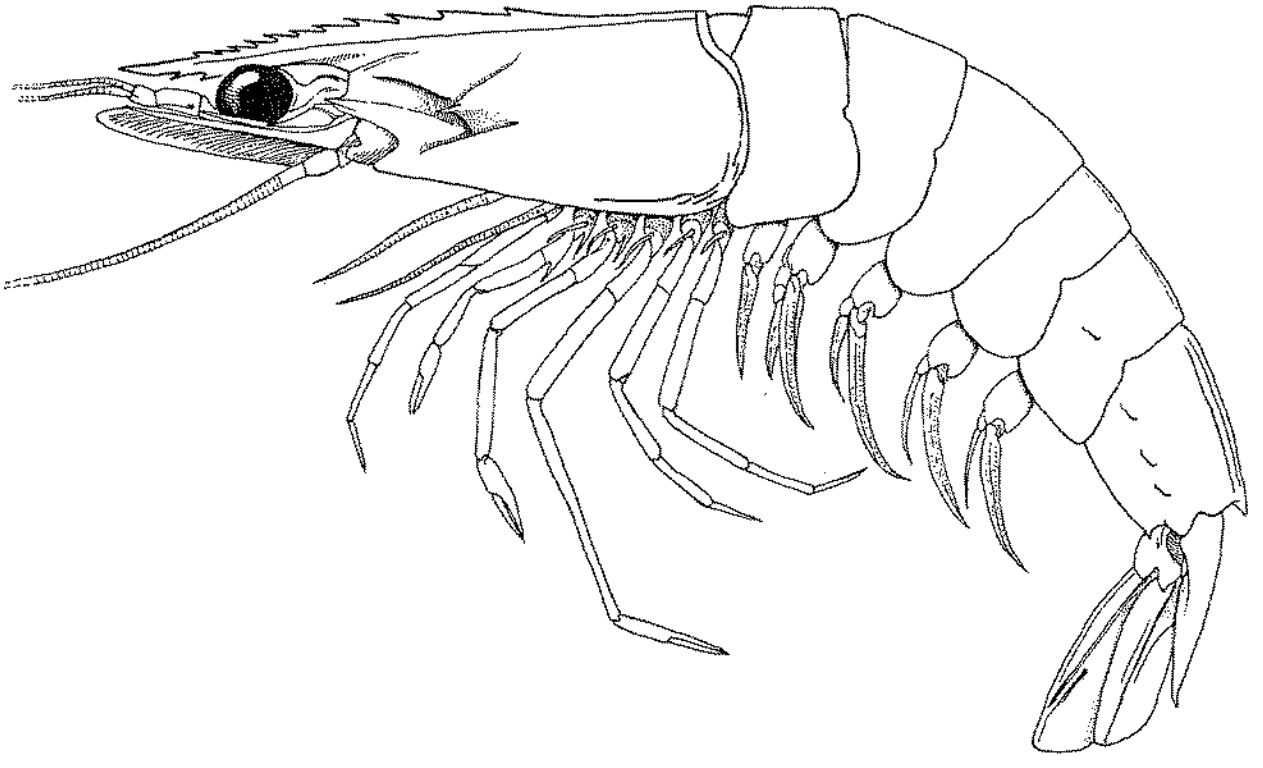
FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

PENAEIDAE

Penaeid shrimps

Shrimps with well developed and toothed rostrum which extends beyond distal margin of eyes; no styliform projections on bases of eyestalks and no tubercles on their mesial (inner) borders. Carapace without postorbital spines and with short cervical grooves ending well below dorsal midline. Last 2 pairs of pereiopods well developed; third and fourth pairs of pleopods biramous, endopods of second pair of pleopods in males bearing appendix masculina only (lacking appendix interna and lateral projection). Telson sharply pointed, with or without fixed or movable spine on sides. Only one, well developed arthrobranch on penultimate thoracic segment (hidden beneath the carapace), but an additional rudimentary arthrobranch occasionally present.

This family includes the most valuable commercial species of shrimps and accounts for roughly 80% (or about 23 000 t) of the total shrimp production from Fishing Area 34 (1977: 28 000 t).



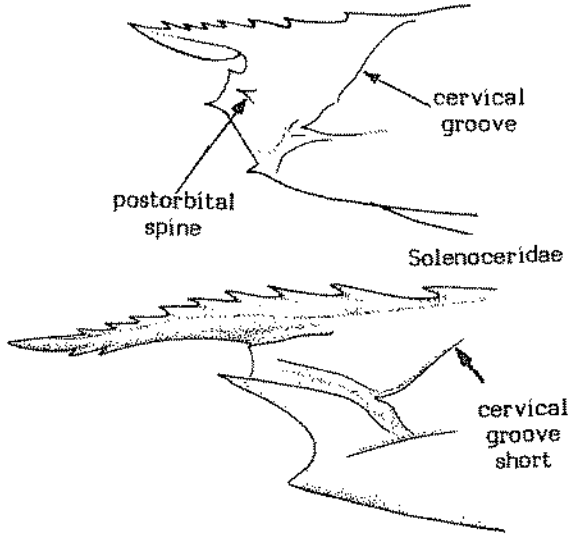
SIMILAR FAMILIES OCCURRING IN THE AREA:

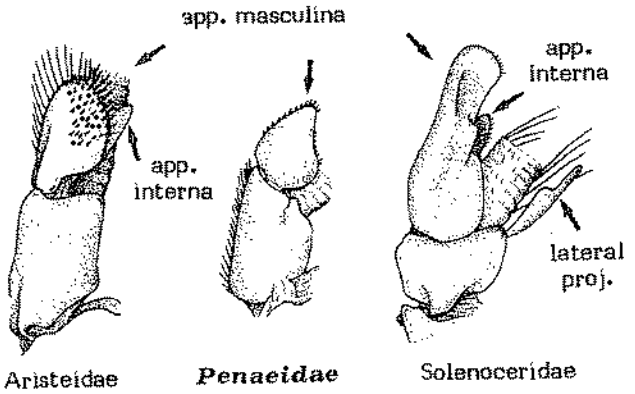
Solenoceridae: eyestalks with a tubercle on their mesial (inner) borders; carapace with post-orbital spines; cervical grooves long; endopods of second pair of pleopods in males bearing appendix masculina, appendix interna and lateral projection; telson with a fixed spine on either side of tip; 2 well developed arthrobranchs on either side of penultimate thoracic segment.

Aristeidae: eyestalks with a tubercle on their mesial (inner) borders; endopods of second pair of pleopods in males bearing appendix masculina and appendix interna, but no lateral projection; 2 well developed arthrobranchs on either side of penultimate thoracic segment.

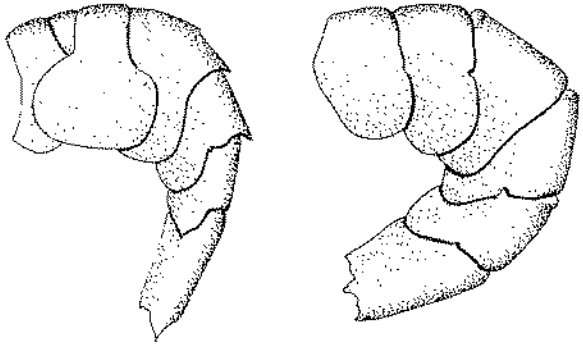
Sicyoniidae: body thick, stony in appearance, integument calcified; cervical grooves very faint or absent; abdomen with deep grooves and numerous tubercles; third and fourth pairs of pleopods single-branched; telson usually with a fixed spine on either side of tip.

Caridean shrimps: pleura of second abdominal segment overlapping those of first and third segments; no pincers on third pair of pereiopods.

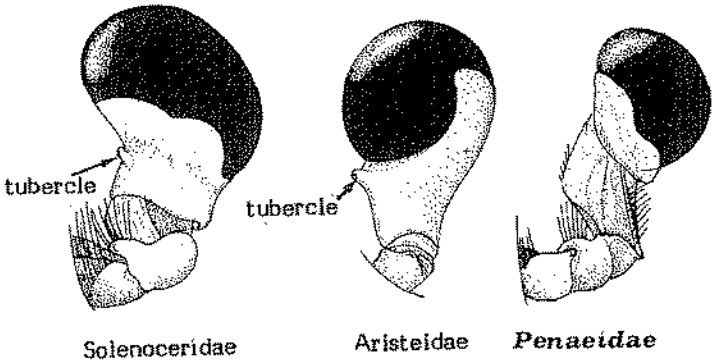


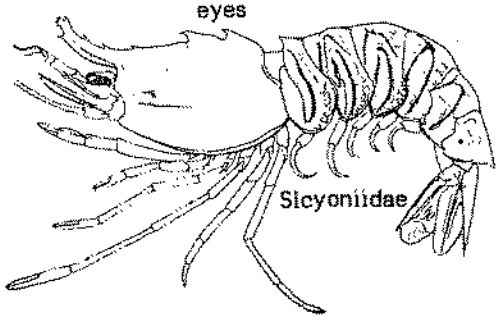


endopod of second pleopod in males



abdomen





KEY TO GENERA OCCURRING IN THE AREA :

1 a. Carapace with lateral keels (Fig. 1); cutting portion of mandible sickle-shaped (Fig. 2a) ..... Funchalia

1 b. Carapace without lateral keels; cutting portion of mandible short and massive (Fig. 2b)

2 a. Rostrum toothed on dorsal as well as on ventral margins (Fig. 3) ..... Penaeus

2 b. Rostrum toothed on dorsal margin only (Fig. 4)

3 a. Carapace with sutures resembling fine grooves (Fig. 4)

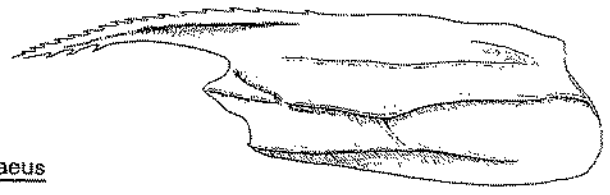
4 a. Exopods present on all pereiopods ..... Parapenaeopsis

4 b. No exopods on pereiopods ..... Parapenaeus

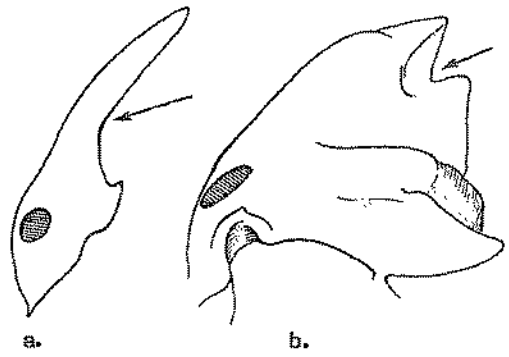
3 b. Carapace without sutures

5 a. Males with symmetrical petasma (Fig. 5a); a single arthrobranch on last thoracic segment ..... Penaeopsis

5 b. Males with asymmetrical petasma (Fig. 5b); 2 arthrobranchs present on last thoracic segment ..... Metapenaeopsis

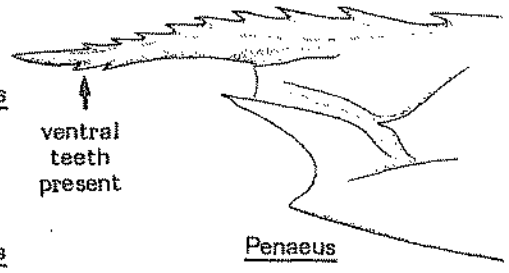


Funchalia (carapace) Fig. 1



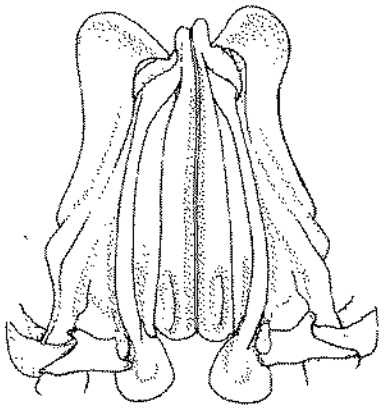
a. b.

mandible Fig. 2

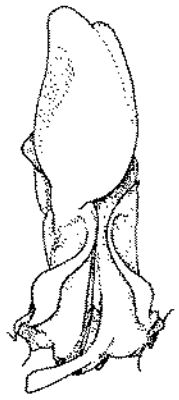


Penaeus

anterior part of carapace Fig. 3

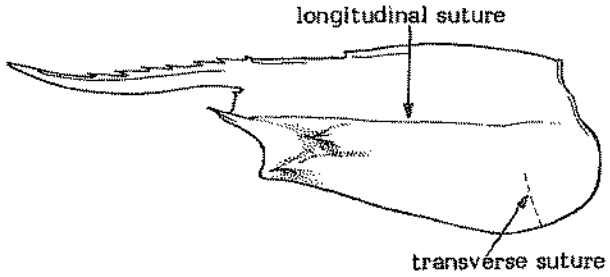


a. Penaeopsis



b. Metapenaeopsis

petasma Fig. 5



Parapenaeus (carapace) Fig. 4

LIST OF SPECIES OCCURRING IN THE AREA :

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

Funchalia balboae (Faxon, 1893)	
Funchalia danae Burkenroad, 1940	
Funchalia villosa (Bouvier, 1905)	
Funchalia woodwardi Johnson, 1867	
Metapenaeopsis miersi Holthuis, 1952	
Parapenaeopsis atlantica Balss, 1914	PEN Para 3
Parapenaeus longirostris (Lucas, 1846)	PEN Parap 1
Penaeopsis serrata (Bate, 1883)	PEN Pe 2
Penaeus (Farfantepenaeus) notialis Pérez-Farfante, 1967	PEN Pen 5
Penaeus (Melicertus) kerathurus (Forskål, 1775)	PEN Pen 1

Prepared by J.P. Lagardère, Antenne de la Station Marine d'Endoume, C.R.E.O., La Rochelle, France. Family sheet adapted from L. Pérez-Farfante in Fischer, W. (ed.), 1978: FAO Species Identification Sheets for Fishery Purposes, W.C. Atlantic, 1978

Illustrations (except section on "Similar Families" on family sheet) prepared by Messrs Gaillard (Laboratoire de Zoologie du Muséum des Sciences Naturelles, Paris) and Opic (O.R.S.T.O.M., Paris)

Draft texts and illustrations revised by A. Crosnier (Paris, France) and L.B. Holthuis (Leiden, The Netherlands)

PEN Para 3

1981

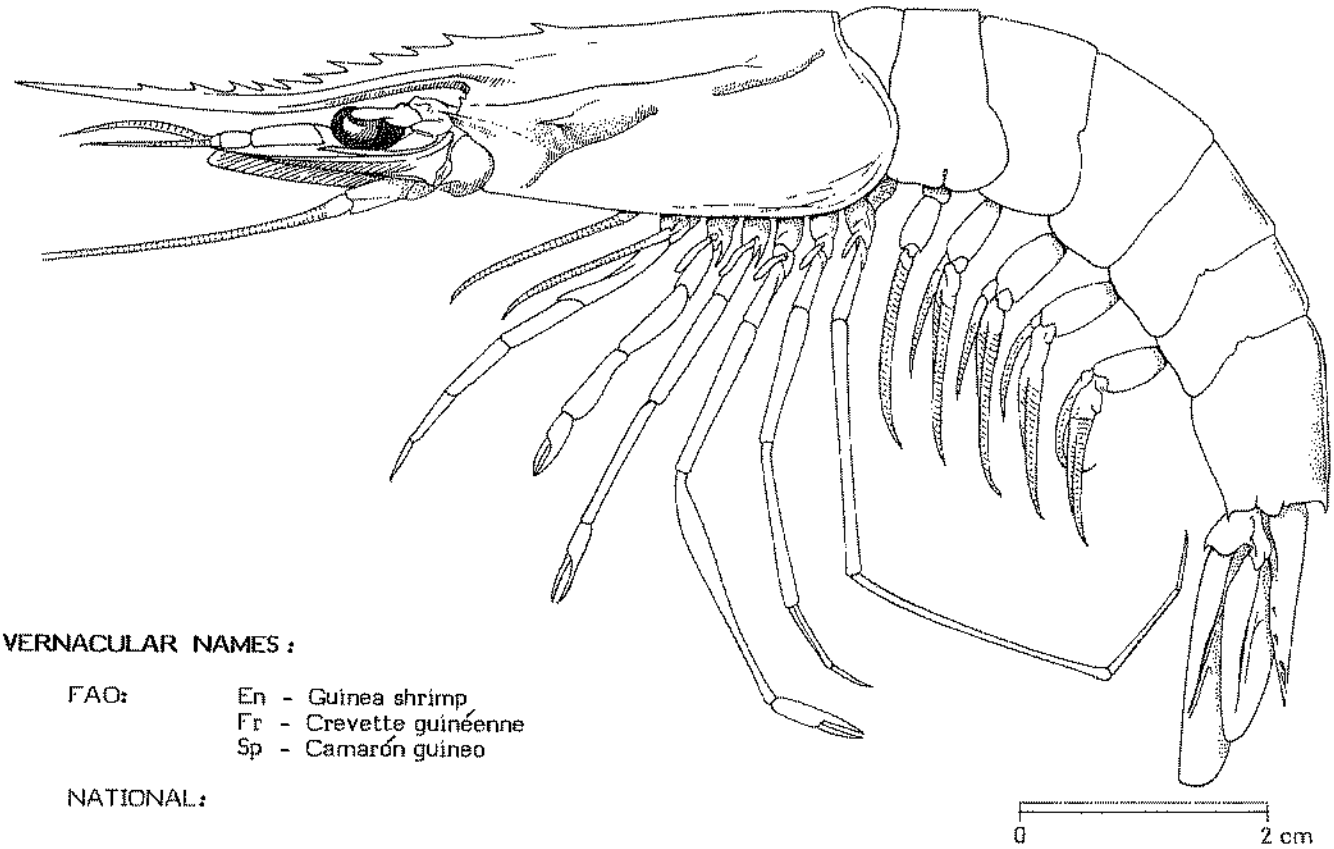
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : PENAEIDAE

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

Parapenaeopsis atlantica Balss, 1914

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES :

FAO: En - Guinea shrimp
Fr - Crevette guinéenne
Sp - Camarón guineo

NATIONAL:

DISTINCTIVE CHARACTERS :

Rostrum rather long, its dorsal margin armed with usually 10 teeth, its tip slightly bent upward and extending well beyond distal end of antennular peduncles. Sides of carapace with an incomplete longitudinal suture. Fourth pair of pereiopods clearly shorter than the fifth (or last) pair; epipods absent at least on third, fourth and fifth pairs, but exopods present on bases of all pereiopods. Lateral margins of telson with 4 pairs of mobile spines.

Colour: an inconspicuous pale brownish pink; eyestalks lemon yellow; antennae and pereiopods (except the first pair) brownish red; uropods of tail fan brownish red distally and edged with yellow toward their tips.

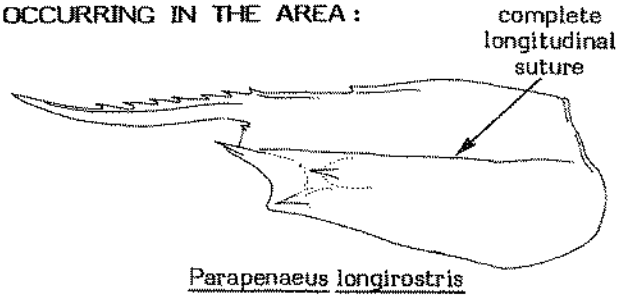
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Parapenaeus longirostris: tip of rostrum also bent upward, but barely extending beyond antennular peduncles; less than 10 teeth on dorsal margin of rostrum (usually 10 in P. atlantica); longitudinal suture running throughout the length of carapace; no exopods on pereiopods; telson without mobile spines.

Penaeopsis serrata: rostrum very short and bent downward, with usually 14 teeth on its dorsal margin; eyes very large; carapace without sutures.

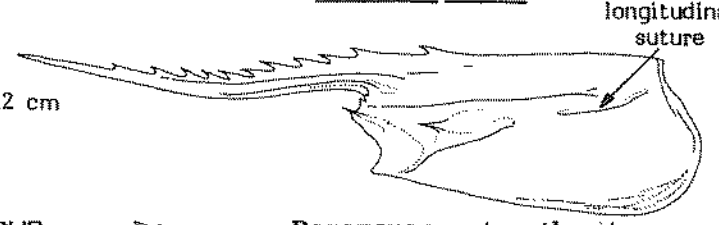
Metapenaeopsis miersi: rostrum very short and directed upward; carapace without sutures; petasma (in males) asymmetrical (symmetrical in P. atlantica).

Penaeus species: 1 or 2 teeth present on ventral margin of rostrum.

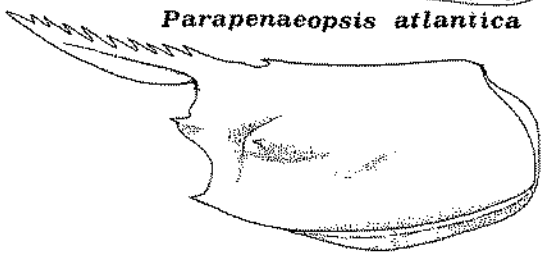


Parapenaeus longirostris


Penaeopsis serrata



Parapenaeopsis atlantica


Metapenaeopsis miersi

SIZE :

Maximum total length: 17 cm (females), 12 cm (males).

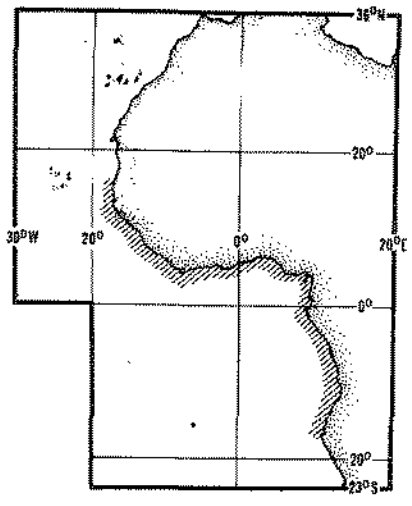
GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Known from Senegal to Angola.

Inhabits sand and muddy sand bottoms at depths between 10 and 40 m (never found beyond 60 m). Although it prefers warm waters it is capable of living, during the cold season, in cool waters not exceeding 16°C. Growth takes place entirely in the sea. This species is apparently rather inactive in daytime, except in turbid waters.

PRESENT FISHING GROUNDS :

Coastal areas off Ivory Coast, Liberia, Cameroun, Gabon, Ghana and Congo. It seems to be a very fluctuating resource, sometimes rare and sometimes very abundant, mainly near estuaries



CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species. The 1977 catch has been estimated at about 2 000 t, and there is clear tendency toward increased exploitation.

Caught with bottom trawls.

Marketed fresh and frozen.

PEN Parap 1

1981

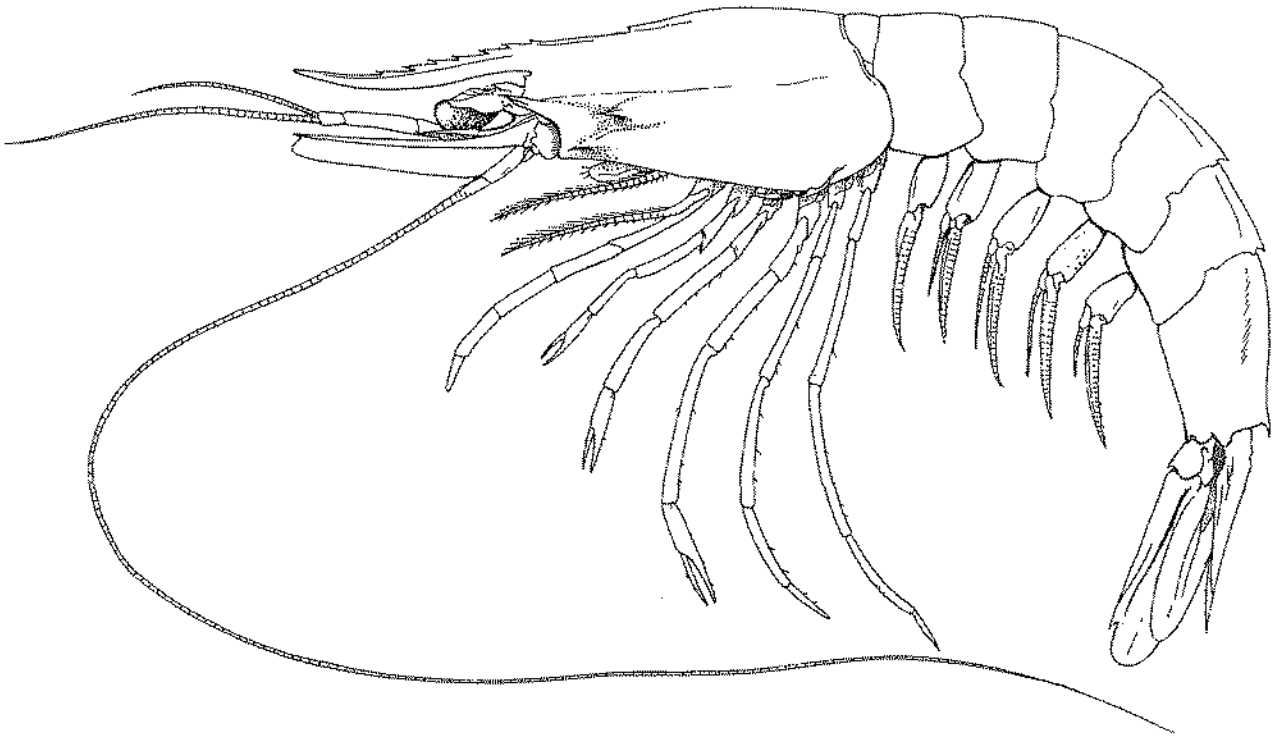
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : PENAEIDAE

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

Parapenaeus longirostris (Lucas, 1846)

OTHER SCIENTIFIC NAMES STILL IN USE : None



0 0.8 cm

VERNACULAR NAMES :

FAO: En - Deepwater roseshrimp
Fr - Crevette rose du large
Sp - Camarón de altura

NATIONAL:

DISTINCTIVE CHARACTERS :

Rostrum always slightly bent upward, its dorsal margin armed with usually 8 teeth, the last gastric in position and well separated from the others. A longitudinal suture running throughout the length of carapace. No exopods at bases of pereiopods. Telson ending in a pointed tip flanked by 2 fixed spines, its lateral margins without mobile spines.

Colour: orange pink with a clearly red rostrum; gastric region reddish violet and ovaries greenish (tur green at maturity) shining through the carapace; sides of abdomen with bright orange blotches at r junction between segments.

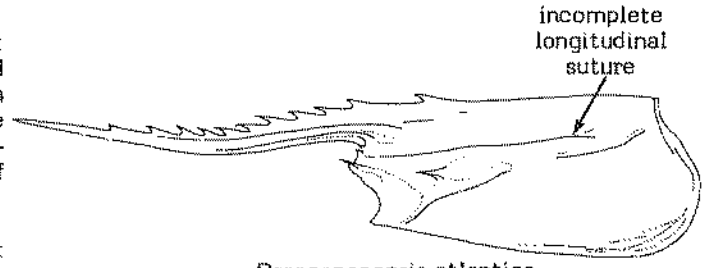
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Parapenaeopsis atlantica: rostrum also bent upward but much longer, its tip reaching well beyond antennular peduncles; usually 10 teeth on dorsal margin of rostrum (8 in P. longirostris); longitudinal suture ending well before posterior margin of carapace; exopods present on all pereiopods; telson with 4 pairs of mobile spines (none in P. longirostris).

Penaeopsis serrata: rostrum rather short and bent downward, with usually 14 teeth on its dorsal margin; eyes very large; carapace without sutures.

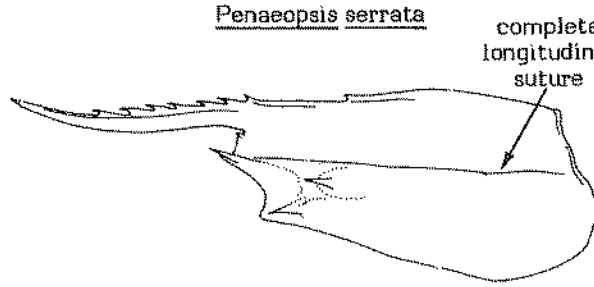
Metapenaeopsis miersi: rostrum very short and directed upward; carapace without sutures; petasma (in males) asymmetrical (symmetrical in P. longirostris).

Penaeus species: 1 or 2 teeth present on ventral margin of rostrum.



Parapenaeopsis atlantica


Penaeopsis serrata



Parapenaeus longirostris


Metapenaeopsis miersi

SIZE:

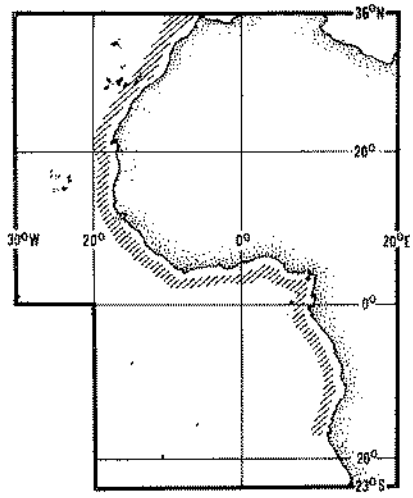
Maximum total length: 19 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Throughout the area, from Morocco to Angola.

Usually inhabits sandy mud bottoms at depths between 100 and 400 m, in waters of 8 to 15°C. It carries out important daily or monthly vertical migrations interpreted as phototrophic responses. Its bathymetric distribution also varies with size, large individuals occupying the deepest part of the species' depth range. Spawning takes place mainly in winter, from November to April. The feeding activity is primarily diurnal and as a result of this most of the catches are taken by day.

Feeds on benthic organisms (clams, mysids and small crangonids).



PRESENT FISHING GROUNDS:

Continental shelf and sandy mud bottoms of the upper slope from Morocco to Senegal, possibly to Angola.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species. The 1977 catches from the area have been estimated at a maximum of 3 000 to 4 000 t.

Caught with bottom trawls.

Marketed fresh, cooked and frozen, or cooked and peeled.

PEN Pen 1

1981

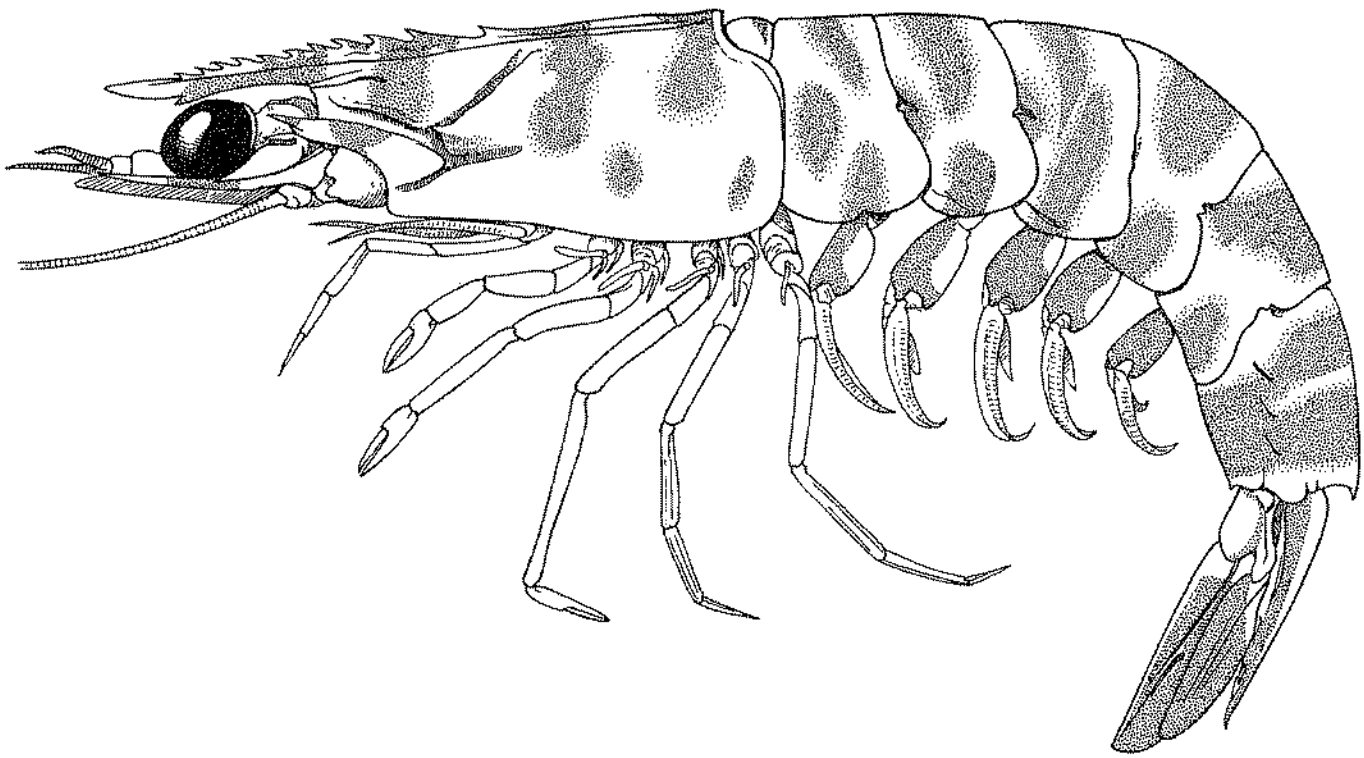
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : PENAEIDAE

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

Penaeus (Melicertus) kerathurus (Forskål, 1775)

OTHER SCIENTIFIC NAMES STILL IN USE : Penaeus trisulcatus (Leach, 1814)
Penaeus caramote Risso, 1816



VERNACULAR NAMES :

FAO: En - Caramote prawn
Fr - Caramote
Sp - Camarón langostino español

NATIONAL:

0 3 cm

OISTINCTIVE CHARACTERS :

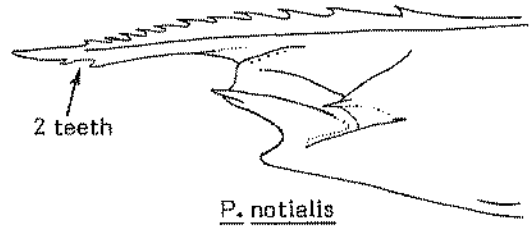
Rostrum slightly bent upward at tip, with usually 11 teeth (from 8 to 13) on dorsal margin, and a single strong tooth on ventral margin. Last (sixth) abdominal segment without dorso-lateral grooves on either side of dorsal keel.

Colour: rather variable and differing with sex; males often light with transverse pink bars on abdomen; females greenish yellow or greyish yellow with copper-green or brownish mauve bars; tail fan often blue toward tip and edged with red.

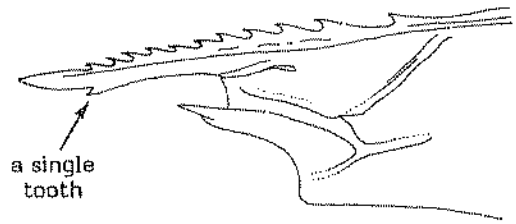
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Penaeus (Farfantepenaeus) notialis: 2 (instead of 1) strong teeth on ventral margin of rostrum; deep dorso-lateral grooves present on either side of dorsal keel of last (sixth) abdominal segment; colour uniform light.

Other species of Penaeldae: ventral margin of rostrum toothless.



P. notialis



P. kerathurus

SIZE :

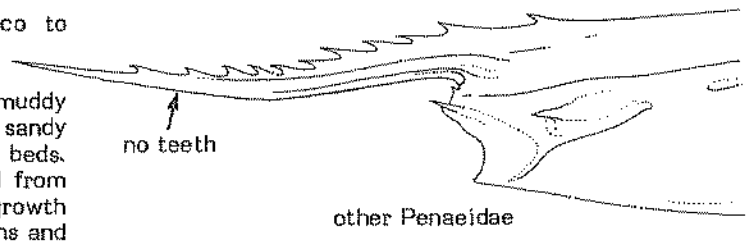
Maximum total length: 23.5 cm (females), 18 cm (males).

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Found throughout the area, from Morocco to Angola, between 5 and 50 m depth.

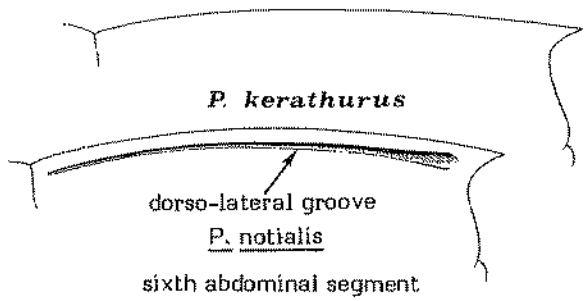
During the reproduction period it prefers muddy bottoms but otherwise occurs more often on sandy bottoms rich in organic detritus or on seagrass beds. Spawning takes place in summer, but may extend from the beginning of May to mid-November; the growth areas of the postlarvae are found near river mouths and in lagoon areas.

Feeds at night on small benthic organisms (molluscs, polychaetes, crustaceans and echinoderms)



other Penaeidae

anterior part of carapace



P. notialis

sixth abdominal segment

(lateral view)

PRESENT FISHING GROUNDS :

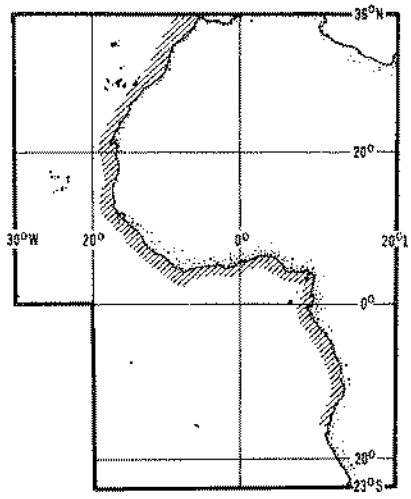
Throughout its range in coastal waters close to river mouths.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Available statistics (950 t by Italy in 1978) are doubtful as there is apparently no direct fisheries for this species.

Caught with bottom trawls.

Marketed fresh or frozen.



PEN Pen 5

1981

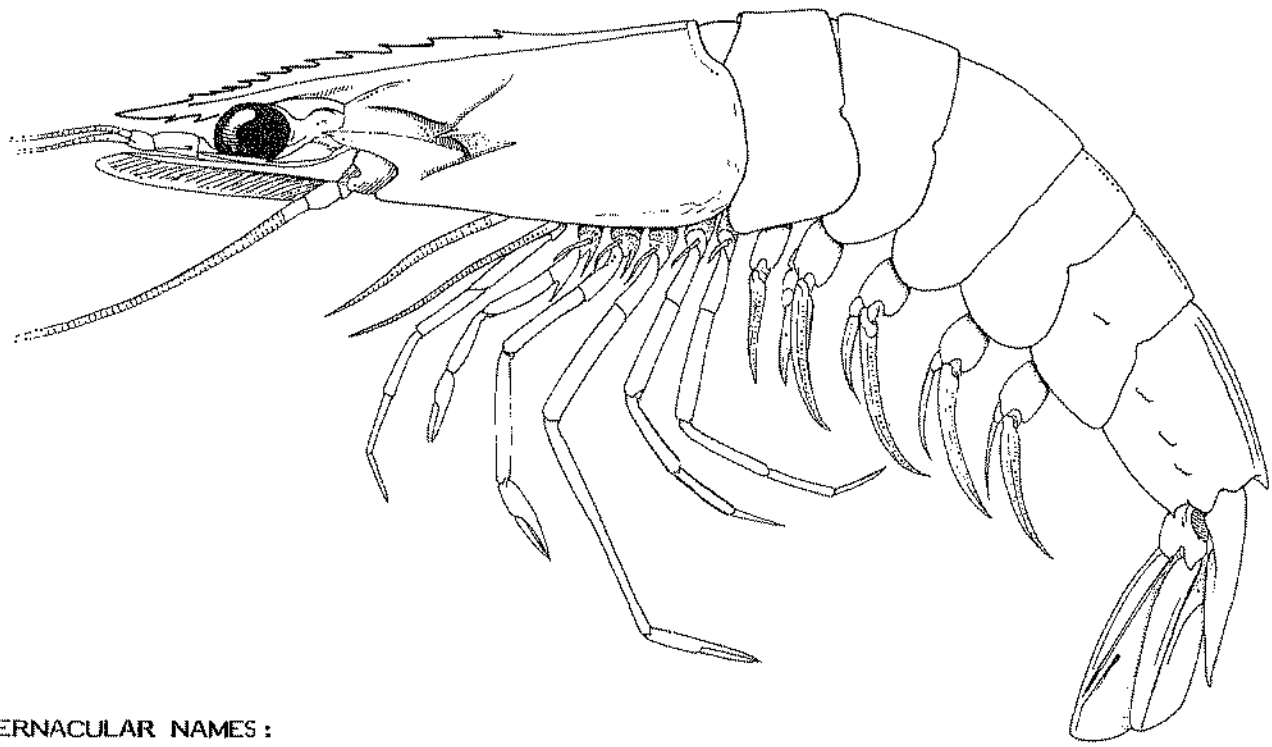
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : PENAEIDAE

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

Penaeus (Farfantepenaeus) notialis Pérez-Farfante, 1967

OTHER SCIENTIFIC NAMES STILL IN USE : Penaeus (Melicertus) duorarum Burkenroad, 1939*
Penaeus brasiliensis Latreille, 1817





VERNACULAR NAMES :

FAO: En - Pink shrimp (southern)
Fr - Crevette rodché (du sud)
Sp - Camarón rosado (sureño)

NATIONAL:

DISTINCTIVE CHARACTERS :

Rostrum with usually 9 teeth (from 8 to 11) on dorsal margin and 2 on ventral margin. Last (sixth) abdominal segment with a well defined dorso-lateral groove on either side of dorsal keel.

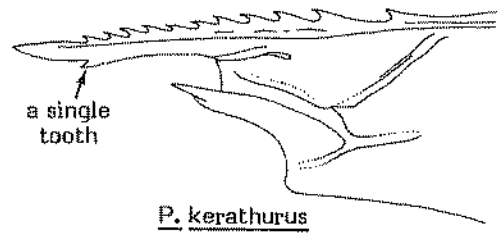
Colour: uniform blond in individuals from the West African coast, while in the Western Central Atlantic, coloration varies considerably with the habitat, from pink to brown red or lemon yellow. This species often has a characteristic dark blotch at junction of third and fourth abdominal segments.

A valid species incorrectly referred to as P. notialis in the literature*

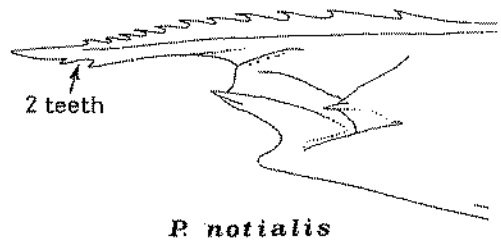
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Penaeus (Melicertus) kerathurus: a single tooth (instead of 2) on ventral margin of rostrum; no dorso-lateral grooves on last abdominal segment; dark bars on carapace and abdomen.

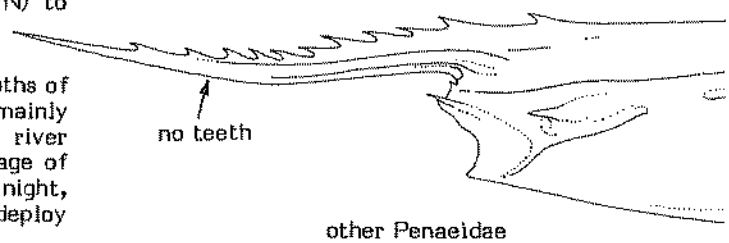
Other species of Penaeidae: ventral margin of rostrum toothless.



P. kerathurus



P. notialis



other Penaeidae

anterior part of carapace

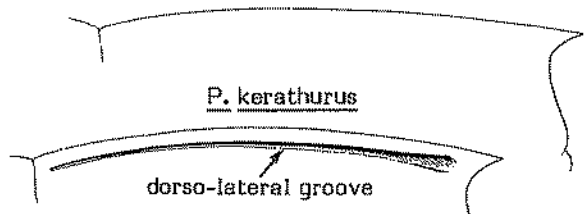
SIZE :

Maximum total length: 23 cm (females), 17 cm (males).

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Known from Mauritania (Cape Blanc, 21°N) to Angola.

Inhabits mud or muddy sand bottoms to depths of 100 m, but usually between 10 and 75 m; it is mainly found in temperate (18 to 24°C) water near river mouths and lagoon outlets; juveniles require a stage of about 6 months in brackish water. Active at night, especially in the warmer season, but may also deploy some activity by day in turbid waters.



P. notialis

sixth abdominal segment

(lateral view)

PRESENT FISHING GROUNDS :

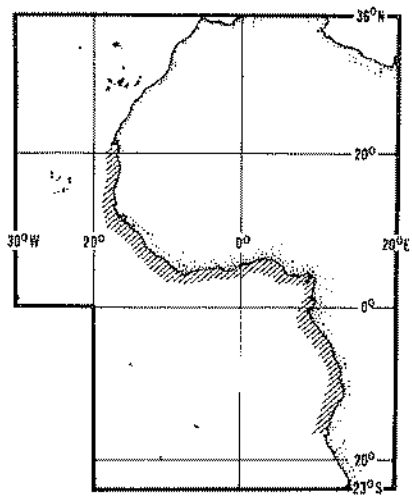
Coastal muddy bottoms off Senegal (Casamance, Cayar, Cape Roxo), Guinea, Sierra Leone, Liberia, Ivory Coast, Ghana, Dahomey, Nigeria, Cameroun, Gabon, also exploited in small quantities off Congo and Angola.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

The catch reported from the area for this species totalled about 15 000 t in 1978.

Caught in lagoons with traps and other artisanal gear (pots, cano-operated stow-nets, conical nets, small "azui" trawls towed by 2 persons and beach seines) and at sea with traditional and Florida-type bottom trawls (double rig).

Marketed fresh, frozen (headless and raw), treated with boric acid (Spain), cooked and frozen (France), or smoked and powdered (locally).



SICYON

1981

FAO SPECIES IDENTIFICATION SHEETS

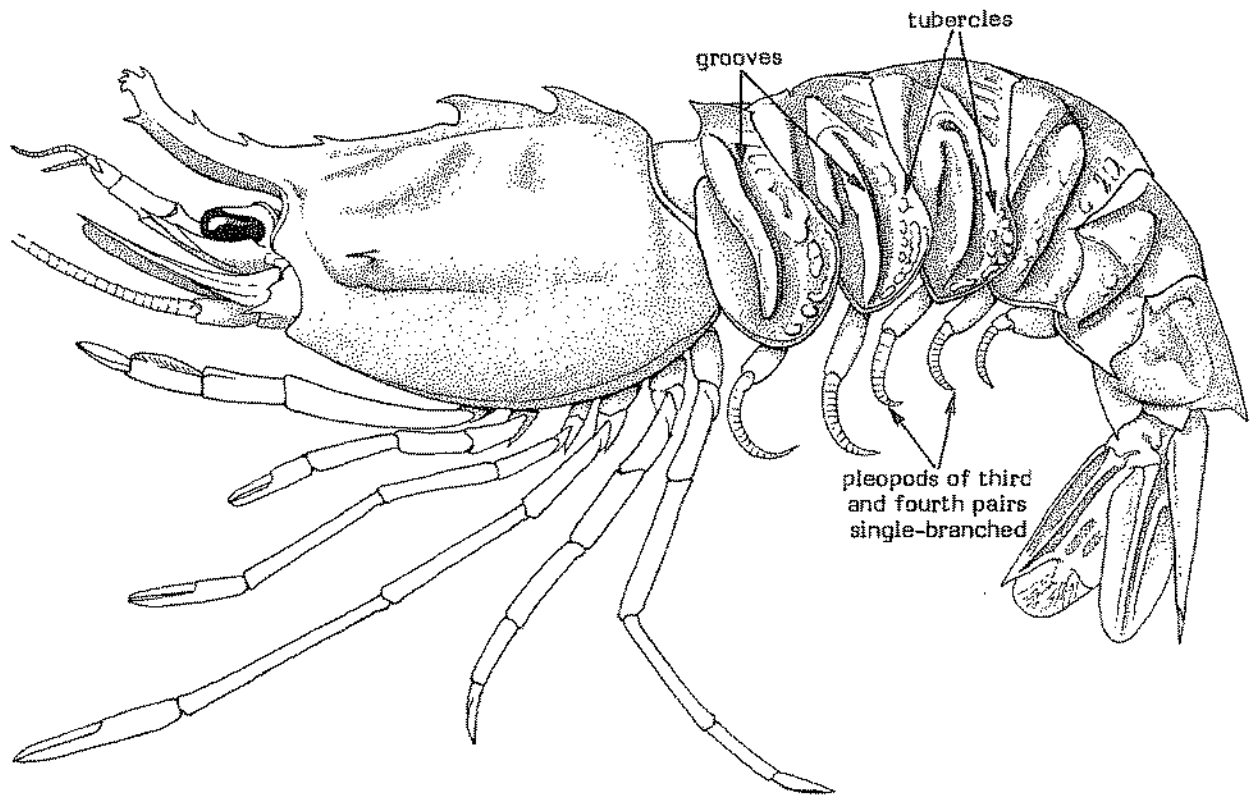
FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

SICYONIIDAE

Rock shrimps

Body robust, rigid, of stony appearance, integument calcified. Rostrum well developed (reaching to or exceeding distal end of eyestalks) and armed with teeth; bases of eyestalks with styliform projections on their inner surface and without a tubercle on their mesial borders. Carapace without postorbital spines; cervical grooves very faint or absent. Last 2 pairs of pereiopods well developed; endopods of second pair of pleopods in males bearing only an appendix masculina; third and fourth pairs of pleopods single-branched. Telson usually armed with a fixed spine on either side of tip. A single well developed arthrobranch on penultimate thoracic segment.

All of the representatives of this family are marine, but only one of the two species occurring in the Eastern Central Atlantic may be considered of some interest to fisheries.



SIMILAR FAMILIES OCCURRING IN THE AREA:

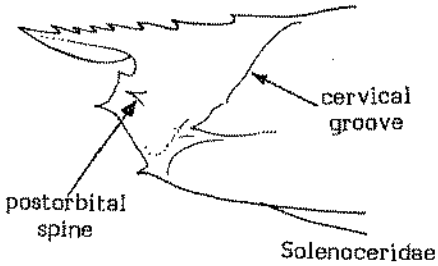
Solenoceridae, Aristeidae and Penaeidae: integument thinner and less rigid; abdomen without deep grooves or tubercles. Further distinguishing characters of these families are the following:

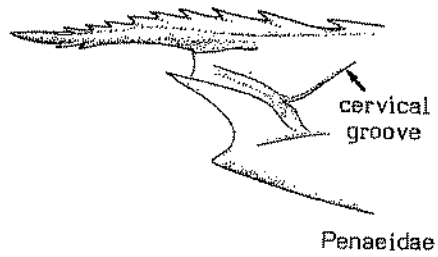
Solenoceridae: carapace with postorbital spines; cervical grooves long; endopods of second pair of pleopods in males bearing appendix masculina, appendix interna and lateral projection; 2 well developed arthrobranchs on either side of penultimate thoracic segment. Telson with fixed spines on either side of tip.

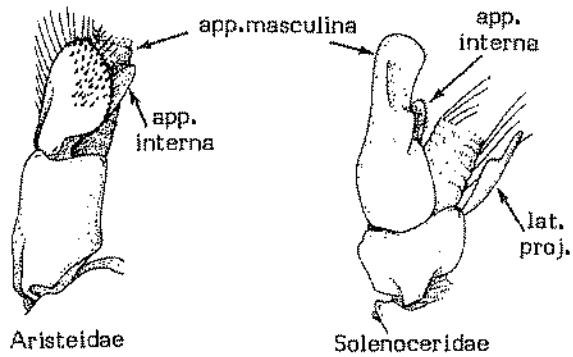
Aristeidae: postorbital spines absent; endopods of second pair of pleopods in males bearing appendix masculina and appendix interna but no lateral projection; spines on either side of tip of telson movable.

Penaeidae: postorbital spines absent; cervical grooves short; endopods of second pair of pleopods (in males) with an appendix masculina only; a single well developed arthrobranch at bases of penultimate thoracic segment (hidden beneath carapace).

Caridean shrimps: pleura of second abdominal segment overlapping those of first and third segments; no pincers on third pair of pereiopods.







endopod of second pleopod in male

KEY TO GENERA OCCURRING IN THE AREA:

Sicyonia only.

LIST OF SPECIES OCCURRING IN THE AREA:

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

Sicyonia carinata (Brünnich, 1768)

Sicyonia galeata Holthuis, 1952 SICYON Sicyon 5

Prepared by J.P. Lagardère, Antenne de la Station Marine d'Endoume, C.R.E.O., La Rochelle, France. Family sheet adapted from I. Pérez-Farfante in Fischer (ed.): FAO Species Identification Sheets for Fishery Purposes, Western Central Atlantic, 1978

Illustrations (except section on "Similar Families" on family sheet) prepared by Messrs. Gaillard (Laboratoire de Zoologie du Muséum des Sciences Naturelles, Paris) and Opic (O.R.S.T.O.M., Paris)

Draft texts and illustrations revised by A. Crosnier (Paris, France) and L.B. Holthuis (Leiden, The Netherlands)

SICYON Sicyon 5

1981

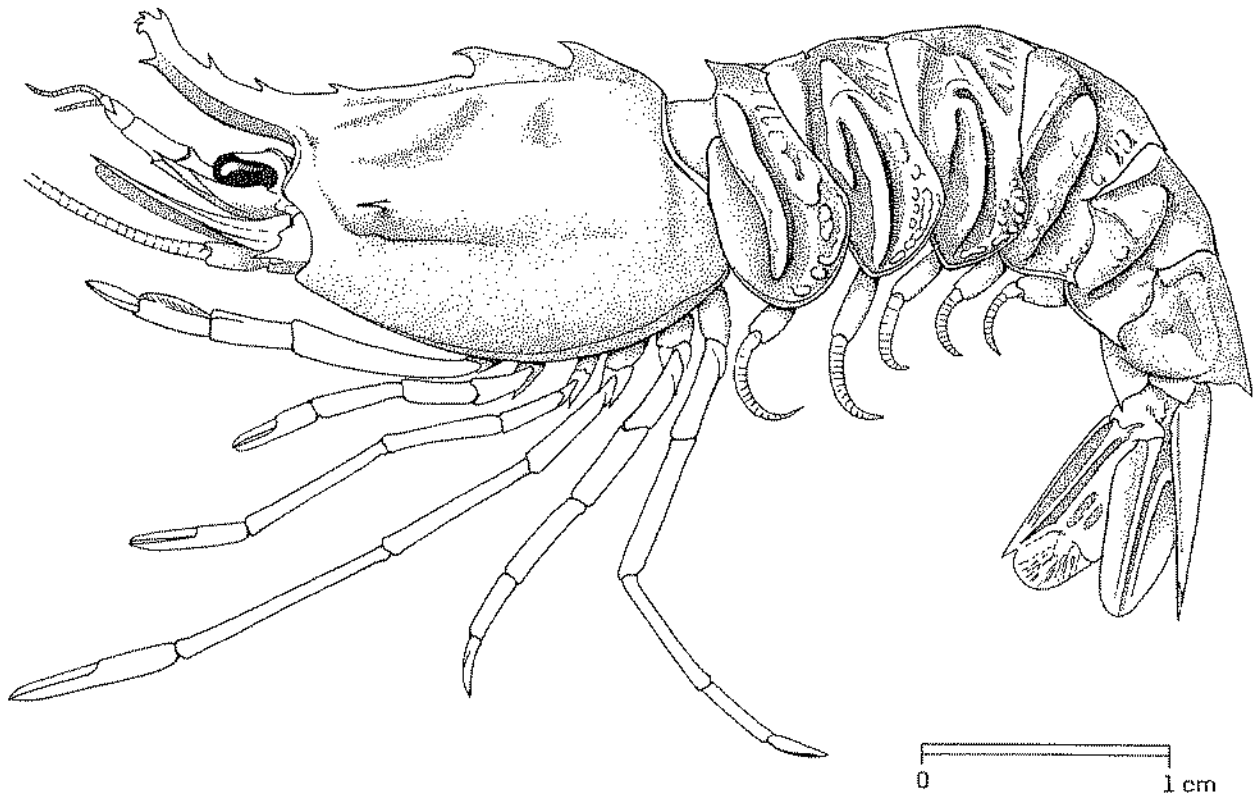
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : SICYONIIDAE

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

Sicyonia galeata Holthuis, 1952

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES :

FAO: En - Tufted rock shrimp
Fr - Sicyonie huppée
Sp - Camarón penachudo

NATIONAL:

DISTINCTIVE CHARACTERS :

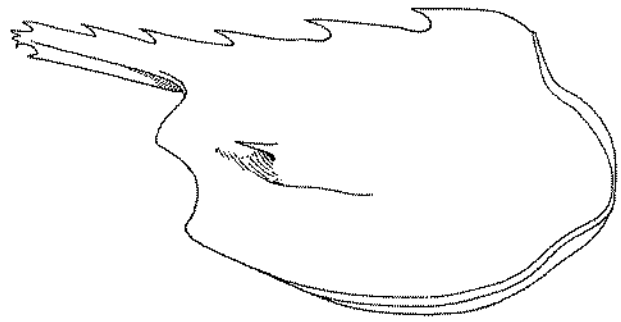
Rostrum long, rather slender and distinctly curved upward, its dorsal margin with 3 teeth anterior to orbit; mid-dorsal keel of carapace (postrostral crest) bearing 3 teeth, the last two very strong. Hind margin of pleura of first 3 abdominal segments rounded, but those of segments 4 and 5 ending in a sharp, backward-pointing spine. Integuments strongly calcified and rigid.

Colour: greyish brown.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Sicyonia carinata: rostrum straight, only slightly bent upward; the 3 teeth on the postrostral crest subequal; hind margin of pleura of 4th abdominal segment rounded.

Other species of Penaeidae: integument much thinner and less calcified.



S. carinata

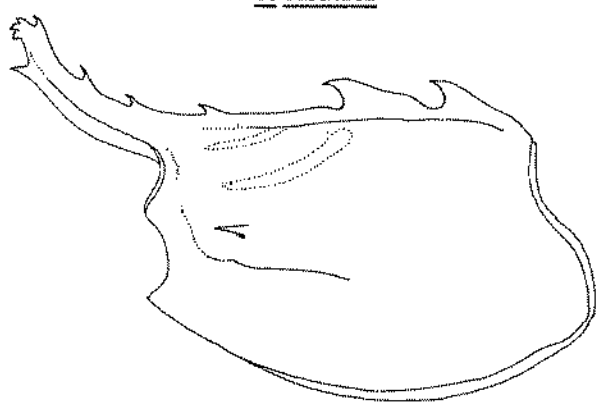
SIZE :

Maximum total length: 6.2 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Found from Southwestern Sahara to Angola.

Inhabits mud or sandy mud bottoms between 15 and 70 m depth.



S. galeata

PRESENT FISHING GROUNDS :

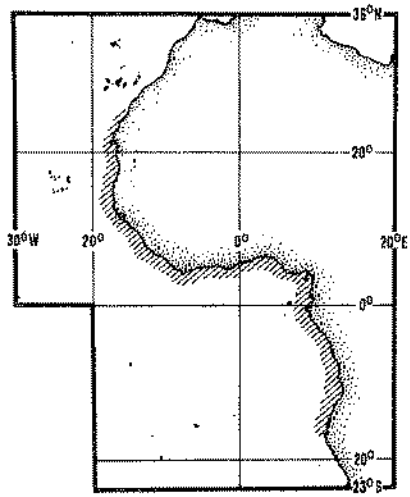
Not exploited commercially at present.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species, but the quantities taken are negligible. The species is too small and apparently not abundant enough to sustain a sizeable fishery and may at best serve as a supplementary resource in intertropical fisheries.

May be caught with bottom trawls.

Marketable fresh.



SOLENO

1981

FAO SPECIES IDENTIFICATION SHEETS

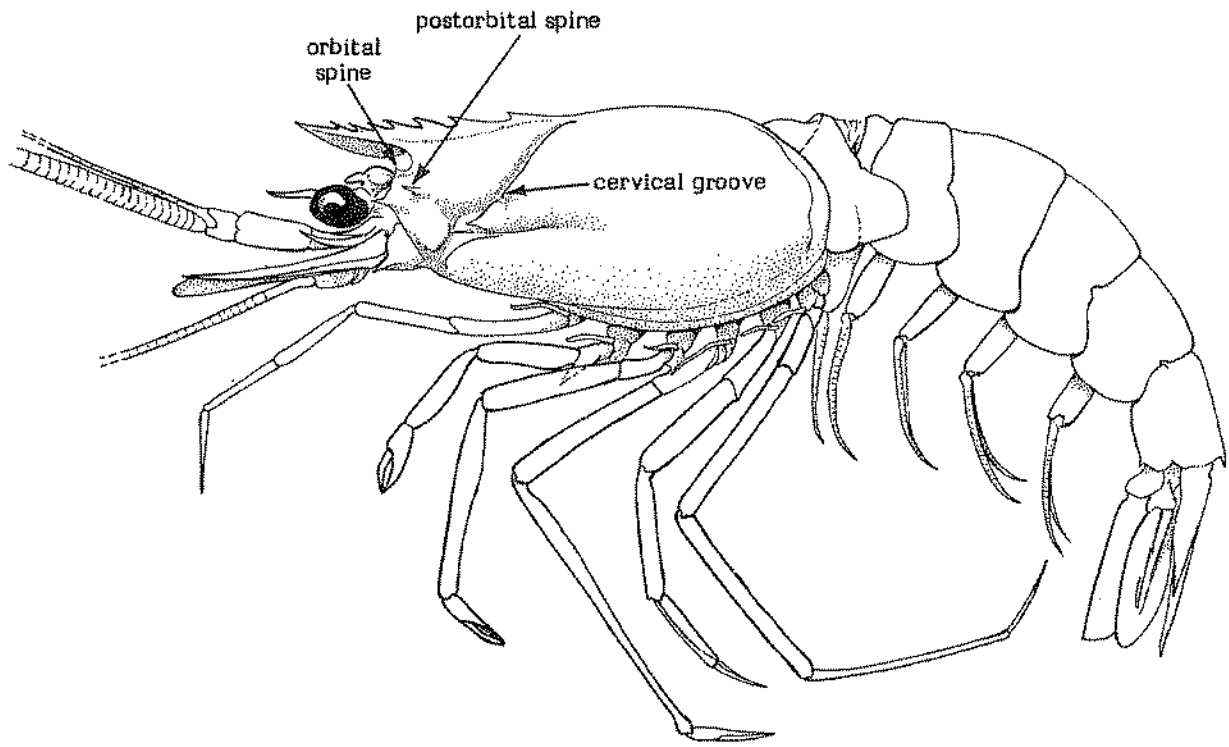
FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

SOLENOCERIDAE

Solenocerid shrimps

Shrimps with a well developed and toothed rostrum which extends to or beyond distal edge of eyes; no styliform projections at bases of eyestalks but a tubercle present on their mesial (inner) border. Carapace with postorbital spines and long cervical grooves which end at, or close to, dorsal midline. Last 2 pairs of pereiopods well developed; endopods of second pair of pleopods in males bearing appendix masculina, appendix interna and lateral projection; third and fourth pairs of pleopods biramous. Telson tridentate (with a fixed spine on each side of tip). Two well developed arthrobranchs on the penultimate thoracic segment (hidden beneath the carapace).

This family includes only marine, generally small-sized representatives.



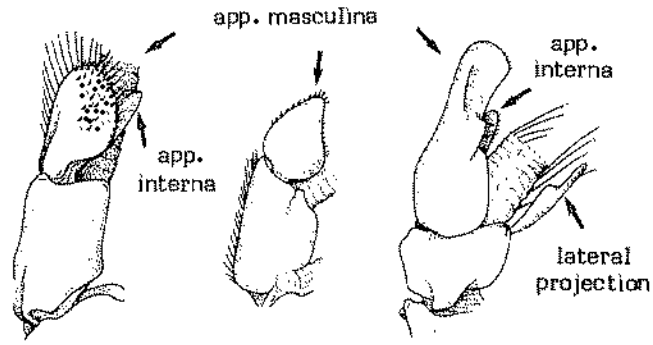
SIMILAR FAMILIES OCCURRING IN THE AREA :

Aristeidae: postorbital spines on carapace absent; telson bearing movable spines; endopods of second pair of pleopods in males bearing appendix masculina and appendix interna but no lateral projection.

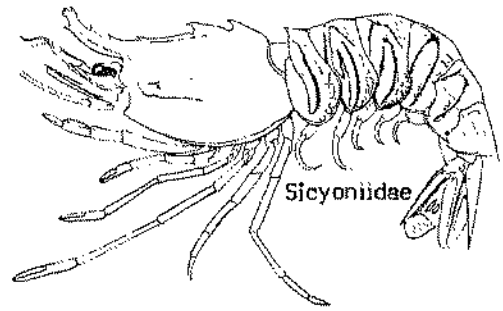
Penaeidae: postorbital spines absent; eyestalks without tubercle on inner border; cervical grooves short; endopods of second pair of pleopods in males bearing appendix masculina only; a single, well developed arthrobranch on penultimate thoracic segment (hidden beneath carapace).

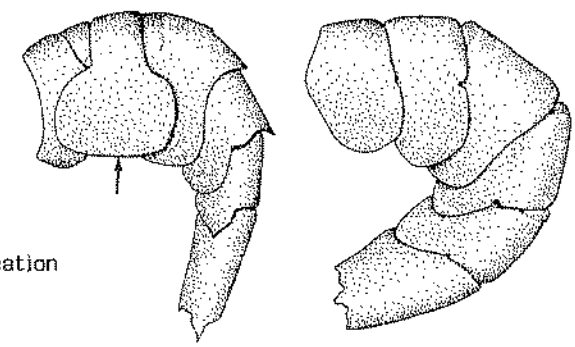
Sicyoniidae: postorbital spines absent; body thick, stony in appearance, with a calcified integument; abdomen with deep grooves and numerous tubercles; cervical groove very faint or absent; third and fourth pairs of pleopods single-branched; endopods of second pair of pleopods in males bearing an appendix masculina only; a single, well developed arthrobranch on penultimate thoracic segment.

Caridean shrimps: pleura of second abdominal segment overlapping those of first and third segments; no pincers on third pair of pereiopods.



endopod of second pleopod in male





abdomen

LIST OF SPECIES OCCURRING IN THE AREA :

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

Hadropenaeus affinis (Bouvier, 1906)

Hymenopenaeus aphoticus Burkenroad, 1936
Hymenopenaeus chacei Crosnier & Forest, 1969
Hymenopenaeus debilis Smith, 1882
Hymenopenaeus laevis (Bate, 1881)

Solenocera africana Stebbing, 1917 SOLENO Soleno 2
Solenocera membranacea (Risso, 1816)

Family sheet adapted from I. Pérez Farfante, in Fischer, (ed.): FAO Species Identification Sheets for Fishery Purposes, W.C. Atlantic, Fishing Area 31, 1978, by J.P. Lagardère, Antenne de la Station Marine d'Endoume, C.R.E.O., La Rochelle, France

Species sheet prepared by J.P. Lagardère

Draft material reviewed by A. Crosnier, O.R.S.T.O.M., Paris, France and L.B. Holthuis, Rijksmuseum van Natuurlijke Historie, Leiden, The Netherlands

SOLENO Soleno 2

1981

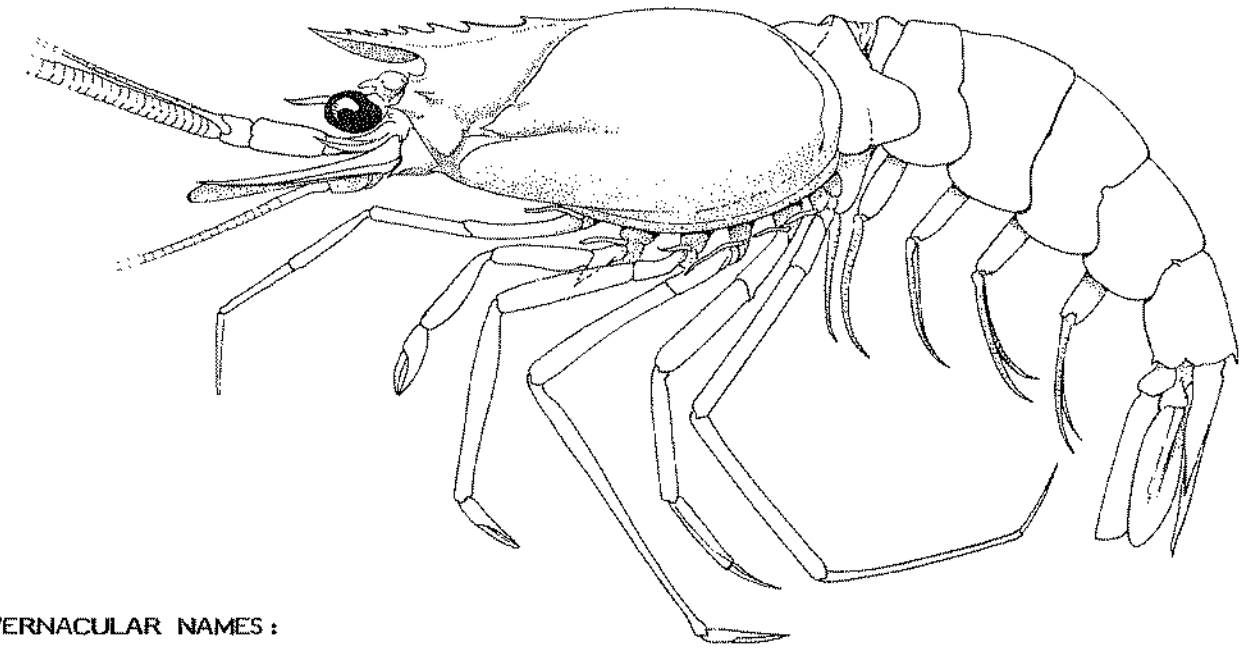
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : SOLENOCERIDAE

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

Solenocera africana Stebbing, 1917

OTHER SCIENTIFIC NAMES STILL IN USE : Solenocera membranacea (Risso, 1816) sensu Holthuis, 1952 *



0 3 cm

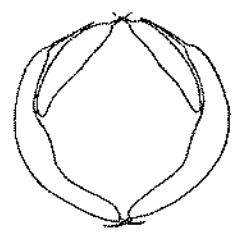
VERNACULAR NAMES :

FAO: En - African mud shrimp
Fr - Solenocère d'Afrique
Sp - Gamba de fango

NATIONAL:

DISTINCTIVE CHARACTERS :

Rostrum short, slightly upcurved at apex, its dorsal margin with 5 to 7 teeth of which 3 or 4 are located on the carapace behind the orbit, its ventral margin smooth. Sculpturing of the carapace includes: a median dorsal keel (postrostral crest) initiating on the rostrum and becoming weaker on the posterior third of carapace, a deep cervical groove not crossing the dorsal keel, an hepatic spine, a postorbital spine, and an additional small spine at the junction of the orbital and antennal margins. Antennular flagella with inner surfaces concave throughout their length, forming, when joined together, a complete tube. A strong dorsal keel on the last four abdominal segments, particularly evident on the third. Petasma in males with external lobe slender and elongate, ending in a point and only slightly enlarged toward the middle of its inner margin.



section of antennular flagellae, joined together forming a tube

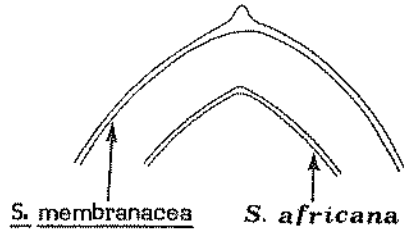
Colour: a light pinkish orange.

* S. africana has often been synonymized with S. membranacea, a valid species occuring in the Mediterranean and along the coasts of Europe and Northwest Africa.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Solenocera membranacea: keel on third abdominal segment very faint; median lobe of petasma (in males) comparatively broader, its tip less pointed.

Other species of Solenoceridae: antennular flagella cylindrical or flattened, but never concave, and thus not forming a tube when joined.



cross section of third abdominal segment (dorsal part only)

SIZE:

Maximum total length: 14 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

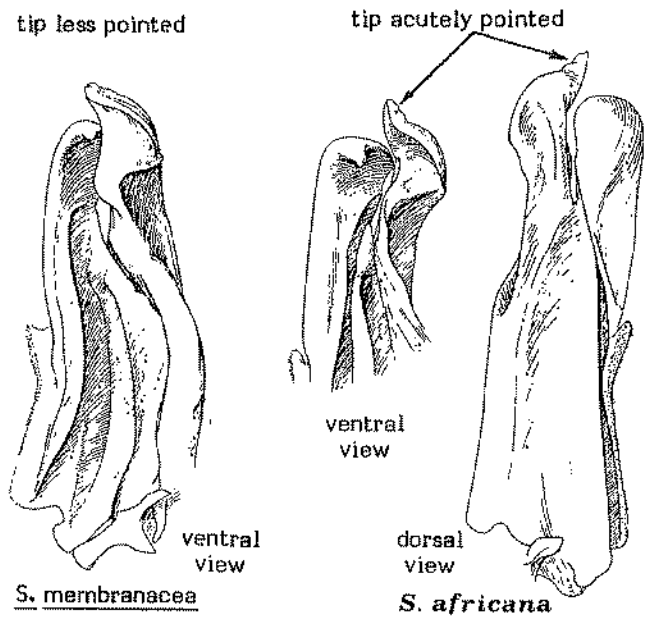
Reported from Mauritania (about the Tropic of Cancer) southward to the Agulhas Bank (South Africa).

Its depth range varies with the developmental stages: immature individuals are most abundant between 50 and 100 m, but may descend to nearly 300 m; only adults occur below this depth. This species inhabits sand and mud bottoms and is active at night.

Feeds on benthic organisms (polychaetes, small crustaceans and molluscs).

PRESENT FISHING GROUNDS:

Continental slope throughout its range.



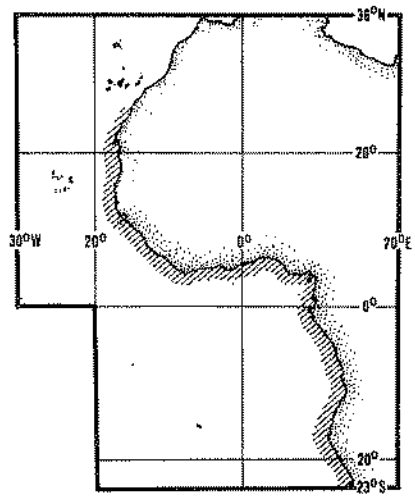
petasma

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species. Up to now, landings have been rather negligible, the yield of trawl hauls being generally less than 1 kg/h, but this might be increased by night-fishing.

Caught with bottom trawls.

Marketed fresh and frozen.

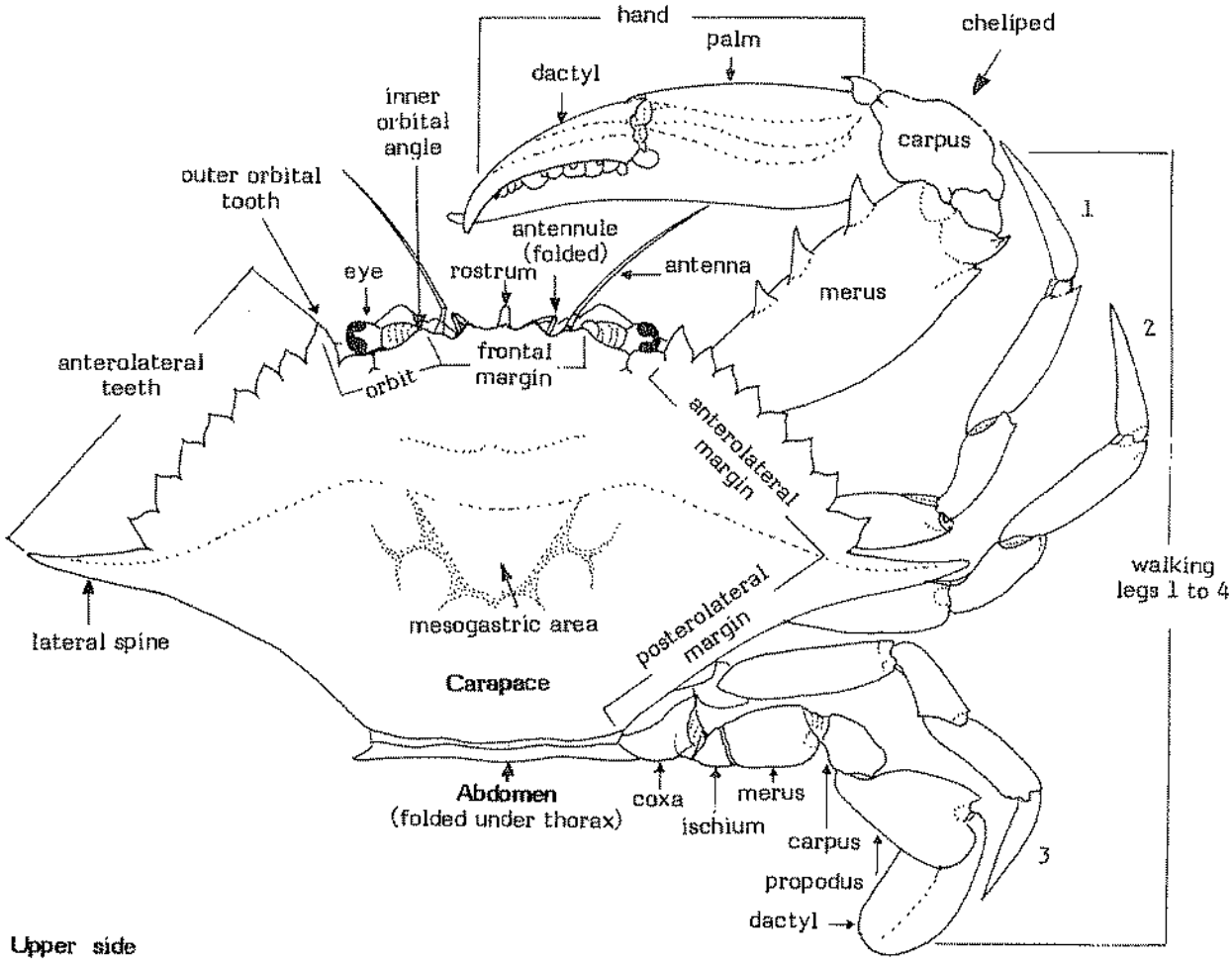


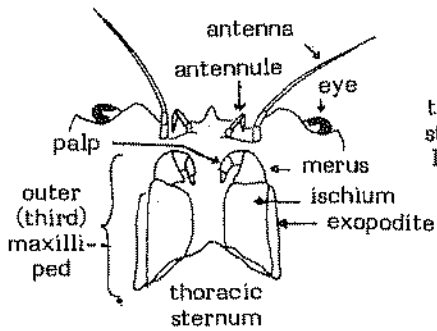
TRUE CRABS

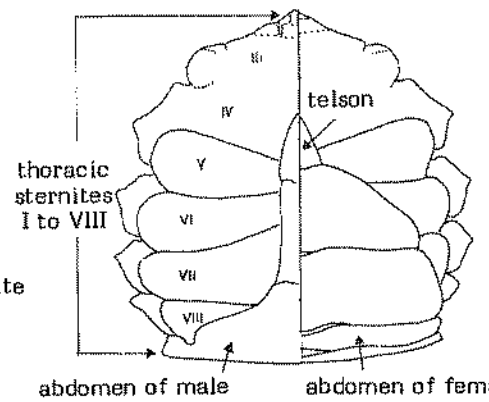
TRUE CRABS

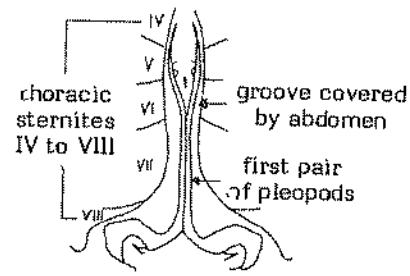
TECHNICAL TERMS AND PRINCIPAL MEASUREMENTS USED

PARTS OF A TRUE CRAB (Callinectes sp.)









GENERAL REMARKS

The true crabs (Decapoda Reptantia, Section Brachyura) have a depressed carapace or cephalothorax and a much reduced, straight and symmetrical abdomen which is closely bent under the cephalothorax; this abdomen is never used for swimming and usually lacks uropods (when present, these are never biramous); in the female, during the spawning season, the eggs are attached to the abdominal appendages (berried crabs). The cephalothorax has 5 pairs of walking legs, the first of which is chelate (ending in pincers) and nearly always much stronger than the other legs.

Species in Fishing Area 34 which contribute substantially to commercial fisheries or may occasionally be found in them belong to 10 families. Most of the species are of little economic value, and almost all are only of local interest. The total catch from Fishing Area 34 and the northern part of Fishing Area 47 slightly exceeded 2 000 t in 1978.

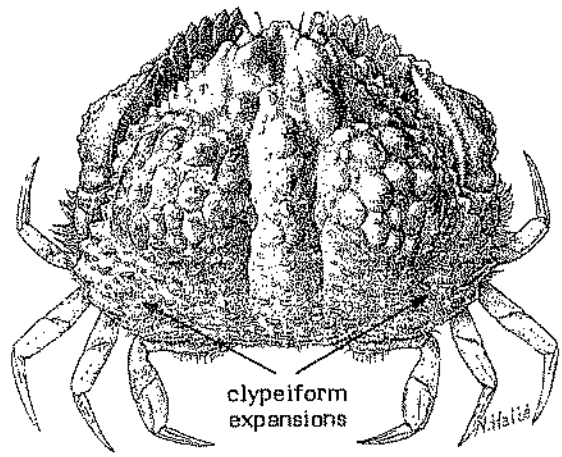
GUIDE TO FAMILIES OF INTEREST TO FISHERIES OCCURRING IN THE AREA

CAL CALAPPIDAE: Box crabs

Carapace strongly convex, anterior and lateral margins forming a single arc; posterolateral parts forming clypeiform expansions over the legs, and ending in broader or narrower teeth; chelipeds large and flattened, in a flexed position fitting exactly against the front of the body, the eyes then just looking over them; palm of chelae with a high dorsal cock's comb-like crest; last four pairs of legs similar, smooth; dactyls without spines or hairs.

Species of possible economic value occurring in the area:

Calappa gallus (Herbst, 1803)	CAL Cal 1
Calappa granulata (Linnaeus, 1758)	CAL Cal 2
Calappa pelii Herklots, 1851	CAL Cal 3
Calappa rubroguttata Herklots, 1851	CAL Cal 4



Calappidae

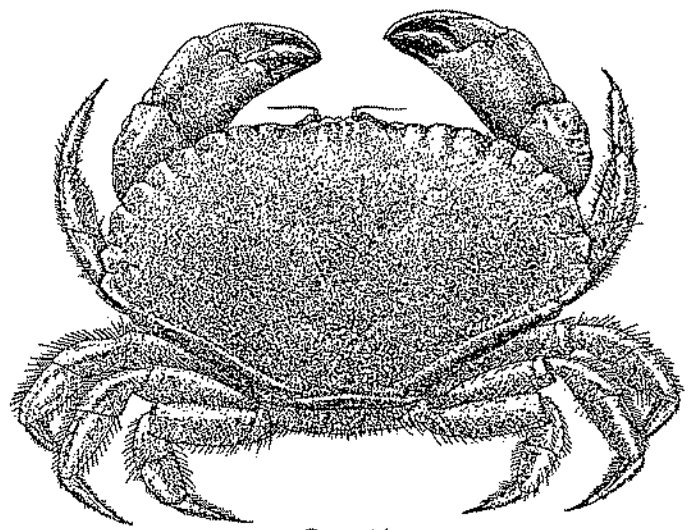
(Calappa gallus)

CAN CANCRIDAE: Rock crabs

Carapace broadly oval or hexagonal; front not produced in form of a rostrum but having a central tooth; anterolateral margins toothed (9 low, blunt, rounded or denticulate teeth in species listed here); posterolateral part of carapace not forming a clypeiform expansion over the bases of the legs; last four pairs of legs similar, with stiff hairs.

Species of economic value occurring in the area:

Cancer bellianus Johnston, 1861	CAN Can 3
Cancer pagurus Linnaeus, 1758	CAN Can 4



Cancridae

(Cancer pagurus)

FAO Sheets

TRUE CRABS

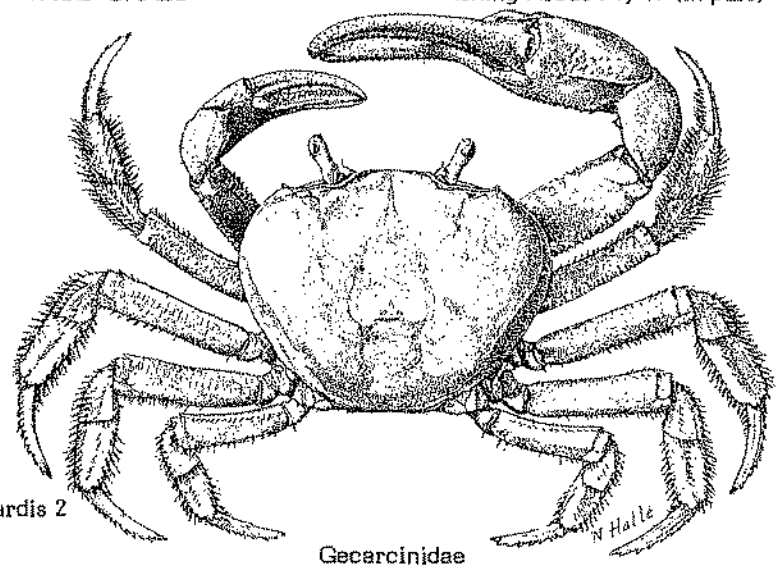
Fishing Areas 34, 47 (in part)

GECAR GECARCINIDAE: Land crabs

Carapace transversely oval, not strongly depressed, anterolateral margins strongly arched, not divided into teeth or lobes; front wider than length of eyes, without teeth; third maxillipeds usually gaping considerably; posterior four pairs of legs similar, their dactyls longitudinally ridged, ridges with rows of distinct spines; adapted to life on land.

Species of economic value occurring in the area:

Cardisoma armatum (Herklots, 1851) GECAR Cardis 2



Gecarcinidae

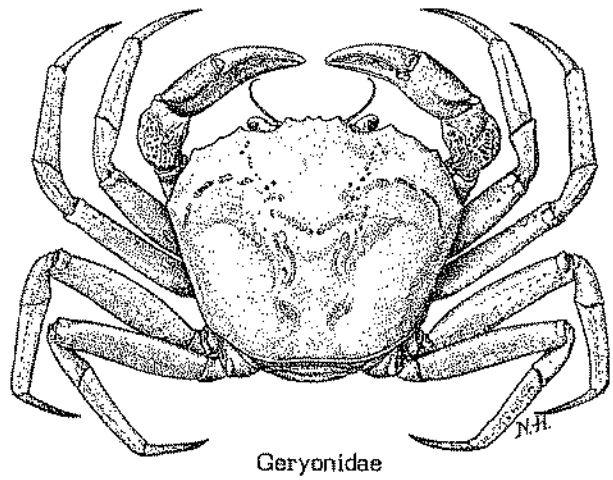
(Cardisoma armatum)

GER GERYONIDAE: Deep-sea crabs, geryons

Carapace flat, smooth or granular, trapezoid, about as long as wide; front broad, not produced, but with four teeth; anterolateral margin with 3 to 5 indistinct shallow teeth; last four pairs of legs long, slender, similar, smooth; deep-sea species.

Species of economic value occurring in the area:

Geryon maritae Manning & Holthuis, 1981 GER Ger 1



Geryonidae

(Geryon maritae)

GRAPS GRAPSIDAE: Lightfoot crabs, marsh crabs, matchbox crabs

Carapace quadrangular or round, dorsally often with transverse ridges; front broader than eyes, usually without teeth, if teeth or lobes are present these are even in number; anterolateral margin of carapace with at most two teeth behind orbit; posterior four pairs of legs similar, their dactyli with conspicuous spines.

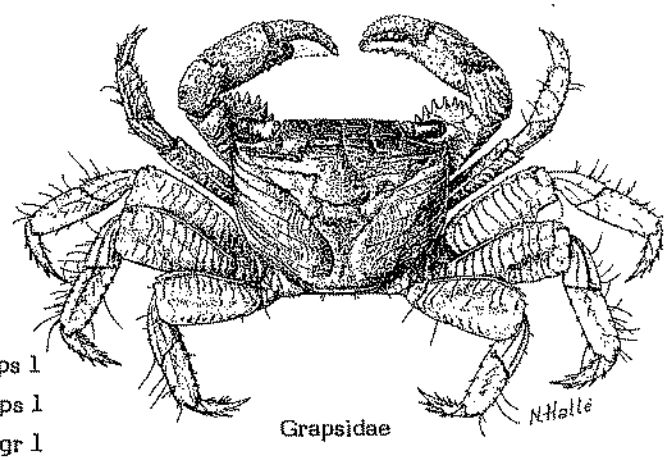
Species of economic value occurring in the area:

Goniopsis pelii (Herklots, 1851) GRAPS Goniops 1

Grapsus grapsus (Linnaeus, 1758) GRAPS Graps 1

Pachygrapsus transversus (Gibbes, 1850) GRAPS Pachygr 1

Sesarma angolense De Brito Capello, 1864 GRAPS Ses 1



Grapsidae

(Goniopsis pelii)

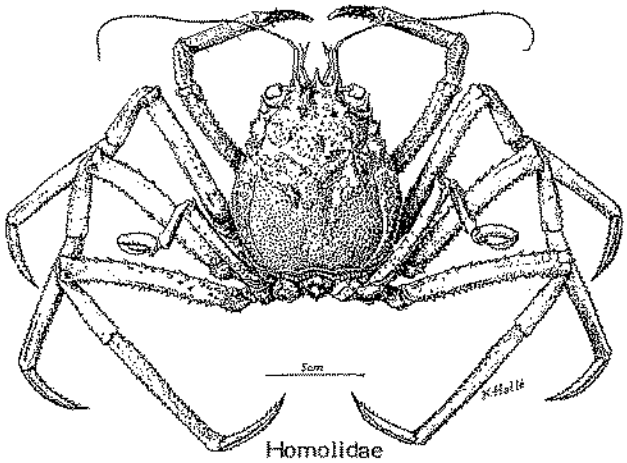
FAO Sheets | TRUE CRABS | Fishing Areas 34, 47 (in part)

HOM HOMOLIDAE: Homolid crabs, paromolas

Carapace longer than broad, squarish, with spines and hairs; eyes on long articulated stalks; last pair of legs slender, but shorter than the others and in a dorsal position; dactylus and propodus together forming a distinct subchela; deepwater crabs.

Species of economic value occurring in the area:

Paromola cuvieri (Risso, 1816) HOM Par 1



Homolidae

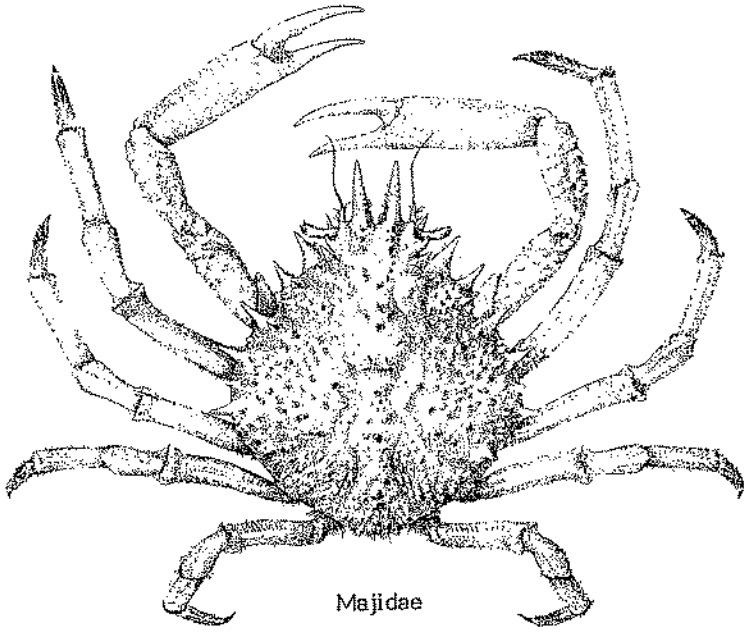
(Paromola cuvieri)

MAJI MAJIDAE: Spider crabs

Carapace narrowed anteriorly, usually triangular in shape, often with spines; front produced between the eyes, usually ending in 2 long teeth, which are separated or close together; anterolateral margin often with spines or teeth; last four pairs of pereiopods similar (except in length), usually hairy and spiny, dactylus with spines.

Species of economic value occurring in the area:

Maja squinado (Herbst, 1788) MAJI Maja 1



Majidae

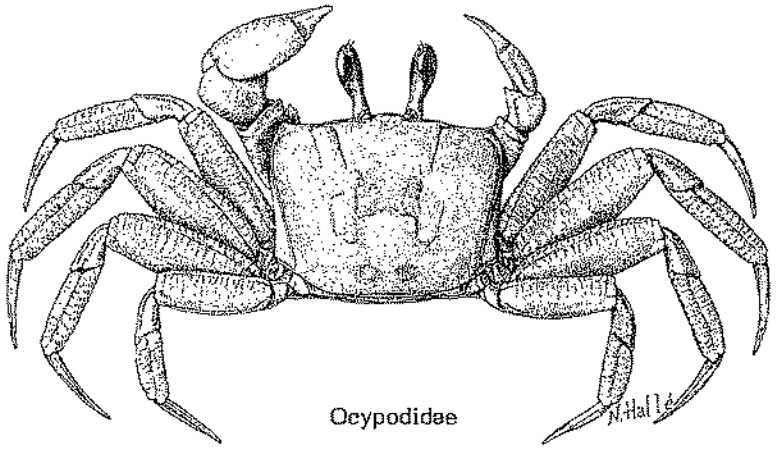
(Maja squinado)

OCYP OCYPODIDAE: Ghost crabs, fiddler crabs

Carapace usually rectangular or nearly so; front relatively narrow and somewhat bent downward, without teeth; orbits occupying whole anterior border outside front, outer walls of orbits often open, eyestalks long (longer than width of front); third maxillipeds usually completely covering mouth cavity; last four pairs of walking legs similar (apart from differences in length and pubescence), with hairs and granules; dactyls smooth or ridged but not conspicuously spiny.

Species of economic value occurring in the area:

Ocypode africana De Man, 1881 OCYP Ocyp 1
Ocypode cursor (Linnaeus, 1758) OCYP Ocyp 2
Uca tangeri (Eydoux, 1835) OCYP Uca 1



Ocypodidae

(Ocypode africana)

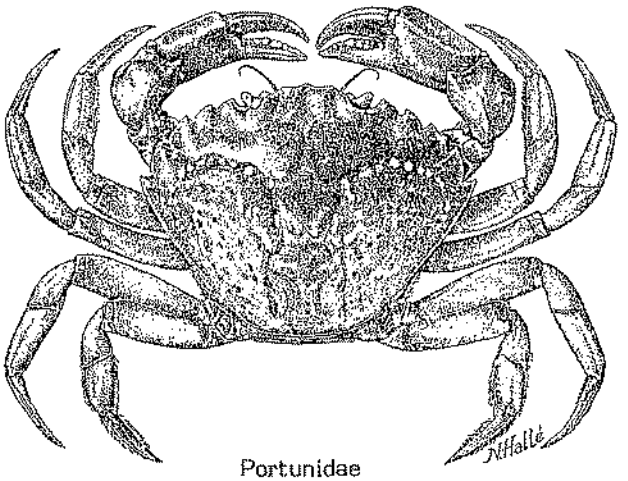
FAO Sheets | TRUE CRABS | Fishing Areas 34, 47 (in part)

PORT PORTUNIDAE: Swimming crabs

Carapace broad and flat, with 5 to 9 teeth on anterolateral margin; last pair of legs with distal two segments wider and more flattened than these segments of previous legs, in most species the dactylus is oval and paddle-shaped, adapted for swimming purposes, none of the dactyli with conspicuous spines.

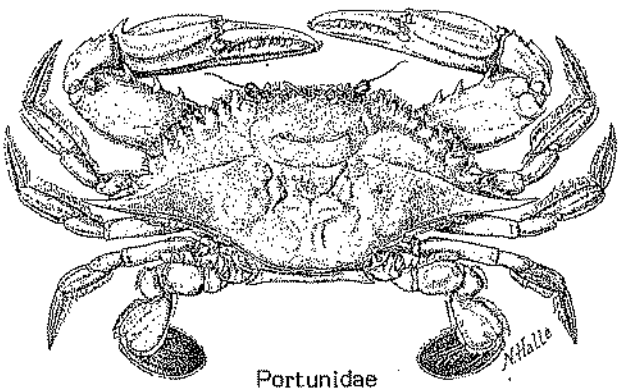
Species of economic value occurring in the area:

Callinectes amnicola (De Rochebrune, 1883)	PORT Call 10
Callinectes marginatus (A. Milne Edwards, 1861)	PORT Call 11
Callinectes pallidus (De Rochebrune, 1883)	PORT Call 12
Carcinus maenas (Linnaeus, 1758)	PORT Carc 2
Cronius ruber (Lamarck, 1818)	PORT Cron 1
Liocarcinus corrugatus (Pennant, 1777)	PORT Lioc 1
Liocarcinus puber (Linnaeus, 1758)	PORT Lioc 2
Portunus hastatus (Linnaeus, 1767)	PORT Port 1
Portunus validus (Herklots, 1851)	PORT Port 2



Portunidae

(Carcinus maenas)



Portunidae

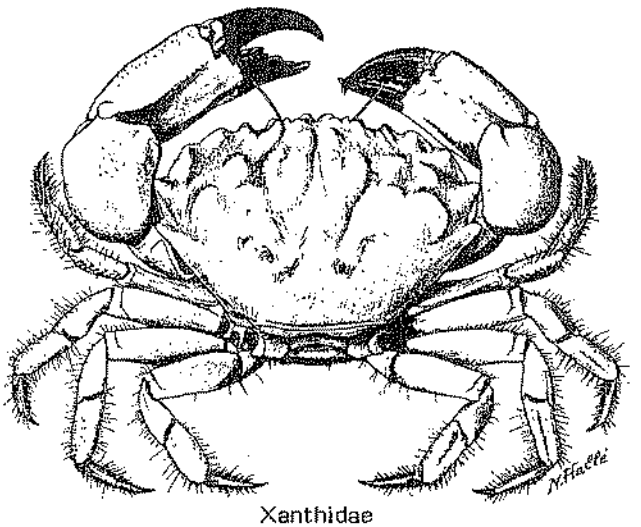
(Callinectes pallidus)

XANTH XANTHIDAE: Mud crabs

Carapace transversely oval or transversely hexagonal, front broad and notched centrally, never produced in form of a rostrum; anterolateral margin lobulate or toothed; posterolateral part of carapace not clypeiform expanded over the legs; all of the legs of the last four pairs similar, provided with hair.

Species of economic value occurring in the area:

Menippe nodifrons Stimpson, 1859	XANTH Men 2
Panopeus africanus (A. Milne Edwards, 1867)	XANTH Pan 1



Xanthidae

(Menippe nodifrons)

Prepared by L.B. Holthuis, Rijksmuseum Van Natuurlijke Historie, Leiden, The Netherlands

CAL Cal 1

1981

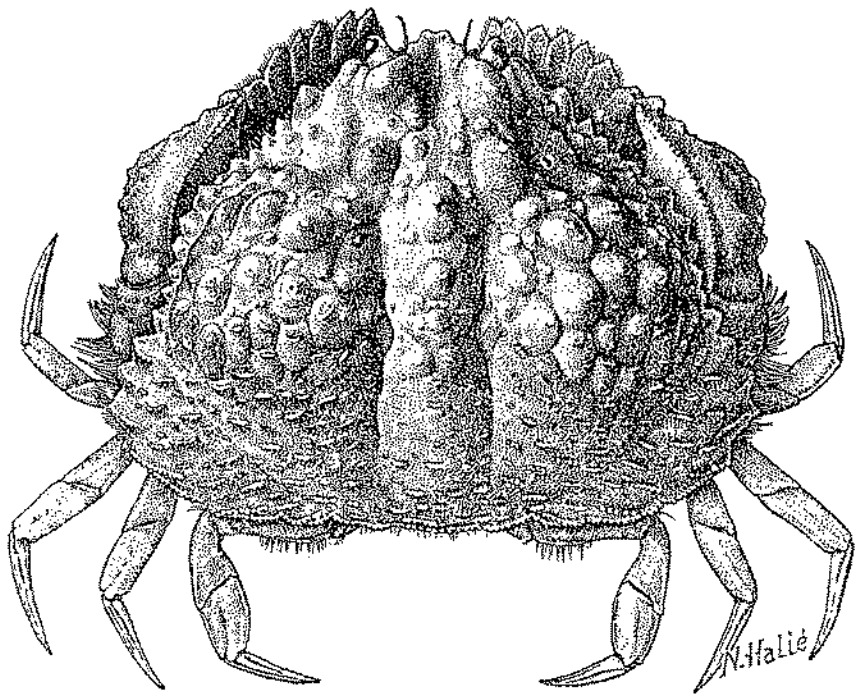
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : CALAPPIDAE

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

Calappa gallus (Herbst, 1803)

OTHER SCIENTIFIC NAMES STILL IN USE : None



0 2.3 cm

VERNACULAR NAMES:

FAO : En - Yellow box crab
Fr - Migraine jaune
Sp - Calapa amarilla

NATIONAL :

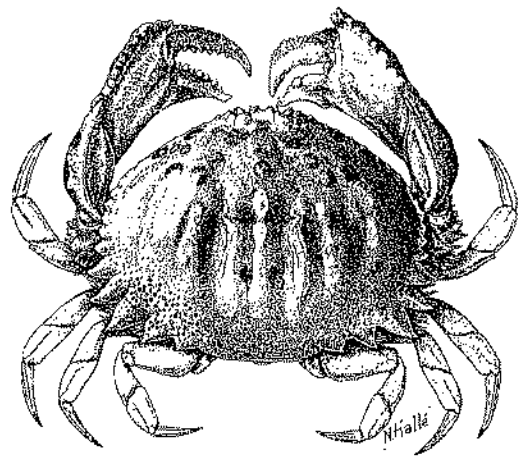
DISTINCTIVE CHARACTERS :

Body strongly convex, carapace bluntly triangular, not semicircular, with a distinct depression behind each orbit; anterior part of carapace irregularly tuberculate, posterior part with numerous sharp and short transverse ridges formed by rows of granules; posterior carapace margin with a few incisions, but without conspicuous teeth.

Colour: upper surface orange to orange brown with irregular dark red or dark reddish brown spots; lower surface yellow.

OISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Other species of Calappa: anterior margin of the carapace semicircular rather than bluntly triangular; no depressed region behind orbits; short, sharp transverse granular ridges on the posterior half of the carapace absent.



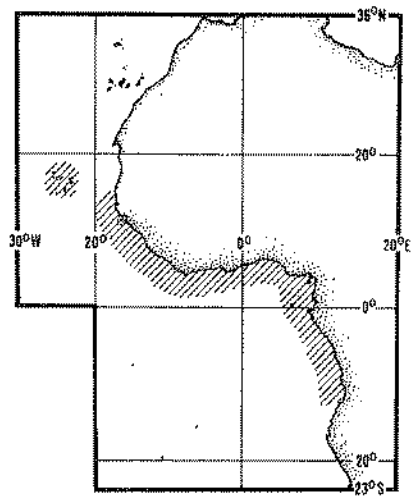
Calappa rubroguttata

SIZE :

Maximum carapace length to about 6 cm, carapace width to about 8 cm.

GEOGRAPHICAL OISTRIBUTION AND BEHAVIOUR :

In the Eastern Atlantic from Senegal to Angola, Cape Verde Islands, São Thomé and Ilha do Principe. Elsewhere in the Western Atlantic (Florida Keys to Brazil), and in the Indo-West Pacific (Red Sea to Japan and Polynesia). It is possible that a closer study will reveal the Atlantic form to be specifically distinct from the Indo-West Pacific Calappa gallus, in which case the Atlantic species should be known as Calappa galloides Stimpson, 1859.



This crab burrows in sand or slightly muddy sand, usually in shallow coastal waters, but it has also been reported from depths down to 200 m.

PRESENT FISHING GROUNDS :

No special fishery for this species.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

The species is not positively known to be of economic value, but is listed by Monod (1967, Mém.Inst.Fond.Afrique Noire, 77:178) to be a possible source of food in West Africa.

CAL Cal 2

1981

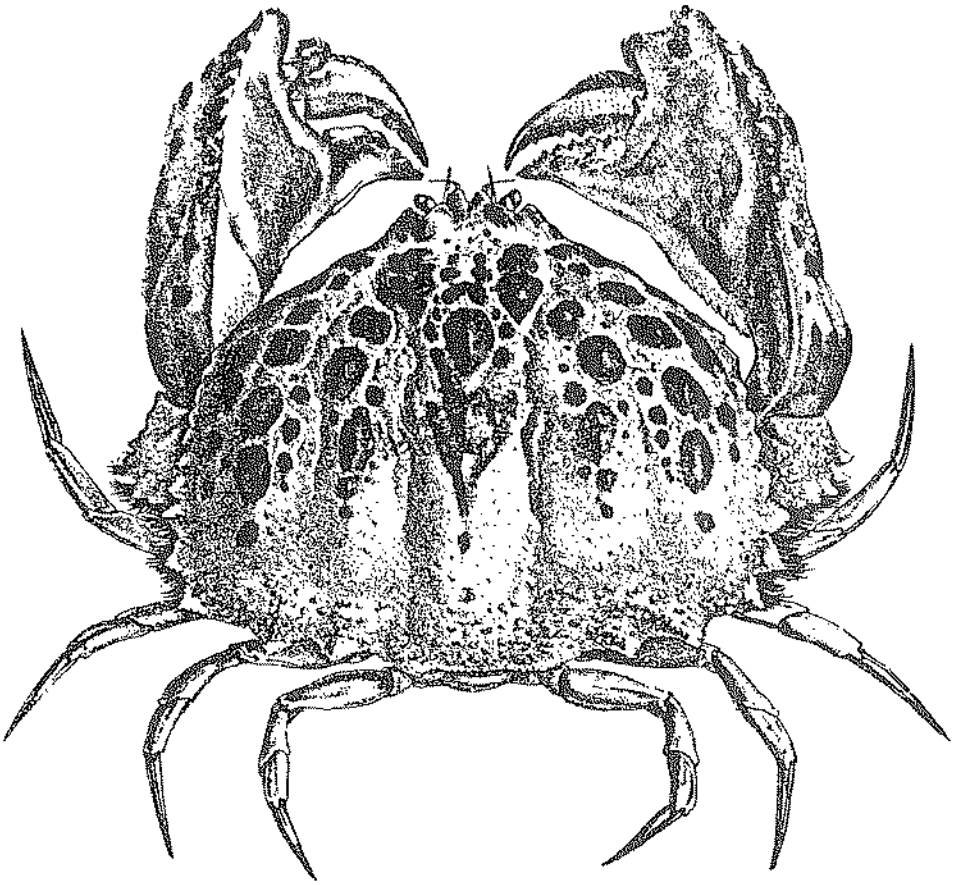
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : CALAPPIDAE

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

Calappa granulata (Linnaeus, 1758)

OTHER SCIENTIFIC NAMES STILL IN USE : None



0 2.8 cm

VERNACULAR NAMES:

FAO : En - Shamefaced crab
Fr - Crabe honteux
Sp - Calapa real

NATIONAL :

DISTINCTIVE CHARACTERS :

Body strongly convex, anterior half rather semicircular in outline; posterior margin transverse with distinct, but broad and rather short teeth; upper surface of carapace tuberculate and minutely shagreened, but without transverse granular ridges.

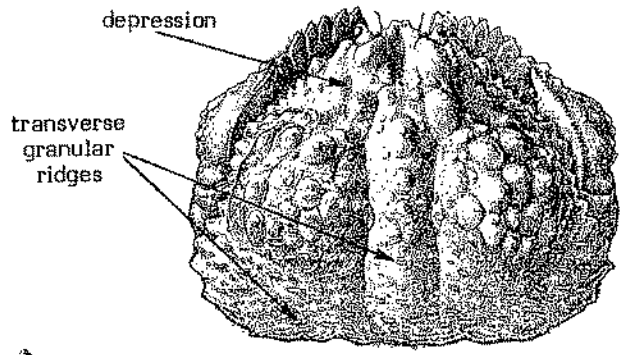
Colour: yellowish, anterior half of dorsal surface with numerous (about 12), sometimes irregular, longitudinal rows of larger and smaller red spots extending on to the posterior half; chelipeds with several large red spots; legs yellow.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Calappa gallus: carapace more triangular than semicircular, with a deep depression behind each orbit and short transverse granular ridges on posterior half; no pattern of conspicuous red spots on dorsal surface.

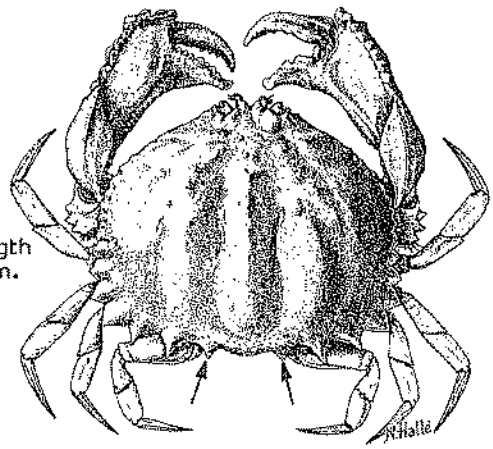
C. pelii: distinct, sharp backward-pointing teeth on posterior carapace margin; no pattern of conspicuous red spots on dorsal surface.

C. rubroguttata: dorsal surface with a limited number of circular red spots which are of equal size and arranged in transverse curved rows.



C. gallus

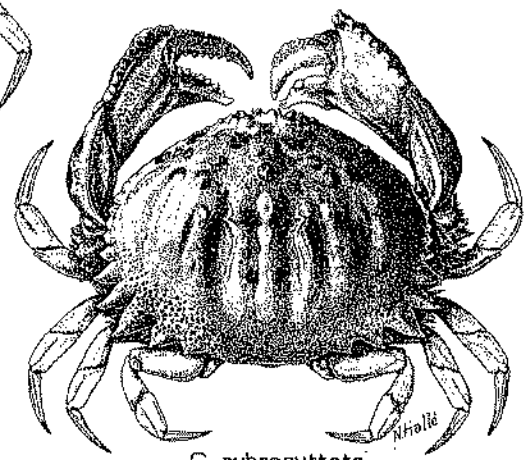
dorsal view of carapace



C. pelii

SIZE :

Maximum carapace length 7 cm, carapace width to 9.2 cm.

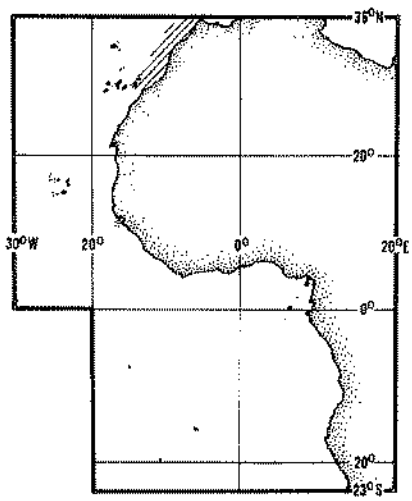


C. rubroguttata

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

In the area, off Morocco and Sahara, possibly also the Cape Verde Islands; northward extending to the Azores and the coast of Portugal. Also found in the Mediterranean as far as Israel.

Burrows in sand at depths ranging from 13 to 400 m, usually from 30 to 150 m.



PRESENT FISHING GROUNDS :

Throughout its range but no special fishery.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Caught in trawls and vertical nets, usually as a byproduct of other fisheries.

Marketed fresh. Sold frequently in the markets of Morocco, but not highly esteemed as food.

CAL Cal 3

1981

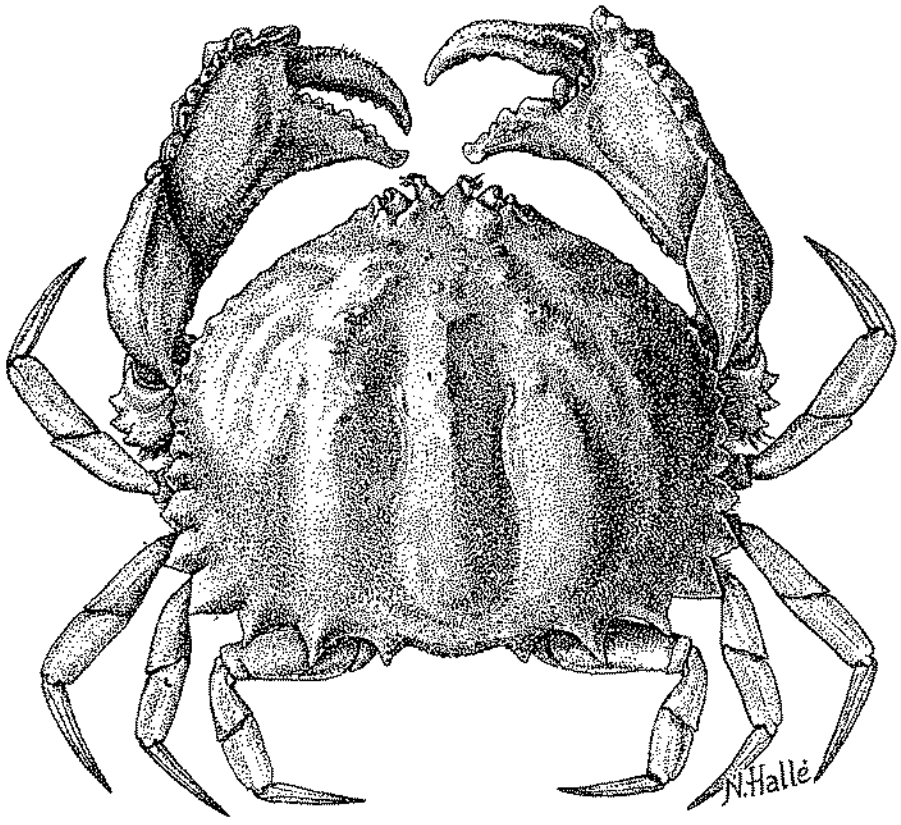
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : CALAPPIDAE

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

Calappa pelii Herklots, 1851

OTHER SCIENTIFIC NAMES STILL IN USE : None



0 2.8 cm

VERNACULAR NAMES:

FAO : En - Spiny box crab
Fr - Migraine épineuse
Sp - Calapa espinuda

NATIONAL :

DISTINCTIVE CHARACTERS :

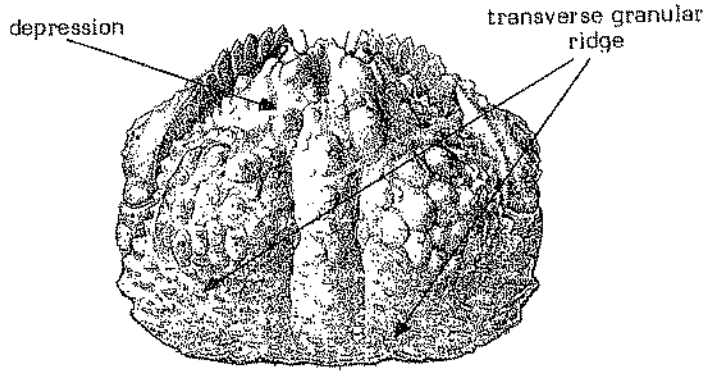
Body strongly convex. Anterior margin of carapace semicircular; posterior margin convex with distinct, sharp, backward-pointing teeth; dorsal surface finely granular, without transverse granular ridges.

Colour: carapace brownish or reddish, irregularly marbled or spotted with very small spots, no striking colour pattern.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Calappa gallus: carapace more triangular than semicircular, with a deep depression behind each orbit and short transverse granular ridges on posterior half; no sharp teeth on posterior margin.

C. rubroguttata and C. granulata: dorsal surface of carapace with large and conspicuous rounded red spots; teeth on posterior margin broad low and pointing sideways (sharp teeth pointing backward in C. pelii).



C. gallus

dorsal view of carapace

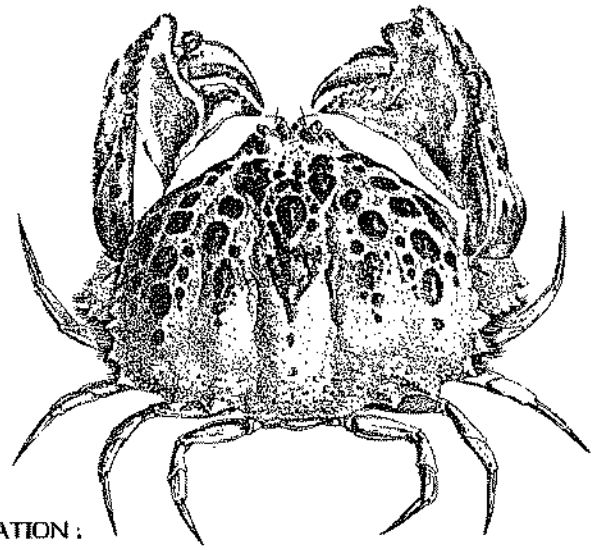
SIZE :

Maximum carapace length 7.6 cm, carapace width to 9.6 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

West Africa from Sahara to Angola.

Burrows in mud or sandy mud at depths from 12 to 400 m, usually between 50 and 150 m; a species occurring deeper than the other West African Calappa species.



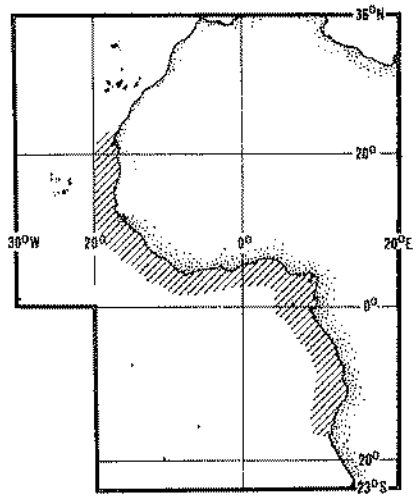
C. granulata

PRESENT FISHING GROUNDS :

No special fishery.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

No information, but the species is reported by Monod (1967, Mém.Inst.Fond.Afrique Noire, 77:178) as of possible commercial value.



CAL Cal 4

1981

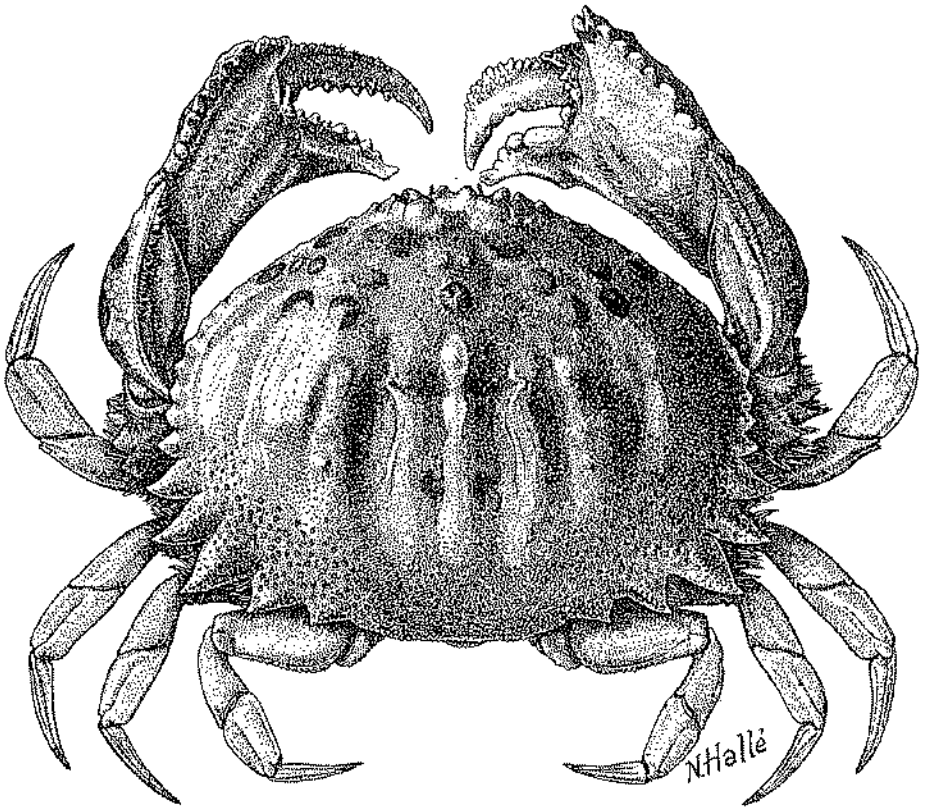
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : CALAPPIDAE

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

Calappa rubroguttata Herklots, 1851

OTHER SCIENTIFIC NAMES STILL IN USE : None





VERNACULAR NAMES:

FAO : En - Spotted box crab
Fr - Migraine maculée
Sp - Calapa manchada

NATIONAL :

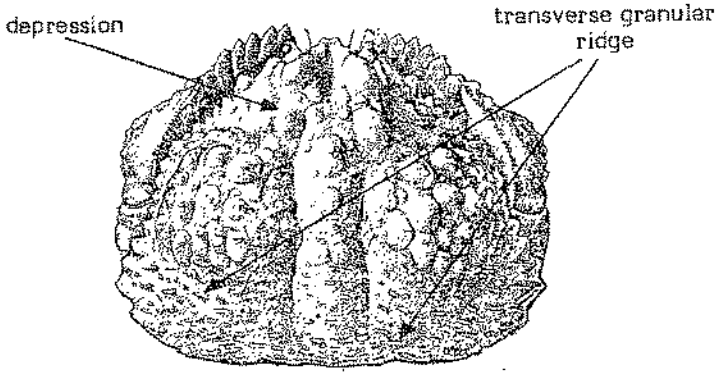
DISTINCTIVE CHARACTERS :

Body strongly convex, without a depression behind the orbits; anterior margin semicircular; posterolateral margins with distinct teeth, but no slender, backward-pointing teeth on posterior margin; dorsal surface with smaller and larger granules, but no transverse granular ridges present.

Colour: yellowish; anterior half of carapace with two curved, parallel rows of sharply defined, large, rounded, red spots of about equal size; several longitudinal red streaks in the posterior half; red spots also present on palm and carpus of chelipeds.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Other Calappa species: none has the distinctive colour pattern of C. rubroguttata, C. gallus and C. pelii lack distinctive spots on carapace, and in C. granulata, the red spots are of different sizes and arranged longitudinally. Furthermore, C. gallus has a bluntly triangular carapace with a deep depression behind each orbit and short transverse granular ridges on posterior half; C. pelii has sharp, backward-pointing teeth on hind margin of carapace.



C. gallus

dorsal view of carapace

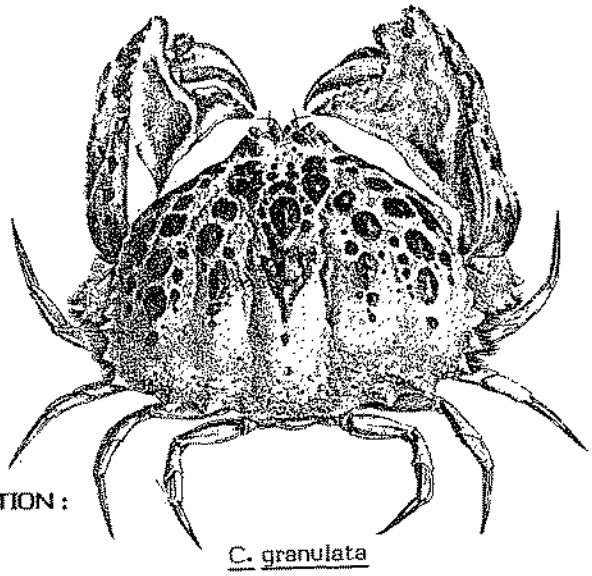
SIZE:

Carapace length to 7.9 cm, carapace width to 10.8 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

West African coast from Senegal to Angola.

Burrowing in sand or fine gravel, but also known from bottoms with other sediments at depths ranging from 0 to 90 m, usually between 4 and 40 m.



C. granulata

PRESENT FISHING GROUNDS:

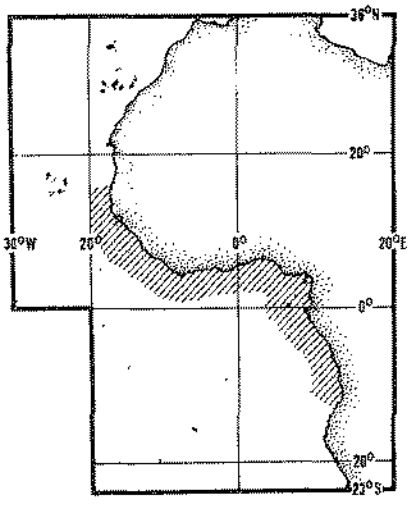
No special fishery.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught with vertical nets or in beach seines.

Claws and part of the body are used as food. Some parts of the body may be noxious and can act as a strong purgative. In Ghana such parts are eaten for purgative purposes (Irvine, 1947, The Fishes and Fisheries of the Gold Coast: 301). Some people in Ghana eat only the claws of the species, evidently to avoid the noxious parts. In this connection the remark by Osorio (1889, Journal Sci.math.phys.nat.Lisboa, (2)1:135) that at São Thomé this species is "considerée venimeuse par les indigènes", is of special interest. There are also other reports that consumption of parts, other than the claws, of Calappa may cause violent sickness.



CAN Can 3

1981

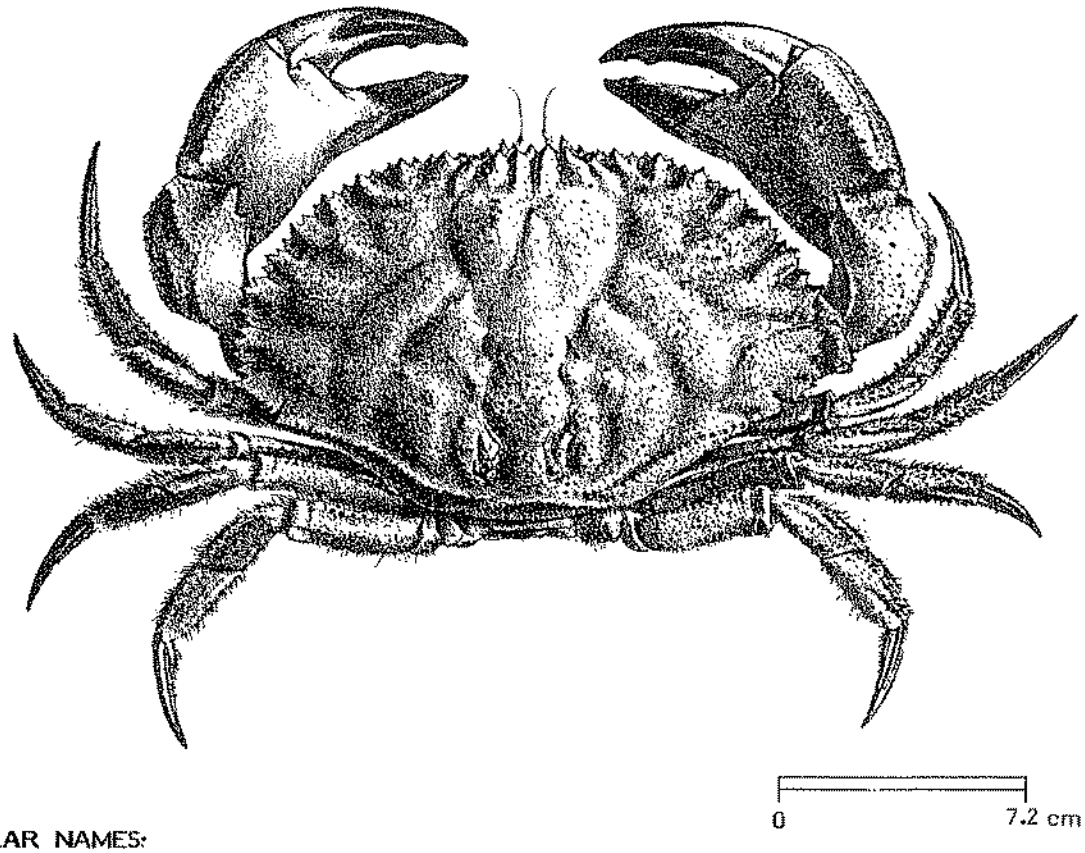
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : CANCRIDAE

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

Cancer bellianus Johnston, 1861

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES:

FAO : En - Toothed rock crab
Fr - Tourteau denté
Sp - Jaiba de roca dientuda

NATIONAL :

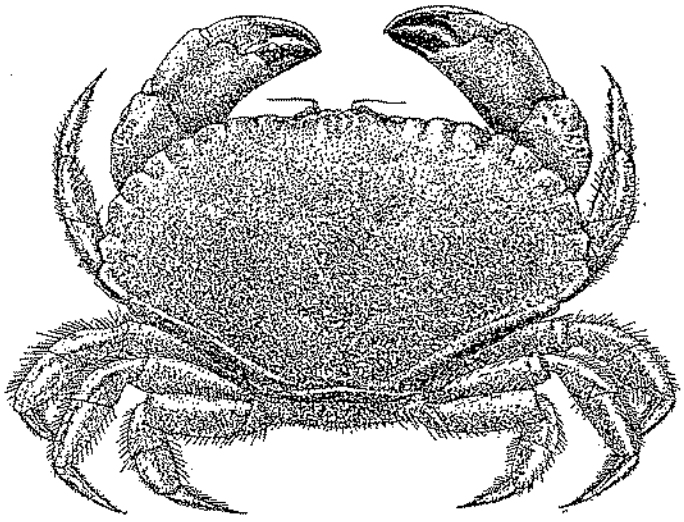
DISTINCTIVE CHARACTERS :

Body broadly oval, rather flat; surface with the regions separated by conspicuous grooves. Front with 5 rather blunt teeth, not produced beyond outline of carapace; anterolateral margin with 9 wide teeth, separated by closed fissures; truncated tips of teeth each with 3 or more sharp denticles. Chelipeds with distinct, sharp tubercles on palm and carpus, those on outer surface of palm arranged in about 7 longitudinal rows; last four pairs of legs similar, with stiff hairs and spinules (e.g. a row of spinules on upper margin of merus).

Colour: pale brown mottled with darker brown and red; tips of fingers and of some of the spines black. Hairs rather long and yellowish.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Cancer pagurus: carapace smoother, more convex and with the regions only faintly indicated; anterolateral teeth with a rounded top, without spines or denticles; palm of chelipds lacking longitudinal rows of granules; no spines or spinules on any of the legs.



Cancer pagurus

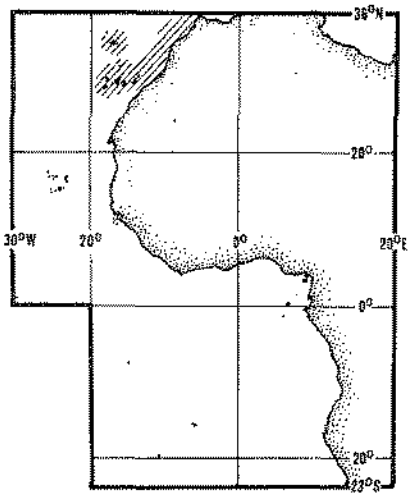
SIZE :

Maximum carapace length 13 cm; carapace width to 20 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Within the area, known from Madeira, the Canary Islands and the West African coast off Morocco and Sahara (to El Aiun); northwards extending to the Azores and along the Atlantic coast of Europe to Southwest Ireland, the Shetland Islands and the southern coast of Iceland.

Essentially a species from deeper water found at depths between 37 and 620 m.



PRESENT FISHING GROUNDS :

Off Portugal and N.W. Africa. Portuguese and Spanish trawlers catch this species off Portugal and off N.W. Africa as a bycatch with their other catches.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Caught mainly with bottom trawls.

Marketed mostly fresh; the claws of the crabs are removed and boxed on board and landed at markets in Portugal and Spain; whole crabs are occasionally landed also. Commercially the catches are unimportant.

CAN Can 4

1981

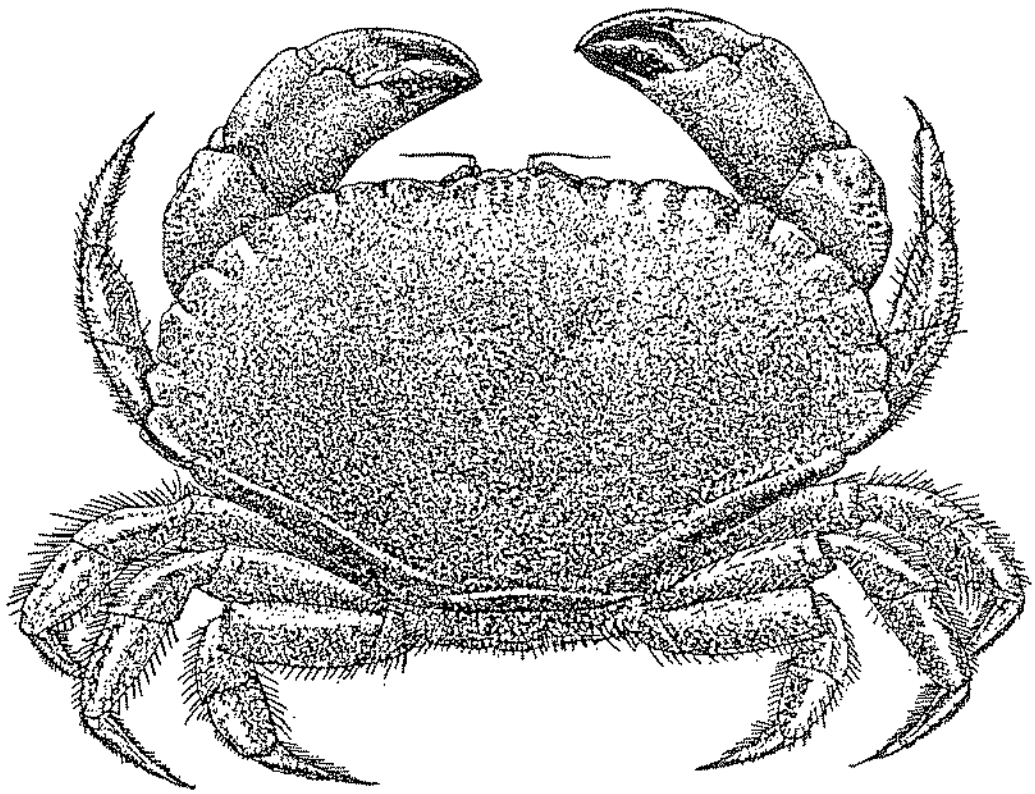
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : CANCRIDAE

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

Cancer pagurus Linnaeus, 1758

OTHER SCIENTIFIC NAMES STILL IN USE : None



0 8 cm

VERNACULAR NAMES:

FAO : En - Ox crab
Fr - Tourteau poupart
Sp - Jaiba de roca masera

NATIONAL :

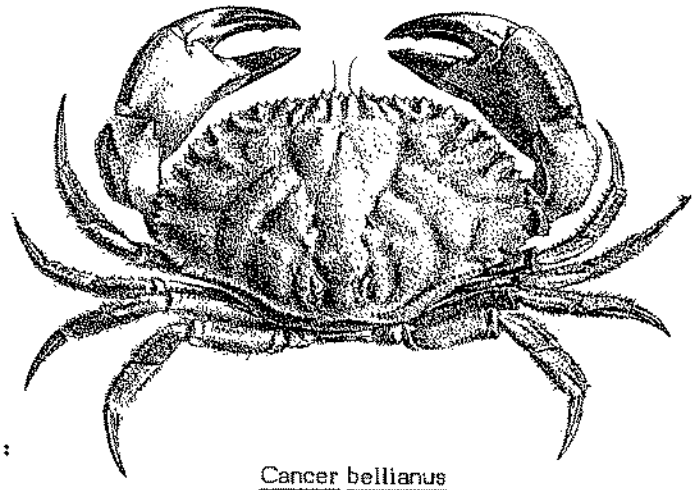
DISTINCTIVE CHARACTERS :

Body broadly oval, rather convex, grooves very faint. Front with 5 blunt teeth, not produced beyond outline of carapace; anterolateral margin with 9 wide, blunt teeth with rounded tops, separated by closed fissures. Pincers large and smooth, without spinules; last four pairs of legs similar, roughened by numerous groups of very short stiff black hairs, but without true spines or spinules.

Colour: pale reddish brown, at places more yellowish brown, juveniles more purplish; colour more or less uniform, without a special pattern; tips of fingers of chelae black.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Cancer bellianus: carapace rougher with rather deep grooves; anterolateral teeth ending in 3 or more sharp denticles; outer surface of palm of chelae with about 7 longitudinal rows of spinules; merus of walking legs with a row of spinules on upper margin.



Cancer bellianus

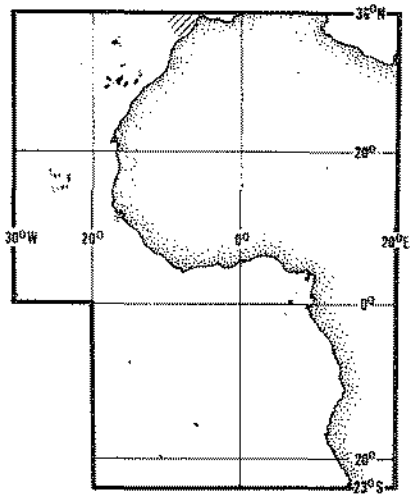
SIZE :

Maximum carapace length 20 cm; maximum carapace width 30 cm. Usually the carapace width does not surpass 24 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

In the area, found only off northern Morocco. Northwards extending along the Atlantic coast of Europe, to the British Isles and northern Norway (about 70°N); several, but mostly old, records from the north coast of the Mediterranean.

Found on rocky or sandy bottom between intertidal area and 100 m depth, usually between 6 and 40 m depth.



PRESENT FISHING GROUNDS :

No special fishery within the area. Of commercial value in Scandinavian and British waters, to a lesser degree off the Atlantic coasts of Spain and Portugal.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported from the area.

Caught usually with traps (in Europe); also as bycatch in trawl fisheries.

Sold fresh in Morocco, but according to A. Gruvel & W. Besnard (1937, Atlas de poche des principaux produits marins rencontrés sur les marchés du Maroc: 183) the species is extremely rare there.

GECAR Cardis 2

1981

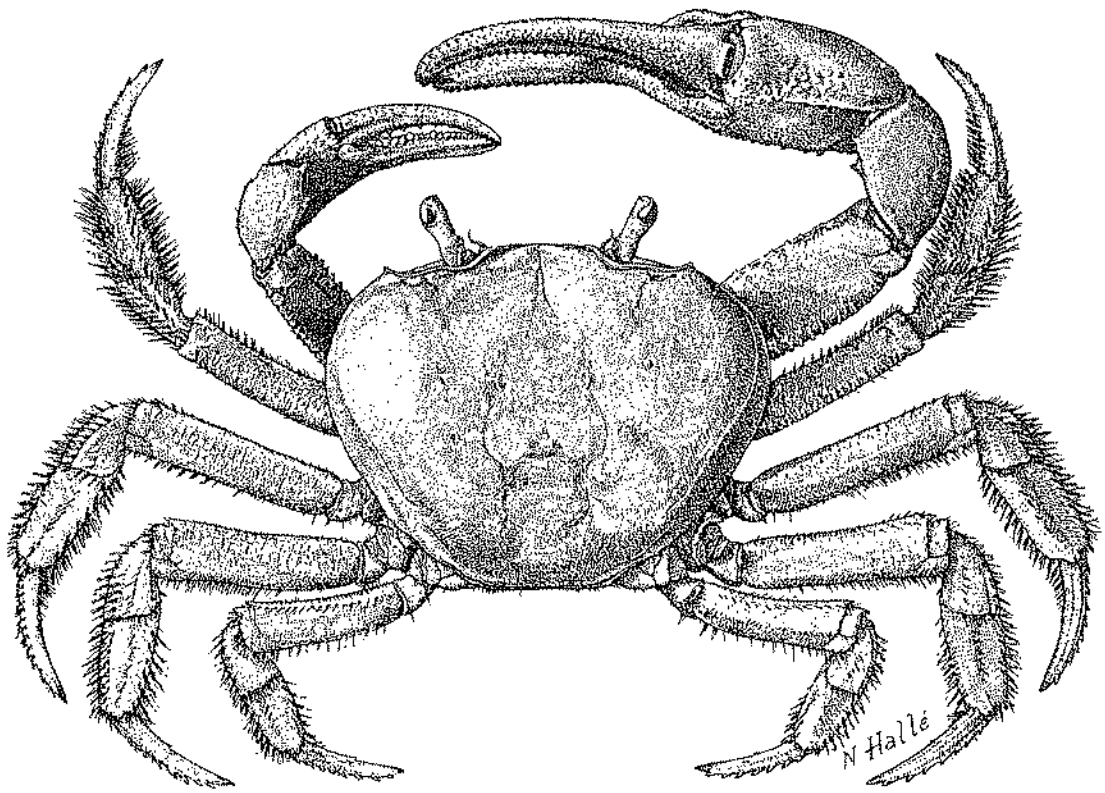
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : GECARCINIDAE

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

Cardisoma armatum (Herklots, 1851)

OTHER SCIENTIFIC NAMES STILL IN USE : None



0 4.5 cm

VERNACULAR NAMES:

FAO : En - Lagoon land crab
Fr - Tourlourou des lagunes
Sp - Moro de laguna

NATIONAL :

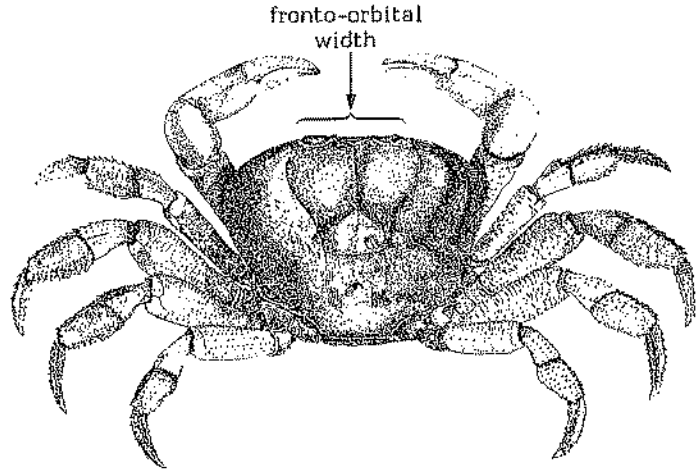
DISTINCTIVE CHARACTERS :

Carapace somewhat heart-shaped, broadest in the anterior part, narrowing posteriorly; surface slightly convex and smooth, apart from some faint grooves; lateral margins not sharply defined, without teeth, except for outer orbital angle. Front slightly broader than the orbits, trapezoid, evenly narrowing anteriorly, without teeth; fronto-orbital width (space between the outer orbital angles) 3/4 to 2/3 of the greatest carapace width. Chelipeds distinctly unequal in large specimens, fingers meeting at the tips only; walking legs with short bundles of dark hairs; dactyls with 4 ridges, each bearing a row of spines. Third maxilliped with palp and exopod visible.

Colour: large specimens are dirty orange-brown or yellowish with blue and red hues on the dorsal surface of body and chelipeds. In some specimens the carapace and upper part of the chelipeds may be bluish, the lower surface of the chelipeds and the walking legs more reddish.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

The only other true landcrab in West Africa, Gecarcinus weileri (Sendler, 1912), which is only known from the islands in the Gulf of Guinea and Cameroon, has the fronto-orbital width less than half the greatest carapace width, the front widens distally having the lateral margins concave, the third maxilliped has only two segments visible (as the palp and the exopod both are covered by these two segments) and the dactyls of the walking legs each have 6 spine-bearing ridges.



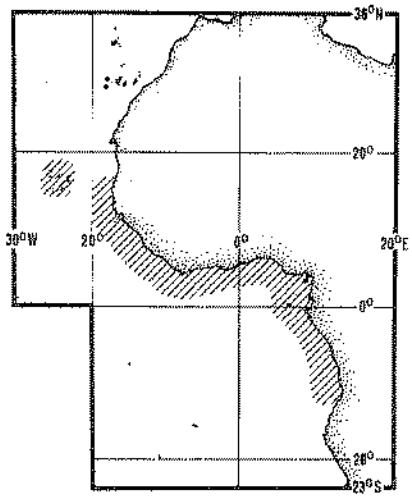
Gecarcinus weileiri

SIZE :

Maximum carapace length 9.5 cm and carapace width 12 cm (adult males).

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

West Africa from the Cape Verde Islands and Senegal to Angola, including the islands in the Gulf of Guinea.



The species is terrestrial and lives in burrows in marshy ground near lagoons, but also on higher ground as long as the burrows can reach the saline ground water.

PRESENT FISHING GROUNDS :

These terrestrial animals are caught wherever they occur.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

The animals are taken with baited traps (usually kerosene cans dug into the ground), with nooses or by removing them from their burrows (by digging them out, by chasing them out by pouring lye in the burrows, or by pulling them out).

Caught for private consumption or sold in local markets. Eaten boiled or fried, and widely used as food throughout their range, both by the native population and, to a smaller degree, by Europeans.

GER Ger 1

1981

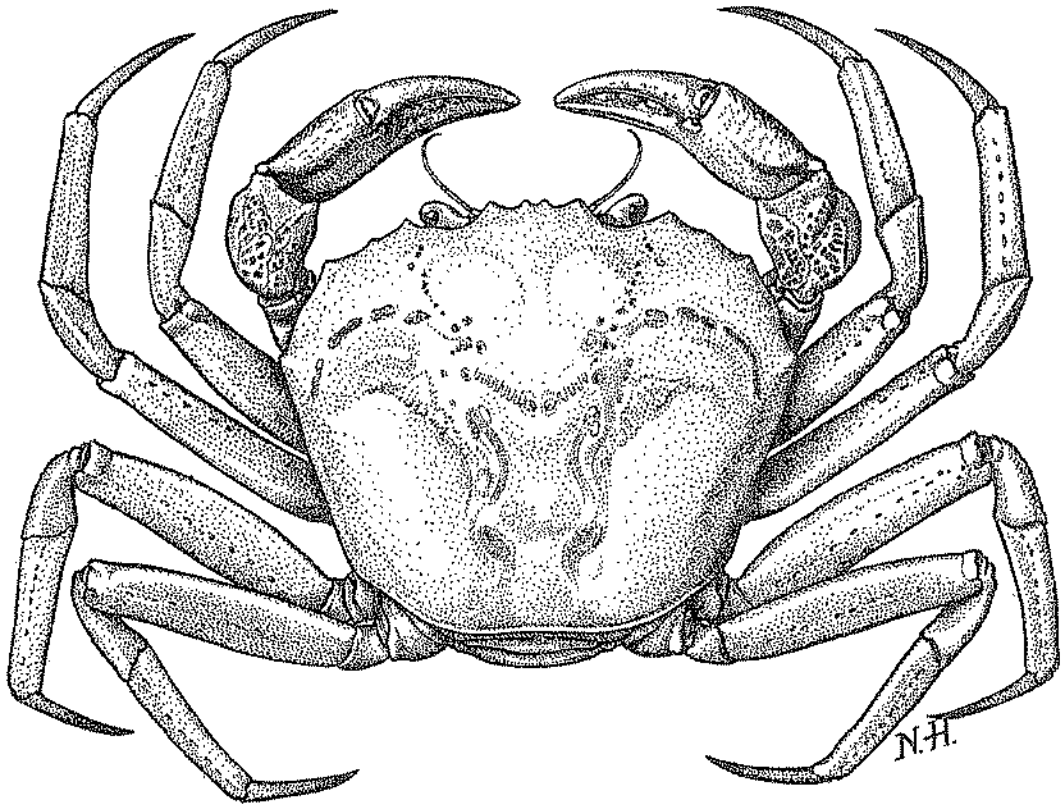
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : GERYONIDAE

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

Geryon maritae Manning & Holthuis, 1981

OTHER SCIENTIFIC NAMES STILL IN USE : Geryon quinquedens sensu Monod, 1956 (non S.I. Smith, 1879)



0 6.6 cm

VERNACULAR NAMES:

FAO : En - West African geryon
Fr - Géryon ouest-africain
Sp - Gerión de Guinea

NATIONAL :

DISTINCTIVE CHARACTERS :

A large deep-sea crab; body hexagonal, widest anteriorly, its surface uneven but rather smooth, with grooves. Front with 4 short and broad teeth, no median tooth; anterolateral margin with 5 blunt, wide, obscure teeth (outer angle of orbit included), of which the second and fourth are particularly indistinct. Chelipeds slightly unequal in shape and size; last four pairs of legs equal or almost so, smooth, without hairs or spines; dactyls dorsoventrally flattened.

Colour: dirty brownish or yellowish, or a rather uniform colouring without distinct pattern.

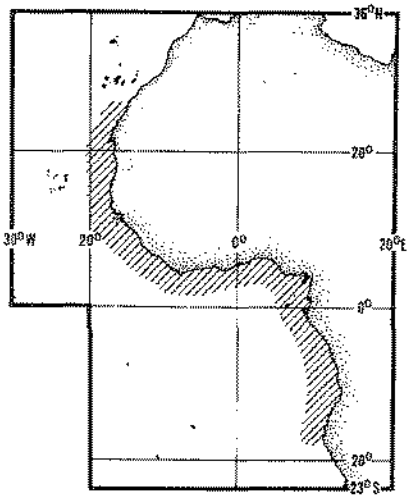
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Geryon affinis A. Milne Edwards & Bouvier, 1894 (from the Atlantic Ocean between Iceland, the Azores, Madeira and the Cape Verde Islands): may immediately be distinguished by the fact that the dactyls of the walking legs are laterally compressed and not dorsoventrally flattened; it also has the front wider and the second anterolateral tooth more distinct.

SIZE:

Carapace of males to 14 cm long and 16 cm wide, in the females these measurements are 8.9 and 9.5 cm respectively.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:



West Africa from Sahara to Southwest Africa.

Inhabits muddy bottoms between 100 and 936 m depth; most frequent between 300 and 700 m.

PRESENT FISHING GROUNDS:

Off Angola and Namibia. Exploratory fishing off the Ivory Coast and possibly other areas.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

The catch reported from the area in 1978 totalled 1 480 t (Namibia only). In 1970 the annual catch off Angola amounted to 2 000 t.

Taken by trawlers, but in areas where the bottom is rough, exploratory fishing with crab pots met with reasonable success.

Marketed fresh, but Spanish trawlers that catch the species as a bycatch to shrimps sell only the chelipeds.

GRAPS Goniops 1

1981

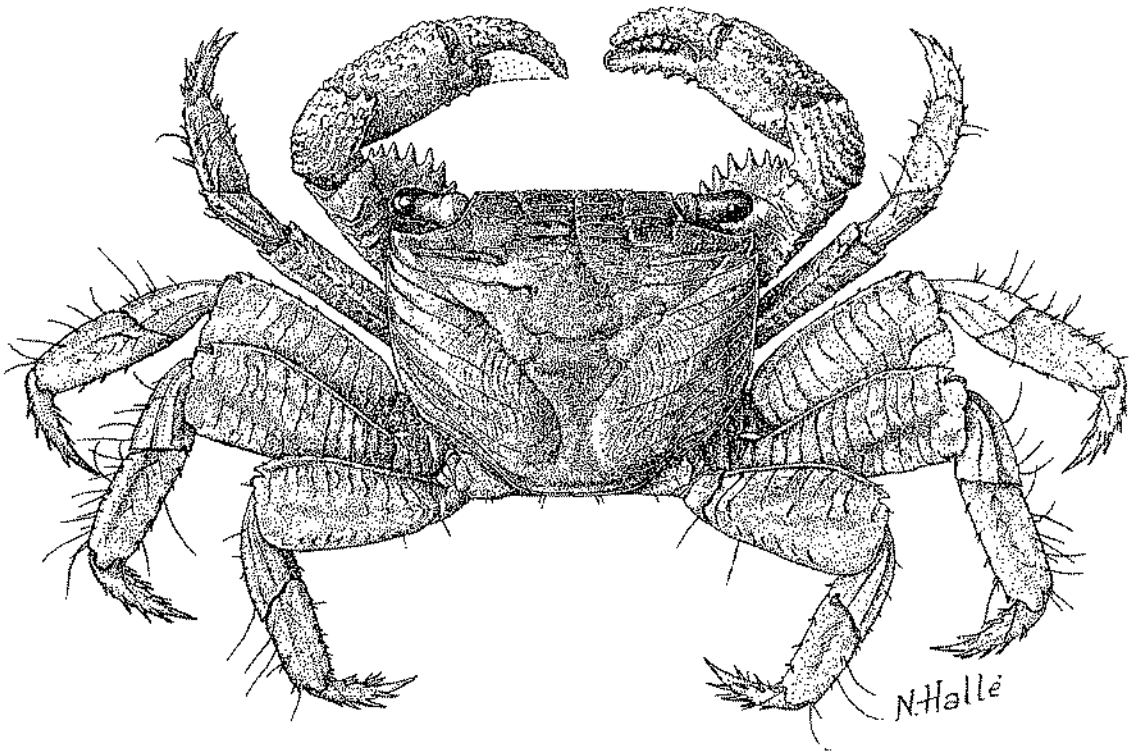
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : GRAPSIDAE

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

Goniopsis pelii (Herklots, 1851)

OTHER SCIENTIFIC NAMES STILL IN USE : Goniopsis cruentata sensu Monod, 1956 (non Latreille, 1802)



VERNACULAR NAMES:

FAO : En - Purple mangrove crab
Fr - Anglette des mangroves
Sp - Abuete real



NATIONAL :

DISTINCTIVE CHARACTERS :

Body squarish, broadest at anterior margin; anterolateral angles square, posterolateral angles rounded; surface of carapace with distinct transverse ridges. Front square, more than half as wide as carapace; eyes at anterolateral corners of carapace. Chelipeds with numerous spines and tubercles, anterior margin of merus with a comb of teeth; walking legs flattened, with ridges and hairs, dactyls with spines; merus of last leg without teeth; third maxillipeds without an oblique hairy ridge over merus and ischium.

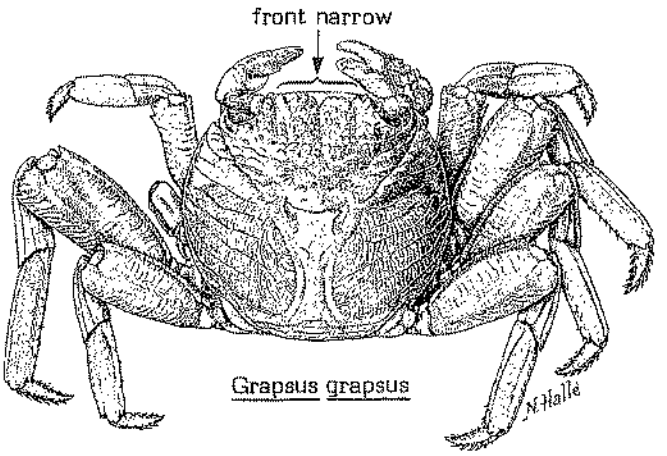
Colour: carapace purple, with small whitish spots and a striking white streak along the lateral margin. Chelae creamy white with a few purple markings. Walking legs purple with yellowish dactyls.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Sesarma species: an oblique hairy ridge extending over merus and ischium of the third maxilliped.

Grapsus grapsus: front less than half as wide as carapace; usually more circular in outline.

Pachygrapsus species: smaller size; teeth present on lower distal angle of all or some of the walking legs; pincers without spines or spinules.



Grapsus grapsus

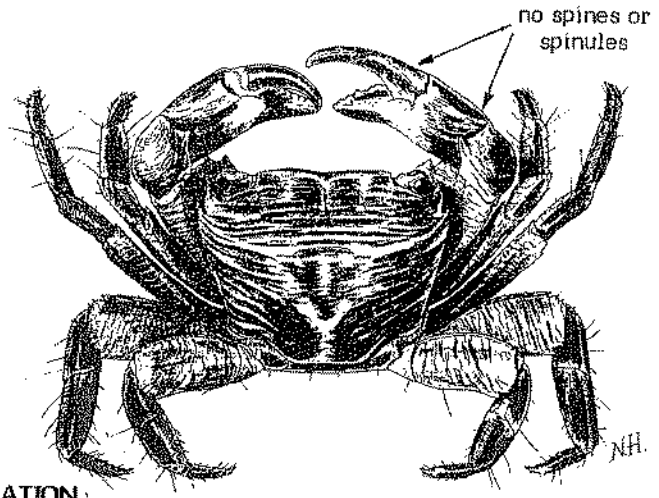
SIZE :

Maximum carapace width 4.9 cm, the carapace length to about 4 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

From Senegal to Angola.

Found in brackish muddy habitats, often in mangrove swamps.



Pachygrapsus transversus

PRESENT FISHING GROUNDS :

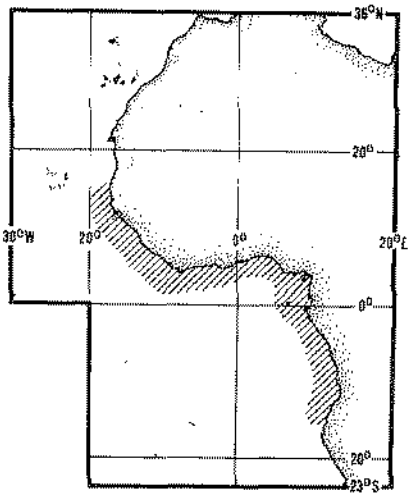
No special fishery for the species. It is of very limited commercial importance.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Caught locally with artisanal gear.

Consumed privately or sold in local markets, mostly fresh. Irvine (1947, Fishes and Fisheries of the Gold Coast:293) mentioned that the species is edible and sold in the fish markets of Ghana. Also in some areas of Nigeria it is eaten (C.B. Powell, in litt.).



GRAPS Graps 1
1981

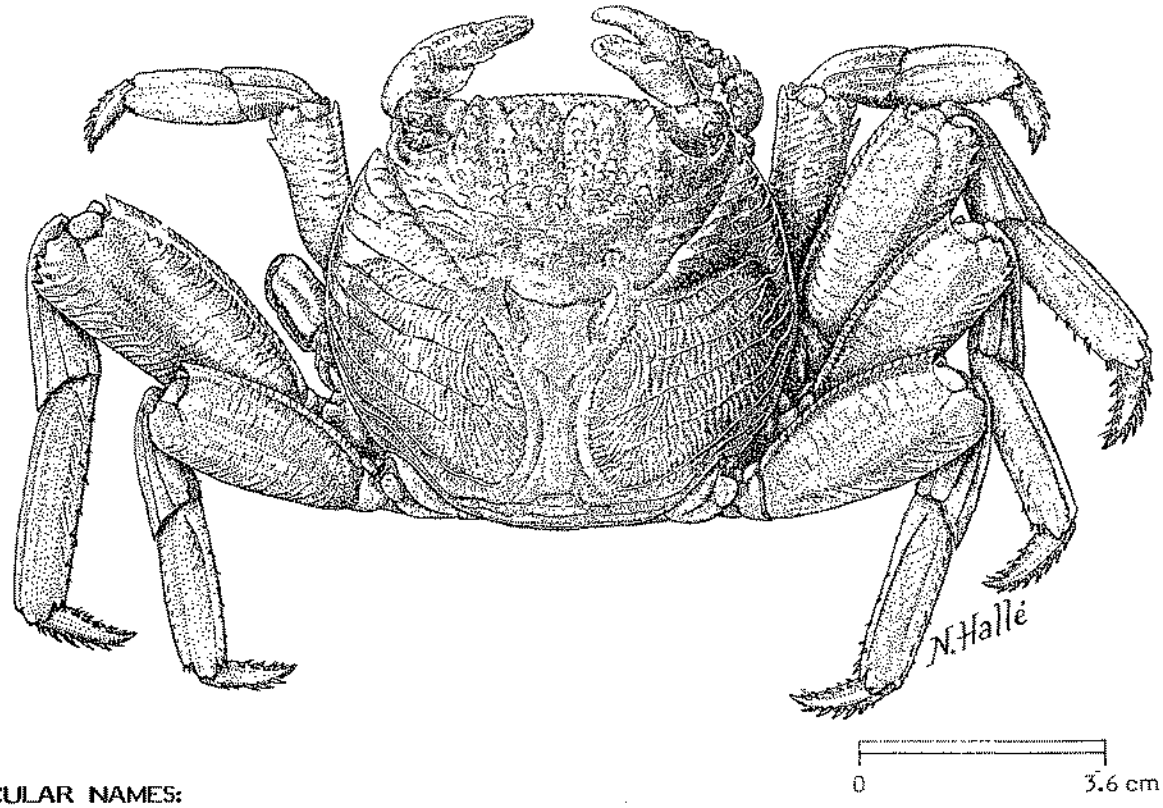
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : GRAPSIDAE

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

Grapsus grapsus (Linnaeus, 1758)

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES:

FAO : En - Lightfoot crab
Fr - Anglette commune
Sp - Abuete negro

NATIONAL :

DISTINCTIVE CHARACTERS :

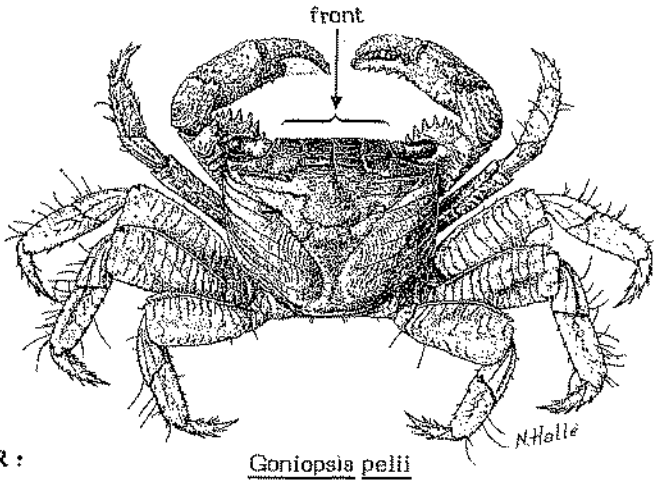
Carapace in adult specimens almost circular, with front and posterior margins straight, dorsal surface with distinct transverse ridges. Front less than half as wide as carapace and directed downwards, the lower margin convex, the upper 4-lobulate; eyes at anterolateral corners of carapace. Chelipeds with numerous spines and tubercles; finger tips spoon-shaped; walking legs flattened and ridged, dactyls with spines; lower distal angle of merus with teeth except on the last leg; third maxilliped without an oblique hairy ridge on ischium and merus.

Colour: carapace reddish brown to almost black marbled with spots of white; exposed parts of the walking legs are of about the same colour; outer surface of pincers dark with white tips to the fingers.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Goniopsis and Pachygrapsus species: front more than half as wide as carapace; carapace more quadrangular.

Sesarma species: third maxilliped with an oblique hairy ridge extending over merus and ischium.



Goniopsis pelii

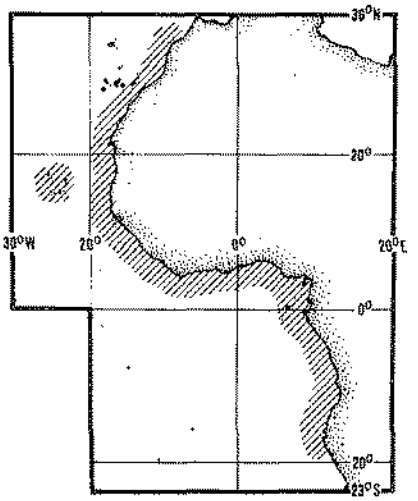
SIZE:

Maximum carapace width 8.7 cm, carapace length 7.7 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Within the area, from Morocco to Namibia, including the Cape Verde Islands, islands of the Gulf of Guinea, Ascension and St. Helena; also on the Azores. Elsewhere, in the Western Atlantic (Bermuda, Bahamas and Florida to Brazil), and the Eastern Pacific (northern Mexico to central Chile, including Clipperton and the Galapagos Islands).

Lives near the water line on rocks and is very active on land, taking refuge in the sea when danger threatens.



PRESENT FISHING GROUNDS:

No special fishery.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Apparently utilized mainly for private consumption. According to Irvine (1947, Fishes and Fisheries of the Gold Coast:291) it is ceught in Ghana by means of circular cast-nets. No other records that the species is eaten in West Africa are availalble to the author.

GRAPS Pachygr 1

1981

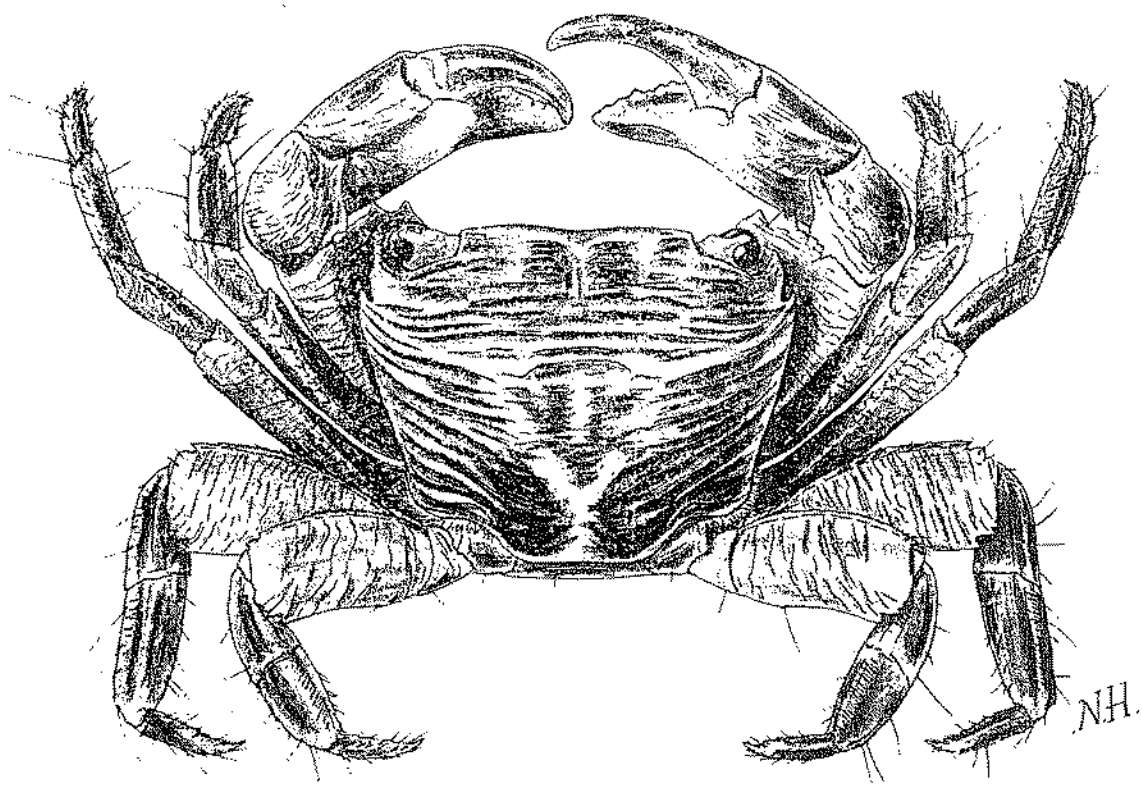
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : GRAPSIDAE

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

Pachygrapsus transversus (Gibbes, 1850)

OTHER SCIENTIFIC NAMES STILL IN USE : None





VERNACULAR NAMES:

FAO : En - African matchbox crab
Fr - Anglette africaine
Sp - Abuete cajeta

NATIONAL :

DISTINCTIVE CHARACTERS :

A small crab; carapace slightly convex, with transverse ridges dorsally, broadest anteriorly, narrowing posteriorly, trapezoid in outline. Front with sinuous anterior margin, its width distinctly greater than half that of carapace; lateral margin with a single tooth behind the exorbital tooth. Pincers smooth without tubercles or spines, but with a faint ridge on outer margin; first walking leg with a tuft of whitish hairs on anterior surface of propodus; merus of all walking legs with teeth at posterodistal angle.

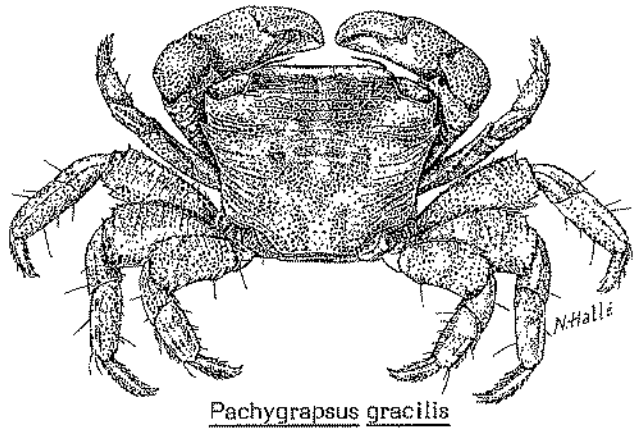
Colour: brown variegated with green and yellowish.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Pachygrapsus gracilis (de Saussure, 1858): front not sinuous but curved; upper margin of the dactyls of chelipeds not smooth, but with denticles, and propodus of first walking leg without a white tuft of hairs.

Goniopsis pelii: pincers or chelipeds with numerous tubercles and spinules, and merus of last walking leg without posterodistal teeth.

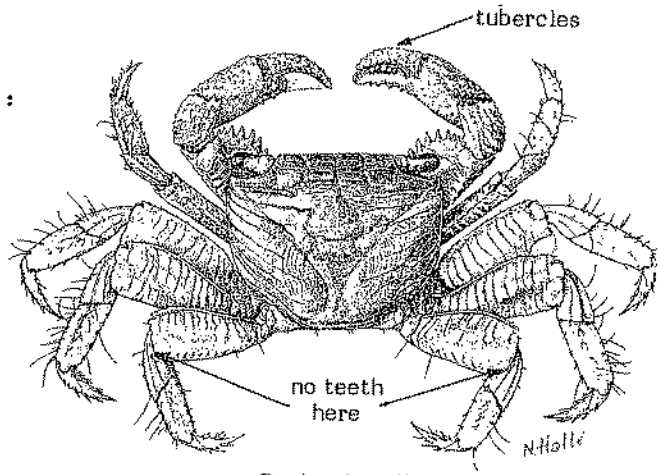
Sesarma species: an oblique hairy ridge over the merus and ischium of third maxilliped.



Pachygrapsus gracilis

SIZE :

Maximum carapace length 1.5 cm, carapace width to 1.8 cm.



Goniopsis pelii

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Within the area, from Morocco to Angola, including offlying islands. Also found in the southern and Eastern Mediterranean, the Western Atlantic (Florida to Uruguay) and the Eastern Pacific (California to Peru).

PRESENT FISHING GROUNDS :

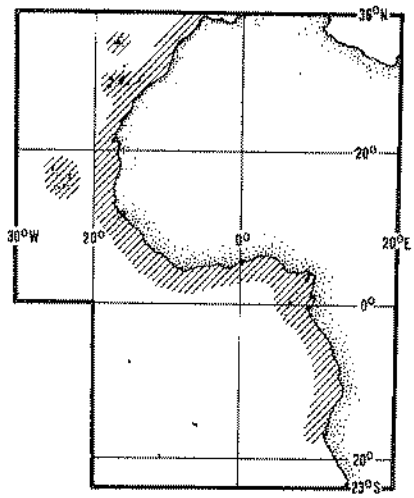
No special fishery for the species.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Caught by hand.

Marketed fresh, it is of very little commercial importance. The only mention of its economic value known to the author is by Irvine (1947, Fishes and Fisheries of the Gold Coast: 292), who stated that in Ghana, "notwithstanding its very small size the species appears to be used as food"; Irvine obtained material at the fish market of Accra.



GRAPS Ses 1

1981

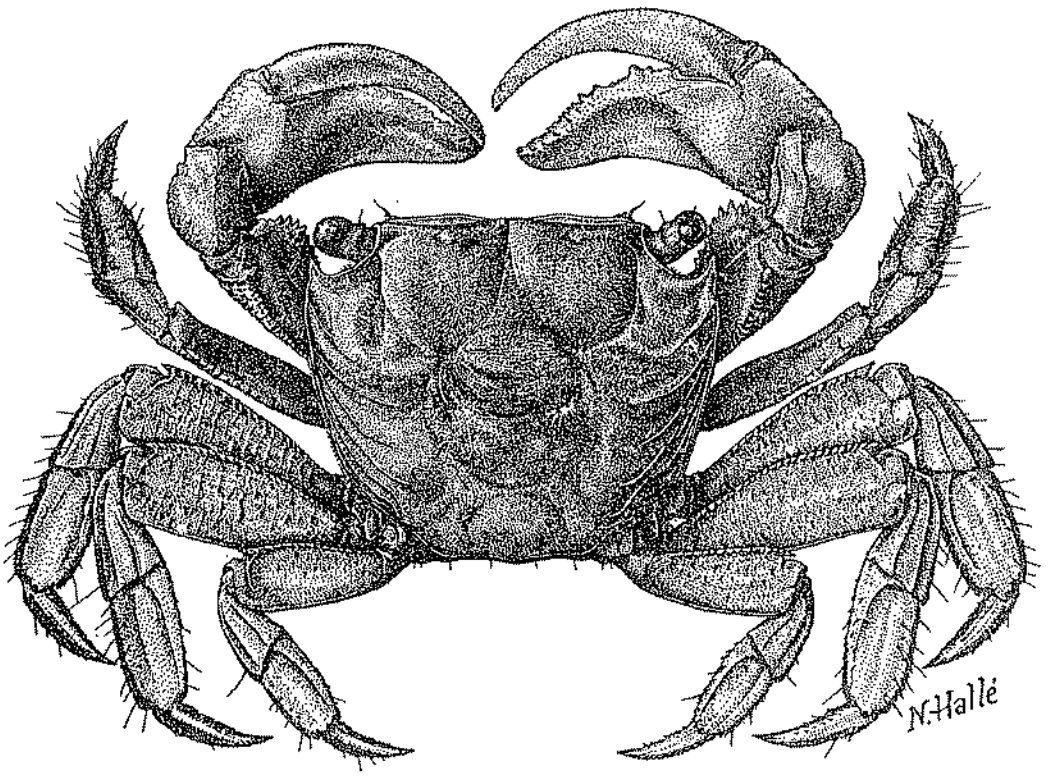
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : GRAPSIDAE

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

Sesarma angolense de Brito Capello, 1864

OTHER SCIENTIFIC NAMES STILL IN USE : None



0 2 cm

VERNACULAR NAMES:

FAO : En - Angola marsh crab
Fr - Anglette angolaise
Sp - Abuete de Angola

NATIONAL :

DISTINCTIVE CHARACTERS :

Body robust and high, squarish in outline, narrowing only slightly posteriorly; upper surface scabrous by the presence of small granules, but without tufts of short, stiff, black hairs; a few oblique ridges laterally; lateral margin without teeth behind the extraorbital tooth; upper margin of front consisting of a single row of granules, which is indistinctly four-lobed. Upper margin of dactylus of chelipeds granular; immovable finger high, triangular; third maxilliped with a distinct oblique, hairy ridge on merus and ischium; walking legs with spinules on dactylus and propodus and rows of short, dark, densely placed hairs; dactylus almost as long as propodus.

Colour: body reddish brown to dark brown; chelipeds becoming lighter distally, with the fingers yellowish.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

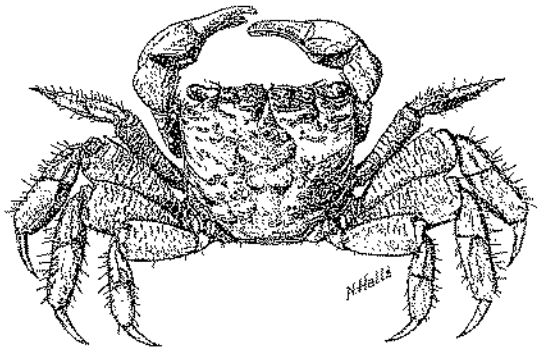
Sesarma huzardi (Desmarest, 1825), *S. alberti* Rathbun, 1921, and *S. kamermani* De Man, 1883: a distinct tooth present on anterolateral carapace margin behind orbit.

S. buettikoferi De Man, 1883: pincers purple with fingers red; in males, base of palm of chelipeds reaching beyond the articulation with carpus and outer surface of palm flattened.

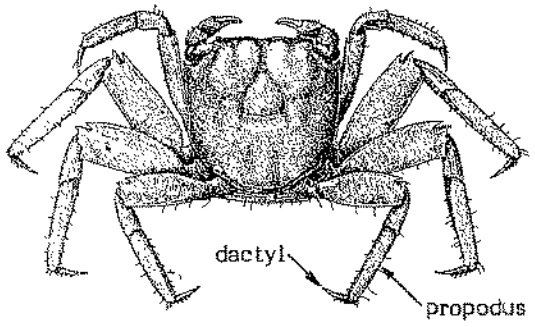
S. elegans Herklots, 1851: a small species with slender legs, their dactylus less than half the length of the propodus.

Cyclograpsus and Metagrapsus species: body more rounded, widest at middle (widest anteriorly in *Sesarma* species).

Crabs not belonging to the subfamily Sesarminae: third maxilliped without an oblique hairy ridge over merus and ischium.



Sesarma huzardi



Sesarma elegans

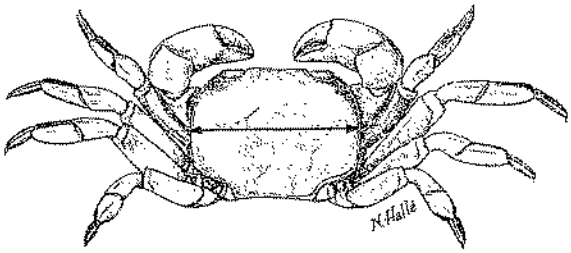
SIZE :

Maximum carapace length 3.3 cm, carapace width 4.2 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

West Africa from Sierra Leone to Angola.

Inhabits swamps and mangroves and makes burrows in the muddy ground.



Cyclograpsus integer

PRESENT FISHING GROUNDS :

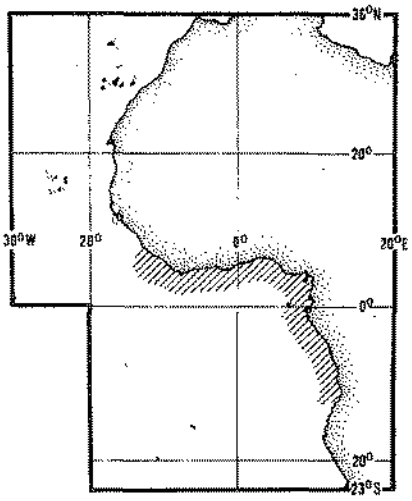
No special fishery.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Caught by hand.

Not used as food, but as bait: "These crabs are not eaten by the natives, but I was told that at times large numbers are crushed and used as bait in certain types of fish traps" (Rathbun, 1921, Bull.American Mus.nat.Hist., 43:452). *The author has been unable to* find any record of *Sesarma* species being eaten in West Africa, while there are positive statements that they are not (e.g., for *S. huzardi* by Irvine, 1947, Fishes and Fisheries of the Gold Coast: 294: "The species is not edible").



HOM Par 1

1981

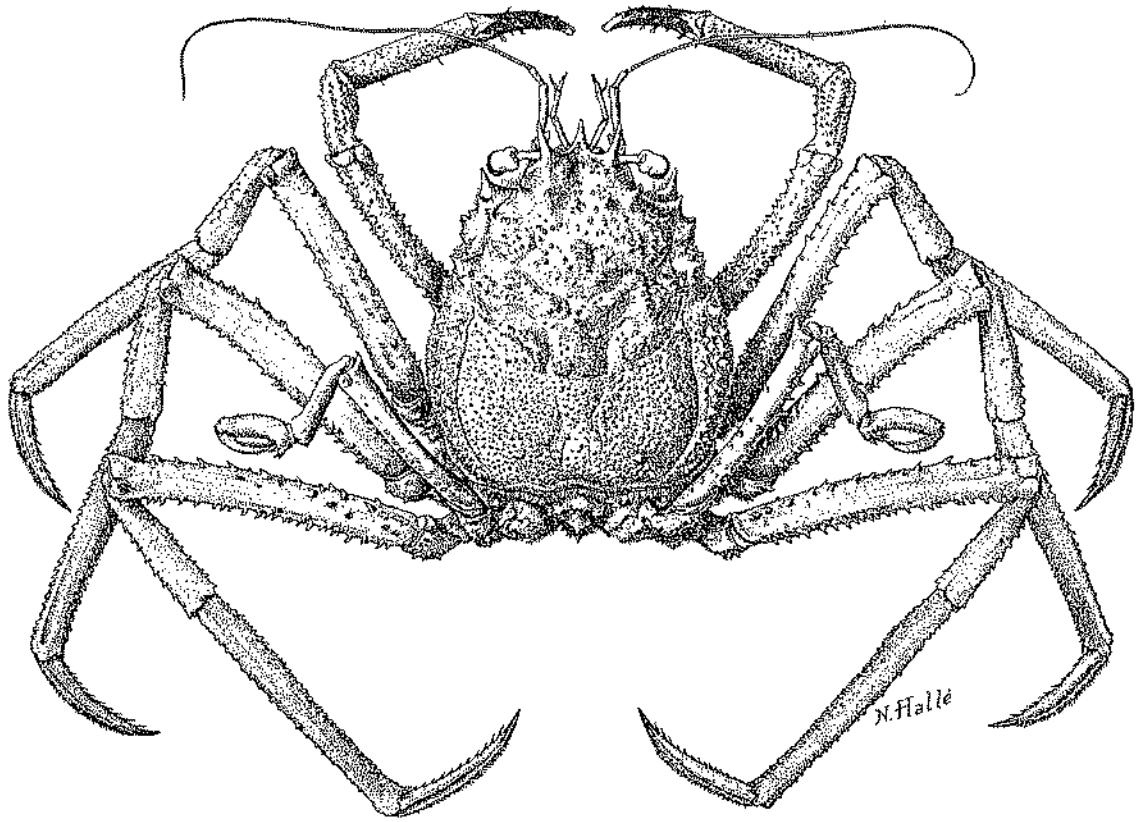
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : HOMOLIDAE

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

Paromola cuvieri (Risso, 1816)

OTHER SCIENTIFIC NAMES STILL IN USE : None



0 10 cm

VERNACULAR NAMES:

FAO : En - Paromola
Fr - Paromole
Sp - Centolla de fondo

NATIONAL :

DISTINCTIVE CHARACTERS :

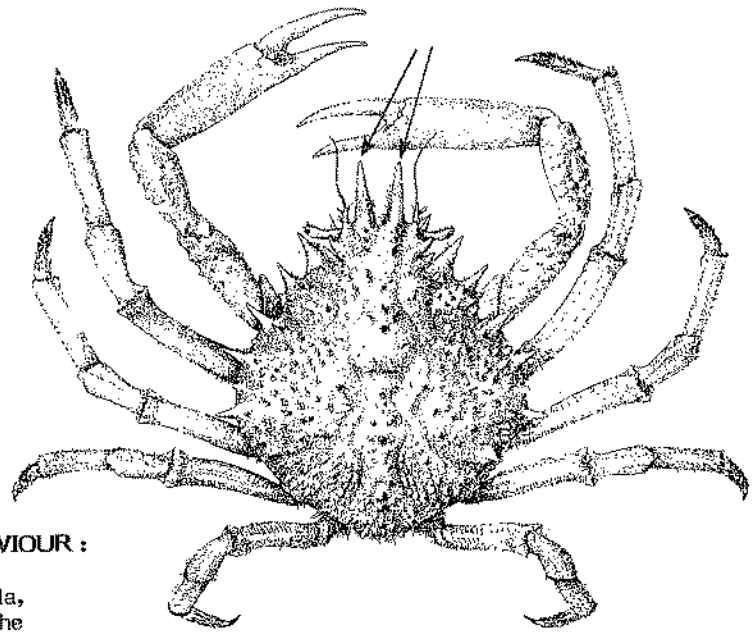
Body high, longer than wide, about quadrangular in outline, covered with numerous spines. Frontal margin with 3 sharp teeth; lateral margins convex, especially posteriorly. Chelipeds longer than body, strong, spinous, with tufts of hair on the fingers; first three pairs of walking legs slender, spinous; dactyls normal, with spines; last leg much shorter than the others and carried on the back of the body, with a prehensile subchela formed by dactylus and propodus.

Colour: light reddish or yellowish orange, spines and legs often darker red; fingers of chelipeds black.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Homola barbata (Fabricius, 1793): much smaller; body flat and with straight lateral margins; fingers of chelipeds not dark in colour.

Maja squinado (Herbst, 1788): body more triangular and front ending in 2 teeth (3 frontal teeth in P. cuvieri); the last legs not different from the foregoing.



Maja squinado

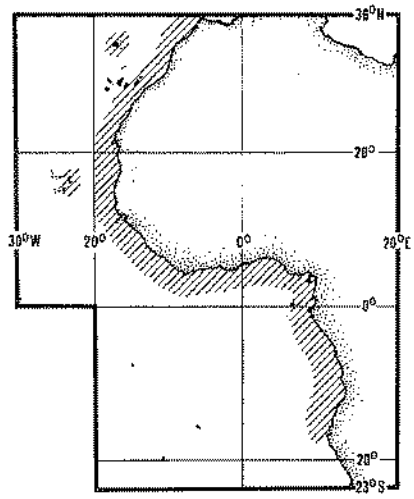
SIZE :

Maximum carapace length 21.5 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

In the area, from Morocco to Angola, including offlying islands; northwards to the Hebrides and S.W. Norway. Also found in the Mediterranean as far east as Greece.

A deep water species, most commonly taken from depths between 80 and 350 m, but reported from 10 to 1 000 m.



PRESENT FISHING GROUNDS :

The species nowhere is specially fished for; occasionally taken by trawlers.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Taken in bottom trawls. The author does not know of any West African record concerning the commercial value of the species, but Türkay (1976, Boletim Museu municipal Funchal, 30(133): 62) mentioned a specimen obtained at the fish market at Funchal, Madeira.

MAJI Maja 1

1981

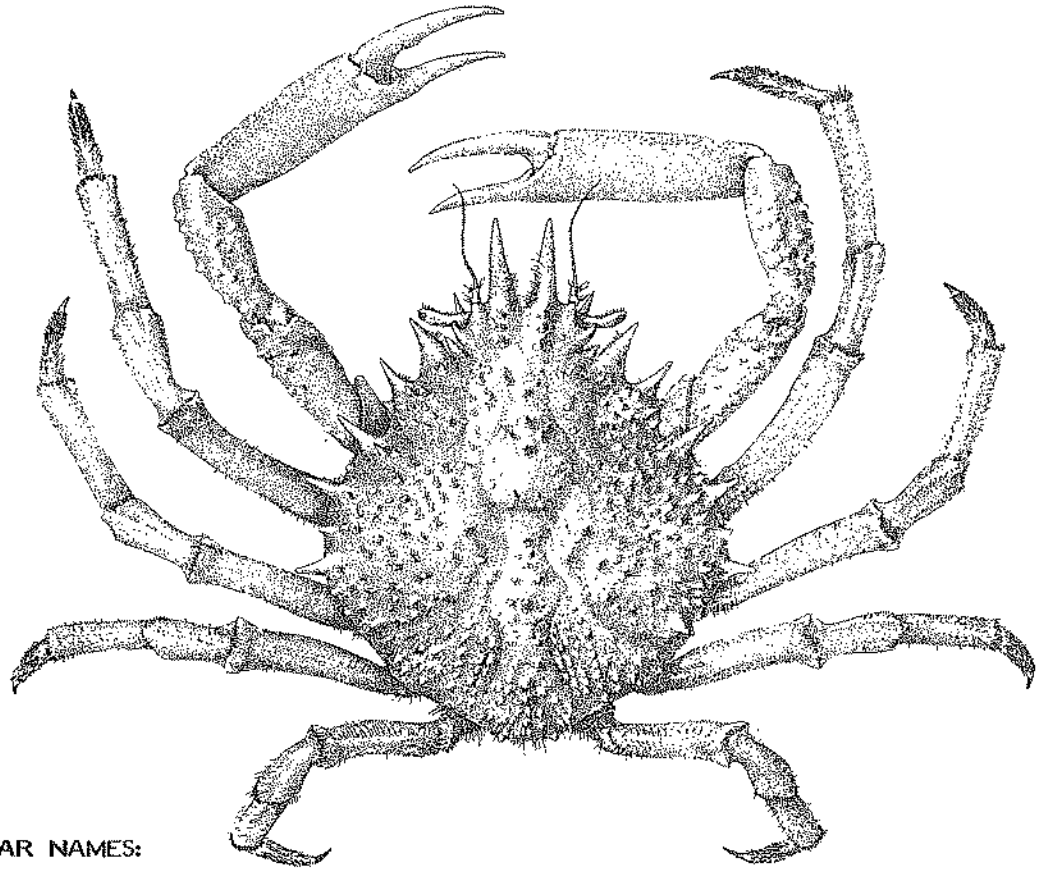
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : MAJIDAE

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

Maja squinado (Herbst, 1788)

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES:

FAO : En - Spinous spider crab
Fr - Araignée européenne
Sp - Centolla europea



NATIONAL :

DISTINCTIVE CHARACTERS :

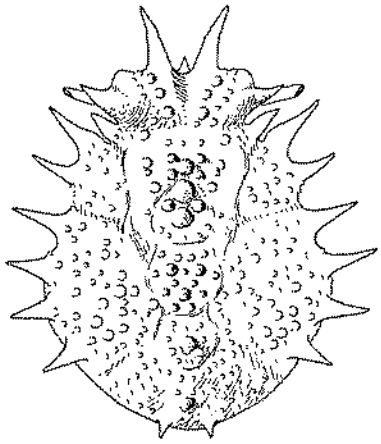
Carapace strongly vaulted, narrowing anteriorly, greatest width behind the middle, covered with numerous spines and granules. Front ending in 2 strong teeth, which project beyond the outline of the carapace; lateral margins with 5 large and some small spinous teeth. Pincers smooth, without spines; walking legs of similar shape, decreasing in size posteriorly, covered with numerous stiff short and longer, more supple, hairs, but without any spines.

Colour: rather uniformly reddish brown or yellowish brown.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Maja crispata Risso, 1827, also known as Maja verrucosa Milne Edwards, 1834; a smaller species (carapace length never over 8 cm) not extending further south than Cape Blanc; carapace longer than broad and depressed near the lateral margins; the lower orbital margin lacks the spine that is present there in M. squinado.

Maja goltziana d'Oliveira, 1888; easily distinguished by the presence of a strong disto-dorsal spine on the merus of the walking legs.



M. crispata

carapace

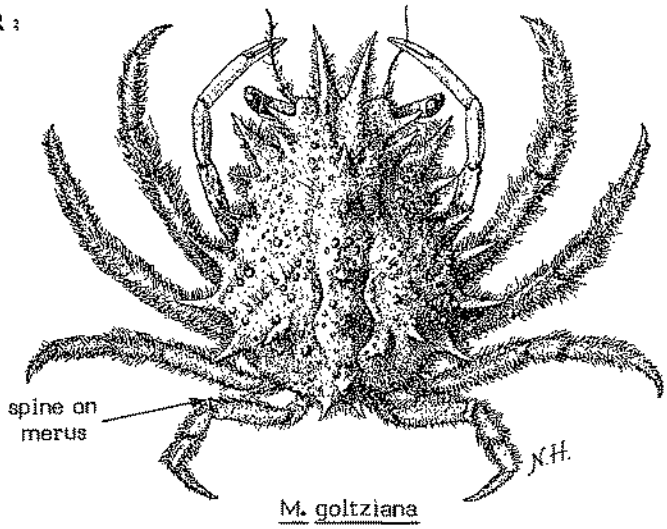
SIZE :

Maximum carapace length 22 cm, carapace width 18 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

In the area, from Morocco to Namibia including offlying islands. Northwards extending as far as the North Sea. Also found in the Mediterranean.

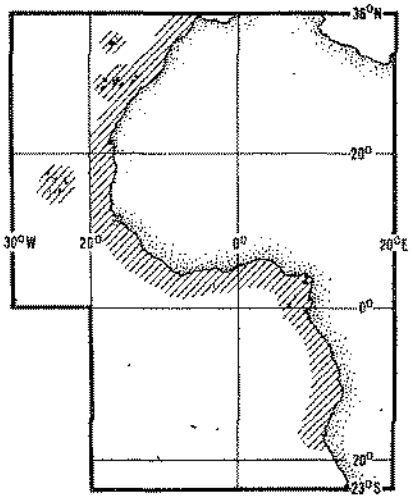
Sublittoral to about 75 m; on rocky bottom with algae.



M. goltziana

PRESENT FISHING GROUNDS :

Coastal waters over the continental shelf. In the larger part of the west african coast it is not enough abundant to form the subject of a fishery, only in Morocco it is said to be "assez abondant sur les marchés" (A. Gruvel & W. Besnard, 1937, Atlas de poche des principaux produits marins rencontrés sur les marchés du Maroc: 186).



CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Caught with bottom trawls and trammel nets.

Marketed fresh.

OCYP Ocyp 1

1981

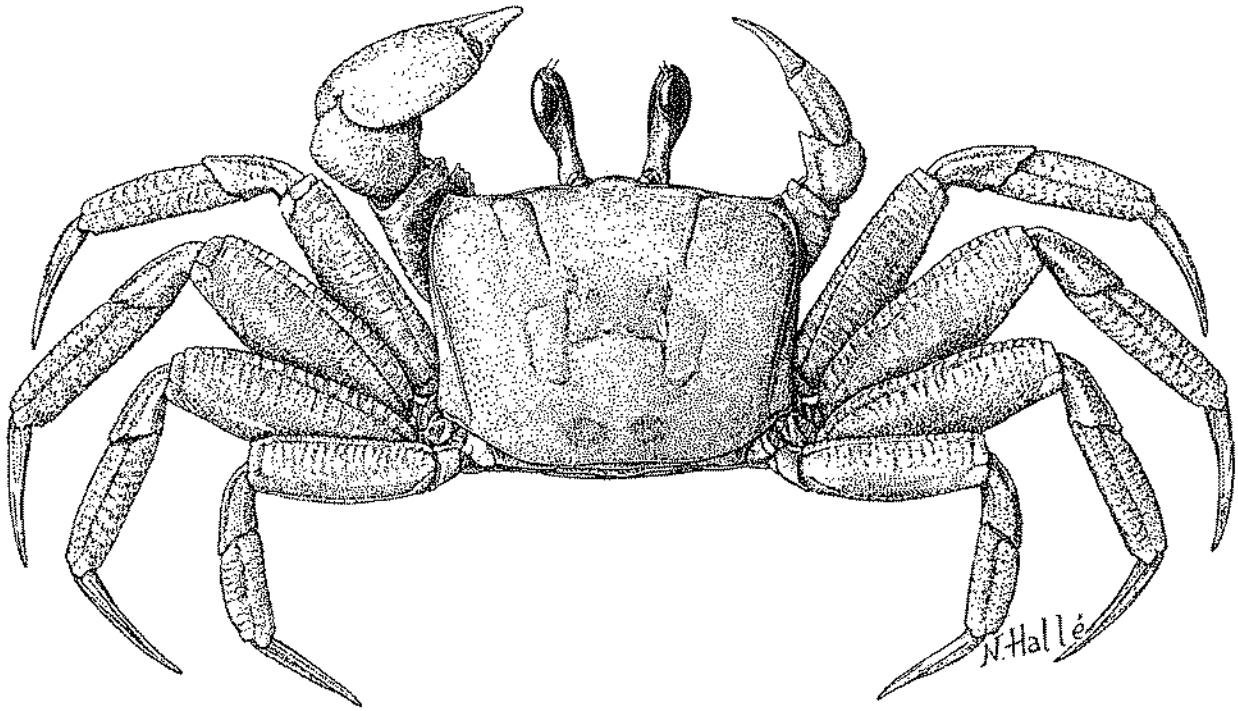
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : OCYPODIDAE

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

Ocypode africana De Man, 1881

OTHER SCIENTIFIC NAMES STILL IN USE : None





VERNACULAR NAMES:

FAO : En - African ghost crab
Fr - Ocypode africain
Sp - Capuco africano

NATIONAL :

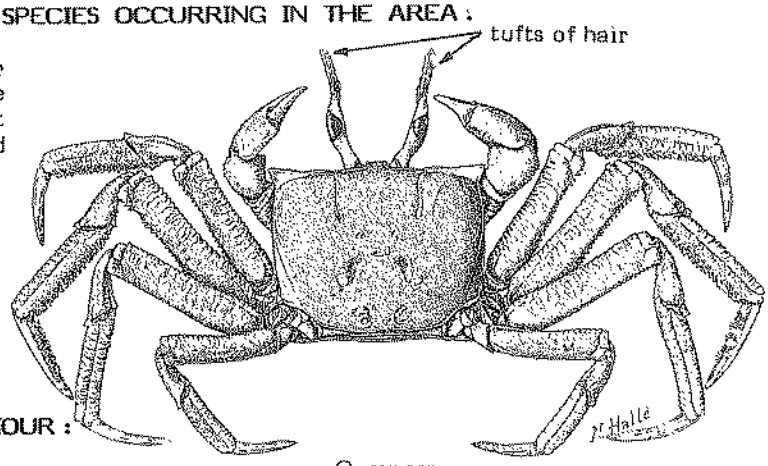
DISTINCTIVE CHARACTERS :

Body squarish, slightly narrowing posteriorly; upper surface slightly convex, evenly granular with some grooves. Front less than half as wide as the orbits and without spines; anterolateral margin without teeth apart from outer orbital angle; eyes long, but without a tuft of hairs at top. Walking legs without brushes of hairs on the dactyl.

Colour: adult animals are reddish, purplish or more brownish; juveniles are usually mottled with brown and yellow and have the legs with dark bands.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Ocypode cursor (Linnaeus, 1758): legs more slender; adults with a long tuft of hairs at the distal end of eye stalk and a dense and short pubescence on lower surface of dactylus of second walking leg.



O. cursor

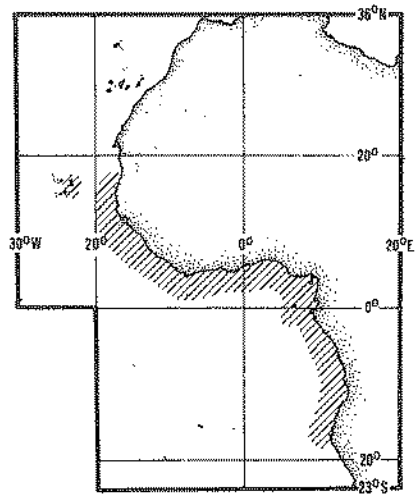
SIZE :

Maximum carapace width 3.4 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

West Africa from Mauritania to northern Namibia.

On sandy beaches at and above the tide line.



PRESENT FISHING GROUNDS :

No special fishery.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Caught by hand, baited traps (kerosene cans dug into the ground), cast-nets, nooses, etc.

Cooked and eaten, at least in Ghana, where it is "much sought after as food" (Irvine, 1947, Fishes and Fisheries of the Gold Coast: 287). Monod (1928, L'industrie des pêches au Cameroun: 123) remarked that he had never seen the local inhabitants collect these species (O. africana and O. cursor) which are too small to be consumed in the ordinary way, but may be used for the preparation of a tasty soup ("potage au tourlourou").

OCYP Ocyp 2

1981

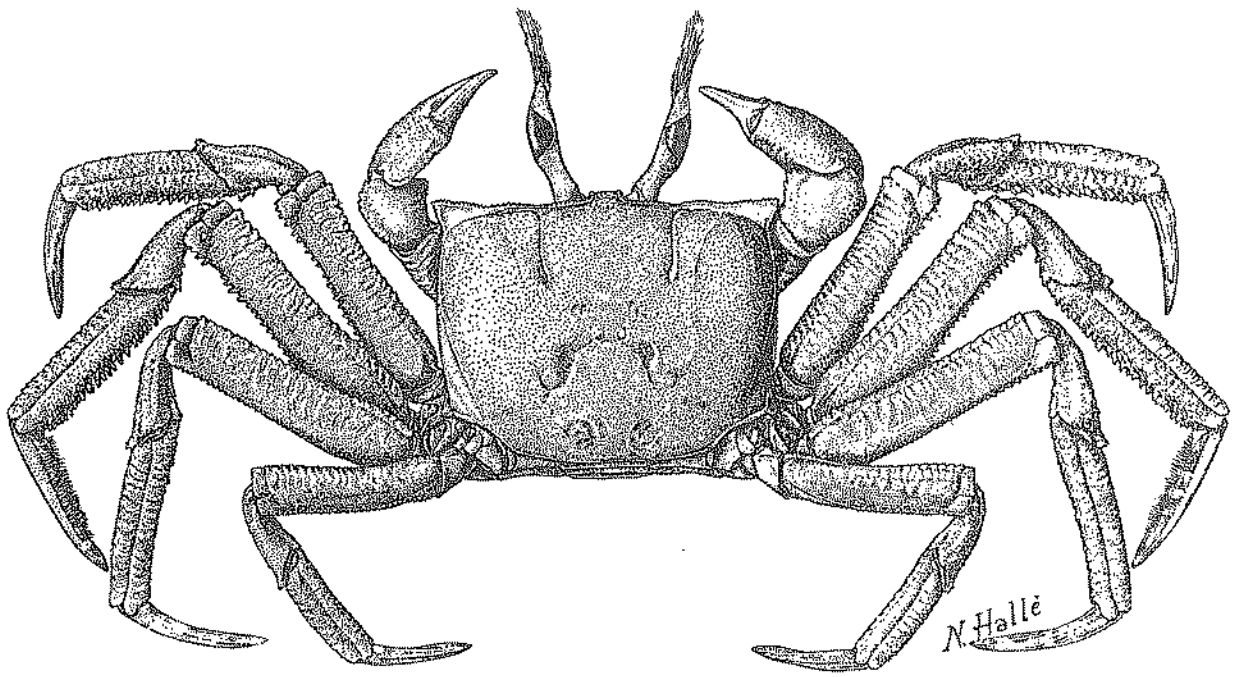
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : OCYPODIDAE

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

Ocypode cursor (Linnaeus, 1758)

OTHER SCIENTIFIC NAMES STILL IN USE : Ocypode (h)ippeus Olivier, 1807



0 2.9 cm

VERNACULAR NAMES:

FAO : En - Tufted ghost crab
Fr - Ocypode pénicillée
Sp - Capuco de mechón

NATIONAL :

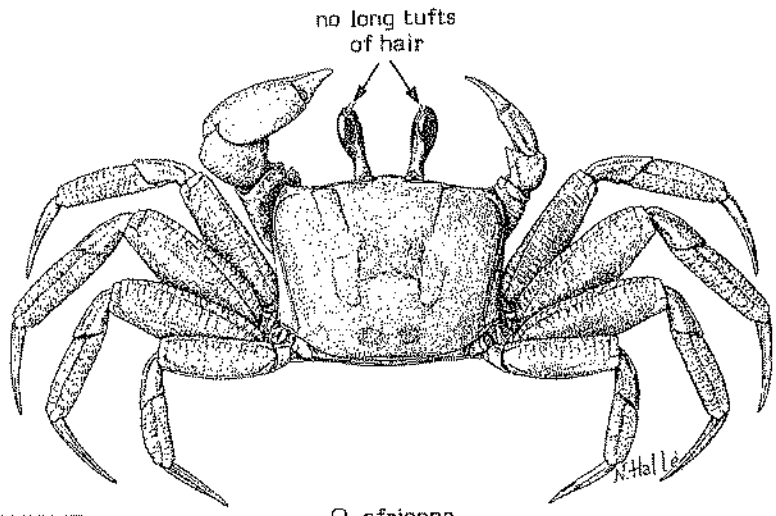
DISTINCTIVE CHARACTERS :

Body squarish, slightly narrowing posteriorly; upper surface slightly convex, evenly granular with some grooves. Front less than half as wide as the orbits and without spines; carapace widest at the anterior margin formed by the orbits and the front; anterolateral margins without teeth behind the outer orbital angle; eyes slender and in the adults ending in a tuft of long hairs, like a paint brush. Walking legs are slender, lower surface of the dactylus of second leg densely and shortly pubescent.

Colour: yellowish, sometimes orangish or sand coloured.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

O. africana De Man, 1881: never a tuft of hairs at tip of eyes and no pubescence on the lower surface of dactylus of second walking leg; legs, and especially the merus less slender.



O. africana

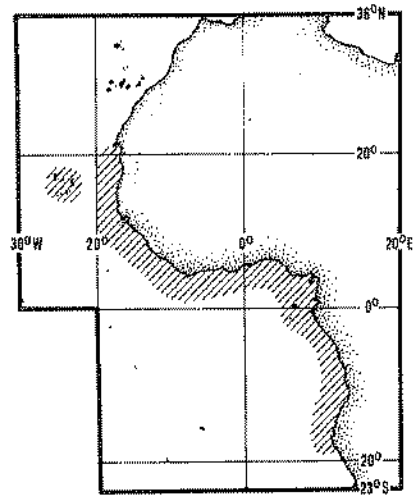
SIZE :

Maximum carapace length 4.6 cm, carapace width 5.5 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

West Africa from southern Mauritania to northern Namibia. Also in the Eastern Mediterranean (Egypt, Israel, Lebanon, Syria and Turkey).

Lives on sandy beaches, making burrows above the high water line.



PRESENT FISHING GROUNDS :

No special fishery.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Probably caught by hand, baited traps, cast nets, nooses, etc.

Probably consumed cooked, like O. africana, but the only positive record of the utilization of the species as food known to the author is the remark by Monod (1928) that this species and O. africana are too small to be eaten in the usual way, but that they can be used for the preparation of a tasty soup (potage au tourlourou).

OCYP Uca 1

1981

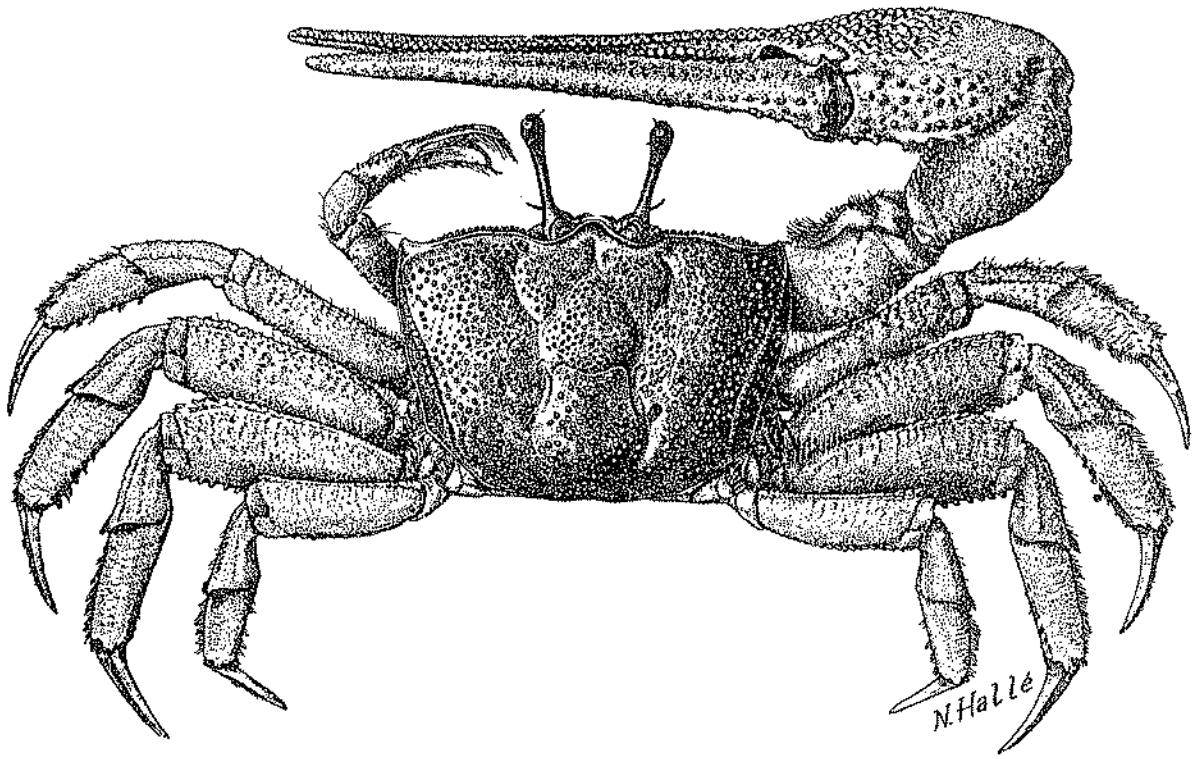
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : OCYPODIDAE

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

Uca tangeri (Eydoux, 1835)

OTHER SCIENTIFIC NAMES STILL IN USE : Uca (Afruca) tangeri (Eydoux, 1835)



0 2.9 cm

VERNACULAR NAMES:

FAO : En - West African fiddler crab
Fr - Gélasime africain
Sp - Violinista africano

NATIONAL :

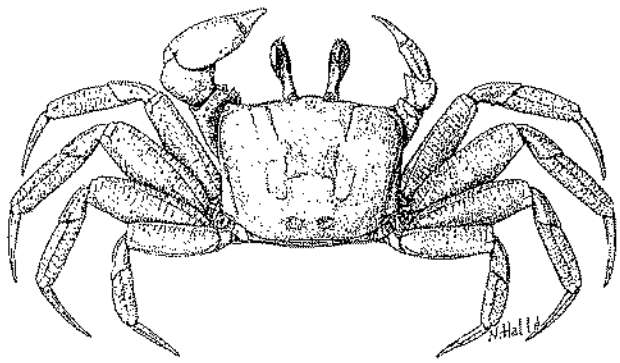
DISTINCTIVE CHARACTERS :

Carapace quadrangular, the anterior margin being widest, the lateral margins straight and converging posteriorly; dorsal surface with distinct granules and some grooves. Front short and narrow, triangular, without teeth; lateral margins also lacking teeth; eyes slender, the orbits occupying the entire anterior margin at either side of the front. Chelipeds in the female small and equal, with spoon-shaped tips; in the males only one cheliped small like that of the female, the other very large, the pincers alone being more than twice as long as the carapace, with long and gaping fingers; walking legs similar in shape, but somewhat different in size.

Colour: carapace grey with a purplish or yellowish tinge; large cheliped of the male purplish at base, the pincers white or partly yellowish.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Uca tangeri: cannot easily be confused with any other West African species. The two species of Ocypode (O. africana and O. cursor) come closest, but have the chelipeds quite different, the eyes less slender and live in a quite different habitat (sandy beaches instead of mud flats).

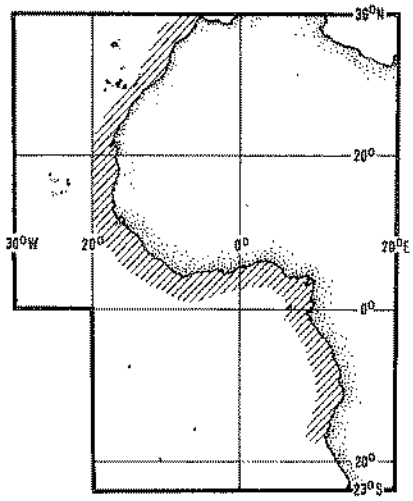


Ocypode africana

SIZE:

Maximum carapace length 3.3 cm, carapace width 4.7 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:



West coast of Africa from Morocco to southern Angola; northwards extending to Portugal; this species does not occur in the Mediterranean.

In marsh land, mud flats, often near river mouths, living in burrows dug into the muddy ground.

PRESENT FISHING GROUNDS:

No special fishery.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught by hand.

In Spain and Portugal the large chelipeds are broken off the males and sold cooked or fresh on the markets. Irvine (1947, Fishes and Fisheries of the Gold Coast: 288) mentioned that in Ghana the species "is very seldom eaten". For Cameroon, Monod (1928, L'industrie des pêches au Cameroun: 123) remarked that local inhabitants do not collect this species which could, however, constitute an excellent product.

PORT Call 10

1981

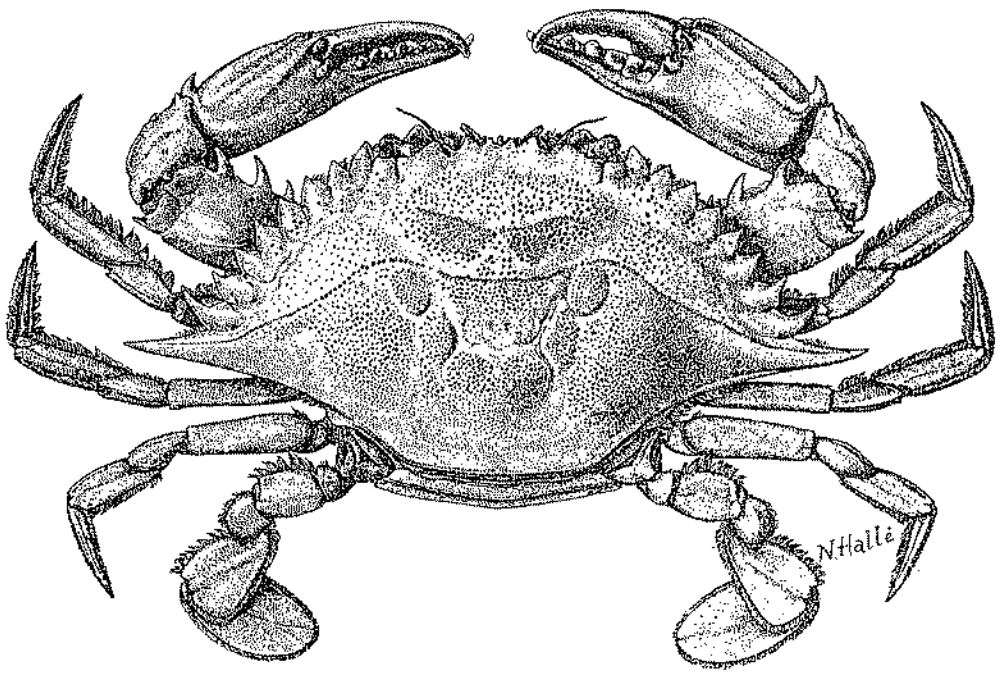
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : PORTUNIDAE

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

Callinectes amnicola (De Rochebrune, 1883)

OTHER SCIENTIFIC NAMES STILL IN USE : Callinectes latimanus Rathbun, 1897



0 4.7 cm

VERNACULAR NAMES:

FAO : En - Bigfisted swimcrab
Fr - Crabe bicorne
Sp - Jaiba puño

NATIONAL :

DISTINCTIVE CHARACTERS :

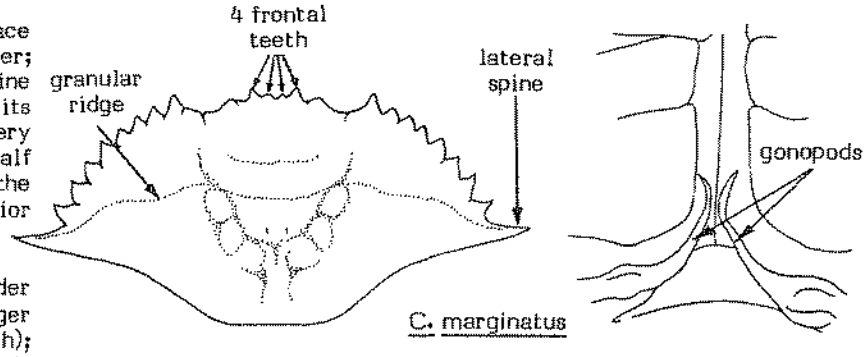
Carapace broad, ending laterally in a strong spine, preceded on the lateral margin by 8 distinct teeth (including the external orbital angle); length of lateral spine twice or more that of preceding tooth; width of carapace twice or slightly more than twice its length (lateral spines included), its upper surface somewhat convex and roughly granular; a rather straight granular ridge extends from the large lateral spine inward. Front with 4 teeth, the inner pair triangular and only half or slightly more than half as long as the outer pair. Chelipeds strong, unequal, pincers with distinct ridges; last walking leg with propodus and dactylus broad and flat, paddle-shaped. Male gonopods (copulatory organs beneath abdomen) very long, reaching almost to the end of abdomen, their tips curved inward and crossing each other.

Colour: described variously as olive brown mottled, and as blue or bluish with pink; the legs seem to be paler than the carapace.

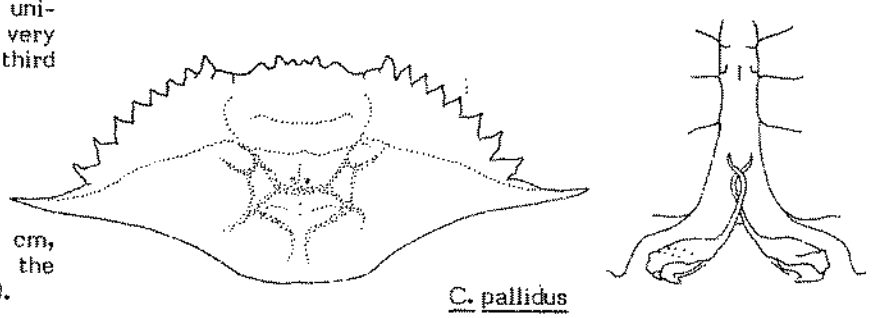
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Callinectes marginatus: carapace slightly flatter and the granulation finer; the ridge extending from the lateral spine inward with a distinct inflection near its midlength; inner pair of teeth of front very small, their length distinctly less than half that of the outer teeth; gonopods of the male very short (not reaching the anterior margin of sternite of third walking legs).

Callinectes pallidus: carapace wider and flatter with the lateral spine longer (about 3 times longer than preceding tooth); surface of carapace very finely and uniformly granulated; male gonopods very short, not reaching end of sternite of third walking legs.



C. marginatus


C. pallidus

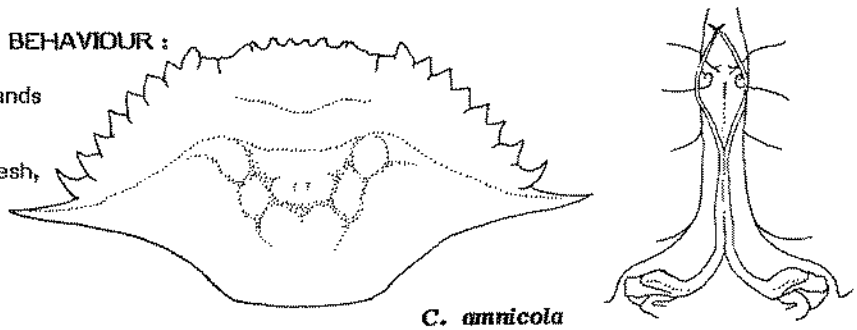
SIZE :

Maximum carapace length 7.5 cm, carapace width 15.1 cm (including the lateral spines; without these: 12.5 cm).

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

West Africa from Cape Verde Islands and Mauritania to Angola.

An estuarine species found in fresh, brackish and salt water.

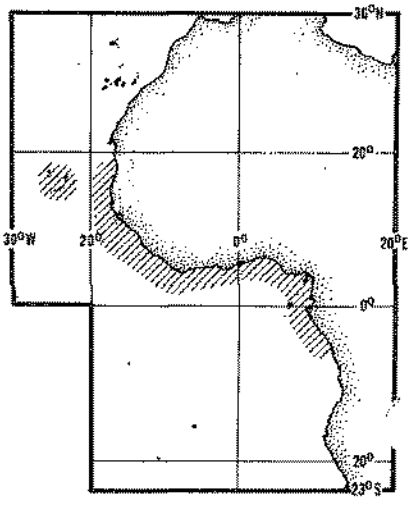

C. amnicola

carapace (dorsal view)

thoracic sternum of male aftern removal of abdomen showing first pair of pleopods (developed as gonopods)

PRESENT FISHING GROUNDS :

Fished for probably throughout its range, certainly between Senegal and Gabon. C. amnicola usually is taken with the two other species of Callinectes and as a rule no distinction between the three species is made by the fishermen.



CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Caught with hand nets, square nets, crab pots and even on hook and line.

The catches are used locally and sold fresh, cooked, or fried in palm oil. These crabs are very well liked and eaten practically everywhere they occur.

PORT Call 11

1981

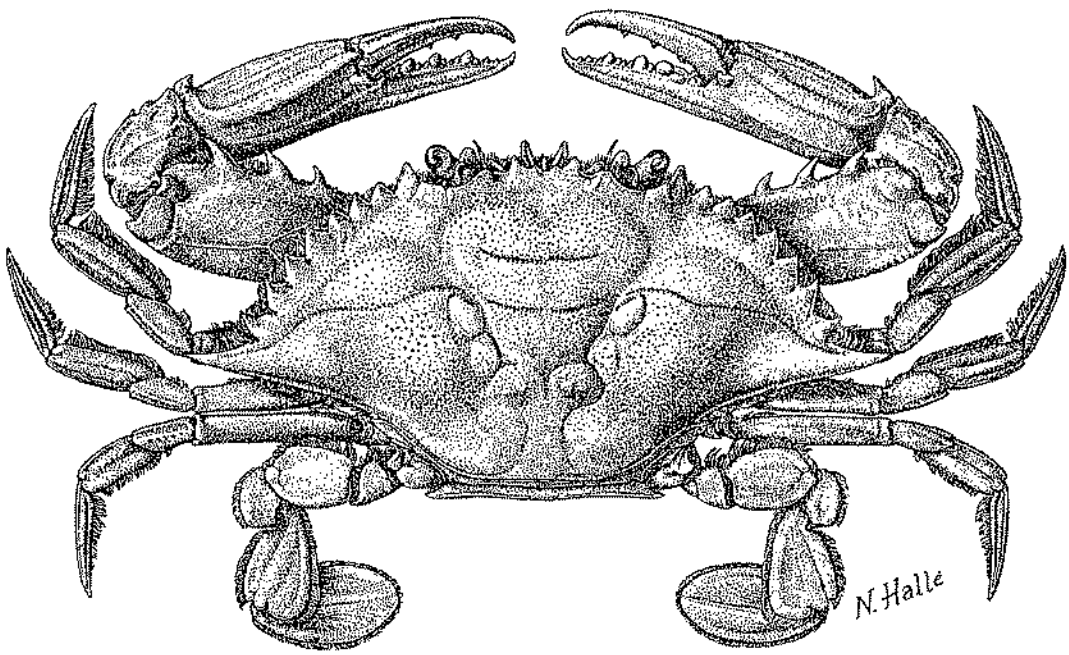
FAO SPECIES IDENTIFICATION SHEETS

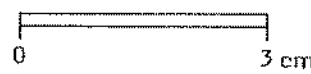
FAMILY : PORTUNIDAE

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

Callinectes marginatus (A. Milne Edwards, 1861)

OTHER SCIENTIFIC NAMES STILL IN USE : None





VERNACULAR NAMES:

FAO : En - Marbled swimcrab
Fr - Crabe marbré
Sp - Jaiba jaspeada

NATIONAL :

DISTINCTIVE CHARACTERS :

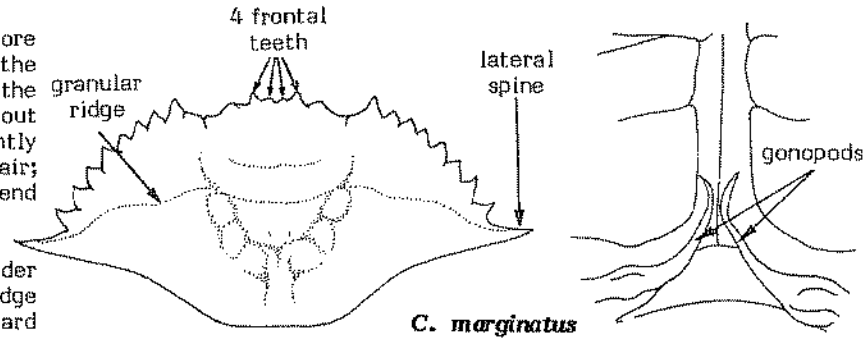
Carapace broad, ending laterally in a strong spine preceded on the lateral margin by 8 distinct teeth (including the external orbital angle); length of lateral spine about twice that of preceding tooth; width of carapace slightly more than twice its length (lateral spines included), its dorsal surface slightly convex with a fine, dense and uniformly distributed granulation; granular ridge extending from the lateral spines inward with a distinct inflexion near its midlength. Front with 4 teeth, the inner pair very small, distinctly less than half as long as the outer teeth. Chelipeds strong, unequal, with distinct granular ridges; last walking leg with both dactylus and propodus, broad and flat, paddle-shaped. Male gonopods short, failing to reach end of sternite of third walking legs, their distal part somewhat curved outward; the left and right gonopods usually do not touch.

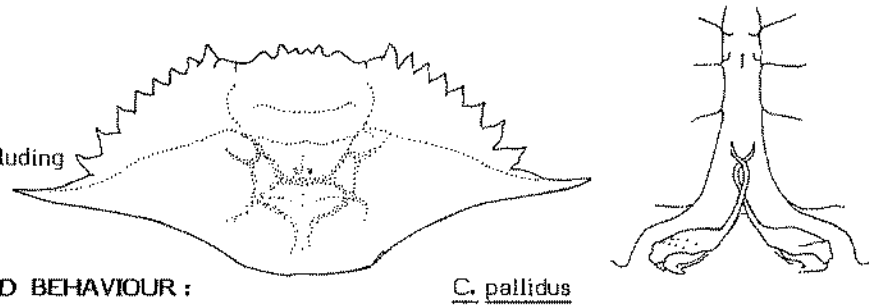
Colour: carapace with a marbled colour pattern which seem to be characteristic of the species.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Callinectes amnicola: carapace more convex with the granulation coarser; the granulated ridge extending inward from the lateral spine practically straight, without inflexion; inner teeth of front are slightly more than half as long as the outer pair; male gonopods long, reaching to about end of abdomen.

Callinectes pallidus: carapace wider and more finely granulated, the ridge extending from the lateral spine inward about straight, without a distinct inflexion; lateral spine is almost three times longer than preceding tooth.





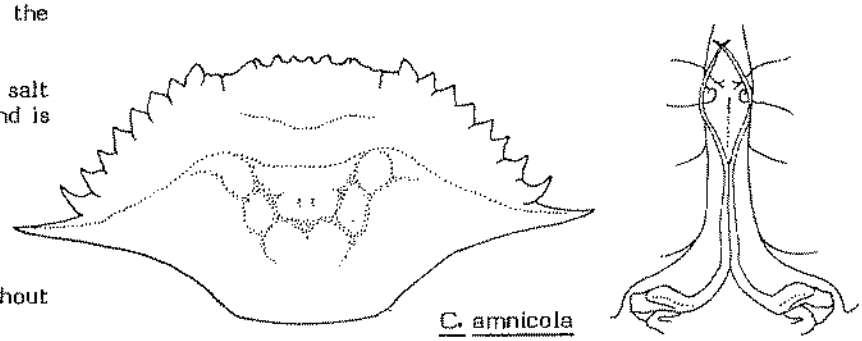
SIZE :

Maximum carapace width (including the lateral spines) 9.7 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

West Africa from Mauritania and the Cape Verde Islands to Central Angola.

The species is found in shallow salt water on sandy or sandy mud bottom and is rather marine than estuarine.



carapace (dorsal view)

thoracic sternum of male after removal of abdomen showing first pair of pleopods (developed as gonopods)

PRESENT FISHING GROUNDS :

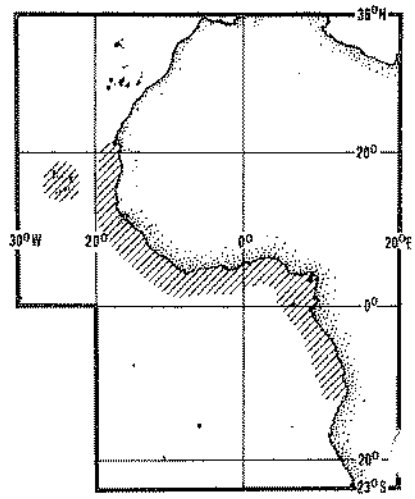
Fished intensively, probably throughout its range.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species. In most accounts on the economic importance of West African Crustacea no distinction is made between the various species of Callinectes.

Taken with hand nets, square nets, crab pots and on hook and line.

Sold locally for immediate consumption either fresh, cooked, or fried in oil.



PORT Call 12

1981

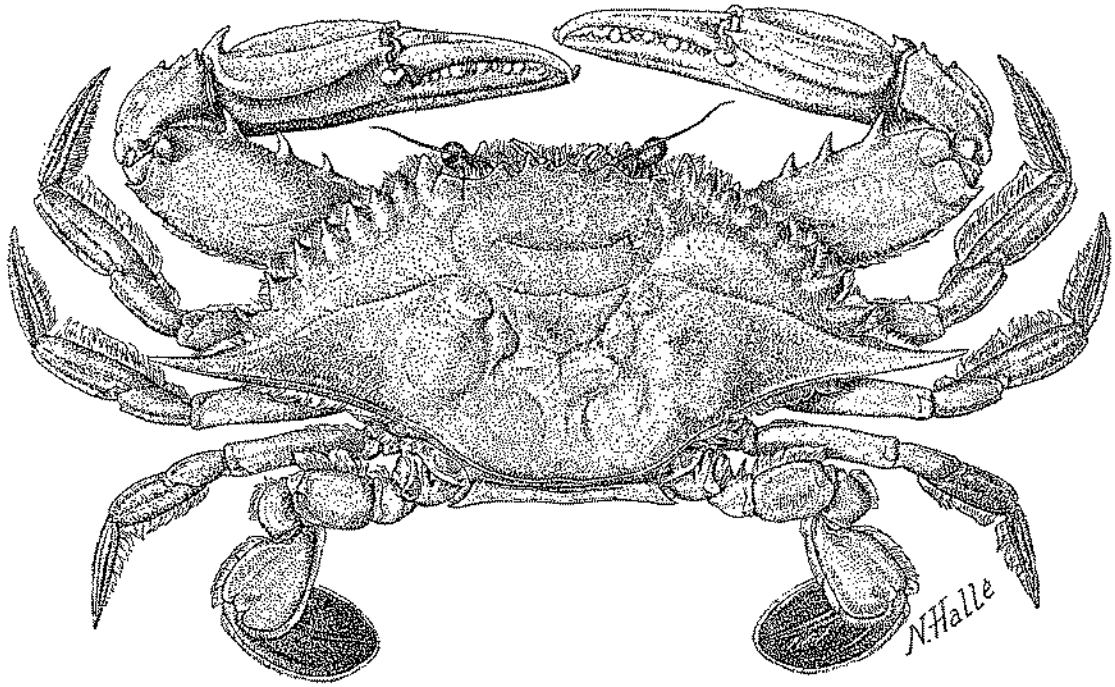
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : PORTUNIDAE

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

Callinectes pallidus (De Rochebrune, 1883)

OTHER SCIENTIFIC NAMES STILL IN USE : Callinectes gladiator Benedict, 1893



0 3.3 cm

VERNACULAR NAMES:

FAO : En - Gladiator swim crab
Fr - Crabe gladiateur
Sp - Jaiba gladiadora

NATIONAL :

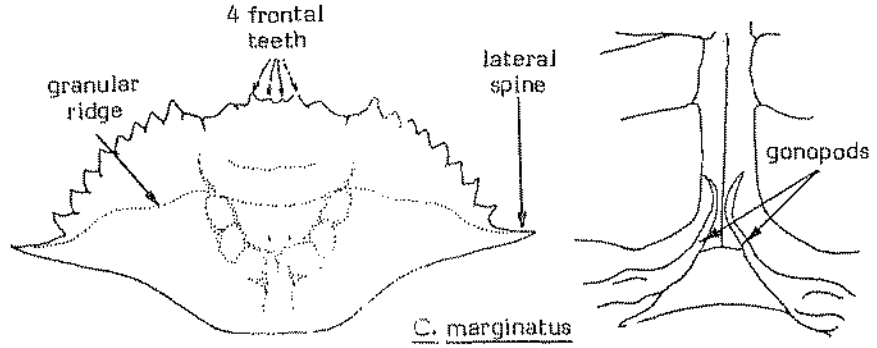
DISTINCTIVE CHARACTERS :

Carapace very broad, almost 2.5 times wider than long, and flatter than that of the other West African species of this genus; anterolateral margin of carapace with 8 usually sharp, teeth (including the extra orbital angle) followed by a very long lateral spine (almost 3 times as long as the preceding tooth); surface very finely and uniformly granular, the granular ridge which extends inward from the lateral spine is rather straight without a median inflexion. Front with 4 teeth, the inner pair slightly less than half as long as the outer teeth. First abdominal segment laterally ending in a sharp point. Chelipeds unequal, with usually distinct granular ridges. Male gonopods short, failing to reach end of sternite of third walking legs, regularly curved outward, tips recurved inward.

Colour: carapace described as brown, dark brown, almost black and grey; legs blue.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Other Callinectes species: carapace more convex and its granulation coarser. Furthermore, in C. marginatus the granular ridge extending inward from the lateral spine shows an inflexion in the middle, the median pair of frontal teeth are smaller, and the lateral spine of the carapace is shorter; in C. amnicola, the median frontal teeth are distinctly larger, the lateral spine is relatively shorter and the male gonopods are much longer.



C. marginatus

SIZE:

Maximum carapace width 10.9 cm, carapace length 4.5 cm.

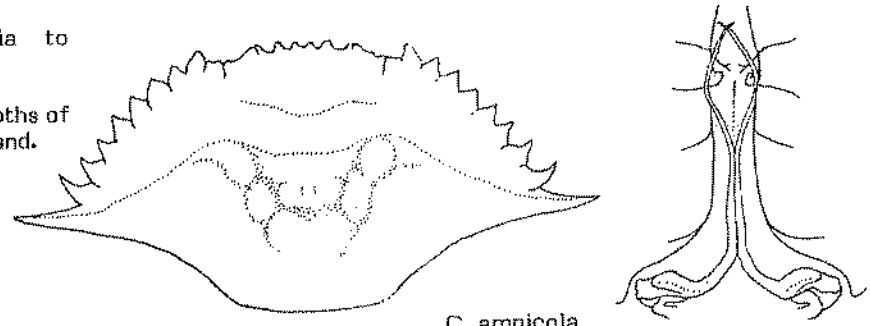


C. pallidus

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

West Africa from Mauritania to Angola.

In brackish and salt water at depths of less than 30 m on bottoms of mud or sand.



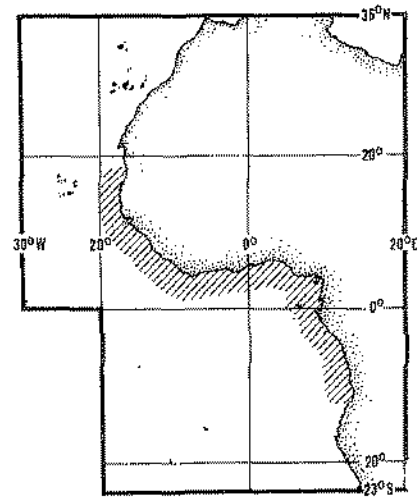
C. amnicola

PRESENT FISHING GROUNDS:

Fished for intensively throughout its range.

carapace (dorsal view)

thoracic sternum of male after removal of abdomen showing first pair of pleopods (developed as gonopods)



CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species. In most accounts on the economic importance of West African Crustacea no distinction is made between the species of Callinectes.

Taken with hand nets, square nets, crab pots and hook and line.

Sold locally for immediate consumption either fresh, cooked or fried in oil.

PORT Carc 2

1981

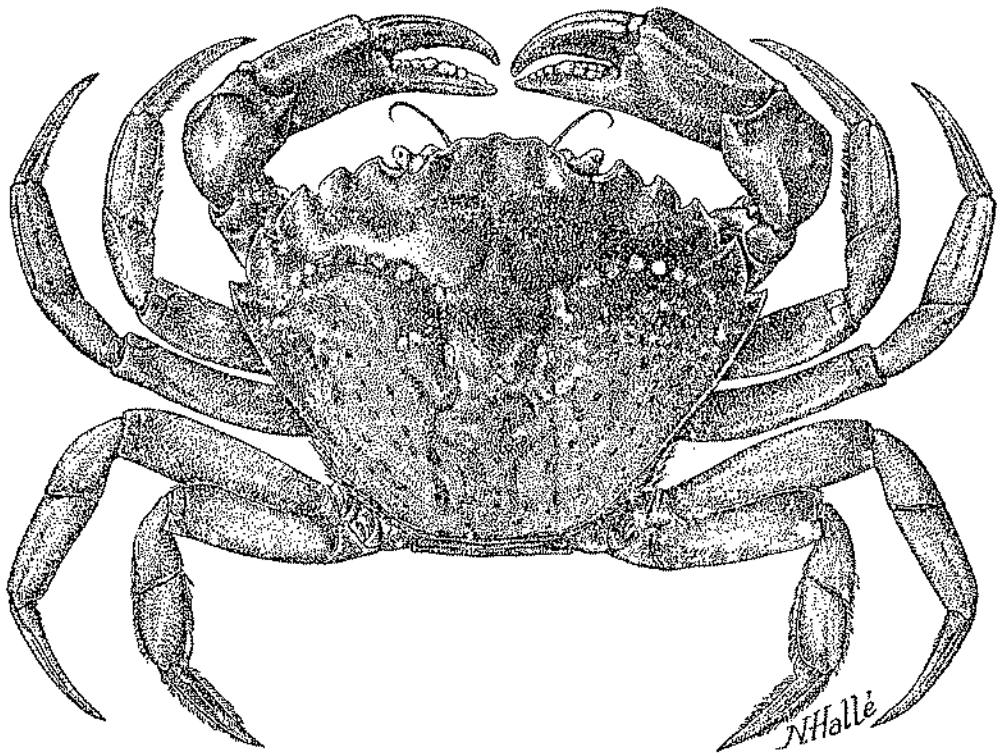
FAD SPECIES IDENTIFICATION SHEETS

FAMILY : PORTUNIDAE

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

Carcinus maenas (Linnaeus, 1758)

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES:

FAO : En - Green crab
Fr - Crabe vert
Sp - Jaiba (cangrejo) verde

NATIONAL :

0 2.3 cm

DISTINCTIVE CHARACTERS :

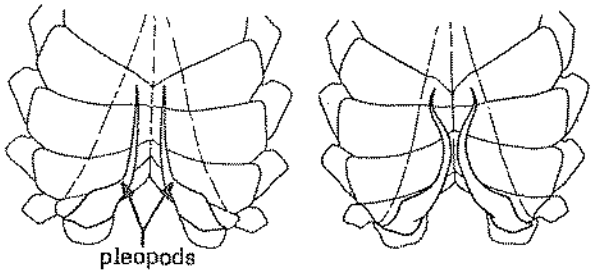
Body rather flat, finely granular and hardly pubescent, with discrete regions. Front with three blunt teeth or lobes; anterolateral margins cut into 5 rather blunt teeth (including outer orbital angle). Chelipeds strong, asymmetrical, the larger with blunt, molar-like teeth on basal part of finger, and a single tooth on carpus; walking legs slender; last pair with the distal two segments clearly more flattened than in previous legs and with a fringe of hairs; dactylus of last leg lanceolate, pointed, not paddle-shaped. Male gonopods curved outward.

Colour: rather variable, adults usually deep green mottled with brown and blackish and a semicircle of whitish spots on each half of the carapace. Juveniles often with rather large and conspicuous white areas. Lower surface yellowish or whitish; in some specimens legs and lower surface brownish orange.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Carcinus mediterraneus Czerniavsky, 1884 (from the Mediterranean): carapace somewhat smoother and more pubescent, with the antero-lateral teeth sharper; male gonopods are straight, not curved.

Other species of the family Portunidae: dactylus of the last leg thin and oval, paddle-shaped.



pleopods

male

C. mediterraneus

male

C. maenas

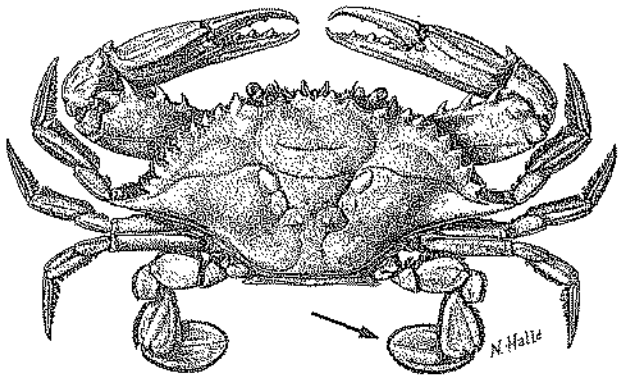
thoracic sternum
after removal of abdomen

SIZE :

Maximum carapace width 7.7 cm, carapace length 6 cm; usually the adults are about 5 cm wide and 4 cm long.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

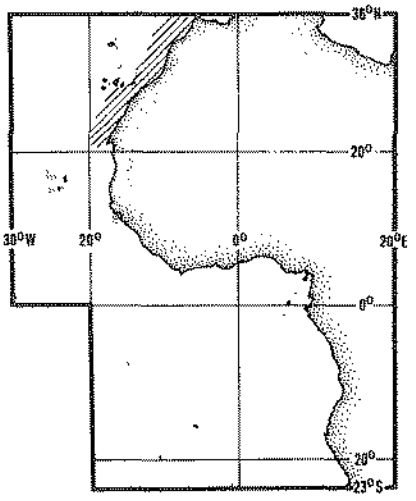
In West Africa, only known from the coast of Morocco and northern Mauritania (Cape Blanc); northwards extending along the Atlantic coast of Europe to northern Norway and the Western Baltic. Absent from the Mediterranean (where it is replaced by Carcinus mediterraneus). Further it is known from Iceland, the east coast of America (from Nova Scotia, Canada to Virginia, U.S.A.) and S.E. Australia, probably being introduced there. Other records of the species from South America and the Indo-West Pacific region are based on mislabelled specimens or accidentally introduced stray specimens, which did not settle.



other Portunidae

(Callinectes marginatus)

The species lives in shallow water from the intertidal area down to a few meters depth; deeper records (there are from as deep as 200 m) must be regarded with suspicion. Found under stones, on muddy or muddy sand bottoms, or hard bottom, etc., and seems not to be very particular about its habitat preferences.



PRESENT FISHING GROUNDS :

No special fishery.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Collected by hand at low tide, or with seines, usually forms an accidental addition to the catch.

In the Moroccan fish markets the species is sold cooked or fresh, but the consumption is limited (Gruvel, 1923, Mém.Soc.Sci.nat.Maroc, 3(2):85).

PORT Cron 1

1981

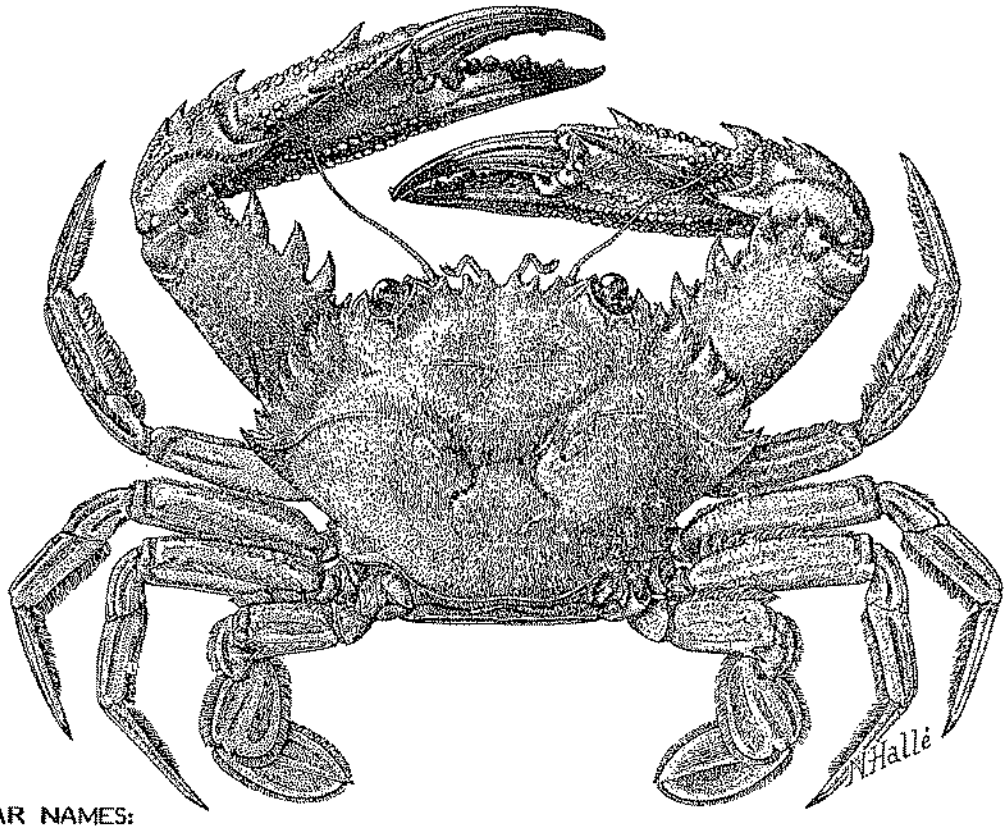
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : PORTUNIDAE

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

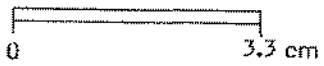
Cronius ruber (Lamarck, 1818)

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES:

FAO : En - Red swimcrab
Fr - Crabe rouge
Sp - Jaiba colorada



NATIONAL :

DISTINCTIVE CHARACTERS :

Carapace slightly convex, covered by a short pubescence and with several more or less transverse granular ridges. Front with 4 rather elongate teeth, inner angle of the orbit triangular with a sharp tooth; anterolateral margin of carapace bearing 9 sharp teeth, which alternate in size, posterior tooth not conspicuously enlarged. Chelipeds slightly unequal, with granular ridges and teeth; 4 spines on carpus, and 4 on upper surface of palm; lower surface of palm covered by transverse rows of coarse granules; walking legs slender, propodus and dactylus of last pair flat and broad, paddle-shaped, the merus of this leg with a ventro-distal spine.



lower surface of palm
of left cheliped

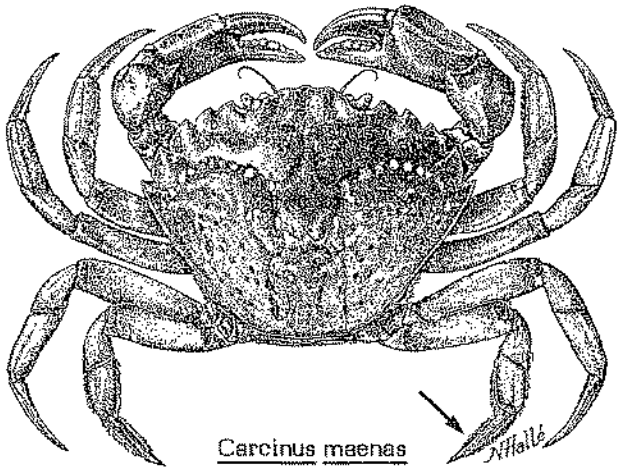
Colour: body and legs purplish red, marbled with lighter colour, finger tips and the apices of numerous spines black; pubescence brown.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Carcinus maenas: dactylus of last pair of walking legs not paddle-shaped.

Liocarcinus and Carcinus species: only 5 anterolateral teeth.

Callinectes and Portunus species: last anterolateral tooth much longer than any of the other teeth, spine-like and directed outward, forming a lateral spine.



Carcinus maenas

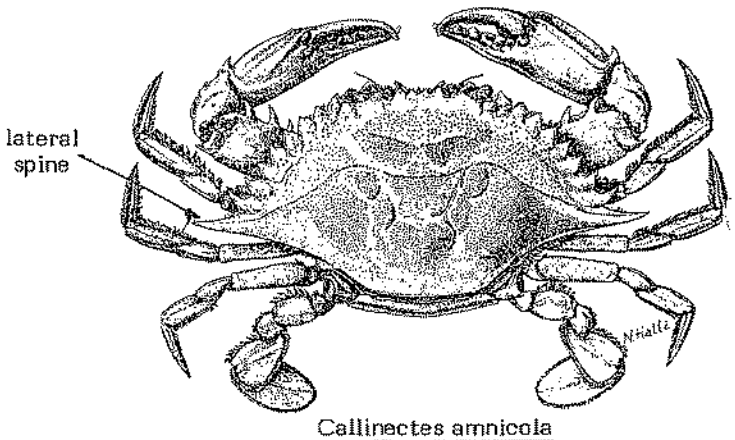
SIZE:

Maximum carapace width 8.2 cm, carapace length 5.2 cm. Usually distinctly smaller.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Within the area, from Senegal and the Cape Verde Islands to Angola. Also in the Western Atlantic (South Carolina, U.S.A. to Brazil), and the Eastern Pacific (Baja California, Mexico, to Peru and Galapagos Islands).

Known from the intertidal zone to a depth of 38 m, usually at less than 20 m; on different types of bottom, usually with a cover of algae, ascidia, etc.



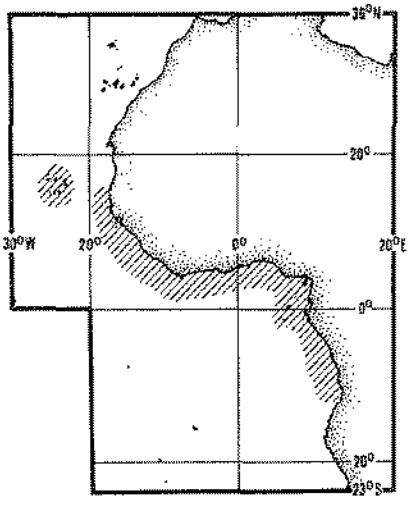
Callinectes amnicola

PRESENT FISHING GROUNDS:

No special fishery.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Apart from Monod's (1967, Mém.Inst. fondamental Afrique Noire, 77:180) listing of the species among "les Crabes ouest-africains comestibles" (:178), the author has not been able to find any data about fishery or consumption of this species.



PORT Lioc 1

1981

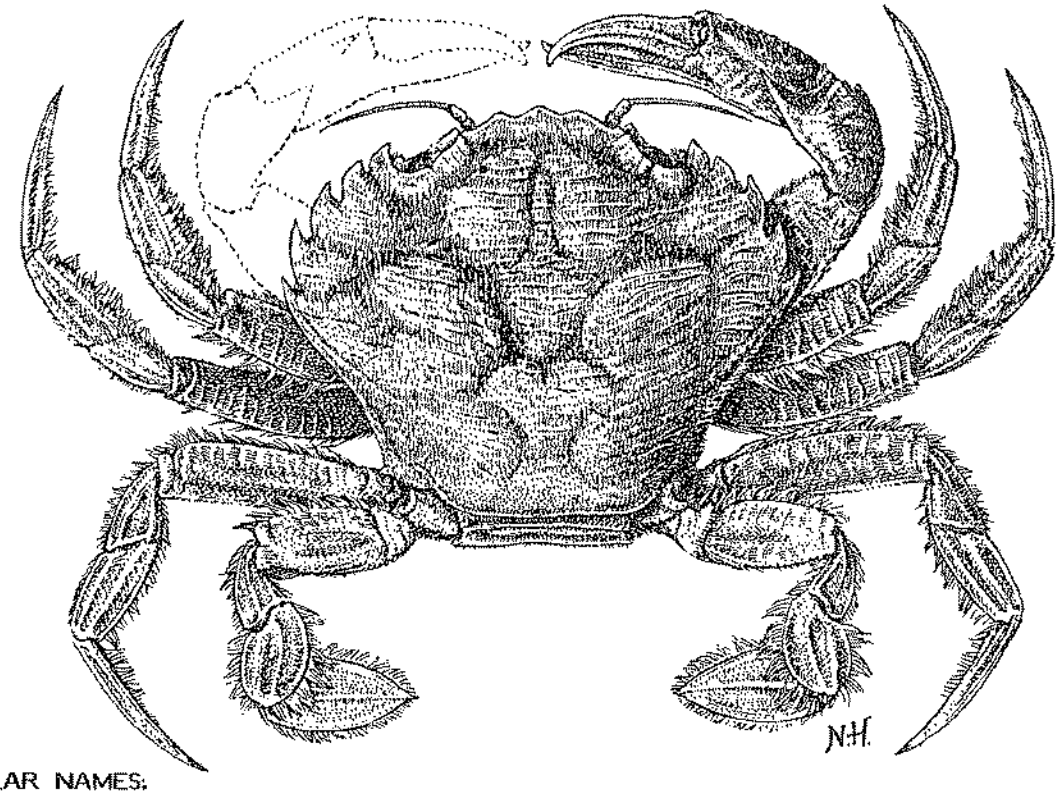
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : PORTUNIDAE

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

Liocarcinus corrugatus (Pennant, 1777)

OTHER SCIENTIFIC NAMES STILL IN USE : Portunus corrugatus (Pennant, 1777)
Macropipus corrugatus (Pennant, 1777)



VERNACULAR NAMES:

FAO : En - Wrinkled swimcrab
Fr - Etrille ballant
Sp - Jaiba de arrugas

NATIONAL :

0 1 cm

DISTINCTIVE CHARACTERS :

Carapace somewhat convex, crossed by numerous very strong, granulated and hairy ridges; front ending in 3 broad, triangular, blunt teeth; anterolateral margin with 5 about equal, sharp teeth (including outer orbital angle). Legs and lower surface of body with numerous hairy ridges; palm of cheliped with squamiform ridges and longitudinal rows of granules, fingers with strong longitudinal ridges; last pair of walking legs with the dactylus and propodus flat and wide, paddle-shaped, dactylus with 1, propodus with 2 median ridges.

Colour: yellowish, mottled with reddish brown, the brown colour usually predominating.

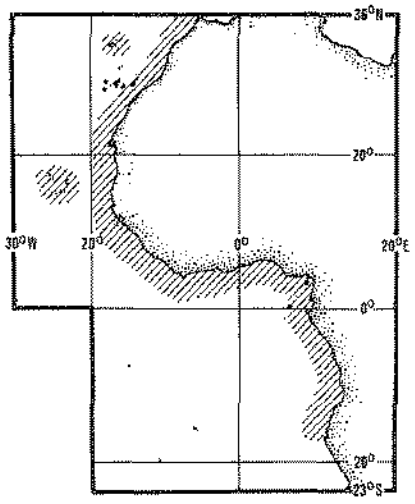
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Other species of Portunidae: lack the numerous strong transverse ridges on carapace characteristic of L. corrugatus. Furthermore, Callinectes, Portunus and Cronius species have 8 or 9 anterolateral teeth on carapace (5 in L. corrugatus).

SIZE:

Maximum carapace length 5 cm, carapace width 6 cm, but specimens usually much smaller, about 2 cm long and 2.4 cm wide.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:



Within the area, from Morocco to Angola including Madeira and the Cape Verde Islands. Northward extending to the British Isles including the Mediterranean; also scattered records from the Indo-West Pacific (Red Sea, Japan, Australia, New Zealand).

Found from the littoral area to depths of 60 m, on coarse bottoms.

PRESENT FISHING GROUNDS:

No special fishery.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Hardly of any commercial significance, and if taken, only appears as an admixture to other catches. Palombi & Santarelli (1961, Gli animali comestibili dei mari d'Italia, ed. 2:378, fig.) listed and figured this species among the edible Crustacea of Italy, it being taken by trawl. The only indication, known to the author, that the species is of commercial value in West Africa is the mention by Türkay (1976, Boletim Museu municipal Funchal, 30 (133):66) of two specimens obtained at the fishmarket of Funchal, Madeira.

PORT Lioc 2

1981

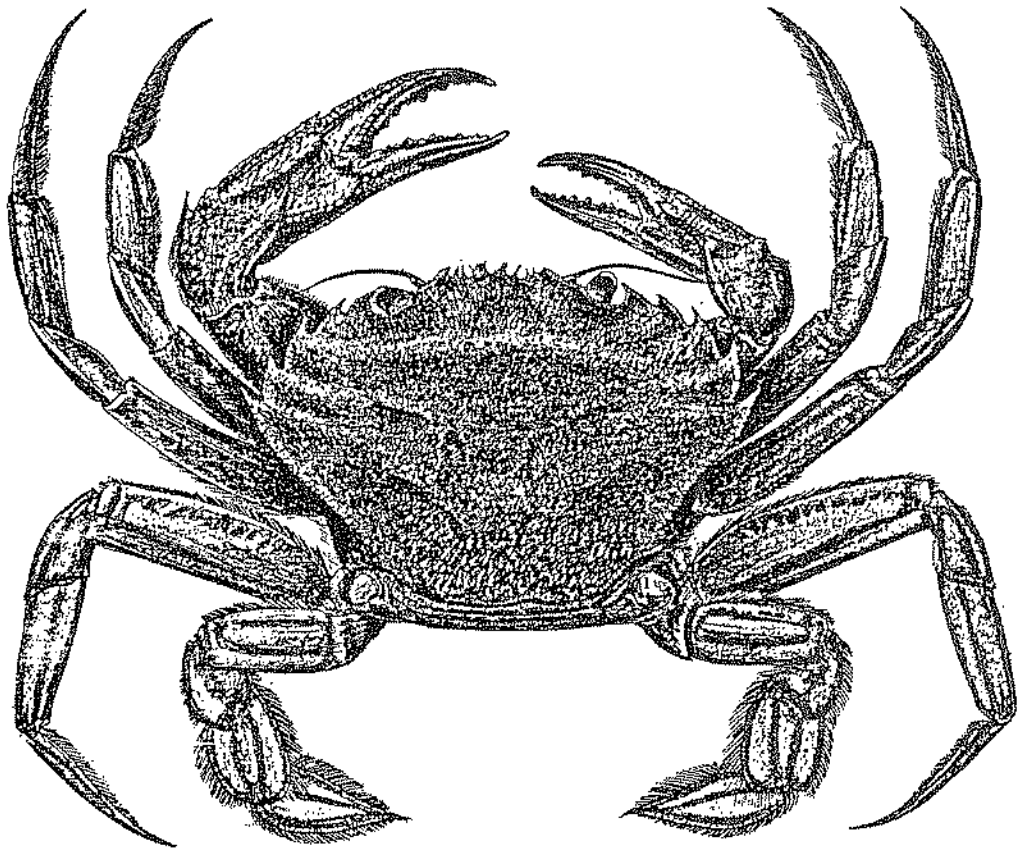
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : PORTUNIDAE

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

Liocarcinus puber (Linnaeus, 1758)

OTHER SCIENTIFIC NAMES STILL IN USE : Macropipus puber (Linnaeus, 1758)
Portunus puber (Linnaeus, 1758)



0 2.7 cm

VERNACULAR NAMES:

FAO : En - Velvet swimcrab
Fr - Etrille commune
Sp - Jaiba nécora

NATIONAL :

DISTINCTIVE CHARACTERS :

Carapace rather flat, granulated and pubescent, but without ridges. Front with about 10 narrow, sharp teeth, which are rather irregularly placed, the 2 innermost and the 2 outermost generally distinctly broader than the others; anterolateral margins with 5 sharply pointed teeth of about equal size. Legs with granular or smooth ridges and pubescent depressions; chelipeds somewhat unequal, with broad granular ridges on the palm and narrow granular ridges on the fingers; last walking legs with dactylus and propodus flattened and broadened, paddle-shaped; dactylus with 1, propodus with 2 median ridges bordered by depressed pubescent areas.

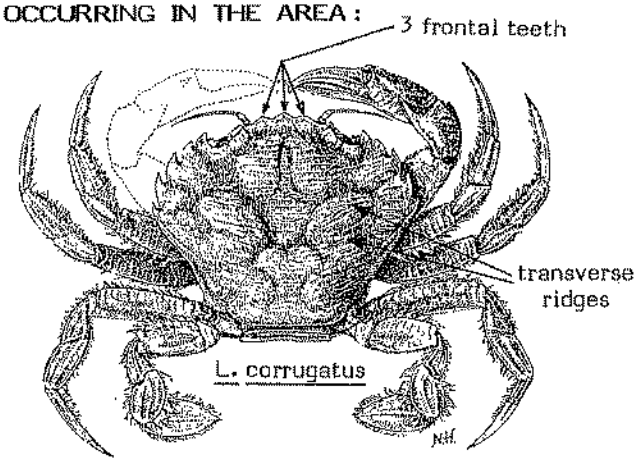
Colour: carapace reddish brown to very dark brown, with blue and reddish spots; legs reddish brown with large dark or bright blue areas; pubescence dark brown. Cornea of eyes red.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Other Liocarcinus species: front 3-lobed, or entire (10 teeth in L. puber). Furthermore, L. corrugatus with numerous strong, transverse ridges on carapace.

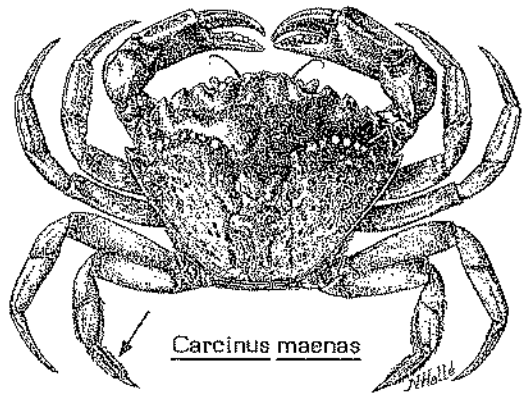
Carcinus maenas: dactyl of last walking leg not flattened or paddle-like.

Other species of Portunidae: 8 or 9 anterolateral teeth on carapace (5 in L. puber).



SIZE :

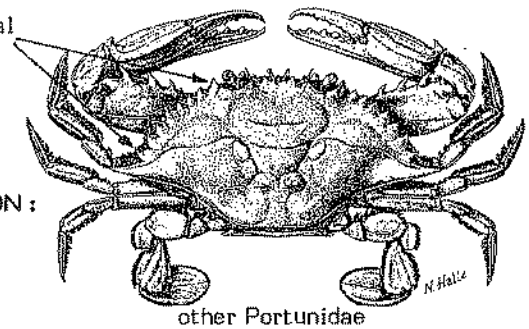
Maximum carapace width 8.4 cm, carapace length 6.5 cm. Usually much smaller: carapace width about 5.5 cm, carapace length 4.5 cm.



GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

In the area, only off Morocco and Sahara; northward extending to southwestern Norway (61°N); a few records from the Western Mediterranean.

On bottom of rock, sand or mud, in depths between intertidal and about 70 m, usually not deeper than 40 m.



other Portunidae
(example: Callinectes marginatus)

PRESENT FISHING GROUNDS :

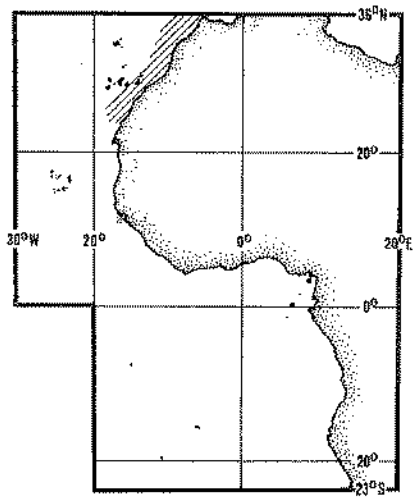
No special fishery.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Mainly collected by hand, with hand nets, etc.

Eaten in France and on the Iberian peninsula and offered for sale on the markets. In Morocco, Liocarcinus puber is sold cooked on some of the fish markets, but the consumption of it seems limited (Gruvel, 1923, Mém.Soc.Sci.nat.Maroc, 3(2):85).



PORT Port 1

1981

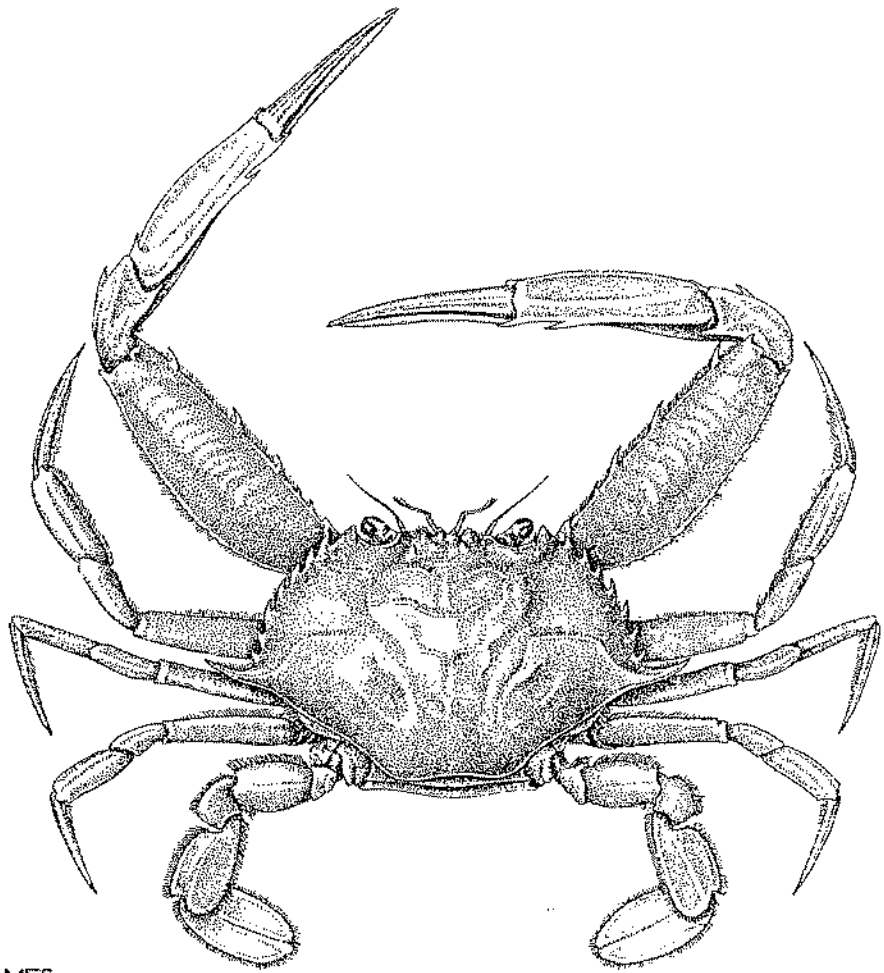
FAD SPECIES IDENTIFICATION SHEETS

FAMILY : PORTUNIDAE

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

Portunus hastatus (Linnaeus, 1767)

OTHER SCIENTIFIC NAMES STILL IN USE : Neptunus hastatus (Linnaeus, 1767)



0 2.7 cm

VERNACULAR NAMES:

FAO : En - Lancer swimcrab
Fr - Etrille nageuse
Sp - Jaiba cornuda

NATIONAL :

DISTINCTIVE CHARACTERS :

Carapace rather convex, with an irregular pattern of ridges and elevations, between which there are pubescent depressed areas; elevated areas granular. Front with 4 teeth, the outer wider and slightly longer than the inner, inner orbital angles bluntly triangular and shorter than the frontal teeth; anterolateral margins bearing 8 teeth, the first (= outer orbital angle) rather wide and blunt, the following sharply pointed; these anterolateral teeth followed by a strong lateral spine, which is about 3 times as long as last anterolateral tooth. Chelipeds slender, their palm showing several longitudinal granular ridges and 2 sharp antero-dorsal spines, fingers also with ridges; similar ridges, separated by depressed pubescent areas present on the other segments of the leg; walking legs slender, with smooth longitudinal ridges on most segments, the depressed areas between the ridges pubescent;

last 2 segments of fifth pair of legs broad and flat, paddle-shaped; dactylus with 1 median ridge, propodus with 2; also, margins of these segments raised, and areas in between depressed and pubescent. Male abdomen triangular.

Colour: yellowish brown with red markings; especially the distal half of the fingers of the chelipeds and the broadened dactylus of the last walking leg may be bright red. Iridescent whitish spots present between bases of anterolateral teeth.

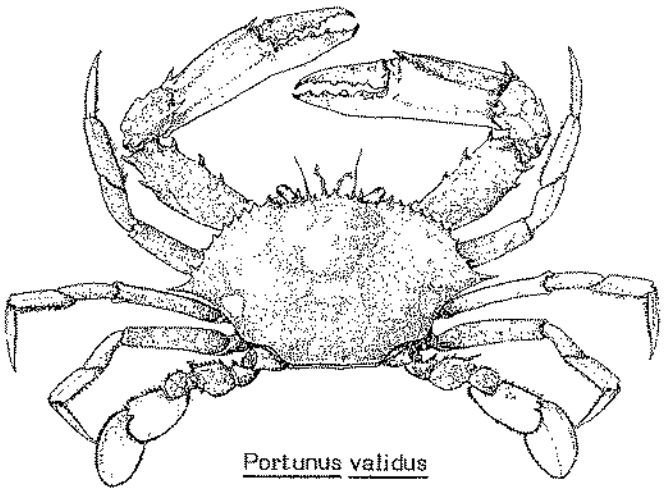
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Portunus validus: carapace and legs quite smooth, not granular and without depressed pubescent areas.

Liocarcinus and Carcinus species: only 5 anterolateral teeth (8 in P. hastatus); also, dactyls of last walking legs not flattened in Carcinus.

Cronius ruber: lateral spine (= 9th anterolateral tooth) not larger than the largest of preceding anterolateral teeth.

Callinectes species: lack the depressed pubescent areas on carapace and legs; male abdomen T-shaped rather than triangular.



Portunus validus

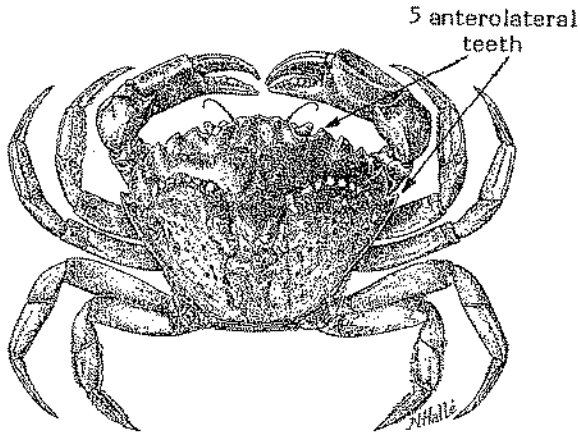
SIZE:

Maximum carapace width 5.6 cm, carapace length 2.6 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Within the area, Madeira, the Canary Islands, and the coast of Angola. Also occurs throughout the Mediterranean and the Azores.

On sandy and muddy sand bottom, in depth of 1 to about 55 m.



Carcinus maenas

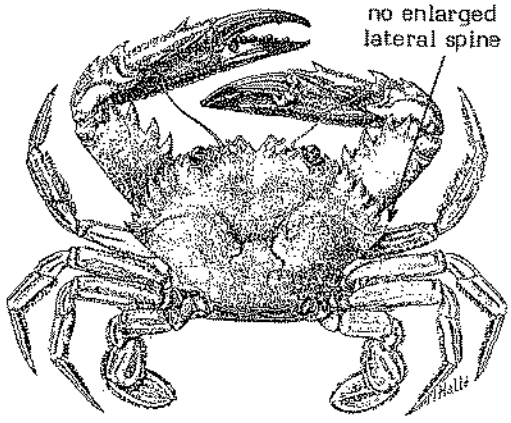
PRESENT FISHING GROUNDS:

No special fishery.

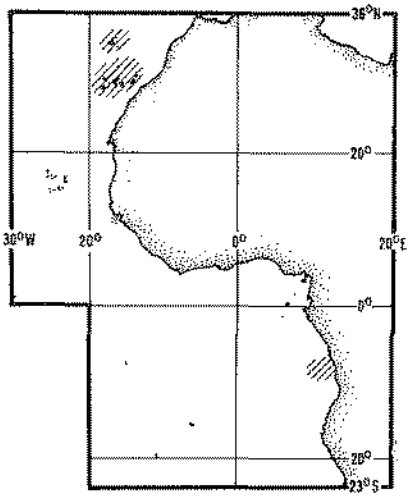
CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Taken in lobster pots, with vertical nets and with beach seines, usually as an admixture of the main catch. The commercial value is minor and often, the animals are thrown out as worthless. Türkay (1976, Boletim Museu municipal Funchal, 30(133):64) mentioned two specimens obtained at the fish market at Funchal, Madeira.



Cronius ruber



PORT Port 2

1981

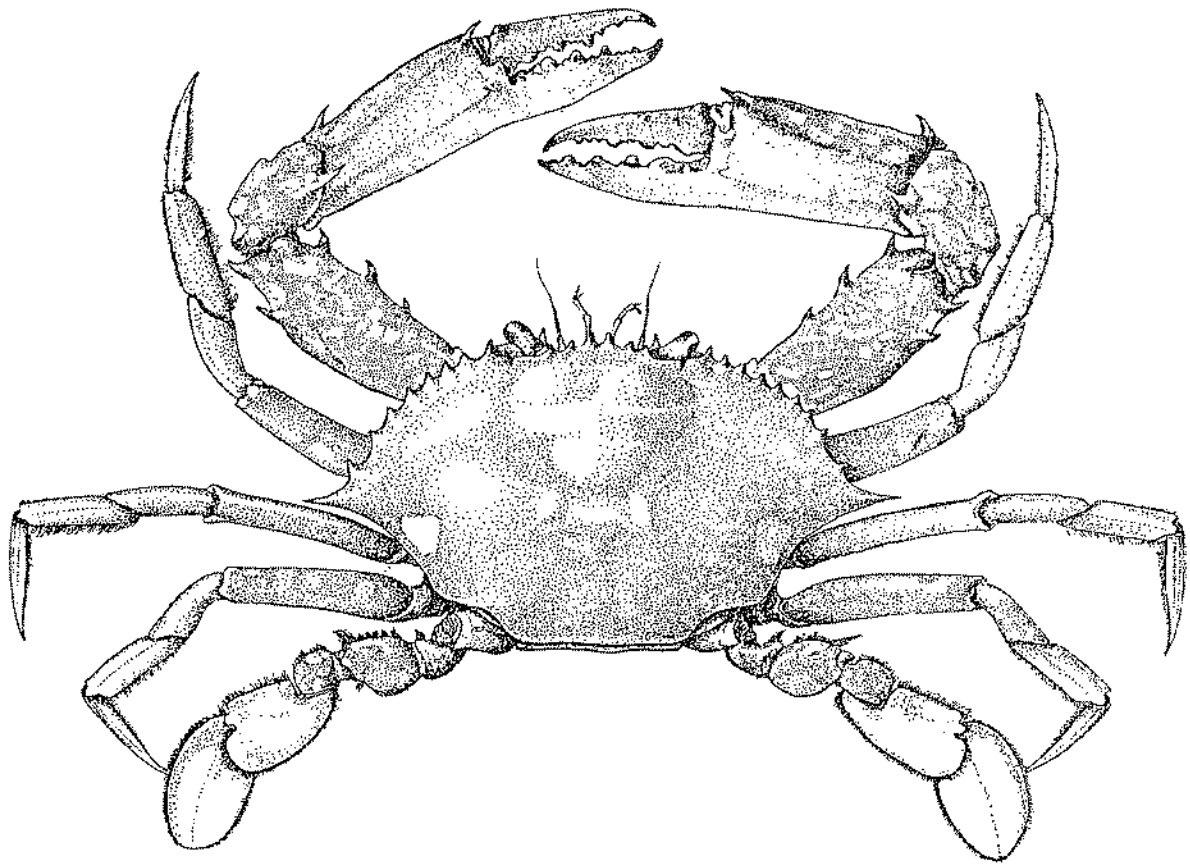
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : PORTUNIDAE

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

Portunus validus (Herklots, 1851)

OTHER SCIENTIFIC NAMES STILL IN USE : Neptunus validus (Herklots, 1851)



0 6.4 cm

VERNACULAR NAMES:

FAO : En - Smooth swimcrab
Fr - Etrille lisse
Sp - Jaiba satinada

NATIONAL :

DISTINCTIVE CHARACTERS :

Carapace swollen and smooth, without transverse ridges. Front bearing 6 rather sharp, triangular teeth (including the inner orbital teeth); anterolateral margin with 8 similar, but slightly wider teeth followed by a sharp lateral spine, which is less than twice as long as last anterolateral tooth. Chelipeds unequal, smooth, with 3 ridges on outer surface of palm and 1 on inner surface; palm bearing a single antero-dorsal spine; fingers with no distinct ridges; walking legs smooth, with some grooves on lateral surfaces, but no ridges nor depressed pubescent areas; dactylus and propodus of last walking leg strongly broadened and paddle-shaped. Abdomen of male triangular.

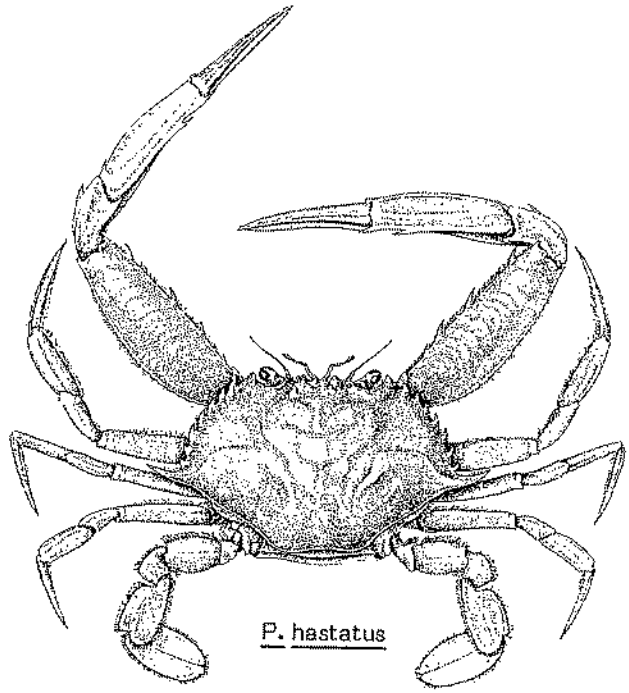
Colour: carapace rather uniformly brownish to greenish grey or khaki colour, with a conspicuous large white spot on each side just before the posterolateral margin; upper surface of chelipeds and legs strikingly marbled with purple or blue, contrasting strongly with the rather uniformly coloured carapace. Lower surface of body uniformly whitish.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

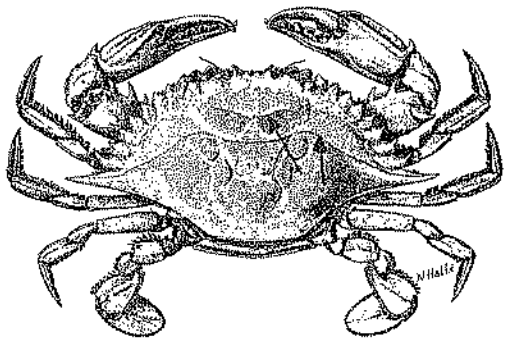
Portunus hastatus: upper surface of carapace with granular ridges and elevations, and pubescent depressed areas; legs also with depressed pubescent areas; palm of chelipeds with 2 antero-dorsal spines (1 in P. validus).

Callinectes species: several distinct granular ridges or lines on carapace, the most conspicuous extending from lateral spines inward; abdomen in male T-shaped.

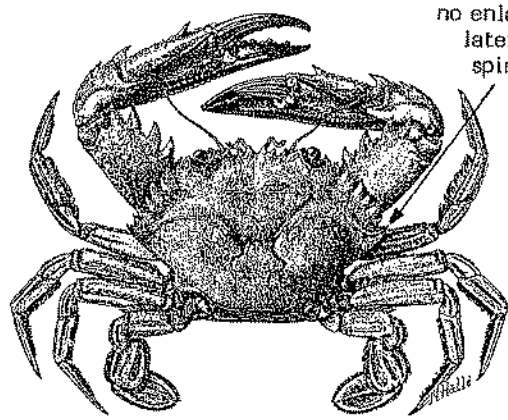
Other species of Portunidae: less than 8 antero-lateral teeth (except in Cronius) and no enlarged lateral spines.



P. hastatus



Callinectes amnicola



Cronius ruber

SIZE:

This is the largest West African swimming crab, maximum carapace length 9.3 cm, maximum width 19 cm.

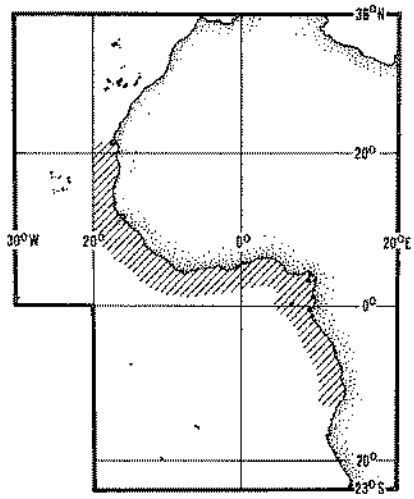
GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Tropical West Africa from Mauritania to Angola.

Found on bottoms consisting of sand or mud in depths from less than 1 m to about 55 m, mostly between 10 and 30 m.

PRESENT FISHING GROUNDS:

Shallow coastal waters.



CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

In Senegal the species is taken by shrimp trawlers in addition to shrimp, lobsters, etc.; the chelipeds are broken off and frozen, the rest of the animal is returned to the sea, after landing the chelae are shelled, cooked, frozen, and packed in cartons for export (Baron, 1975, Cahiers, ORSTOM (océanogr.) 13(2):103). Almost throughout its range the natives fish the species with either beach seines or with vertical nets; the animals are cooked or fried in oil. Although the species is common, it occurs never in great numbers and therefore is commercially of limited importance.

XANTH Men 2

1981

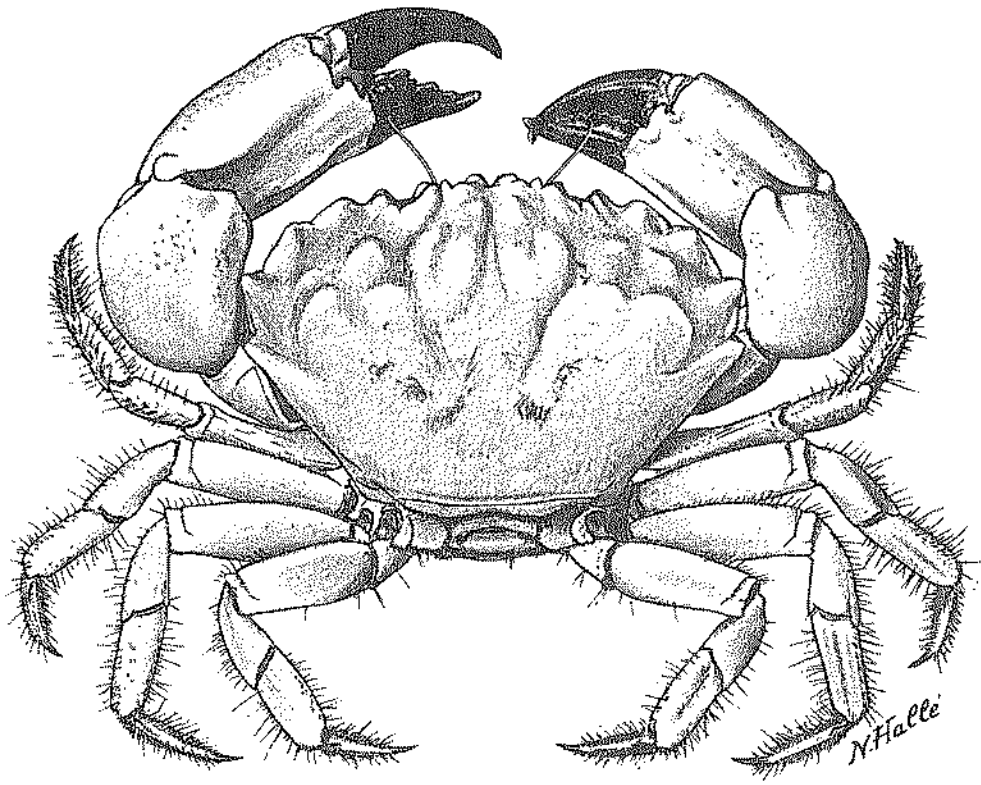
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : XANTHIDAE

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

Menippe nodifrons Stimpson, 1859

OTHER SCIENTIFIC NAMES STILL IN USE : None



0 2.7 cm

VERNACULAR NAMES:

FAO : En - Lumpy stone crab
Fr - Crabe caillou guinéen
Sp - Cangrejo jorobado

NATIONAL :

OISTINCTIVE CHARACTERS :

Carapace transversely oval, rather smooth, with about a dozen lumpy elevations on anterior half. Front with 4 blunt teeth the inner pair much larger than the outer which are placed immediately besides the broad inner orbital angles; outer orbital angles each formed by 2 broad tubercles, one placed above the other; anterolateral margin behind outer orbital angle with 4 broad, rounded teeth, the anterior 2 very blunt, the last 2 more triangular. Pincers unequal, smooth, without granules or spines, fingers of large pincer with molar-like tooth at base; walking legs similar in shape, without spines, but with stiff hairs.

Colour: body reddish, legs banded, fingers of pincers black.

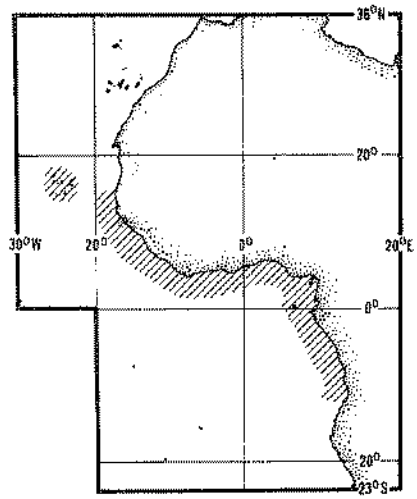
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Most other species West African Xanthidae: much smaller; carapace and/or legs with ridges, spines or tubercles, and without the lumpy elevations characteristic of M. nodifrons.

SIZE :

Maximum length of carapace for West Africa 4.5 cm (4.9 cm in American specimens) and width 6.5 cm for West Africa (7.2 cm in America).

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :



In the area, from the Cape Verde Islands and Senegal to Angola. Also in the Western Central Atlantic (Florida, U.S.A. to Brazil).

Inhabits the littoral and sublittoral down to a depth of 20 m, on rocky bottoms.

PRESENT FISHING GROUNDS :

No special fishery.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

The only author mentioning this species as edible in West Africa, to my knowledge is Monod (1928, L'industrie des Pêches au Cameroun: 175), who reported that the species is eaten by the inhabitants of Cameroon, and evidently collected by hand. Monod (1967, Mém.Inst.fondamental Afrique Noire, 77:180) again listed the species among the edible West African crabs.

XANTH Pan 1

1981

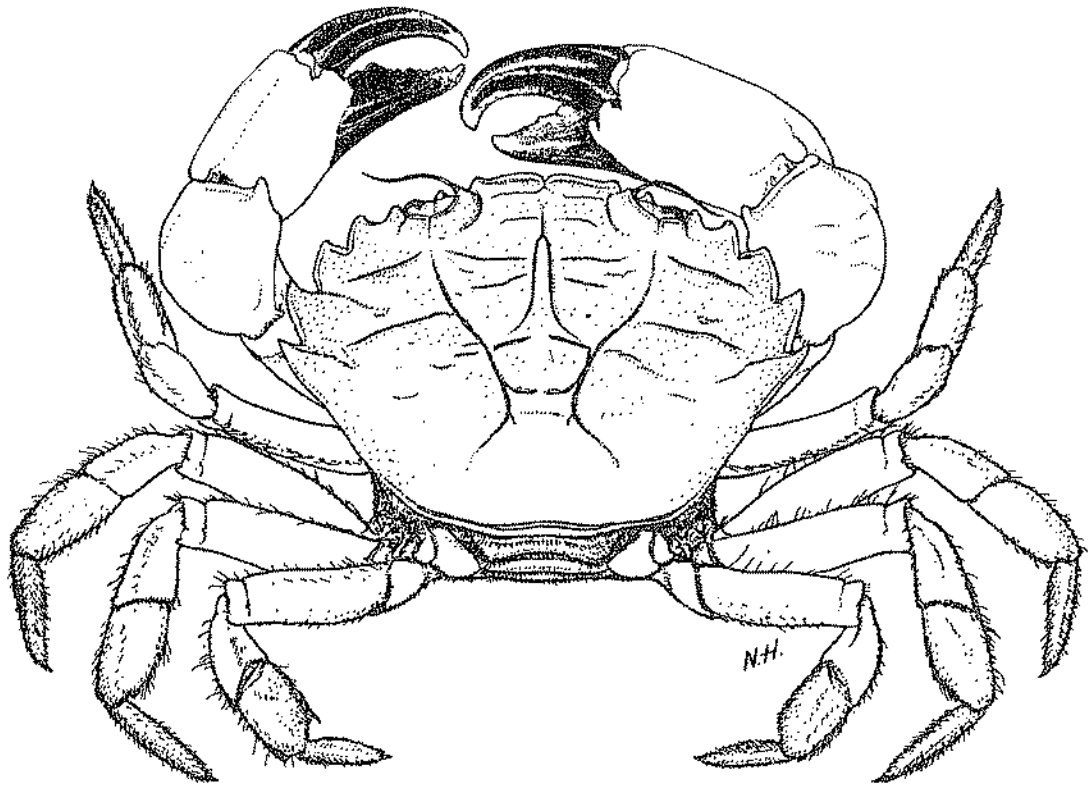
FAO SPECIES IDENTIFICATION SHEETS

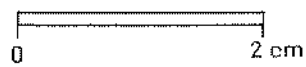
FAMILY : XANTHIDAE

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

Panopeus africanus A. Milne Edwards, 1867

OTHER SCIENTIFIC NAMES STILL IN USE : None





VERNACULAR NAMES:

FAO : En - African mud crab
Fr - Crabe caillou africain
Sp - Cangrejo de piedra africano

NATIONAL :

DISTINCTIVE CHARACTERS :

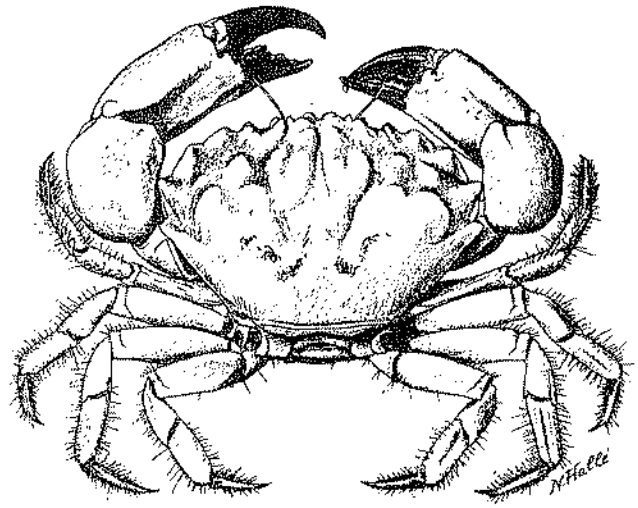
Carapace hexagonal, rather flat, with some transverse rows of small granules on anterior half. Front incised in the middle and divided into 4 lobes, the inner 2 broad and slightly convex, the outer small and more triangular; outer orbital angle blunt, tooth-like, followed by 4 larger, pointed anterolateral teeth, which are rather flat, the last of these ending in a narrow point. Chelipeds massive and unequal; outer surface of palm smooth, its upper margin with 2 indistinct ridges; carpus bearing a blunt inner tooth, and a few blunt tubercles on upper surface; walking legs slender and similar in shape, pubescent, but lack spines or spinules.

Colour: reddish brown with a brownish pubescence and dark brown or black fingers with lighter tips.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Menippe nodifrons: no transverse lines of granules but very characteristic lumpy elevations on carapace.

Eurypanopeus blanchardi (A. Milne Edwards, 1881) much smaller (carapace breadth less than 2 cm): anterolateral teeth bluntly rounded.



Menippe nodifrons

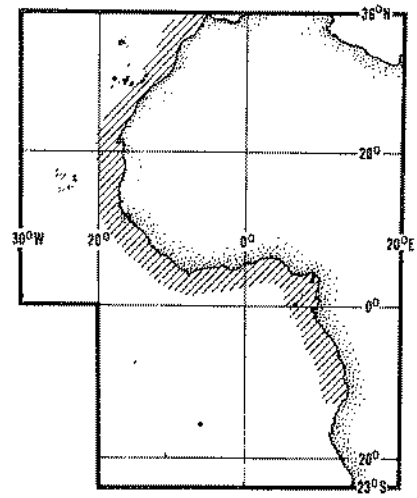
SIZE:

Maximum carapace length 3.4 cm and carapace width 5.15 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Eastern Atlantic from the south coast of Portugal and south-west coast of Spain south to Angola.

Intertidal and subtidal to a depth of about 4 m, estuarine and marine, burrowing in mud or found under stones in a muddy or rocky environment.



PRESENT FISHING GROUNDS:

No special fishery.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Collected by hand in the intertidal region.

Used as food in Cameroon (Monod, 1928, L'industrie des pêches au Cameroun: 175).

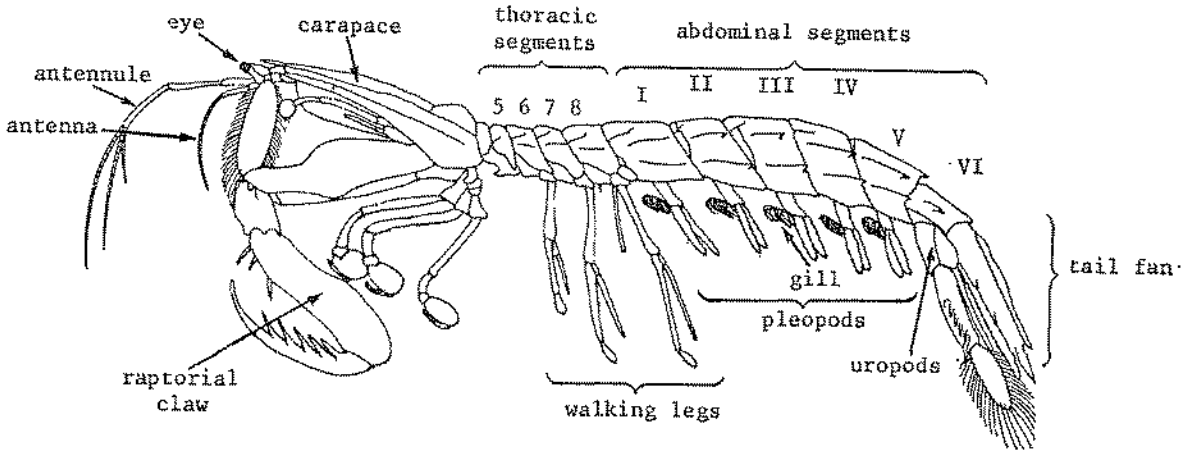
STOMATOPODS

FAO Sheets

STOMATOPODS

Fishing Areas 34, 47 (in part)

TECHNICAL TERMS AND GENERAL REMARKS



lateral view of a mantis shrimp

The mantis shrimps include small and large, shrimp-like or lobster-like animals with large movable eyes, a very short head or carapace, covering only a third of the body, only 3 walking legs, a long flattened tail (including thoracic and abdominal segments) with a well developed tail fan, and large, conspicuous "raptorial" claws (second pair of legs) resembling those of a praying mantis.

Although the stomatopods are not known to be fished commercially in Fishing Area 34 at the present time, they include large (to 30 cm), conspicuous representatives which are often caught by trawls in commercial shrimp operations. In some parts of the world mantis shrimps are considered a delicacy and consequently are fished commercially and marketed.

The stomatopods generally live in burrows which they may leave to forage for food. Although most of the more than 25 species occurring in Area 34 are too small or too rare to be of potential interest to fisheries, 2 families contain species large and apparently abundant enough to have commercial potential.

LIST OF SPECIES ATTAINING OVER 10 CM IN TOTAL LENGTH:

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

FAMILY: LYSIOSQUILLIDAE	LYSIOSQ
Lysiosquilla hoevenii (Herklots, 1851)	LYSIOSQ Lysiosq 2
Lysiosquilla monodi Manning, 1977	
Lysiosquilloides aulacorhynchus (Cadenat, 1957)	
FAMILY: SQUILLIDAE	SQUIL
Squilla aculeata calmani Holthuis, 1959	SQUIL Squil 3
Squilla cadenati Manning, 1970	SQUIL Squil 4
Squilla mantis (Linnaeus, 1758)	SQUIL Squil 1

Prepared by R.B. Manning, Department of Invertebrate Zoology, National Museum of Natural History, Smithsonian Institution, Washington, D.C., U.S.A.

LYSIOSQ Lysiosq 2

1981

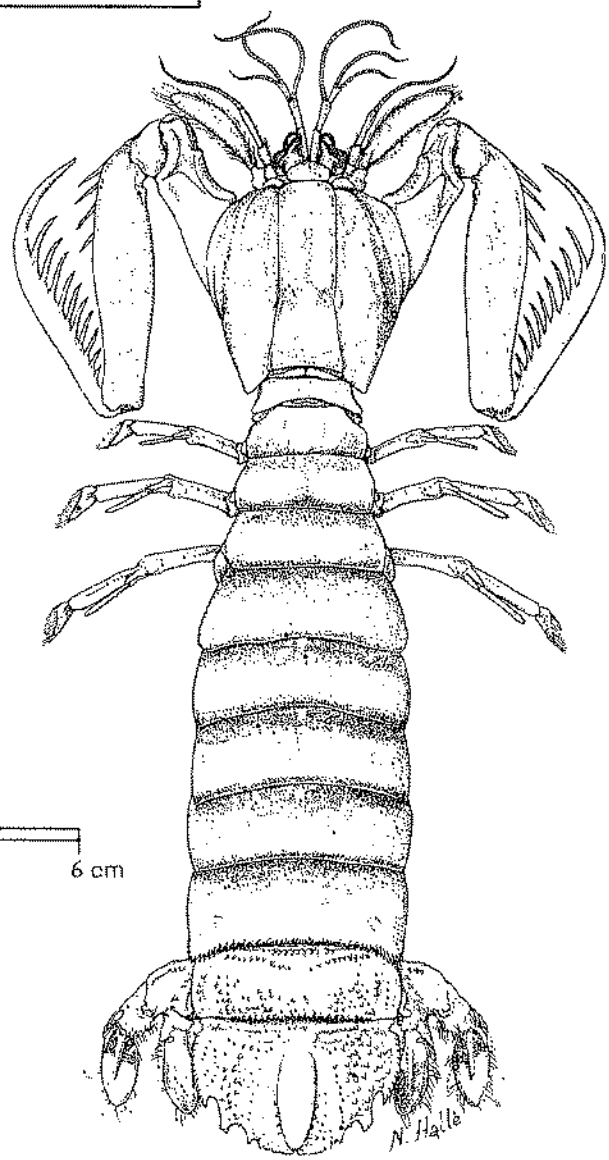
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : LYSIOSQUILLIDAE

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

Lysiosquilla hoevenii (Herklots, 1851)

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES :

FAO : En - Lizard mantis
Fr - Squille-lézard géante
Sp - Galera gigante

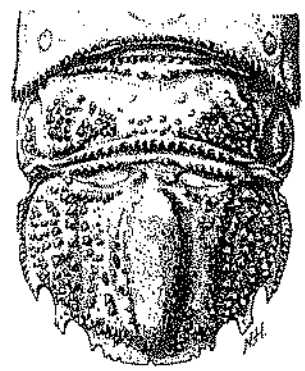
NATIONAL :

0 6 cm

DISTINCTIVE CHARACTERS :

A moderately large to very large stomatopod. Body conspicuously flattened, smooth, lacking ridges or spines except for the tail region (6th abdominal segment and telson) which is prickly with small bumps or tubercles; telson with a raised, elongate boss medially, but without a median ridge. Rostral plate broader than long, with a low median crest on its anterior third. Claws very large, often longer than carapace and armed with 10 to 12 sharp spines on the terminal segment.

Colour: body conspicuously marked with light and dark cross bands.



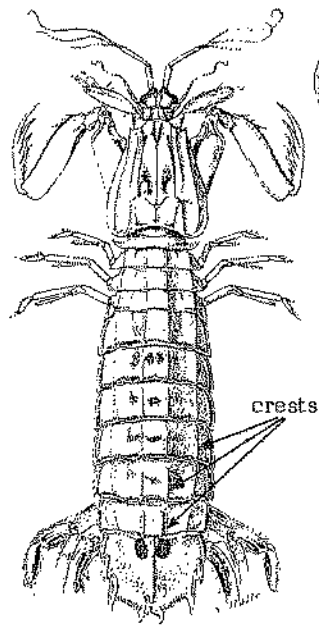
tail region (last abdominal segment and telson) dorsal view

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

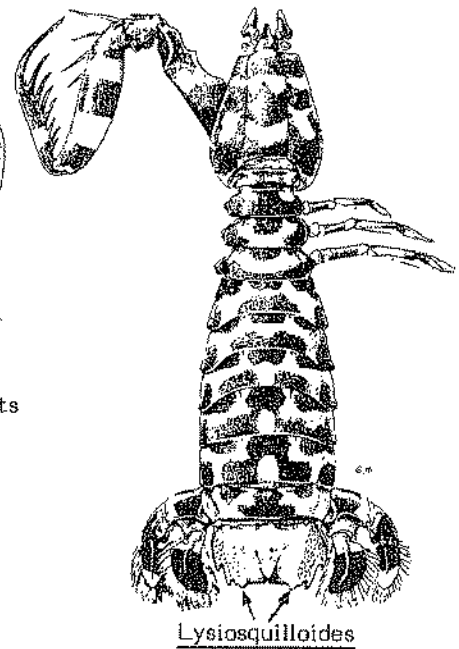
Other Lysiosquilla species: the only other Lysiosquilla in the area, L. monodi, has a smooth tail which lacks conspicuous bumps and tubercles, and is smaller (total length less than 15 cm).

Lysiosquilloides species: one species, L. aulacorhynchus, occurs in the area. It is mottled rather than banded, has the rostrum channeled rather than carinate, and has 2 blunt, movable projections on the posterior margin of the telson. It attains 27 cm in length.

Squilla species: all are smaller than L. hoevenii, have strong longitudinal crests on the body, and are not conspicuously banded in life.



Squilla mantis
dorsal view



Lysiosquilloides aulacorhynchus
dorsal view

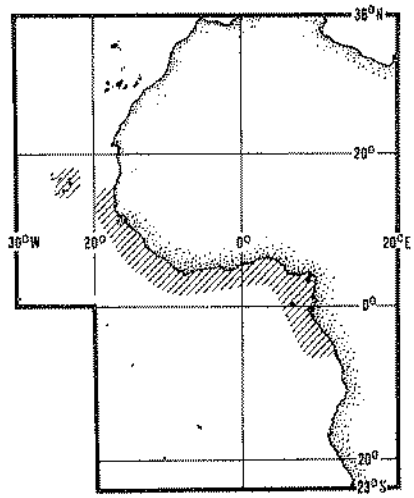
SIZE :

Maximum: about 27 cm body length; common over 20 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Off West Africa, from the Cape Verde Islands and Senegal to Angola.

Generally found in shallow water, at 30 m or less.



PRESENT FISHING GROUNDS :

Taken incidentally through its range, mainly in artisanal fisheries.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Caught mainly in lobster pots or shrimp trawls.

SQUIL Squil 3

1981

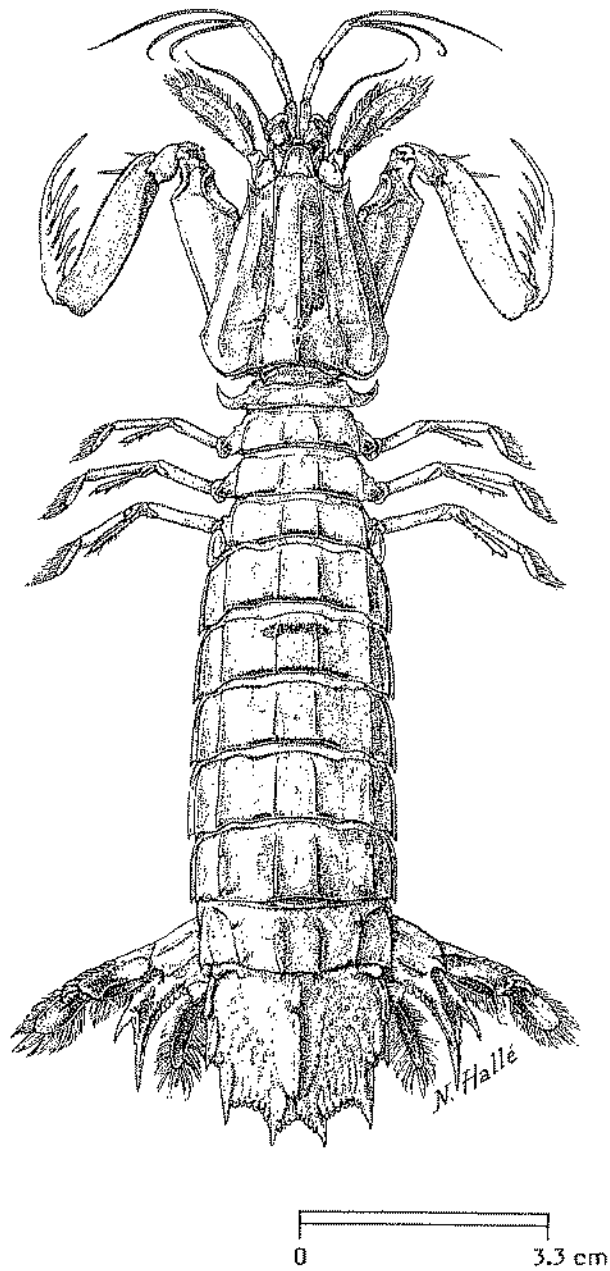
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : SQUILLIDAE

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

Squilla aculeata calmani Holthuis, 1959

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES :

FAO : En - Guinean mantis shrimp
Fr - Squille guinéenne
Sp - Galera de Guinea

NATIONAL :

DISTINCTIVE CHARACTERS :

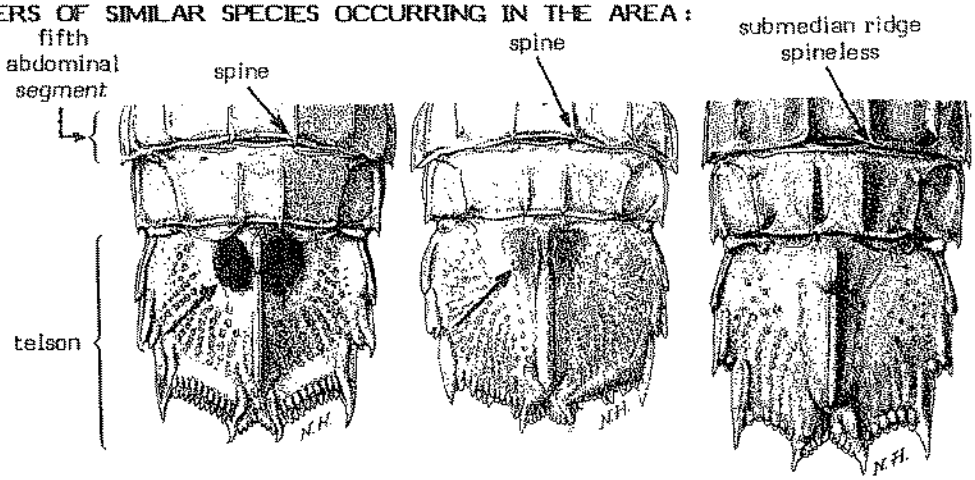
A moderately sized stomatopod. Body with conspicuous longitudinal ridges; submedian ridges of fifth abdominal segment lacking posterior spines; tail segment (telson) with a distinct median ridge. Claws large, armed with 6 spines on the terminal segment.

Colour: body not conspicuously banded; telson without prominent dark spots. In life dusky, khaki green or greyish, with green dorsal ridges on the body; spines of telson pink, and last segment of uropod yellow.

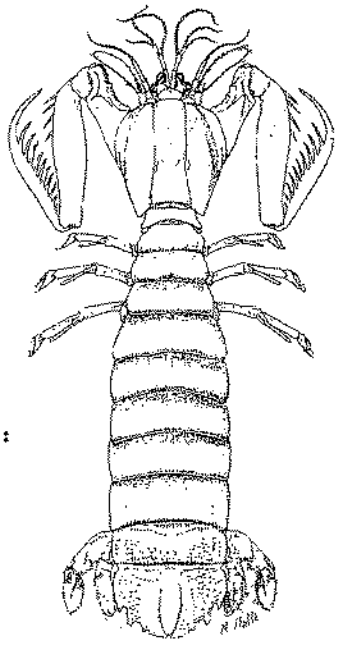
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Other *Squilla* species: both other Squilla species have spines on the submedian ridges of fifth abdominal segment and conspicuous colour spots on the telson.

Species of Lysiosquillidae: all three species occurring in the area have smooth, depressed bodies without longitudinal ridges; colour pattern conspicuously mottled or banded.



tail region (dorsal view)



Lysiosquilla hoevenii

SIZE :

Maximum: 15 cm; common to 12 cm.

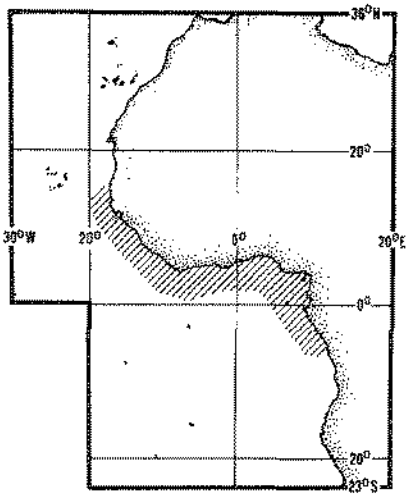
GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Off West Africa, from Senegal to Angola.

A coastal species, common in estuaries.

PRESENT FISHING GROUNDS :

Taken in artisanal fisheries throughout its range.



CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Taken mainly in trawls and beach seines.

SQUIL Squil 4
1981

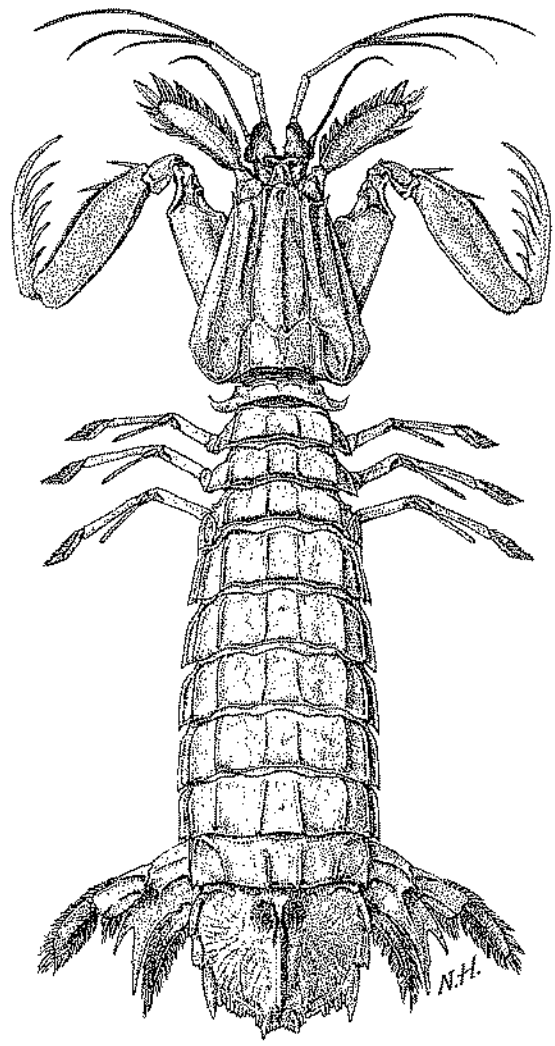
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : SQUILLIDAE

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

Squilla cadenati Manning, 1970

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES :

FAO : En - Angolan mantis shrimp
Fr - Squille angolaise
Sp - Galera de Angola

NATIONAL :

DISTINCTIVE CHARACTERS :

A moderately sized stomatopod. Body with conspicuous longitudinal ridges; submedian ridges of fifth abdominal segment with posterior spines; tail segment with a distinct median ridge. Claws large, armed with 6 spines on the terminal segment.

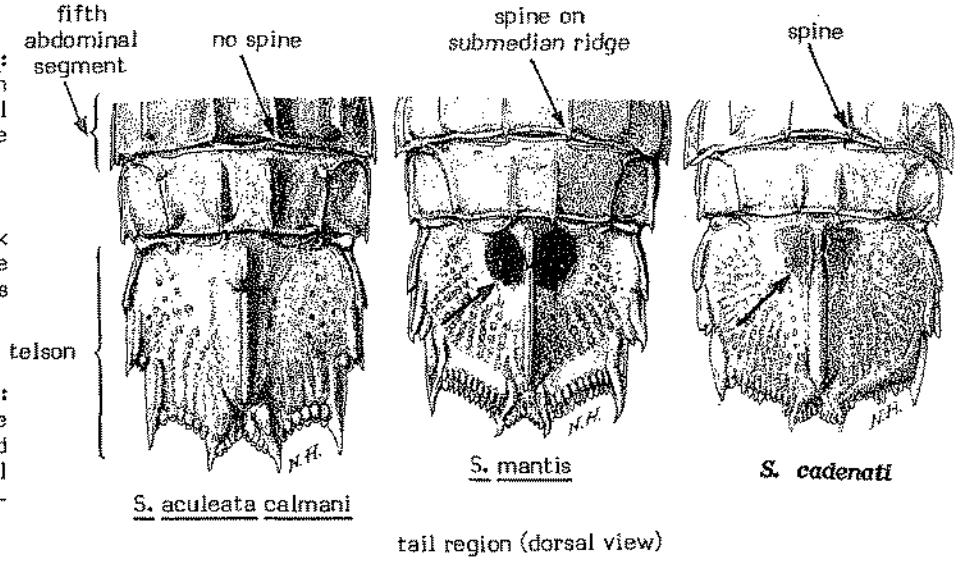
Colour: never conspicuously banded; telson with a conspicuous pair of dark triangles anteriorly, bright red in life.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Squilla aculeata calmani: no spines on the submedian ridges of the fifth abdominal segment and no dark spots on the telson.

Squilla mantis: has dark circles surrounded by a white ring, rather than dark triangles on the telson.

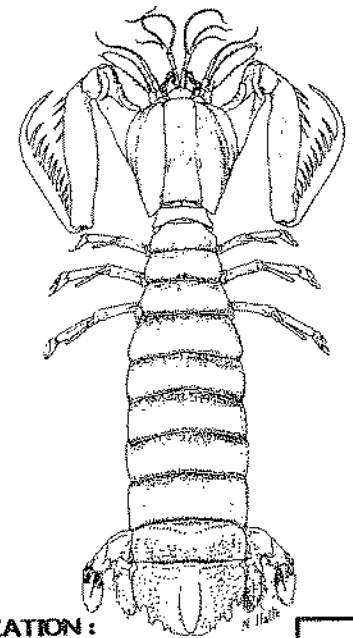
Species of Lysiosquillidae: all three species occurring in the area have smooth, depressed bodies, lacking longitudinal ridges; colour pattern conspicuously mottled or banded.



tail region (dorsal view)

SIZE :

Maximum: 17 cm; common to 15 cm.



Lysiosquilla hoevenii

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Off West Africa, from Senegal to Angola.

Occurs in depths between 37 and 300 m, commonest below 60 m.

PRESENT FISHING GROUNDS :

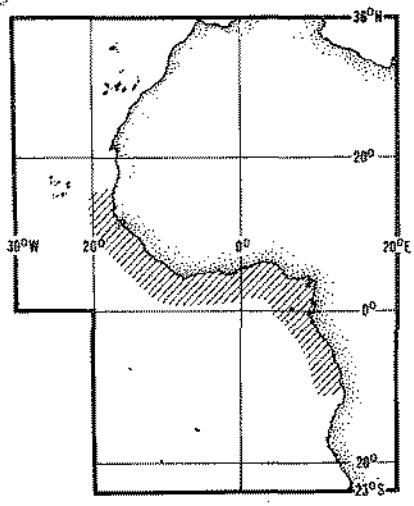
Taken incidentally as bycatch throughout its range.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Taken mainly in shrimp trawls

Consumed mostly fresh.



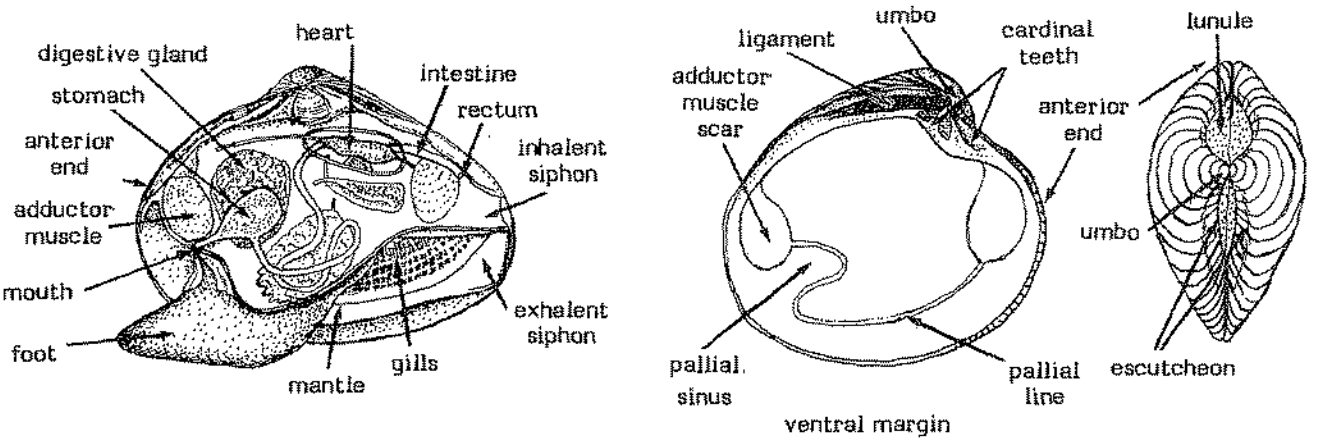
BIVALVES

BIVALVES

(Class Bivalvia - pelecypods, clams, oysters, etc.)

TECHNICAL TERMS AND GENERAL REMARKS

Bivalve Features



Glossary of Bivalve Terms

Beak (or umbo - plural umbos or umbones) :	the first formed part of a valve, usually above the hinge
Bifid :	split in two (as in the tooth in the hinge)
Byssus :	clump of horny threads spun by the foot and attached to the hard bottom
Concentric :	sculpturing running parallel to the growth margin of the valves
Escutcheon :	a smooth, long surface on the upper margin of the valve behind the horny ligament
Gape :	opening or gap at either end of the closed valves
Hinge :	top interlocking margin of the valves, usually with teeth
Ligament :	an external or internal horny band, usually behind the beaks, holding the valves together or ajar
Lunule :	an arrow-shaped or heart-shaped impression on the valves just in front of the beaks
Pallial sinus :	an embayment or U-shaped curve in the pallial line
Radial :	sculpture or colour rays running from the beaks to the lower margins of the valves, crossing the concentric sculpturing
Valve :	one of the main shelly halves of a bivalve.

Remarks

The class Bivalvia contains about 10 000 kinds of molluscs characterized by two shelly valves held together by a hinge usually bearing small interlocking teeth. Bivalves lack a ribbon of radula teeth and have no head. Feeding is done by filtering algae and diatoms over the gills and passing them by hairlike cilia to the mouth. Free bivalves, such as clams, use a large foot to move under the sand; scallops swim short distances by clapping the valves together; and other bivalves, like the oysters, are cemented to rocks or wood. This is the most important class of molluscs as a source of food, as well as very destructive in the form of wood-boring species, such as the teredo shipworms. The age of bivalves varies from one or two years in scallops, up to a hundred years for some venerid clams and Tridacna giant clams.

TAXONOMIC LIST OF EDIBLE SPECIES OCCURRING IN THE AREA

This list, alphabetically arranged by families, includes all bivalve species treated in this account. Those described on separate identification sheets are marked with an asterisk. Although most bivalves are edible, the species here described are large enough and sufficiently common to serve as human food.

ARCIDAE - Ark clams	ARC
Anadara diluvii (Lamarck, 1805)	ARC Anad 3
Anadara senegalensis (Gmelin, 1791)	ARC Anad 4
Arca noae Linnaeus, 1758	ARC Arc 2
Noetia gambiensis (Reeve, 1844)	ARC Noet 1
Senilia senilis (Linnaeus, 1758)	ARC Sen 1
CARDIIDAE - Cockles	CARD
Cardium costatum Linnaeus, 1758	CARD Card 1
Cardium ringens Bruguière, 1789	CARD Card 2
Cerastoderma edule (Linnaeus, 1758)	CARD Cerast 2
CARDITIDAE - Cardita clams	CARDIT
Cardita ajar Bruguière, 1792	CARDIT Cardit 1
Cardita tankervillei Wood, 1828	CARDIT Cardit 2
DONACIDAE - Bean, Donax or Wedge clams	DONAC
Donax pulchellus Hanley, 1843	DONAC Don 4
Donax rugosus Linnaeus, 1758	DONAC Don 5
Donax trunculus Linnaeus, 1758	DONAC Don 1
Donax venustus Poli, 1795	DONAC Don 6
Galatea paradoxa (Born, 1778)	DONAC Gal 1
Iphigenia delesserti (Bernardi, 1860)	DONAC Iphig 2
Iphigenia laevigata (Gmelin, 1791)	DONAC Iphig 3
Iphigenia rostrata Römer, 1869	DONAC Iphig 4
GARIDAE - Garies, Sanguin clams	GARI
Gari bornii (Gmelin, 1791)	GARI Gari 1
GLYCYMERIDAE - Bittersweet clams	GLY
Glycymeris scripta Born, 1780	GLY Gly 2
Glycymeris vovan Lamy, 1912	GLY Gly 3
HIATELLIDAE - Saxicave clams, Panopes	HIA
Panopea aldrovandi Ménard, 1807	HIA Pan 1
Panopea cancellata Sowerby, 1873	HIA Pan 2

FAO Sheets | BIVALVES | Fishing Areas 34, 47 (in part)

MACTRIDAE - Mactra surf clams	MACTR
Labiosa vitrea Gray, 1837	MACTR Lab 1
Lutraria elongata Gray, 1837	MACTR Lut 1
Lutraria lutraria (Linnaeus, 1758)	MACTR Lut 2
Mactra glabrata (Linnaeus, 1758)	MACTR Mac 1
Mactra largillierti Philippi, 1849	MACTR Mac 2
Mactra nitida Gmelin, 1791	MACTR Mac 3
Mactra rostrata Spengler, 1802	MACTR Mac 4
MYTILIDAE - Sea mussels	MYTIL
Modiolus nitens Carpenter, 1857	MYTIL Modi 2
Modiolus rhomboideus Reeve, 1857	MYTIL Modi 3
OSTREIDAE - Oysters	OSTR
Ostrea cucullata Born, 1778	OSTR Ostr 2
Ostrea denticulata Born, 1778	OSTR Ostr 3
PECTINIDAE - Scallops	PECT
Pecten jacobaeus (Linnaeus, 1758)	PECT Pect 1
PETRICOLIDAE - Rock-boring clams, Angel wings	PETR
Petricola pholadiformis Lamarck, 1818	PETR Petr 1
PHOLADIDAE - Boring pholad clams, Barneas	PHOL
Barnea candida (Linnaeus, 1758)	PHOL Barn 1
Barnea truncata Say, 1822	PHOL Barn 2
Pholas campechiensis (Gmelin, 1791)	PHOL Phol 1
Talona explanata (Splenger, 1792)	PHOL Tal 1
PINNIDAE - Pen shells	PINN
Atrina chautardi Nicklés, 1953	PINN Atri 3
Pinna rudis (Linnaeus, 1758)	PINN Pinn 1
SOLECURTIDAE - Tagelus clams	SOLEC
Solecurtus strigilatus (Linnaeus, 1758)	SOLEC Solec 1
Tagelus adansonii (Bosc, 1801)	SOLEC Tag 2
SOLENIDAE - Razor and Knife clams	SOLEN
Cultellus tenuis Griffith & Pidgeon, 1834	SOLEN Cult 1
Ensis goreensis Clessin, 1888	SOLEN Ens 2
Solen guinensis Hanley, 1842	SOLEN Solen 3
Solen vagina Linnaeus, 1758	SOLEN Solen 1

TELLINIDAE - Tellin clams	TELL
Apolymetis papyracea (Gmelin, 1791)	TELL Apol 1
Tellina hyalina Gmelin, 1791	TELL Tell 3
Tellina madagascariensis Gmelin, 1791	TELL Tell 4
Tellina senegambiensis Salisbury, 1934	TELL Tell 5
Tellina strigosa Gmelin, 1791	TELL Tell 6
VENERIDAE - Venus clams	VEN
Pitar tumens (Gmelin, 1791)	VEN Pit 1
Tapes decussatus (Linnaeus, 1758)	VEN Tap 1
Tivela tripla (Linnaeus, 1771)	VEN Tiv 2
Venerupis corrugata (Gmelin, 1791)	VEN Vener 2
Venerupis dura (Gmelin, 1791)	VEN Vener 3
Venus foliaceolamellosa Römer, 1865	VEN Ven 3
Venus verrucosa (Linnaeus, 1758)	VEN Ven 2

PICTURE GUIDE TO EDIBLE BIVALVES OCCURRING IN THE AREA

Included here is condensed information on the marine bivalves most often fished commercially or found in local fish markets. They are arranged alphabetically by families. An asterisk following the sheet code symbol indicates that the species is treated fully on a separate Identification Sheet.

FAMILY : ARCIDAE - Ark clams

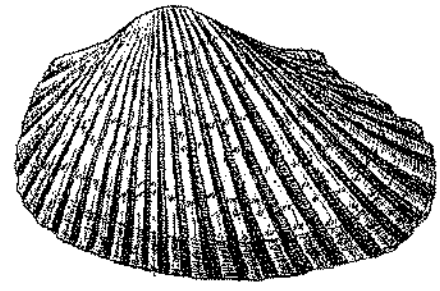
ARC Anad 3

Anadara diluvii (Lamarck, 1805)

FAO : En - Diluvial ark
Fr - Arche diluvienne
Sp - Arca diluviana

NATIONAL :

Length 7 cm. Mediterranean to Madeira. Beaks inflated; shell heavy; exterior with about 27 radial ribs crossed by fine concentric lines. Colour whitish to reddish; 5 to 500 m in sand. Used in soups.



ARC Anad 4

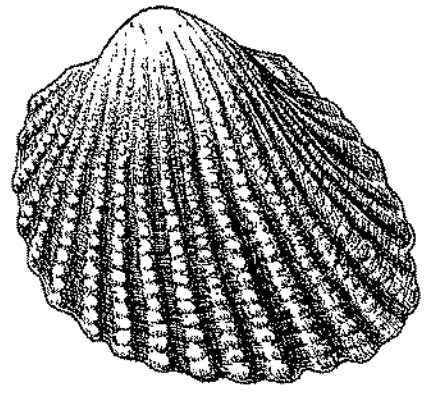
Anadara senegalensis (Gmelin, 1791)

FAO : En - Senegal ark
Fr - Arche du Sénégal
Sp - Arca de Senegal

NATIONAL :

SYNONYM : Anadara subglobosa Kobelt, 1889

Length 2.5 cm. Senegal to Congo. Obliquely globose; 25 to 31 ribs with small, strong beads. Colour whitish with brown hairy periostracum. Common, intertidal. Used in soups; shells as road beds.



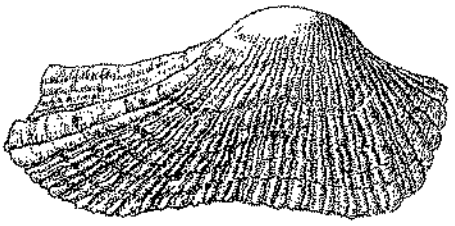
ARC Arc 2

Arca noae Linnaeus, 1758

FAO : En - Noah's ark
Fr - Arche de Noë
Sp - Arca de Noé

NATIONAL :

Length 10 cm. Morocco to Angola. Squarish-oblong; dorsal hinge straight, with many fine teeth. Gape on ventral edge. Colour yellowish with brown stripes. Common, offshore. Used in soups.



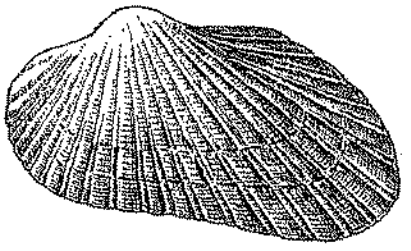
ARC Noet 1

Noetia gambiensis (Reeve, 1844)

FAO : En - Gambia ark
Fr - Arche de Gambie
Sp - Arca de Gambia

NATIONAL :

Length 4 cm. Senegal to Guinea. Oblong, not very inflated; posterior end obliquely truncated; with 25 to 30 ribs alternating with much finer ones. Colour whitish. Common; intertidal. Used in soups.



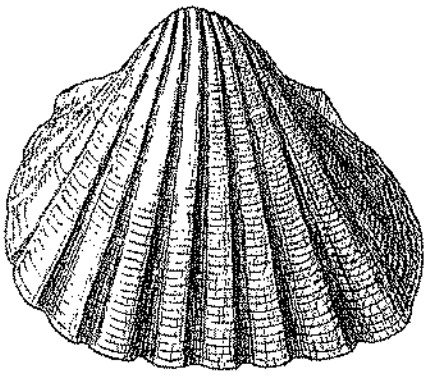
ARC Sen 1

Senilia senilis (Linnaeus, 1758)

FAO : En - Heavy African ark
Fr - Arche épaisse d'Afrique
Sp - Arca gruesa africana

NATIONAL :

Length 10 cm. Mauritania to Angola. Very heavy and thick-shelled, with 10 to 15 strong rounded ribs. Colour white with a brownish black periostracum. Abundant; intertidal. Extensively used as food; shells used for mortar.



FAMILY : CARDIIDAE - Cockles

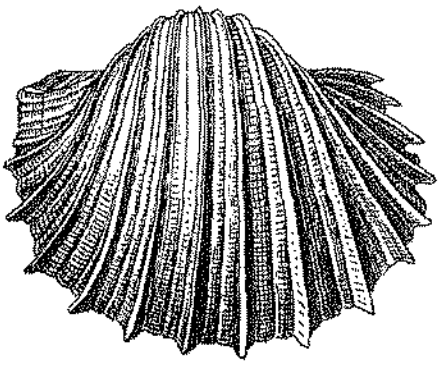
CARD Card 1

Cardium costatum Linnaeus, 1758

FAO : En - Costate cockle
Fr - Bucarde à côtes
Sp - Beberecho acostillado

NATIONAL :

Length 11 cm. Cape Verde Islands to Angola. Rotund, thin-shelled, with 16 or 17 very strong, sharp, thin ribs. Colour usually pure white, rarely rose-tinted. Common; offshore. Fished in nets. Used in soups.



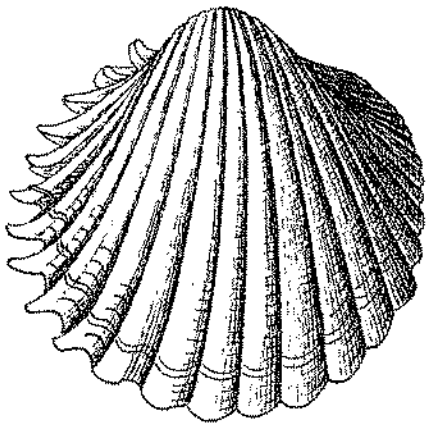
CARD Card 2

Cardium ringens Bruguière, 1789

FAO : En - Gaping cockle
Fr - Bucarde bâillante
Sp - Arca boquiabierta

NATIONAL :

Length 4 cm. Mauritania to Angola. Oval, rotund, solid, with 25 ribs, strong and rounded, but with sharp points at the posterior end. Colour yellowish. Common; offshore. Used in soups.



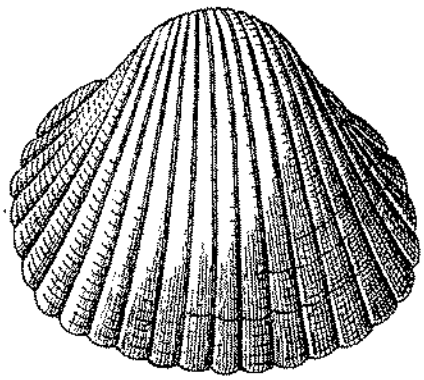
CARD Cerast 2

Cerastoderma edule (Linnaeus, 1758)

FAO : En - Common edible cockle
Fr - Coque (commune)
Sp - Berberecho comun

NATIONAL :

Length 3.5 cm. Mediterranean to Senegal. Oval, rotund, with about 25 low rounded ribs bearing weak beads. Interior white with brown on the hinge. Common; intertidal. Used in soups.



FAMILY : CARDITIDAE - Cardita clams

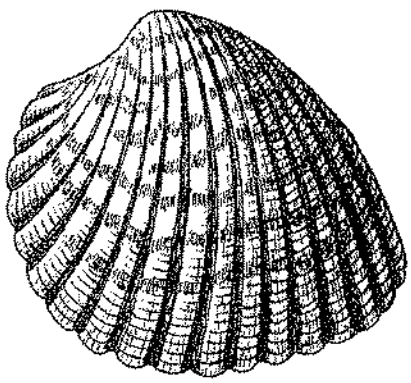
CARDIT Cardit 1

Cardita ajar Bruguière, 1792

FAO : En - Ajar Cardita
Fr - Cardite Ajar
Sp - Cardita ajar

NATIONAL :

Length 4 cm. Mauritania to Benin. Obliquely oblong; thick-shelled; with 23 to 25 ribs, the posterior ones beaded; hinge with 2 strong teeth. Colour whitish with variegations of brownish red. Common; intertidal. Used in soups.



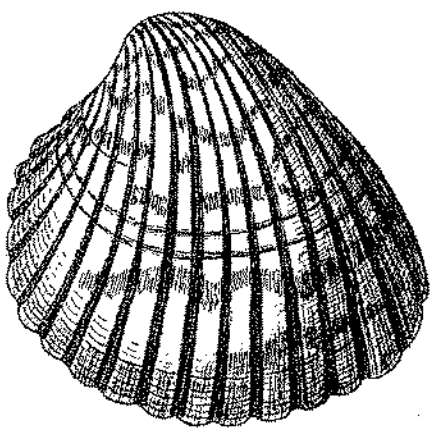
CARDIT Cardit 2

Cardita tankervillei Wood, 1828

FAO : En - Tankerville's Cardita
Fr - Cardite de Tankerville
Sp - Cardita de Tankerville

NATIONAL :

Length 5.5 cm. Senegal to Gabon. Obliquely ovate, thick-shelled; with 25 or 26 flat, strong ribs. Colour whitish with brownish red variegations; periostracum brown. Common; offshore. Used in soups.



FAMILY : DONACIDAE - Bean, Donax or Wedge clams

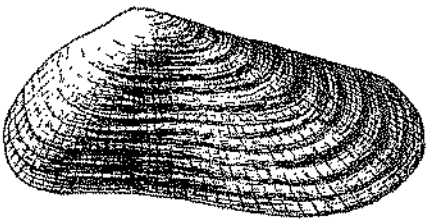
DONAC Don 4

Donax pulchellus Hanley, 1843

FAO : En - Beautiful donax
Fr - Flion mignonnet
Sp - Coquina bonita

NATIONAL :

Length 1.5 cm. Ivory Coast to Congo. Posterior part long; ventral edge concave; surface with fine radial scratches. White with violet rays. Common; on beaches. Used in soups.



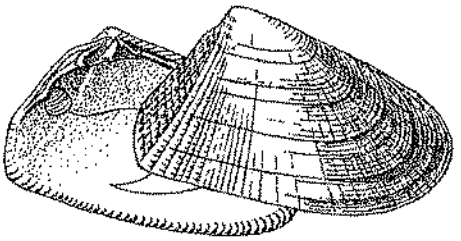
DONAC Don 5

Donax rugosus Linnaeus, 1758

FAO : En - Rugose donax
Fr - Flion rugueux
Sp - Coquina rugosa

NATIONAL :

Length 6 cm. Mauritania to Angola. Solid, wedge-shaped; posterior end with fine granulations in concentric rows. Colour variable from white to violet and rose. Abundant on beaches. Used extensively in soups.



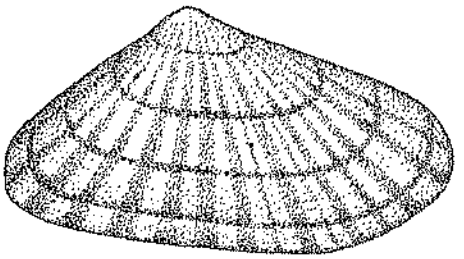
DONAC Don 1

Donax trunculus Linnaeus, 1758

FAO : En - Truncate donax
Fr - Flion tronqué
Sp - Coquina truncada

NATIONAL :

Length 2 cm. Mediterranean to Senegal. Elongate, solid, smooth exterior. Colour yellowish brown to olive, rarely with violet rays. Common; subtidal in sand. Used in soups.



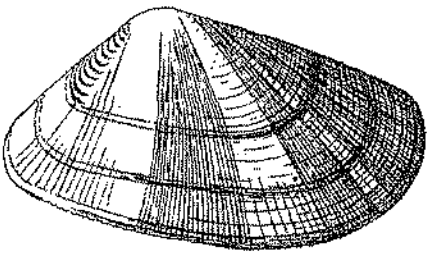
DONAC Don 6

Donax venustus Poli, 1795

FAO : En - Lovely donax
Fr - Flion amourette
Sp - Coquina amorosa

NATIONAL :

Length 3 cm. Mediterranean to Mauritania. Elongate, anterior rounded; ventral side convex; sculpture of very fine lines; edges crenulate interiorly. Colour brown with 3 white rays. Common; beaches. Used in soups.



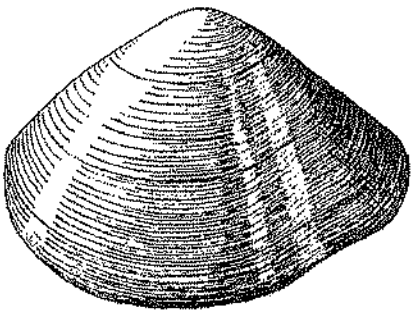
DONAC Iphig 2

Iphigenia delesserti (Bernardi, 1860)

FAO : En - Delessert's false donax
Fr - Flion de Delessert
Sp - Coquina de Delessert

NATIONAL :

Length 3 cm. Liberia to Congo. Ovate, pointed posteriorly. Colour white to purple, with white rays; periostracum olive brown. Common; subtidal in sand. Used in soups.



SYNONYM : Iphigenia truncata von Martens, 1877

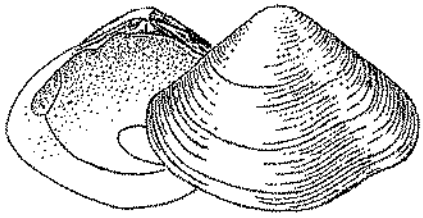
DONAC Iphig 3

Iphigenia laevigata (Gmelin, 1791)

FAO : En - Smooth false donax
Fr - Flion lisse
Sp - Coquina lisa

NATIONAL :

Length 7 cm. Mauritania to Congo. Triangular ovate; anterior fourth twisted. Internal colour pale violet; periostracum olive brown. Offshore in sand. Common. Used in soups.



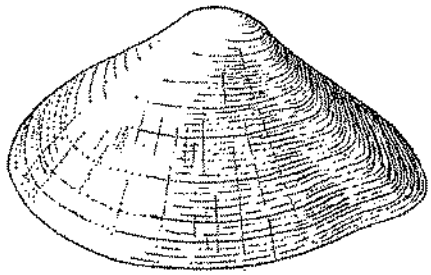
DONAC Iphig 4

Iphigenia rostrata Römer, 1869

FAO : En - Rostrate false donax
Fr - Donace à rostre
Sp - Coquina rostrada

NATIONAL :

Length 8 cm. Guinea to Congo. Pointed at both ends; smoothish. Shell white; periostracum olive brown. Moderately common; offshore in sand. Used in soups.



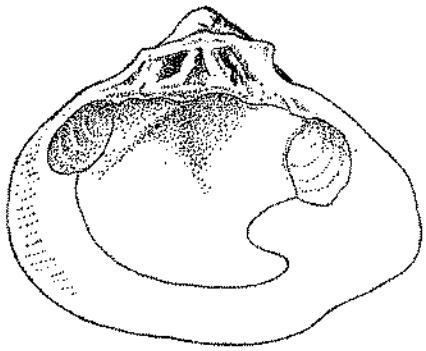
DONAC Gal 1

Galatea paradoxa (Born, 1778)

FAO : En - Common galatea clam
Fr - Donace peigne
Sp - Almeja galatea

NATIONAL :

Length 9 cm. Guinea to Congo. Trigonal, thick-shelled, very heavy; exterior smooth; hinge and umbones prominent; ligament external. Colour white and violet; periostracum olive, smooth. Common in estuaries. Used extensively in soups.



FAMILY : GARIDAE - Garies, Sanguin clams

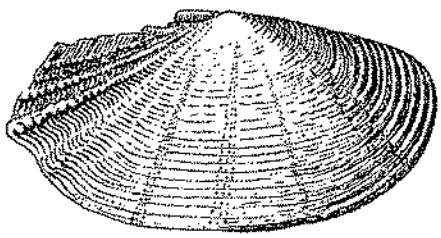
GARI Gari 1

Gari bornii (Gmelin, 1791)

FAO : En - Faeroe gary
Fr - Psammobie boréale
Sp - Gario boreal

NATIONAL :

Length 6 cm. Senegal to Guinea. Oblong; posterior with two strong radial ridges; concentric cords numerous and fine. Colour yellow with rays of rosy violet. Subtidal in mud. Used in soups.



FAMILY : GLYCYMERIDAE - Bittersweet clams

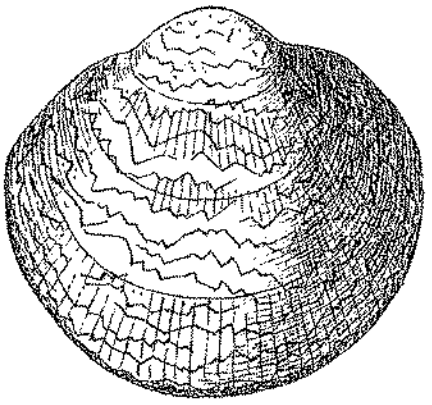
GLY Gly 2

Glycymeris scripta Born, 1780

FAO : En - Scripta bittersweet
Fr - Amande écriture
Sp - Almendra escritura

NATIONAL :

Length 7 cm. Morocco to Senegal. Round in outline, thick-shelled; numerous hinge teeth. Colour brownish rose with a network of zigzag lines. Subtidal in sand. Used raw or in soups.



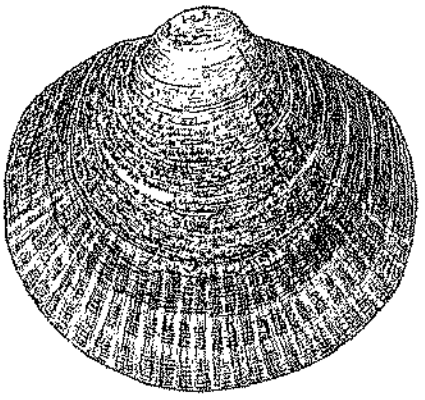
GLY Gly 3

Glycymeris vovan Lamy, 1912

FAO : En - Vovan bittersweet
Fr - Amande vovan
Sp - Almendra vovania

NATIONAL :

Length 7 cm. Morocco to Cameroon. Round and slightly truncate at one end, with fine growth lines. Colour brownish red with fine white rays and scratches. Subtidal in mud. Used raw or in soups.



FAMILY : HIATELLIDAE - Saxicave clams, Panopes

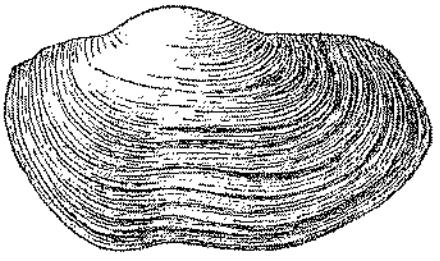
HIA Pan 1

Panopea aldrovandi Ménard, 1807

FAO : En - Aldrovandi's panope
Fr - Panopée d'Aldrovandi
Sp - Panopea de Aldrovandi

NATIONAL :

Length 30 cm. Mediterranean to Dakar. Oblong; gaping at both ends; ventral border slighlty sinuous; siphons united, long. Colour whitish. Offshore, deep in sand. Used in soups.



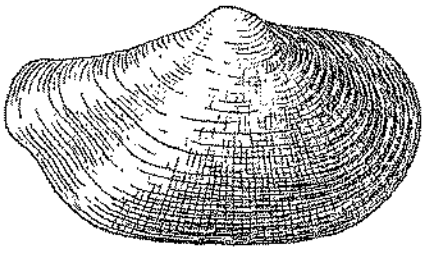
HIA Pan 2

Panopea cancellata Sowerby, 1873

FAO : En - Cancellate panope
Fr - Panopée quadrillée
Sp - Panopea cuadrilla

NATIONAL :

Length 12 cm. Morocco to Gabon. Oblong, pointed posteriorly, rounded in front; rather thin-shelled; sculpture finely cancellate. Colour yellowish white. Common offshore in sand. Used in soups.



FAMILY : MACTRIDAE - Mactra surf clams

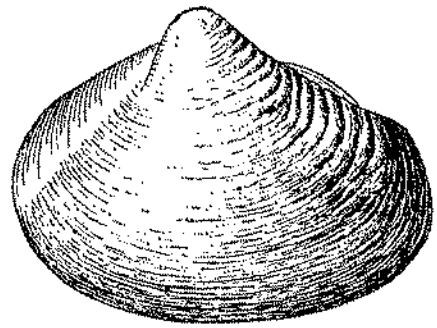
MACTR Lab 1

Labiosa vitrea Gray, 1837

FAO : En - Glassy mactra
Fr - Mactre vitreuse
Sp - Mactra vitrea

NATIONAL :

Length 5 cm. Morocco to Congo. Oval-oblong; thin-shelled; hinge with small internal resilium; posterior end with rounded, concentric ridges; umbones prominent. Colour translucent white. Offshore in sand. Used in soups.



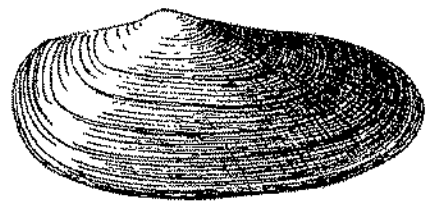
MACTR Lut 1

Lutraria elongata Gray, 1837

FAO : En - Elongate mactra
Fr - Lutraire oblongue
Sp - Mactra alargada

NATIONAL :

Length 10 cm. Congo to Angola. Elongate, rounded in front, narrowing at end; shell strong; sculpture of fine growth lines. Colour whitish; periostracum greyish olive. Common in mud offshore. Used in soups.



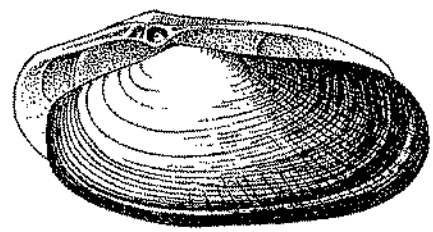
MACTR Lut 2

Lutraria lutraria (Linnaeus, 1758)

FAO : En - Mud-dwelling mactra
Fr - Lutraire commune
Sp - Mactra lutraria

NATIONAL :

Length 12 cm. Wester Europe to Senegal. Elongate oblong, both ends about the same; umbones nearer front; exterior smoothish. Colour whitish with a greysh olive periostracum. Common subtidally in mud. Used in soups.



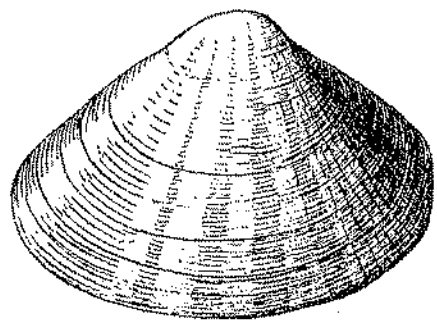
MACTR Mac 1

Mactra glabrata (Linnaeus, 1758)

FAO : En - Smooth mactra
Fr - Mactre lisse
Sp - Mactra lisa

NATIONAL :

Length 5 cm. Morocco to Angola. Oval; umbones slighlty anterior; exterior smooth except for fine beads at anterior end. Colour pale lilac with narrow brown rays. Common; intertidal in sand. Used in soups.



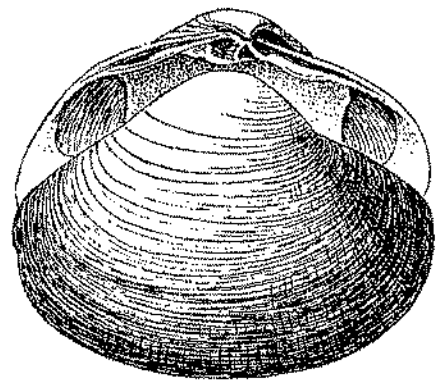
MACTR Mac 2

Mactra largillierti Philippi, 1849

FAO : En - Largilliert's mactra
Fr - Mactre de Largilliert
Sp - Mactra de Largilliert

NATIONAL :

Length 8 cm. Gabon to Angola. Roundly oval; inflated; exterior smoothish with concentric cords, especially anteriorly. Colour lilac grey with a few brown rays; periostracum olive. Offshore in sand. Used in soups.



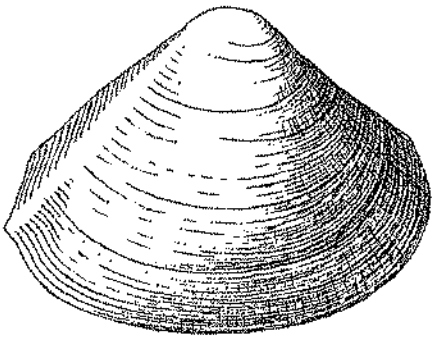
MACTR Mac 3

Mactra nitida Gmelin, 1791

FAO : En - Polished mactra
Fr - Mactre polie
Sp - Mactra pulida

NATIONAL :

Length 4 cm. Morocco to Angola. Trigonal; inflated; fine cords on back end behind weak radial carina or rib; shell thin, but strong. Colour greyish white. Abundant intertidally in sand. Used in soups.



MACTR Mac 4

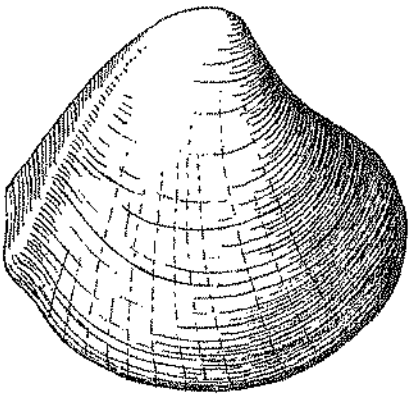
Mactra rostrata Spengler, 1802

FAO : En - Rostrate mactra
Fr - Mactre à rostre
Sp - Mactra rostrada

NATIONAL :

SYNONYM : Mactra cumingiana Petit

Length 6 cm. Gambia to Congo. Higher than wide; obliquely oval; weak radial rib at back end; exterior smoothish. Colour whitish. Common offshore in sand. Used in soups.



FAMILY : MYTILIDAE - Sea mussels

MYTIL Modi 2

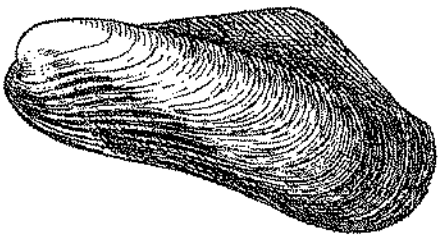
Modiolus nitens Carpenter, 1857

FAO : En - Shiny mussel
Fr - Modiole lisse
Sp - Mejillon liso

NATIONAL :

SYNONYM : Modiolus lulat Dautz

Length 8 cm. Cape Verde Islands to Angola. Very oblique; umbones at anterior end. Colour white with rose; periostracum shiny brownish red. Common; shallow water. Steamed or in soups.



MYTIL Modi 3

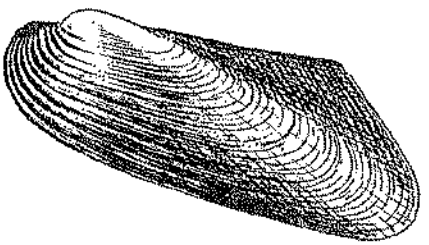
Modiolus rhomboideus Reeve, 1857

FAO : En - Rhomboid mussel
Fr - Modiole losangique
Sp - Mejillon rhomboidal

NATIONAL :

SYNONYM : Modiolus stultorum Jouss

Length 5 cm. Morocco to Congo. Thin-shelled; elongate; umbones toward anterior end. Shell white; periostracum olive brown. Common; offshore. Steamed or used in soups.



FAO Sheets | BIVALVES | Fishing Areas 34, 47 (in part)

FAMILY : OSTREIDAE - Oysters

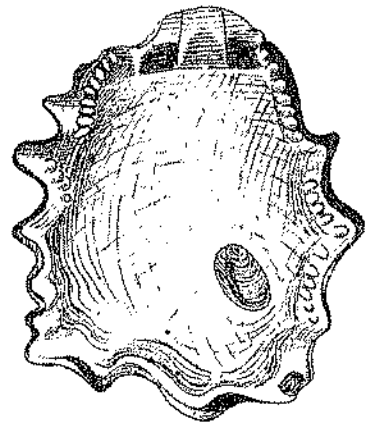
OSTR Ostr 2

Ostrea cucullata Born, 1778

FAO : En - Cucullate rock oyster
Fr - Huître plate de l'Angola
Sp - Ostion cucullato

NATIONAL :

Length 8 cm. Cameroon to Angola. Edges jagged; lower valve on rocks; upper valve smaller, flatter; hinge with many, round denticles. Colour bluish black. Common; used raw or in soups



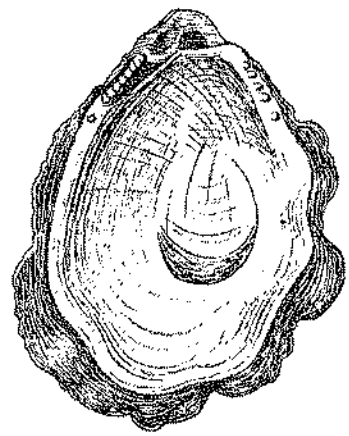
OSTR Ostr 3

Ostrea denticulata Born, 1778

FAO : En - Denticulate rock oyster
Fr - Huître plate de Guinée
Sp - Ostion denticulado

NATIONAL :

Length 20 cm. Guinea to Congo. Oval-oblong; borders undulated; 6 to 8 internal denticles on each side of hinge. Colour dark brown; interior white or brown. Abundant intertidally; attached to rocks. Used raw or in soups.



FAMILY : PECTINIDAE - Scallops

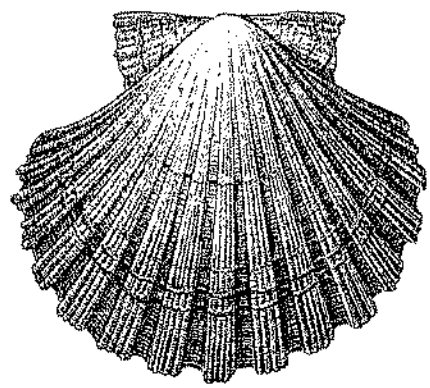
PECT Pect 1

Pecten jacobaeus (Linnaeus, 1758)

FAO : En - Great scallop
Fr - Coquille St. Jacques de Méditerranée
Sp - Concha de peregrino

NATIONAL :

Length 10 cm. Mediterranean to Morocco. Top valve flat, with 14 to 18 ribs; lower (right) valve cupped, also with strong ribs; ears large, almost equal. Colour yellowish with red brown. Offshore to 30 m. Popular sea food.



FAMILY : PETRICOLIDAE - Rock boring clams, Angel wings

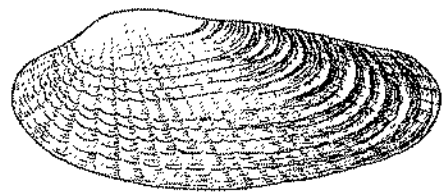
PETR Petr 1

Petricola pholadiformis Lamarck, 1818

FAO : En - False angel wing
Fr - Fausse aile d'ange
Sp - Falso ala de angel

NATIONAL :

Length 4 cm. Western Europe to Congo. Elongate, fragile, with 2 teeth in each valve; exterior with radial, beaded ribs. Colour white. Burrows in peat and clay. Common; intertidal. Used in soups.



FAMILY : PHOLADIDAE - Boring pholad clams, Barneas

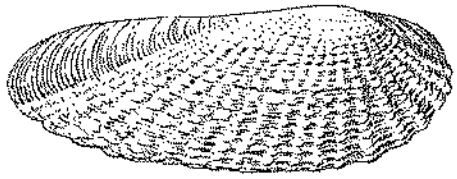
PHOL Barn 1

Barnea candida (Linnaeus, 1758)

FAO : En - White Barnea
Fr - Pholade blanche
Sp - Barnea blanca

NATIONAL :

Length 6 cm. Mediterranean to Morocco. Elongate, thin-shelled; no teeth in hinge, but a shelly hook is under each umbo; with radial cords and concentric fimbriations. Colour white. Common in peat; intertidal. Used in soups.



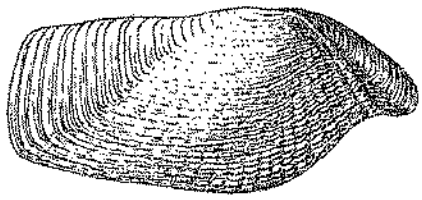
PHOL Barn 2

Barnea truncata Say, 1822

FAO : En - Truncate barnea
Fr - Pholade tronquée
Sp - Barnea truncada

NATIONAL :

Length 5 cm. Senegal to Angola. Eastern U.S. Shell ventrally truncated at the anterior end; valves gape at both ends. Colour white. Common in peat and clay; intertidal. Used in soups.



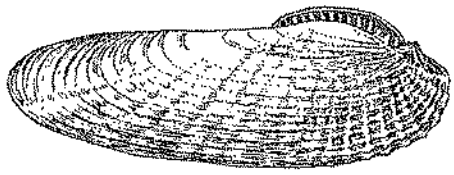
PHOL Phol 1

Pholas campechiensis (Gmelin, 1791)

FAO : En - Campechee pholad
Fr - Pholade de Campèche
Sp - Ala de angel campechano

NATIONAL :

Length 9 cm. Senegal to Gabon; Eastern Americas. Thin-shelled; very elongate; with vertical bars supporting the ridge on the umbones. Colour white. Burrows in mud; subtidal. Used in soups.



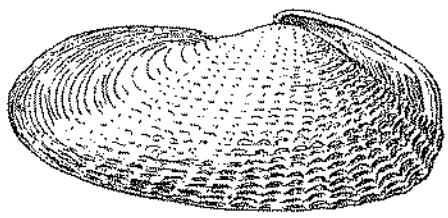
PHOL Tal 1

Talona explanata (Spengler, 1792)

FAO : En - Talona pholad
Fr - Pholade talone
Sp - Ala de angel talón

NATIONAL :

Length 6 cm. Gambia to Gabon. Elongate; thin-shelled; no hinge teeth, but internal, shelly hook (apophysis) present; no bars supporting shelflike ridge above umbones. Colour white. In mud, subtidal. Used in soups.



FAMILY : PINNIDAE - Pen shells

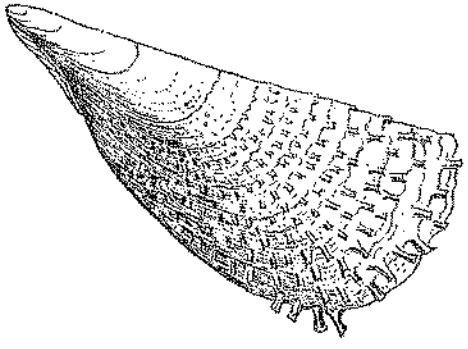
PINN Atri 3

Atrina chautardi Nicklés, 1953

FAO : En - Chautard's pen shell
Fr - Jambonneau de Chautard
Sp - Pina de Chautard

NATIONAL :

Length 20 cm. Mauritania to Angola. Fragile; with 15 to 20 rows of small, sometimes tubular, spines. Colour, translucent brown. Common in sand, 1 to 6 m. Muscle fried in oil, or used in sea food dishes.



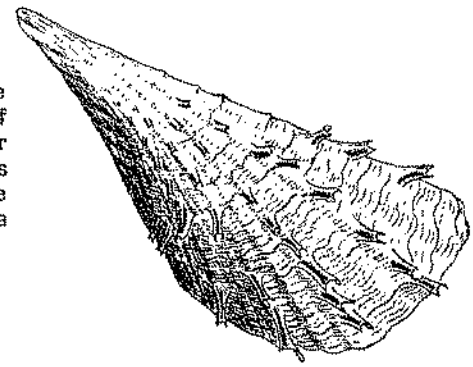
PINN Pinn 1

Pinna rudis (Linnaeus, 1758)

FAO : En - Rough pen shell
Fr - Jambonneau rude
Sp - Pina áspera

NATIONAL :

Length 40 cm. Cape Verde Island to Congo; 6 to 8 rows of large, tubular spines. Colour translucent reddish. Lives buried in sand, subtidal. Muscle is fried in oil, or used in sea food dishes.



FAMILY : SOLECURTIDAE - Tagelus clams

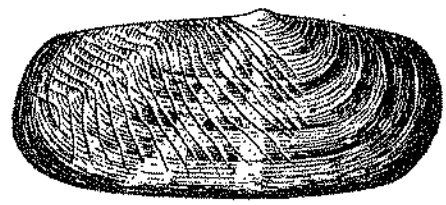
SOLEC Solec 1

Solecurtus strigilatus (Linnaeus, 1758)

FAO : En - Rasp tagelus
Fr - Solecurte rosé
Sp - Tagelo raspa

NATIONAL :

Length 8 cm. Mediterranean to Congo. Oblong, thin-shelled, but solid. Two teeth in each valve; sculpture of oblique, wavy striae. Colour rose with 2 white rays. Common; subtidal in sand. Used in soups.



SOLEC Tag 2

Tagelus adansonii (Bosc, 1801)

FAO : En - Adanson's tagelus
Fr - Tagelus d'Adanson
Sp - Tagelo de Adanson

NATIONAL :

SYNONYM: Tagelus angulatus Sowerby

Length 7 cm. Mauritania to Angola. Elongate, smoothish; long ligament external. Colour whitish; periostracum olive-brown. Common; estuaries; in mud. Used in soups.



FAMILY : SOLENIDAE - Razor clams, knife clams

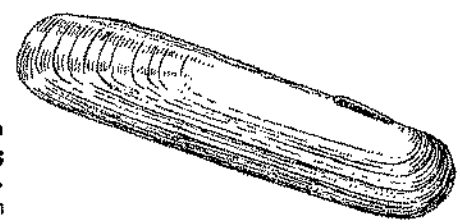
SOLEN Cult 1

Cultellus tenuis Griffith & Pidgeon, 1834

FAO : En - African knife clam
Fr - Petit couteau africain
Sp - Navaja africana

NATIONAL :

Length 7 cm. Morocco to Congo. Shell thin, oval, fragile; hinge teeth small, central. Colour, translucent white with a glossy, brown periostracum. Common; offshore in sand. Used in soups.



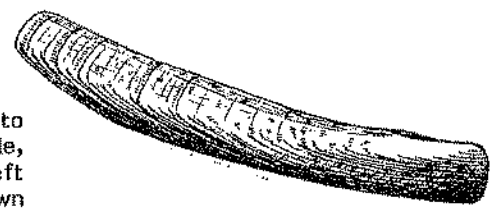
SOLEN Ens 2

Ensis goreensis Clessin, 1888

FAO : En - Goree razor clam
Fr - Couteau de Gorée
Sp - Navaja de Gorea

NATIONAL :

Length 7 cm. Mauritania to Angola. Thin and fragile, arching; 3 teeth at end of left valve. Colour lilac with brown spots. Common; subtidal in sand. Used fried or in soups.



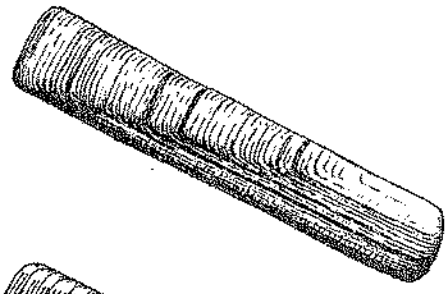
SOLEN Solen 3

Solen guinensis Hanley, 1842

FAO : En - Guinea razor clam
Fr - Couteau de Guinée
Sp - Navaja de Guinea

NATIONAL :

Length 8 cm. Mauritania to Angola. Solid, very elongate. Colour white and rosy violet in alternating, concentric zones. Common; intertidal in sand. Used fried or in soups.



SOLEN Solen 1

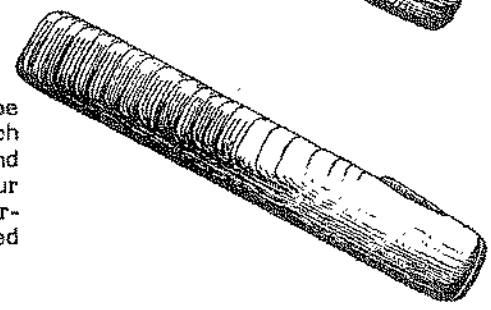
Solen vagina Linnaeus, 1758

FAO : En - European razor clam
Fr - Couteau d'Europe
Sp - Navaja europea

NATIONAL :

SYNONYM : Solen marginatus Penn

Length 14 cm. Western Europe to Senegal. One tooth in each valve; a vertical groove behind anterior margin. Colour whitish with yellow zones. Burrows in sand offshore. Used fried



FAMILY : TELLINIDAE - Tellin clams

TELL Apol 1

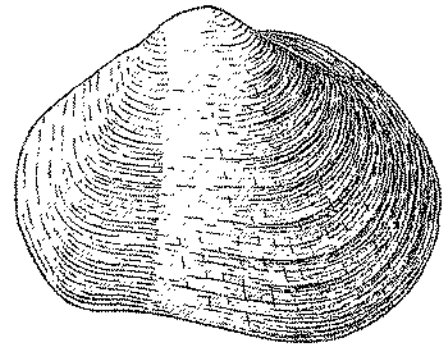
Apolymetis papyracea (Gmelin, 1791)

FAO : En - Paper tellin
Fr - Telline papier
Sp - Telina papirea

NATIONAL :

SYNONYM : Apolymetis lacunosa Schröter

Length 9 cm. Mauritania to Angola. Valves unequal in shape, with a large radial groove nearer the anterior end; ligament external. Colour pure white. Subtidal, in sand. Used in soups.



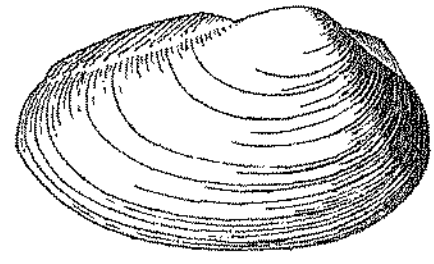
TELL Tell 3

Tellina hyalina Gmelin, 1791

FAO : En - Hyaline tellin
Fr - Telline hyaline
Sp - Telina hialina

NATIONAL :

Length 7 cm. Guinea to Congo. Elongate, flat, fragile, rounded at both ends; right valve with a deep indentation at top edge. Colour white. Intertidal in sand. Used fried or in soups.



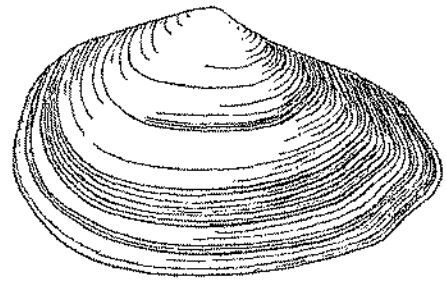
TELL Tell 4

Tellina madagascariensis Gmelin, 1791

FAO : En - Madagascar tellin
Fr - Telline de Madagascar
Sp - Telina de Madagascar

NATIONAL :

Length 9 cm. Congo to Angola. Elongate, solid, rounded in front; growth lines strong. Colour rose with zones of yellow. Intertidal; in sand. Used in soups.



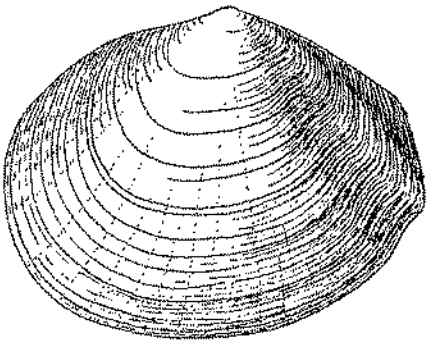
TELL Tell 5

Tellina senegambiensis Salisbury, 1934

FAO : En - Senegambian tellin
Fr - Telline de Sénégambie
Sp - Telina de Senegambia

NATIONAL :

Length 7 cm. Mauritania to Congo. Oval-round, solid, slightly inflated; a weak ridge near posterior edge; growth lines fine. Colour white. Subtidal in sand. Used in soups.



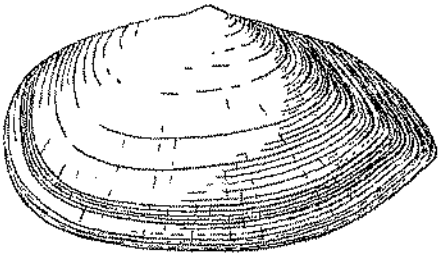
TELL Tell 6

Tellina strigosa Gmelin, 1791

FAO : En - Thin tellin
Fr - Telline jaunâtre
Sp - Telina delgada

NATIONAL :

Length 7 cm. Mauritania to Guinea. Elongate-oval, wih a pointed posterior end; surface glossy, with strong growth lines. Colour white to yellowish. Intertidal in sand. Used in soups.



FAMILY : VENERIDAE - Venus clams

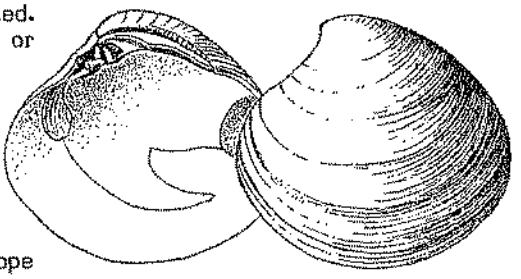
VEN Pit 1

Pitar tumens (Gmelin, 1791)

FAO : En - Swollen venus
Fr - Venus bombée
Sp - Almeja bombacha

NATIONAL :

Length 6 cm. Mauritania to Cameroon. Solid, roundly oval, inflated; concentric growth lines strong, irregular. Colour white, rarely brown-tinted. Intertidal in sand. Used raw or in soups.



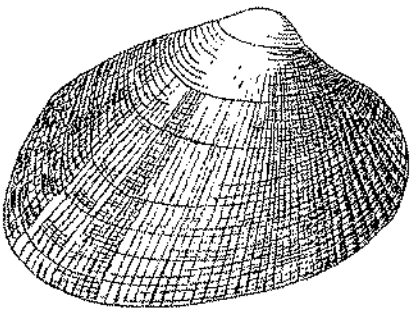
VEN Tap 1

Tapes decussatus (Linnaeus, 1758)

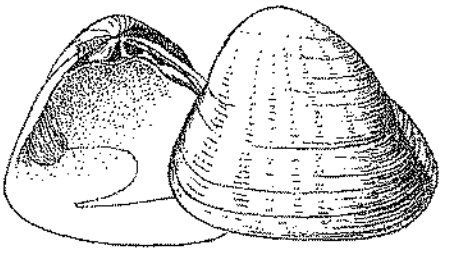
FAO : En - Decussate venus
(= Grooved carpet shell)
Fr - Palourde commune
Sp - Almeja fina

NATIONAL :

Length 6 cm. Western Europe to Mauritania. Oval, elongate, ornamented with fine radial scratches and granular concentric growth lines. Colour dirty white, with variable browns. Intertidal in sand. Used fried and in soups.



VEN Tiv 2



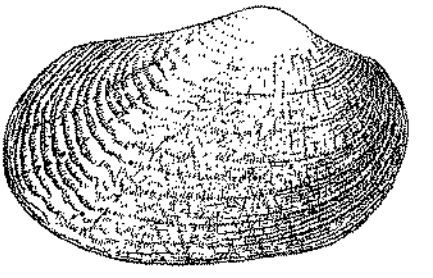
Tivela tripla (Linnaeus, 1771)

FAO : En - Triple venus
Fr - Venus triple
Sp - Tivela triple

NATIONAL :

Length 3 cm. Mauritania to Angola. Heavy, subtrigonal, solid; 3 cardinal teeth in each valve; smooth. Colour yellowish with faint brownish rays. Abundant offshore in sand. Used in soups.

VEN Vener 2



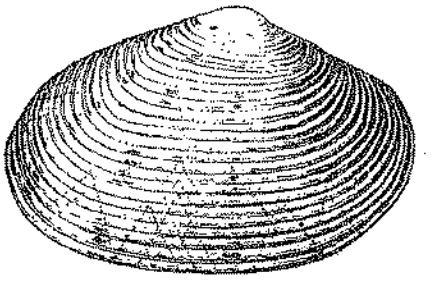
Venerupis corrugata (Gmelin, 1791)

FAO : En - Corrugated venus
Fr - Clovisse ridée
Sp - Margarita arrugada

NATIONAL :

Length 4 cm. Mauritania to Angola. Ornamented with fine concentric ridges especialy strong at the longer, posterior end. Colour dirty white with networks of brown. Common, interdial in sand. Used in soups.

VEN Vener 3



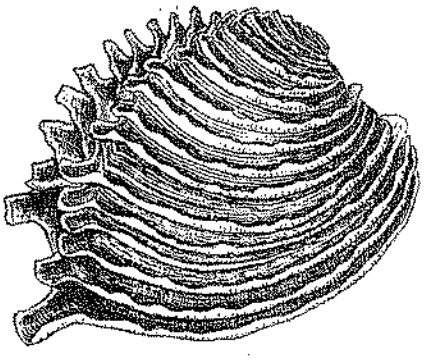
Venerupis dura (Gmelin, 1791)

FAO : En - Durable venus
Fr - Clovisse durable
Sp - Margarita durable

NATIONAL :

Length 7 cm. Morocco to Angola. Elongate, solid, shiny, with small beaded, concentric ridges. Colour yellowish or clear brown, sometimes with spots and lines. Offshore to 40 cm, in sand. Used in soups.

VEN Ven 3



Venus foliaceolamellosa Römer, 1865

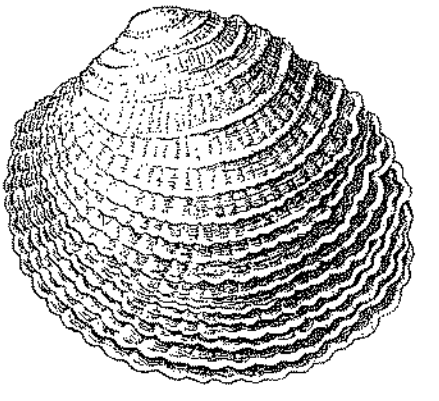
FAO : En - Plicate venus
Fr - Praire ondulée
Sp - Venus plegada

NATIONAL :

Length 7 cm. Mauritania to Congo. Oval, solid, ornamented with large, fluted concentric lamellae. Colour yellowish. Used in soups.

SYNONYM : Venus plicata Gmelin, non Barbut

VEN Ven 2



Venus verrucosa Linnaeus, 1758

FAO : En - Warty venus
Fr - Praire commune
Sp - Escupina grabada

NATIONAL :

Length 5 cm. Western Europe to South Africa. Hard-shelled, oval, covered with strong warty, concentric ridges. Colour yellowish, rarely with brown. Common intertidally in sand. Used in soups or fried.

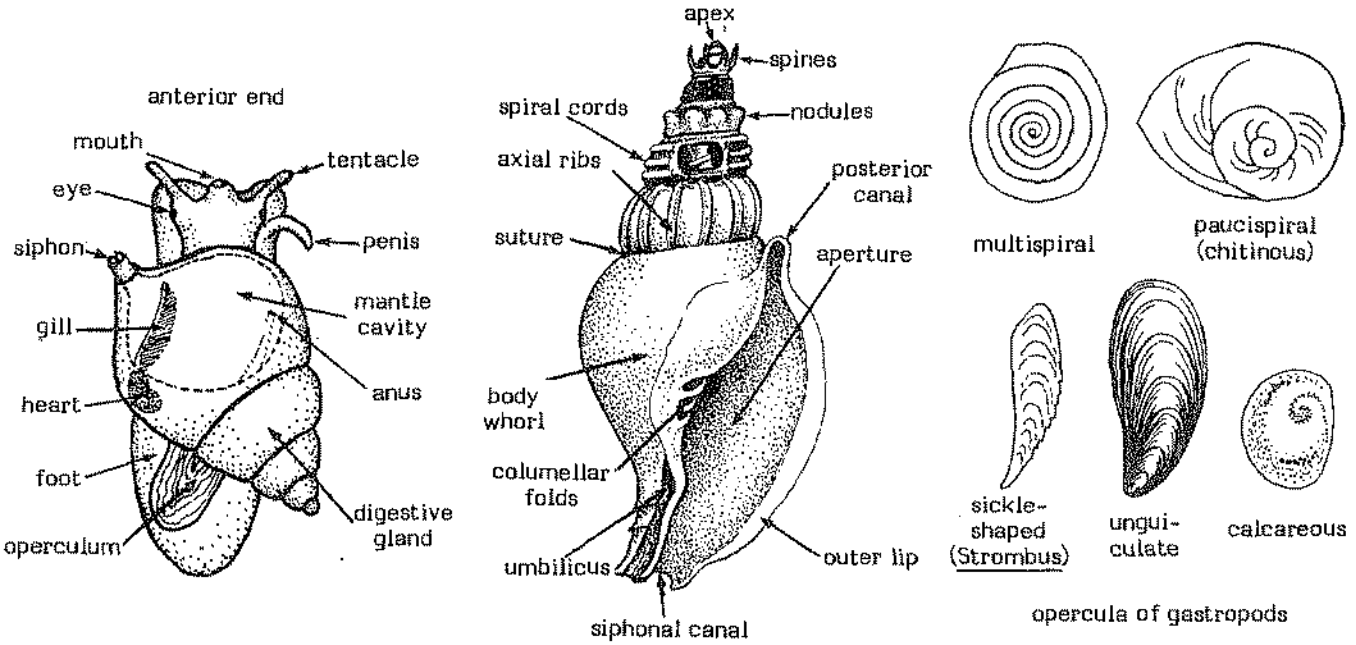
GASTROPODS

GASTROPODS

(Class Gastropoda - univalves, conchs, whelks, etc.)

TECHNICAL TERMS AND GENERAL REMARKS

Gastropod Features



Glossary of Gastropod Terms

Aperture:	the opening in the last whorl, providing an outlet for the head and foot
Axial sculpture:	ribs or growth lines that run parallel to the outer lip
Operculum:	a "trapdoor" grown on the posterior upper part of the foot of a snail. It may be hard and shelly or pliable and made of chitinous, or horny, material
Periostracum:	an outer layer of thin or thick chitinous material covering the outer shell. Sometimes with bristles or hairs
Radula (plural - radulae):	microscopic hard teeth on a moveable ribbon in the mouth of molluscs, other than bivalves
Spiral sculpture:	cords or threds that encircle the whorls parallel to the sutures
Spire:	the whorls at the top, narrow end, where growth began
Suture:	continuous line on shell surface where the whorls join
Umbilicus:	a central cavity at the base or bottom of the shell
Whorl:	a turn or coil of a snail shell. The body whorl is the last and largest

Remarks

Most of the gastropods, such as the whelks, conchs and periwinkles, produce a single, coiled shell and either a shelly or horny trapdoor, or operculum, that seals the opening of the shell. Some, however, have a simple, cap-shaped shell and lack an operculum, as in the Patella limpets. Marine snails chew on food or bore holes in barnacles and other shells by means of a ribbonlike series of hard teeth called radulae. Most aquatic snails breathe by means of feathery gills found within the mantle cavity. Some species lay strings or balls of egg cases, while others shed minute eggs and sperm into the water. The trochid top shells, abalones, and Strombus conchs are plant eaters, but many other kinds such as the buccinid whelks are carnivorous. Most univalve snails take three or four years to reach maturity, and some may live for ten or twenty years.

There are about 20 000 species of marine gastropods, many of which live in deep water and, as adults, never exceed a size of 1 cm. Only a few hundred are large enough or sufficiently abundant to be of use as human food. In Fishing Area 34 there are about 1 270 species of marine gastropods, many ranging from Morocco to northwestern South Africa.

TAXONOMIC LIST OF EDIBLE SPECIES OCCURRING IN THE AREA

The list, arranged alphabetically by families, incudes all gastropod species treated in this account. Those described on separate identification sheets are marked with an asterisk. Although most molluscs are edible, the species here described are large enough and sufficiently common to serve as human food.

CASSIDAE - Helmet shells	CASS
Cassis tessellata (Gmelin, 1791)	CASS Cas 4
CREPIDULIDAE - Slipper and Boat shells	CREP
Crepidula goreensis (Gmelin, 1791)	CREP Crep 1
CYMATIIDAE - Triton shells	CYMAT
Charonia nodifera (Lamarck, 1816)	CYMAT Char 2
FISSURELLIDAE - Keyhole limpets	FISSUR
Fissurella coarctata King & Broderip, 1832	FISSUR Fiss 3
Fissurella nubecula (Linnaeus, 1758)	FISSUR Fiss 4
HALIOTIDAE - Abalones, Ormers	HAL
Haliotis tuberculata Linnaeus, 1758	HAL Hal 1
MELONGENIDAE - Whelks, Crown conchs	MELON
Pugilina morio (Linnaeus, 1758)	MELON Pug 1
MURICIDAE - Rock and Murex shells	MURIC
Murex angularis Lamarck, 1822	MURIC Mur 5
Murex cornutus Linnaeus, 1758	MURIC Mur 6
Murex duplex Röding, 1798	MURIC Mur 7
Thais coronata (Lamarck, 1816)	MURIC Thais 2
Thais haemastoma (Lamarck, 1822)	MURIC Thais 1
Thais nodosa (Linnaeus, 1758)	MURIC Thais 3
NASSARIIDAE - Nassa snails, Bullias	NASS
Bullia callosa (Gray, 1828)	NASS Bull 1
Bullia miran (Bruguière, 1789)	NASS Bull 2

NATICIDAE - Moon snails, Baby's ears	NAT
Natica adansoni Blainville, 1825	NAT Nat 1
Natica collaris Link, 1807	NAT Nat 2
Natica fulminea (Gmelin, 1791)	NAT Nat 3
Natica marochiensis (Gmelin, 1791)	NAT Nat 4
Natica tigrina (Röding, 1798)	NAT Nat 5
Natica turtoni E.A. Smith, 1890	NAT Nat 6
Natica vittata (Gmelin, 1791)	NAT Nat 7
Sinum concavum (Lamarck, 1822)	NAT Sin 1
NERITIDAE - Nerites	NERIT
Nerita senegalensis (Gmelin, 1791)	NERIT Nerit 2
OLIVIDAE - Olive shells	OLIV
Pseudoliva plumbea (Dillwyn, 1817)	OLIV Pseud 1
PATELLIDAE - True limpets	PATEL
Patella lugubris Gmelin, 1791	PATEL Pat 1
Patella safiana Lamarck, 1819	PATEL Pat 2
STROMBIDAE - Stromb conchs	STROM
Strombus latus Gmelin, 1791	STROM Strom 4
VOLUTIDAE - Volutes	VOLUT
Cymbium cymbium (Linnaeus, 1758)	VOLUT Cymb 1
Cymbium glans (Gmelin, 1791)	VOLUT Cymb 2
Cymbium marmoratum Link, 1807	VOLUT Cymb 3
Cymbium pepo (Lightfoot, 1786)	VOLUT Cymb 4

PICTURE GUIDE TO EDIBLE GASTROPODS OCCURRING IN THE AREA

Included here is condensed information on the marine gastropods, arranged alphabetically by families, that are most often fished commercially or apt to be found in local fish markets. Many of these are also used as bait for fish, or the shells are used for road beds or burned for lime.

FAMILY : CASSIDAE - Helmet shells

CASS Cas 4

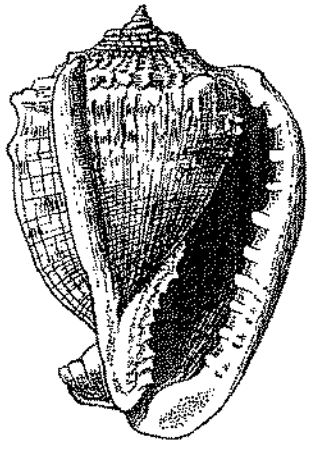
Cassis tessellata (Gmelin, 1791)

FAO : En - Tessellate helmet
Fr - Casque à damier
Sp - Casco teselado

NATIONAL :

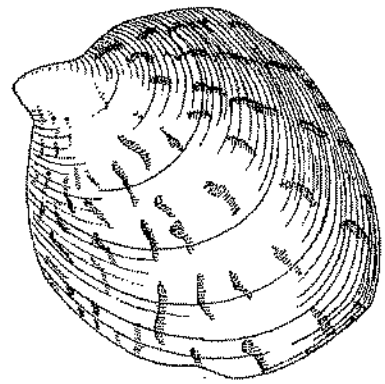
SYNONYM : Cassis spinosa Grov

Length 26 cm. Senegal to Angola. Large, rotund, with 2 or 3 spiral rows of small knobs on the shoulder. Colour light tan with brown spots. Common offshore on sand, 1 to 50 m. Used in meat dishes.



FAMILY : CREPIDULIDAE - Slipper and Boat shells

CREP Crep 1



Crepidula goreensis (Gmelin, 1791)

FAO : En - Goree slippers shell
Fr - Crépidule sandale
Sp - Concha sandalia

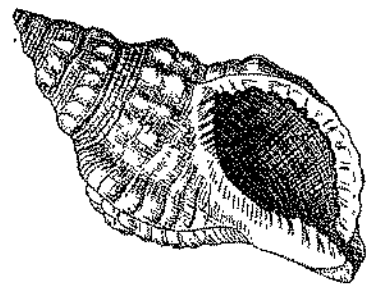
NATIONAL :

Length 4 cm. Cape Verde Islands to northwestern South Africa. Limpet-shaped, with an internal shelly deck. Colour white, rayed or speckled in brown; exterior smooth. Attached to other shells. Used in soups.

SYNONYM : Crepidula porcellana Lam

FAMILY : CYMATIIDAE - Triton shells

CYMAT Char 2



Charonia nodifera (Lamarck, 1816)

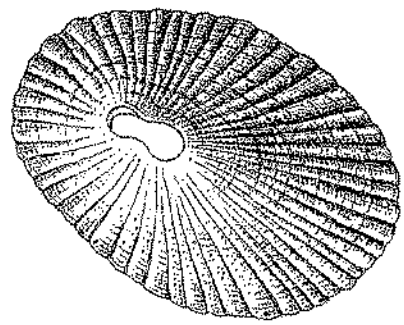
FAO : En - Knobby triton
Fr - Triton noueux
Sp - Triton bultos

NATIONAL :

Length 30 cm. Mediterranean to Angola. Ornamented with about one rounded varix per whorl and by nodular, spiral cords. Colour brown, marbled with tan. Offshore to 20 m. Used in stews or fried.

FAMILY : FISSURELLIDAE - Keyhole limpets

FISSUR Fiss 3



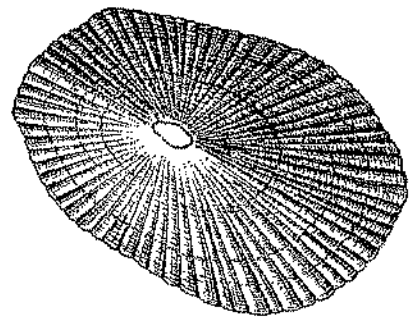
Fissurella coarctata King & Broderip, 1832

FAO : En - Compressed keyhole limpet
Fr - Fissurelle compressée
Sp - Fisurela compresa

NATIONAL :

Length 4 cm. Cape Verde Islands and Senegal. With numerous radial, rounded ribs; orifice large, contracted in middle. Colour white, rose or brownish. Common on tidal rocks. Used in soups.

FISSUR Fiss 4



Fissurella nubecula (Linnaeus, 1758)

FAO : En - Cloudy keyhole limpet
Fr - Fissurelle nuageuse
Sp - Fisurela nublada

NATIONAL :

Length 2.5 cm. France to Angola. With numerous fine radial riblets; orifice small, oval. Colour rose or violet with white rays. Common on tidal rocks. Used in soups.

FAMILY : HALIOTIDAE - Abalones, Ormers

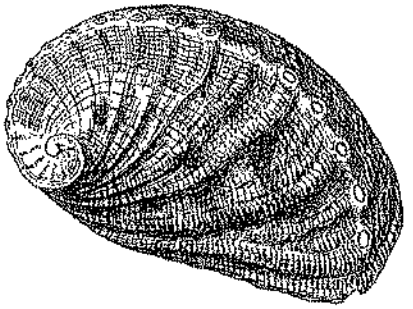
HAL Hal 1

Haliotis tuberculata Linnaeus, 1758

FAO : En - Tuberculate abalone
Fr - Ormeau tuberculeux
Sp - Oreja marina tuberculosa

NATIONAL :

Length 8 cm. Western Europe to Guinea. Oval, flat, with 5 or 6 natural holes. Interior iridescent, exterior rough, brownish grey. On rocks offshore. Foot fried.



FAMILY : MELONGENIDAE - Whelks, Crown conchs

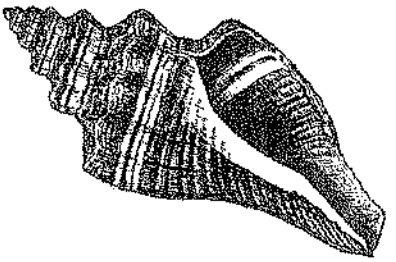
MELON Pug 1

Pugilina morio (Linnaeus, 1758)

FAO : En - Giant hairy melongena
Fr - Mélongène noire
Sp - Melongena negra

NATIONAL :

Length 15 cm. Mauritania to Angola; Trinidad to Brasil. Elongate; exterior with thick, brown periostracum. Colour dark brown with light spiral bands. Common in mangrove waters. Foot eaten.



FAMILY : MURICIDAE - Rock and Murex shells

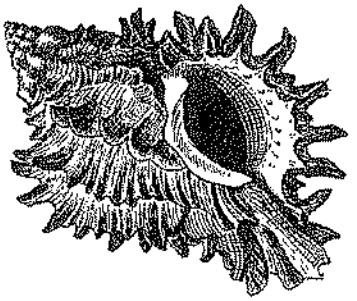
MURIC Mur 5

Murex angularis Lamarck, 1822

FAO : En - Angular murex
Fr - Rocher anguleux
Sp - Busano angular

NATIONAL :

Length 5 cm. Senegal to Gabon. Seven to 11 varices per whorl bearing about a dozen equal-sized, tubular spines. Colour yellow to brownish black. Common among offshore rocks Used in soups.



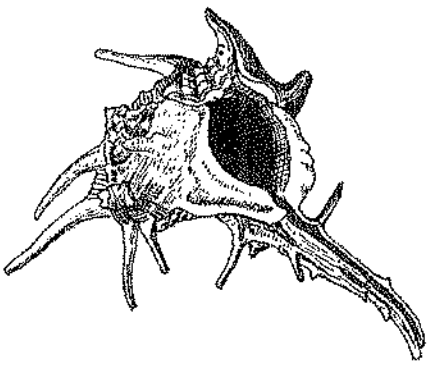
MURIC Mur 6

Murex cornutus Linnaeus, 1758

FAO : En - Horned murex
Fr - Rocher cornu
Sp - Busano cornudo

NATIONAL :

Length 15 cm. Mauritania to Gambia. Siphonal canal long; last whorl with 2 rows of long, thin spines. Colour yellowish brown. Mouth orange brown. Offshore among rocks. Foot eaten.



FAO Sheets | GASTROPODS | Fishing Areas 34, 47 (in part)

MURIC Mur 7

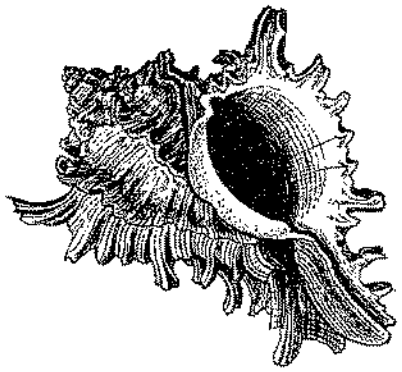
Murex duplex Röding, 1798

FAO : En - Duplex murex
Fr - Rocher duplex
Sp - Busano duplex

NATIONAL :

SYNONYM: Murex hoplites Fischer

Length 20 cm. Dahomey to Guinea. Six to 8 varices per whorl; spines longest at top; siphonal canal broad; umbilicus deep. Mouth with rose border. Offshore among rocks. Foot eaten.



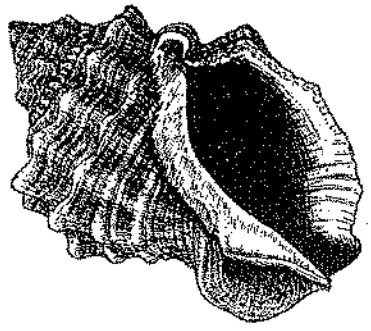
MURIC Thais 2

Thais coronata (Lamarck, 1816)

FAO : En - Crowned rock shell
Fr - Ovarque couronnée
Sp - Purpura coronada

NATIONAL :

Length 4 cm. Mauritania to Angola; also northeastern Brazil. Rotund, heavy, with 3 spiral rows of large, rounded knobs; axial lamellae below sutures. Colour dirty grey. Common among mangroves. Used in soups.



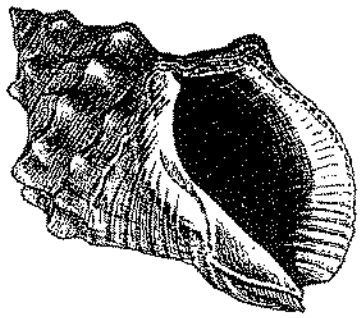
MURIC Thais 1

Thais haemastoma (Lamarck, 1822)

FAO : En - Red-mouthed rock shell
Fr - Ovarque bouche de sang
Sp - Purpura de boca roja

NATIONAL :

Length 6 cm. France to Angola; West Indies. Smoothish, sometimes with nodules on shoulder, and with fine spiral threads. Colour greyish brown; aperture salmon pink. Common on subtidal rocks. Used in soups.



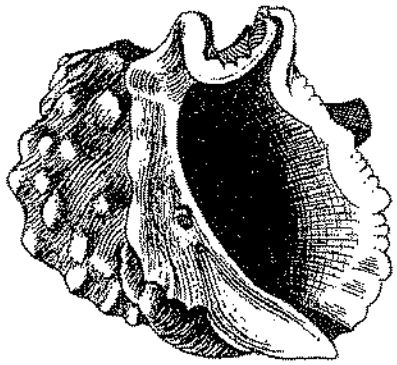
MURIC Thais 3

Thais nodosa (Linnaeus, 1758)

FAO : En - Nodose rock shell
Fr - Ovarque nouveux
Sp - Purpura nodosa

NATIONAL :

Length 5 cm. Senegal to Angola. Globular with 5 spiral rows of low, rounded nodes. Colour greyish; aperture large, white, with 1 to 3 black spots on columella. On subtidal rocks. Used in soups.



FAMILY : NASSARIIDAE - Nassa snails, Bullias

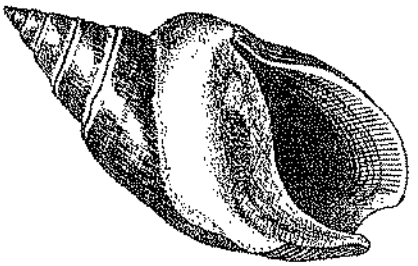
NASS Bull 1

Bullia callosa (Gray, 1828)

FAO : En - Callused bullia
Fr - Bullie à callosité
Sp - Bulia callosa

NATIONAL :

Length 4 cm. Angola to South Africa. Solid, glossy, smooth, with a pointed spire; last whorl large, distorted by a thick callus above the aperture. Common intertidally in muddy sand. Used in soup.



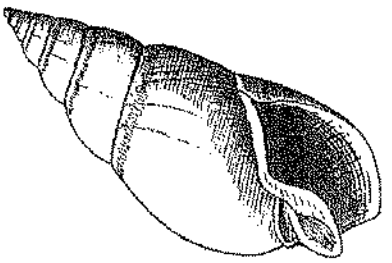
NASS Bull 2

Bullia miran (Bruguière, 1789)

FAO : En - Miran bullia
Fr - Bullie de miran
Sp - Bulia del Miran

NATIONAL :

Length 2.5 cm. Mauritania to Angola. Solid, smooth, elongate; aperture 1/3 length of shell. Colour horny grey with a darker band below the suture. Common in intertidal muddy sands. Used in soups.



FAMILY : NATICIDAE - Moon snails, Baby's ears

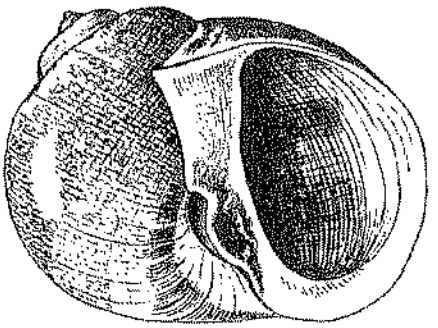
NAT Nat 1

Natica adansoni Blainville, 1825

FAO : En - Adanson's moon snail
Fr - Natice d'Adanson
Sp - Natica de Adanson

NATIONAL :

Length 3 cm. Morocco to Angola. Rotund; umbilicus has a brown callus almost filling it. Colour marbled brown with a yellow band below. On intertidal sands. Used in stews and soups.



NAT Nat 2

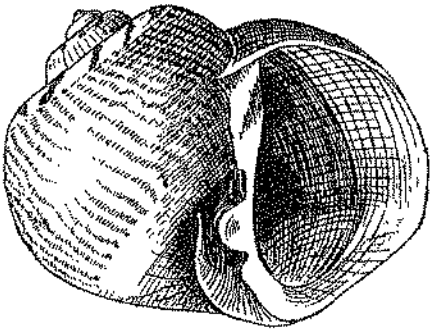
Natica collaris Link, 1807

FAO : En - Collar moon snail
Fr - Natice à collet
Sp - Natica engolada

NATIONAL :

SYNONYM : Natica collaria Lam

Length 3 cm. Mauritania to Congo. Rotund; umbilicus deep, with a small white callus. Colour yellowish with axial brown lines and a spiral row of spots below the suture. On subtidal sands. Used in stews and soups.



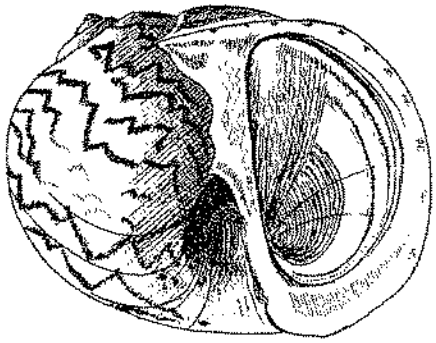
NAT Nat 3

Natica fulminea (Gmelin, 1791)

FAO : En - Flamed moon snail
Fr - Natice flammée
Sp - Natica flama

NATIONAL :

Length 3.5 cm. Guinea to Angola. Round, smooth, with a wide rounded umbilicus, without a callus inside. Colour whitish with numerous zigzag lines of brownish yellow; rarely banded. Subtidal on sand. Used in stews and soups.



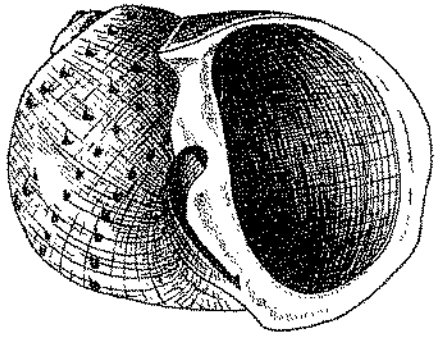
NAT Nat 4

Natica marochiensis (Gmelin, 1791)

FAO : En - Morocco moon snail
Fr - Natice du Maroc
Sp - Natica marroquí

NATIONAL :

Length 2.5 cm. Morocco to Angola. Umbilicus almost covered by a long, white callus. Colour greyish brown with spiral, broken rows of dark brown dots and dashes. Common on intertidal sand. Used in stews and soups.



NAT Nat 5

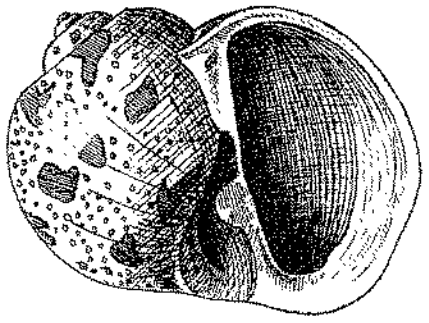
Natica tigrina (Röding, 1798)

FAO : En - Tiger moon snail
Fr - Natice tigrée
Sp - Natica atigrada

NATIONAL :

SYNONYM: Natica farnel Récluz

Length 3.5 cm. Mauritania to Angola. Umbilicus deep with a yellowish callus at the centre; aperture violet within. Colour with brown spots in spiral rows or with tiny dots all over. Used in stews and soups.



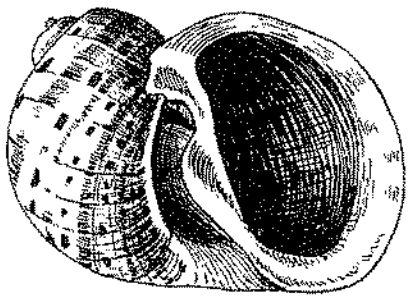
NAT Nat 6

Natica turtoni E.A. Smith, 1890

FAO : En - Turton's moon snail
Fr - Natice de Turton
Sp - Natica de Turton

NATIONAL :

Length 3 cm. Mauritania to Dahomey. Aperture large, violet-brown within; umbilicus very large, with a large white callus. Colour whitish with spiral rows of brown dashes. Subtidal on sand. Used in stews and soups.



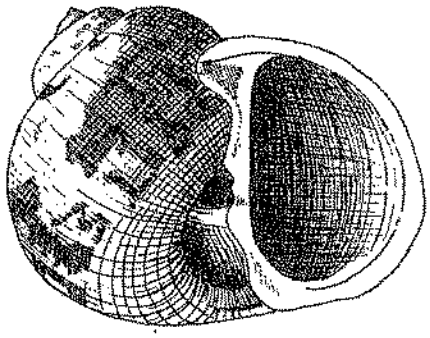
NAT Nat 7

Natica vittata (Gmelin, 1791)

FAO : En - Banded moon snail
Fr - Natice à bandelettes
Sp - Natica listada

NATIONAL :

Length 2 cm. Morocco to Senegal. Umbilicus wide, with a very small callus. Colour bright yellow and lilac with brown flames, sometimes in broad spiral bands. Common, subtidal in sand. Used in stews and soups.



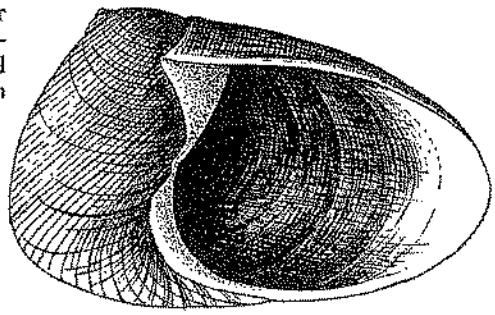
NAT Sin 1

Sinum concavum (Lamarck, 1822)

FAO : En - Concave baby's car
Fr - Naticide concave
Sp - Sigarita concava

NATIONAL :

Length 4.5 cm. Senegal to Angola. Animal much larger than the flat, oval, large-mouthed shell. Colour of shell tan. Intertidal sands. Used in stews and soups.



FAMILY : NERITIDAE - Nerites

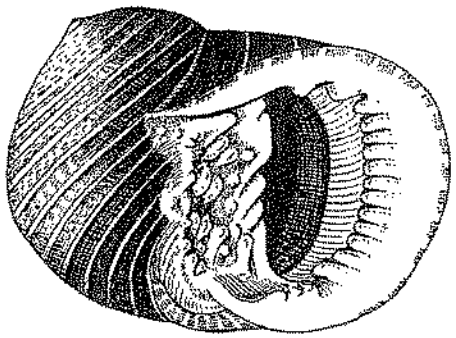
NERIT Nerit 2

Nerita senegalensis (Gmelin, 1791)

FAO : En - Senegal nerite
Fr - Nérite du Sénégal
Sp - Nerita senegalesa

NATIONAL :

Length 2 to 5 cm. Senegal to Angola. Round, with spiral striae; parietal wall pustulose, white, with 2 or 3 teeth. Colour blackish. Operculum shelly. Common; on rocks intertidally. Used in soups.



FAMILY : OLIVIDAE - Olive shells

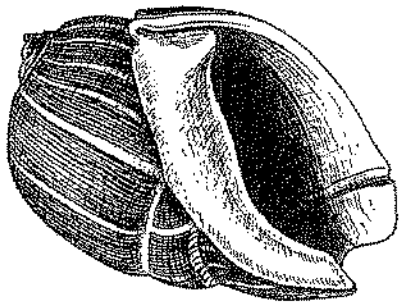
OLIV Pseud 1

Pseudoliva plumbea (Dillwyn, 1817)

FAO : En - Leaden false olive
Fr - Olivette orange
Sp - Oliva falsa ploma

NATIONAL :

Length 4 cm. Angola. Spire very short, last whorl rotund. Base with 2 spiral creases. Colour of shell and thick columella rose-orange; periostracum brown. Operculum horny. Intertidal in sand. Used in soups.



FAMILY : PATELLIDAE - True limpets

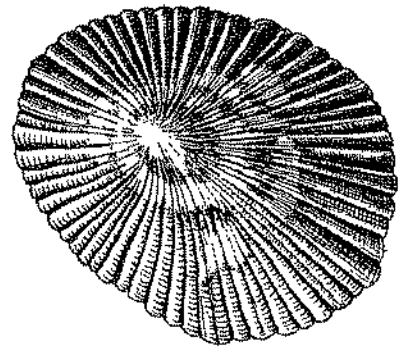
PATEL Pat 1

Patella lugubris Gmelin, 1791

FAO : En - Mournful limpet
Fr - Patelle lugubre
Sp - Lepada lugubre

NATIONAL :

Length 6 cm. Morocco to Senegal. Oval, rather flat, with numerous, neat, radial cords. Colour black, rarely with white markings. Common on intertidal rocks. Used in soups.



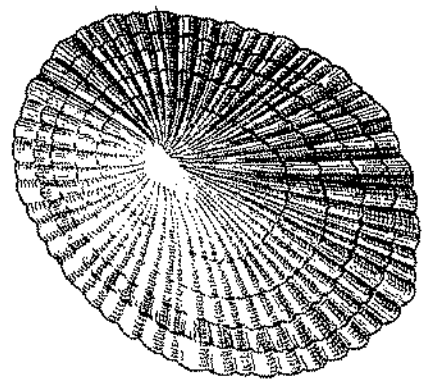
PATEL Pat 2

Patella safiana Lamarck, 1819

FAO : En - Safian limpet
Fr - Patelle safian
Sp - Lepada safiana

NATIONAL :

Length 11 cm. Morocco to Angola. Oval, variable in form and sculpture; slightly elevated; narrower in front; with about 100 fine radial riblets. Colour grey; interior bluish grey. Commonly collected on rocks and used in stews and soups.



FAMILY : STROMBIDAE - Stromb conchs

STROM Strom 4

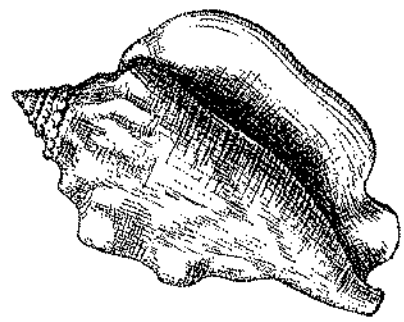
Strombus latus Gmelin, 1791

FAO : En - West African stromb
Fr - Strombe d'Afrique occidentale
Sp - Cobo de Africa occidental

NATIONAL :

SYNONYM : Strombus bubonius Lam

Length 14 cm. Morocco to Angola. Quadrate in shape, with 3 spiral rows of tubercles, the top one having knobs. Colour maculated in brown, rose and white. Offshore to 10 m. Foot used in fish dishes.



FAMILY : VOLUTIDAE - Volutes

VOLUT Cymb 1

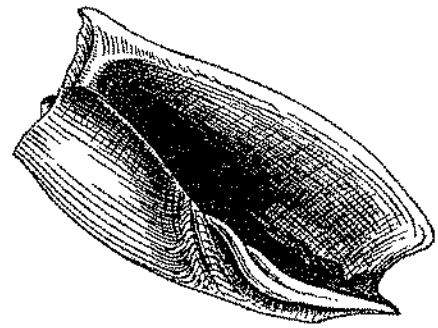
Cymbium cymbium (Linnaeus, 1758)

FAO : En - Pig's snout volute
Fr - Volute trompe de cochon
Sp - Voluta trompa de cerdo

NATIONAL :

SYNONYM : Cymbium porcinum Lam

Length 15 cm. Mauritania to Guinea. Subcylindrical; apex mammilliate; top of shell flattish; glossy smooth. Colour pale yellowish brown. Offshore on sand bottoms. Foot used in sea food dishes.



VOLUT Cymb 2

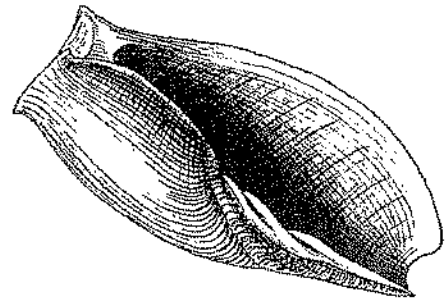
Cymbium glans (Gmelin, 1791)

FAO : En - Elephant's snout volute
Fr - Volute trompe d'éléphant
Sp - Voluta trompa de elefante

NATIONAL :

SYNONYM : Cymbium proboscidalis Lam

Length 35 cm. Senegal to Angola. Cylindrical, with a dished-out apex; shell thin but strong, glossy. Colour greyish brown. Offshore on sand bottoms. Foot used in sea food dishes.



VOLUT Cymb 3

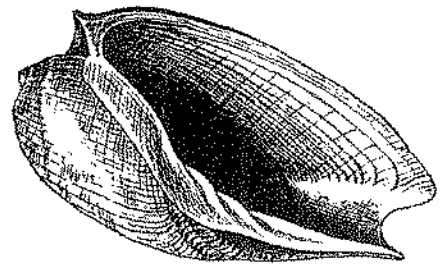
Cymbium marmoratum Link, 1807

FAO : En - Marmorate volute
Fr - Volute marbrée
Sp - Voluta marmorata

NATIONAL :

SYNONYM : Cymbium gracilis Brod

Length 20 cm. Morocco and Senegal. Oval-elongate, solid; apex mammillate with a deep suture. Colour yellowish with brownish red marbling. Offshore on sand bottoms. Foot used in sea food dishes.



VOLUT Cymb 4

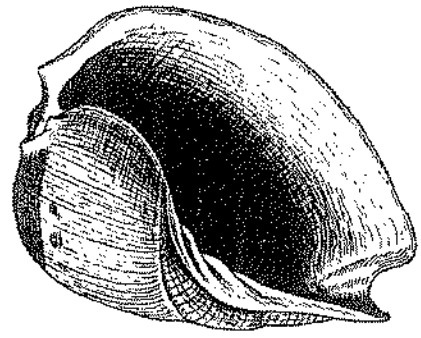
Cymbium pepo (Lightfood, 1786)

FAO : En - Neptune's volute
Fr - Volute Neptune
Sp - Volute de Neptuno

NATIONAL :

SYNONYM : Cymbium neptuni Gmelin

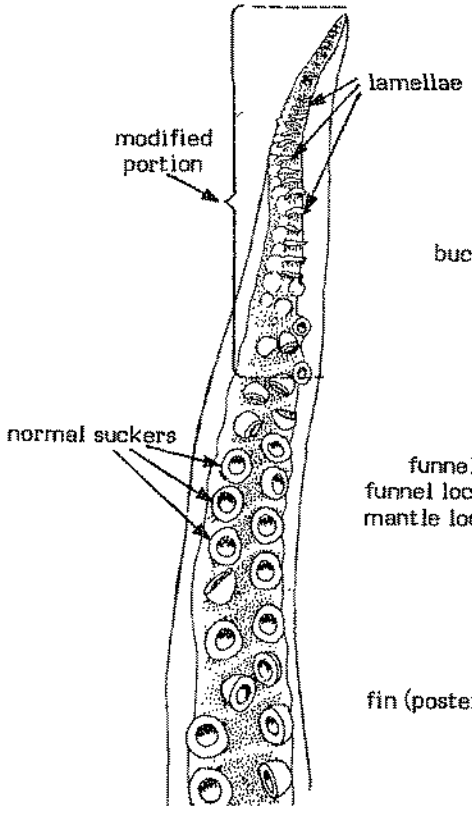
Length 27 cm. Senegal to Dahomey. Globular; apex hardly visible; aperture very large. Colour orange with a brown periostracum. Offshore on sandy bottoms. Used in sea food dishes.



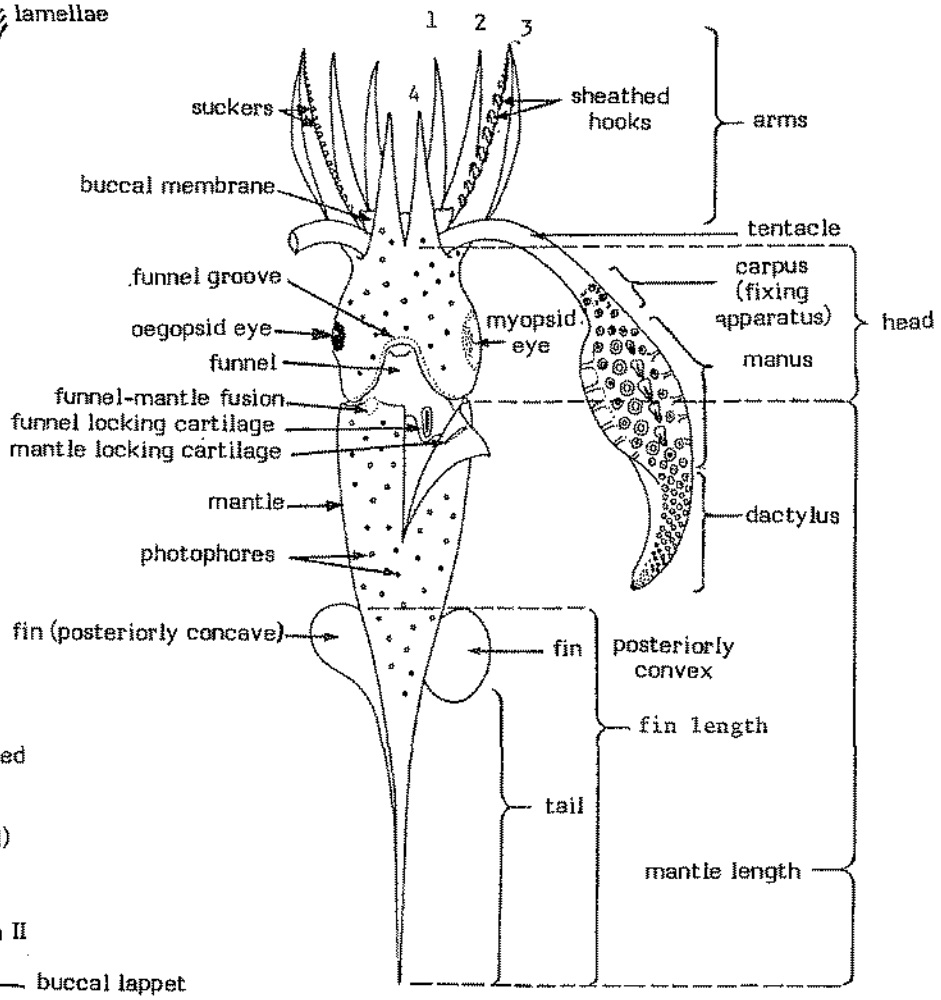
CEPHALOPODS

CEPHALOPODS

TECHNICAL TERMS



example of hectocotylized arm in male (Illex)



a composite diagram illustrating basic squid (teuthoid) features

ventral view

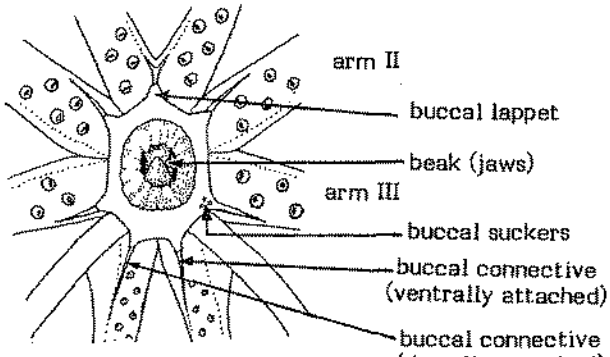
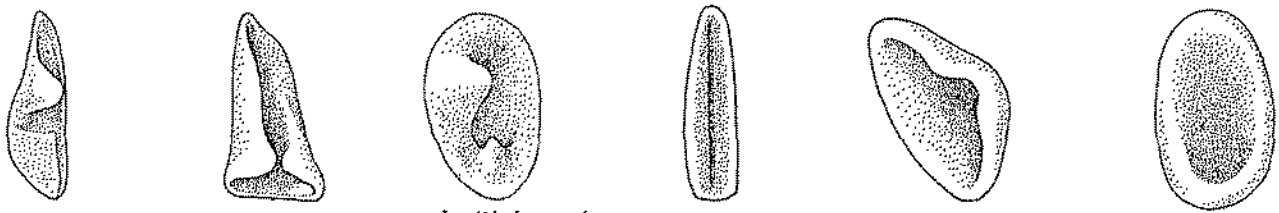
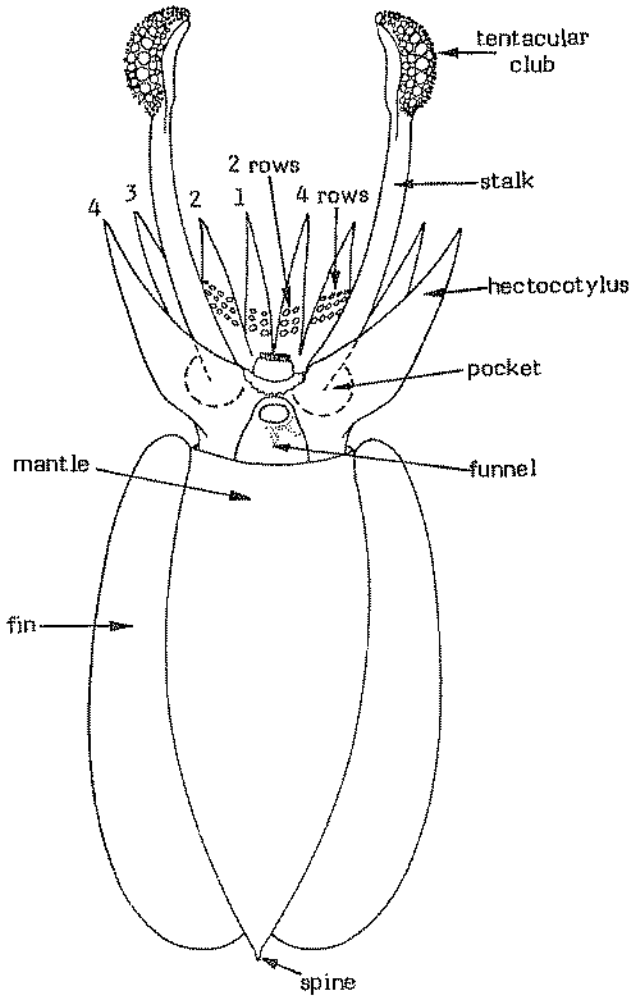


diagram of oral surface of brachial crown and buccal membrane

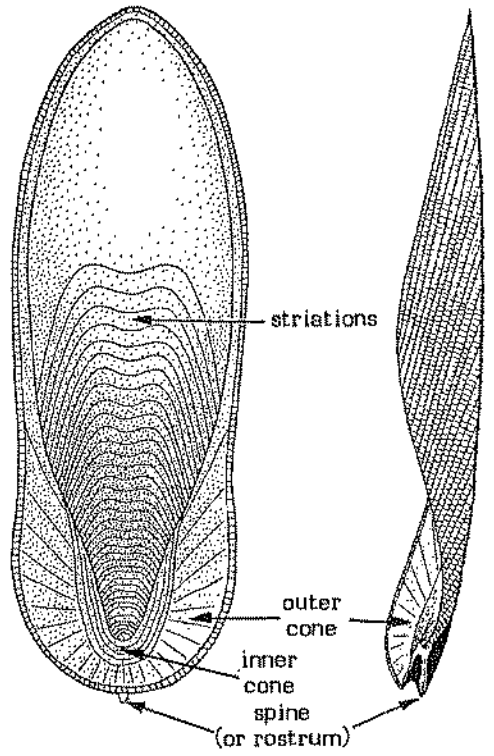


basic types of funnel locking cartilage
(cartilaginous grooves that lock with corresponding ridges on inner mantle wall to keep base of funnel in position during water expulsion)

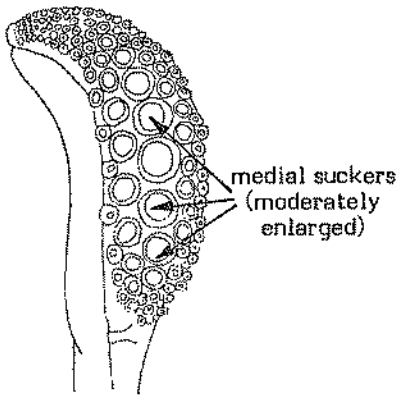


ventral view

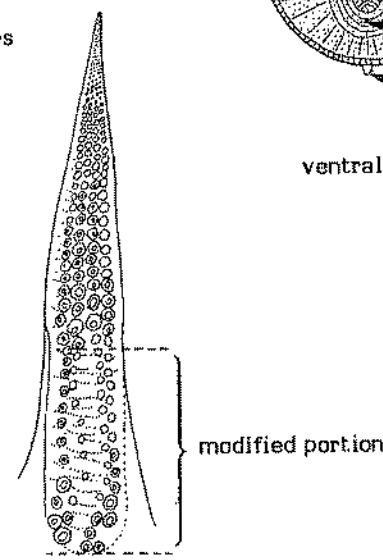
diagram of basic cuttlefish features



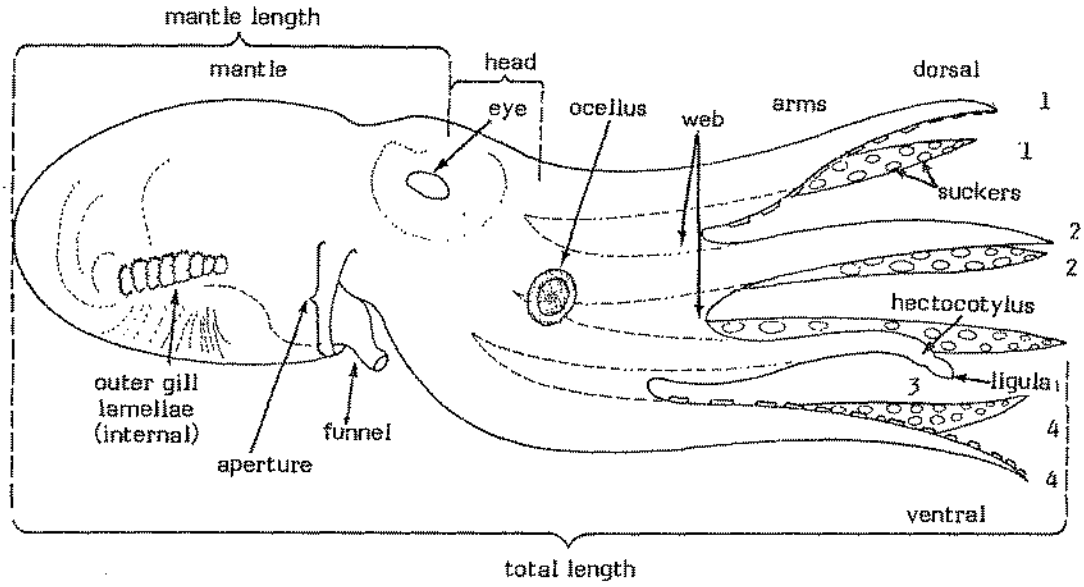
ventral view lateral view



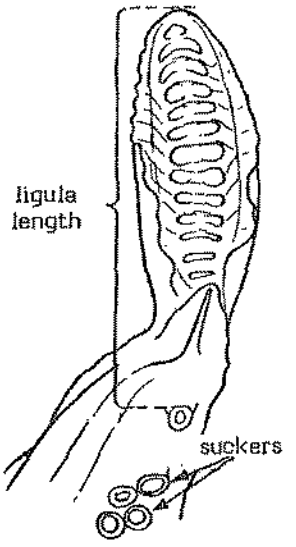
tentacular club



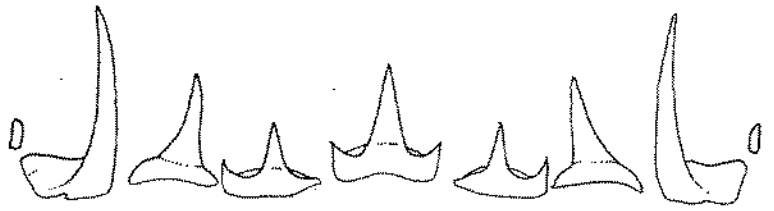
hectocotylus



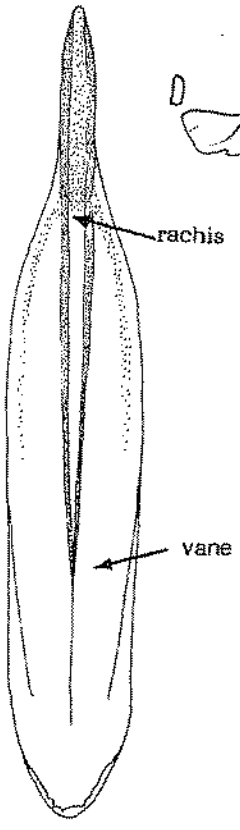
a. diagram of basic octopus features (lateral view)



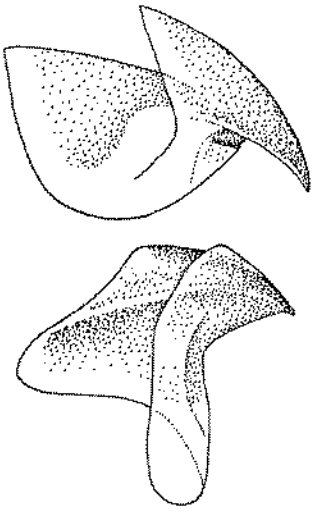
b. diagram of hectocotylus showing ligula measurement



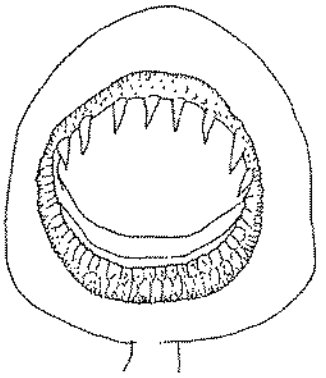
radula



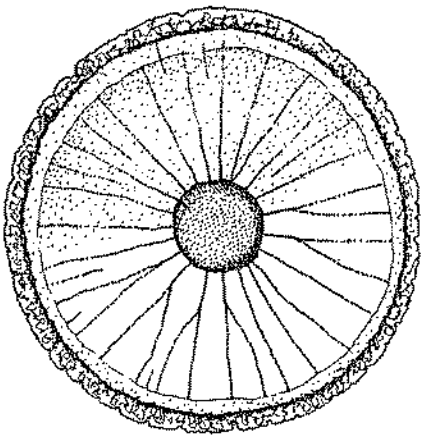
gladius of squid



upper and lower jaws (beak)



sucker of squid



sucker of octopus

GENERAL REMARKS

The group known as cephalopods consists of bilaterally symmetrical molluscs with a well developed head that contains a circumoral (surrounding the mouth) crown of mobile arms that bear suckers and/or hooks. The mouth has chitinous beak-like jaws and a chitinous tongue-like radula (band of teeth). The shell is reduced, modified, or absent and is enclosed by the mantle; an external shell occurs only in the primitive form Nautilus (restricted to Indo-Pacific). Cephalopods are soft-bodied animals with their primary skeletal features, a cranium and, in most forms, a mantle support (cuttle-bone or gladius). One pair of ctenidia (gills) is present (two pairs in Nautilus only). The central nervous system is highly developed, especially the well-organized eyes. A funnel or siphon (tube) expells water from the mantle (body) cavity providing propulsion and expelling waste products. Coloration is variable depending on group and habitat; most forms are provided with numerous chromatophores (pigment sacs) and iridocytes (shiny, reflective platelets) in the skin, so rapid changes in colour and colour patterns are an integral part of their behaviour.

The size of adults ranges from about 2 cm to over 20 m in total length; largest specimens may weigh over 1 t. Locomotion is achieved by drawing water into the mantle cavity followed by its jet-like expulsion through the funnel, and also by crawling along the bottom on the arms (mostly sepioids and octopods). Fins on the mantle provide balance, steering, and minor locomotion. The sexes are separate, eggs are heavily yolked and development is direct, without metamorphic stages.

The total number of living species of cephalopods is fewer than 1 000; about 115 species in 30 families occur in the Eastern Central Atlantic. Cephalopods occur in all marine habitats of the world: benthic on coral reefs, grass flats, sand, mud and rocks; pelagic and epipelagic in bays, seas, and the open ocean. The range of depths extends from 0 to over 5 000 m. Abundance of cephalopods varies (depending on group, habitat, and season) from isolated territorial individuals (primarily benthic octopods) through small schools with a few dozen individuals to huge schools of oceanic species with millions of specimens.

Three groups of cephalopods, squids, cuttlefishes and octopuses, occur in the Eastern Central Atlantic waters and they are easily distinguished by external characteristics. *The squids have an elongate, torpedo-like body with* lateral fins, and 8 circumoral arms, not connected at bases with a web, with 2 rows of stalked suckers bearing chitinous rings (or hooks) running the entire length, plus 2 longer tentacles with an organized cluster (tentacular club) of 2 or more rows of suckers (or hooks) at the distal end. The cuttlefishes have broad sac-like bodies with lateral fins that either are narrow and extend the length of the mantle (Sepia) or are short, round and flap-like (Sepiolidae): in either case the posterior lobes of the fins are free (subterminal) and separated by the posterior end of the mantle; 10 circumoral appendages, the longest pair (= tentacles) retractile into pockets at the ventrolateral sides of head; the 8 remaining arms frequently with 4 rows of stalked suckers with chitinous rings, never hooks (otherwise 2 rows); eyes covered with transparent membrane and eyelids present; shell thick, chalky, calcareous (Sepia) or thin, chitinous (Sepiolidae). The octopuses have a short, sac-like body with no lateral fins (some deep-sea forms excepted), and 8 circumoral arms only (no tentacles) with bases connected by a membraneous web and unstalked suckers, without chitinous rings, along the length of the arms.

All cephalopods are dioecious (separate sexes) and many, though not all, exhibit external sexual dimorphism, *either in structural or size differences. Females generally are larger than males.* Males of many forms possess 1 or 2 modified arms (hectocotylus) for mating. The hectocotylus may consist of modified suckers, papillae, membranes, ridges and grooves, flaps, etc., but in any case it functions to transfer the sperm packets or spermatophores from the male's mantle cavity to a locus of implantation on the female, which may occur inside the mantle cavity, around the mantle opening on the neck, in a pocket under the eye, around the mouth, etc. Fertilization takes place in the female as the eggs are laid. Eggs of squids generally are encased in a gelatinous matrix secreted by the nidamental glands and are laid as multi-finger-like masses (sometimes called "sea mops") attached to rocks, shells or other hard substrate on the bottom in shallow waters (inshore squids), or they are extruded as large, singular, sausage-shaped masses that drift in the open sea (oceanic squids). The fingers each may contain from a few to several hundred eggs, while the sausages contain tens or even hundreds of thousands of eggs. The mode of reproduction and egg-laying is unknown for many forms, especially oceanic and deep-sea species. Cuttlefishes lay relatively few, large grape-like eggs that are attached to hard substances and are usually coloured black by a covering of ink deposited by the female at egg-laying. Benthic octopuses lay their eggs in great, grape-like clusters and strands in lairs, under rocks and in abandoned mollusc shells, where they brood them until they hatch. The eggs are attached to each other, but they are not encased in a geletinous matrix. The female of the pelagic octopus Argonauta constructs a thin, shell-like egg case in which she resides and lays festoons of eggs, fertilization having taken place from sperm contained in the highly modified hectocotylus that was autotomized (detached) from the male and deposited in the egg case. The life expectancy is about one to two years in most forms, but larger species of squids and octopus, for example, the giant squid (Architeuthis spp.) and the giant octopus (O. dofleini), must live for several years. Many species die after spawning, but this phenomenon apparently is not universal.

Cephalopods are active predators that prey upon shrimps, crabs, fishes, other cephalopods, and, in the case of octopuses, on bivalved molluscs. In turn, cephalopods are major food items in the diets of toothed whales, seals, pelagic birds (penguins, petrels, albatrosses, etc.), and both benthic and pelagic fishes (e.g., sea basses, lancetfishes, tunas, billfishes, sharks).

Many species of oceanic cephalopods undergo diel vertical migrations, wherein they occur at depths of about 400 to 800 m during the day, then ascend into the uppermost 200 m or so during the night. While shallow-living cephalopods are able to conceal themselves by chromatophore-produced colour patterns and chameleon-like colour changes, many deep-sea forms camouflage themselves by producing bioluminescent light from photophores (light-producing organs) which eliminates their silhouettes against the downwelling light in the dimly-lit mid-depths.

Cephalopod eggs are very yolky and cleavage is thus incomplete, so that typical molluscan spiral cleavage is absent. Development is direct and young hatch as miniatures of the adult (to a greater or lesser extent depending on the species). Thus, no discrete larval stages or metamorphoses occur. Cephalopod eggs may vary in size from about 1.7 cm long in some Octopus species to 0.8 mm long in Argonauta, both octopods. Eggs of Sepia can attain 9 to 10 mm in diameter. Time of embryonic development also varies widely, from a few weeks to several months, depending on the species and temperature conditions. Hatching may occur rapidly from a single clutch or be extended over a period of 2 to 3 weeks. At hatching, young animals often inhabit different habitats than the adults. For example, the young of some species of benthic octopuses spend periods of time as planktonic organisms before settling to their bottom habitat, and the "larvae" of many deep-sea forms occur in the upper 100 m of the open ocean, then exhibit an ontogenetic descent, gradually occurring at deeper depths with increasing size.

Cephalopods are extremely important as food for human consumption, and well over 1.2 million metric tons are caught each year. The fisheries are especially intense in Japan, the Orient and in the Mediterranean/Eastern Atlantic waters. Cephalopods are also important experimental animals in biomedical research with direct application to man. Because of the highly developed brain and sensory organs, cephalopods have a great capacity to learn and remember, rendering them valuable in behavioural and comparative neuroanatomical studies. In addition, cephalopods possess the largest single nerve axons in the animal kingdom, located in the mantle, and these are used extensively in all aspects of neurophysiological research.

Fishing techniques include small traps (octopods), wiers, lures, spears and jigs (some cuttlefishes, octopuses and squids), lampara nets (nearshore squids), and midwater and otter trawls (squids, cuttlefishes, and octopods). Certain species of squids are attracted to light, then jigged or seined. Occasionally cuttlefishes and octopods are caught in hand-nets or are speared, but it is nearly impossible to capture free-swimming squid in this manner. Caution: the bites of cephalopods, especially octopuses, can be painful at the least, poisonous or secondarily infected, or, rarely, lethal (several human deaths have been recorded in Australia due to blue-ringed octopus, Hapalochlaena). So cephalopods must be handled carefully.

The total commercial catch of cephalopods in the Eastern Central Atlantic is estimated at around 200 000 t, but the potential for major fisheries for several species is high. The future should bring the development of greater fishery efforts in this area.

The status of the systematics of cephalopods is rapidly changing, as research has increased significantly in the past 25 years. A number of monographic studies on several large, important families currently are being conducted, so greater stability should be achieved soon.

KEY WITH PICTURE GUIDE TO FAMILIES OCCURRING IN THE AREA*

1 a. Animal with 10 circumoral appendages (arms and tentacles); stalked suckers with chitinous, usually toothed, rings

1 b. (see page 12)

2 a. Internal shell straight, coiled and chambered or rudimentary and straight (Sepioidea)

3 a. Shell calcified, coiled ..... Spirulidae (Fig. 1)

3 b. Shell chitinous or rudimentary ..... Sepiolidae (Fig. 2)

3 c. Shell chalky, broad, straight (= cuttle-bone) ..... Sepiidae (Fig. 3)

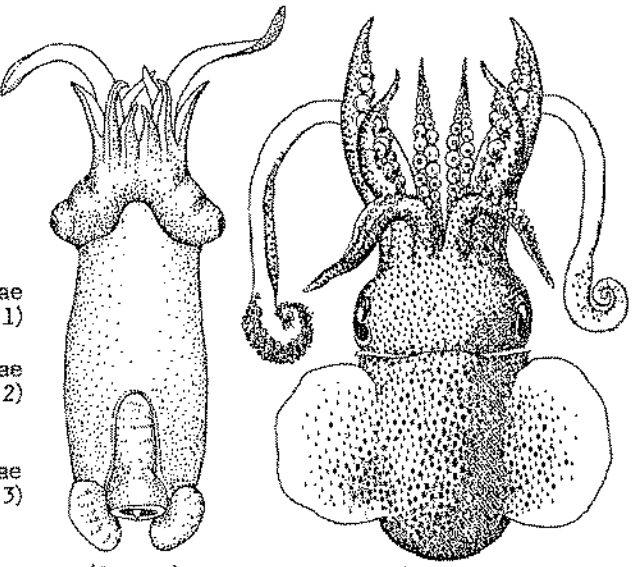
2 b. Internal shell pen-shaped or feather-shaped, chitinous (Teuthoidea)

4 a. Eye covered by a transparent membrane (cornea) (Fig. 4a) (Myopsida) ..... Loliginidae (Fig. 5)

4 b. Eye without cornea and in open contact with seawater (Fig. 4b) (Oegopsida)

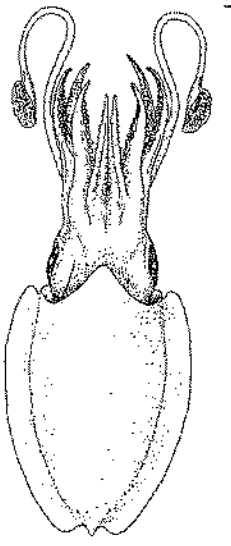
5 a. Funnel free from mantle; a funnel-mantle locking apparatus present

5 b. (see page 12)

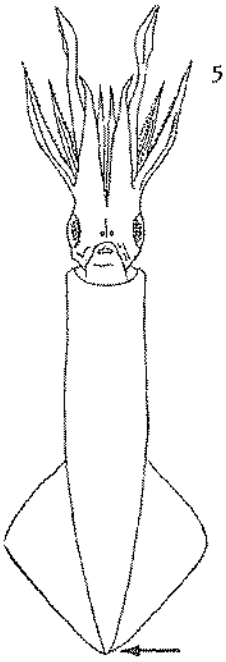


(Spirula) Spirulidae Fig. 1

(Rossia) Sepiolidae Fig. 2



(Sepia) Sepiidae Fig. 3



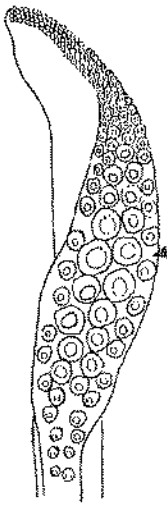
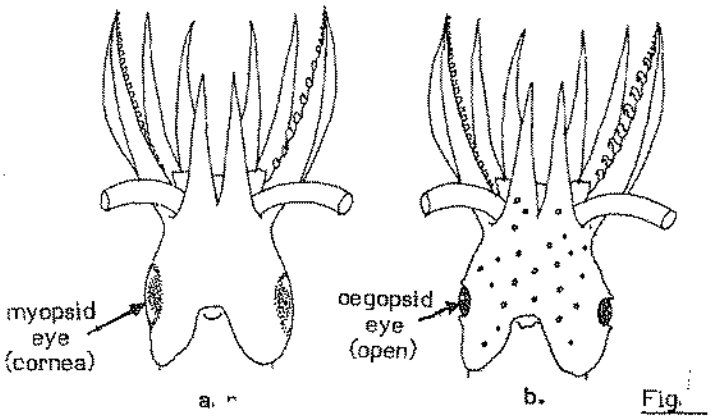


Fig. 5

a. ventral view b. tentacular club
Loliginidae (Loligo)



a. b. Fig.

* Illustrations show typical genera of families

6 a. Funnel-mantle locking apparatus a simple, straight groove and ridge*(Fig. 6)

6 b. (see page 10)

7 a. Arms with hooks or with suckers in 4 rows on the proximal (nearest head) half of the ventral arms

8 a. Tentacles present; fully developed clubs present (Fig. 7) ..... Enoploteuthidae

8 b. Tentacles and clubs absent in adults although present in larvae or occasionally juveniles (Taningia) but always with rudimentary clubs (Fig. 8) ..... Octopoteuthidae

7 b. Arms without hooks and with suckers in two rows on the proximal half of the ventral arms

9 a. Buccal membrane connectives attach to the ventral sides of arms IV (Fig.9)



Fig. 6

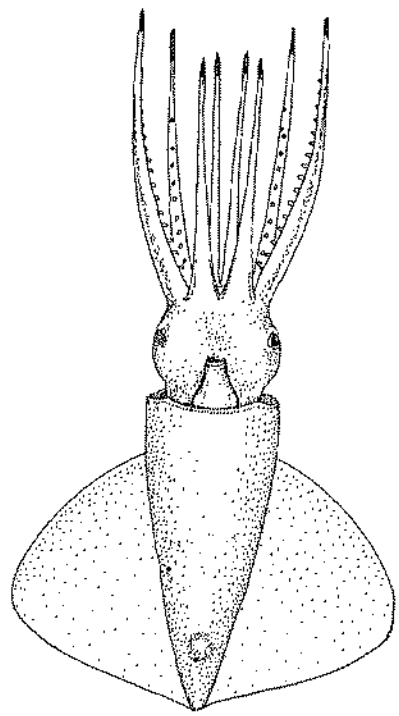
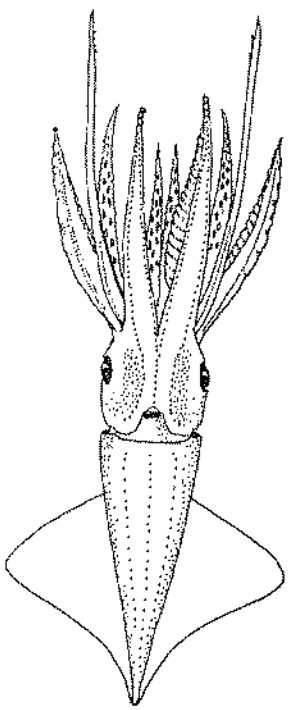
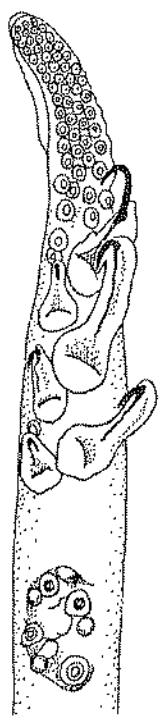


Fig. 8

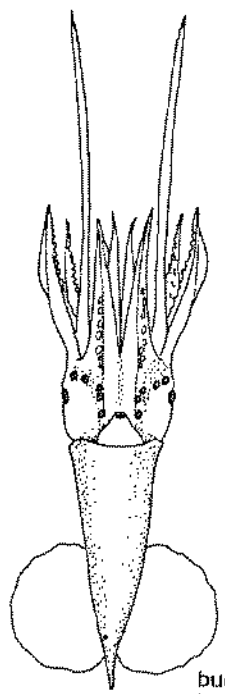
ventral view
Octopoteuthidae (Octopoteuthis)



a.
Abraliopsis
ventral view



b.
Abraliopsis
tentacular club



c.
Pyroteuthis
ventral view

Enoploteuthidae

Fig. 7

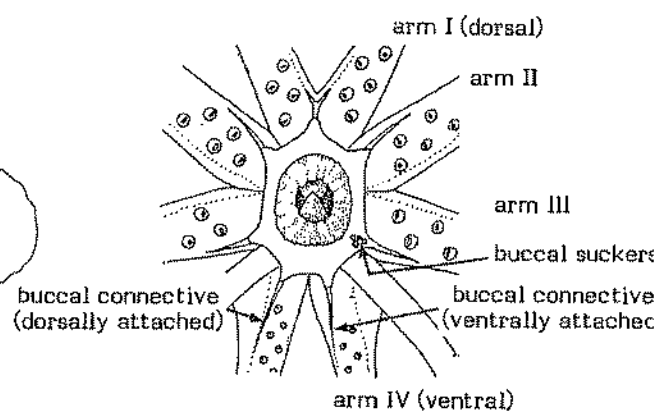


Fig. 9

* The classification "simple and straight" includes some locking apparatuses that show considerable variation. For example, in the Octopoteuthidae and the Histioteuthidae the central groove is fairly broad and may curve slightly. The homogeneity of this classification becomes apparent when this type of locking-cartilage is contrasted with the highly specialized types illustrated on page 1

10 a. Hooks present on tentacular clubs (Fig. 10b) (tentacles and clubs unknown in Chaunoteuthis) ..... Onychoteuthidae

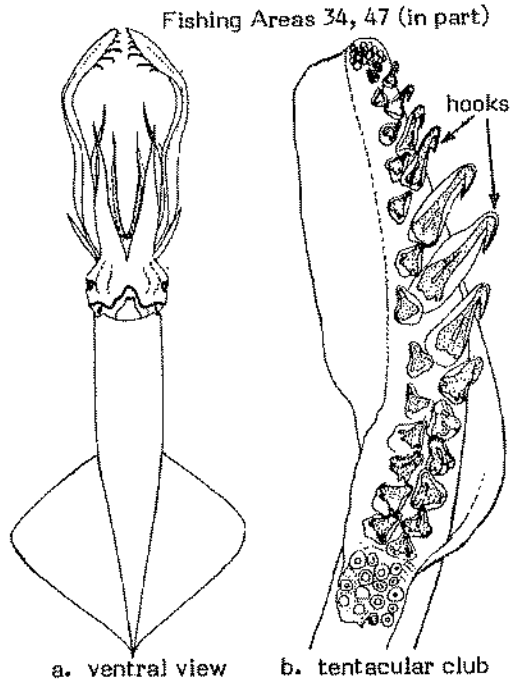
10 b. Hooks lacking on tentacular clubs

11 a. Cartilaginous scales present on mantle (may be minute) (Fig. 11); tentacular clubs with 4 longitudinal rows of suckers ..... Lepidoteuthidae (Fig. 12)

11 b. Cartilaginous scales lacking; tentacular clubs with more than 4 longitudinal rows of suckers on some areas

12 a. Fins nearly as long as the mantle, supported by strong, transverse, muscular "ribs" (Fig. 13); minute suckers present on oral surface of buccal lappets (Fig. 9) ..... Ctenopterygidae

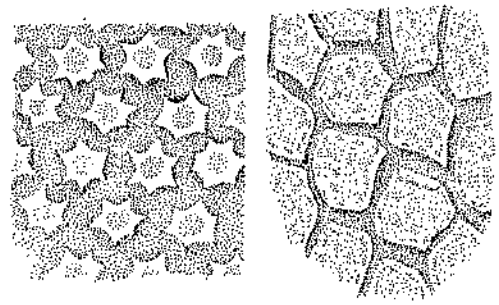
12 b. Fins less than half the body length and without supporting "ribs" (Fig. 14a); no suckers on buccal lappets; numerous rows of suckers on proximal part of tentacular club (Fig. 14b) ... Brachioteuthidae



a. ventral view b. tentacular club

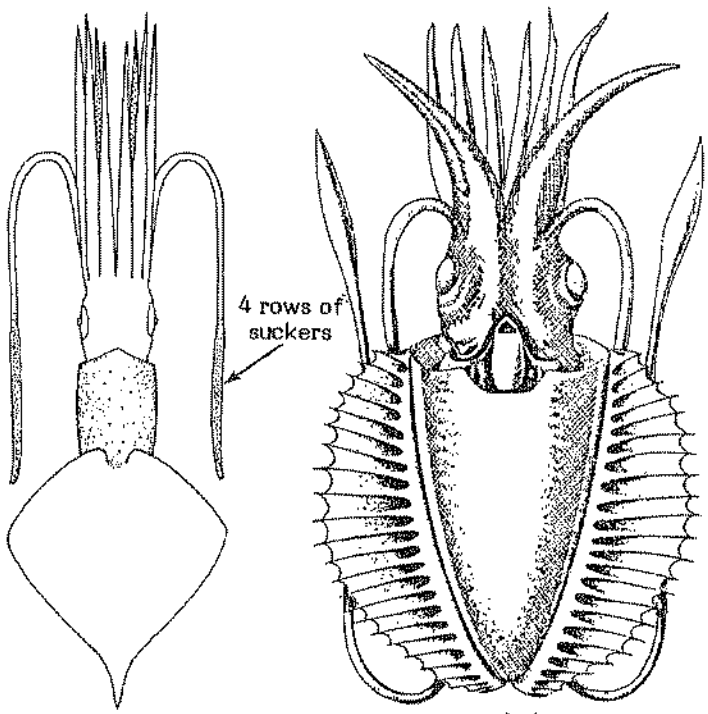
Onychoteuthidae (Onychoteuthis)

Fig. 10



cartilaginous scales on mantle.

Fig. 11



dorsal view
Lepidoteuthidae
(Pholidoteuthis)
Fig. 12

ventral view
Ctenopterygidae
(Ctenopteryx)
Fig. 13

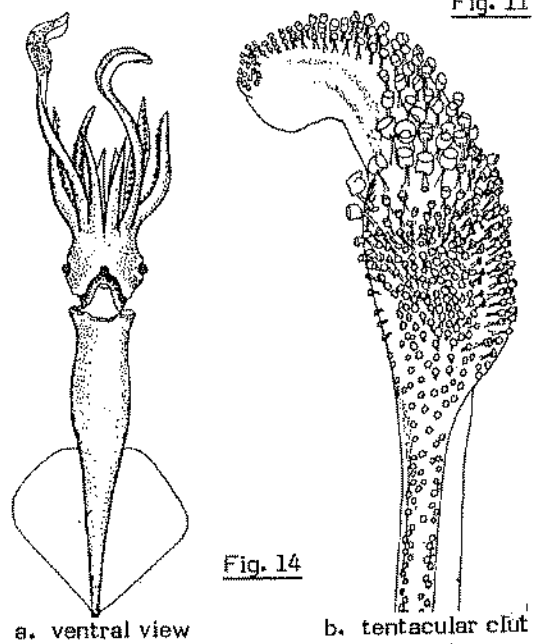


Fig. 14

a. ventral view b. tentacular club

Brachioteuthidae (Brachioteuthis)

9 b. Buccal membrane connectives attach to *the dorsal sides of arms IV** (Fig. 9)

13 a. Ventral surface of eye with a row of photophores (Fig. 15a); buccal membrane with 8 separate lappets ..... Lycoteuthidae

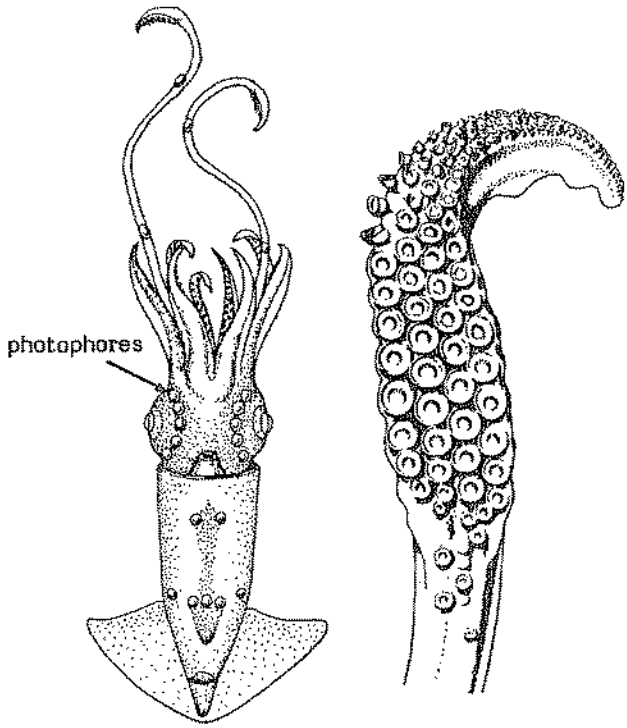
13 b. No photophores on eyes; buccal membrane with 7 lappets or less

14 a. Surface of mantle, head and arms covered with numerous photophores, usually large and distinct (Fig. 16a) ..... Histioteuthidae

14 b. Surface of mantle and head without photophores (arms may have a few photophores)

15 a. Minute suckers present on oral surface of buccal lappets (Fig. 17c) ..... Bathyteuthidae

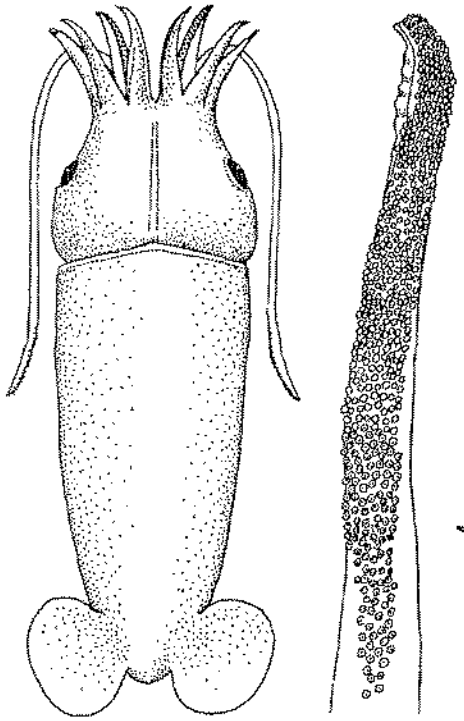
15 b. No suckers on oral surface of buccal lappets



a. ventral view b. tentacular club

Lycoteuthidae (Lycoteuthis)

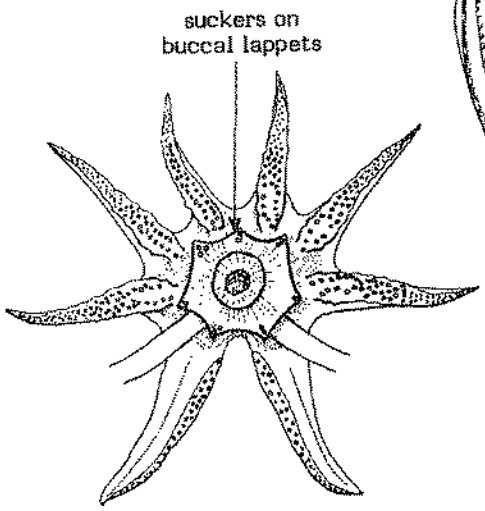
Fig. 15



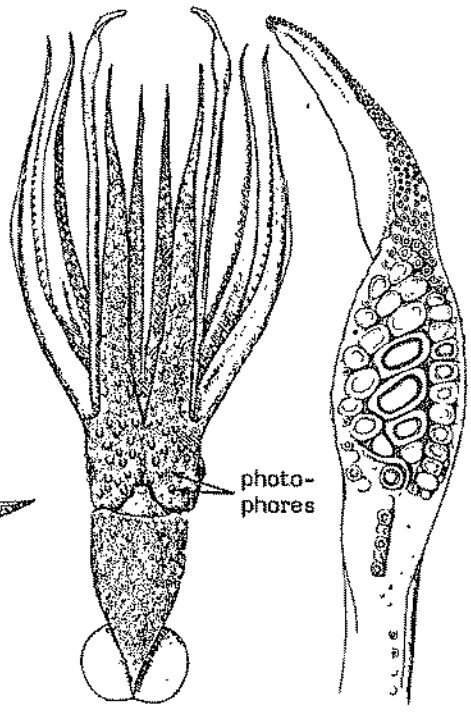
a. dorsal view b. tentacular club

Bathyteuthidae (Bathyteuthis)

Fig. 17



c. oral view of arms and buccal membrane



a. ventral view b. tentacular club

Histioteuthidae (Histioteuthis)

Fig. 16

*This character is difficult to detect in some histioteuthids because of the development of secondary connectives

16 a. Medial posterior borders of fins slightly convex (Fig. 18a); carpal knobs in a single dorsal row or absent (Fig. 18b); small size ..... Neoteuthidae

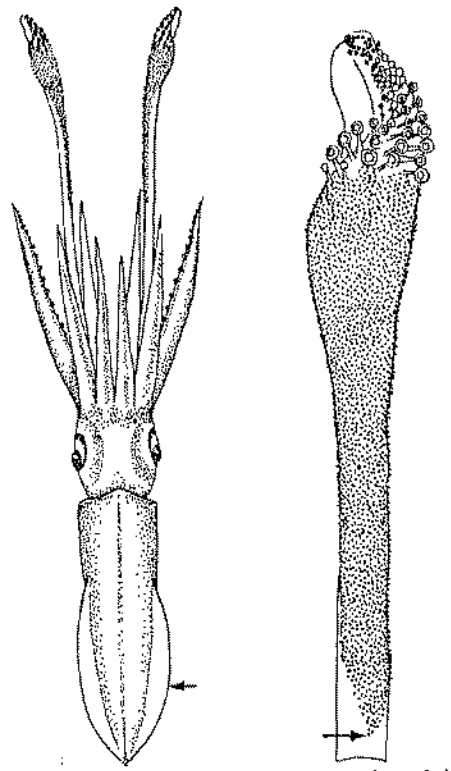
16 b. Medial posterior borders of fins concave (Fig. 19a); carpal knobs in a cluster alternating with carpal suckers (Fig. 19b); attains gigantic size ..... Architeuthidae

6 b. Funnel-mantle locking apparatus not a simple, straight groove and ridge (Fig. 20 a to e)

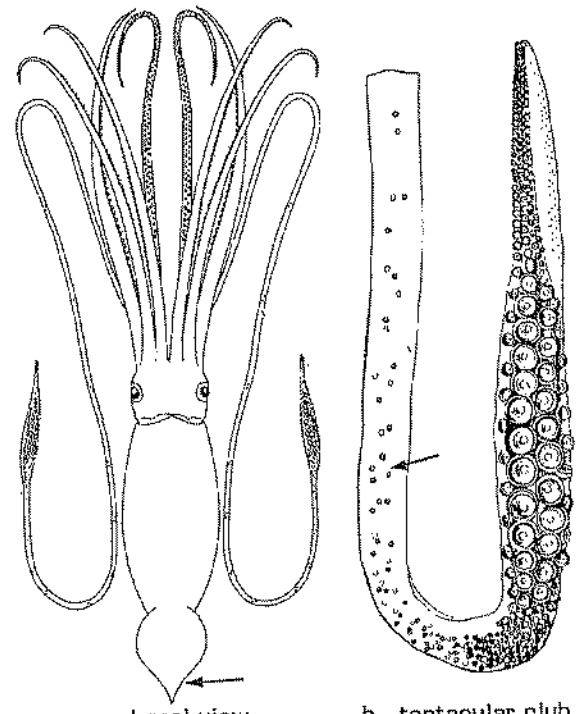
17 a. Funnel locking-cartilage with a longitudinal and a transverse groove, ⊥ -shaped or ⊣ -shaped (Fig. 20a,b)

17 b. (see page 11)

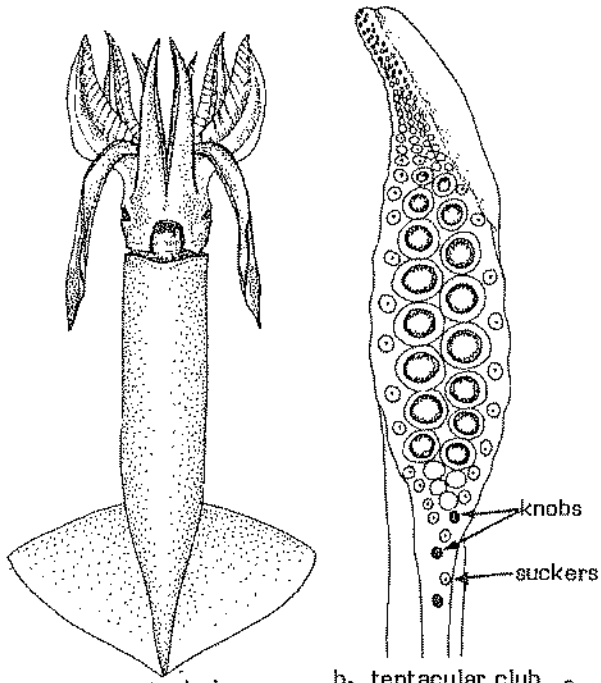
18 a. Funnel locking-cartilage with a longitudinal groove crossed by a transverse groove at its posterior end, ⊥-shaped (Fig. 20b); fins less than 60% of mantle length (Fig. 21) ..... Ommastrephidae



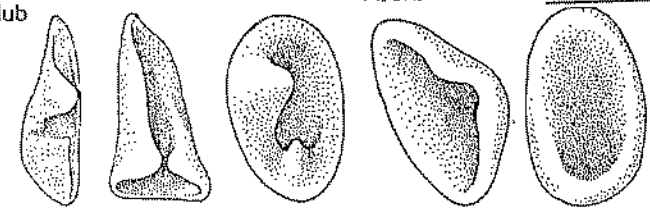
a. dorsal view b. tentacular club
Neoteuthidae (Neoteuthis)
Fig. 18



a. dorsal view b. tentacular club
Architeuthidae (Architeuthis) Fig. 19



a. ventral view b. tentacular club
Ommastrephidae (Ommastrephes)
Fig. 21



a. b. c. d. e. Fig. 20
types of funnel-locking cartilage

18 b. Funnel locking-cartilage with a longitudinal groove from which a shorter groove branches medially, ⊣ -shaped (Fig. 20a); fins more than 80% of mantle length (Fig. 22) ..... Thysanoteuthidae

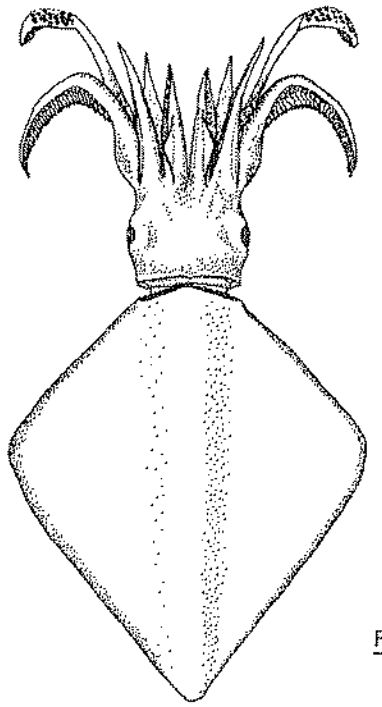
17 b. Funnel locking-cartilage oval, triangular or oval with inward projecting knobs (Fig. 20 c, d and e)

19 a. Funnel locking-cartilage oval with one or two knobs directed toward the centre of the concavity (Fig. 20c)

20 a. Club with only 4 rows of suckers (Fig. 23b) ..... Chiroteuthidae

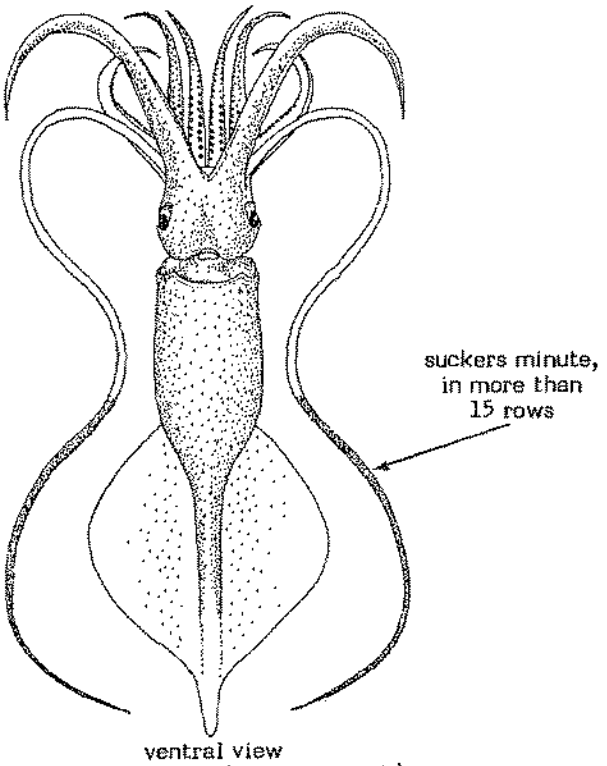
20 b. Club with many (more than 15) rows of minute suckers (Fig. 24) ..... Mastigoteuthidae

19 b. Funnel locking-cartilage oval or subtriangular, without knobs (Fig. 20 d and e)



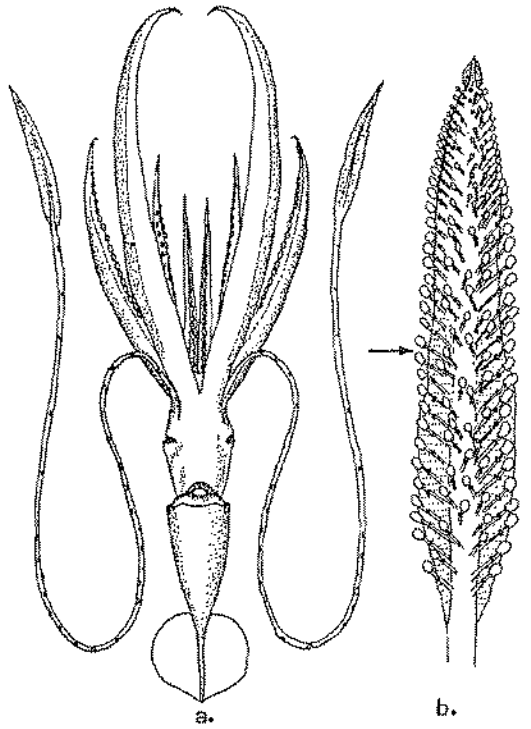
dorsal view
Thysanoteuthidae (Thysanoteuthis)

Fig. 22



ventral view
Mastigoteuthidae (Mastigoteuthis)

Fig. 24



a. ventral view
b. tentacular club
Chiroteuthidae (Chiroteuthis)

Fig. 23

21 a. Sucker on arms in 4 to 6 rows; tail extremely long, greater than the mantle length (Fig. 25) ..... Joubiniteuthidae

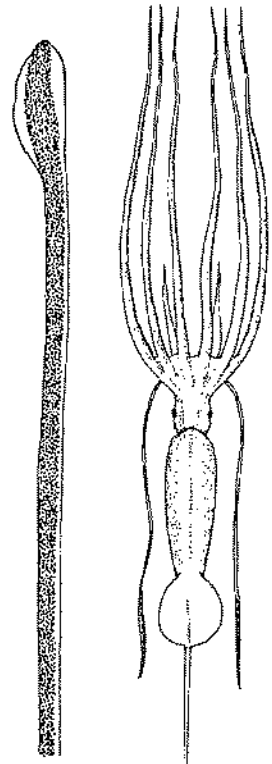
21 b. Suckers on arms in 2 rows; tail short (less than half the mantle length) or absent (Fig. 26) ..... Cycloteuthidae

5 b. Funnel fused to mantle on each side; no funnel -mantle locking apparatus present

22 a. Mantle free dorsally, articulates with head by ridge and groove (Fig. 27) ..... Grimalditeuthidae

22 b. Mantle fused dorsally with head (Fig. 28) ..... Cranchiidae

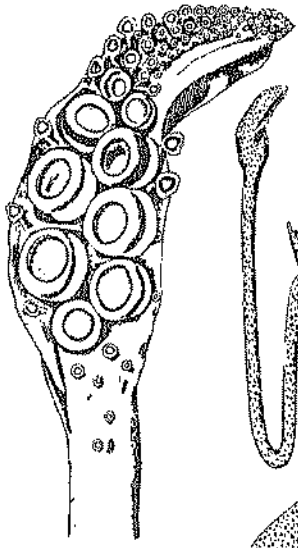
1 b. Eight circumoral appendages; sessile suckers (except Vampyroteuthis) without chitinous rings



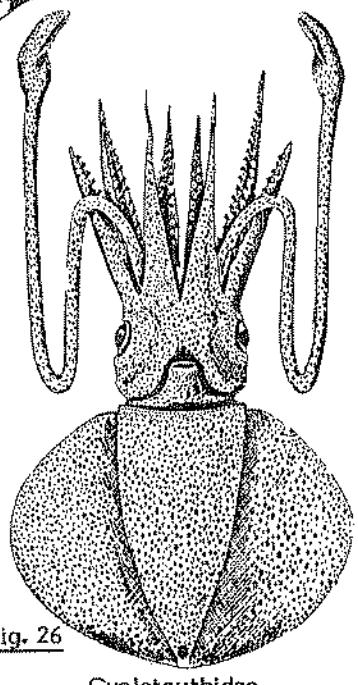
a. tentacular club Joubiniteuthidae

b. dorsal view (Joubiniteuthis)

Fig. 25

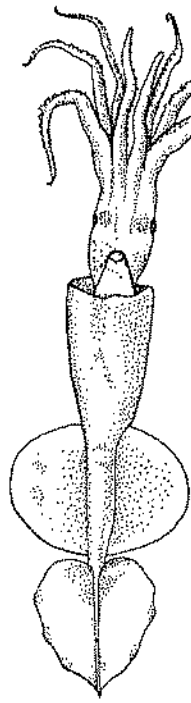


tentacular club



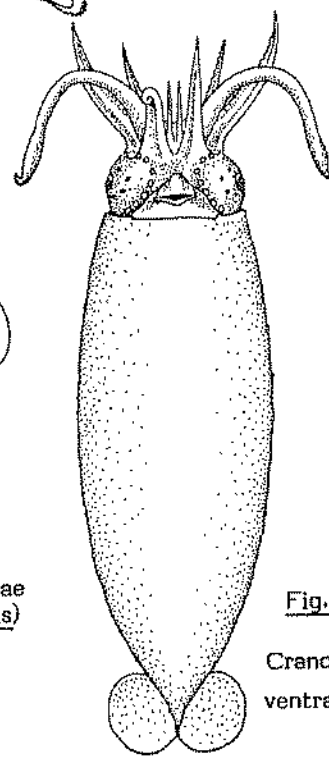
Cycloteuthidae (Discoteuthis)

Fig. 26

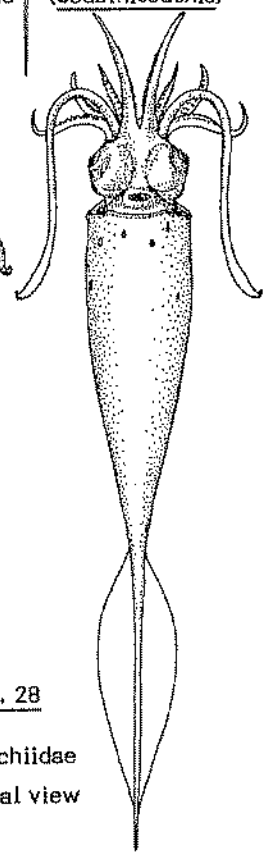


ventral view Grimalditeuthidae (Grimalditeuthis)

Fig. 27



a. (Cranchia)



b. (Galiteuthis)

Fig. 28

Cranchiidae ventral view

23 a. Filament present in pouch between base of arms I and II on dorsal side; light organ present at base of each fin; colour black (Fig. 29) ..... (Vampyromorpha) Vampyroteuthidae

23 b. Both filaments and light organs absent; colour variable to deep maroon, never black

24 a. Cirri present on arms

25 a. Body flattened dorso-ventrally, no prominent mantle and head; fins reduced (Fig. 30) ..... Opisthoteuthidae

25 b. Body oblong; prominent mantle and head; fins prominent (Fig. 31) ..... Cirroteuthidae

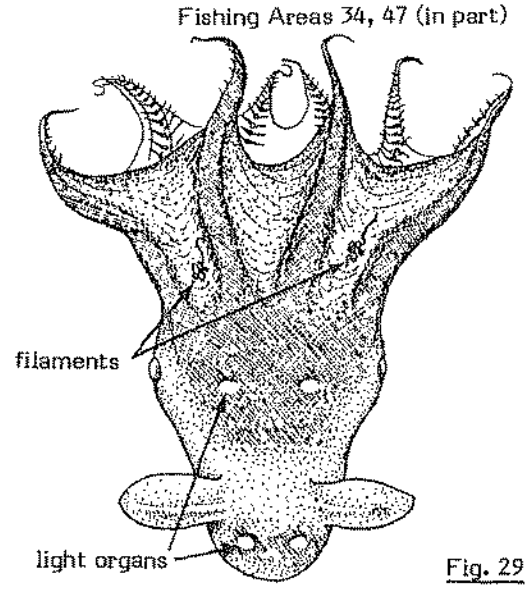
24 b. Cirri absent on arms

26 a. Body gelatinous

27 a. Suckers biserial (Fig. 32) ..... Alloposidae

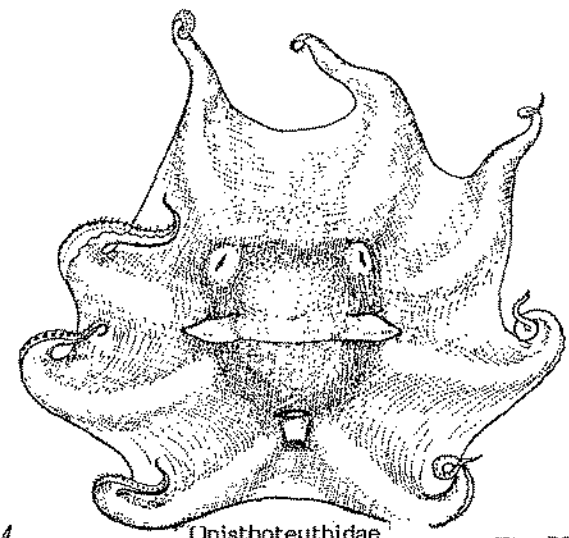
27 b. Suckers uniserial (Fig. 33) ..... Bolitaenidae

26 b. Body firm



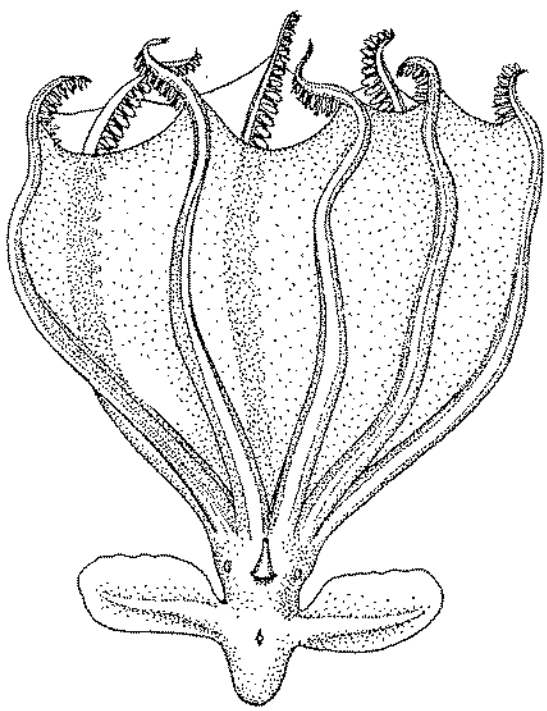
Vampyroteuthidae (Vampyroteuthis)

Fig. 29

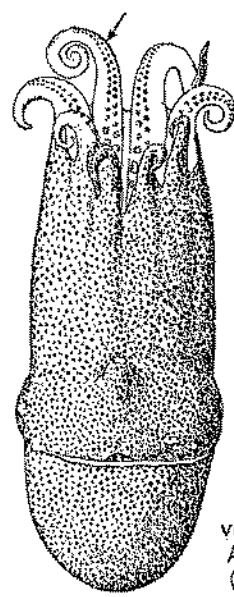


Opisthoteuthidae (Opisthoteuthis)

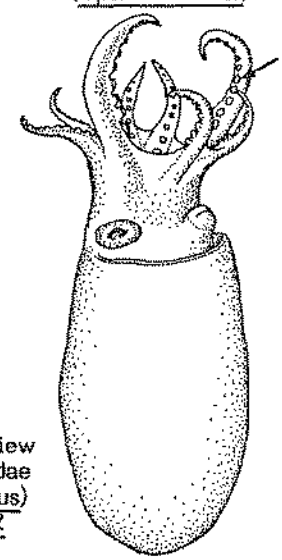
Fig. 30



ventral view
Cirroteuthidae
(Cirrothauma)
Fig. 31



ventral view
Alloposidae
(Alloposus)
Fig. 32



lateral view
Bolitaenidae
(Japetella)

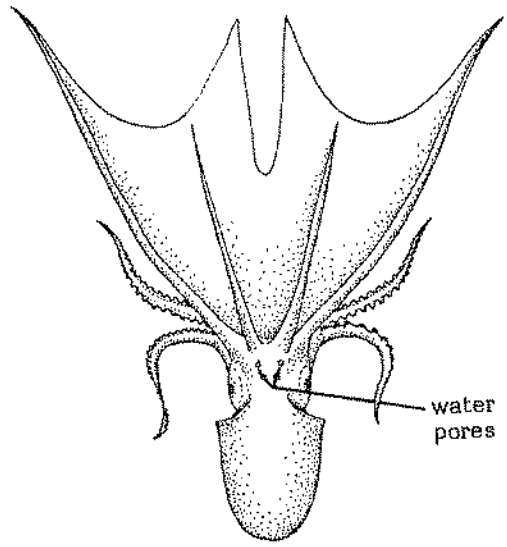
Fig. 33

28 a Water pores present at base of web, both dorsally and ventrally (Fig. 34) ..... Tremoctopodidae

28 b. Water pores absent

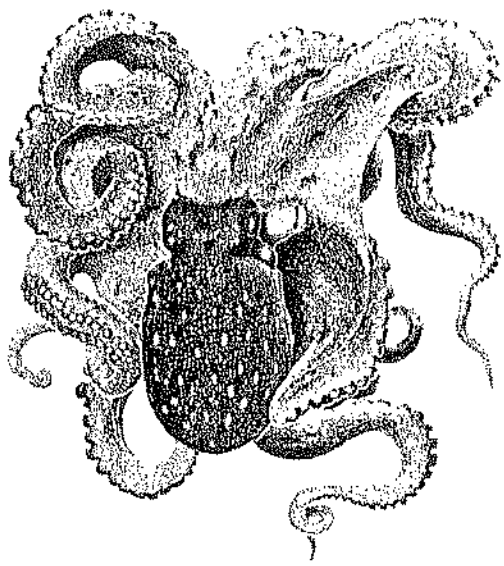
29 a. Males very small (smaller than females); hectocotylus (left third arm) temporarily coiled in sac below eye, with extremely long filamentous tip. Females with dorsal (first) arms each with broad, membranous flap that secrets and holds a thin, shell-like egg case (Fig. 35) ..... Argonautidae

29 b. Males with left or right third arm hectocotylized (never in pocket); with spoon-shaped, non-filamentous tip. Females without dorsal arm flaps; egg case always absent ..... Octopodidae (Fig. 36)



dorsal view of
Tremoctopodidae
(Tremoctopus) ♀

Fig. 34



dorsal view
Octopodidae (Octopus)
Fig. 36

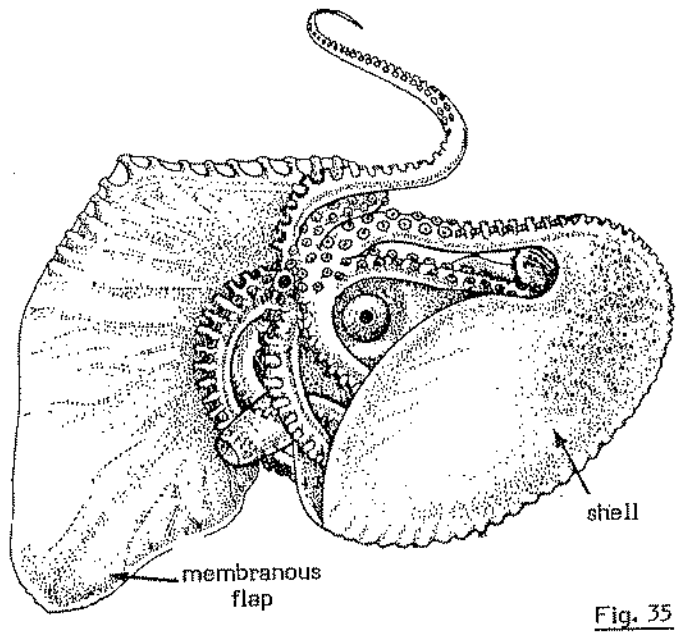


Fig. 35

lateral view of female
Argonautidae (Argonauta)

LIST OF SPECIES OCCURRING IN THE AREA

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

Order Sepioidea	
Family Spirulidae - Ram's horn squids	
Spirula spirula (Linnaeus, 1758)	
Family Sepiidae	SEP
Sepia bertheloti Orbigny, 1838	SEP Sep 2
Sepia elegans Blainville, 1827	SEP Sep 3
Sepia elobyana Adam, 1941	
Sepia officinalis hierredda Rang, 1837	SEP Sep 1
Sepia officinalis officinalis Linnaeus, 1758	SEP Sep 1
Sepia orbignyana Ferussac, 1826	SEP Sep 4
Sepiella ornata (Rang, 1837)	SEP Sepie 1
Family Sepiolidae - Bob-tailed squids	SEPIOL
Subfamily Rossiinae	
Neorossia caroli (Joubin, 1902)	
Rossia macrosoma (Delle Chiaje, 1829)	SEPIOL Ross 1
Subfamily Heteroteuthinae	
Heteroteuthis dispar (Rüppell, 1844)	
Subfamily Sepiolinae	
Rondeletiola minor (Naef, 1912)	
Sepiola atlantica Orbigny, 1839	
Sepiola rondeleti Steenstrup, 1856	
Order Teuthoidea - Suborder Myopsida - Inshore squids	
Family Loliginidae	LOLIG
Alloteuthis africana Adam, 1950	LOLIG Allot 1
Alloteuthis subulata (Lamarck, 1798)	LOLIG Allot 2
Loligo forbesi Steenstrup, 1856	LOLIG Lolig 2
Loligo vulgaris Lamarck, 1798	LOLIG Lolig 1
Lolliguncula mercatoris Adam, 1941	LOLIG Lolligun 2
Order Teuthoidea - Suborder Oegopsida - Oceanic squids	
Family Lycoteuthidae	
Lampadioteuthis megaleia Berry, 1916	
Lycoteuthis diadema (Chun, 1900)	
Oregoniateuthis lorigera (Steenstrup, 1875)	

Family Enoploteuthidae

Abralia veranyi (Rüppell, 1844)

Abraliopsis pfefferi Joubin, 1896
Abraliopsis sp.

Ancistrochirus lesueuri (Orbigny, 1839)

Enoploteuthis anapsis Roper, 1964
Enoploteuthis leptura (Leach, 1817)

Pterygioteuthis gemmata Chun, 1908
Pterygioteuthis giardi Fischer, 1895

Pyroteuthis margaritifera (Rüppel, 1844)

Family Octopoteuthidae

Octopoteuthis danae Joubin, 1931
Octopoteuthis megaptera (Verrill, 1885)
Octopoteuthis sicula Rüppell, 1844

Taningia danae Joubin, 1931

Family Onychoteuthidae ONYCHO

Ancistroteuthis lichtensteini (Orbigny, 1839) ONYCHO Anc 1

Chaunoteuthis mollis Appellöf, 1890

Moroteuthis robsoni Adam, 1962
Moroteuthis aequatorialis Thiele, 1921

Onychoteuthis banksi (Leach, 1817) ONYCHO Ony 1

Onykia appellöfi (Pfeffer, 1900)

Family Cycloteuthidae

Cycloteuthis sirventi Joubin, 1919

Discoteuthis discus Young & Roper, 1969
Discoteuthis laciniosa Young & Roper, 1969

Family Lepidoteuthidae

Lepidoteuthis grimaldii Joubin, 1895

Pholidoteuthis adami Voss, 1956

Tetronychoteuthis dussumieri (Orbigny, 1839)

Family Architeuthidae

Architeuthis dux Steenstrup, 1857

Family Histioteuthidae	
Histioteuthis bonnelli (Ferussac, 1835)	
Histioteuthis bruuni Voss, 1970	
Histioteuthis celetaria (Voss, 1960)	
Histioteuthis corona (Voss & Voss, 1962)	
Histioteuthis dofleini (Pfeffer, 1912)	
Histioteuthis elongata (Voss & Voss, 1962)	
Histioteuthis meleagroteuthis (Chun, 1910)	
Histioteuthis reversa (Verrill, 1880)	
Family Neoteuthidae	
Neoteuthis sp.	
Family Bathyteuthidae	
Bathyteuthis abyssicola Hoyle, 1885	
Family Ctenopterygidae	
Ctenopteryx sicula (Verany, 1851)	
Family Brachioteuthidae	
Brachioteuthis picta Chun, 1910	
Brachioteuthis riisei (Steenstrup, 1882)	
Family Ommastrephidae	OMMAS
Hyaloteuthis pelagica (Bosc, 1802)	
Illex coindetii (Verany, 1837)	OMMAS Ill 1
Ommastrephes bartrami (LeSueur, 1821)	OMMAS Ommas 2
Ommastrephes caroli (Furtado, 1887)	
Ommastrephes pteropus Steenstrup, 1855	OMMAS Ommas 3
Ornithoteuthis antillarum Adam, 1957	OMMAS Orni 1
Todarodes sagittatus angolensis Adam, 1962	OMMAS Todarod 1
Todarodes sagittatus sagittatus (Lamarck, 1799)	OMMAS Todarod 1
Todaropsis eblanae (Ball, 1841)	OMMAS Todarop 1
Family Thysanoteuthidae	THYSANO
Thysanoteuthis rhombus Troschel, 1857	THYSANO Thysano 1
Family Chiroteuthidae	
*Chiroteuthis spp.	
Valbyteuthis danae Joubin, 1931	
Family Mastigoteuthidae	
Echinoteuthis danae Joubin, 1933	

*Several species occur throughout the area; this deep-sea family currently is being revised by Roper & Young

Mastigoteuthis agassizi Verrill, 1881
Mastigoteuthis cordiformis Chun, 1908
Mastigoteuthis flammea Chun, 1908
Mastigoteuthis glaucopsis Chun, 1908
Mastigoteuthis grimaldii (Joubin, 1895)
Mastigoteuthis hjorti Chun, 1913
Mastigoteuthis magna Joubin, 1913
Mastigoteuthis schmidti Degner, 1925
Mastigoteuthis talismani (Fischer & Joubin, 1906)

Family Grimalditeuthidae

Grimalditeuthis bomplandi (Verany, 1837)

Family Joubiniteuthidae

Joubiniteuthis portieri (Joubin, 1912)

Family Cranchiidae*

Bathothauma lyromma Chun, 1906

Cranchia scabra Leach, 1817

Egea inermis Joubin, 1933

Galiteuthis armata Joubin, 1898

Helicocranchia pfefferi Massy, 1907

Leachia cyclura LeSueur, 1821

Liocranchia reinhardti (Steenstrup, 1856)

Megalocranchia maxima Pfeffer, 1884

Taonius pavo (LeSueur, 1821)

Teuthowenia megalops (Prosch, 1849)

Order Octopoda - Octopuses

Family Cirroteuthidae

Cirroteuthis mulleri Eschricht, 1838

Stauroteuthis syrtensis Verrill, 1879

Family Opisthoteuthidae

Opisthoteuthis agassizi Verrill, 1883

Family Bolitaenidae

Eledonella pygmaea Verrill, 1884

Japetella diaphana Hoyle, 1885

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*This very speciose family currently is being revised by N.A. Voss

FAO Sheets | CEPHALOPODS | Fishing Areas 34, 47 (in part)

Family Alloposidae

Alloposus mollis Verrill, 1880

Family Octopodidae — OCT

Bathypolypus arcticus (Prosch, 1849)

Benthoctopus januari (Hoyle, 1885)

Danoctopus schmidti Joubin, 1933

Octopus defilippi Verany, 1851
Octopus macropus Risso, 1826 — OCT Oct 2
Octopus vulgaris Cuvier, 1797 — OCT Oct 1

Pteroctopus tetracirrhus (Delle Chiaje, 1830)

Scaeurgus unicirrhus (Orbigny, 1840)

Family Tremoctopodidae

Tremoctopus gelatus Thomas, 1977
Tremoctopus violaceus Delle Chiaje, 1830

Family Argonautidae

Argonauta argo Linnaeus, 1758
Argonauta hians Solander, 1786

Order Vampyromorpha - Vampire squids

Family Vampyroteuthidae

Vampyroteuthis infernalis Chun, 1903

Prepared by C.F.E. Roper and M.J. Sweeney, National Museum of Natural History, Smithsonian Institution, Washington, D.C., U.S.A.

Part of the illustrations based on material provided by authors; others taken from: FAO Species Identification Sheets, Western Central Atlantic

LOLIG

1981

FAO SPECIES IDENTIFICATION SHEETS

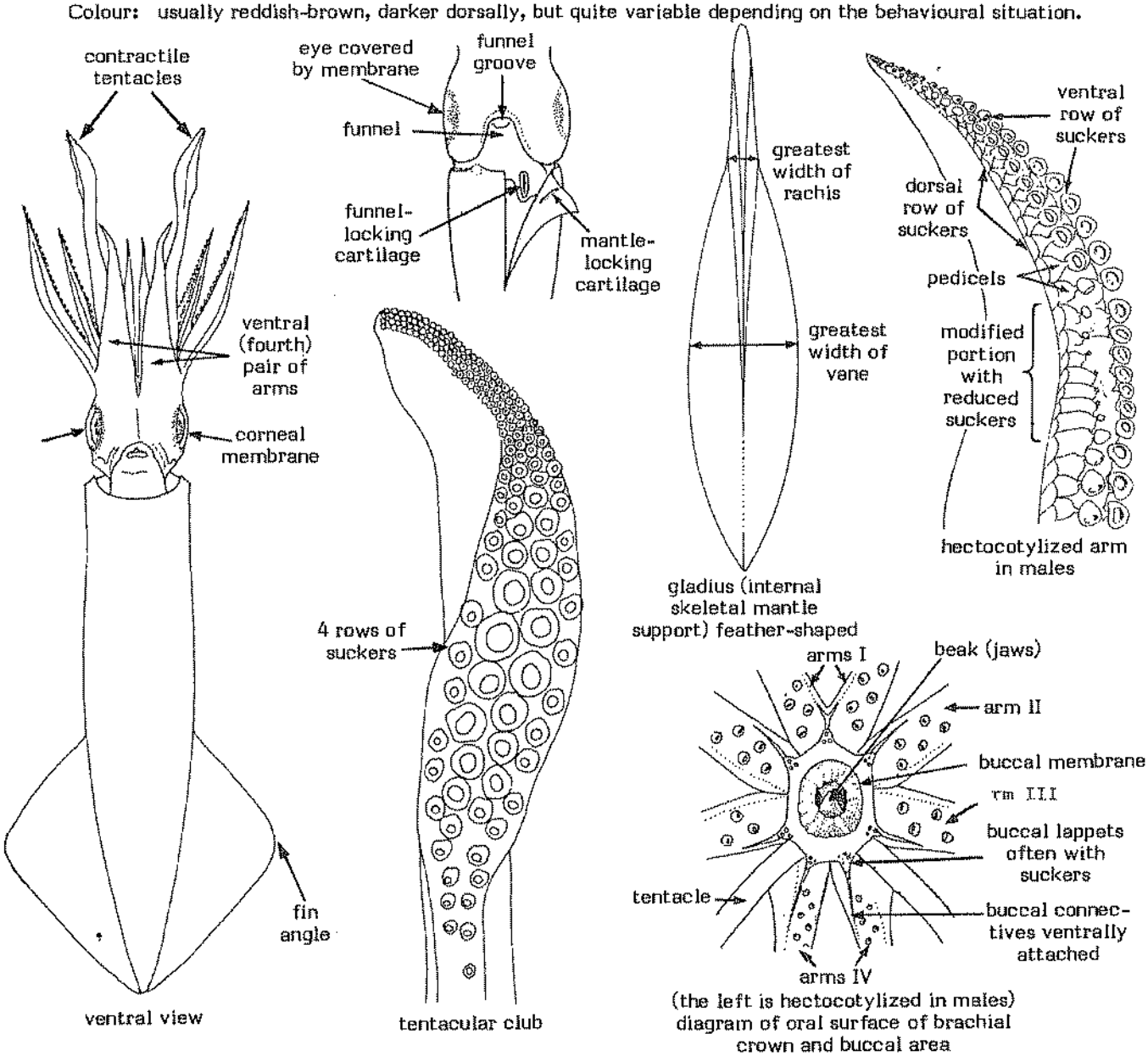
FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

LOLIGINIDAE

Inshore squids

Shape variable from short and stout to long and slender; fins terminal or marginal, but always united posteriorly; funnel-locking apparatus a simple, straight groove; eyes covered with transparent skin (corneal membrane); buccal connectives attached to ventral borders of fourth arms; 7 buccal lappets supplied with small suckers (except in Loliguncula and Alloteuthis); 8 arms and 2 tentacles around mouth; 2 rows of suckers on arms and 4 rows on tentacular clubs, hooks never present. Usually the left arm of the fourth (ventral) pair is hectocotylized in males (used to transfer sperm packets from the male to the female); the structure of the modified portion (hectocotylus) of the arm is useful in most species as a diagnostic character (often, the suckers on the hectocotylus are reduced in size or number, or modified into fleshy papillae or flaps (lamellae), or they disappear altogether).

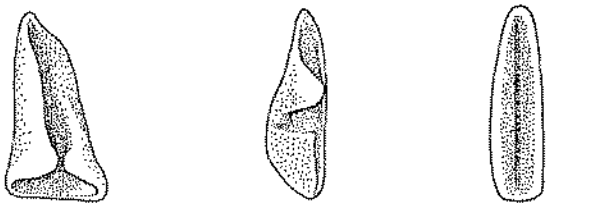
Colour: usually reddish-brown, darker dorsally, but quite variable depending on the behavioural situation.



The Loliginidae are medium-sized squids (to about 40 cm mantle length) occurring world-wide along the coastal margins and continental shelf, primarily in warmer to temperate waters; they form one of the major groups of commercially utilized cephalopods. Various species occur from very shallow water in bays and estuaries, over grass flat and coral reefs, to water as deep as 400 m (during seasonal offshore migrations). Eggs usually are attached to hard surfaces in large, finger-like masses ("seamops") in shallow water; larvae resemble the adults. Certain species support extensive fisheries in several parts of the world, as the flesh is of excellent quality. The combined catches of Loligo species in Fishing Area 34 totalled about 15 000 t in 1978.

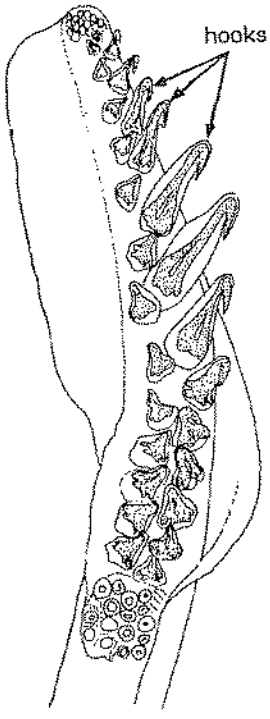
SIMILAR FAMILIES OCCURRING IN THE AREA:

Other teuthoid families which include commercial sized species of present potential interest to fisheries (Onychoteuthidae, Thysanoteuthidae, Lepidoteuthidae, Ommastrephidae) all lack suckers on the buccal lappets and have eyes open to the sea, not covered by a transparent corneal membrane. Furthermore: the funnel-locking apparatus is ⊥-shaped in Ommastrephidae and ⊣-shaped in Thysanoteuthidae; there are hooks on the tentacular clubs in Onychoteuthidae, and the mantle is covered with small integumentary scales in Lepidoteuthidae.



-shaped Ommastrephidae | -shaped Thysanoteuthidae | simple, straight **Loliginidae**

basic types of funnel-locking apparatus



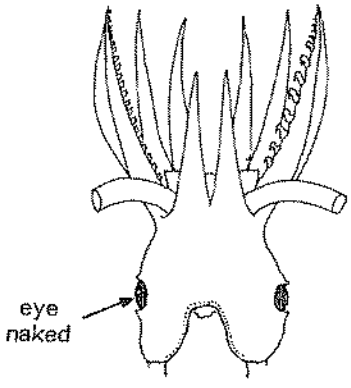
Onychoteuthis

tentacular club

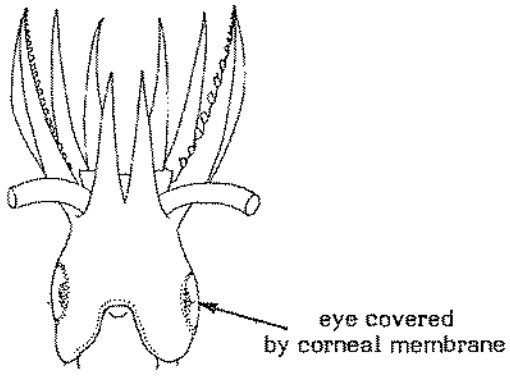


Lepidoteuthidae

types of scales



Ommastrephidae, and other commercial squid families



Loliginidae

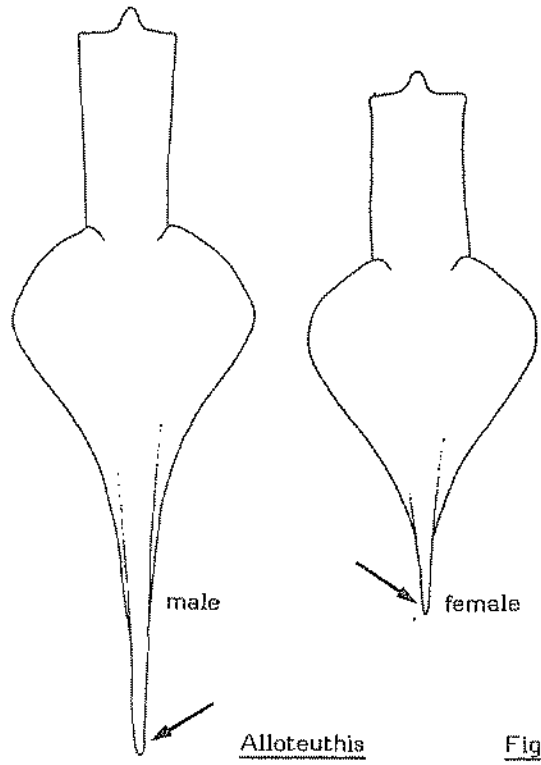
KEY TO GENERA OCCURRING IN THE AREA:

1 a. Posterior end of mantle drawn out into a long tail (Fig. 1); gladius long, narrow ..... Alloteuthis

1 b. Posterior end of mantle bluntly pointed or broadly rounded, not drawn out into a long tail (Figs. 2,3); vane of gladius broad with curved borders

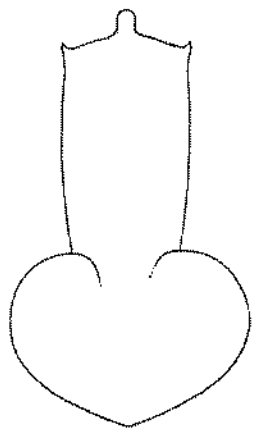
2 a. Fins terminal, elliptical, relatively short (Fig. 2); spermatophore pad of females located in mantle cavity near gills; buccal lappets without suckers .. Lolliguncula

2 b. Fins lateral, more or less rhomboidal, relatively long (Fig. 3); spermatophore pad of females located on buccal membrane; buccal lappets with suckers ..... Loligo

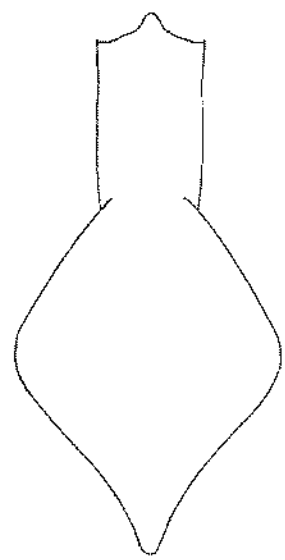


Alloteuthis Fig. 1

dorsal view of mantle and fins



Lolliguncula Fig. 2



Loligo Fig. 3

LIST OF SPECIES OCCURRING IN THE AREA:

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

Alloteuthis africana Adam, 1950	LOLIG Allot 1
Alloteuthis subulata (Lamarck, 1798)	LOLIG Allot 2
Loligo forbesi Steenstrup, 1856	LOLIG Lolig 2
Loligo vulgaris Lamarck, 1798	LOLIG Lolig 1
Lolliguncula mercatoris Adam, 1941	LOLIG Lolligun 2

Prepared by C.F.E. Roper and M.J. Sweeney, National Museum of Natural History, Smithsonian Institution, Washington, D.C., U.S.A.

LOLIG Allot 1

1981

FAO SPECIES IDENTIFICATION SHEETS

FAMILY : LOLIGINIDAE

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

Alloteuthis africana Adam, 1950

OTHER SCIENTIFIC NAMES STILL IN USE : None

VERNACULAR NAMES:

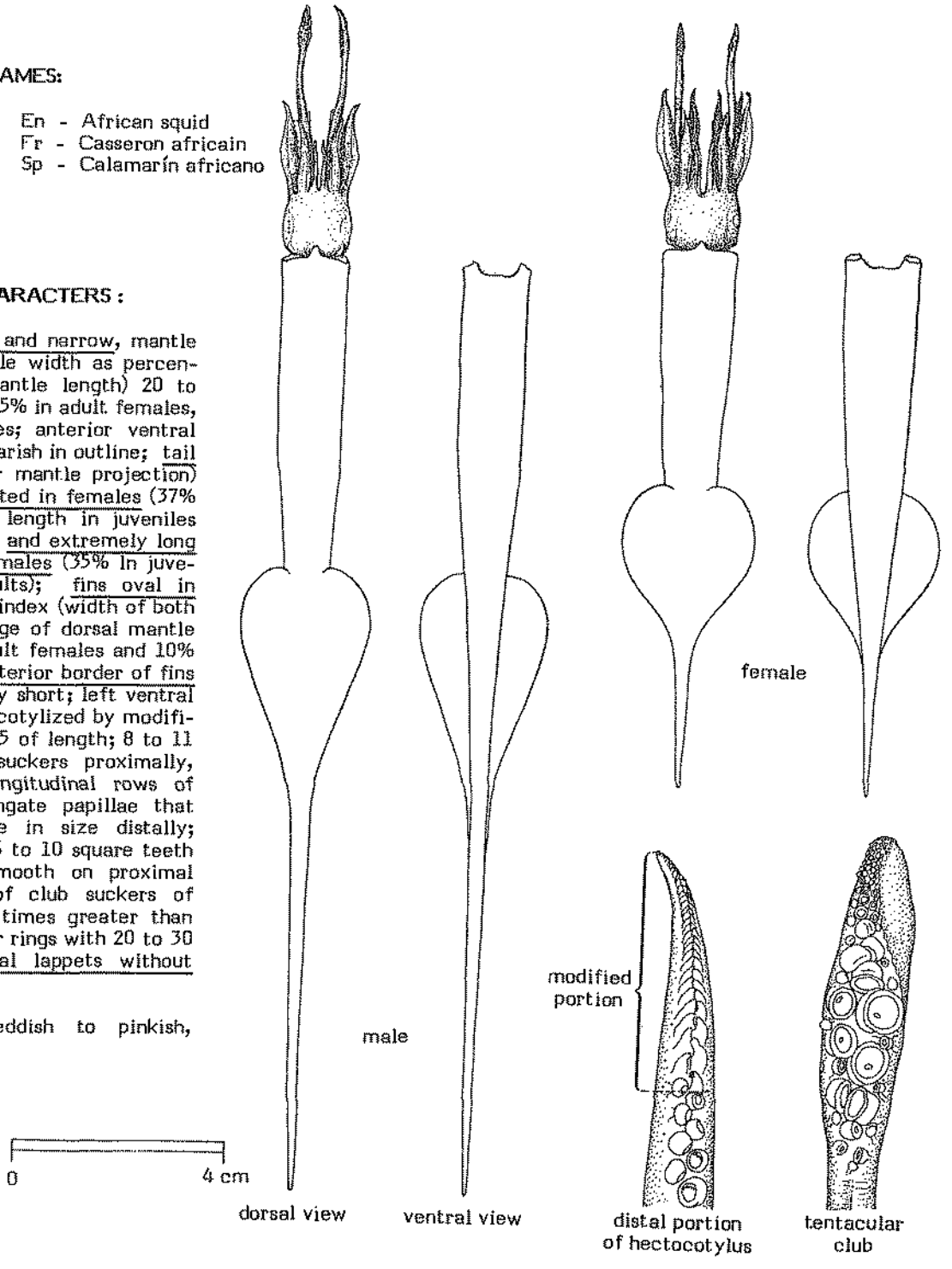
FAO : En - African squid
Fr - Casseron africain
Sp - Calamarín africano

NATIONAL :

DISTINCTIVE CHARACTERS :

Mantle long and narrow, mantle width index (mantle width as percentage of dorsal mantle length) 20 to 25% in juveniles, 15% in adult females, 5% in adult males; anterior ventral mantle margin squarish in outline; tail (fins and posterior mantle projection) very long and pointed in females (37% of dorsal mantle length in juveniles and 58% in adults) and extremely long and spike-like in males (35% in juveniles, 73% in adults); fins oval in outline, fin width index (width of both fins as a percentage of dorsal mantle length) 23% in adult females and 10% in adult males; posterior border of fins concave; arms very short; left ventral (fourth) arm hectocotylized by modification of distal 2/5 of length; 8 to 11 pairs of normal suckers proximally, followed by 2 longitudinal rows of more or less elongate papillae that gradually decrease in size distally; arm suckers with 6 to 10 square teeth on distal half, smooth on proximal half; diameter of club suckers of median 2 rows 3 times greater than lateral ones, sucker rings with 20 to 30 blunt teeth; buccal lappets without suckers.

Colour: reddish to pinkish, darker dorsally.

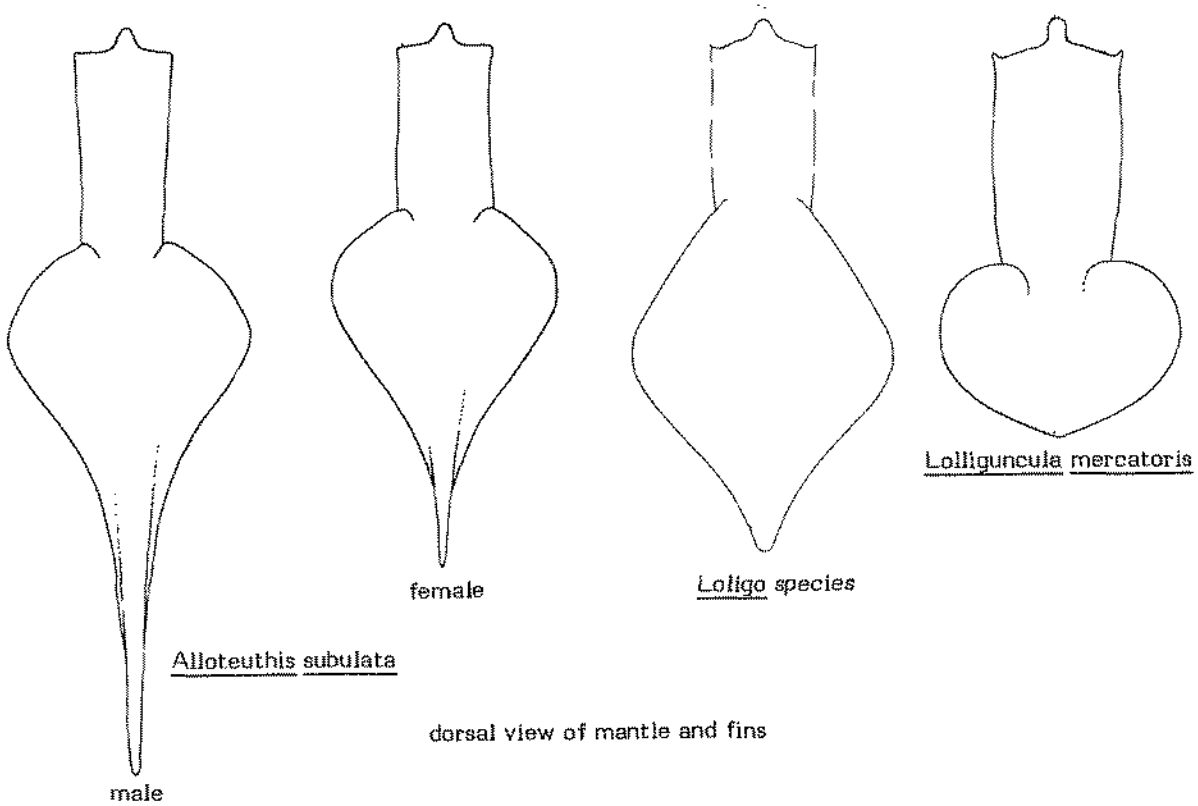


DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Alloteuthis subulata (juveniles closely resemble A. africana): fins wider, forming an angle laterally; arms longer; tail of males not excessively longer than that of females.

Loligo species: posterior part of mantle not drawn out into a long tail; buccal lappets bearing suckers.

Lolliguncula mercatoris: mantle short, broad; fins rounded, short, terminal, their posterior borders convex.



Alloteuthis subulata

dorsal view of mantle and fins

SIZE:

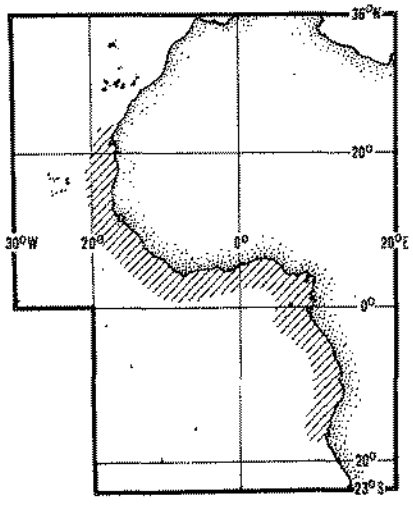
Maximum: males to 19 cm mantle length, females to 9 cm mantle length.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

In the area, found from Senegal to Southern Angola (from about 25°N to 15°S).

A neritic species associated with the bottom where spawning takes place.

Feeds on small and juveniles fishes.



PRESENT FISHING GROUNDS:

No specific fishery in the area; but probably caught as bycatch in shelf waters.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught with trawls as bycatch.

LOLIG Allot 2

1981

FAO SPECIES IDENTIFICATION SHEETS

FAMILY : LOLIGINIDAE

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

Alloteuthis subulata (Lamarck, 1798)

OTHER SCIENTIFIC NAMES STILL IN USE : None

VERNACULAR NAMES:

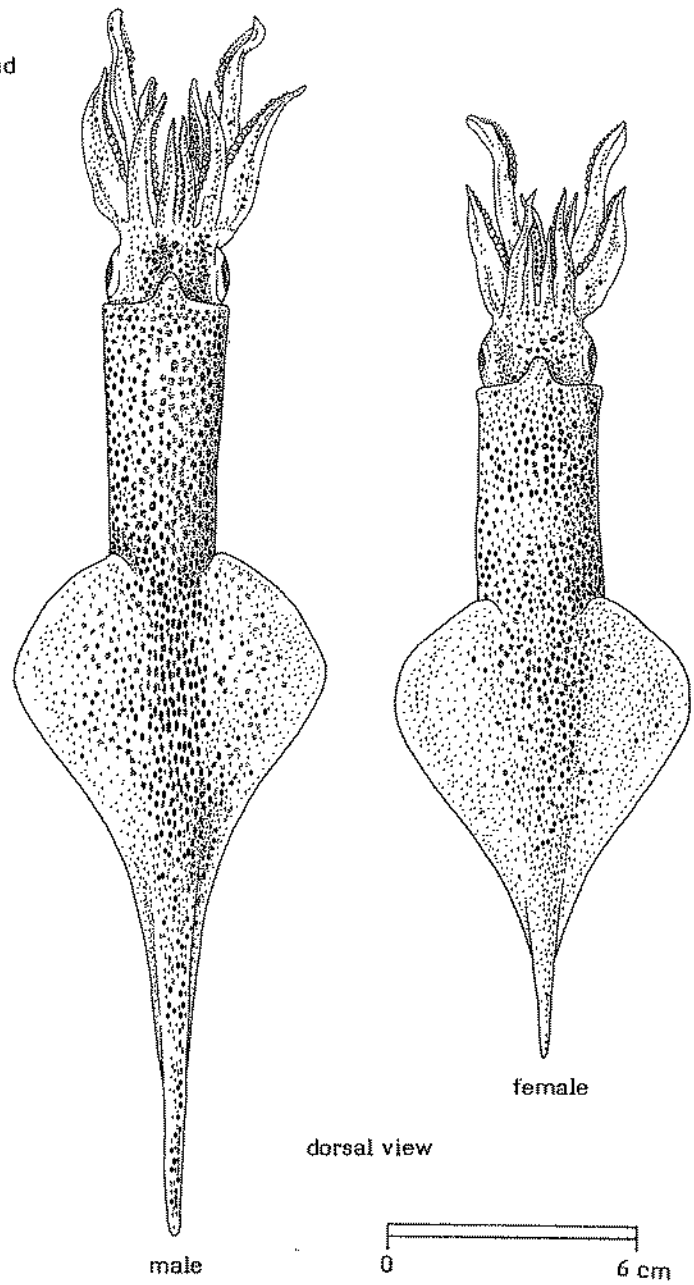
FAO : En - European common squid
Fr - Casseron commun
Sp - Calamarin comun

NATIONAL :

DISTINCTIVE CHARACTERS :

Mantle long and narrow, anterior ventral mantle margin shallowly curved; tail long and pointed in adult females (length of posterior extention plus fins 66% of dorsal mantle length) and very long and spike-like in adult males (72% of dorsal mantle length); fins rhombic with pointed lateral angles, their posterior borders concave and extending along tail; arms are medium to short; left ventral (fourth) arm hectocotylized, with 6 to 8 pairs of normal suckers proximally, followed distally by 2 longitudinal rows of fine papillae; buccal lappets without suckers.

Colour: reddish to pinkish, darker dorsally.

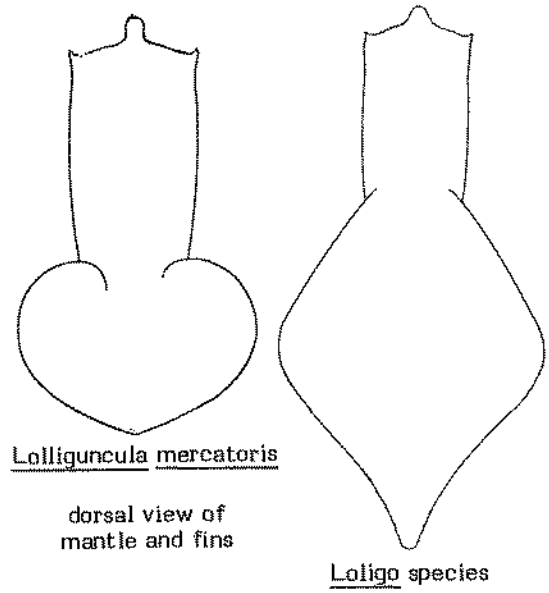


DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Alloteuthis africana: fins oval to heart-shaped; anterior ventral mantle margin square in outline; arms very short.

Loligo species: posterior part of mantle not drawn out into tail; buccal lappets bearing suckers.

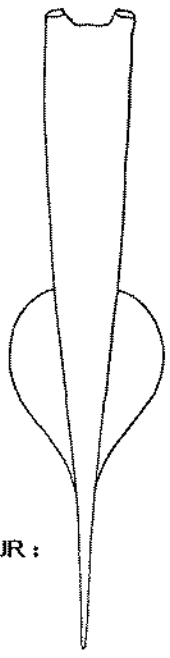
Lolliguncula mercatoris: mantle short, broad; fins short, rounded, terminal, their posterior borders convex.



Lolliguncula mercatoris

dorsal view of mantle and fins

Loligo species



Alloteuthis africana

ventral view of mantle and fins

SIZE :

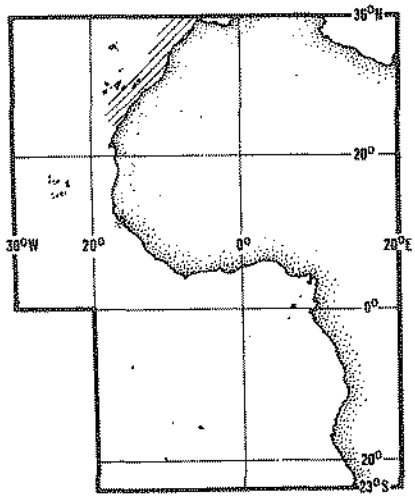
Maximum: males to 16 cm mantle length, females to 12 cm mantle length.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

In the area found from the Straits of Gibraltar to about 24°N; northward extending into the Mediterranean Sea, along the western coast of Europe and to the North Sea.

A neritic species (in waters over the continental shelf), associated with the bottom where the egg masses are laid, attached to hard objects.

Feeds on small and juveniles fishes.



PRESENT FISHING GROUNDS :

There is no special fishery for this species in Fishing Area 34. Captured in the Mediterranean Sea between 20 and 120 m depth over sandy-muddy bottoms.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Caught as bycatch in trawl fisheries.

Marketed fresh and frozen.

LOLIG Lolig 1

1981

FAO SPECIES IDENTIFICATION SHEETS

FAMILY : LOLIGINIDAE

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

Loligo vulgaris Lamarck, 1798

OTHER SCIENTIFIC NAMES STILL IN USE : None

VERNACULAR NAMES:

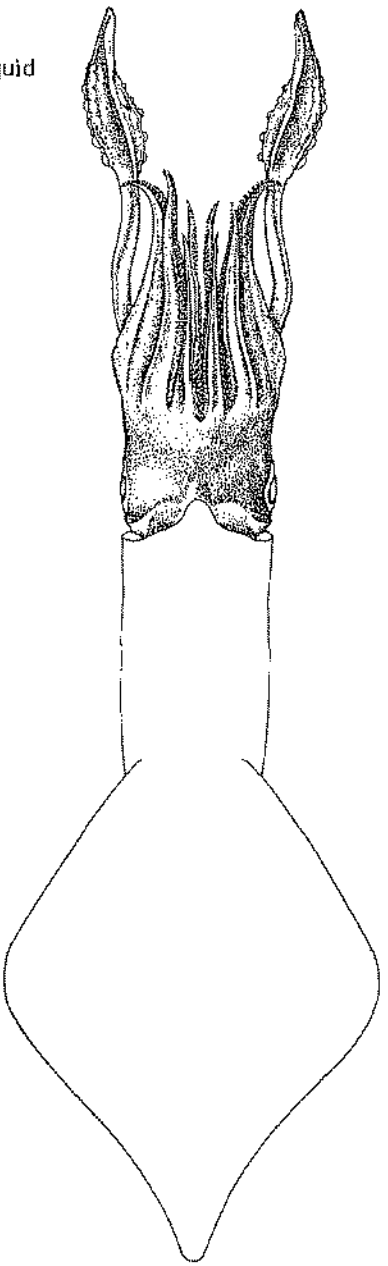
FAO : En - European squid
Fr - Encornet
Sp - Calamar

NATIONAL :

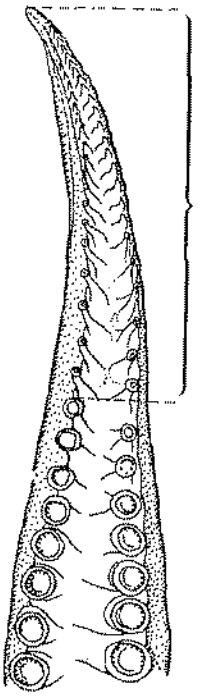
DISTINCTIVE CHARACTERS :

Mantle long, moderately slender, cylindrical; fins rhomboid, their length two thirds that of mantle, their posterior border slightly concave; left ventral arm (fourth) hectocotylized along its distal third to fourth by modification of suckers into papillae that decrease in size distally; arm sucker rings with 20 teeth, distal ones large and pointed, proximal ones minute or absent; manus of club with 4 longitudinal rows of suckers, the 2 median rows with 6 enlarged suckers each; sucker rings of median rows on manus with approximately 30 irregularly-sized teeth; dactylus with about 20 transverse rows of minute suckers; suckers present on buccal lappets; spermatophore pad located on buccal membrane.

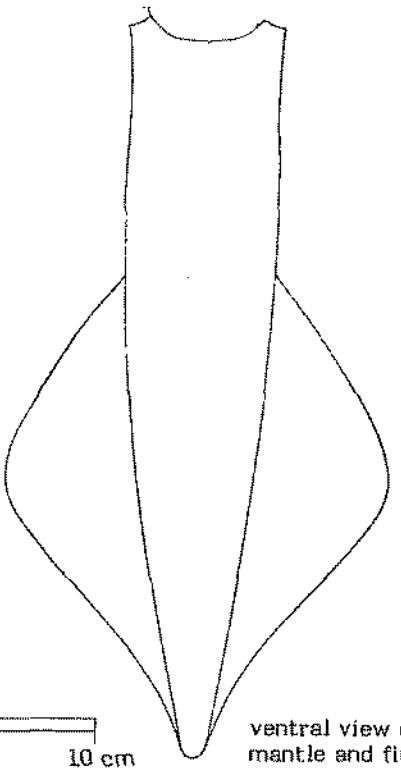
Colour: reddish to pinkish, darker dorsally.



dorsal view



hectocotylus and distal portion
of left arm IV



ventral view of
mantle and fins

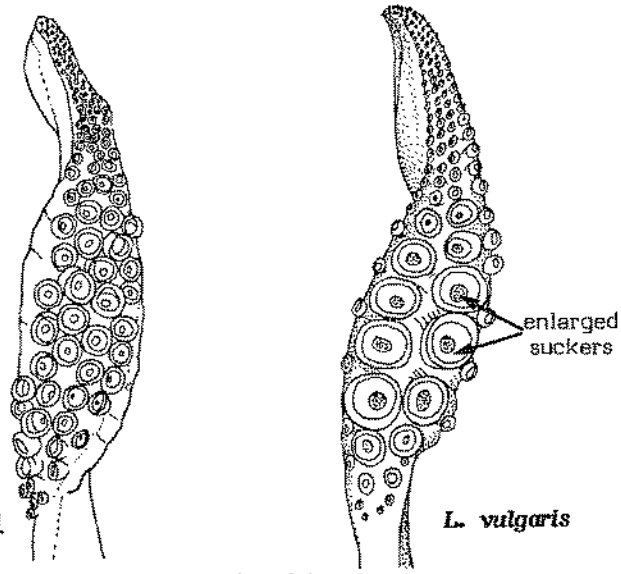
0 10 cm

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Loligo forbesi: suckers in median longitudinal 2 rows on manus subequal with laterals; head and eyes much larger; mantle wider.

Lolliguncula mercatoris: fins short, rounded, terminal, their posterior borders convex; spermatophore pad located in mantle cavity near gill.

Alloteuthis species: posterior end of mantle drawn out into elongate, pointed tail; no suckers on buccal lappets.



SIZE :

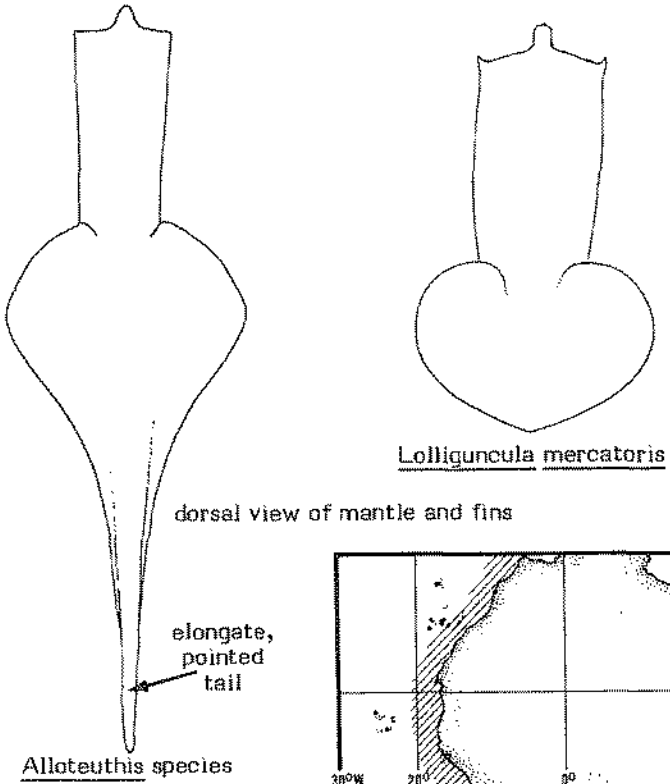
Maximum: males to 42 cm mantle length, females to 32 cm mantle length; weight up to 1.5 kg.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Found throughout the area. Also in the Mediterranean and northward to the British Isles; southward to 25°S.

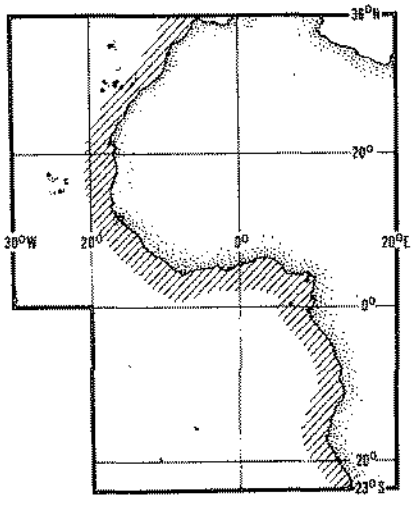
A neritic species living from surface waters to 500 m depth (mostly between 20 and 250 m), migrating inshore to spawn. Males reach maturity in about 10 months (at 13 cm mantle length), with about 800 spermatophores and have a life span of 3 years; females mature in 12 months (at 16 cm mantle length), produce up to 20 000 eggs of 2 mm in diameter and have a life span of 2 years; the spawning season starts in late winter and ends in early autumn; the eggs are attached to hard debris on sandy and muddy bottoms; hatching occurs in 18 to 45 days depending on the temperature.

Feeds on small and juvenile fishes.



PRESENT FISHING GROUNDS :

Mainly Spanish Sahara over sandy bottoms (from 20 to 60 m depth) but maximum catches over sandy mud bottoms (from 80 to 130 m depth); size of individuals increases with depth.



CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Caught by medium to large stern trawlers (mostly from 7 to 10 a.m. and 2 to 6 p.m.).

Marketed fresh and frozen.

LOLIG Lolig 2

1981

FAO SPECIES IDENTIFICATION SHEETS

FAMILY : LOLIGINIDAE

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

Loligo forbesi Steenstrup, 1856

OTHER SCIENTIFIC NAMES STILL IN USE : None

VERNACULAR NAMES:

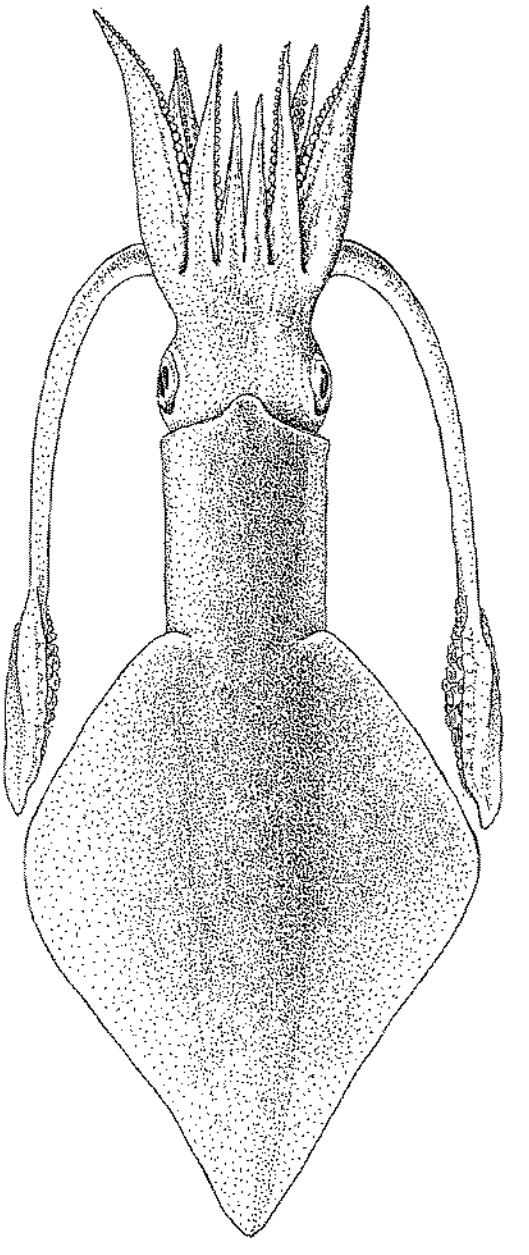
FAO : En - Forbes' squid
Fr - Encornet de Forbes
Sp - Calamar de Forbes

NATIONAL :

DISTINCTIVE CHARACTERS :

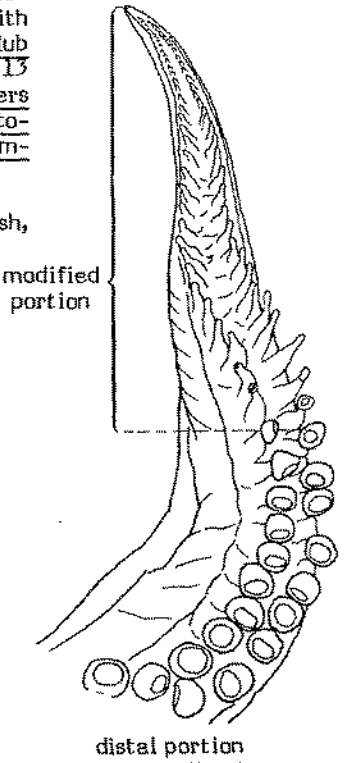
Mantle long, moderately slender, cylindrical; fins rhomboid, their length three quarters that of mantle, their posterior borders slightly concave; left ventral (fourth) arm hectocotylized in its distal third by modification of suckers into long papillae which gradually decrease in size distally; largest arm sucker rings with 7 or 8 teeth; suckers on manus of club subequal in size; sucker rings with 13 to 18 sharp, conical teeth; suckers present on buccal lappets; spermatophore pad located on buccal membrane.

Colour: reddish to pinkish, darker dorsally.



dorsal view





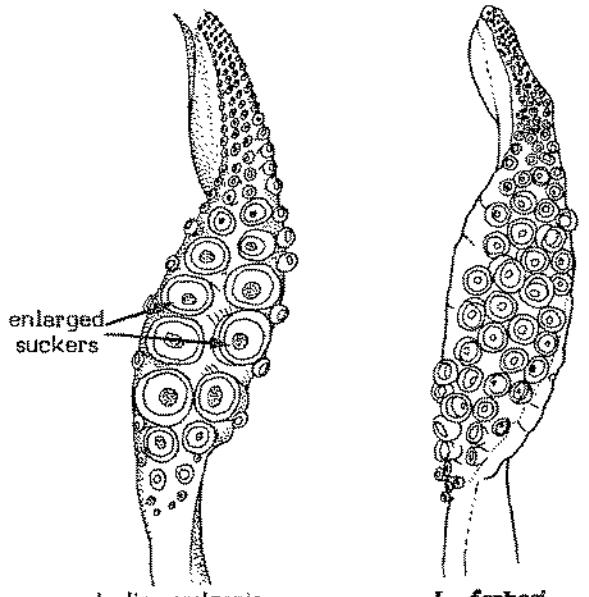
distal portion
of hectocotylized arm

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Loligo vulgaris: suckers in median 2 rows of manus much larger than those in lateral rows; head and eyes much smaller; mantle more slender.

Alloteuthis species: posterior end of mantle drawn out into an elongate, pointed tail; no suckers on buccal lappets.

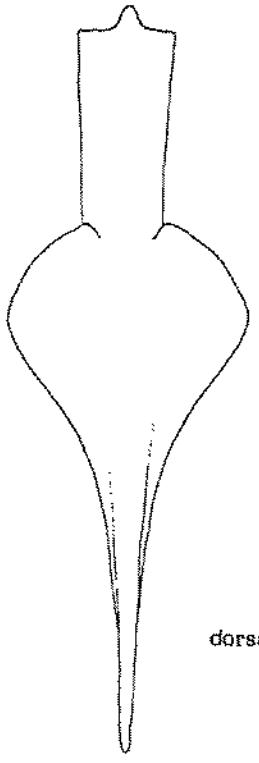
Lolliguncula mercatoris: fins short, round, terminal, their posterior borders convex; spermatophore pad located in mantle cavity, near gill.



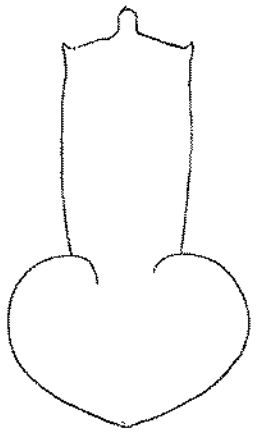
Loligo vulgaris

L. forbesi

tentacular club



Alloteuthis species



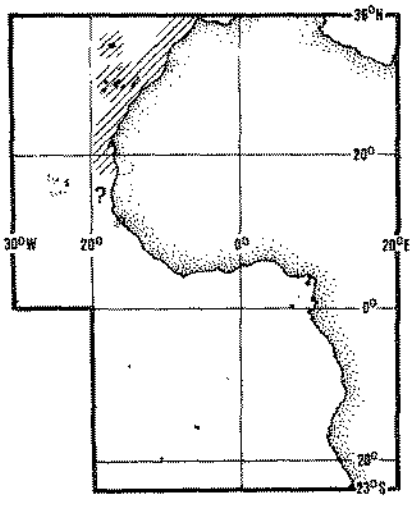
Lolliguncula mercatoris

dorsal view of mantle and fins

SIZE:

Maximum: up to 55 cm mantle length, males larger than females.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:



In the area found from the Straits of Gibraltar to at least 18°N, its southern limit of distribution unknown; northward extending into the Mediterranean Sea, the North Eastern Atlantic and to the North Sea.

A neritic, cold water species living in deeper waters than Loligo vulgaris (between 100 and 400 m). The egg masses are attached to hard objects on sandy to muddy bottoms.

Feeds on small and juvenile fishes.

PRESENT FISHING GROUNDS:

Caught off Madeira and Azores in winter time and as bycatch in deeper trawl fisheries throughout its range.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught with trawls.

Marketed fresh and frozen.

LOLIG Lolligun 2

1981

FAO SPECIES IDENTIFICATION SHEETS

FAMILY : LOLIGINIDAE

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

Lolliguncula mercatoris Adam, 1941

OTHER SCIENTIFIC NAMES STILL IN USE : None

VERNACULAR NAMES:

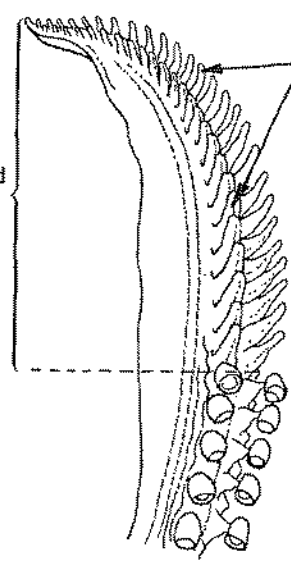
FAO : En - Guinean thumbstall squid
Fr - Calmar doigtier de Guinée
Sp - Calamar dedal de Guinea

NATIONAL :

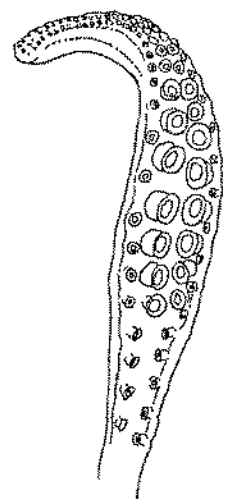
DISTINCTIVE CHARACTERS :

Mantle broad (its width about 35% of dorsal mantle length), and bluntly rounded posteriorly; fins rounded, short (their length 40 to 45% of dorsal mantle length), broad, (width of both fins about 55 to 65% of dorsal mantle length) with convex posterior margins; head short; dorsal arms extremely short in comparison to the others; left ventral arm (fourth) of males hectocotylized, its proximal half with 6 to 12 pairs of normal suckers, its distal half with elongate papillae replacing the suckers, those of the dorsal row more strongly developed; tentacular club-narrow, small, with suckers arranged in 4 longitudinal rows, 4 or 5 pairs of medial suckers on manus much larger than the laterals; club sucker rings with 15 to 25 more or less sharp teeth, larger, more pointed distally; buccal lappets without suckers. Spermatophore pad of females located in mantle cavity, near gill.

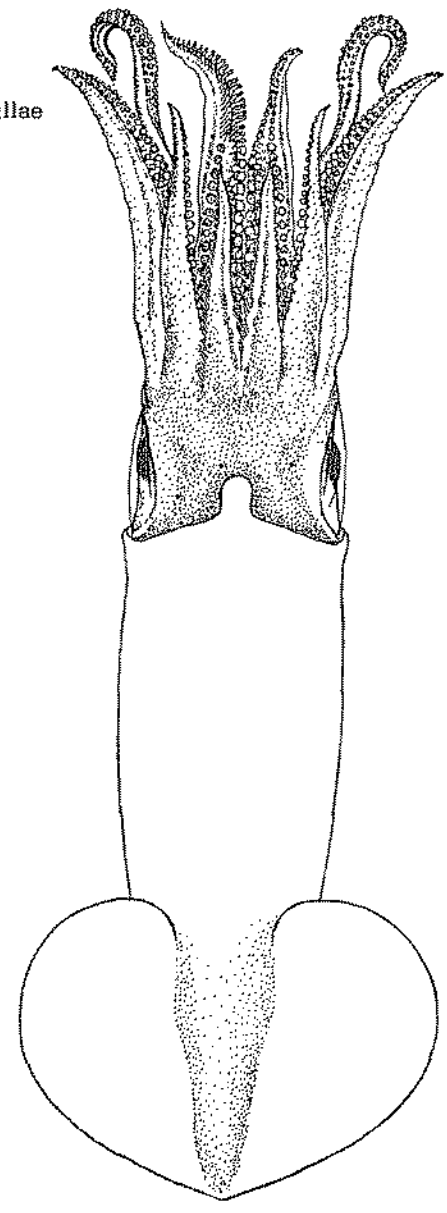
Colour: reddish to brownish.



hectocotylus



tentacular club



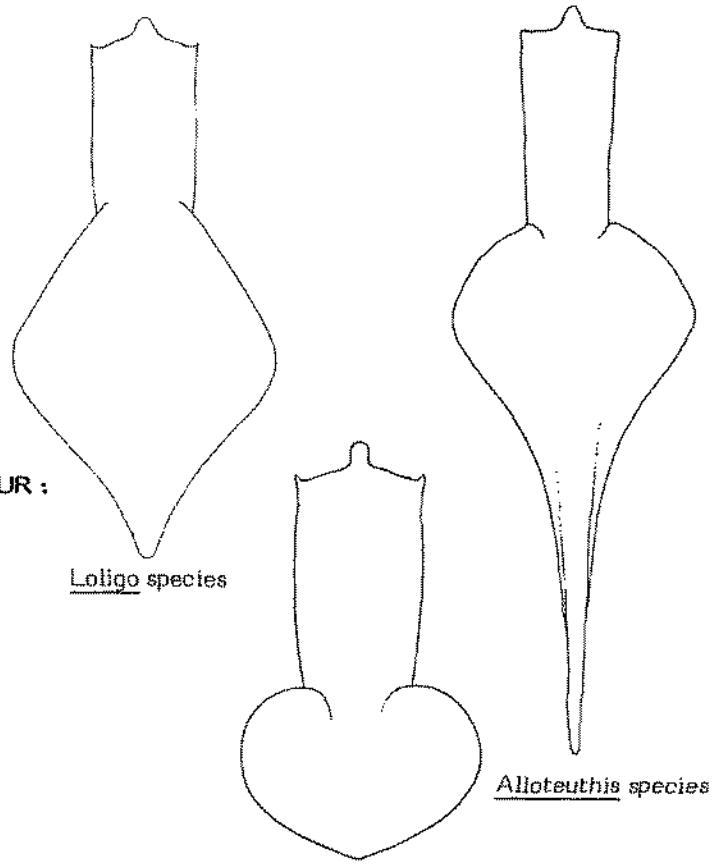
dorsal view



DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Loligo species: fins lateral, more or less rhomboidal (not round or elliptical); buccal lappets bearing suckers; spermatophore pad on buccal membrane.

Alloteuthis species: mantle long, narrow, its posterior end drawn out into a long, narrow, spike-like tail; posterior border of fins concave, extending posteriorly along tail.



Loligo species

Alloteuthis species

SIZE :

Maximum: 5 cm mantle length.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Limited to the west coast of Africa from Rio de Oro (Spanish Sahara) to Lüderitz Bay (Southwest Africa).

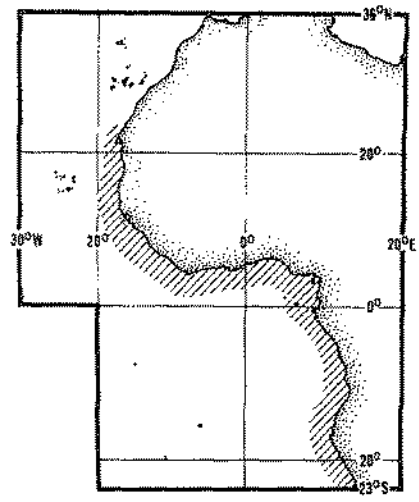
A neritic, near shore, shallow-water species taken at depths of less than 50 m on mud and sandy mud bottoms.

PRESENT FISHING GROUNDS :

Currently not exploited. If abundance, habitat, and distribution are found to be similar to those of L. brevis in the Western Central Atlantic, then a fishery could develop.

Lolliguncula mercatoris

dorsal view of mantle and fins



CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Incidentally caught as bycatch.

OCT
1981

FAO SPECIES IDENTIFICATION SHEETS

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

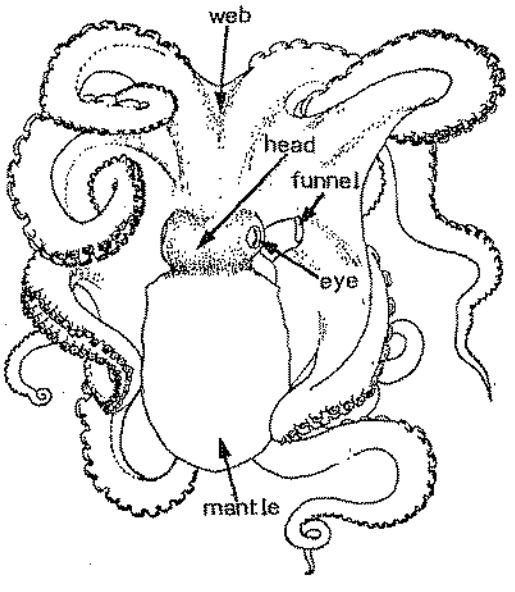
OCTOPODIDAE

Octopuses

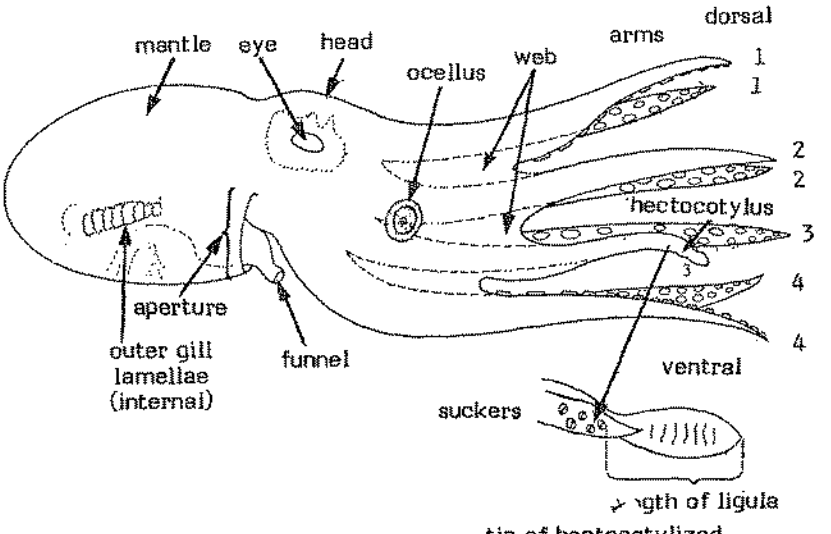
Body short, sac-like, without lateral fins; 8 arms around mouth, but no tentacles; mantle with a large aperture; suckers in 2 rows, without chitinous sucker rings (the subfamily Eledoninae has 1 row of suckers, but it does not occur in Fishing Area 34). Third (ventro-lateral) left arm in males hectocotylized (used to transfer sperm packets from the male to the female); the shape and structure of the modified distal portion (or ligula) of this arm is often useful as a diagnostic generic or specific character.

Colour: very variable and changeable from mottled brown, green, and white to deep brick red or maroon, to white-spotted or ocellated.

The family Octopodidae is extremely rich in species. Octopuses occur in all oceans and nearly all habitats. Those under consideration here are the inshore, shallow water forms that support current fisheries or show a potential for fisheries. They occur from 1 to perhaps 50 m depth on sand, mud, grass flat, coral reef or reef-rubble habitats, depending on the species. Most lay eggs in large numbers strung together in strands and attached to a hard substrate, hidden from view of potential predators. Larvae hatch out resembling the adults and they either settle immediately to the bottom to take up the habitat of the adult, or they become planktonic for a period during which time they drift about with the currents before settling out into the adult habitat. Fishing activity ranges from the subsistence level using hooked poles or spears to the commercial level using multiple baited lines, clay pots or otter trawls. The reported catch of octopuses in Fishing Area 34 totalled about 70 000 t in 1978.



dorsal view



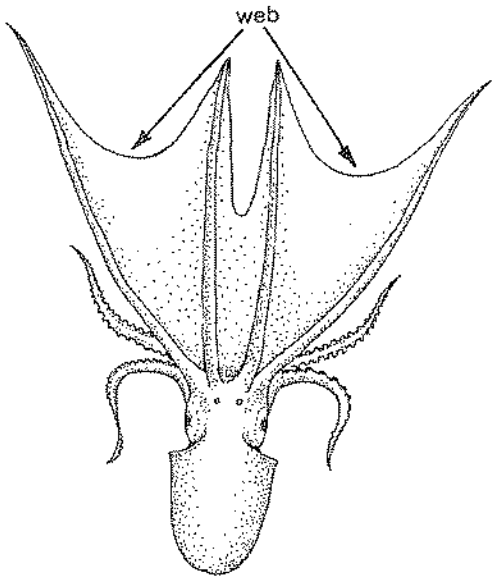
tip of hectocotylized arm (in males)

lateral view

SIMILAR FAMILIES OCCURRING IN THE AREA:

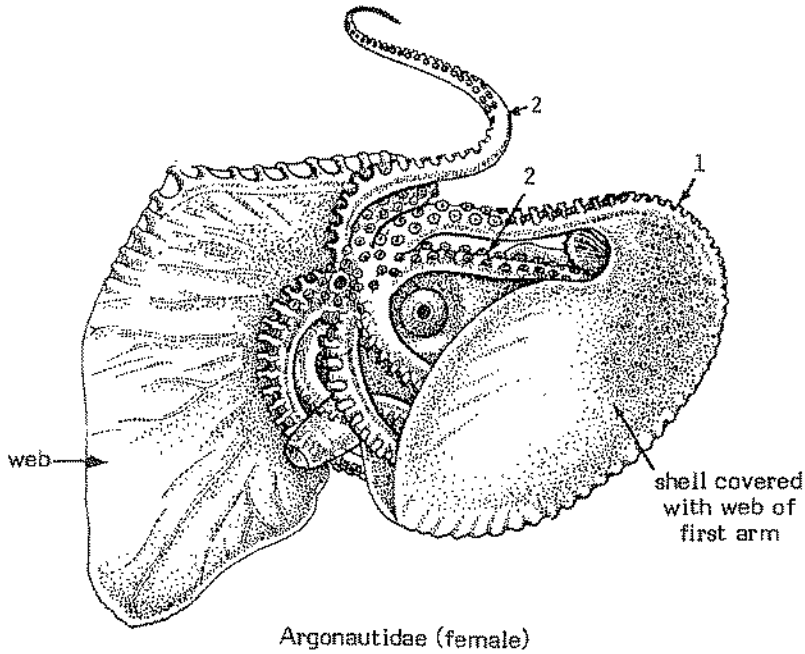
Tremoctopodidae: animals large, semi-gelatinous; dorsal (first) pair of arms much the longest and connected to each other and the second arms by a deep, membranous web; coloration violet.

Argonautidae: animals small to medium-sized; a very shallow web between the arms; in females dorsal ir (first) pair of arms with a very broad, flap-like membrane distally that produces and holds the open, white shell as that serves as an egg case; males very small.



Tremoctopodidae (female)

dorsal view

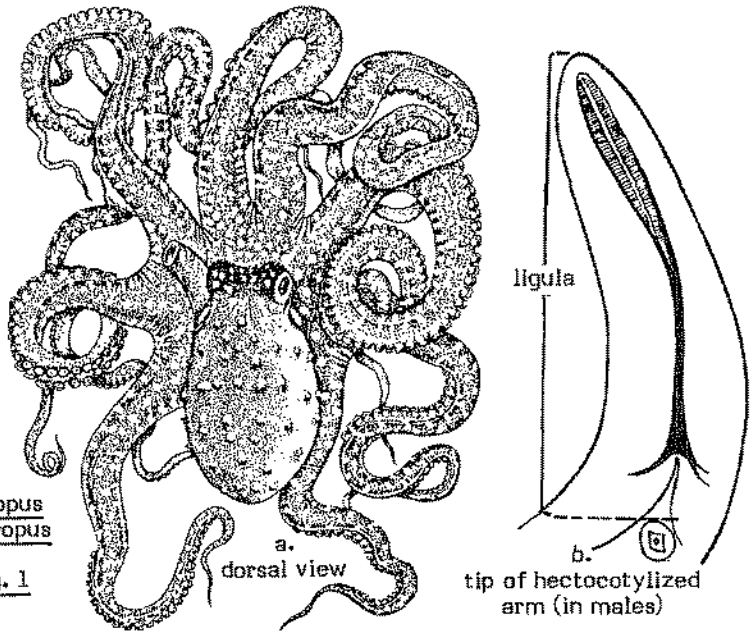


Argonautidae (female)

KEY TO SPECIES OF Octopus OCCURRING IN THE AREA:

1 a. First pair of arms (dorsal) always largest and usually longest, stoutest or co-equally stoutest with second pair of arms; dorsal surface of arms with conspicuous light-coloured or white spots (Fig. 1a); gill lamellae 9 to 13; ligula index* up to 14 (Fig. 1b) ..... O. macropus

1 b. Second and/or third pair of arms longest, but not conspicuously so; no large white or light-coloured spots on dorsal surface of head and arms; gill lamellae 7 to 11; ligula index* less than 2.5 (Figs. 2,3)



Octopus macropus

Fig. 1

* Length of ligula expressed as percentage of length of hectocotylized arm; length of ligula is measured from distal (last) sucker to tip of arm; length of hectocotylized arm is measured from mouth to tip of arm

FAO Sheets | OCTOPODIDAE | Fishing Areas 34, 47 (in part)

2 a. All arms long and slender, asymmetrical in length; mantle small (Fig. 4); size small to medium; gill lamellae 11 ..... O. defilippi

2 b. Arms stout, moderately short, nearly symmetrical in length; size medium to large (Fig. 5); gill lamellae 7 to 11 ..... O. vulgaris

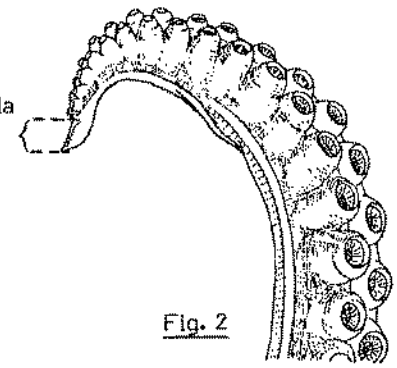


Fig. 2

tip of hectocotylized arm (in males)
Octopus defilippi

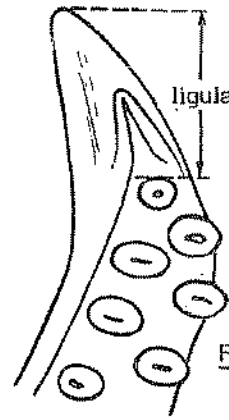
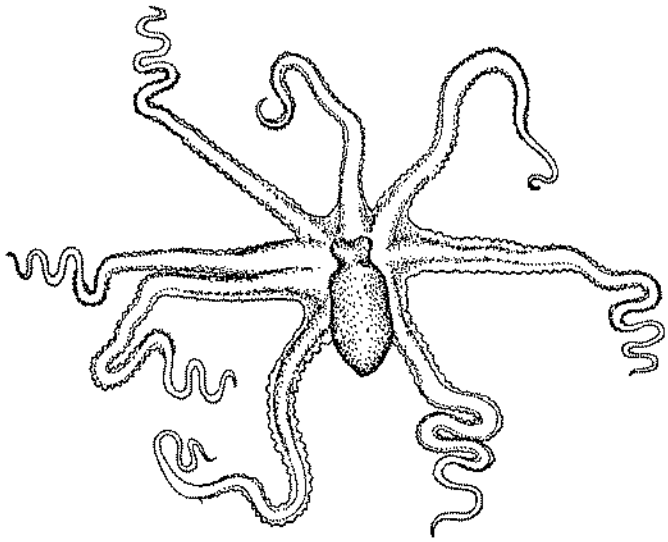


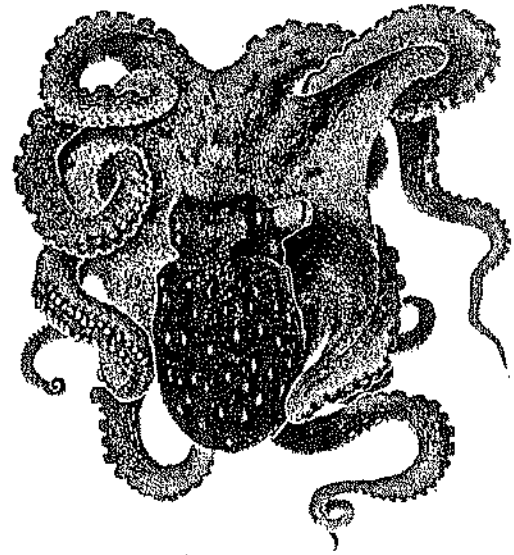
Fig. 3

tip of hectocotylized arm (in males)
Octopus vulgaris



dorsal view

Octopus defilippi Fig. 4



dorsal view

Octopus vulgaris Fig. 5

LIST OF SPECIES OCCURRING IN THE AREA:

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

Bathypolypus arcticus (Prosch, 1849)

Benthoctopus januari (Hoyle, 1885)

Danoctopus schmidti Joubin, 1933

Octopus defilippi Verany, 1851
Octopus macropus Risso, 1826 — OCT Oct 2
Octopus vulgaris Cuvier, 1797 — OCT Oct 1

Pteroctopus tetracirrhus (Delle Chiaje, 1830)

Scaeurgus unicirrhus (Orbigny, 1840)

Prepared by C.F.E. Roper and M.J. Sweeney, National Museum of Natural History, Smithsonian Institution, Washington, D.C., U.S.A.

OCT Oct 1

1981

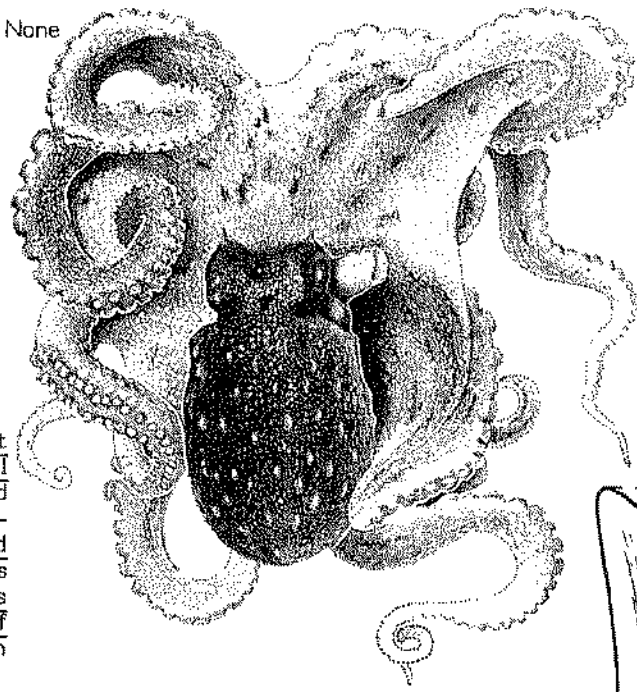
FAO SPECIES IDENTIFICATION SHEETS

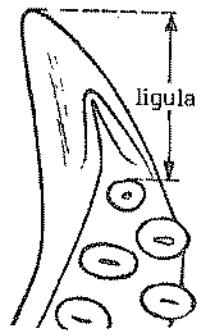
FAMILY : OCTOPODIDAE

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

Octopus vulgaris Cuvier, 1797

OTHER SCIENTIFIC NAMES STILL IN USE : None





tip of hectocotylized arm (in males)

0 16 cm

VERNACULAR NAMES:

FAO : En - Common octopus
Fr - Pieuvre
Sp - Pulpo común

NATIONAL :

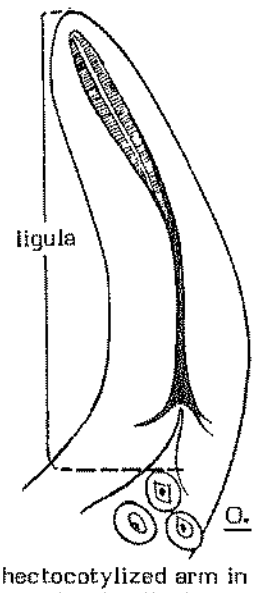
DISTINCTIVE CHARACTERS :

Animal chunky in appearance, with stout arms of about equal length and thickness, dorsal (first) pair of arms slightly shorter; shortened third right arm of males hectocotylized by modification of tip into a very small, spoon-shaped ligula, ligula index (length of ligula expressed as percentage of length of hectocotylized arm) less than 2.5; 7 to 11 gill lamellae on outer side of gill, including terminal lamella; animals medium to large-sized; eggs small, 3 mm or less.

Colour: very variable, commonly mottled brown, white and tan.

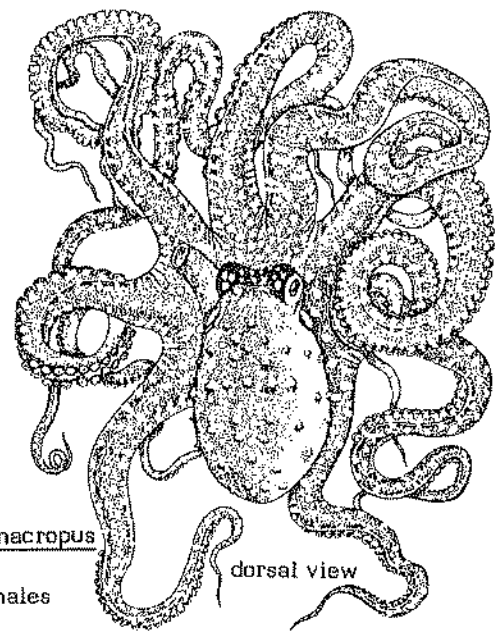
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

O. macropus: dorsal (first) pair of arms longest, often stoutest (shortest in O. vulgaris); third right arm hectocotylized in males, with a long, stout, tubular ligula, ligula index up to 14 (less than 2.5 in O. vulgaris); 9 to 13 gill lamellae (7 to 11 in O. vulgaris); colour blue-green with large white spots over dorsal surface of mantle, head, and arms; turns brick red, spots intensify, when animal disturbed.



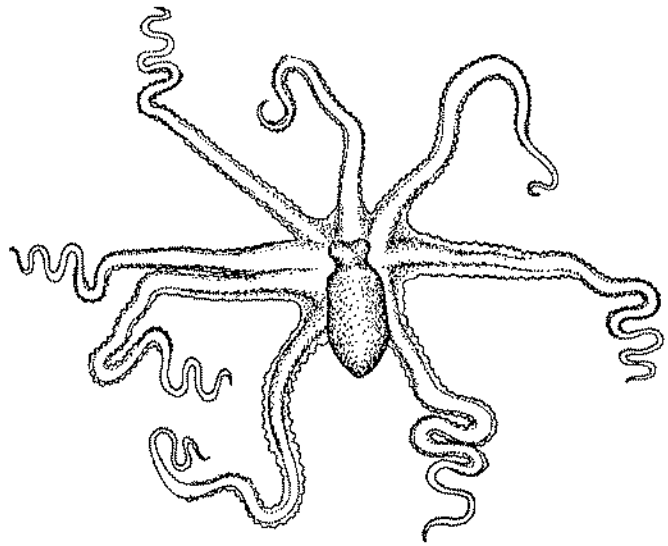
O. macropus

tip of hectocotylized arm in males showing ligula



dorsal view

O. defilippi: all arms very long and slender; body small.



O. defilippi

dorsal view

SIZE :

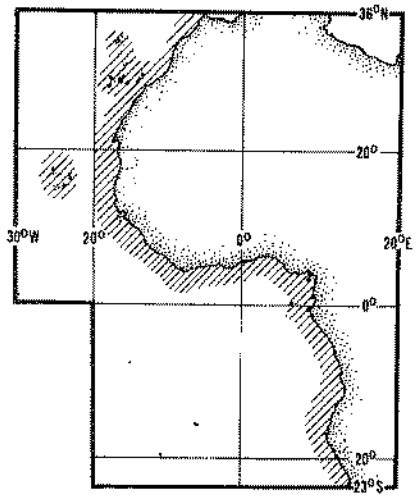
Maximum: females up to 115 cm and males up to 130 cm total length (up to 10 kg); common to 3 kg.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Worldwide in great variety of habitats; entire Eastern Atlantic, North Sea, Mediterranean Sea to South Africa.

Occurs on all types of bottoms and inhabits waters from a few meters to the edge of the continental shelf (range: from surface waters to 400 m depth, but mostly to 200 m). Matures at about 50 cm total length; spawns year around with spring and autumn peaks, at depths between 15 and 100 m, either on shallow rocky and coraline bottoms or in lairs on sandy to muddy bottoms at greater depths; lives up to 3 years; males carry about 125 spermatophores and die after mating; females lay large clusters of eggs (150 000 to 400 000 of 2.4 mm diameter) in holes, shells, etc., at temperatures of 10 to 25°C, then cease feeding, brood the clutch and die after eggs hatch; incubation requires 25 to 65 days at temperatures of 25 to 15°C respectively. Larvae are planktonic for several weeks before settling on the bottom.

Feeds primarily on crabs, shrimps and molluscs.



PRESENT FISHING GROUNDS :

Fished year around from off Spanish Sahara (26°N) to Senegal (14°N); evidence for localized stocks; each stock with two spawning groups (spring and autumn) with discrete life histories.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

The catch reported from the area as O. vulgaris totalled about 20 000 t in 1979 (56% of world octopod catch).

Caught with otter trawls.

Marketed fresh, frozen and dried salted.

OCT Oct 2

1981

FAO SPECIES IDENTIFICATION SHEETS

FAMILY : OCTOPODIDAE

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

Octopus macropus Risso, 1826

OTHER SCIENTIFIC NAMES STILL IN USE : None

VERNACULAR NAMES:

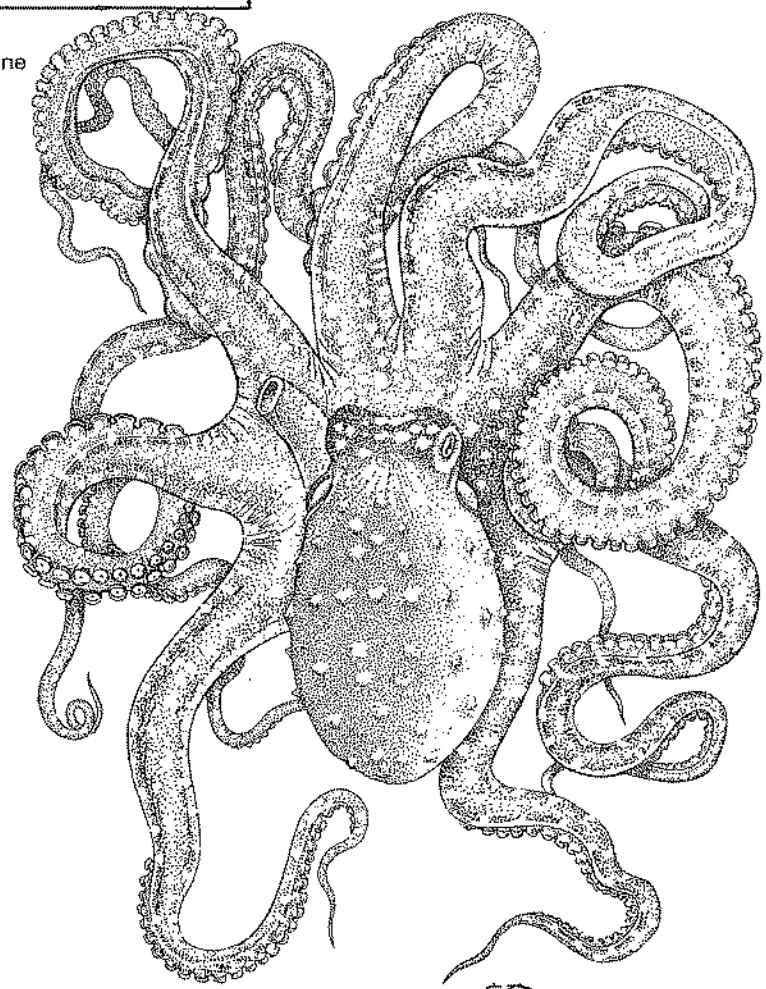
FAO : En - White-spotted octopus
Fr - Poulpe tacheté
Sp - Pulpo manchado

NATIONAL :

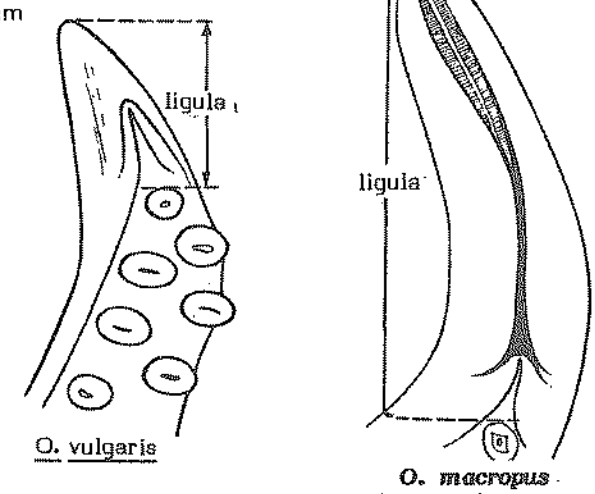
DISTINCTIVE CHARACTERS :

Dorsal (first) pair of arms longest and stoutest (or co-equally stoutest with second pair); third right arm of males hectocotylized by modification of tip to a large stout, tubular ligula; ligula index (length of ligula expressed as percentage of length of hectocotylized arm) up to 14; 9 to 13 gill lamellae on outer side of gill; animals medium to large; eggs small.

Colour: blue-green with large white spots over dorsal surface of mantle, head, and arms; turns brick red, spots intensify when animal disturbed.





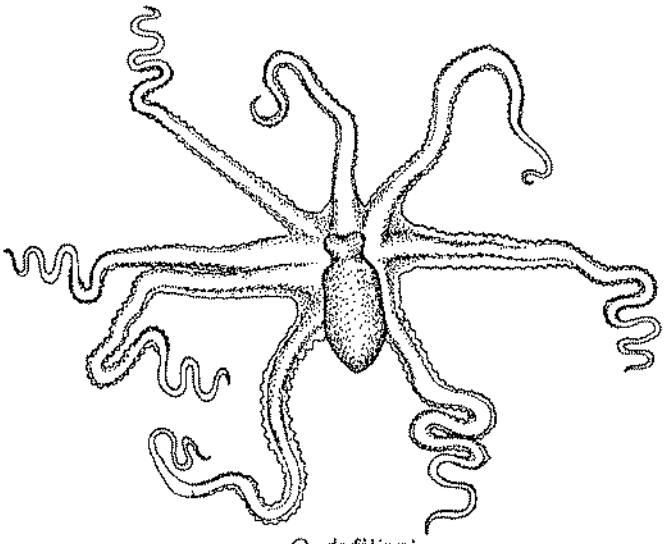


tip of hectocotylized arm (in males)

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

O. vulgaris: all arms about equally robust, the first pair shortest (first pair longest, most robust or co-equally robust with second arms in O. macropus); tip of hectocotylized arm small, spoon-shaped, ligula index less than 2.5 (large, stout, tubular, ligula index up to 14 in O. macropus); 7 to 11 gill lamellae (9 to 13 in O. macropus); colour variable, mottled brown, white and tan, no spots.

O. defilippi: arms very long, slender, asymmetrical in length; mantle small, 11 gill lamellae; ligula index 1.8 to 2.5



O. defilippi

dorsal view

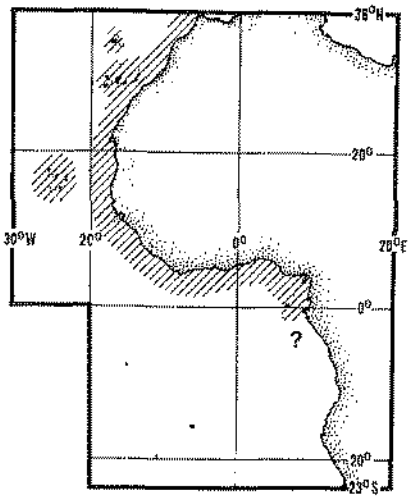
SIZE :

Maximum: 1 m total length (including arms); common to 60 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

In the area, reported from the Straits of Gibraltar to at least the equator, but southern boundary unknown. Elsewhere, worldwide in shallow warm waters.

Associated with coral reefs, but also occurs on reef flats and open bottom; depth range from 1 to 20 m; distribution and biology incompletely known; spawns in winter and early spring; larvae are planktonic before settling on the bottom; life span about 1 year; feeds on crustaceans.



PRESENT FISHING GROUNDS :

No large-scale fishery exists; captured in Fishing Area 34 at local and subsistence levels.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Probably included in the catch reported for Octopus vulgaris (about 21 000 t in 1978 in Fishing Area 34).

At present, the main fishing gear are hooks and spears. Can be trawled on appropriate bottom.

Probably, as O. vulgaris, is marketed fresh, frozen and dried salted.

OMMAS

1981

FAO SPECIES IDENTIFICATION SHEETS

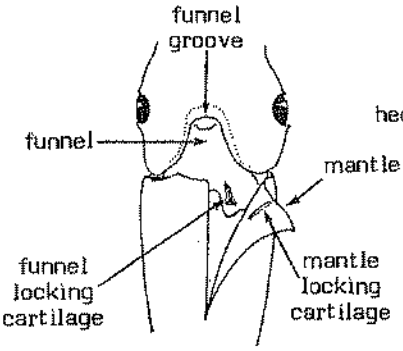
FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

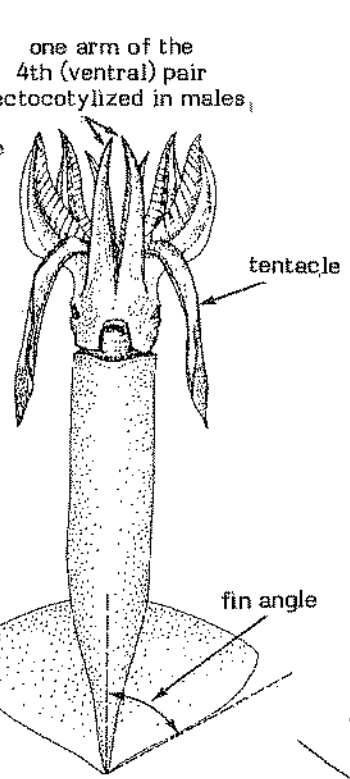
OMMASTREPHIDAE

Flying squids

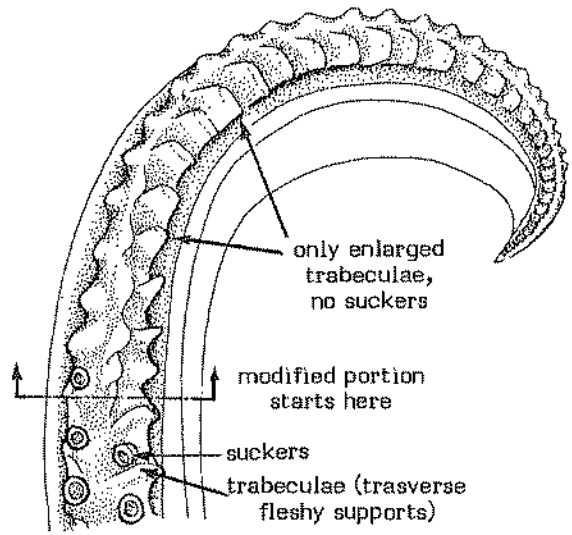
Mantle elongate, cylindrical, tapering posteriorly; fins large and terminal; funnel-locking apparatus ⊥-shaped; 8 arms and 2 tentacles around mouth; 2 rows of suckers on arms and 4 rows on tentacular clubs, except in Illex which has 8 rows of suckers on the dactylus of the clubs; hooks never present on arms or clubs; buccal connectives attached to dorsal borders of fourth arms. Usually one of the ventral (fourth) pair of arms is hectocotylized in males (used to transfer sperm packets from the male to the female); the structure of the modified portion (hectocotylus) of this arm is useful in most species as a diagnostic character (often, sucker stalks or trabeculae on the hectocotylus are modified into fleshy papillae or flaps; suckers may be reduced in size or disappear altogether, or there may be further modifications).

Colour: deep maroon to pale reddish-brown, or purplish; darkest dorsally.

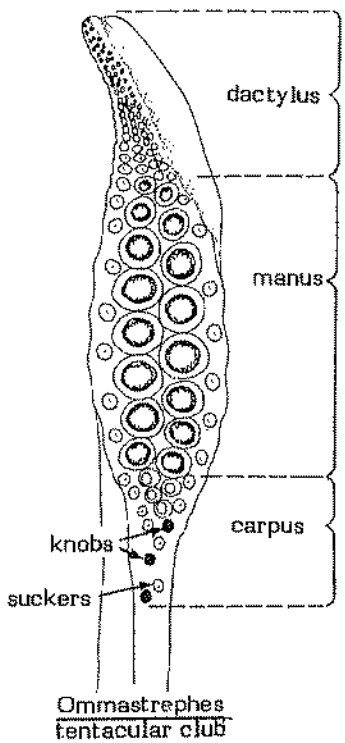




Ommastrephes
ventral view



hectocotylized arm
(Illex)



Ommastrephes
tentacular club

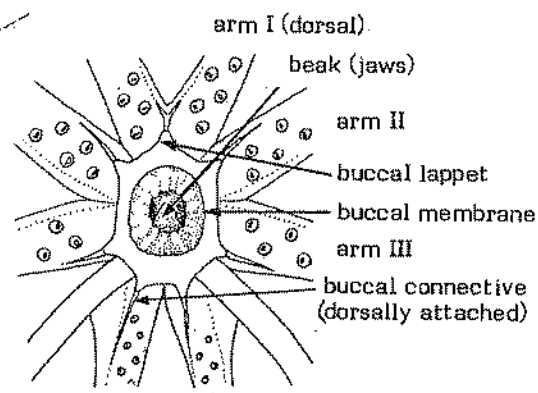


diagram of oral surface of brachial crown and buccal area

Medium- to large-sized oceanic and neritic squids. This is one of the most widely distributed and conspicuous families of squids in the world. Most species are exploited commercially and one, Todarodes pacificus, makes up the bulk of the squid landings in Japan (up to 600 000 metric tons annually) and may comprise at least half the annual world catch of cephalopods. In various parts of Fishing Area 34, nine species of ommastrephids are currently fished commercially or have a potential for commercial exploitation. Ommastrephids are powerful swimmers and often occur in large schools. Some neritic species exhibit strong seasonal migrations, wherein they occur in huge numbers in inshore waters where they are accessible to fisheries activities. The large size of most species (commonly 30 to 50 cm total length and up to 120 cm total length) and the heavily muscled structure, make them ideal for human consumption.

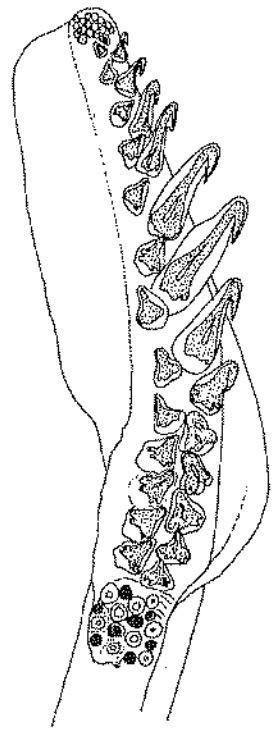
SIMILAR FAMILIES OCCURRING IN THE AREA:

Onychoteuthidae: tentacular clubs with claw-like hooks; funnel-locking apparatus a simple, straight groove.

Thysanoteuthidae: funnel-locking apparatus a long, narrow longitudinal groove with a short broad transverse groove, ⊣-shaped; fins broad, rhomboidal, extend nearly full length of mantle.

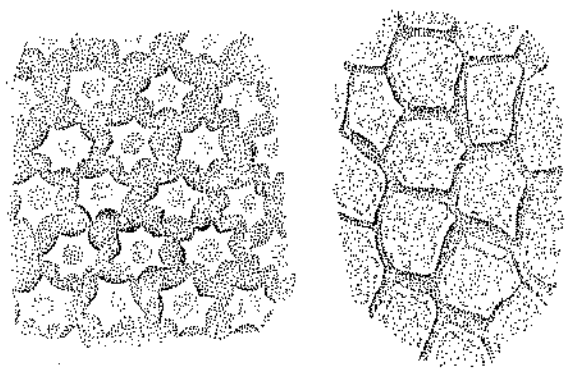
Lepidoteuthidae: distinct "scales" on the surface of the mantle; funnel-locking apparatus a simple, straight groove.

Loliginidae: eyes covered with a transparent corneal membrane; funnel-locking apparatus a simple, straight groove; small suckers on the buccal lappets (none in Ommastrephidae).



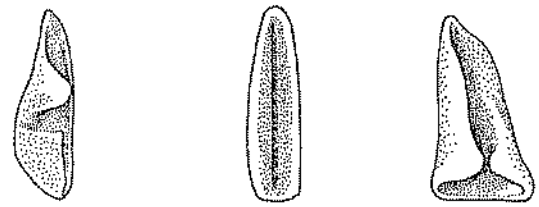
Onychoteuthidae

tentacular club



Lepidoteuthidae

scales on surface of mantle



⊣-shaped simple, straight ⊥-shaped

Thysanoteuthidae Lepidoteuthidae **Ommastrephidae**
Loliginidae
funnel-locking apparatus

KEY TO SUBFAMILIES OCCURRING IN THE AREA:

1 a. Funnel groove smooth, without foveola or side pockets ..... Illicinae

1 b. Funnel groove with foveola or with foveola and side pockets

2 a. Funnel groove with foveola only, no side pockets (Fig. 1a) ..... Todarodinae

2 b. Funnel groove with foveola and side pockets (Fig. 1b) ..... Ommastrephinae

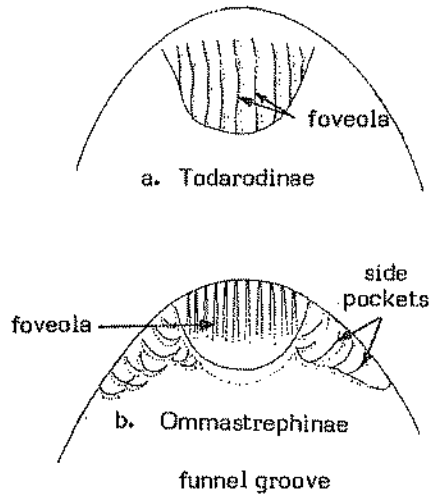


Fig. 1

KEY TO GENERA OCCURRING IN THE AREA:

Illicinae:

1 a. Dactylus of tentacular club with 8 longitudinal rows of small suckers (Fig. 2a) ..... Illex

1 b. Dactylus of tentacular club with 4 longitudinal rows of small suckers (Fig. 2b) ..... Todaropsis

Todarodinae:

1 a. Luminous strip of tissue along ventral midline of viscera; mantle slender, tapering to a moderately long tail-like posterior point (Fig. 3a) ..... Ornithoteuthis

1 b. No luminous strip on viscera (no light organs at all); mantle robust, not tapering to a long tail-like posterior point (Fig. 3b) ..... Todarodes

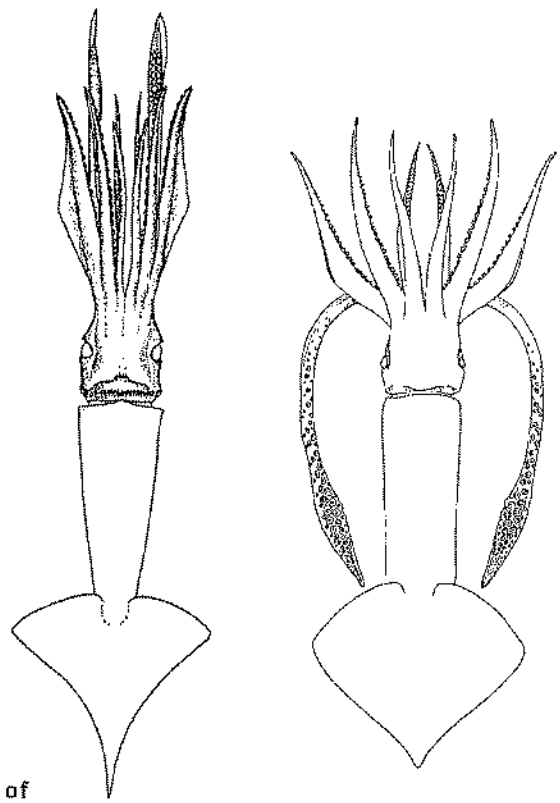


Fig. 3

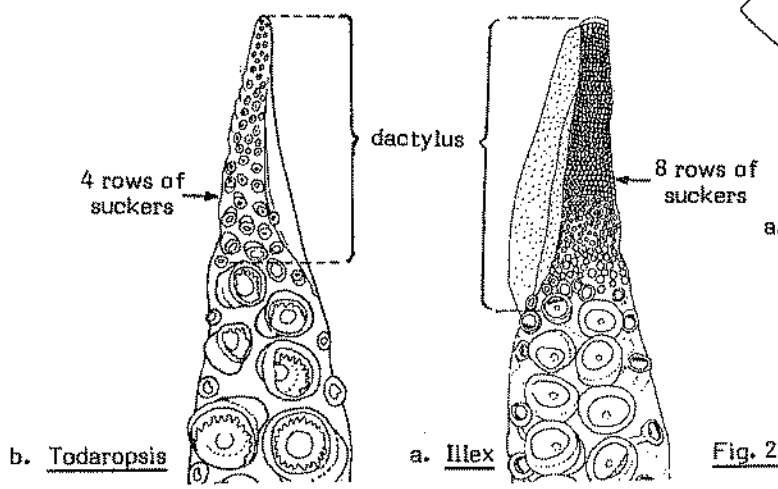
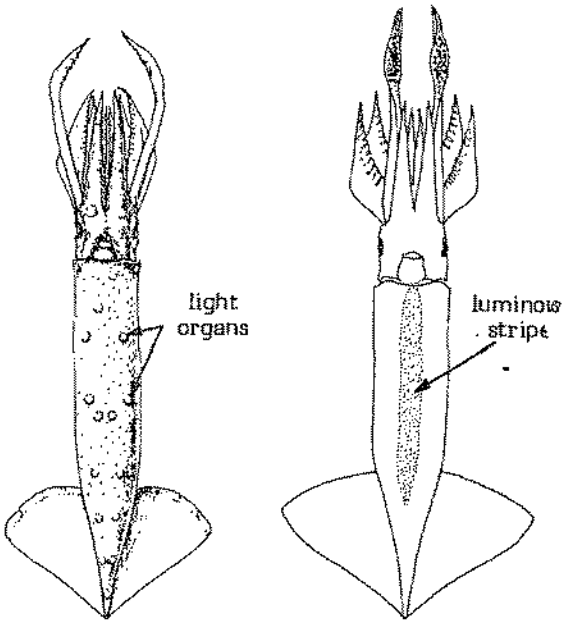


Fig. 2

Ommastrephinae:

1 a. Nineteen discrete round, light organs in distinctive pattern on ventral surface of mantle (Fig. 4a) ..... Hyaloteuthis

1 b. No discrete round light organs on ventral surface of mantle (Fig. 4b) ..... Ommastrephes



a. Hyaloteuthis b. Ommastrephes

ventral surface

Fig. 4

LIST OF SPECIES OCCURRING IN THE AREA:

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

Hyaloteuthis pelagica (Bosc, 1802)	
Illex coindetii (Verany, 1837)	OMMAS Ill 1
Ommastrephes bartrami (LeSueur, 1821)	OMMAS Ommas 2
Ommastrephes caroli (Furtado, 1887)	
Ommastrephes pteropus Steenstrup, 1855	OMMAS Ommas 3
Ornithoteuthis antillarum Adam, 1957	OMMAS Orni 1
Todarodes sagittatus angolensis Adam, 1962	OMMAS Todarod 1a
Todarodes sagittatus sagittatus (Lamarck, 1799)	OMMAS Todarod 1b
Todaropsis eblanae (Ball, 1841)	OMMAS Todarop 1

Prepared by C.F.E. Roper and M.J. Sweeney, National Museum of Natural History, Smithsonian Institution, Washington, D.C., U.S.A.

OMMAS III 1

1981

FAO SPECIES IDENTIFICATION SHEETS

FAMILY : OMMASTREPHIDAE

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

Illex coindetii (Verany, 1837)

OTHER SCIENTIFIC NAMES STILL IN USE : Illex illecebrosus coindetii. Formerly considered a subspecies, such a designation is now unjustifiable (see Roper, Lu & Mangold, 1969)

VERNACULAR NAMES:

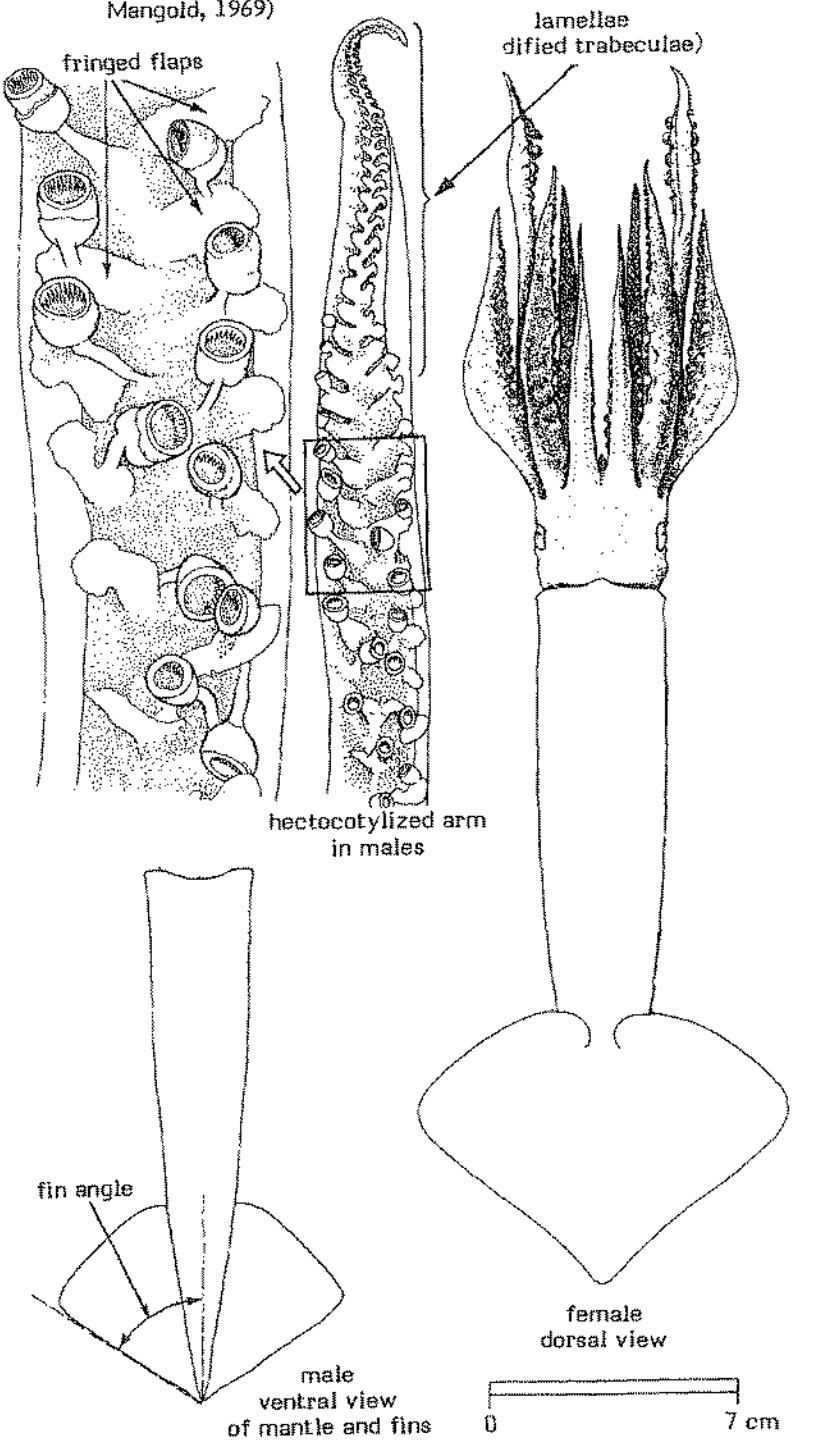
FAO : En - Short fin squid
Fr - Encornet rouge
Sp - Pota voladora

NATIONAL :

DISTINCTIVE CHARACTERS :

Mantle widest at anterior end (except in fully ripe females), moderately long and narrow; tail pointed, moderately drawn out; fin angle broad, exceeding 50°; fin width greater than fin length; head large and robust, especially in males, length about equal to width; funnel groove without foveola or side pockets; arms very long, especially in males where second and third also are very robust; hectocotylized arm (in males) longer than the opposite ventral (fourth) arm, its modified portion about 25% of arm length, distal trabeculae modified to papillose, fringed flaps; 1 to 2 knobs on dorsal row of lamellae of modified arm tip; dactylus of tentacular club with 8 longitudinal rows of small suckers.

Colour: reddish to reddish brown, more vivid dorsally; paler, more yellowish ventrally.

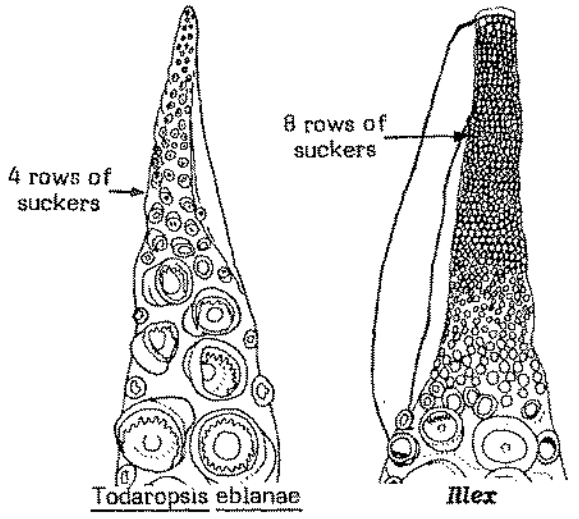


DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Todaropsis eblanae: dactylus of club with 4 longitudinal rows of suckers (8 in Illex); fin angle greater than 60° (50° in Illex coindetii); body compact and stocky.

Ornithoteuthis antillarum and Todarodes species: funnel groove with foveola only. Furthermore, only 4 rows of suckers at tips (dactylus) of tentacular clubs and no fixing apparatus on tentacular clubs in O. antillarum.

Hyaloteuthis pelagica and Ommastrephes species: funnel groove with foveola and side pockets. Furthermore, mantle with 19 round integumentary light organs on ventral surface and 4 round light organs along ventral surface of each ventral arm in H. pelagica (no light organs in Illex).



distal end of tentacular club

SIZE :

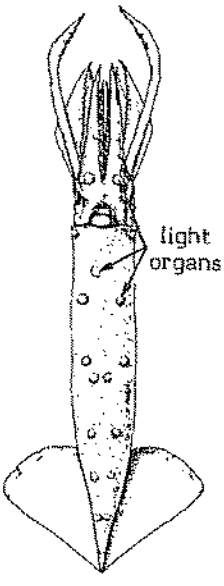
Maximum: males 22 cm; females 26 cm mantle length.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

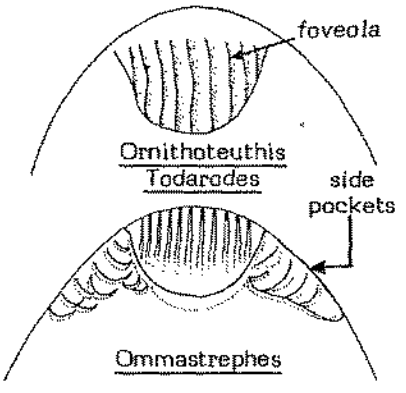
In the Eastern Atlantic from the North Sea southward along the Atlantic coast of Europe, into the Mediterranean Sea and along the African coast to 14°S. Elsewhere, in the Western North Atlantic from 37°N southward through the Gulf of Mexico and Caribbean Sea.

A neritic species that inhabits nearshore waters of the continental shelf. Apparent preference for sandy or silty bottoms; vertical range from a few metres to 1 000 m with major abundance at 50 to 500 m. Apparently associated with the bottom during the day (when captures are most frequent), disperses into the water column at night. Males mature at 9 cm mantle length at 6 to 8 months and females at 16 cm mantle length at 12 to 15 months; life span about 1 or 2 years; males carry about 250 spermatophores and females about 12 000 ripe eggs of 1.2 mm diameter in the ovary; spawn in Mediterranean Sea in late winter and spring through fall; temperatures of habitat primarily from 12° to 20°C.

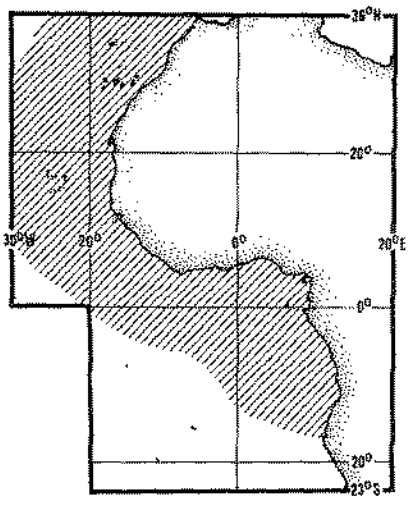
Prey presumed to be crustaceans (euphasids) and fishes.



Hyaloteuthis pelagica
ventral view



funnel groove



PRESENT FISHING GROUNDS :

Off Spanish Sahara area between 50 and 500 m (maximum catches between 90 and 250 m) over mud and sand bottoms.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Caught with otter trawl.

OMMAS Ommas 2

1981

FAO SPECIES IDENTIFICATION SHEETS

FAMILY : OMMASTREPHIDAE

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

Ommastrephes bartrami (LeSueur, 1821)

OTHER SCIENTIFIC NAMES STILL IN USE : The occasional use of the generic name Sthenoteuthis is entirely unjustified and incorrect, and it should be avoided

VERNACULAR NAMES:

FAO : En - Flying squid
Fr - Encornet volant
Sp - Pota saltadora

NATIONAL :

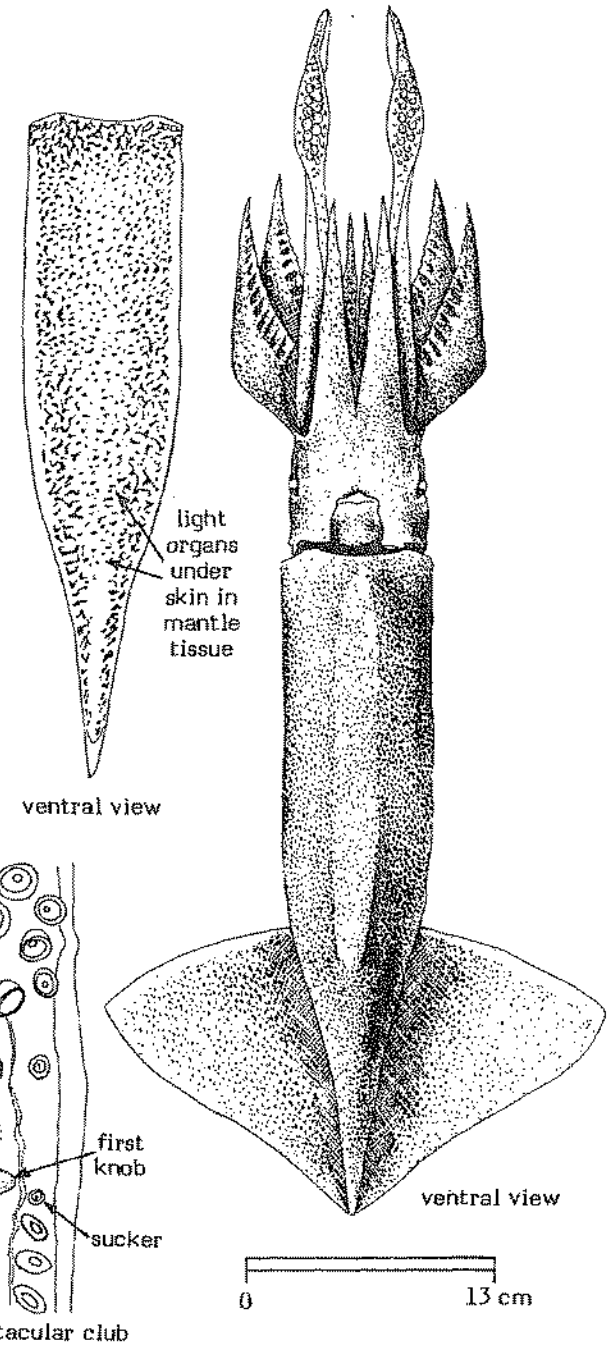
DISTINCTIVE CHARACTERS :

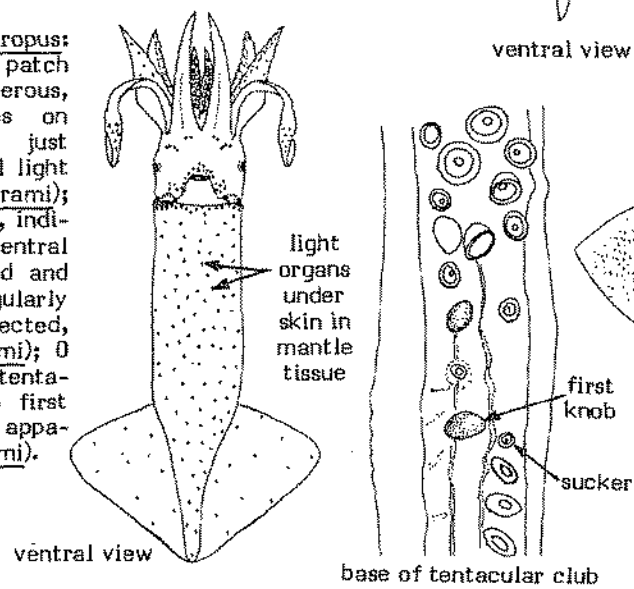
Mantle muscular, robust, not drawn out posteriorly into a pointed tail; a long golden or silvery stripe along the ventral midline from mantle opening to level of fin-insertion (this stripe probably is a luminescent organ); similar golden tissue on ventral surfaces of head and ventral (fourth) arms; numerous, closely-packed, small, very irregularly shaped, often interconnected, light organs embedded under the skin in muscle of mantle ventrally; similar light organs occur in patches on ventral surface of head; 4 to 6 small suckers on the tentacular stalk proximal to the first smooth knob of the fixing apparatus.

Colour: deep maroon overall, slightly lighter ventrally, darker along dorsal midline of mantle.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Ommastrephes pteropus: a large, oval light-organ patch composed of numerous, densely-packed granules on antero-dorsal mantle just under the skin (no dorsal light organ patch in O. bartrami); numerous small granular, individual light organs in ventral muscles of mantle, head and fourth arms (many irregularly shaped, often interconnected, light organs in O. bartrami); 0 to 2 small suckers on tentacular stalk proximal to first smooth knob of fixing apparatus (4 to 6 in O. bartrami).



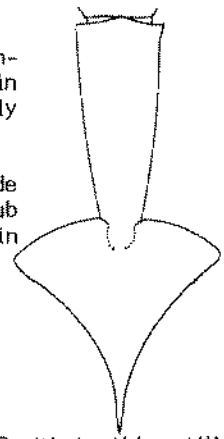


O. pteropus

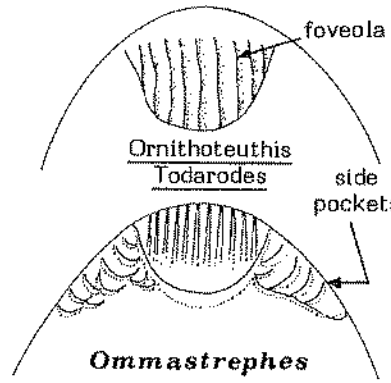
Hyaloteuthis pelagica: mantle with 19 round light organs on ventral surface; 4 round light organs in integument along ventral surface of each ventral arm (no round integumentary light organs in O. bartrami).

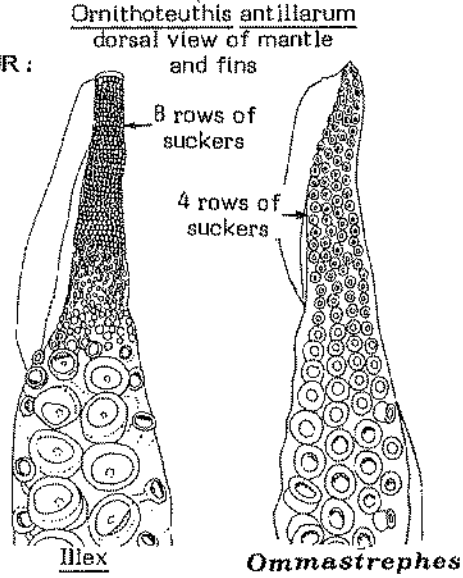
Ornithoteuthis antillarum and Todarodes species: funnel groove without side pockets (1 to 5 side pockets in Ommastrephes). Furthermore, mantle drawn out posteriorly into a long, pointed tail in O. antillarum.

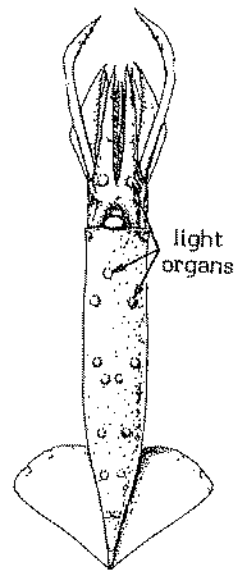
Todaropsis eblanae and Illex species: no foveola or side pockets in funnel groove. Furthermore, tip of tentacular club (dactylus) with 8 rows of small suckers in Illex (only 4 rows in Ommastrephes); no light organs.



Ornithoteuthis antillarum
dorsal view of mantle and fins







Hyaloteuthis pelagica
ventral view

SIZE:

Maximum: females 50 cm mantle length, males somewhat smaller.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

In the area found from the Straits of Gibraltar to about 5°S. Elsewhere, in the North Atlantic, in tropical and temperate waters; North and South transition Zones, of the Pacific and southern Indian Oceans.

Apparently similar to O. pteropus in its oceanic habitat and behaviour; at night occurs near the surface and is dispersed throughout the water column to about 1 500 m both day and night. A very powerful swimmer, O. bartrami has been observed during daytime to leap from the water and glide for some distance over the surface, thus receiving the name "flying squid". It occurs in schools of similarly-sized animals that congregate around a night light; as the size of individuals increases, their number in the school decreases; very large individuals around 50 cm mantle length apparently are solitary.

Spawning areas and seasons are unknown; up to several thousand eggs are laid in a sausage-shaped, gelatinous, mass that floats at or near the surface; larvae can be very numerous but identification of species is very difficult in Ommastrephes. The flying squid feeds on small oceanic fishes and reportedly is cannibalistic.

PRESENT FISHING GROUNDS:

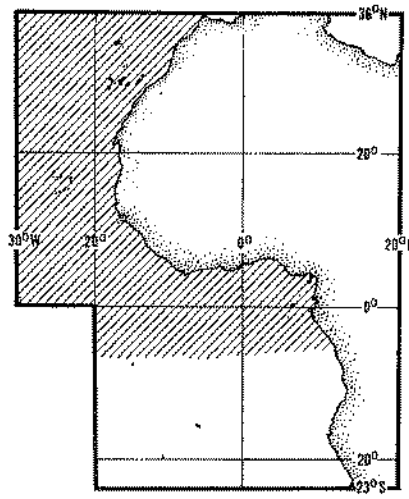
Currently not fished commercially in Area 34. While the species appears to be very abundant, no data on actual stock size are available. Fished commercially in the Pacific in waters surrounding Taiwan and Japan.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Readily captured on squid jigs, so jigging machines used at night with electric lamps in the open ocean should be effective and more efficient than hand-jigging or dip-netting.

Flesh of excellent quality for human consumption, either fresh or frozen.



OMMAS Ommas 3

1981

FAO SPECIES IDENTIFICATION SHEETS

FAMILY : OMMASTREPHIDAE

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

Ommastrephes pteropus Steenstrup, 1855

OTHER SCIENTIFIC NAMES STILL IN USE : The occasional use of the generic designation Stenoteuthis is entirely unjustified and incorrect, and it should be avoided

VERNACULAR NAMES:

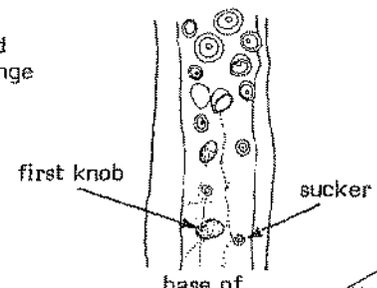
FAO : En - Orangeback squid
Fr - Encornet dos orange
Sp - Pota naranja

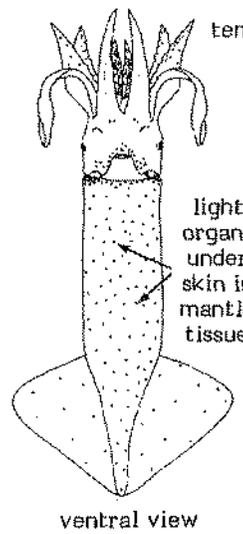
NATIONAL :

DISTINCTIVE CHARACTERS :

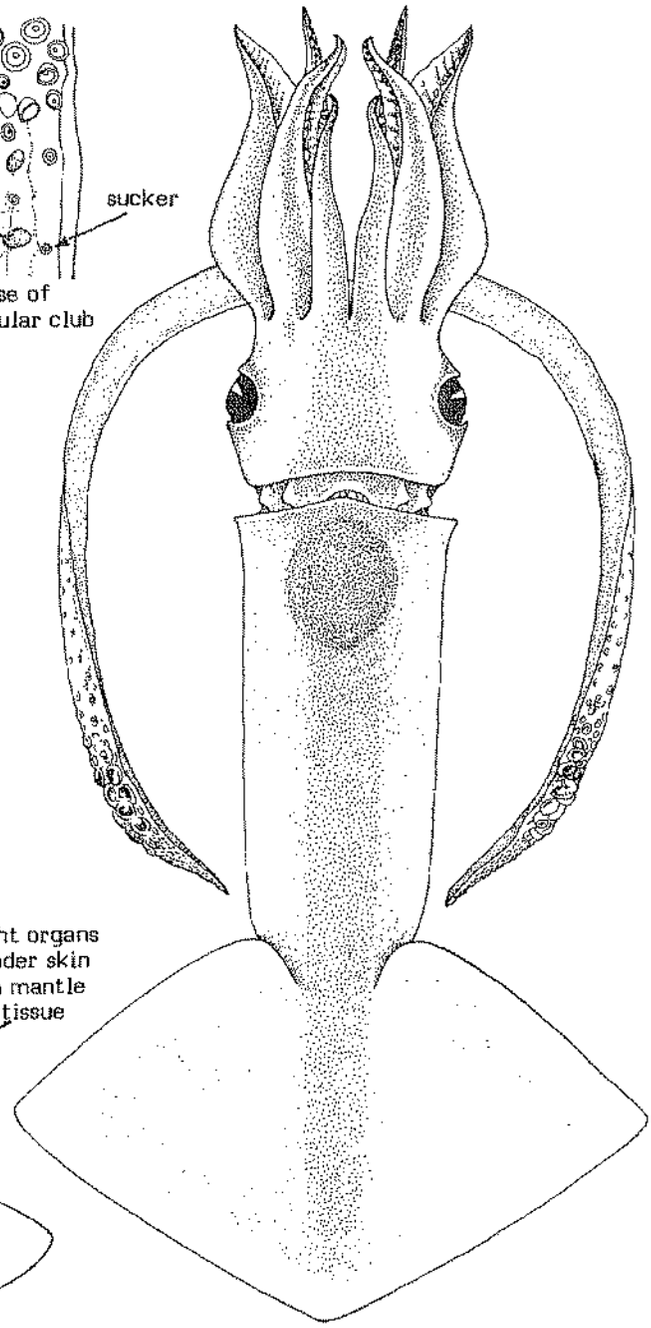
Mantle muscular, robust, not drawn out posteriorly into a pointed tail; a large, oval patch on the antero-dorsal part of the mantle just beneath the skin consisting of numerous densely packed, small light organs; small, individual scattered light organs (like short grains of rice) embedded in muscle of ventral surface of mantle head and fourth arms; 0 to 2 small suckers on the tentacular stalk proximal to the first smooth knob of the fixing apparatus.

Colour: very dark maroon overall, slightly lighter ventrally; dorsal midline darkest.





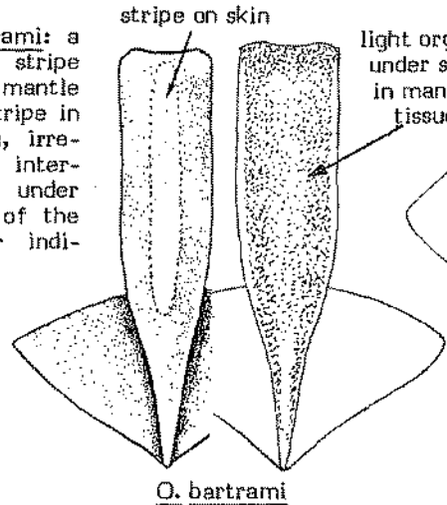
ventral view



dorsal view

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Ommastrephes bartrami: a long, golden or silvery stripe along ventral midline of mantle (no ventral luminiscent stripe in O. pteropus); numerous, irregularly shaped, often interconnected, light organs under the skin in the muscle of the mantle (fewer, granular individual light organs in O. pteropus); 4 to 6 small suckers on tentacular stalk proximal to first smooth knob of fixing apparatus (0 to 2 suckers in O. pteropus).



O. bartrami
ventral view of mantle

0 10 cm

Hyaloteuthis pelagica: mantle with 19 round light organs on ventral surface; 4 round light organs in integument along ventral surface of each ventral arm (*no round integumentary light organs in* O. pteropus).

Ornithoteuthis antillarum and Todarodes species: funnel groove without side pockets (1 to 5 on each side in Ommastrephes). Furthermore, mantle drawn out posteriorly into a long, pointed tail in O. antillarum.

Todaropsis eblanae and Illex species: funnel groove without foveola or side pockets. Furthermore, tip of tentacular club (dactylus) with 8 rows of small suckers in Illex species (only 4 rows in Ommastrephes); no light organs.

SIZE :

Maximum: females 37 cm mantle length, males somewhat smaller.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Pan-Atlantic in tropical and temperate waters; *limits of distribution unknown.*

This very abundant, strong-swimming near-surface, oceanic squid congregates at night light where it can be dipnetted. It is a dominant species at the surface during dark (moonless) nights, but is distributed over a broad vertical range day and night to about 1 500 m; during periods of bright moonlight or rough seas it does not appear at the surface. *With such* extensive vertical and geographic ranges, the species tolerates a broad range of temperature conditions. When at the surface, it forms schools of up to about 50 similarly-sized individuals, the size of the school diminishing with increased size of individuals. The vernacular name, orangeback squid, derives from the "orangish" luminiscent glow emitted by the dorsal patch of light organs.

Extent and location of spawning areas are unknown; eggs are laid in large, gelatinous, sausage-shaped masses that float at or near the surface of the sea and contain up to several hundred thousand embryos. *Larvae occur in great abundance in the upper* water layer. The species is an active predator that preys on fishes, cephalopods, and crustaceans.

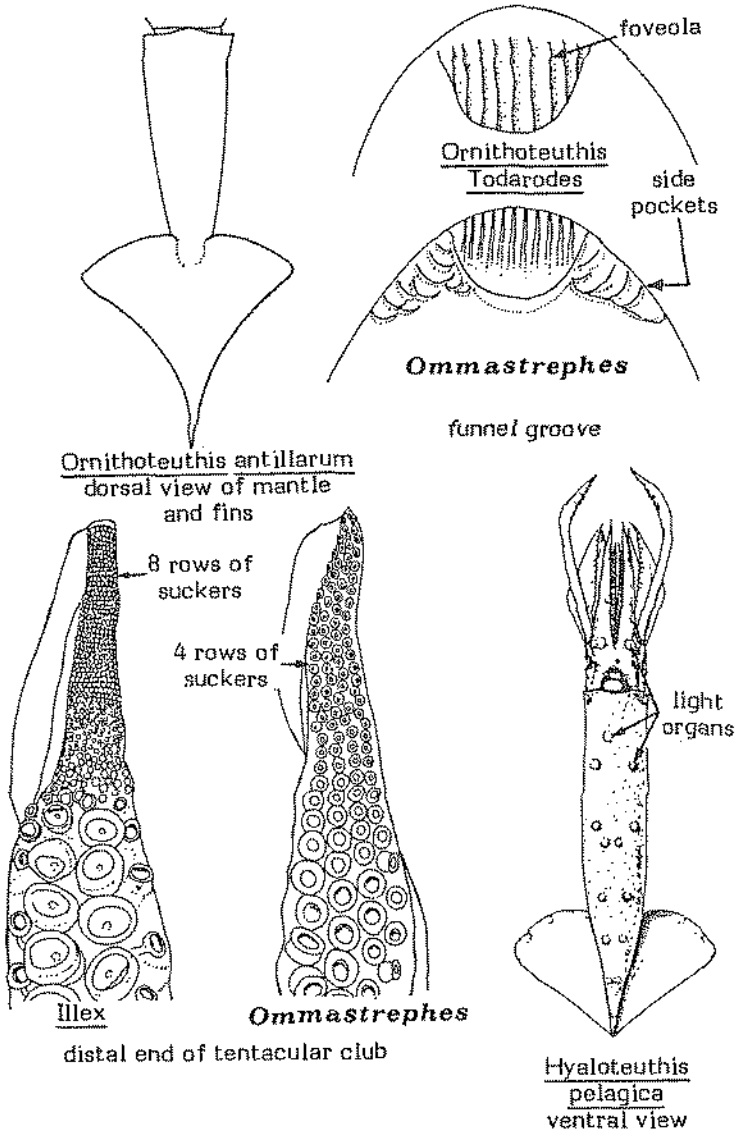
PRESENT FISHING GROUNDS :

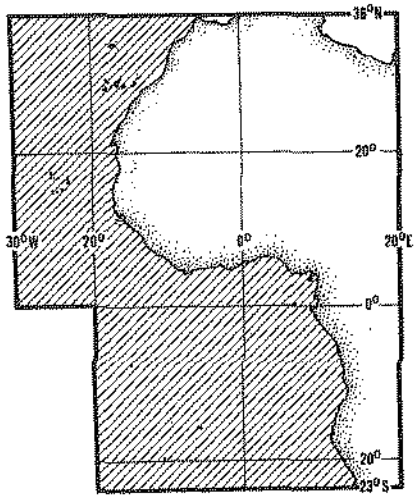
Currently not fished commercially in Area 34. Although O. pteropus *is considered to be very abundant,* no assessment of actual population size has been made.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Fishing techniques would be jigging machine, hand jigs and dip-net at night using lights for attraction. Currently used in Madeira (locally) for fish bait and human consumption.





OMMAS Orni 1

1981

FAO SPECIES IDENTIFICATION SHEETS

FAMILY : OMMASTREPHIDAE

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

Ornithoteuthis antillarum Adam, 1957

OTHER SCIENTIFIC NAMES STILL IN USE : None

VERNACULAR NAMES:

FAO : En - Bird squid
Fr - Encornet oiseau
Sp - Pota pájara

NATIONAL :

DISTINCTIVE CHARACTERS :

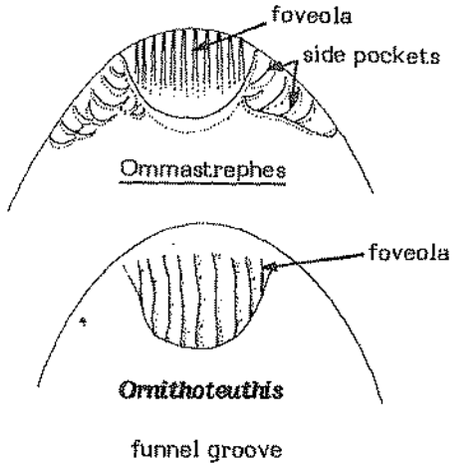
Mantle muscular, narrow, drawn out posteriorly into a long pointed tail; funnel groove with foveola with 7 to 12 indistinct folds, no side pockets; no external light organs; a long, thin usually pinkish stripe of luminescent material along the ventral surface of the viscera from about the level of the heart to the posterior tip of the viscera; discrete light organs on the ink sac and rectum; no distinct fixing apparatus on tentacular stalk.

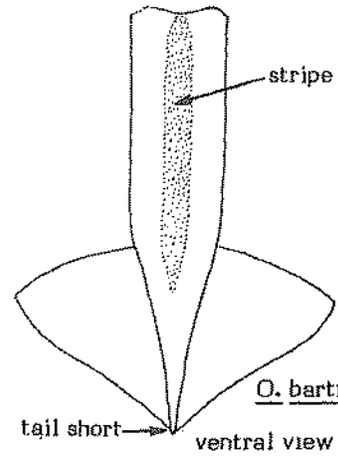
Colour: purplish-maroon, darkest on dorsal surface.

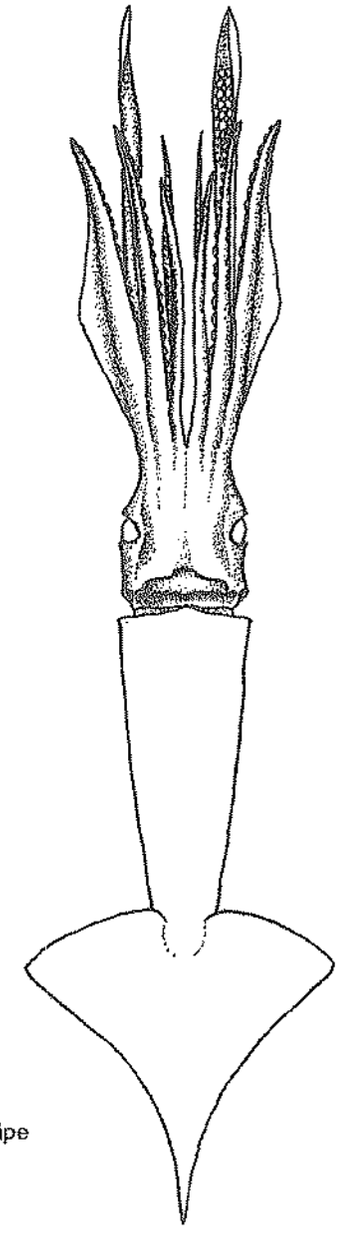
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Todarodes species: no luminous strip along ventral portion of viscera; mantle not tapering to a long, tail-like posterior point.

Ommastrephes species: external light organs such as an oval patch on antero-dorsal mantle (O. pteropus) or as a long stripe along the ventral midline (O. bartrami) (no external light organs in Ornithoteuthis antillarum); mantle not drawn out posteriorly into a long, pointed tail; funnel groove possesses foveola and side pockets (side pockets absent in Ornithoteuthis).

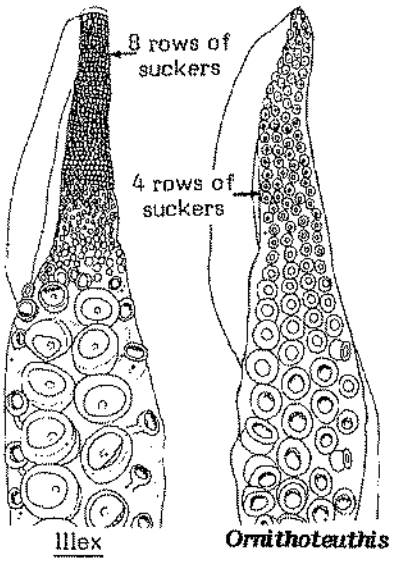




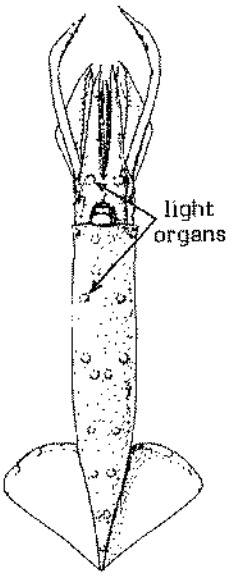


Hyaloteuthis pelagica: mantle with 19 round light organs on ventral surface; 4 roundish light organs in integument along ventral surface of each ventral arm; funnel groove with foveola and side pockets.

Todaropsis eblanae and Illex species: funnel groove without foveola or side pockets. Furthermore, tip of tentacular clubs (dactylus) with 8 rows of numerous small suckers in Illex species (only 4 rows in Ornithoteuthis); no light organs.



distal end of tentacular club



Hyaloteuthis pelagica
ventral view

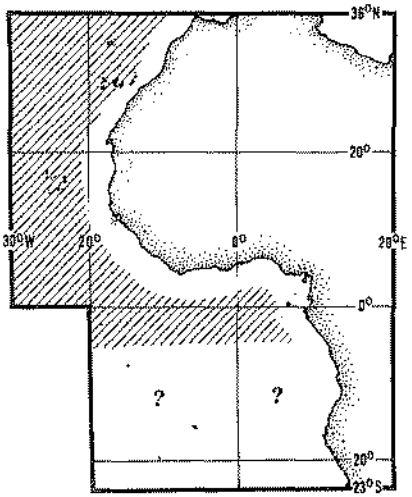
SIZE :

Maximum: up to 20 cm mantle length.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

In the area known from the Straits of Gibraltar to slightly south the equator. Elsewhere, in tropical and subtropical waters of the Western Atlantic.

The species is infrequently caught but its rarity in collections undoubtedly is a reflection of the animal's rapid, powerful swimming ability. Specimens have been captured in bottom-fishing trawls during the day at 585 to 1 100 m (mostly 640 to 825 m); night-time captures were made in large midwater trawls at 100 to 600 m over very deep water and by dip-net at the surface in the open ocean. Thus, O. antillarum apparently is associated with bottom during the day and disperses into the water column at night.



PRESENT FISHING GROUNDS :

Not currently fished commercially. May inhabit continental shelf and slope waters or be associated with islands, as major catches were made in bottom trawls. Too few data are available on distribution, abundance, and biology to allow prediction of fishing potential.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Fishing techniques would include jigging, dip-netting and especially otter and midwater trawling.

The species should be edible, as other members of the family are confirmed to be good.

OMMAS Todarod 1a

1981

FAO SPECIES IDENTIFICATION SHEETS

FAMILY : OMMASTREPHIDAE

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

Todarodes sagittatus angolensis Adam, 1962

OTHER SCIENTIFIC NAMES STILL IN USE : None

VERNACULAR NAMES:

FAO : En - Angola flying squid
Fr - Toutenon angolais
Sp - Pota de Angola

NATIONAL :

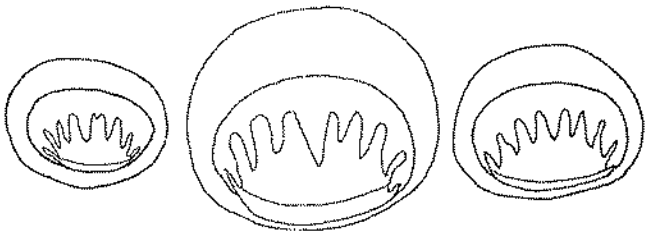
DISTINCTIVE CHARACTERS :

Arm sucker rings with large distal teeth alternating with very small teeth; carpal area of club very short with 4 pairs of suckers; funnel groove with foveola, no side pockets; no light organs on viscera.

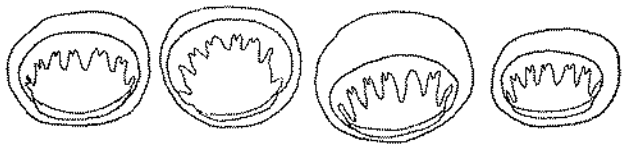
Colour: maroon-darkest dorsally.

OISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Todarodes sagittatus sagittatus: carpal area of club very long with 10 to 12 pairs of suckers (carpal area short, with only 4 pairs of suckers in T. s. sagittatus); arm sucker rings with no small teeth alternating with large teeth.

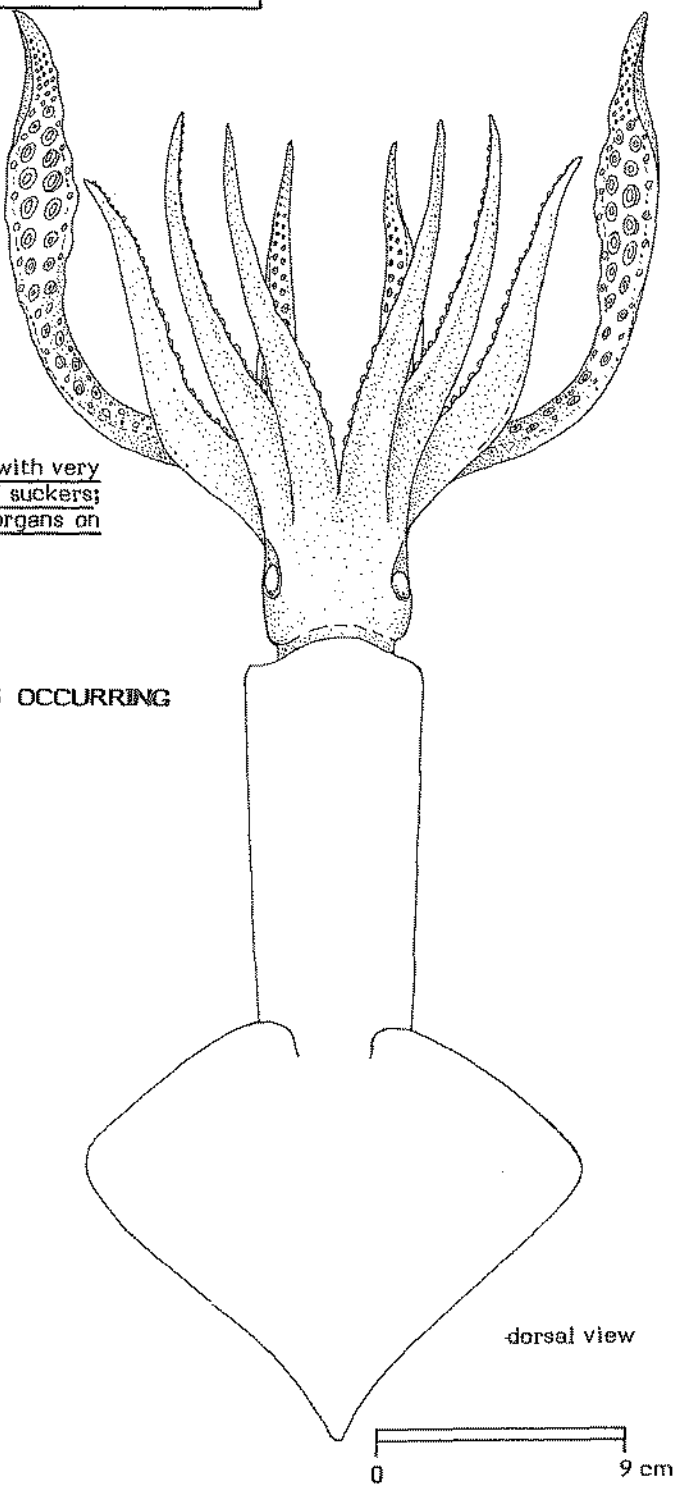


T. sagittatus sagittatus



T. sagittatus angolensis

examples of arm sucker rings



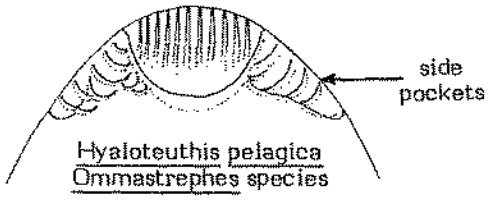
dorsal view

0 9 cm

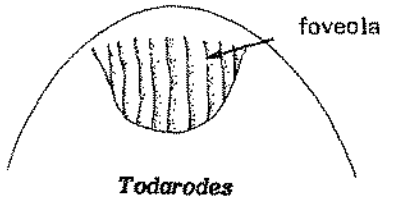
Ornithoteuthis antillarum: a luminous strip present along ventral surface of viscera.

Hyaloteuthis pelagica and Ommastrephes species: funnel groove with foveola and side pockets (no side pockets in Todarodes).

Todaropsis eblanae and Illex coindetii: funnel groove without foveola or side pockets (foveola present in Todarodes).



Hyaloteuthis pelagica
Ommastrephes species



Todarodes

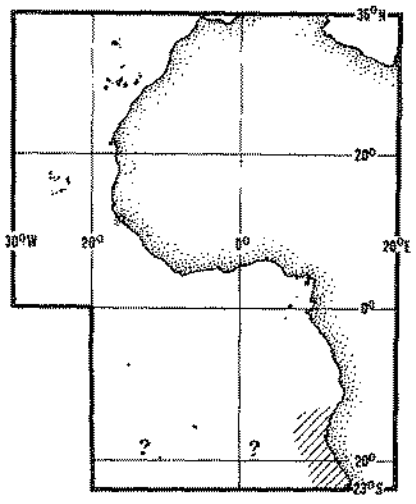
funnel
groove

SIZE :

Maximum: females up to 35 cm mantle length, male maximum size unknown.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Limited to the Eastern Atlantic, south of 13°S to around South Africa and into Indian Ocean; limit unknown.



PRESENT FISHING GROUNDS :

No special fishery exists for this species.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Caught with otter trawls.

OMMAS Todarod 1b

1981

FAO SPECIES IDENTIFICATION SHEETS

FAMILY : OMMASTREPHIDAE

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

Todarodes sagittatus sagittatus (Lamarck, 1799)

OTHER SCIENTIFIC NAMES STILL IN USE : None

VERNACULAR NAMES:

FAO : En - European flying squid
Fr - Toutenon commun
Sp - Pota europea

NATIONAL :

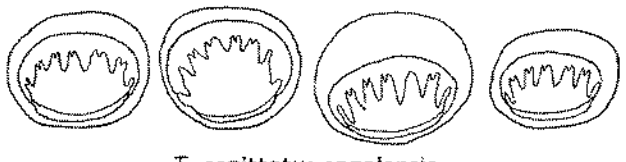
DISTINCTIVE CHARACTERS :

Funnel groove with foveola and without side pockets; arm suckers with enlarged central tooth, 7 to 9 regular teeth and virtually no small alternating teeth; club suckers on dactylus in 4 rows, suckers on elongate carpus in 10 to 12 pairs; entire club relatively very long, extending along stalk; no light organs on viscera.

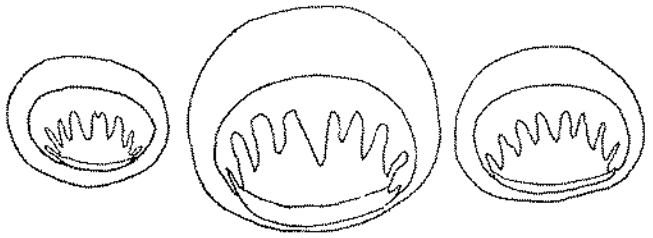
Colour: deep maroon to reddish; darkest dorsally.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Todarodes sagittatus angolensis: short carpal area on club, with 4 pairs of suckers (10 to 12 pairs in T. s. sagittatus); arm suckers with large distal teeth consistently alternating with very small teeth.

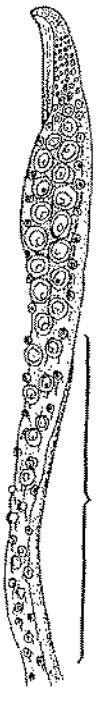


T. sagittatus angolensis



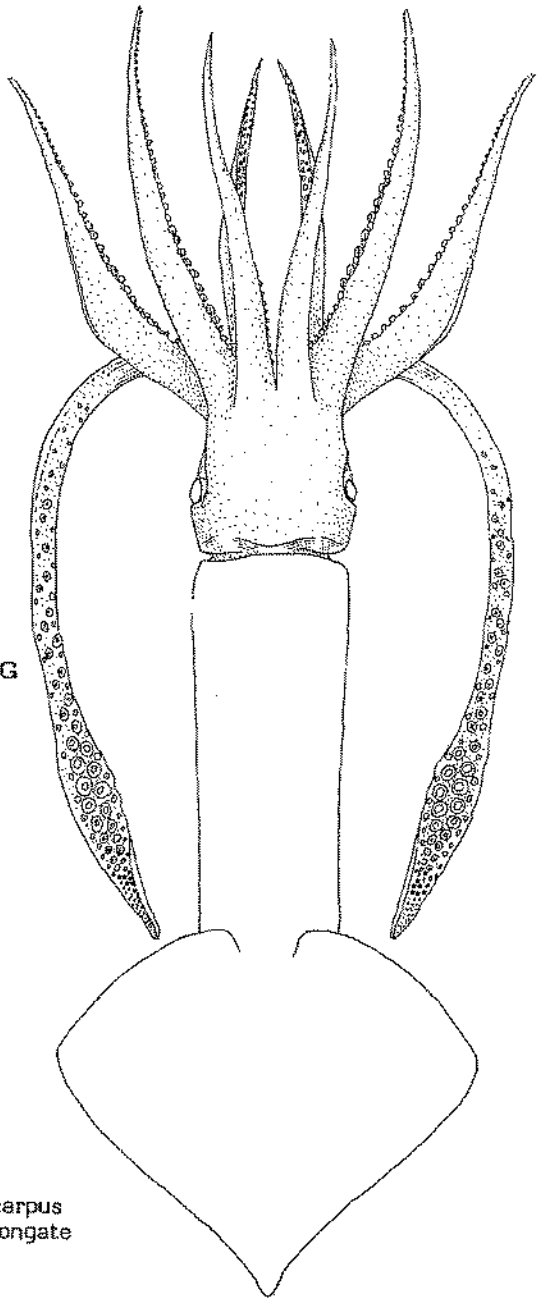
T. sagittatus sagittatus

examples of arm sucker rings



carpus elongate

tentacular club



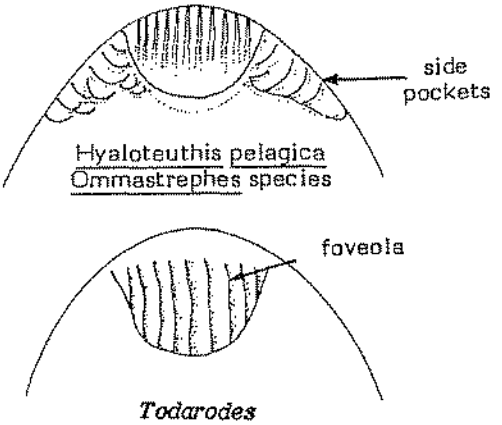
dorsal view



Ornithoteuthis antillarum: luminous strip along ventral surface of viscera.

Hyaloteuthis pelagica and Ommastrephes species: funnel groove with foveola and side pockets (side pockets absent in Todarodes; light organs present (none in Todarodes).

Todaropsis eblanae and Illex coindetii: funnel groove without foveola or side pockets (foveola present in Todarodes). Furthermore, dactylus of club with 8 rows of suckers in I. coindetii (4 in T. sagittatus sagittatus).



SIZE :

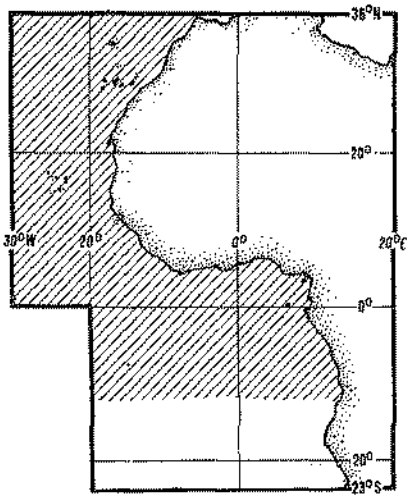
Maximum: 75 cm mantle length.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

In the area, found from the Straits of Gibraltar to 13°S; northward extending into the Mediterranean Sea and up to the Norwegian Sea.

Spawning takes place in autumn; males mature at about 25 cm and females at 30 cm mantle length. Females carry about 15 000 eggs of 2.3 mm diameter in the ovary at maturity. Undergoes shoreward migrations in large schools. Neritic to oceanic species, surface to 1 000 m, temperature range 1° to 22°C.

Preys on fishes.



PRESENT FISHING GROUNDS :

Fished along the continental slope with maximum catches during March to May. Depth range from 90 to 260 m, maximum catches at 120 to 160 m.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Caught with otter trawls.

Deepfrozen for export.

OMMAS Todarop 1

1981

FAO SPECIES IDENTIFICATION SHEETS

FAMILY : OMMASTREPHIDAE

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

Todaropsis eblanae (Ball, 1841)

OTHER SCIENTIFIC NAMES STILL IN USE : None

VERNACULAR NAMES:

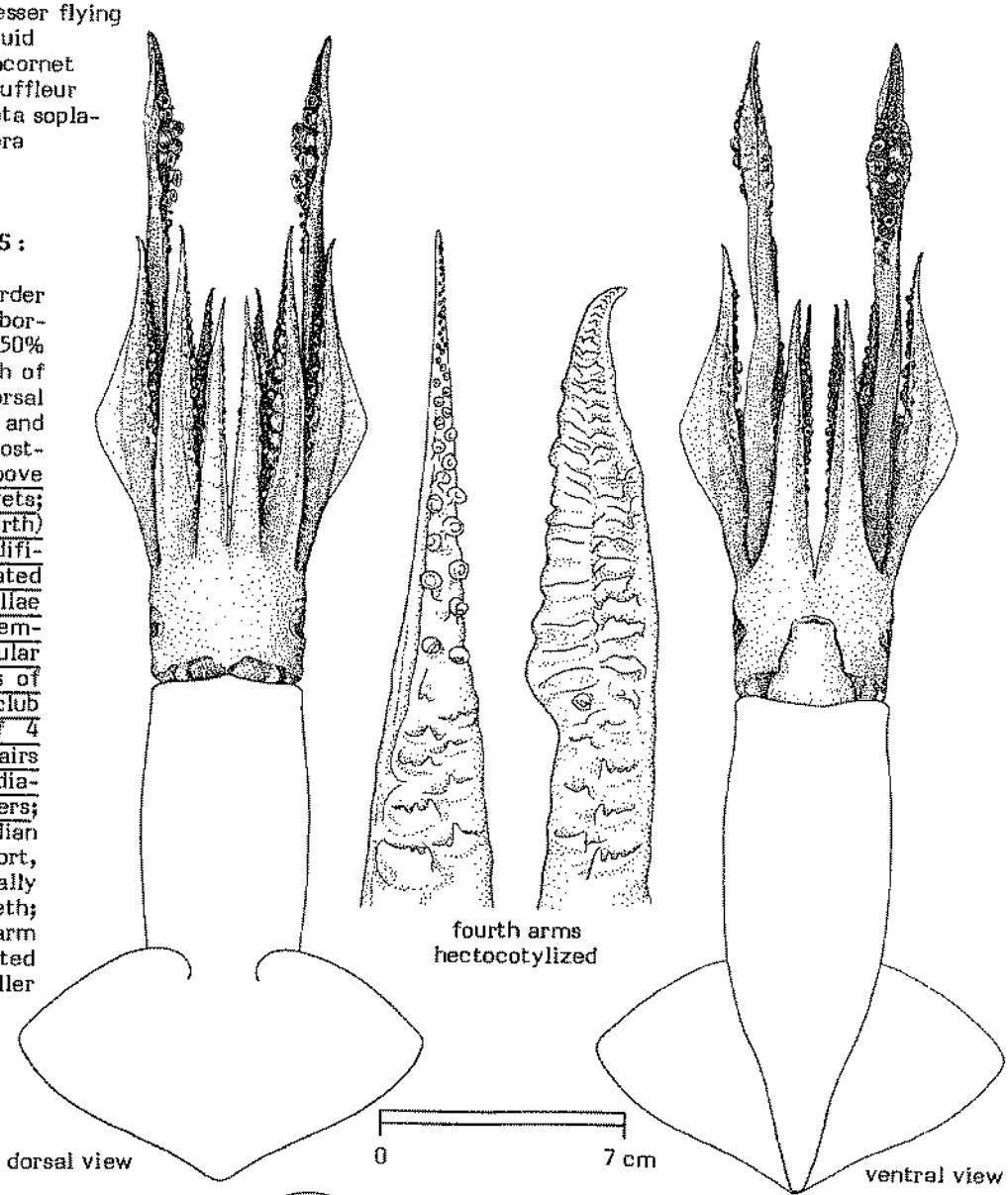
FAO : En - Lesser flying squid
Fr - Encornet souffleur
Sp - Pota sopladora

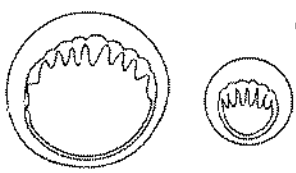
NATIONAL :

DISTINCTIVE CHARACTERS :

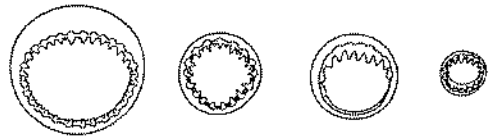
Fins with anterior border more convex than posterior border; length of fin less than 50% of dorsal mantle length, width of both fins equal to 90% of dorsal mantle length; head large and broad, 4 nuchal folds on posterior of head; funnel groove without foveola or side pockets; left and right ventral (fourth) arms hectocotylized by modification of suckers into cirrated lappets with transverse lamellae and expanded protective membrane; dactylus of tentacular club with 4 longitudinal rows of small suckers; manus of club with 6 transverse rows of 4 suckers each with median pairs up to four times larger in diameter than lateral suckers; sucker rings of largest median suckers with about 30 short, pointed teeth, occasionally alternating with minute teeth; sucker rings of largest arm suckers with one large pointed median tooth and 3 or 4 smaller pointed teeth.

Colour: light maroon, darkest dorsally.





examples of sucker rings from ventrolateral arm



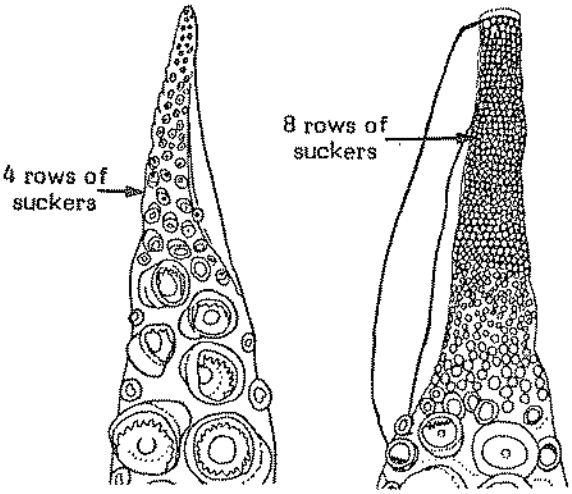
examples of sucker rings from tentacular club

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Illex coindetii: club with 8 rows of suckers on dactylus (4 in *T. eblanae*).

Ornithoteuthis antillarum and Todarodes species: funnel groove with foveola.

Hyaloteuthis pelagica and Ommastrephes species: funnel groove with foveola and side pockets. Furthermore, ventral surface of mantle with 19 round light organs in Hyaloteuthis pelagica (no light organs in T. eblanae).



Todaropsis eblanae — Illex

distal end of tentacular club

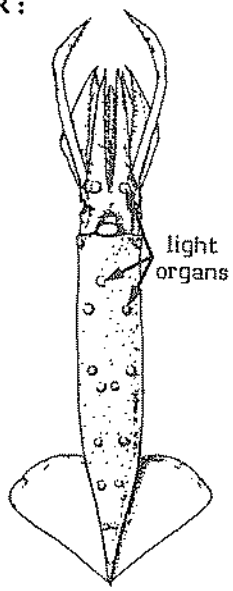
SIZE :

Maximum: males up to 16 cm, females up to 24 cm mantle length.

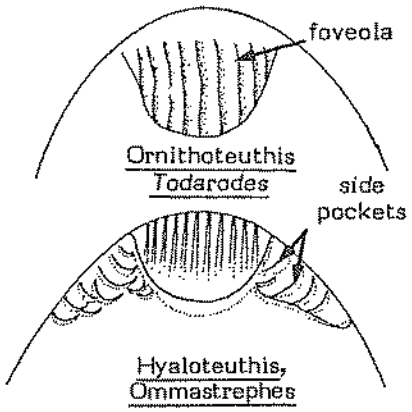
GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

In the area, from the Straits of Gibraltar to the southern limit and southward to South Africa; northward extending into the Mediterranean Sea, along the Atlantic coasts of Europe and into the North Sea.

A neritic species, associated with sandy to muddy bottoms at temperatures between 9° and 18°C; depth range from 20 to 650 m with concentrations between 100 and 400 m. Males mature at 11 cm and females at 15 cm mantle length at 1½ years; males contain 200 spermatophores and females about 10 000 eggs of 1 or 2 mm in diameter in the ovary.



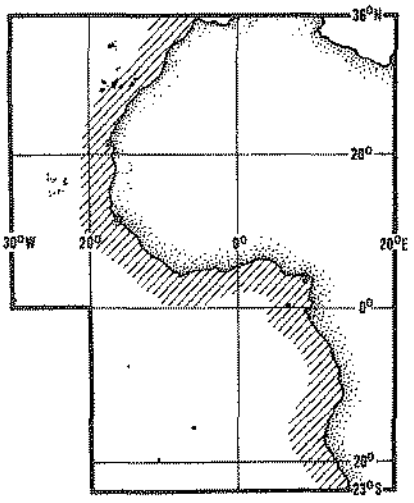
Hyaloteuthis pelagica
ventral view



funnel groove

PRESENT FISHING GROUNDS :

Fished on the continental slope along the Sahara Bank between 100 and 400 m, mostly at 200 m. Often captured with *Illex coindetii*.



CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Caught with otter trawls.

ONYCHO

1981

FAO SPECIES IDENTIFICATION SHEETS

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

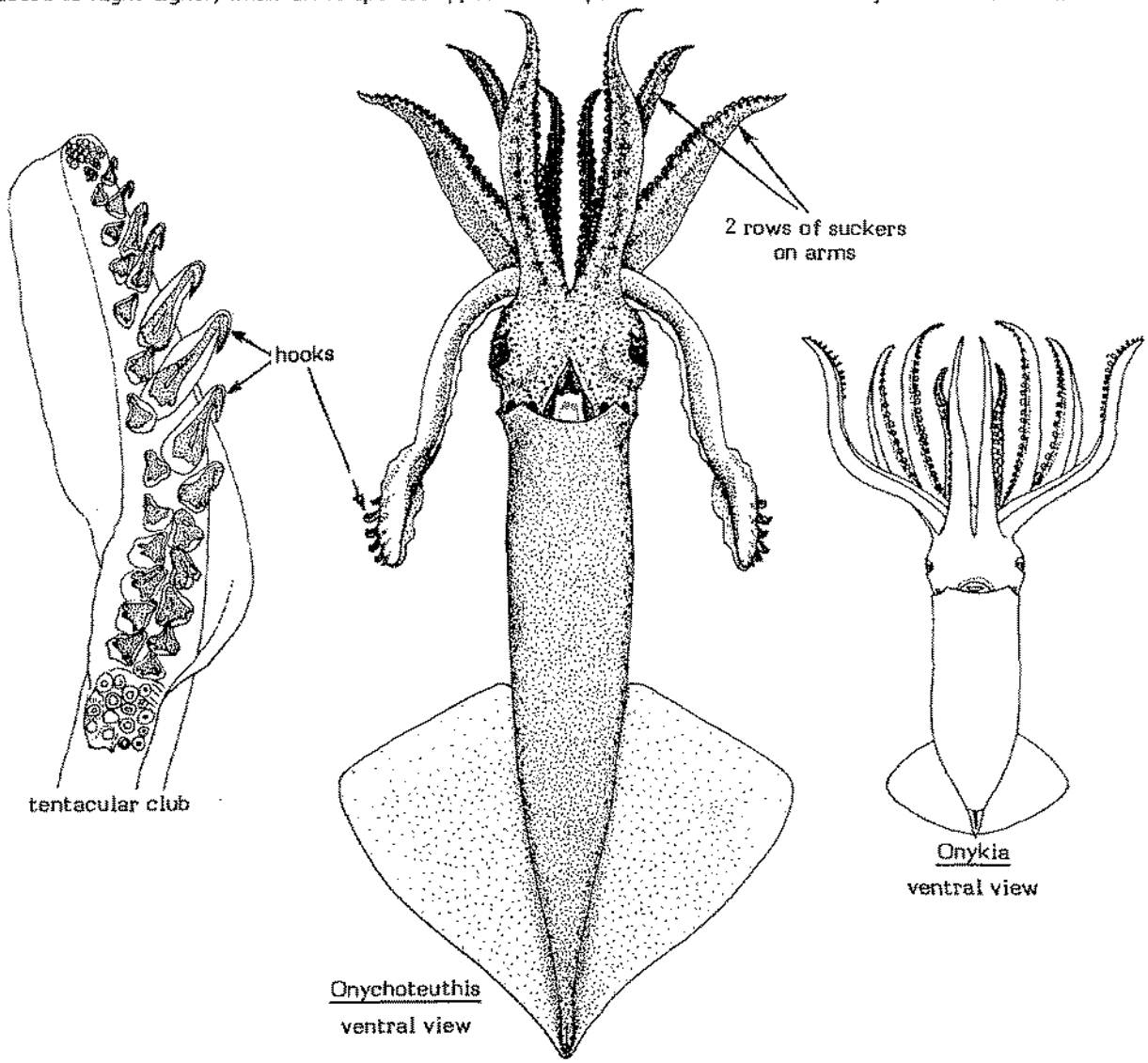
ONYCHOTEUTHIDAE

Hooked squids

Body muscular, tail pointed, fins with sharp lateral angles; funnel-locking apparatus simple, straight; 8 arms and 2 contractile tentacles around mouth; 2 rows of suckers on arms; tentacular club with 2 rows of hooks and, except in Onychoteuthis, 2 marginal rows of suckers; buccal connectives attached to ventral borders of fourth arms.

Colour: maroon to brick red, darker dorsally.

Medium-sized oceanic squids, widely distributed and generally powerful swimmers. One species supports a moderate fishery in the Pacific, but to date the family is not widely utilized. Several epipelagic species are attracted to night-lights, while other species appear to be epibenthic and are taken only in bottom trawls.



SIMILAR FAMILIES OCCURRING IN THE AREA:

Ommastrephidae: funnel-locking apparatus ⊥-shaped; tentacular clubs usually with 4, exceptionally with 8 (Illex) rows of suckers at tips, no hooks; buccal connectives attached to dorsal borders of fourth arms.

Thysanoteuthidae: funnel-locking apparatus ⊣-shaped; 4 rows of suckers on tentacular clubs, no hooks; rhomboidal fins that occupy nearly entire mantle length.

Lepidoteuthidae: surface of mantle covered with small integumentary scales; suckers in 2 rows on arms, in 4 rows on tentacles, no hooks.

Loliginidae: eyes covered with a transparent corneal membrane (eyes open in other families); arms with 2 rows of suckers, tentacular clubs with 4; no hooks.

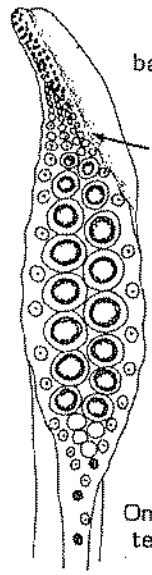


⊥-shaped
Ommastrephidae

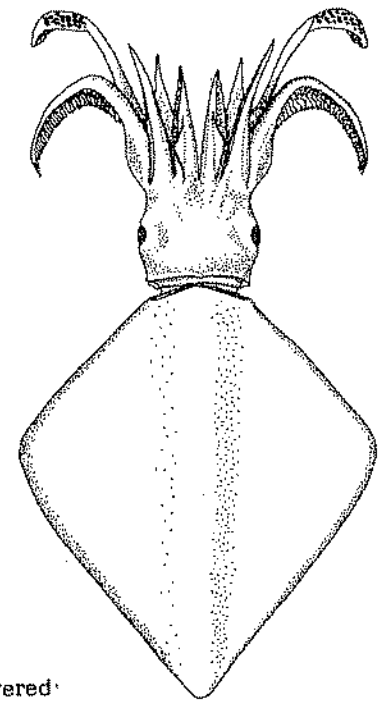
⊣-shaped
Thysanoteuthidae

simple, straight
Onychoteuthidae
Lepidoteuthidae
Loliginidae

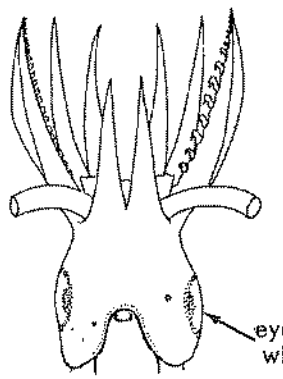
basic types of funnel-locking apparatus



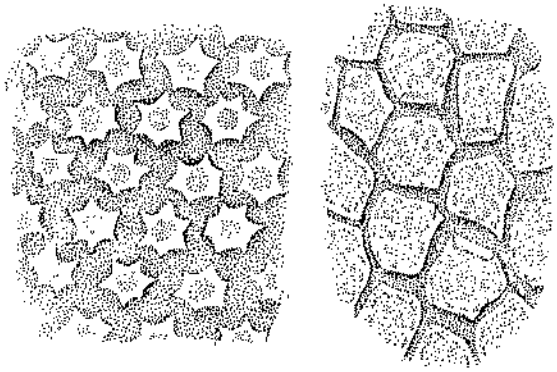
Ommastrephidae tentacular club



Thysanoteuthidae



Loliginidae



Lepidoteuthidae
types of scales

KEY TO GENERA OCCURRING IN THE AREA:

1 a. Mantle soft, semi-gelatinous; tentacles absent (Fig. 1) ..... Chaunoteuthis

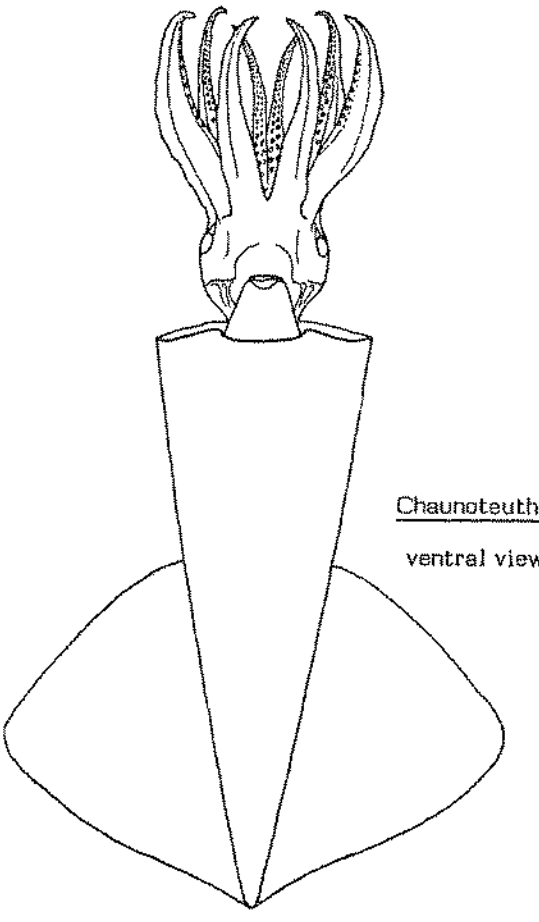
1 b. Mantle firm, muscular; tentacles present

2 a. Nuchal folds present (Fig. 2)

3 a. Rachis of gladius with a strong ridge visible on entire length of dorsal midline; 2 round light organs along ventral midline of intestinal tract (Fig. 3) ..... Onychoteuthis

3 b. Rachis of gladius not strongly keeled, not visible along dorsal midline in subadults, but visible anteriorly in adults; light organs absent from intestinal tract (Fig. 4) .. Ancistroteuthis

2 b. Nuchal folds absent (Fig 5)



Chaunoteuthis

ventral view

Fig. 1

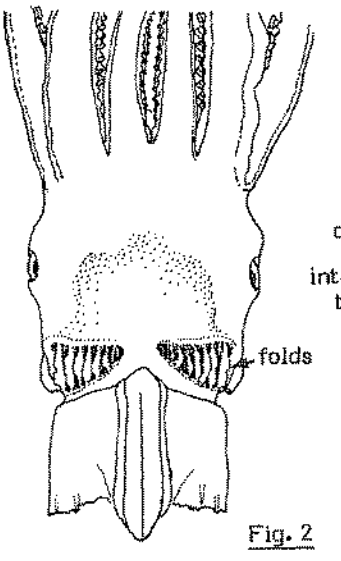


Fig. 2

Onychoteuthis

dorsal view of head

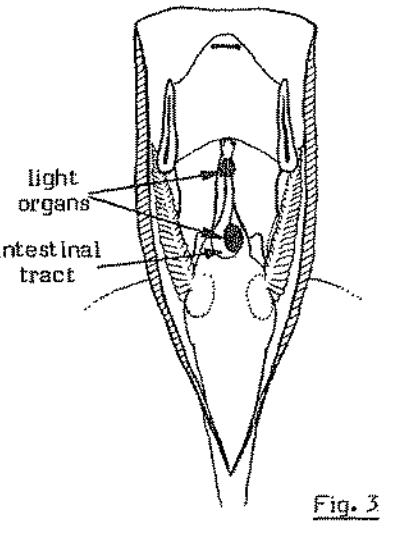


Fig. 3

Onychoteuthis

viscera (after removal of ventral portion of mantle)

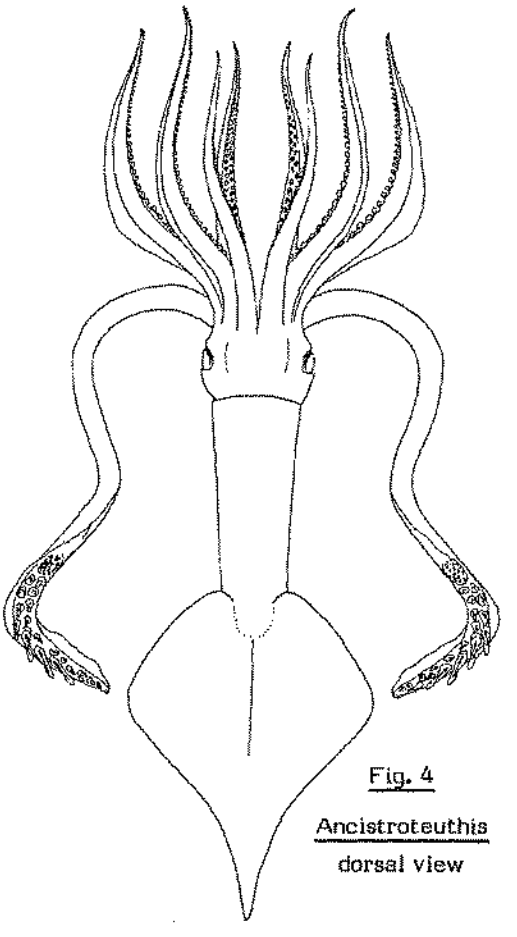


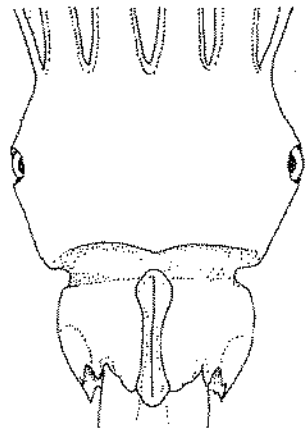
Fig. 4

Ancistroteuthis

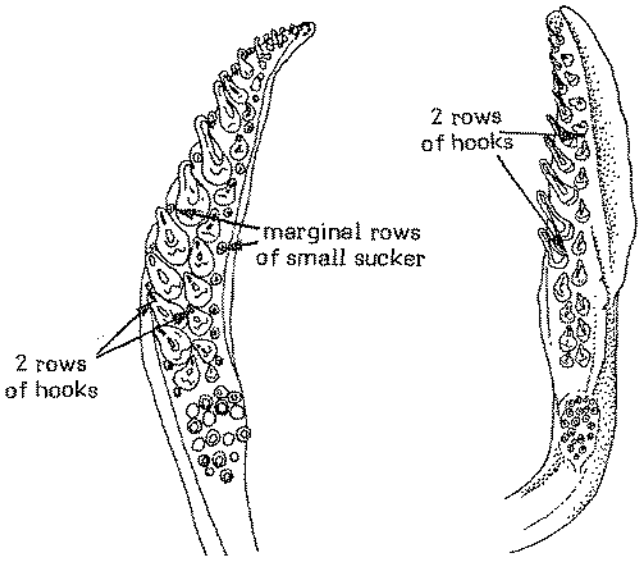
dorsal view

4 a. Manus of tentacular club with 2 median rows of hooks and 2 lateral half rows of small suckers (Fig. 6a) ..... Onykia

4 b. Manus of tentacular club with 2 median rows of hooks, but no marginal rows of suckers or hooks (Fig. 6b) ..... Moroteuthis



Onykia, Moroteuthis Fig. 5
dorsal view of head



a. Onykia b. Moroteuthis Fig. 6

tentacular club

LIST OF SPECIES OCCURRING IN THE AREA:

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

Ancistroteuthis lichtensteini (Orbigny, 1839) ONYCHO Anc 1

Chaunoteuthis mollis Appellöf, 1890

Moroteuthis aequatorialis Thiele, 1921
Moroteuthis robsoni Adam, 1962

Onychoteuthis banksi (Leach, 1817) ONYCHO Ony 1

Onykia appellofi (Pfeffer, 1900)

Prepared by C.F.E. Roper and M.J. Sweeney, National Museum of Natural History, Smithsonian Institution, Washington, D.C., U.S.A.

ONYCHO Anc 1

1981

FAO SPECIES IDENTIFICATION SHEETS

FAMILY : ONYCHOTEUTHIDAE

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

Ancistroteuthis lichtensteini (Orbigny, 1839)

OTHER SCIENTIFIC NAMES STILL IN USE : None

VERNACULAR NAMES:

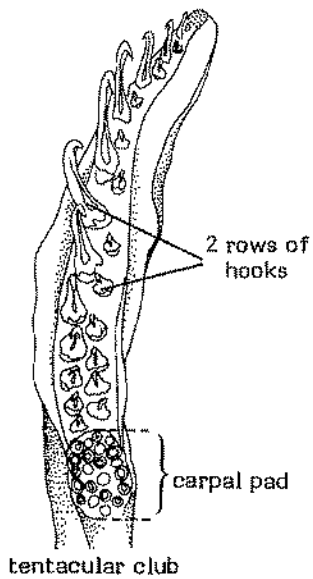
FAO : En - Angel squid
Fr - Cornet archange
Sp - Luria paloma

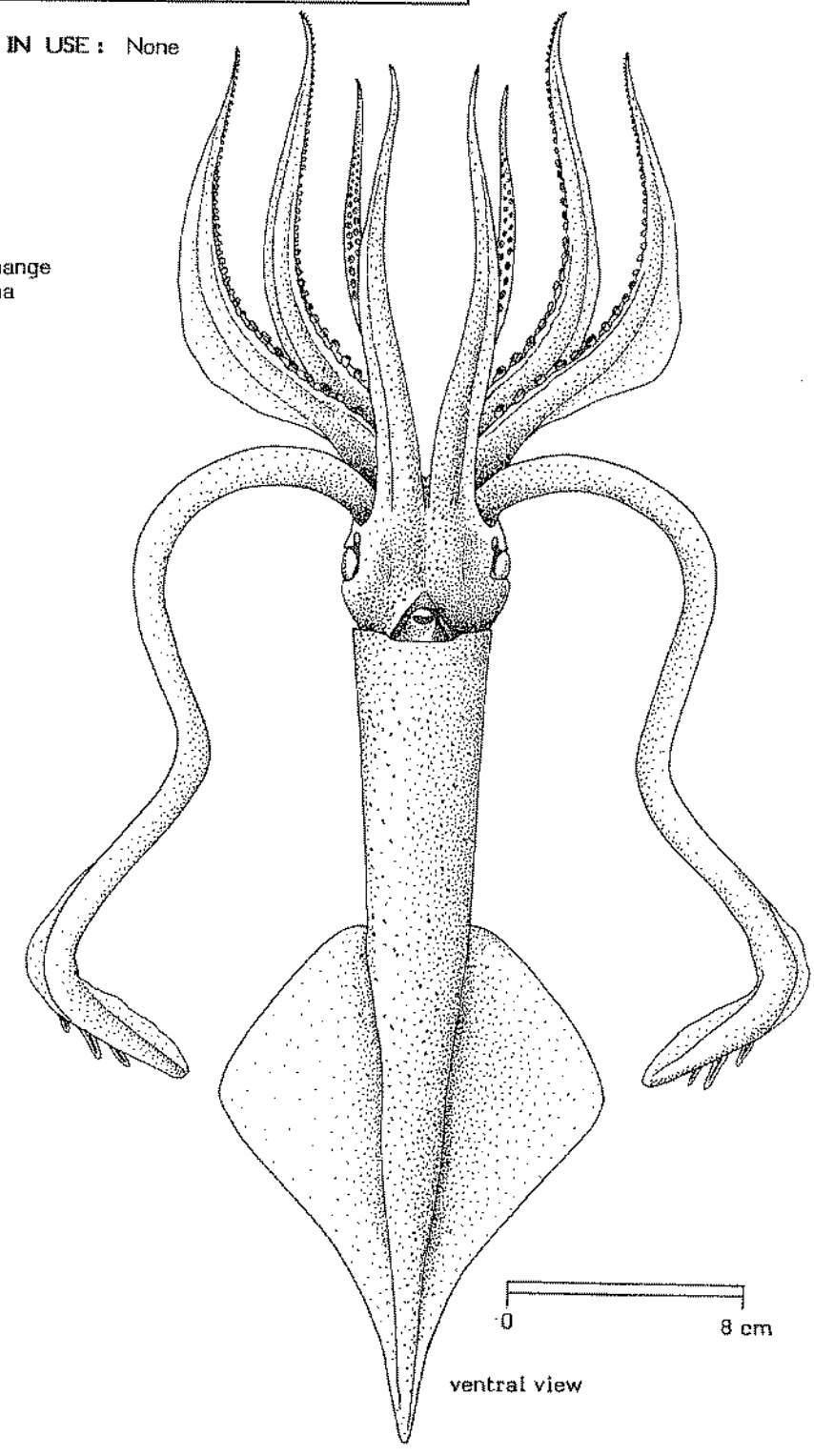
NATIONAL :

DISTINCTIVE CHARACTERS :

Tentacular club in adults with 2 median rows of hooks, but, lacking lateral rows of suckers; carpal pad of club elliptical with 8 to 12 suckers and 8 to 12 pads; 3 flap-like folds in neck area; rhachis of gladius not visible along dorsal midline of mantle in sub-adults, visible anteriorly in adults; light organs lacking on intestinal tract.

Colour: dark reddish-purple to reddish brown, darkest dorsally.



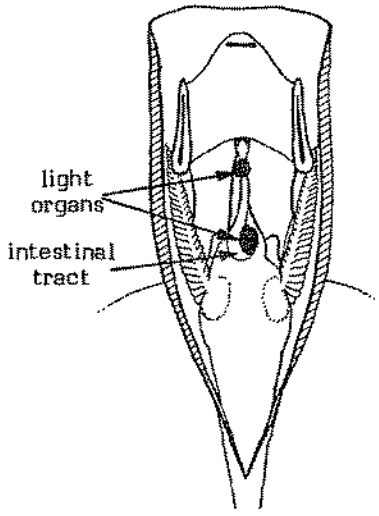


DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Onychoteuthis banksi: multiple (more than 3) nuchal folds in neck area; rhachis of gladius strongly keeled and visible along dorsal midline; 2 light organs present on viscera; 2 median rows of hooks and no marginal rows of suckers on manus.

Onykia appellofi and Moroteuthis species: no nuchal folds. Furthermore, 2 median rows of hooks and 2 half rows of marginal suckers on manus of club in O. appellofi.

Chaunoteuthis mollis: tentacles absent; mantle soft, semigelatinous.



Onychoteuthis

viscera (after removal of ventral portion of mantle)

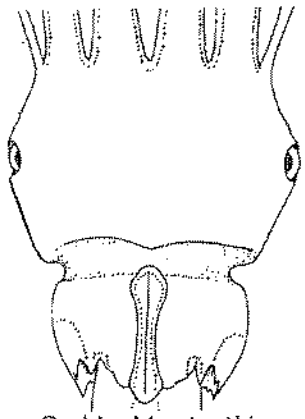
SIZE:

Maximum: 30 cm mantle length.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

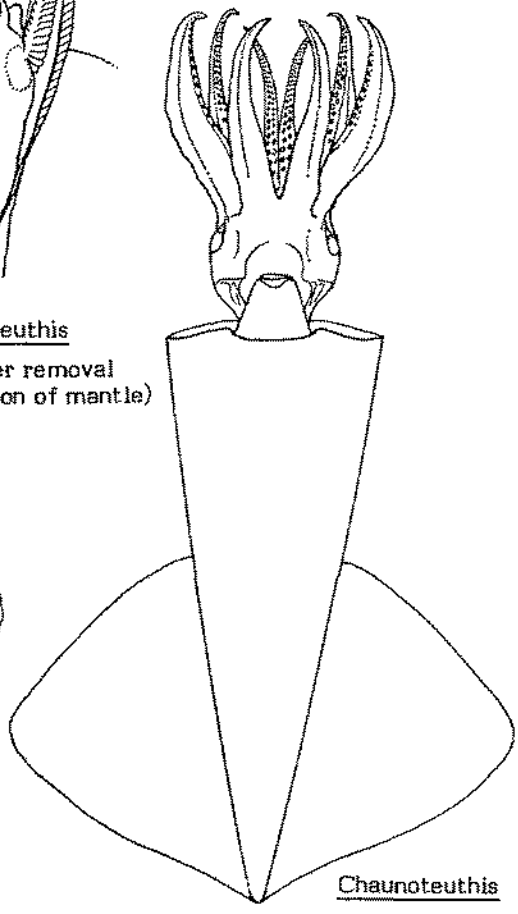
In the area, found from the Straits of Gibraltar to Angola. Elsewhere, in warm-temperate open waters of the Mediterranean Sea and North Eastern Atlantic, from the surface to 250 m depth.

Feeds on epipelagic and upper mesopelagic fishes, and crustaceans.



Onykia, Moroteuthis

dorsal view of head



Chaunoteuthis

ventral view

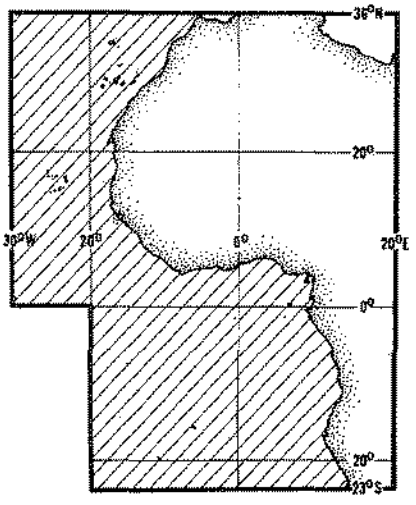
PRESENT FISHING GROUNDS:

No special fishery in this area.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught as bycatch in pelagic trawls.



ONYCHO Ony 1

1981

FAO SPECIES IDENTIFICATION SHEETS

FAMILY : ONYCHOTEUTHIDAE

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

Onychoteuthis banksi (Leach, 1817)

OTHER SCIENTIFIC NAMES STILL IN USE : None

VERNACULAR NAMES:

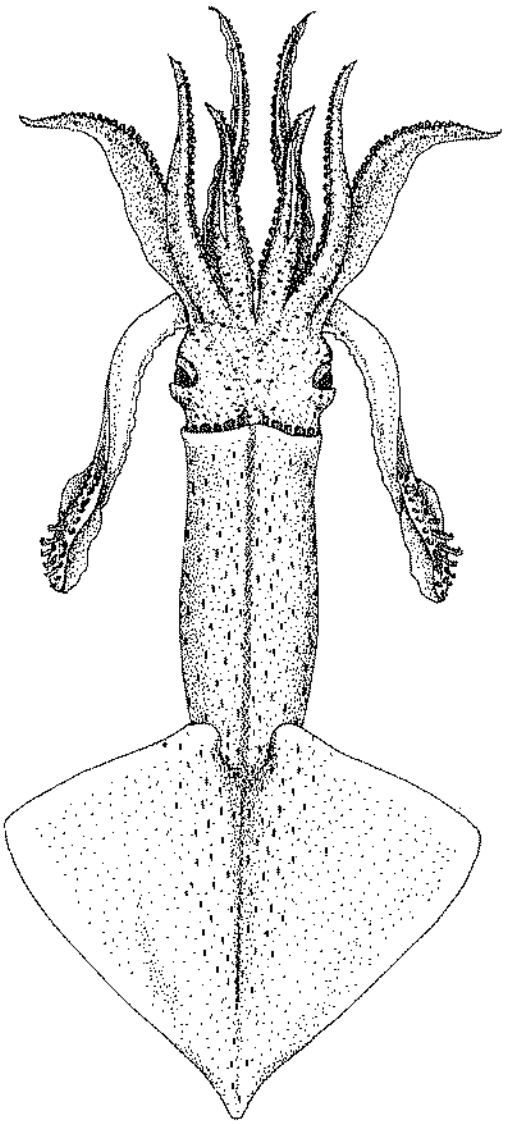
FAO : En - Hooked squid
Fr - Cornet crochu
Sp - Luria ganchuda

NATIONAL :

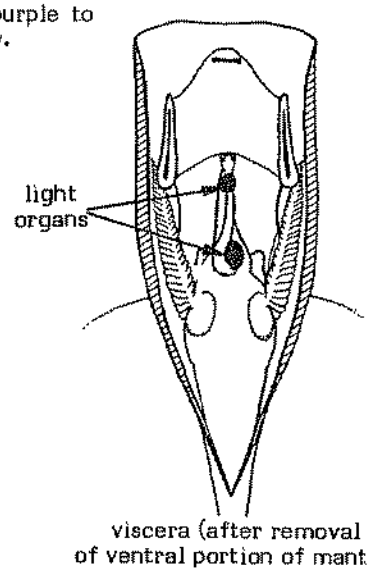
DISTINCTIVE CHARACTERS :

Tentacular club with 2 rows of large, claw-like hooks, no marginal rows of suckers; several elongate, flap-like folds around the dorso-lateral surface of the neck; gladius visible as a dark line through the skin along dorsal midline of mantle; 2 light organs along ventral midline on intestinal tract; fins with sharp lateral angles; tail pointed.

Colour: dark reddish-purple to reddish brown, darkest dorsally.



dorsal view



viscera (after removal
of ventral portion of mantle)

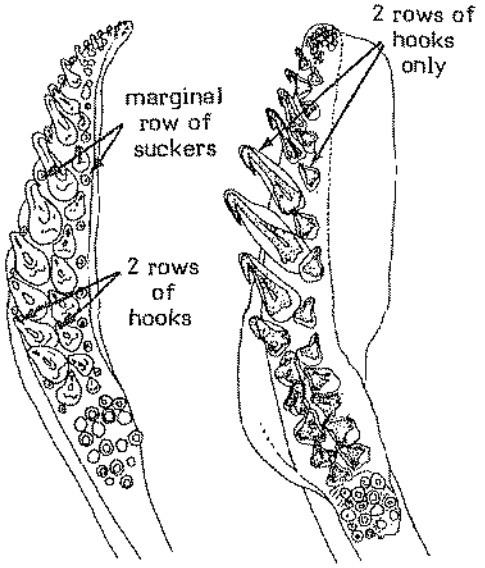
0 6 cm

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Ancistroteuthis lichtensteini: only 3 nuchal folds in neck area; rachis of gladius not strongly keeled, not visible along dorsal midline in subadults, but visible anteriorly in adults; light organs lacking along intestinal tract.

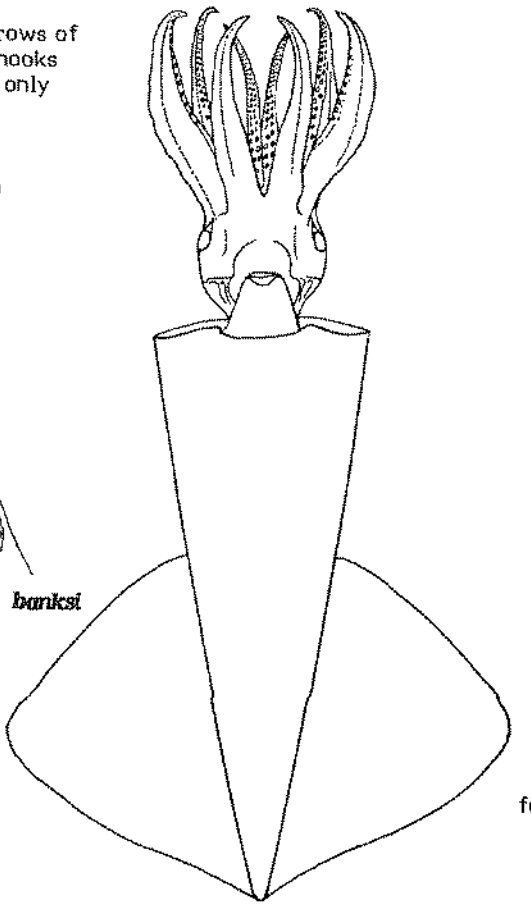
Onykia appellofi and Moroteuthis species: nuchal folds absent. Furthermore, manus of tentacular club with 2 median rows of hooks and 2 half-rows of suckers laterally (lateral rows absent in O. banksi).

Chaunoteuthis mollis: mantle soft, semigelatinous; tentacles absent.

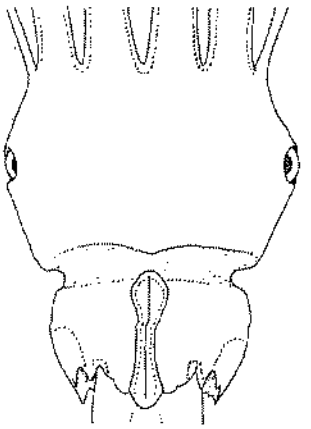


Onykia appellofi *Onychoteuthis banksi*

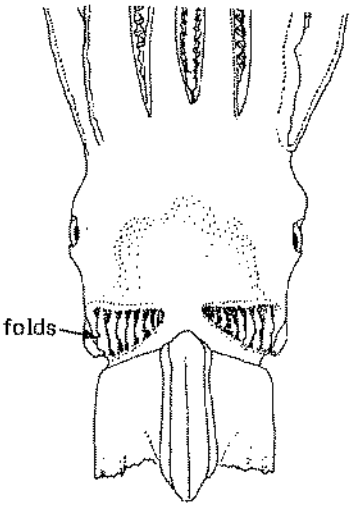
tentacular club



Chanoteuthis mollis



Onykia, Moroteuthis



Onychoteuthis banksi

dorsal view of head

SIZE :

Maximum: 20 cm mantle length.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Worldwide in warm and temperate oceanic waters, including *Fishing Area 34.*

This entirely oceanic species commonly comes to the night light in numbers and occasionally is found on the decks of ships in the morning; a powerful swimmer rarely caught in nets; normally lives from the surface to 150 m depth but is capable of much deeper excursions (to 800 m). Nothing is known of its biology in spite of its apparent abundance; spawning, life span, etc., unknown.

Feeds on epipelagic fishes and crustaceans.

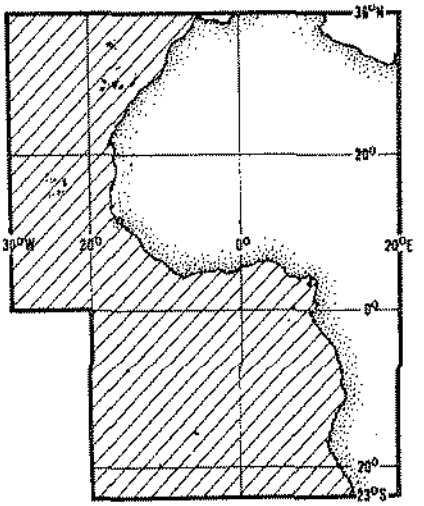
PRESENT FISHING GROUNDS :

At present not fished commercially in Fishing Area 34.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Presumably could be caught in some quantities with night light and jigging machine or liftnet.

Quality as human food judged to be good.



SEP

1981

FAO SPECIES IDENTIFICATION SHEETS

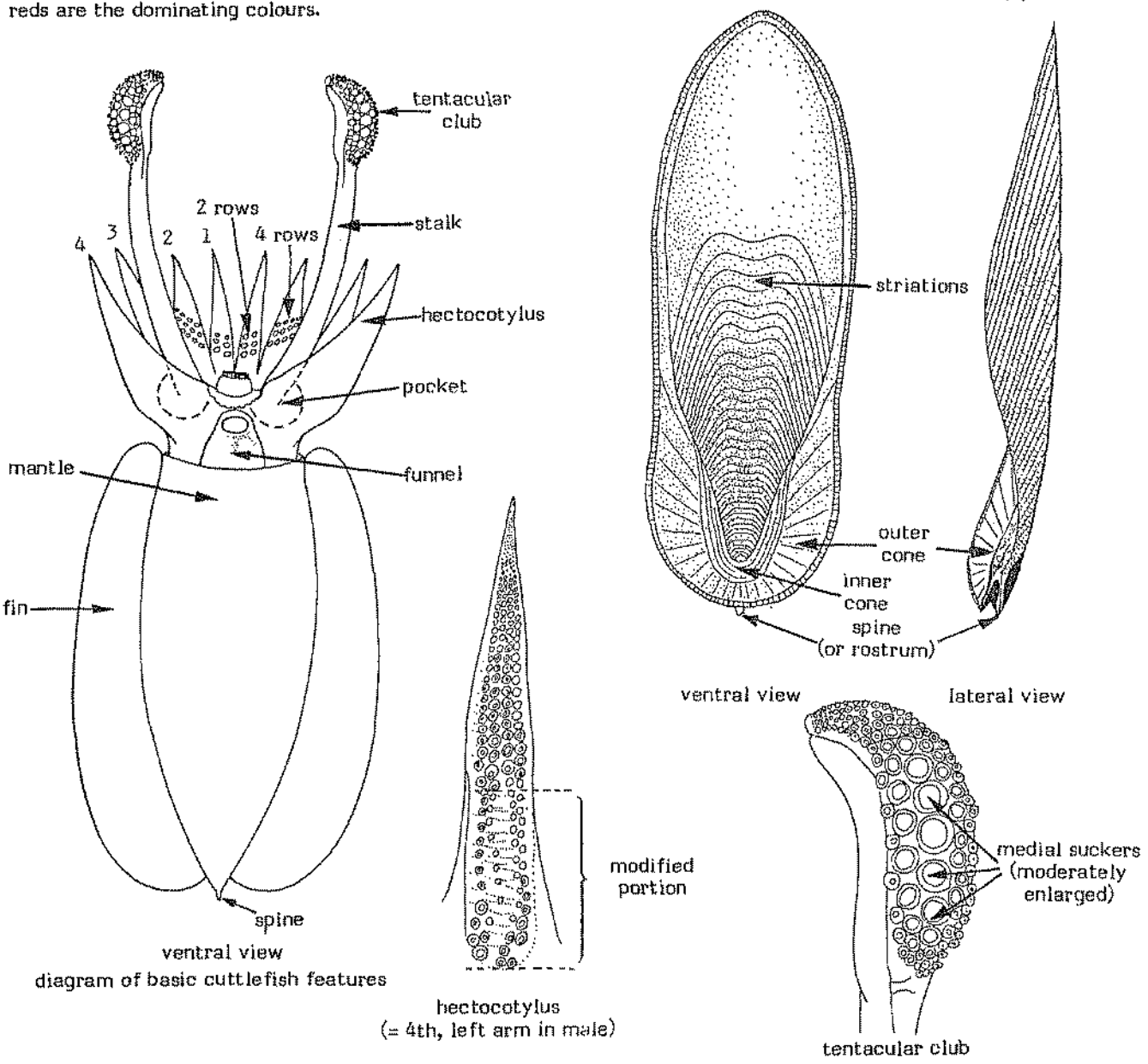
FISHING AREAS
34, 47 (in part)
(E.C. Atlantic)

SEPIIDAE

Cuttlefishes

Cuttlebone (shell or sepion) internal, chalky (calcareous), porous, finely laminate; mantle broad, robust, sac-like, slightly dorso-ventrally flattened; eyes covered with corneal membrane; fins narrow, long (more or less equal to mantle length); circumoral appendages 10; arms with 2 to 4 and tentacles with 4 to 8 longitudinal rows of suckers; tentacles retractile into pockets on ventrolateral sides of head.

Colour: variable due to the great complex of chromatophores (pigment cells); browns, blacks, yellows and reds are the dominating colours.



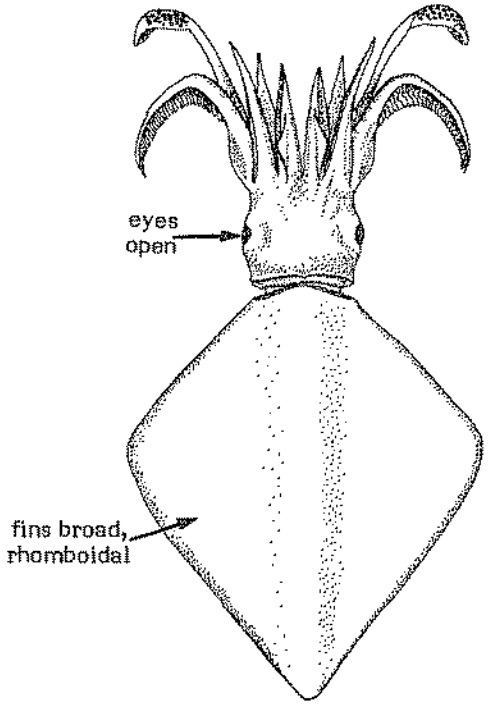
ventral view
diagram of basic cuttlefish features

hectocotylus
(= 4th, left arm in male)

The Sepiidae are small to large cephalopods (10 to 50 cm mantle length) that occur in warm and warm temperate waters of the Old World (absent in the Western Hemisphere). They are benthic and epibenthic, inhabiting littoral, shelf and upper slope waters. Habitats vary from rocky, sandy or muddy bottoms, grassflats, coral reefs, rubble, etc. Eggs are large and laid in grape-like clusters attached to hard objects on the bottom; life cycle up to 3 years. Prey includes crabs, shrimps, fishes. They are extremely important fisheries resources and in many areas form the major landings of cephalopods. The reported catch of cuttlefishes totalled about 40 000 t in Fishing Area 34 in 1978. Fishing techniques range from otter trawling, jigging, luring, spearing, seining. Their flesh is highly prized and constitutes an important item in foreign trade.

SIMILAR FAMILIES OCCURRING IN THE AREA:

Thysanoteuthidae: fins extending length of mantle but very broad and rhomboidal; eyes open, corneal membrane absent; tentacles and clubs not retractile into pockets; oceanic (occasionally strands).



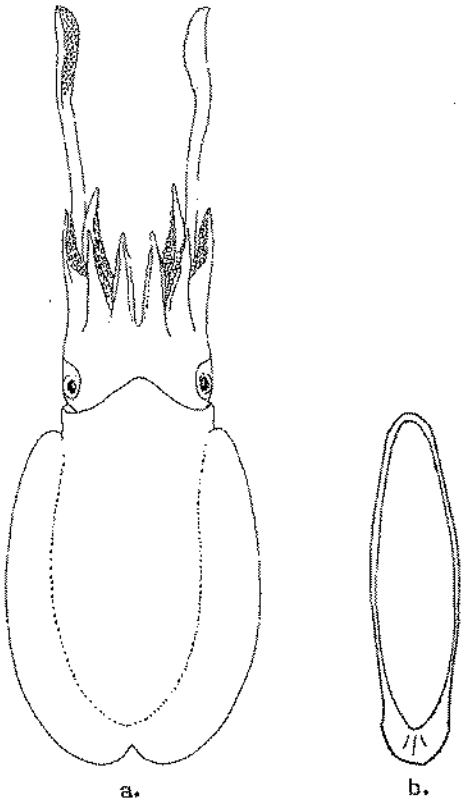
dorsal view

Thysanoteuthidae (Thysanoteuthis)

KEY TO GENERA OCCURRING IN THE AREA:

1 a. A glandular pore present at posterior end of mantle between ends of fins (Fig. 1a); no spine on posterior end of cuttlebone (Fig. 1b) ..... Sepiella

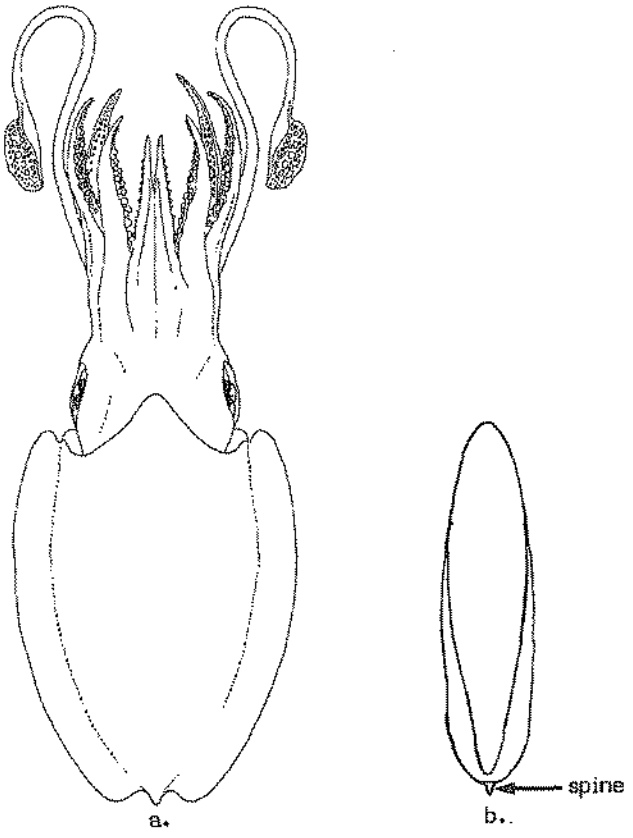
1 b. No glandular pore at posterior end of mantle (Fig. 2a); spine (or remnant) present (occasionally absent in some species) on posterior end of cuttlebone (Fig. 2b) ..... Sepia



cuttlebone

Sepiella

Fig. 1



cuttlebone

Sepia

Fig. 2

LIST OF SPECIES OCCURRING IN THE AREA:

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

Sepia bertheloti Orbigny, 1838	SEP Sep 2
Sepia elegans Blainville, 1827	SEP Sep 3
Sepia elobyana Adam, 1941	
Sepia officinalis Linnaeus, 1758 (two subspecies)	SEP Sep 1
Sepia orbignyana Ferussac, 1826	SEP Sep 4
Sepiella ornata (Rang, 1837)	SEP Sepie 1

Prepared by C.F.E. Roper and M.J. Sweeney, National Museum of Natural History, Smithsonian Institution, Washington, D.C., U.S.A.

SEP Sep 1

1981

FAO SPECIES IDENTIFICATION SHEETS

FAMILY : SEPIIDAE

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

Sepia officinalis subspecies

OTHER SCIENTIFIC NAMES STILL IN USE : Sepia officinalis officinalis Linnaeus, 1758
Sepia officinalis hierredda Rang, 1837

VERNACULAR NAMES:

FAO : En - Common cuttlefish
Fr - Seiche commune
Sp - Jibia (= Sepia)

NATIONAL :

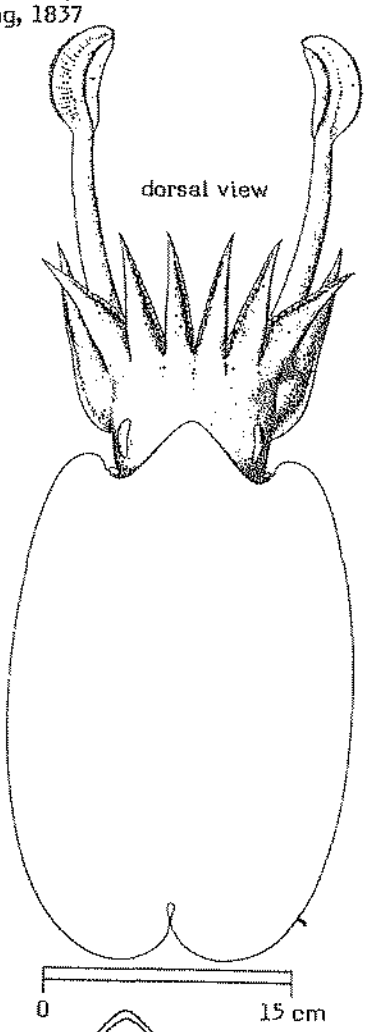
DISTINCTIVE CHARACTERS :

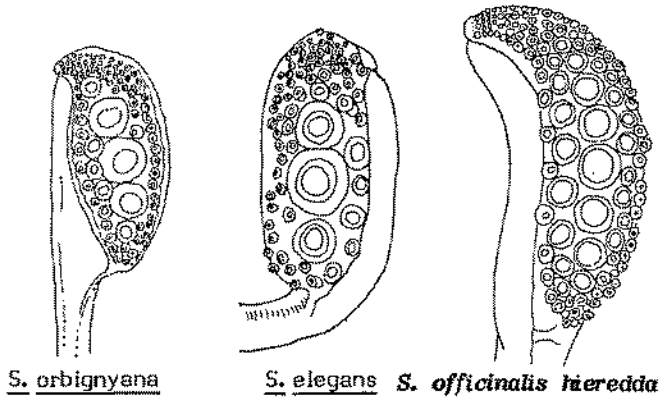
Left ventral arm (fourth) hectocotylized by reduction in size of suckers in proximal 5 to 8 horizontal rows (officinalis type) or in proximal 8 to 13 rows (hierredda type); rostrum soft (officinalis type) or hard (hierredda type); dorsal protective membrane of normal width (officinalis type) or little developed (hierredda type); tentacular club with 5 or 6 longitudinal rows of suckers, those of median row moderately enlarged; swimming membrane not extending proximally beyond base of club; cuttlebone anteriorly and posteriorly rounded (not acuminate), with parallel sides and a weak spine visible in juveniles, but embedded in chiton in adults, the striated zone not extending past midpoint of length (officinalis type), cuttlebone acuminate at both ends, with a spine also in adults and striations sometimes extending past midpoint of length (hierredda type).

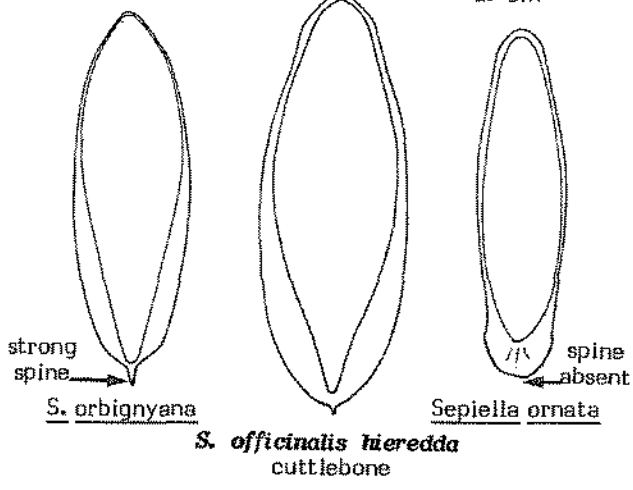
Colour: mottled, banded, striped patterns, primarily dark (blacks, browns) on light background (yellow, beige).

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Sepia orbignyana: size smaller (to 12 cm mantle length); hectocotylus with greatly reduced suckers for two thirds of its length, forming a zig-zag pattern along each margin and leaving mid-area naked; dorsal protective membrane narrow; tentacular club with 5 longitudinal rows of suckers, the median row with 3 greatly enlarged and 2 moderately enlarged suckers; swimming membrane extending dorsally beyond base of club; cuttlebone with a very strong, prominent, dorsally-directed spine.





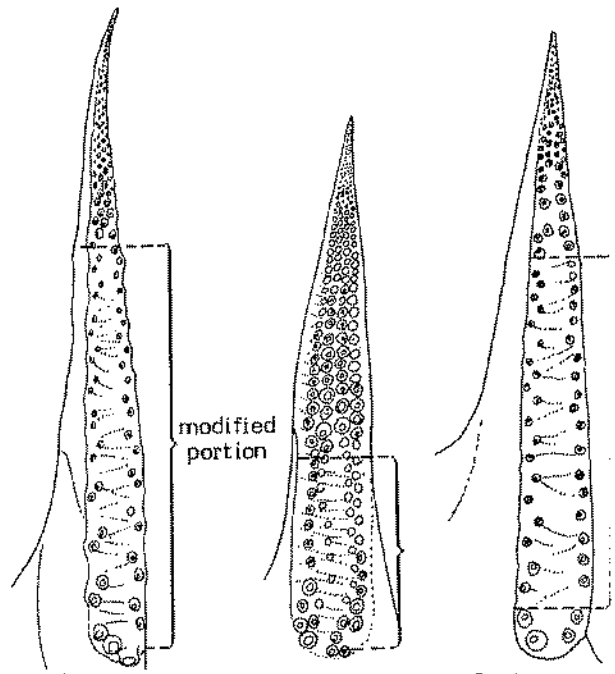


S. bertheloti: a series of elongate tubercles and light coloured patches present along fin bases; tentacular club with 8 rows of suckers; hectocotylus with 2 to 5 normal suckers at base and 9 to 13 rows of minute, spaced suckers on proximal third.

S. elobyana: dorsal surface of mantle, head and arms covered with ridge-like tubercles; hectocotylus along basal 2/5 of arms modified by great reduction in size of suckers; tentacular club with 8 rows of small, subequal suckers.

S. elegans: hectocotylus modified for two thirds of length with minute, widely-spaced suckers; tentacular club with up to 8 longitudinal rows of suckers, 3 extremely enlarged suckers on manus and a few moderately enlarged on dorsal row.

Sepiella ornata: a round gland and open pore located between fins at posterior end of mantle.



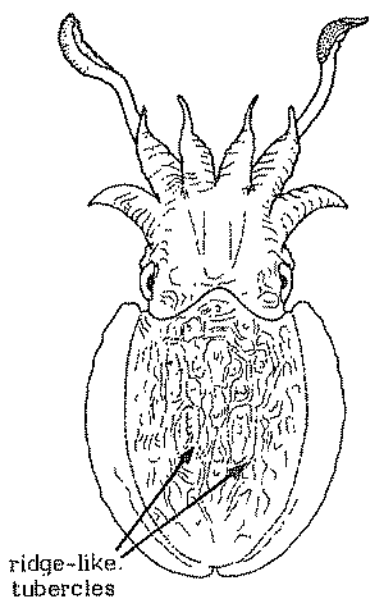
SIZE :

Maximum: 40 cm mantle length; 3.5 kg.

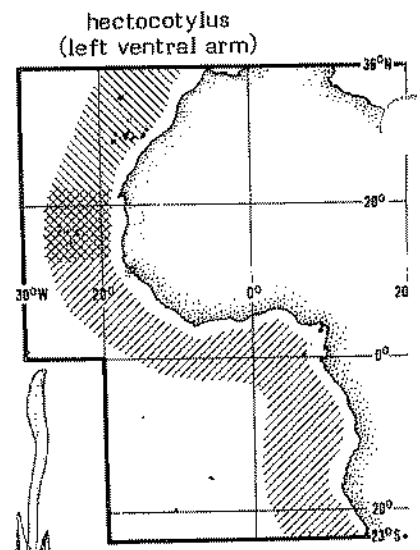
GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

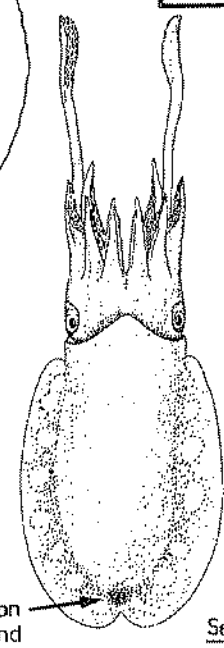
The range of the two subspecies in Area 34 is uncertain. Considerable overlap exists, S. o. officinalis extending from the North Sea, along the Atlantic coasts of Europe, into the Mediterranean southward to Cape Verde (15°N), S. o. hierredda from Cape Blanc (21°N) to South Africa.

They occur from the surface to 200 m, most abundant in waters above 100 m, larger specimens caught at greater depths; spawn year around with peak from May to August at depths less than 40 m and temperatures between 13 and 15°C; males are sexually mature at 12 to 14 cm mantle length and carry up to 1 400 spermatophores; females mature at 14 cm mantle length and lay 150 to 4 000 eggs in grape-like clusters on rocks and shells on sandy bottom (egg size 8 to 10 mm diameter); hatching takes place after 30 to 70 days of incubation, dipending on the temperature (16° to 22°C); hatchlings 7 or 8 mm total length.



S. elobyana





Sepiella ornata

PRESENT FISHING GROUNDS :

Captured during daylight, on sandy-mud bottoms from 10 to 110 m. Peak abundance in Spanish Sahara and Cape Blanc area is September to January and October to March, respectively; most abundant decapod caught in the area; second only to octopus in landings.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Caught mainly with Spanish trawls (68 m footrope)

Marketed fresh and frozen.

SEP Sep 2

1981

FAO SPECIES IDENTIFICATION SHEETS

FAMILY : SEPIIDAE

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

Sepia bertheloti Orbigny, 1838

OTHER SCIENTIFIC NAMES STILL IN USE : None

VERNACULAR NAMES:

FAO : En - African cuttlefish
Fr - Seiche africaine
Sp - Jibia africana

NATIONAL :

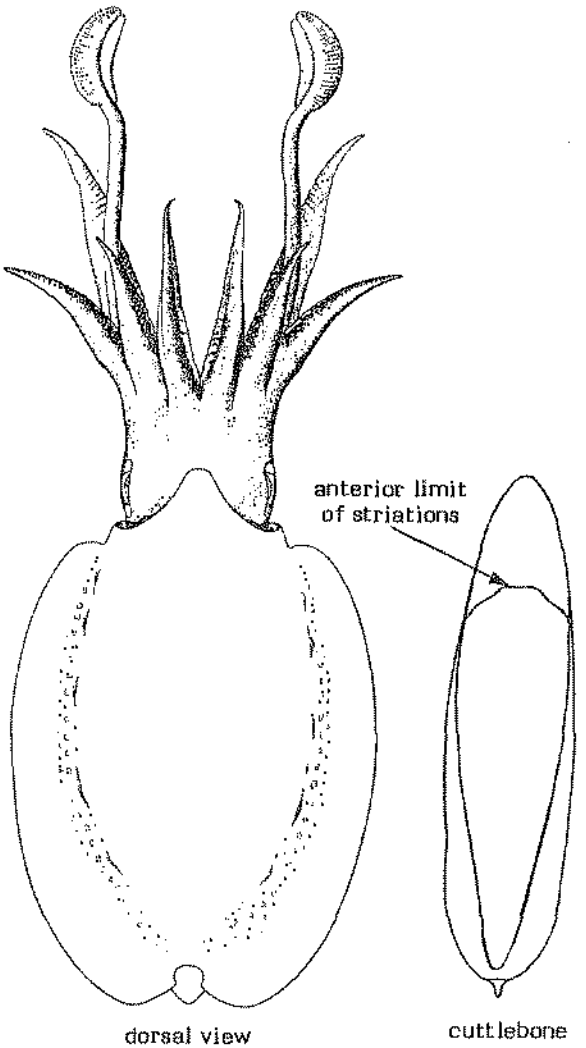
DISTINCTIVE CHARACTERS :

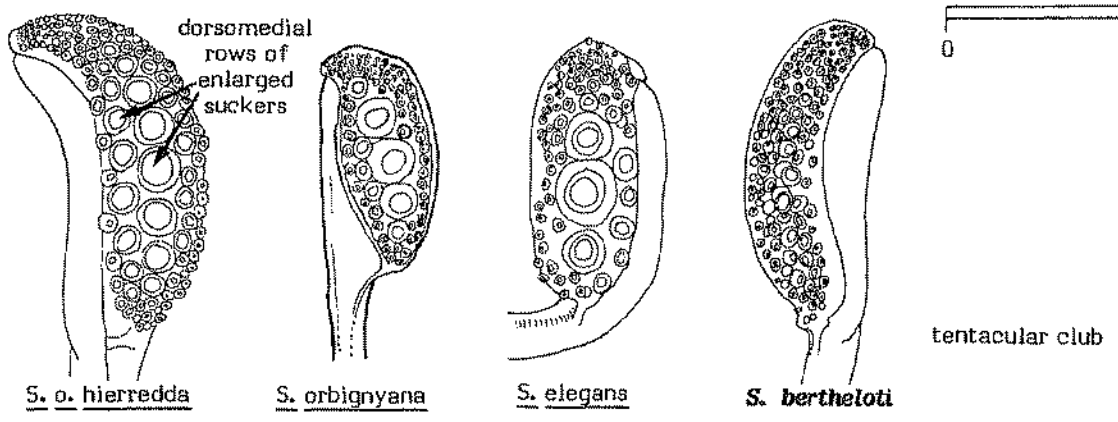
Left ventral arm (hectocotylus) with 2 to 5 normal suckers at its base and 9 to 13 rows of minute spaced suckers on its proximal third; dorsal protective membrane very broad, almost completely covering suckers; tentacular club slender, with 8 longitudinal rows of suckers, those in third row slightly enlarged; swimming membrane not extending beyond base of club; cuttlebone elongate and oval, its dorsal surface with a median ridge and fine tubercles, ventral striations convex, extending 70 to 80% of bone length with a small, posteriorly-directed indentation; spine strong, keel absent; a series of elongate tubercles present at base of fins.

Colour: mottled dark and light; round, light-coloured patches present along base of fins, more pronounced in males; reddish strip present along free margins of fins in males only.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

S. officinalis subspecies: size much larger (the largest Sepia species in the area, reaching 40 cm mantle length); less than 50% of hectocotylus modified, with moderately reduced suckers (not minute); tentacular club with 5 or 6 longitudinal rows of suckers (8 rows in S. bertheloti) the two dorsomedial rows with about 6 or 7 enlarged suckers each.



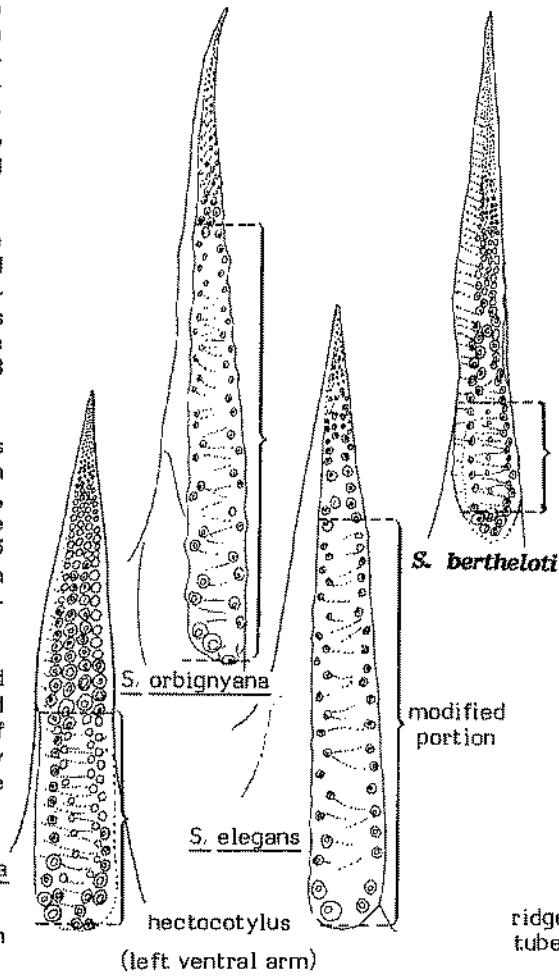


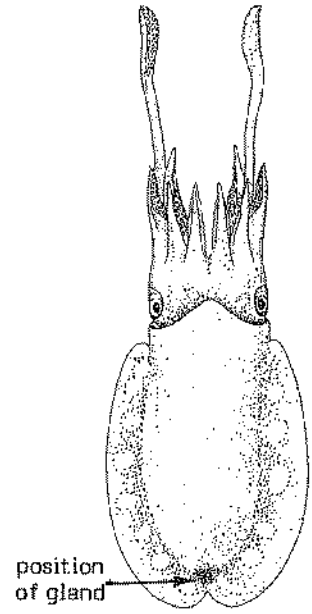
S. orbignyana: hectocotylus with greatly reduced suckers for two thirds of arm length forming a zig-zag row along each margin and leaving mid-area of arm devoid of suckers; dorsal protective membrane narrow; tentacular club with 5 longitudinal rows, the median row with 3 greatly and 2 moderately enlarged suckers; cuttlebone with a very strong, prominent, dorsally-directed spine; swimming membrane extending proximally beyond base of club.

S. elobyana: dorsal surface of mantle, head and arms covered with ridge-like tubercles; hectocotylus along basal 2/5 of arms modified by great reduction in size of suckers; tentacular club with 8 rows of small, subequal suckers.

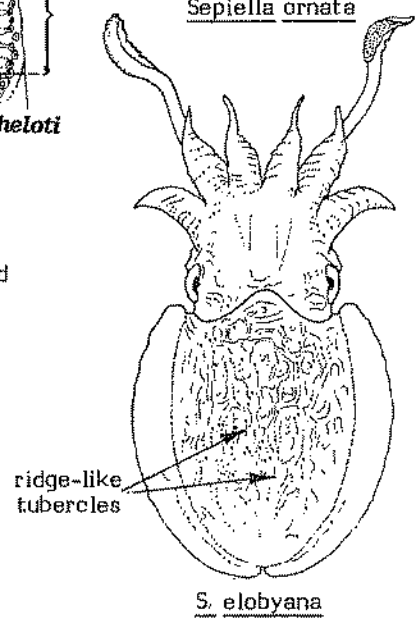
S. elegans: hectocotylus modified for two thirds of length with minute widely-spaced suckers, and a narrow dorsal protective membrane; tentacular club with 3 extremely enlarged suckers on manus and a few moderately enlarged suckers on dorsal row.

Sepiella ornata: a round gland and open pore located between fins at posterior end of mantle; cuttlebone with a very broad, winglike outer cone, spine absent.





Sepiella ornata



S. elobyana

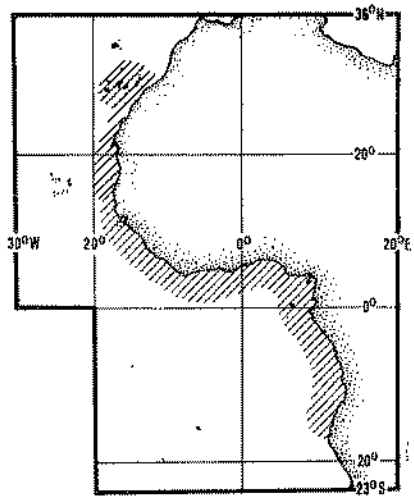
SIZE :

Maximum: females 13 cm and males 17.5 cm mantle length.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

In the area found from the Canary Islands to southern Angola (14°S).

Spawns during summer and autumn.



PRESENT FISHING GROUNDS :

Captured from 20 to 160 m depth with greatest concentrations between 70 and 140 m. Sometimes caught with Sepia officinalis which however occurs in shallower waters. Females captured more often than males.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Taken with trawls.

Marketed fresh but mainly deep-frozen for export.

SEP Sep 3
1981

FAO SPECIES IDENTIFICATION SHEETS

FAMILY : SEPIIDAE

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

Sepia elegans Blainville, 1827

OTHER SCIENTIFIC NAMES STILL IN USE : None

VERNACULAR NAMES:

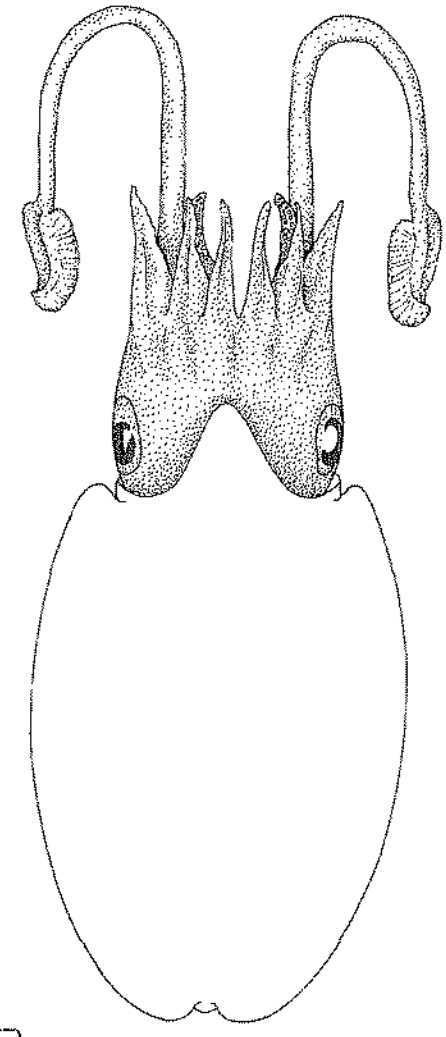
FAO : En - Elegant cuttlefish
Fr - Seiche élégante
Sp - Castaño

NATIONAL :

DISTINCTIVE CHARACTERS :

Left ventral arm (fourth) hectocotylized for two thirds of its length, with a few normal basal suckers followed by 9 to 11 rows of minute, widely spaced suckers arranged in a zig-zag pattern; distal third of hectocotylus with 4 oblique rows of normal suckers; tentacular club with 8 longitudinal rows, the central 3 suckers greatly enlarged, dorsal row with few enlarged suckers; cuttlebone long, narrow, oval, acuminate at both ends; wings of outer cone united behind inner cone by a rugose, calcareous ledge; spine very small or absent, a short rugose keel present; striations regularly convex, extending for more than half but less than three fourths of length; fins not meeting posteriorly.

Colour: mottled.

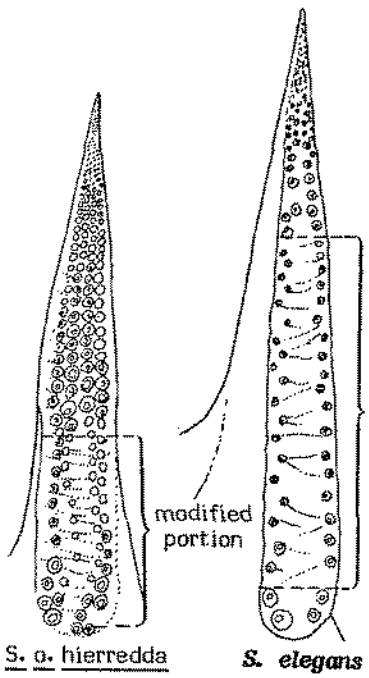


dorsal view

0 4 cm

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

S. officinalis subspecies: size much larger (the largest Sepia species in this area, up to 40 cm mantle length); left ventral arm in males modified by reduction in size of its proximal half (about two thirds of arm modified in S. elegans); tentacular club with 5 or 6 longitudinal rows of suckers (8 in S. elegans), those in 2 dorso-medial rows moderately (but not greatly) enlarged.



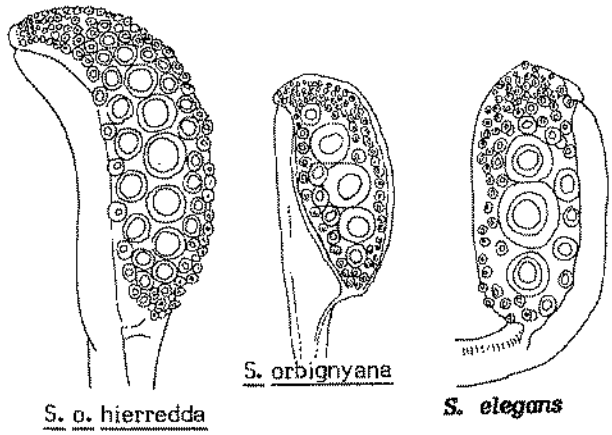
hectocotylus
(left ventral arm)

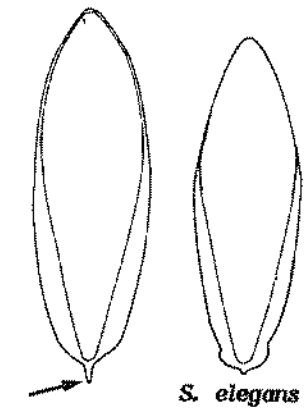
S. orbignyana: cuttlebone with a very strong, prominent, dorsally-directed spine; tentacular club with 5 longitudinal rows of suckers and 3 greatly and 2 moderately enlarged suckers in median rows.

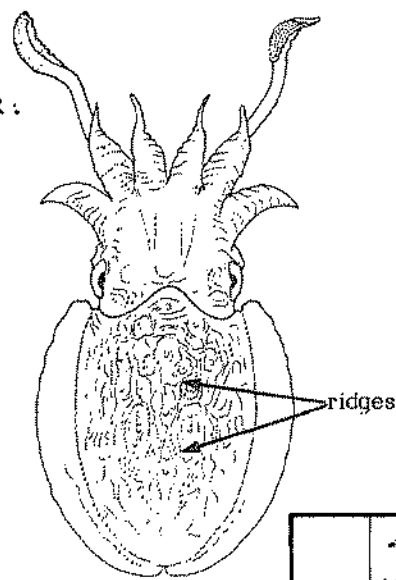
S. bertheloti: a series of elongate tubercles and light-coloured patches present along bases.

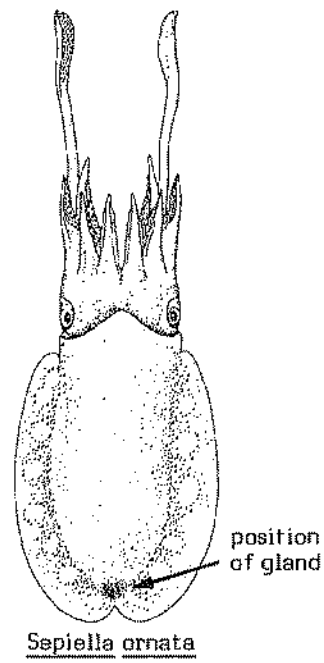
S. elobyana: dorsal surface of mantle, head and arms covered with ridge-like tubercles; hectocotylus along basal 2/5 of arm modified by great reduction in size of suckers.

Sepiella ornata: a round gland and open pore located between fins at posterior end of mantle.









SIZE :

Maximum: 9 cm dorsal mantle length.

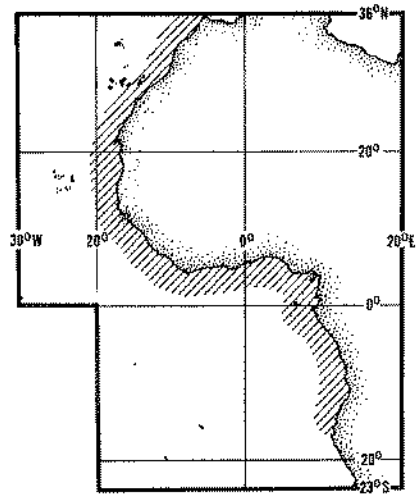
GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

In the area, found from the Straits of Gibraltar to 16°S; northward extending into the Mediterranean Sea and along the Atlantic coasts of Europe up to the English Channel, mostly between 30 and 430 m depth.

Reaches maturity at about 1 year at sizes greater than 3 cm dorsal mantle length in males and 5 cm in females; spawns inshore during summer and autumn months. Males carry about 95 spermatophores and females carry about 250 eggs in the ovary and lay 12 to 25 eggs 4 mm in diameter at each deposition; eggs laid on alcyona rians, shells etc., on muddy bottom at 13° to 18°C; life span 1 to 1.5 years.

PRESENT FISHING GROUNDS :

Captured off Spanish Sahara from surface waters to 250 m depth (greatest abundance at 150 m); caught deeper than S. officinalis and S. bertheloti.



CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Caught with trawls.

Marketed fresh and frozen.

SEP Sep 4

1981

FAO SPECIES IDENTIFICATION SHEETS

FAMILY : SEPIIDAE

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

Sepia orbignyana Ferussac, 1826

OTHER SCIENTIFIC NAMES STILL IN USE : None

VERNACULAR NAMES:

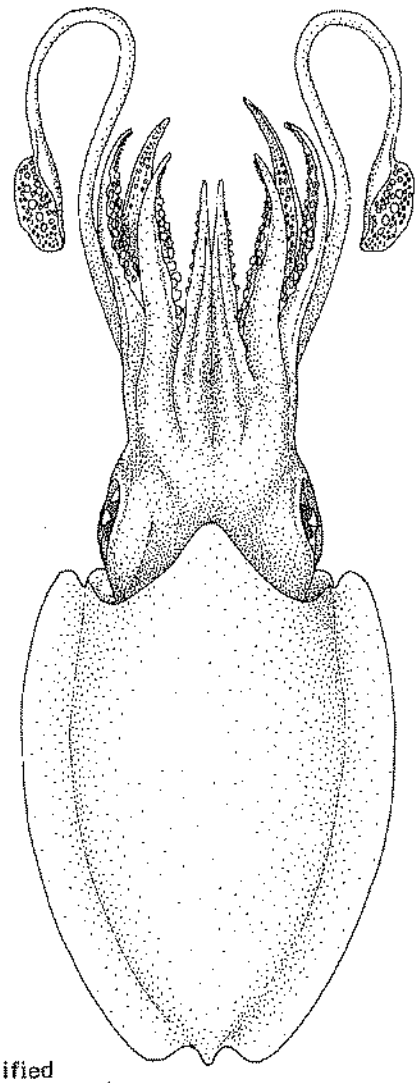
FAO : En - Pink cuttlefish
Fr - Seiche rosée
Sp - Jibia rosada

NATIONAL :

DISTINCTIVE CHARACTERS :

Left ventral arm (fourth) hectocotylized with proximal dorsal and ventral suckers forming zig-zag series for two thirds of length, followed by a dozen transverse rows of 4 minute suckers to tip of arm; tentacular club with 5 longitudinal rows of suckers, the median row with 3 greatly and 2 moderately enlarged suckers; swimming membrane extending proximally beyond base of club; width of cuttlebone equal to one third of its length, dorsal surface rose or orange with a faint medlan groove, ventral surface with striations shaped on a compound curve; outer cone with two distinct wings, spine strong, prominent and directed dorsally, ventral keel present; fins along full length of mantle, not uniting posteriorly.

Colour: mottled.

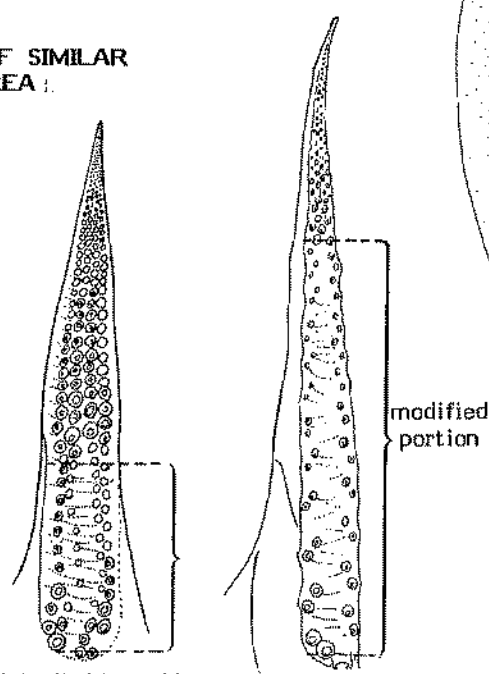


dorsal view

0 6 cm

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

S. officinalis subspecies: size much larger (the largest Sepia in the area, reaching up to 40 cm mantle length); hectocotylus with less than 50% of arm modified proximally with moderately reduced suckers (not minute); dorsal protective membrane not extending proximally beyond base of club.



S. officinalis hierredda *S. orbignyana*

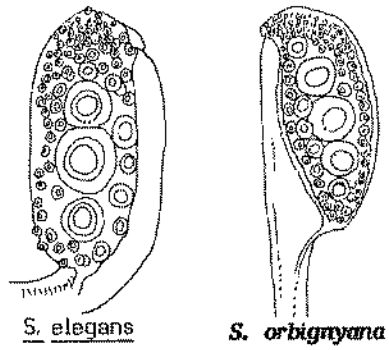
hectocotylus (left ventral arm)

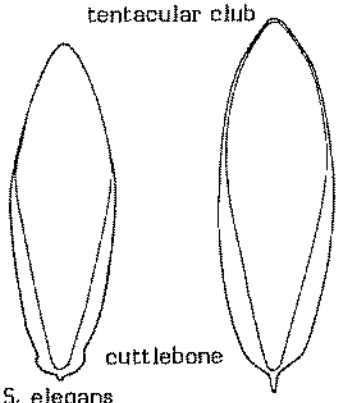
S. elegans: hectocotylus modified for 2/3 of length with minute, widely spaced suckers, and a narrow dorsal protective membrane; tentacular club with up to 8 longitudinal rows of suckers (5 in *S. orbygnyana*), 3 extremely enlarged suckers on manus, few moderately enlarged suckers on dorsal row; cuttlebone long, narrow, acuminate at both ends, spine absent or minute.

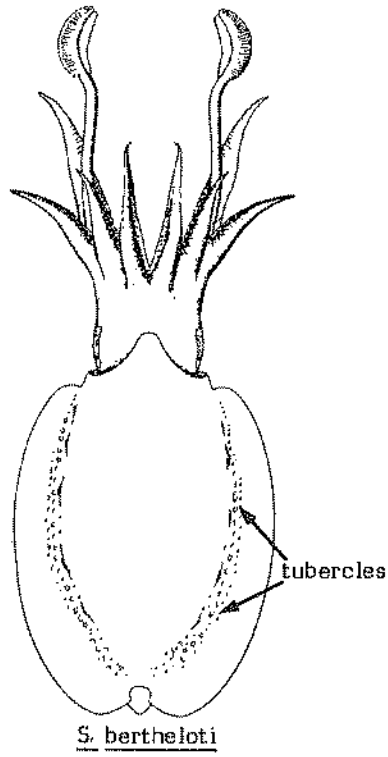
S. bertheloti: a series of elongate tubercles and light-coloured patches present along fin bases; tentacular club with 8 rows of suckers; hectocotylus with 2 to 5 normal suckers at base and 9 to 13 rows of minute spaced suckers on proximal third.

S. elobyana: dorsal surface of mantle, head and arms covered with ridge-like tubercles; hectocotylus along basal 2/5 of arms modified by great reduction on size of suckers; tentacular club with 8 rows of small, subequal suckers.

Sepiella ornata: a round gland and open pore located between fins at posterior end of mantle; cuttlebone with very broad, wing-like outer cone, spine absent.







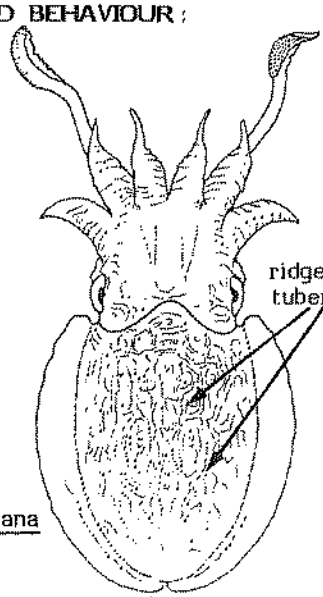
SIZE:

Maximum: 12 cm dorsal mantle length.

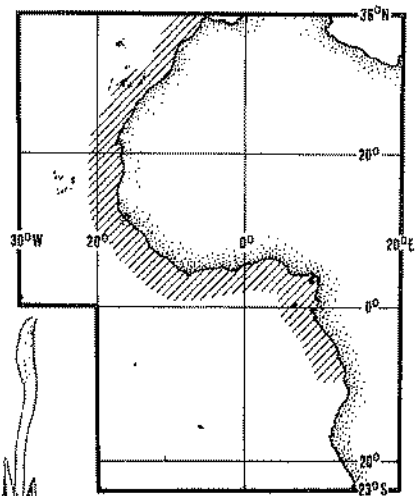
GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

In the area found from the Straits of Gibraltar to about 17°S; northward extending into the Mediterranean, along the Atlantic coast of Europe and into the North Sea.

A nektonic species, ranging from 50 to 450 m depth. Males mature at 4 cm (age 6 or 7 months) and females at 7 cm (age 9 or 10 months) dorsal mantle length; males carry about 100 spermatophores; females carry about 400 eggs in the ovaries and lay 30 to 40 eggs of 8 mm diameter in clusters, attached to sponges on mud bottoms; spawn in summer to autumn at 13° to 16°C; life span 1 to 1.5 years.



S. elobyana



PRESENT FISHING GROUNDS:

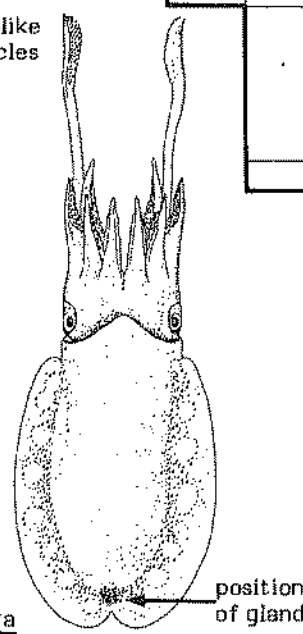
Captured along Spanish Sahara between 50 and 370 m depth with peak abundance from 80 to 150 m depth.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught mainly with trawls.

Marketed fresh and frozen.



Sepiella ornata

SEP Sepie 1
1981

FAO SPECIES IDENTIFICATION SHEETS

FAMILY : SEPIIDAE

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

Sepiella ornata (Rang, 1837)

OTHER SCIENTIFIC NAMES STILL IN USE : None

VERNACULAR NAMES:

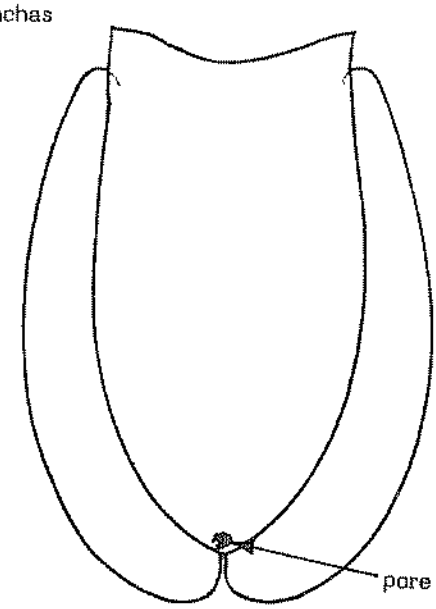
FAO : En - Ornate cuttlefish
Fr - Seppia ornée
Sp - Sepita de manchas

NATIONAL :

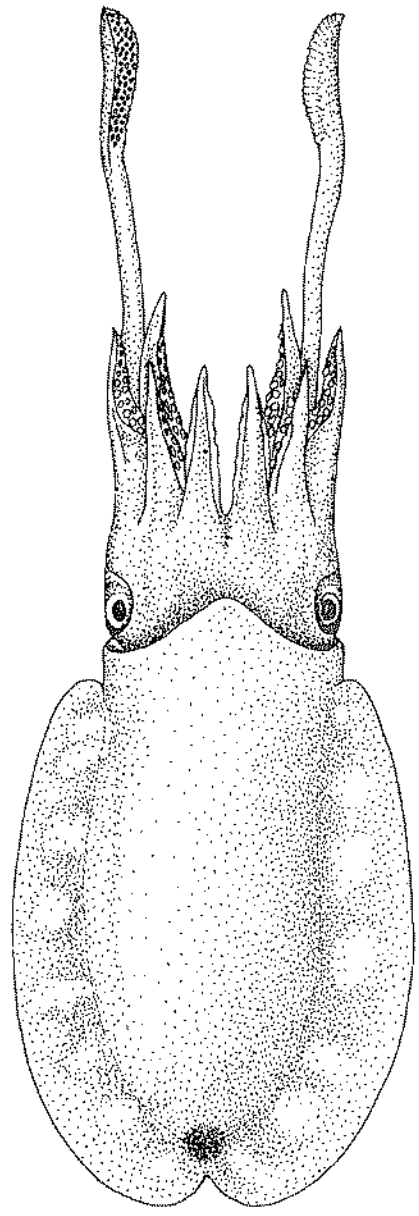
DISTINCTIVE CHARACTERS :

Left ventral arm (fourth) hectocotylized on proximal half with 4 rows of minute suckers, the 2 dorsal rows widely separated, the 2 ventral rows closely set in a zig-zag pattern; cuttlebone with broad wing-like outer cone, spine absent; tentacular club narrow, with 10 to 14 rows of minute equally-sized suckers; a round gland and pore visible between fins at posterior end of mantle.

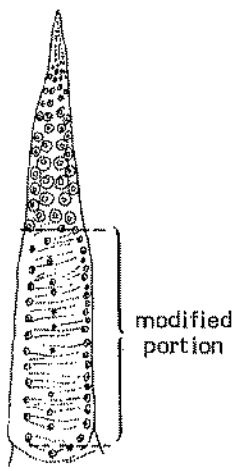
Colour: mottled; a series of light-coloured patches present along fin bases.



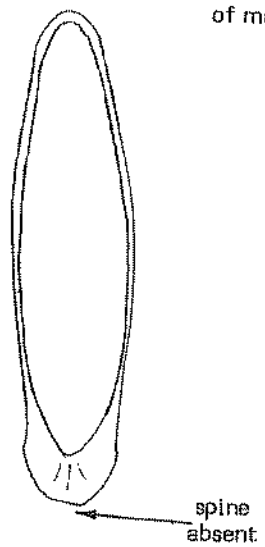
ventral view
of mantle and fins



dorsal view



hectocotylus
(left ventral arm)



cuttlebone

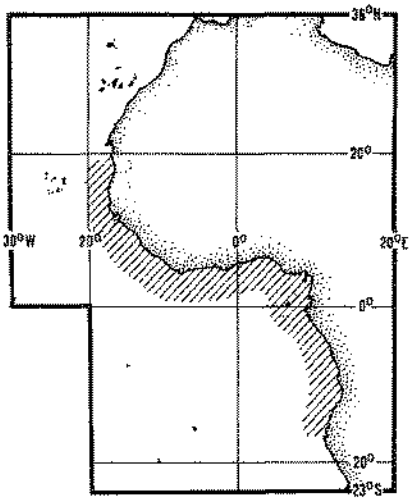


DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Sepia species: no gland on posterior tip of mantle.

SIZE :

Maximum: 10 cm mantle length.



GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Found from Mauritania to Angola.

PRESENT FISHING GROUNDS :

Caught from 20 to 150 m depth, most abundant in waters deeper than 50 m; catches mixed with Sepia species.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Caught with trawls.

SEPIOL

1981

FAO SPECIES IDENTIFICATION SHEETS

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

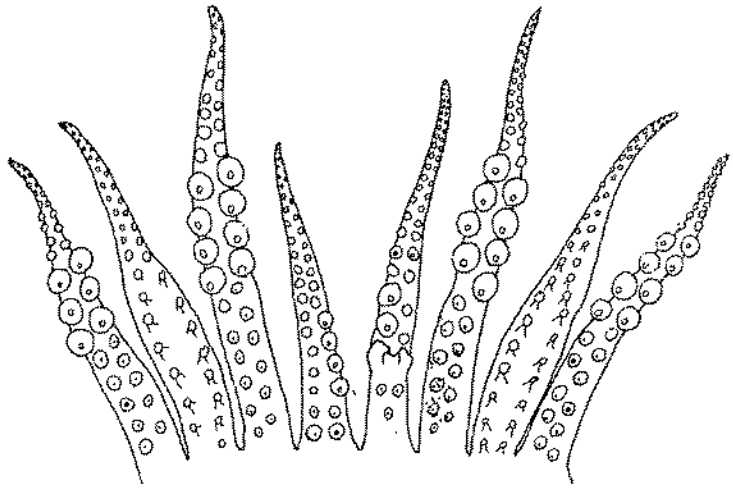
SEPIOLIDAE

Bob-tailed squids

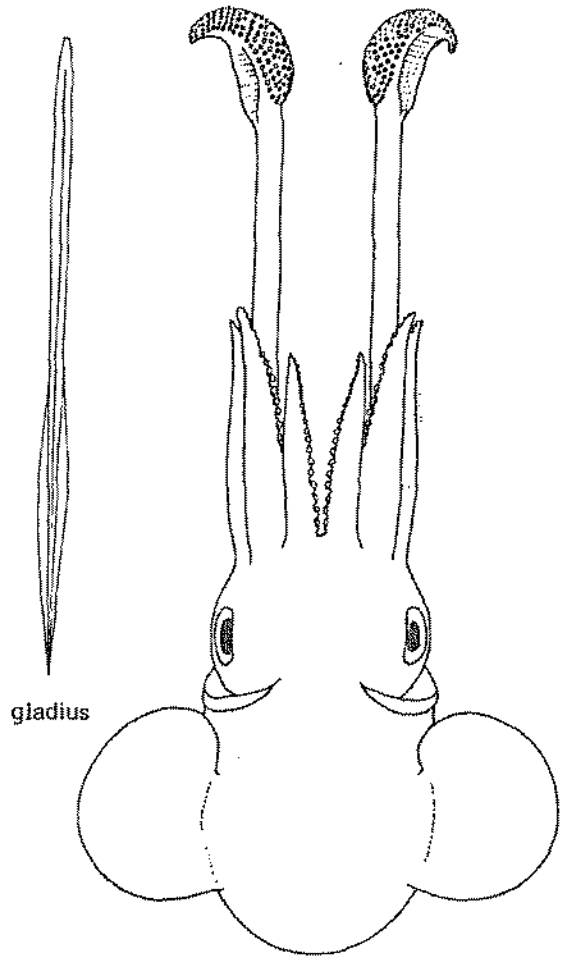
Gladius (shell) greatly reduced, noncalcified; hectocotylization of one or both dorsal arms, or a dorsolateral arm; mantle short, broad, sac-like, with large rounded fins; no protective membranes on arms; eyes covered with "corneal" membranes.

Colour: generally pinkish to maroon, darkest dorsally.

Small-sized (up to 10 cm mantle length), squid-like cephalopods of such heterogeneity that 3 subfamilies are known. This is the most devergent and speciose family of sepioids with representatives in all oceans and seas ranging from intertidal to deep-sea benthic and even mesopelagic habitats. At least 6 species are known to occur in Fishing Area 34, but very little is known about their biology. One (Rossia macrosoma) appears to have some potential as an exploitable species.



brachial crown opened dorsally
to show the oral surface
of the arms



Sepiola

dorsal view

SIMILAR FAMILIES OCCURRING IN THE AREA:

None.

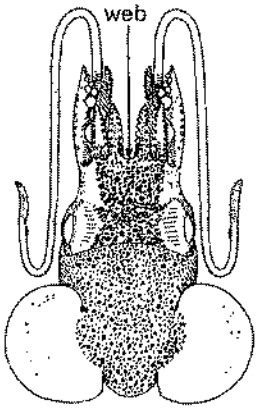
KEY TO SUBFAMILIES OCCURRING IN THE AREA:

1 a. All arms except fourth united by a broad web; orbital pores closed; pelagic (Fig. 1) ... Heteroteuthinae (Heteroteuthis)

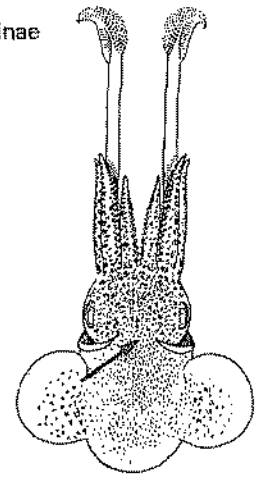
1 b. Third and fourth arms united by a broad web; orbital pores open; benthic

2 a. Dorsal border of mantle fused with the head (Fig. 2) ..... Sepiolinae

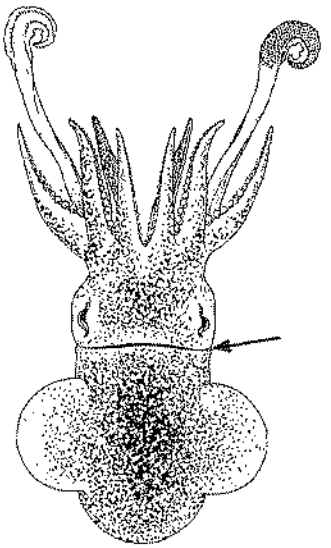
2 b. Dorsal border of mantle not fused with head (Fig. 3) ..... Rossiinae



Heteroteuthinae (Heteroteuthis) Fig. 1



Sepiolinae Fig. 2

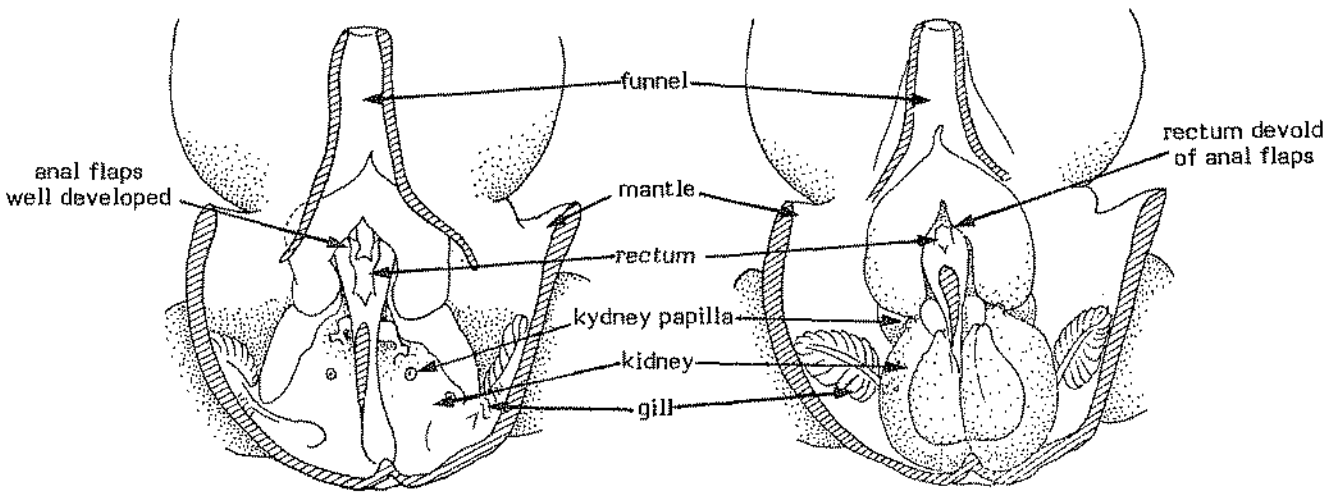


Rossiinae Fig. 3

KEY TO GENERA OF ROSSIINAE OCCURRING IN THE AREA:

1 a. Ink sac functional; anal flaps well-developed (Fig. 1a) ..... Rossia

1 b. Ink sac small, degenerate, non-functional; anal flaps degenerate (Fig. 1b) ..... Neorossia



a. Rossia b. Neorossia

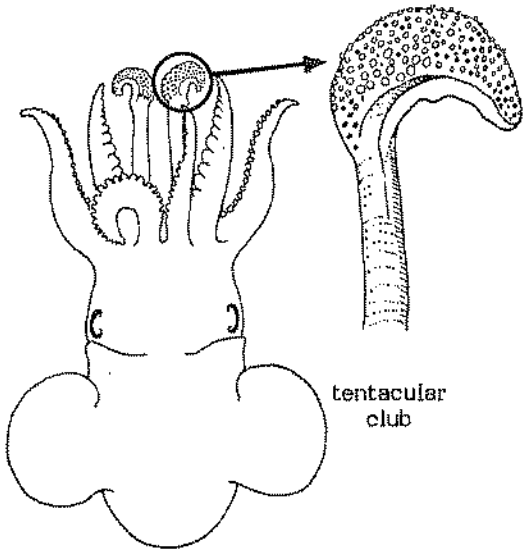
mantle cavity ventral view

Fig. 1

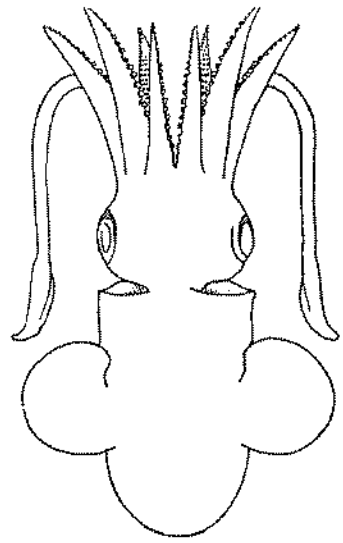
KEY TO GENERA OF SEPIOLINAE OCCURRING IN THE AREA:

1 a. Suckers on tentacular club in 8 rows; suckers on arms in 2 rows, or in 4 rows at tips of fourth arms in some species (Fig. 1) ..... Sepiola

1 b. Suckers on tentacular club in 16 rows; suckers on all arms always in 2 rows (Fig. 2) ..... Rondeletiola



dorsal view
Sepiola Fig. 1



dorsal view
Rondeletiola Fig. 2

LIST OF SPECIES OCCURRING IN THE AREA:

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

Heteroteuthis dispar (Rüppel, 1844)

Neorossia caroli (Joubin, 1902)

Rondeletiola minor (Naef, 1912)

Rossia macrosoma (Delle Chiaje, 1829) SEPIOL Ross 1

Sepiola atlantica Orbigny, 1839
Sepiola rondeleti Steenstrup, 1856

Prepared by C.F.E. Roper and M.J. Sweeney, National Museum of Natural History, Smithsonian Institution, Washington, D.C., U.S.A.

SEPIOL Ross 1

1981

FAO SPECIES IDENTIFICATION SHEETS

FAMILY : SEPIOLIDAE

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

Rossia macrosoma (Delle Chiaje, 1829)

OTHER SCIENTIFIC NAMES STILL IN USE : None

VERNACULAR NAMES:

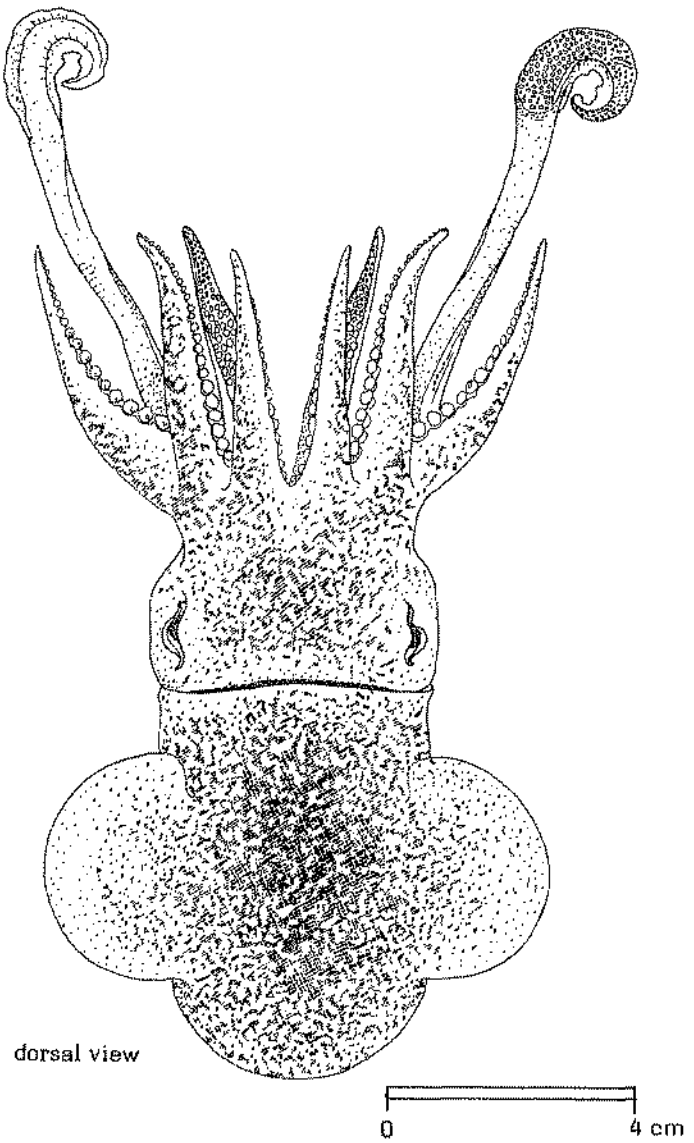
FAO : En - Ross' bob-tailed squid
Fr - Sépiole melon (= Petite seiche, Area 37)
Sp - Chopito

NATIONAL :

DISTINCTIVE CHARACTERS :

Mantle broad, sac-like, dorsal mantle border not fused to head; ink sac functional; anal flaps normally developed; fins semi-lunate, not extending to posterior of mantle; both dorsal arms hectocotylized by decrease in size of the large basal suckers (arranged in 2 rows) to smaller suckers (arranged in 4 rows in a zig-zag pattern) and by the presence of a deep ridge and groove between the horizontal sucker rows; tentacular club with more than 8 longitudinal rows of subequal suckers, all much smaller than the arm suckers; third and fourth arms united by a broad web; orbital pores open.

Colour: light yellowish brown with greenish reflection to dark reddish brown



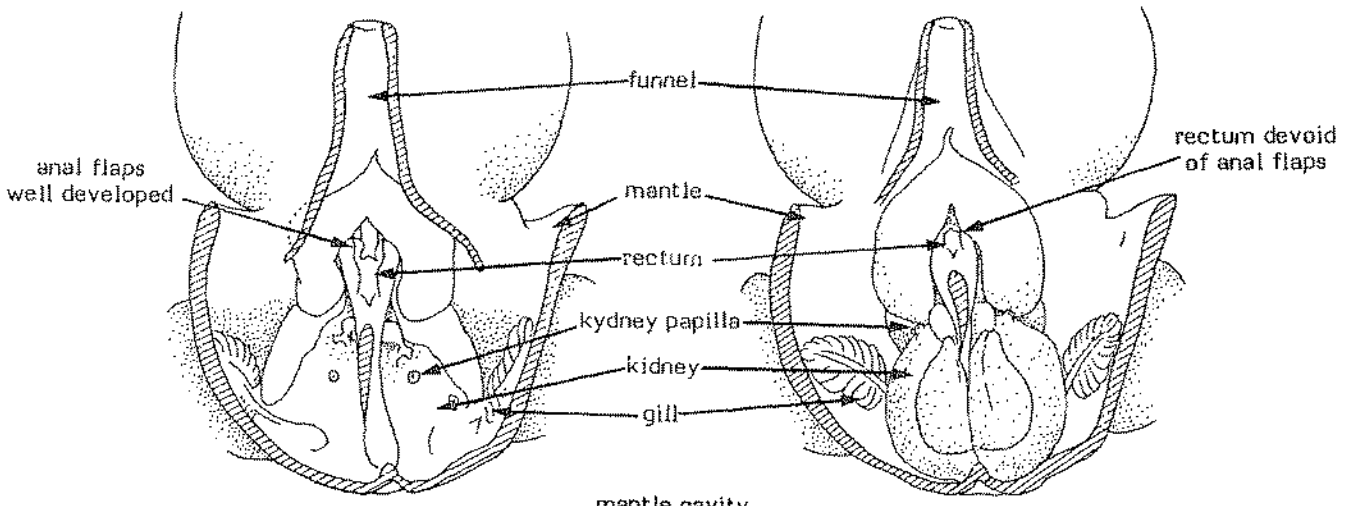
dorsal view

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

Neorossia caroli: ink sac non-functional; anal flaps degenerate.

Species of Sepiolinae (Sepiola, Rondeletiola): dorsal border of mantle fused to head.

Species of Heteroteuthinae (Heteroteuthis): all arms, except fourth, united by a broad web; orbital pores closed; pelagic.



Rossia macrosoma — mantle cavity ventral view — Neorossia caroli:

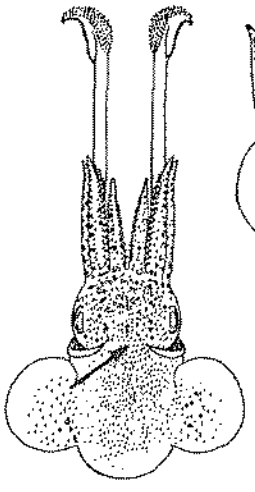
SIZE :

Maximum: 8.5 cm mantle length.

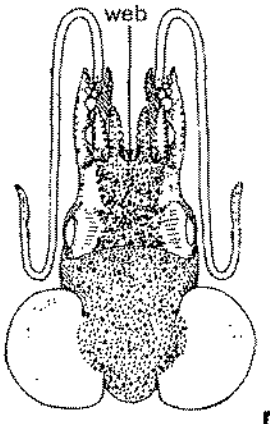
GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

In the area found from the Straits of Gibraltar to Mauritania; northward extending into the Mediterranean, to the Northeastern Atlantic and the North Sea.

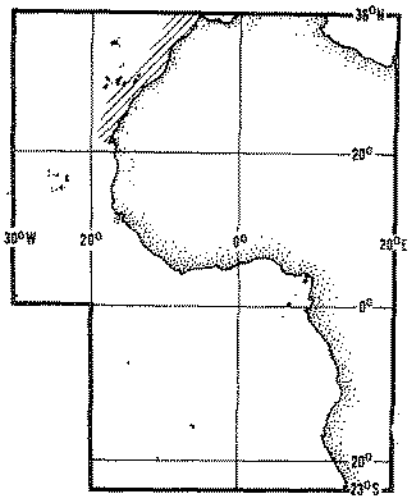
Males mature at 30 mm (7 to 8 months), with 85 to 100 spermatophores; females mature at 40 mm mantle length (8 to 11 months) with 120 to 150 eggs in ovary; spawns in spring and summer; the eggs are laid in dead mollusc shells, in clusters of 30 to 40 of 7 or 8 mm diameter; eggs hatch in 45 days at 16°C; life span one year.



Sepiolinae



Heteroteuthinae (Heteroteuthis)



PRESENT FISHING GROUNDS :

Captures on sandy to muddy bottoms, from 30 to 600 m depth (mostly between 100 and 250 m).

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species.

Caught with bottom trawls as bycatch.

THYSANO

1981

FAO SPECIES IDENTIFICATION SHEETS

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

THYSANOTEUTHIDAE

Rhomboid squids

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

Thysanoteuthis rhombus Troschel, 1857 THYSANO Thysano 1

Prepared by C.F.E. Roper and M.J. Sweeney, National Museum of Natural History, Smithsonian Institution, Washington, D.C., U.S.A.

THYSANO Thysano 1

1981

FAO SPECIES IDENTIFICATION SHEETS

FAMILY : THYSANOTEUTHIDAE

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

Thysanoteuthis rhombus Troschel, 1857

OTHER SCIENTIFIC NAMES STILL IN USE : None

VERNACULAR NAMES:

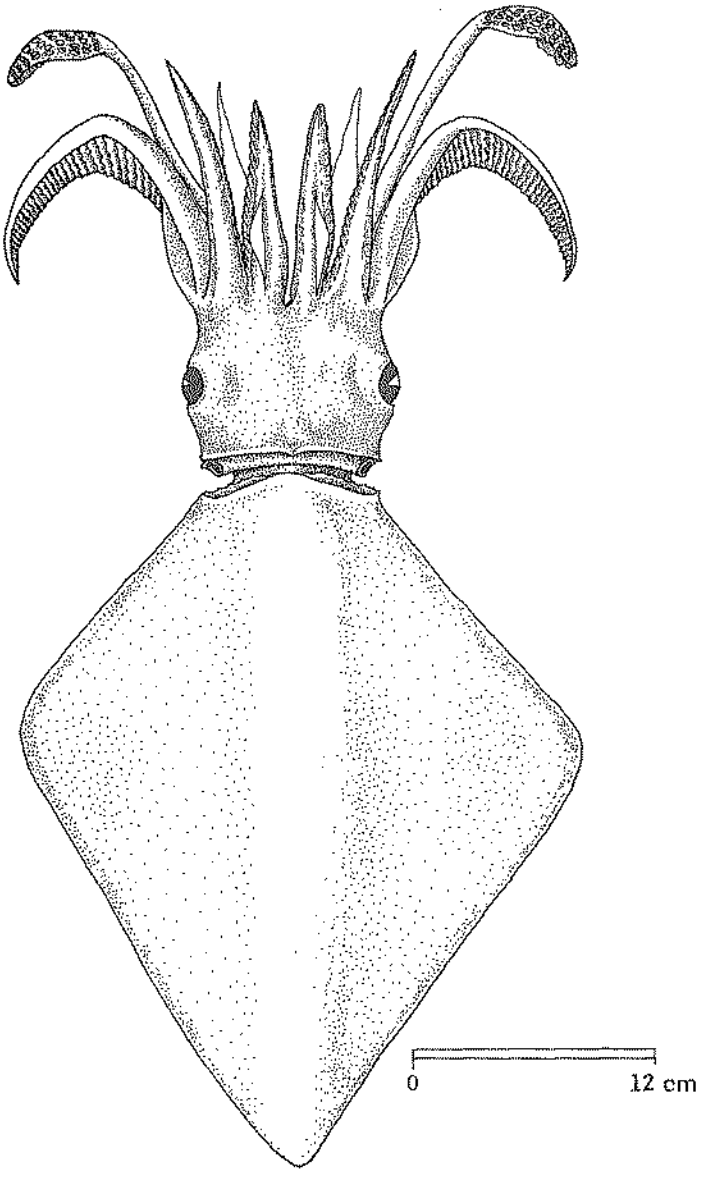
FAO : En - Rhomboid squid
Fr - Chipiloua commun
Sp - Chipirón volantín

NATIONAL :

DISTINCTIVE CHARACTERS :

Mantle thick, muscular, tapering to a blunt tip posteriorly; fins long, broad, rhombic (◊) occupying entire length of mantle; mantle-funnel locking apparatus ⊣-shaped; arms with 2 rows of suckers; tentacular clubs with 4 rows of suckers; buccal connectives attached to ventral borders of fourth arms.

Colour: deep maroon overall, darker dorsally.



dorsal view



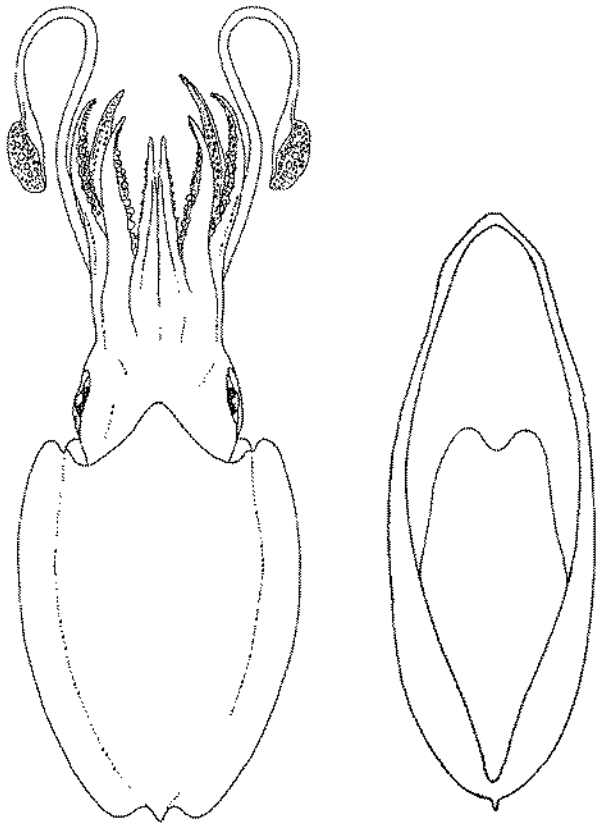
⊣ -shaped

funnel locking apparatus

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Sepia species: fins narrow (never rhomboidal) extending more or less the length of mantle; eyes covered with corneal membrane; calcareus cuttlebone present; tentacles and clubs retractile into pockets on ventrolateral sides of head.

Other oceanic squids: fins never as long as mantle except in Ctenopterygidae and Cycloteuthidae (both without species of interest to fisheries).



Sepia species

dorsal view

cuttlebone

SIZE:

Maximum: 100 cm mantle length; common to 60 cm mantle length.

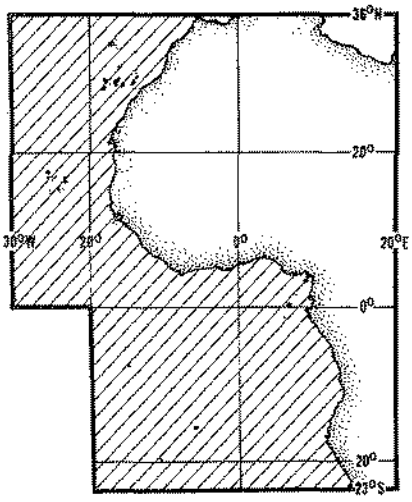
GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Cosmopolitan in warm water, latitudinal limits unknown, although it undoubtedly occurs throughout most Area 34.

Little is known about the biology of this pelagic species; it is clearly oceanic, but in the Japan Sea it migrates to nearshore waters in fall and early winter where it is fished with set nets; catches are greater at night but do occur during the day; young and larvae are taken only in open ocean in near-surface waters; adults known from strandings and predators' stomachs (sperm whale, blue marlin).

PRESENT FISHING GROUNDS:

Not fished in Area 34. Abundance unassessed.



CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

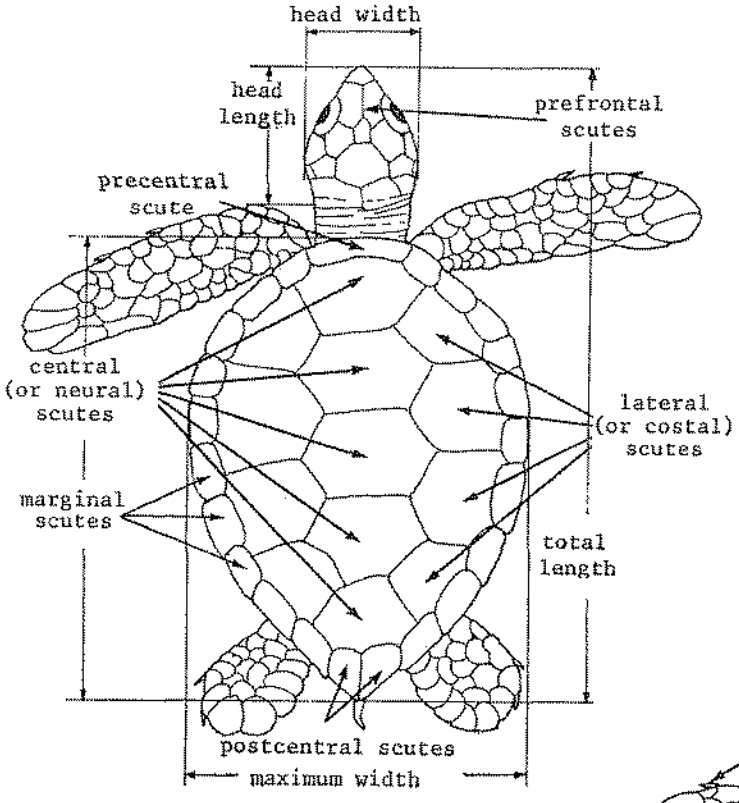
Captured in Japan with set nets.

Eaten regularly in Japan.

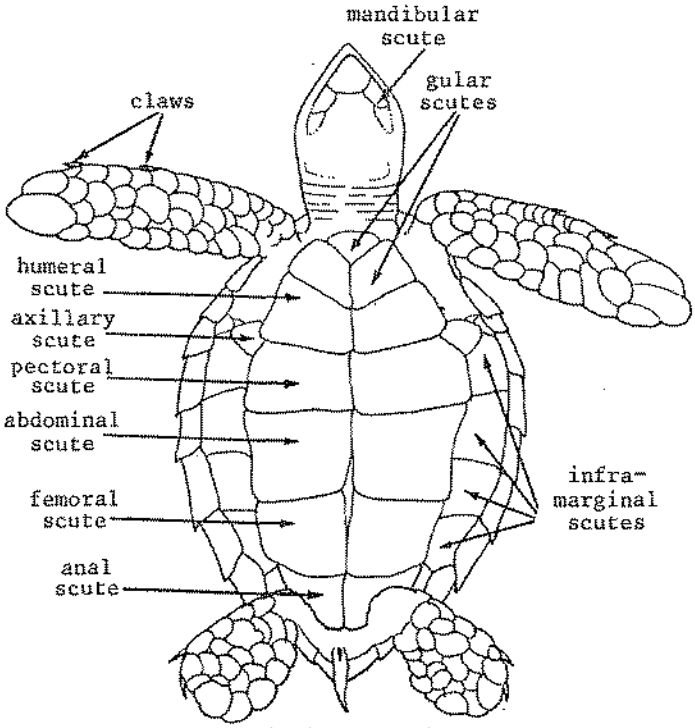
SEA TURTLES

TECHNICAL TERMS AND PRINCIPAL MEASUREMENTS USED

(Straight-line distances)



dorsal view of a juvenile sea turtle (Family Chelonidae)



ventral view of a juvenile sea turtle (Family Chelonidae)

GENERAL REMARKS

The most typical feature of a turtle is the hard shell encasing the entire body. This shell is composed of a layer of bones underneath and a layer of horn on the outside; the latter often, but not always, displays a geometrical pattern of lamellae or scutes (see basic arrangement and nomenclature in the above figures). The top of the shell or carapace is joined at the sides with the bottom or plastron and the latter is notched in front and rear where the limbs emerge from the shell. All turtles have a strong, horny beak; none have true teeth, although tooth-like projections may be present on the jaws. The limbs or flippers of sea turtles are paddle-shaped.

Sea turtles occur in all tropical and warm-temperate oceans. They inhabit shallow waters along coasts and around islands, but some species are believed to be highly migratory and are found in the open sea. They are swift swimmers and some are said to attain speeds of about 35 km per hour; unlike freshwater turtles they move forward by simultaneous action of the front flippers. All species are compelled to return in regular intervals to the land during the nesting season when they lay their eggs in a nest dug into the sand. After a relatively long incubation period (usually from 45 days to two and a half months) the hatchlings go back to the sea. Very little is known about their movements and fate before they attain sexual maturity. The majority of sea turtles are predominantly carnivorous, but some species are omnivorous or even herbivorous.

Since ancient times turtles have been held in high esteem as food for man. The flesh as well as the eggs are of delicate taste and much of the production goes frozen or canned to export markets for the preparation of turtle soup, calipees, and other delicacies. Other uses are in the extraction of oil from turtle fat, in the tortoise shell industry and in the leather industry. Fishing gear at sea includes catch by hand, tangle nets, gillnets, seines and harpoons. The catch reported from Fishing Area 34 in 1978 totalled 100 t (Equatorial Guinea only).

Some marine turtle species are becoming scarce nowadays and are in bad need of protection from irrational exploitation; they are especially vulnerable on land during their nesting period. More recently, farming of sea turtles, especially of the green turtle, has been successfully introduced to some parts of the area; it is hoped that this technique will become more widespread in the near future and thus take off some of the fishing pressure exerted on the species. In addition to the enforcement of protective legislation, the establishment of natural reserves for sea turtles is highly desirable.

The sea turtles of the Eastern Central Atlantic comprise 2 families, 5 genera and 6 species.

GUIDE TO FAMILIES AND GENERA OCCURRING IN THE AREA

FAMILY CHELONIDAE

Shell, head and flippers covered with horny lamellae (scutes); horny beak never W-shaped when viewed from the front; flippers with one or two claws.

KEY TO GENERA OCCURRING IN THE AREA:

1 a. Horny scutes on carapace imbricated (overlapping in all except very old specimens (Figs. 1b and 1c) ..... Eretmochelys

1 b. Horny scutes on carapace juxtaposed (not imbricated)

2 a. Four pairs of lateral (costal) scutes on carapace (Fig. 2c); edge of lower jaw coarsely toothed (Fig. 2b); a single pair of prefrontal scutes (Fig. 2a); a single pair of claws on flippers ..... Chelonia

2 b. Five or more pairs of lateral (costal) scutes on carapace (Figs. 3a and 4a); 2 claws on each flipper

3 a. Four inframarginal scutes on plastron, each with a small perforation or pore toward their hind margin (Fig. 3c); carapace semicircular (Fig. 3b) ..... Lepidochelys

3 b. Three pairs of enlarged inframarginal scutes without pores on plastron (Fig. 4c); carapace heart-shaped (Fig. 4b) ..... Caretta

LIST OF SPECIES OCCURRING IN THE AREA:

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

Caretta caretta caretta (Linnaeus, 1758)	CHEL Car 1
Chelonia mydas mydas (Linnaeus, 1758)	CHEL Chel 1
Eretmochelys imbricata imbricata (Linnaeus, 1766)	CHEL Eret 1
Lepidochelys kempii (Garman, 1880)	CHEL Lepid 1
Lepidochelys olivacea (Eschscholtz, 1829)	CHEL Lepid 2

FAMILY DERMOCHELIDAE

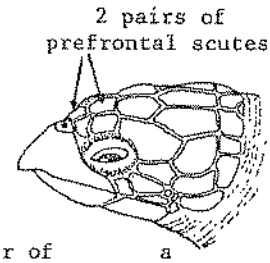
Horny skin smooth, scuteless; carapace black with 7 narrow longitudinal ridges (Fig. 5b), plastron with 5 longitudinal ridges (Fig. 5c); upper jaw with a well-defined cusp on each side, givig the horny beak a W-shaped appearance when viewed from the front (Fig. 5a); flippers without claws, the anterior pair much larger, the posterior broadly connected with the tail by a web in adults.

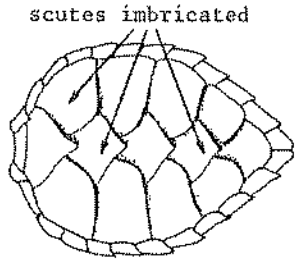
A single species occurring in the area:

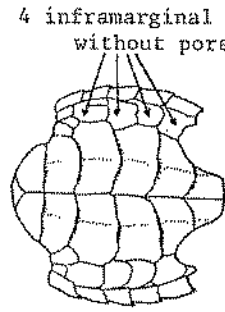
Dermochelys coriacea coriacea (Linnaeus, 1758) (Fig. 5)	DERMO Dermo 1

Prepared by M. Marquez, R., Mexico City, Mexico

PICTURE GUIDE TO SPECIES OCCURRING IN THE AREA

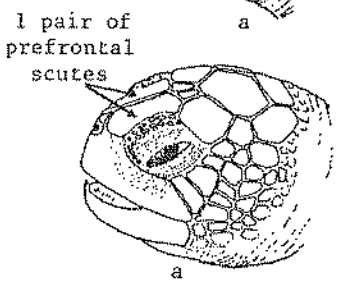


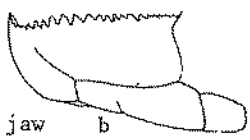


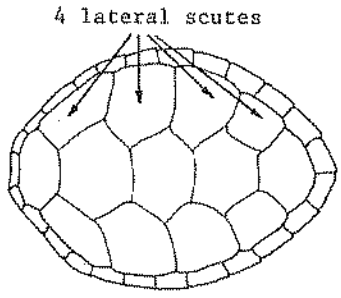


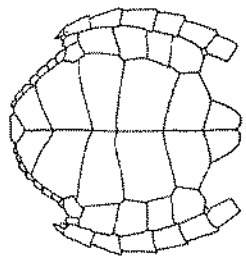
Eretmochelys imbricata

Fig. 1



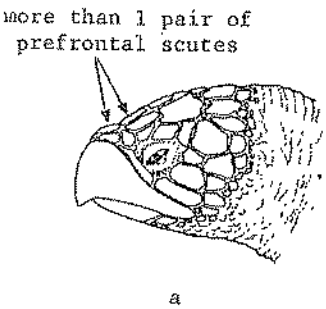


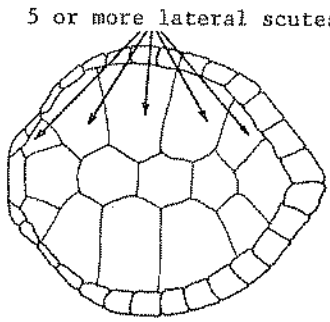


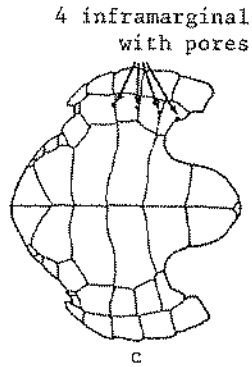


Chelonia mydas

Fig. 2

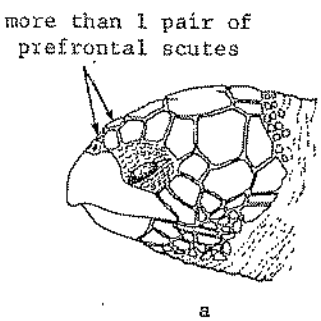


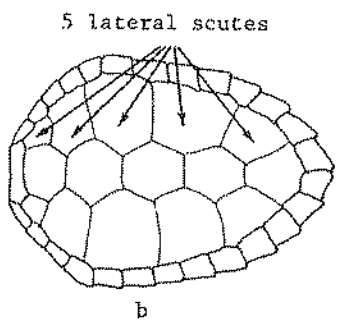


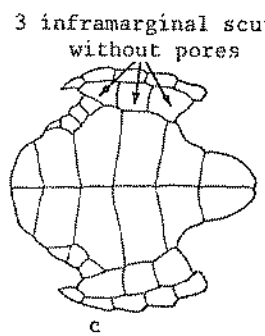


Lepidochelys sp.

Fig. 3

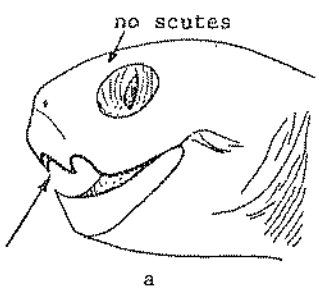


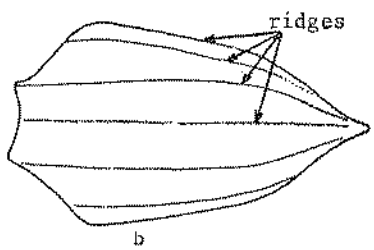


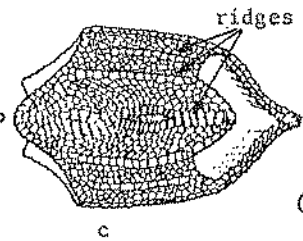


Caretta caretta

Fig. 4







Dermochelys coriacea

(hatchling)

Fig. 5

CHEL Car 1

1981

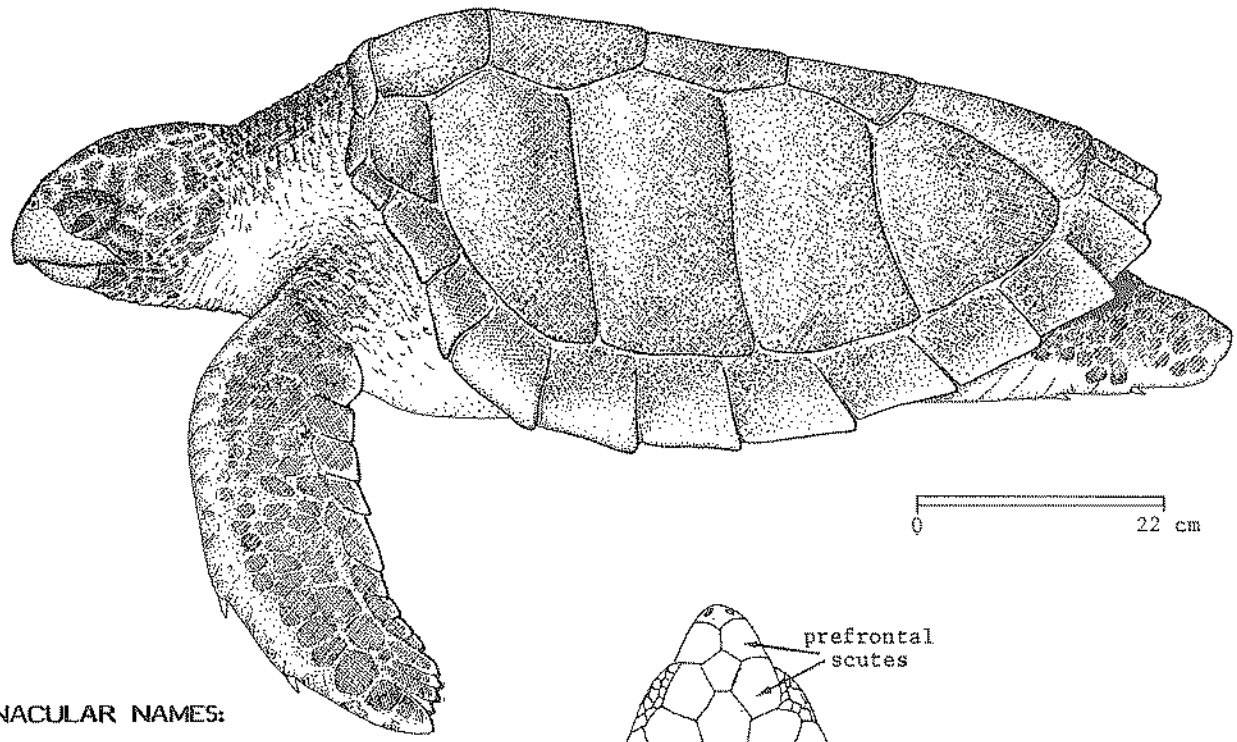
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : CHELONIDAE

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

Caretta caretta caretta (Linnaeus, 1758)

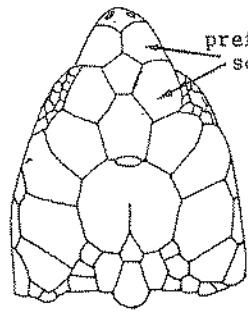
OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES:

FAO : En - Atlantic loggerhead turtle
Fr - Tortue caouane de l'Atlantique
Sp - Tortuga cahuama del Atlantico

NATIONAL :



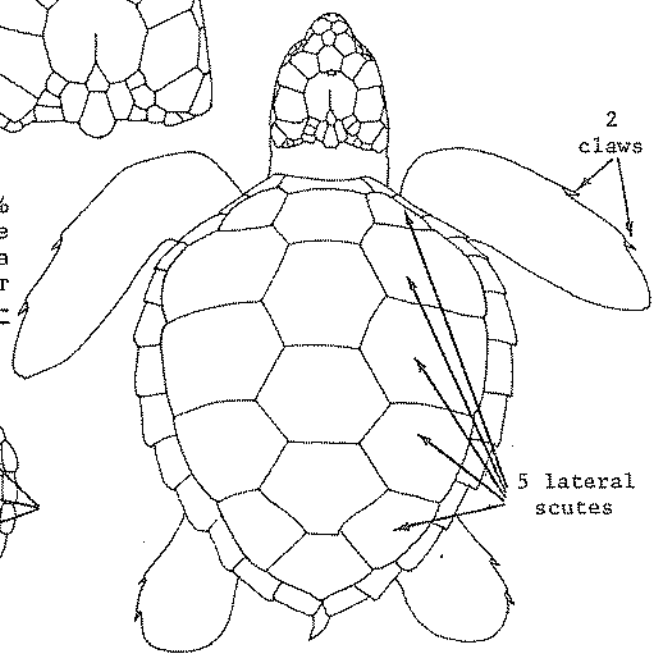
DISTINCTIVE CHARACTERS :

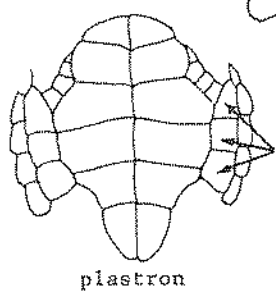
Carapace heart-shaped, depressed, its width about 76% of the length. Head rather long (about 28% of carapace length) and very broad, with 2 pairs of prefrontal scutes and a strong horny beak. Five pairs of lateral scutes, anterior pair touching the precentral scute; 3 pairs of enlarged inframarginal scutes on plastron; 2 claws on each flipper.

Colour: upper side brownish red with light spots; underside pale yellow with diffuse orange spots.

Eggs: white, spherical, about 4.3 cm in diameter and 36 g in weight.

Hatchlings: length of carapace about 4.5 cm. Colour dark brown with light margins, except for the keels of the plastron which are lighter.





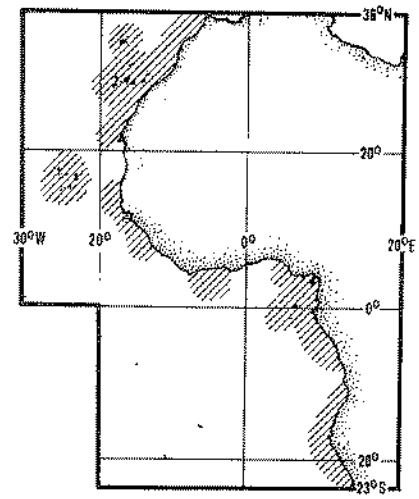
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Other sea turtles with horny scutes on shell: head narrower, carapace broader (except Eretmochelys imbricata which is easily distinguished by its imbricated scales); 4 inframarginal plates on plastron (3 in Caretta caretta); upper side of carapace usually not brownish red.

SIZE:

Carapace length (straight-line distance): maximum to 125 cm; common to 110 cm.
Weight: maximum to 140 kg; common to 105 kg.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:



Throughout the area, northward extending to Morocco and southward to Congo and Cabinda, and in warmer years until Walvis Bay, South West Africa. Also present in the Mediterranean Sea (common in Algeria, the Gulf of Gabés and Libya) and in the Western Atlantic.

Found entering streams of brackish water, but also encountered in the open sea and around islands. It is known to be a highly migratory species. The nesting areas are found in the Mediterranean, off Senegal and on the Cape Verde and Canary Islands. Mating takes place before the nesting season, oviposition from April to September in the Mediterranean beaches, and from July to December along the West African coast; the incubation period ranges from 45 to 65 days. Nowadays the nesting activity is scarce throughout Area 34.

Predominantly carnivorous, feeding on molluscs, crustaceans, fish and jellyfish.

PRESENT FISHING GROUNDS:

Mainly from Morocco to Mauritania, throughout the Gulf of Guinea, Angola, and on islands within Area 34. Also in the Mediterranean.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

At sea it is caught mainly with tangle nets, seines and harpoons.

The flesh and eggs of this turtle are reported to be a regular item in the diet of the coastal population, especially on the Cape Verde Islands, the Gulf of Guinea and Angola. The eggs are considered a delicacy; the meat is tasty, but somewhat tough; the flippers and other parts are used for soup. Protection of this species should be enforced at least for limited periods.

CHEL Chel 1

1981

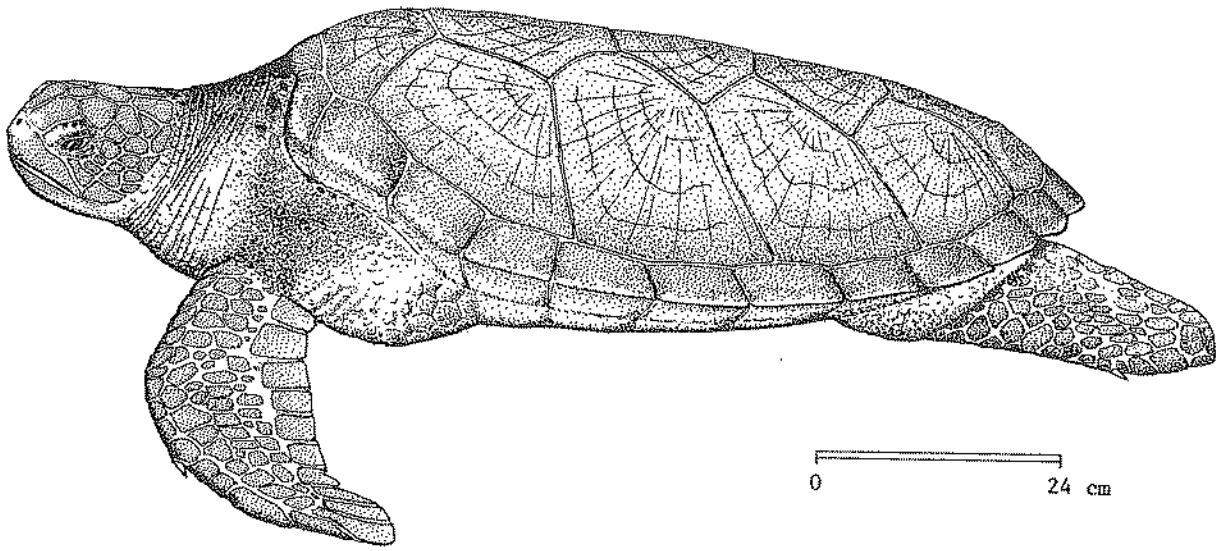
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : CHELONIDAE

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

Chelonia mydas mydas (Linnaeus, 1758)

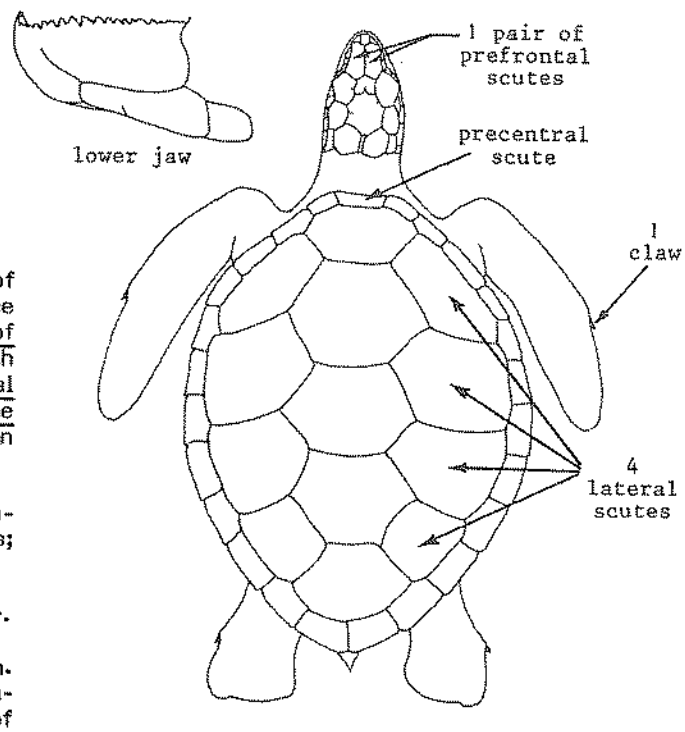
OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES:

FAO : En - Atlantic green sea turtle
Fr - Tortue verte de l'Atlantique
Sp - Tortuga verde del Atlántico

NATIONAL :



DISTINCTIVE CHARACTERS :

Carapace oval, depressed, its width about 88% of the length. Head small (about 20% of carapace length), with a single pair of prefrontal scutes; edge of lower jaw coarsely toothed, that of upper jaw with strong ridges on inner surface. Four pairs of lateral scutes on carapace, anterior pair not touching the precentral scute; 4 pairs of inframarginal scutes on plastron; a single claw on each flipper.

Colour: upper side olive brown, scutes of carapace shiny with radiating yellow, green and black spots; underside pale yellow, creamy or whitish.

Eggs: white, spherical, about 4.5 cm in diameter.

Hatchlings: length of carapace about 5 cm. Upper side brownish black, posterior portion of carapace and flippers with a white margin; underside of neck, body and flippers yellowish white.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

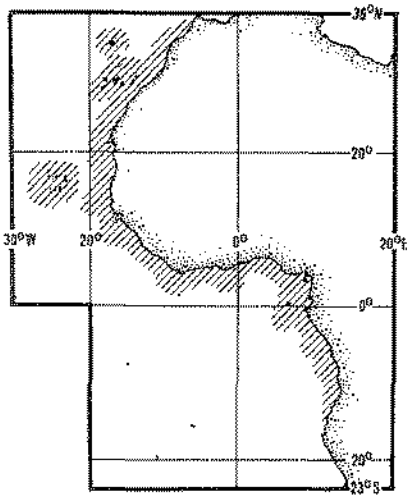
Other sea turtles with horny scutes on shell: edges of jaws smooth and more than one pair of prefrontal scutes; also, scutes on shell imbricated in Eretmochelys imbricata and 5 or more lateral scutes in the remaining species (4 lateral scutes in C. mydas).

SIZE:

Carapace length (straight-line distance): maximum to 105 cm; common to 90 cm.
Weight: maximum to 140 kg; common to 80 kg.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Within the area, from Morocco to Benguela, Angola. Also occurs in the Mediterranean Sea and in the Western Atlantic. Other subspecies of green turtle are found in the Indian and Pacific Oceans.



The optimum habitat is shoal water with an abundance of submerged vegetation (sea grass), but straggling individuals may be seen at considerable distances from land, and larger agglomerations are found on small mid-sea islands. The main nesting areas are located along the West African coast between 35°N and 15°S, principally Senegal, Gulf of Guinea and Congo. Ascension Island is remarkable for the long-distance migrant nesting colony (between Brazil and Ascension); other important islands for nesting are Cape Verde, Sao Tomé and Fernando Poo. Mating takes place in July and oviposition from July to November; the incubation period varies with latitude, ranging from 45 to 60 days.

Adult green turtles are primarily herbivorous, feeding on several species of sea grass, but they are not adverse to eating animals; captive green turtles accept pelleted or animal food.

PRESENT FISHING GROUNDS:

Throughout the area, but especially off the Cape Verde Islands, Senegal, Nigeria, Equatorial Guinea, Congo, the Gulf of Guinea and Ascension Island.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

At sea it is mainly caught with tangle nets, seines and harpoons. On the nesting grounds, adult females are simply turned on their backs.

The flesh is marketed fresh locally. Also utilized in the preparation of subproducts such as oil, calipee and leather.

Since the population has been heavily depleted as a result of irrational exploitation, several countries in the area have adopted regulatory measures ranging from partial to full protection of eggs and adult females (especially Ascension Island where full protection of turtles and their eggs has been enforced).

CHEL Eret 1

1981

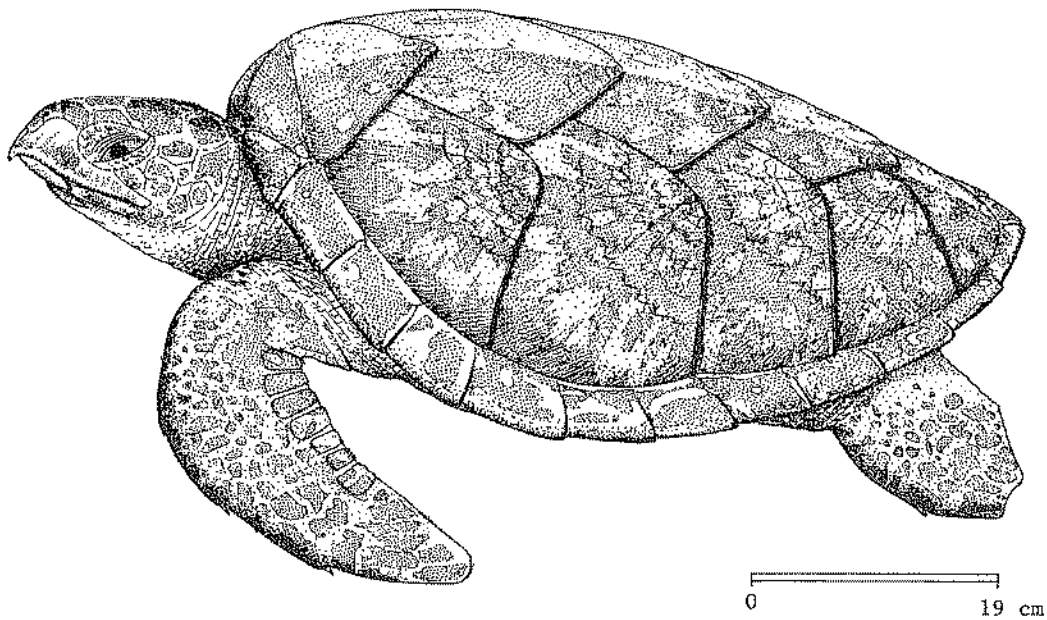
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : CHELONIDAE

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

Eretmochelys imbricata (Linnaeus, 1766)

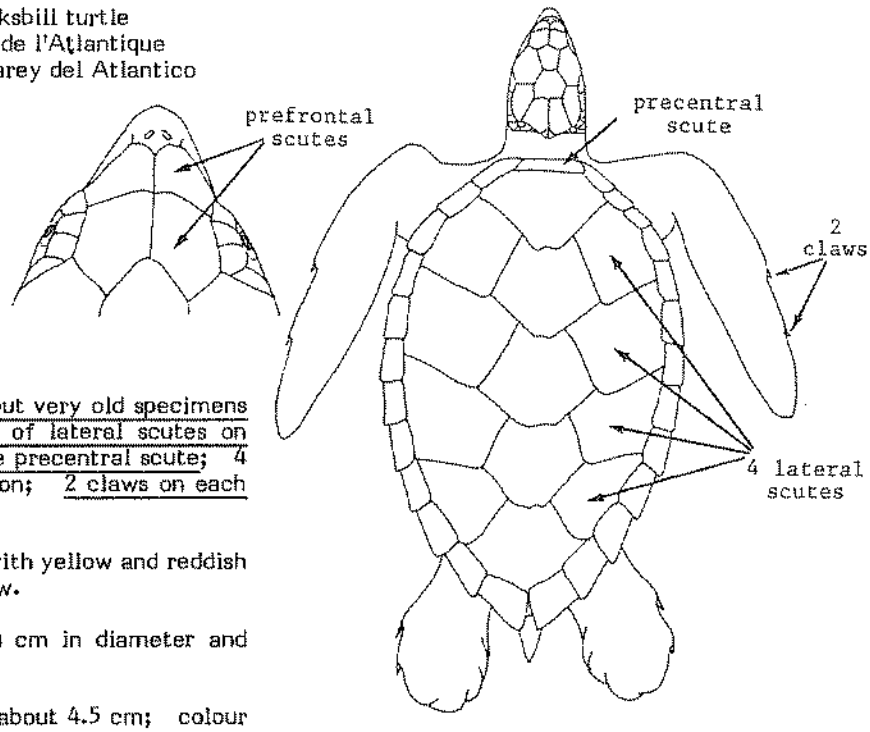
OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES:

FAO : En - Atlantic hawksbill turtle
Fr - Tortue caret de l'Atlantique
Sp - Tortuga de carey del Atlantico

NATIONAL :



DISTINCTIVE CHARACTERS :

Carapace oval, depressed, its width about 75% of the length. Head medium-sized (about 27% of carapace length), with 2 pairs of prefrontal scutes and a strong horny beak. Scutes on shell imbricated (overlapping) in all but very old specimens where they are juxtaposed; 4 pairs of lateral scutes on carapace, anterior pair not touching the precentral scute; 4 pairs of inframarginal scutes on plastron; 2 claws on each flipper.

Colour: upper side dark brown, with yellow and reddish streaks on scutes; underside pale yellow.

Eggs: white, spherical, 3.5 to 4 cm in diameter and 28 g in weight.

Hatchlings: length of carapace about 4.5 cm; colour dark brown.

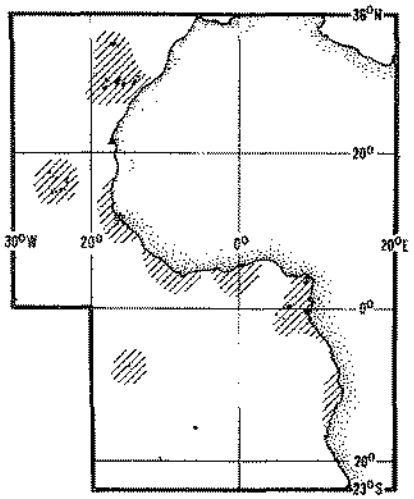
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

No other adult sea turtle from this area has imbricated scutes on carapace or plastron; the only other species with 4 lateral scutes on the carapace is Chelonia mydas, but the carapace is much broader, the flippers bear a single claw and the lower jaw is roughly toothed (smooth in E. imbricata).

SIZE:

Carapace length (straight-line distance): maximum to 90 cm; common to 80 cm.
Weight: maximum to 120 kg; common to 60 kg.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:



Found throughout the area, including offlying islands, but its occurrence is rather spotty and uncommon. Also occurs in the Mediterranean (apparently rare) and in the Western Atlantic. Another species of hawksbill turtle, Eretmochelys imbricata bissa, is found in Indo-Pacific waters.

Inhabits coastal waters, including shallow vegetated bottoms as well as bays and lagoons with muddy and coralline bottoms lacking extensive beds of submarine vegetation. Nesting is reported from Senegal, Sierra Leone, and Rolas and Sao Tomé Islands. Mating is documented to take place in August and oviposition from September to February; the incubation period ranges from 45 to 60 days.

The hawksbill turtle is an omnivorous species; its diet includes jellyfish, sponges, sea urchins, crustaceans, molluscs, seaweeds and seagrass.

PRESENT FISHING GROUNDS:

Traditional fishing grounds are located around coral islands or along rocky coasts; presently caught mainly off Liberia, Ghana and on islands in the Gulf of Guinea.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

At sea it is mainly caught with tangle nets, seines and harpoons; also by scuba-diving.

Marketed fresh in some countries; the meat as well as the eggs are good eating, although in many places the former is not particularly fancied and is reported to be sporadically poisonous (probably as a result of the turtle's diet). The most important product obtained from this species is the tortoise-shell or carey which is widely used in artisanal work. Protection measures for this species are highly desirable.

CHEL Lepid 1

1981

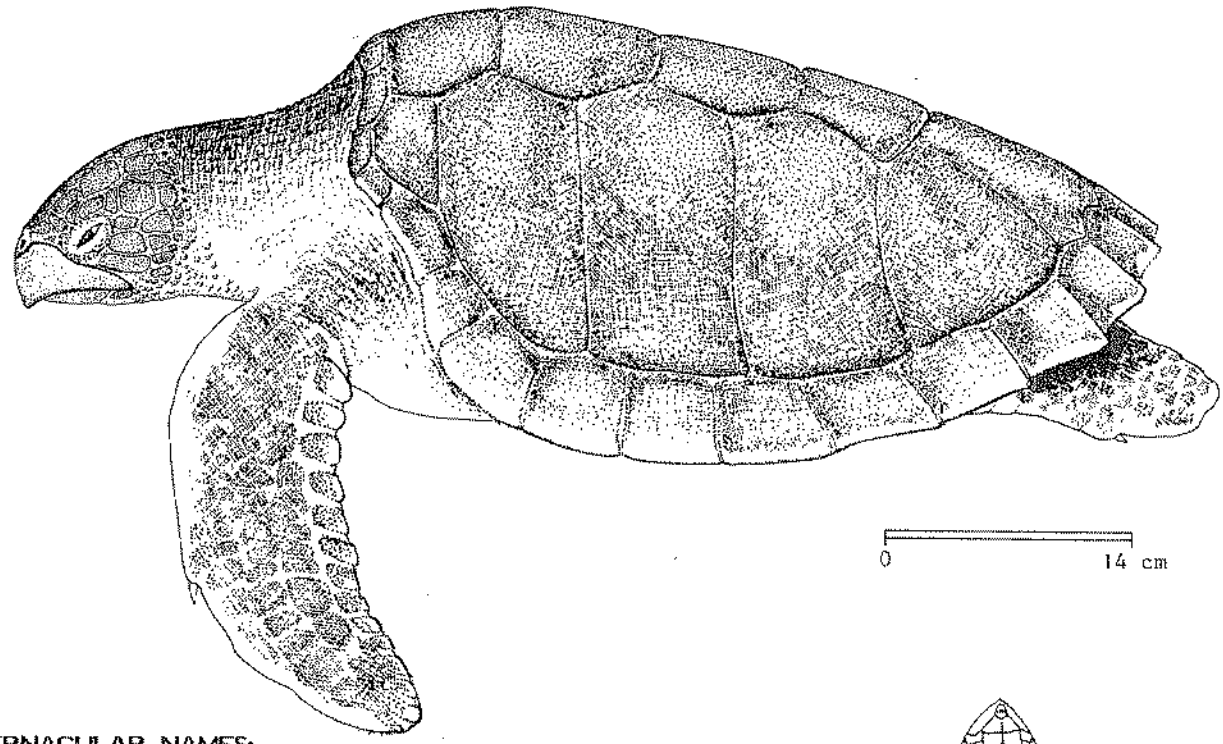
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : CHELONIDAE

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

Lepidochelys kempii (Garman, 1880)

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES:

FAO : En - Atlantic ridley turtle
Fr - Tortue ridley de l'Atlantique
Sp - Tortuga lora del Atlántico

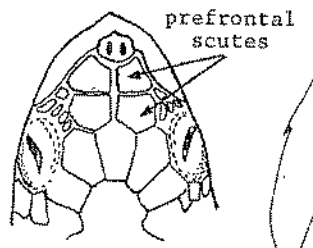
NATIONAL :

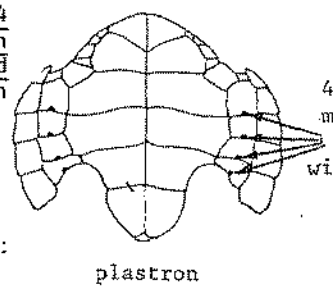
DISTINCTIVE CHARACTERS :

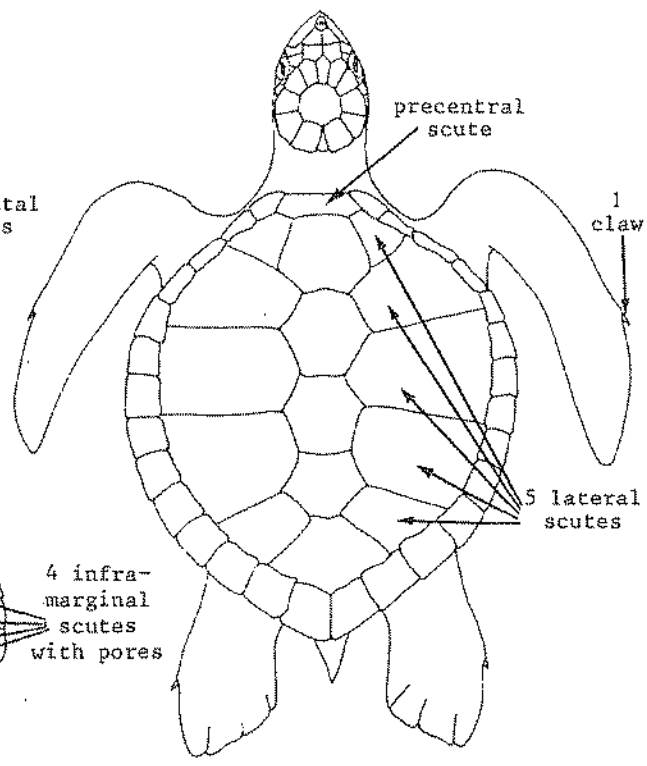
Carapace circular in outline, depressed, its width about 95% of the length. Head small (about 20% of carapace length) with 2 pairs of prefrontal scutes and a horny beak which may be finely serrated. Five pairs of lateral scutes on carapace, anterior pair touching the precentral scute; 4 pairs of inframarginal scutes, each perforated by a pore toward its hind margin; adults with only 1 claw on each flipper.

Colour: upper side predominantly olive greyish; underside pale yellow.

Eggs: white, spherical, about 4 cm in diameter and 32 g in weight.







Hatchlings: length of carapace about 4.2 cm; shell with 3 longitudinal ridges above and 2 below. Upper side dark grey to black, underside slightly paler; some individuals display white margins on flippers and greenish tones in the axillary region.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Lepidochelys olivacea: similar in shape, but very rarely found in the area occupied by L. kempii; colour darker (olive); shell deeper and slightly more elongated; central scutes on carapace flat and usually more than 5 pairs of lateral scutes.

No other turtle species occurring in the area has pores on the inframarginal scutes or a nearly circular carapace.

SIZE:

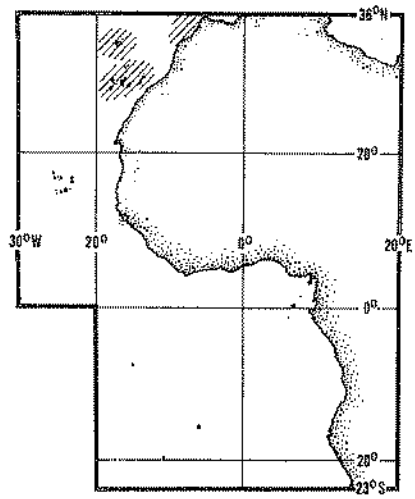
Carapace length (straight-line distance): maximum to 73 cm; common to 70 cm.
Weight: maximum to 45 kg; common to 42 kg; juveniles are commonly taken.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Within the area, only off Morocco, Madeira and the Canary Islands (usually immature individuals). Also along the Atlantic coasts of Europe and in the North-western Atlantic.

This species seems to prefer shallow water and is associated with the subtropical shoreline of mangrove, where it is often found on shrimp grounds; mating takes place from March to April and oviposition from April to July; the incubation period ranges from 45 to 60 days.

Feeds on crabs, shrimps, jellyfish and fishes.



PRESENT FISHING GROUNDS:

Northernmost part of the area.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Exploitation of this species is incidental, and most of the specimens taken appear to be juveniles.

Taken in shrimp trawls and generally not returned to the sea.

Not normally marketed. The flesh is not highly esteemed in some localities, but the eggs used to be eaten throughout its American range, where enhancement projects are on going.

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1981

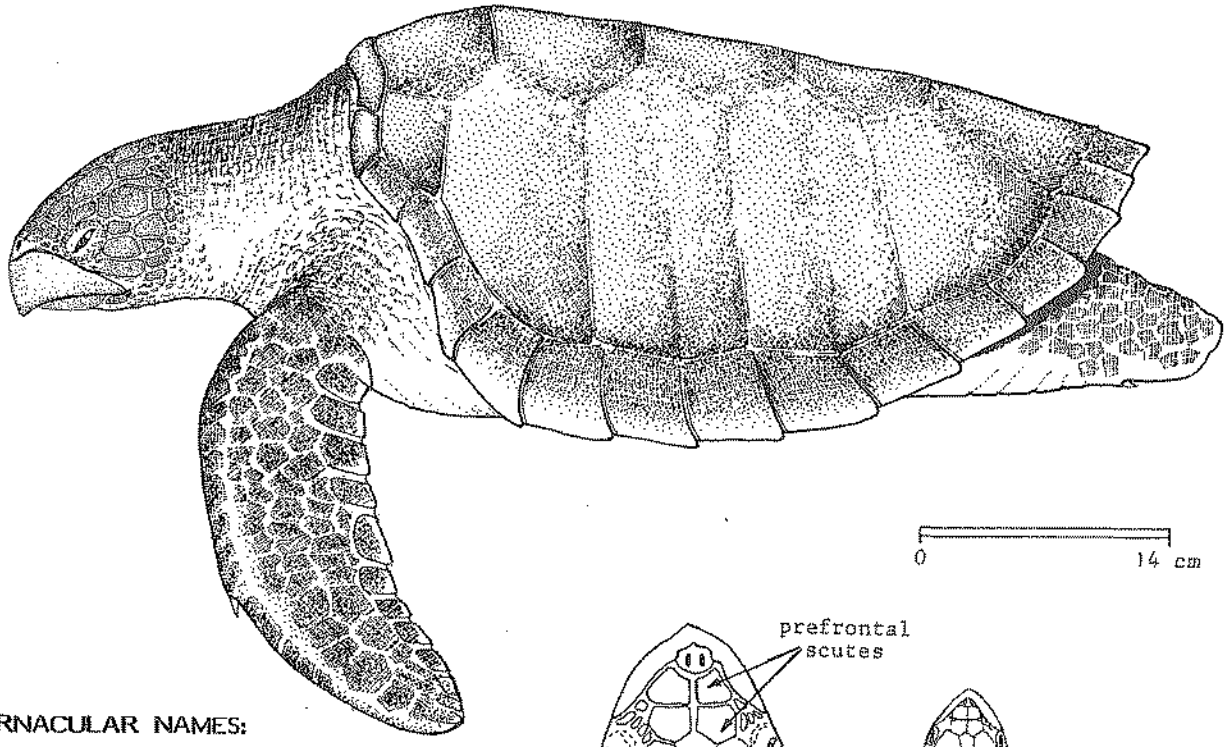
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : CHELONIDAE

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

Lepidochelys olivacea (Eschscholtz, 1829)

OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES:

FAO : En - Pacific ridley turtle
Fr - Tortue ridley du Pacifique
Sp - Tortuga golfina

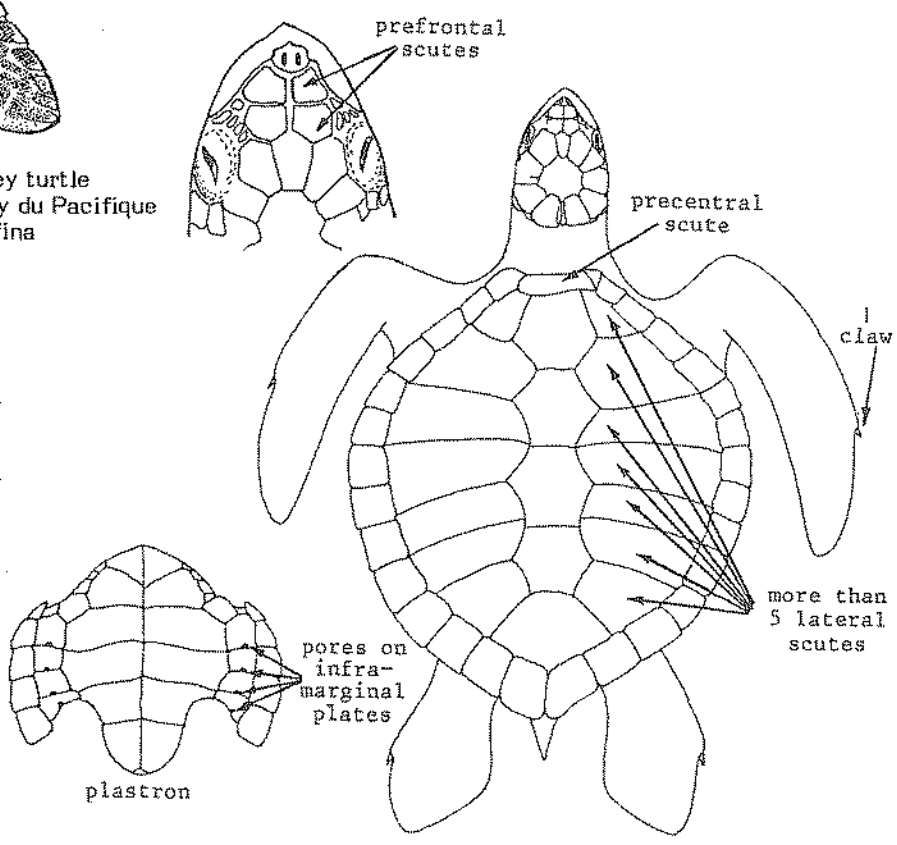
NATIONAL :

DISTINCTIVE CHARACTERS :

Carapace semicircular in outline, depressed, its width about 90% of the length. Head small (about 22% of carapace length) with 2 pairs of prefrontal scutes and a horny beak which may be finely serrated. Usually more than 5 pairs (sometimes even 7) of lateral scutes on carapace, anterior pair touching the precentral scute; 4 pairs of inframarginal scutes, each perforated by a pore toward its hind margin; adults with only 1 claw on each flipper.

Colour: upper side olive brown; underside yellowish white.

Eggs: white, spherical, about 3.9 cm in diameter and 33 g in weight.



Hatchlings: length of carapace about 4 cm; shell with 3 longitudinal ridges above and 2 below; scutes slightly imbricated. Colour dark greyish to black; some individuals with yellow margins to the shell.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Lepidochelys kempii: similar in shape, but very rarely found in the area occupied by L. olivacea; colour lighter, predominantly greyish; carapace slightly broader and more strongly depressed, its margin curved upward and the central scutes convex (nearly flat in L. olivacea); 5 pairs of lateral scutes on carapace (usually more than 5 in L. olivacea).

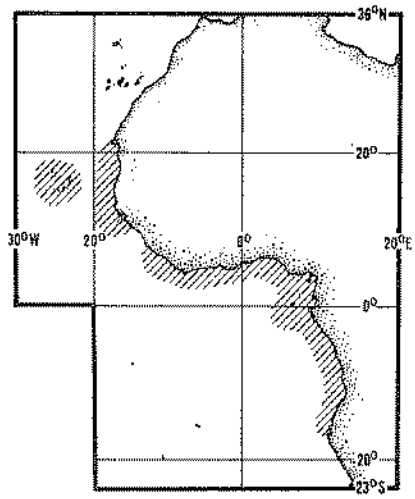
No other turtle species occurring in the area has pores on the inframarginal scutes or a nearly circular carapace.

SIZE:

Carapace length (straight-line distance): maximum to 76 cm; common to 72 cm.
Weight: maximum to 52 kg; common to 45 kg.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Within the area, from 25°N (Sahara) to 10°S (Angola). Also occurs on the Atlantic coast of South America from Eastern Venezuela to Brazil. Elsewhere, in the Pacific and Indian Oceans(main distribution area).



Found in shallow coastal waters as well as in the open sea forming "flotillas". The most important nesting areas are found on the coasts of Senegal, Ghana, Cameroon, Gabon, Congo, Angola and Cape Verde Islands. Oviposition takes place from August to December; the incubation period ranges from 45 to 65 days, depending upon the latitude.

PRESENT FISHING GROUNDS:

Gulf of Guinea and northward to Senegal, but mostly outside the area (N.W. Brazil).

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Apparently taken in small numbers in the nesting area; at sea it is caught incidentally by shrimp trawlers.

The flesh and eggs are marketed locally.

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1981

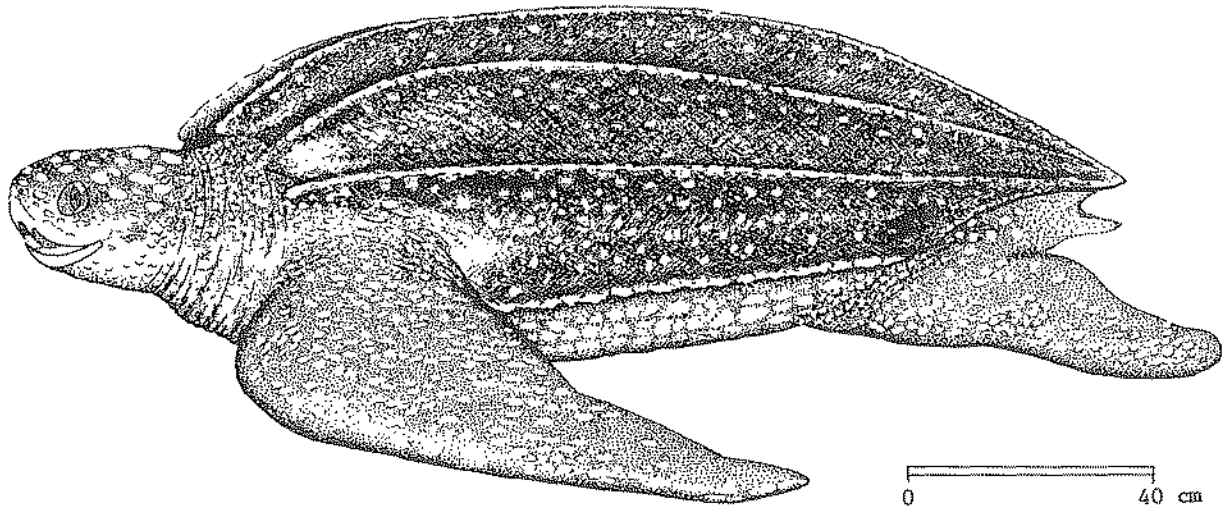
FAO SPECIES IDENTIFICATION SHEETS

FAMILY : DERMOCHELIDAE

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

Dermochelys coriacea coriacea (Linnaeus, 1758)

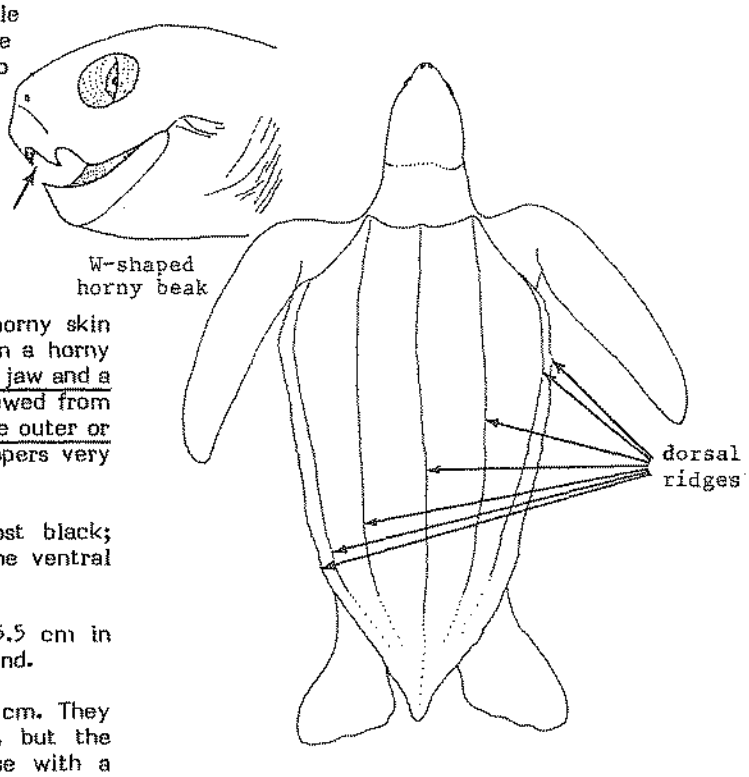
OTHER SCIENTIFIC NAMES STILL IN USE : None



VERNACULAR NAMES:

FAO : En - Atlantic leatherback turtle
Fr - Tortue luth de l'Atlantique
Sp - Tortuga laúd del Atlántico

NATIONAL :



DISTINCTIVE CHARACTERS :

Body depressed and covered by a smooth horny skin lacking lamellae or scutes. Head small, ending in a horny beak with a well defined cusp at each side of upper jaw and a central cusp on lower jaw (beak W-shaped when viewed from the front). Seven longitudinal ridges (including the outer or lateral pair) on carapace and 5 on plastron. Flippers very large, without claws.

Colour: upper side dark brown to almost black; whitish spots on neck, increasing in number on the ventral and caudal areas.

Eggs: white, spherical, normally about 5.5 cm in diameter; unfertilized small eggs may often be found.

Hatchlings: length of carapace about 5.5 cm. They show basically the same features as the adult, but the flippers are much larger and the skin is rugose with a reticulate pattern of small scales. Upper side black, with lateral ridges white; underside white, mottled with light brown.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA :

All other sea turtles occurring in the area have horny lamellae or scutes all over their body and adults lack the longitudinal ridges on carapace and plastron.

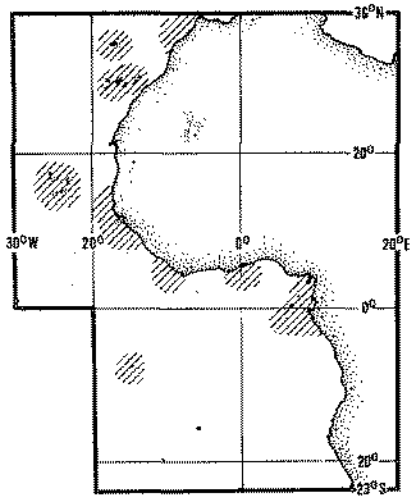
SIZE :

Carapace length (straight-line distance): maximum to 180 cm; common to 140 cm.
Weight: maximum to 725 kg; common to 150 kg.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR :

Throughout the area; northward extending into the Mediterranean and along the Atlantic coast of Europe to the British Isles; southward to the Cape of Good Hope. Also found in the Western Atlantic. Another subspecies, Dermochelys coriacea schlegelli, occurs in the Pacific and Indian Oceans.

Predominantly pelagic and highly migratory, usually found in the open sea, but approaching the land seasonally. The most important nesting areas are found in Liberia and the Gulf of Guinea; oviposition takes place from September to February; the incubation period ranges from 60 to 70 days.



PRESENT FISHING GROUNDS :

Caught incidentally throughout its range; normally rather scarce, except in certain areas during the nesting season.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION :

Separate statistics are not reported for this species. It is estimated that less than 200 leatherback turtles are caught annually in the Eastern Central Atlantic.

At sea it is caught mainly with tangle nets and harpoons; sometimes also taken on the nesting areas.

The meat is usually not esteemed and used mainly for bait, but the eggs are good-eating; the fat and other parts are used for the production of oil.

The capture of this species is forbidden in most countries of the area, due to the depletion of the stock in recent years. In some parts of the area, the species is unknown.