

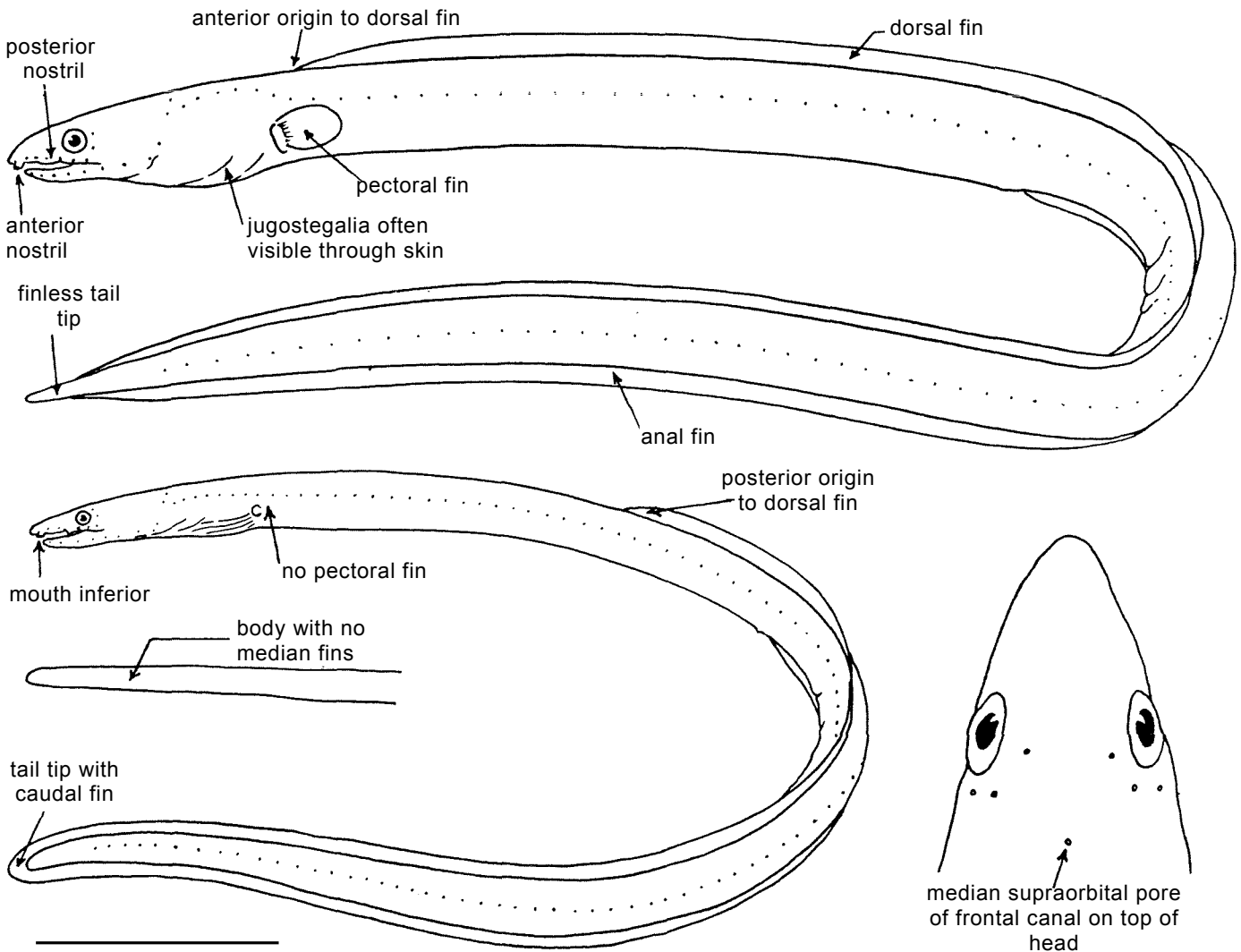
FAO SPECIES IDENTIFICATION SHEETS

FISHING AREA 51
(W. Indian Ocean)

OPHICHTHIDAE*

Snake eels and worm eels

Body long to very long and snake-like, or worm-like, cylindrical anteriorly. Snout pointed, mouth either terminal or inferior; teeth on jaws highly variable with the different genera, typically conical and multiserial, but ranging from fang-like (*Ophisurus*) to molariform or granular (*Myrichthys*, *Pisodonophis*) or villiform (*Muraenichthys*); teeth on vomer (roof of mouth) either in 1 to 3 rows or in a solid patch; nostrils widely separated, the posterior inside the mouth or somehow penetrating or opening through a valve in upper lip, except in *Neenchelys* and *Benthenchelys* where it is lateral; gill openings small, slit-like or round; branchial region and throat swollen, supported by a basket of free branchiostegal rays (jugostegalia) that overlap below, a unique feature for this family; these are in addition to the normal complement of branchiostegal rays that are attached to the hyoid arch. No spines in fins; dorsal and anal fins, when present, continuous around the tail externally (subfamily *Myrophinae*), or discontinuous, with the caudal-fin rays reduced (subfamily *Ophichthinae*); pectoral fins present or absent; pelvic fins always absent. No scales. Lateral-line system extending on to head, the right and left sides connected through a frontal and a temporal canal, the frontal canal opening externally through a median supra orbital pore.



*Diagnosis applies to Western Indian Ocean representatives only

Colour; some of the sand-burrowing species do not have distinctive colour patterns, except being darker dorsally than ventrally; others are strikingly marked with stripes, bars or spots.

Snake- and worm eels are small- to large-sized marine fishes (to about 300 cm in total length) occurring mostly in tropical and subtropical waters between the shoreline and depths to below 750 m. Many species are benthic and burrow partially or totally in the bottom at least for part of the day. Some of the larger and more abundant coastal snake eels are taken rather frequently with longlines and trawls and may be consumed locally. They may inflict painful wounds when handled. Some enter freshwater.

SIMILAR FAMILIES OCCURRING IN THE AREA:

Other eel families: median dorsal pore (opening of the frontal lateral-like canal) absent, and branchiostegal rays not overlapping below. Most eels are readily distinguished from the snake eels (subfamily Ophichthinae) by the presence of a continuous fin around the tail; the tail tip in the Ophichthinae is typically a hard, finless point used for burrowing in soft sediments.

KEY TO GENERA OCCURRING IN THE AREA*:

- 1a. Tip of tail with a fringe of fin around it, the dorsal, caudal and anal fins thus forming one continuous external fin (Fig.1) (subfamily Myrophinae)
- 2a. Posterior nostril lateral, in front of eye, not on lip (labial) (Fig.2)
- 3a. Dorsal fin origin over anus Benthenchelys
- 3b. Dorsal fin origin before mid-trunk Neenchelys
- 2b. Posterior nostril labial, bisecting lip and partly inside, partly outside mouth (Fig.3)
- 4a. Pectoral fins present Myrophis
- 4b. Pectoral fins absent Muraenichthys

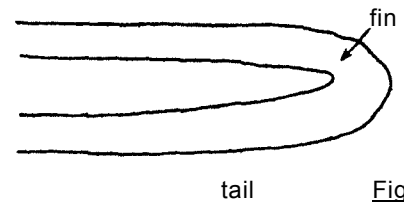


Fig.1

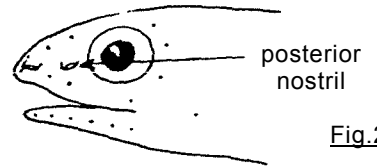


Fig.2

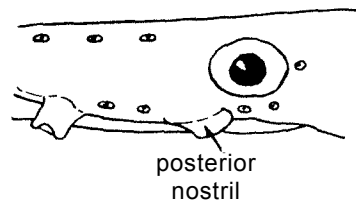


Fig.3

Tip of tail finless externally, the tail tip hard and pointed (Figs.4 and 5) (subfamily Ophichthinae)

- 5a. Pectoral fins much reduced or absent; median fins if present, much reduced, or absent
- 6a. All fins absent, or if present, reduced

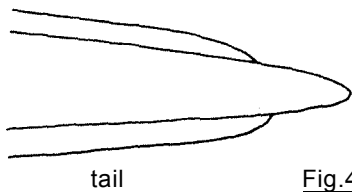


Fig.4

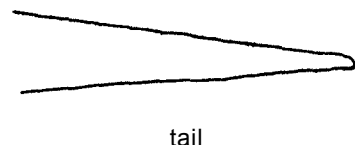


Fig.5

*Western Indian Ocean only

7 a. Posterior nostril opening within confines of mouth (Fig-6); anterior nostril non-tubular but with a groove between its mesial (inner) margin and undersurface of snout Ichthyapus

7 b. Posterior nostril opening outside closed mouth, nostril penetrating upper lip (Fig.7); anterior nostril tubular Apterichtus

6 b. Median fins present (except for anal absent in Phaenomonas)

8 a. Dorsal fin begins well forward on head

9 a. Gill openings lateral and oblique, or horizontal

10 a. Dorsal fin complete to shortly before tail tip; pectoral fins are minute flaps; greatest depth 30 to 60 times in total length Bascanichthys

10 b. Dorsal fin ends on front part of trunk; pectoral fins absent; greatest depth about 130 times in total length Phaenomonas

9 b. Gill openings ventral Callochelys

8 b. Dorsal fin begins above or behind gill opening

11 a. Gill openings entirely ventral

12 a. Lateral head profile, when seen from above, narrows sharply behind eye, then continues evenly to a pointed snout (Fig-8); body stout, its depth less than 30 times in length; vomerine teeth pointed, enlarged Lamnostoma

12 b. Lateral head profile, from above, narrows evenly to tip of snout (Fig.9); body slender, its depth more than 40 times in length; vomerine teeth conical, not enlarged Caecula

11 b. Gill openings lateral Yirrkala

5 b. Pectoral fins present, generally well developed; median fins moderately well developed, though low

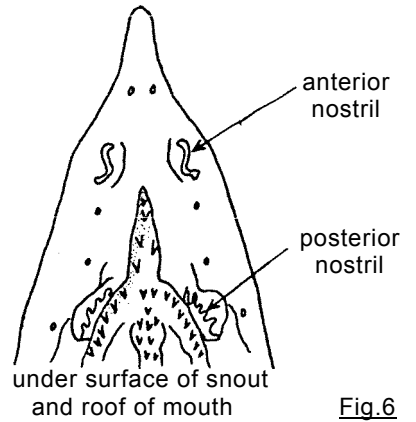


Fig.6

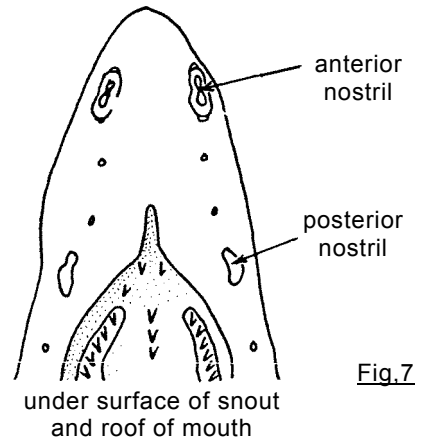


Fig.7

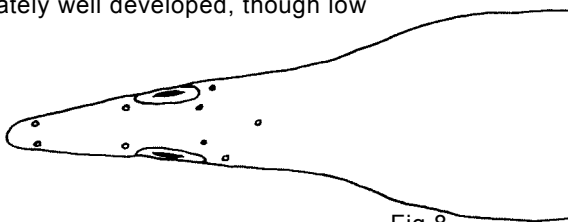


Fig.8

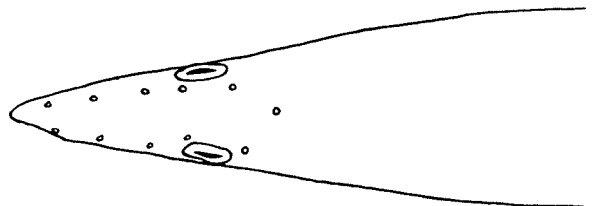


Fig.9

13a. Anterior nostrils with conspicuous leaflike appendages
Fig.10)Phyllophichthus

13b. Anterior nostrils simple tubes

14a. Vomerine teeth absent or at most 1 to 3Leiuranus

14b. Vomerine teeth present

15a. Vomerine teeth molariform; pectoral fin
broad-based (Fig.11)

16a. Dorsal fin begins above or behind gill
openingPisodonophis

16b. Dorsal fin begins well in advance of gill
openingMyrichthys

15b. Vomerine teeth pointed, pectoral fin base
restricted (Fig.12)

17a. Eye before middle of upper
jawBrachysomophis

17b. Eye about over middle of upper jaw

18a. Upper lip fringed (Fig.13) .
.....Cirrhimuraena

18b. Upper lip not fringed
although one or more barbels
may be present (Fig.14)

19a. Snout very long, jaws
slender and elongate,
incapable of closing
completely in adults...
.....Ophisurus

19b. Snout moderate or
short, jaws stout and
short, capable of clos
ing completely Ophichthus

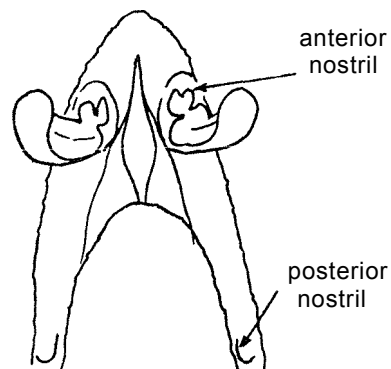


Fig.10

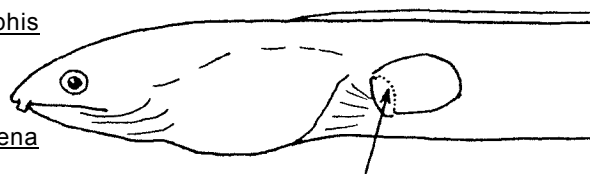


Fig.11



Fig.12

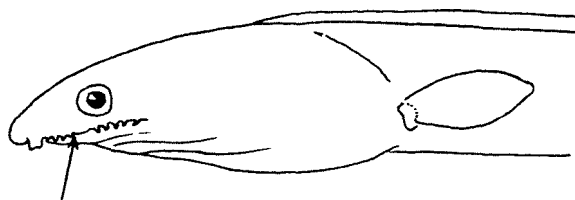


Fig.13

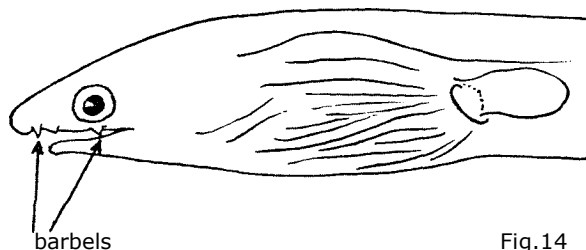


Fig.14

LIST OF SPECIES OCCURRING IN THE AREA.

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

Apterichtus klazingai (Weber, 1913)

Bascanichthys deraniyagalai Menon, 1961

Bascanichthys kirki Giinther, 1870)

Bascanichthys longipinnis (Kner & Steindachner, 1867)

Benthenchelys cartieri Fowler, 1934

Brachysomophis cirrhocheilus (Bleeker, 1859)

Brachysomophis crocodilinus (Bennett, 1833)

Caecula pterygera Vahl, 1794

OPHICH Caec 1

Callechelys bitaeniatus (Peters, 1877)

Callechelys marmoratus (Bleeker, 1853)

Callechelys melanotaenia Bleeker, 1864

Callechelys nebulosus Smith, 1962

Callechelys striatus Smith, 1957

Cirrhimuraena (Jenkinsiella) inhacae (Smith, 1962)

Cirrhimuraena (Jenkinsiella) playfairii (Giinther, 1870)

Ichthyapus acuticeps (Barnard, 1923)

Lamnostoma orientalis (McClelland, 1844)

OPHICH Lamnos i

Lamnostoma polyophthalma (Bleeker, 1853)

Leiuranus semicinctus (Lay & Bennett, 1839)

Muraenichthys gymnopterus Bleaker, 1853

Muraenichthys gymnotus Bleaker, 1864

Muraenichthys laticaudata (Ogilby, 1897)

Muraenichthys macropterus Bleaker, 1857

Muraenichthys schultzei Bleaker, 1857

Muraenichthys vermiformis (Peters, 1866)

Muraenichthys xorae Smith, 1958

OPHICH Muraen 1

Myrichthys colubrinus (Boddaert, 1781)

Myrichthys maculosus (Cuvier, 1817)

Myrophis lepturus Kotthaus, 1968

Myrophis uropterus (Temminek & Schlegel, 1848)

Neenchelys buitendijki (Weber & de Beaufort, 1916)

Neenchelys microtretus Bamber, 1915

OPHICH Neen 1

Ophichthus (Centrurophis) bonaparti (Kaup, 1856)

Ophichthus (Centrurophis) cephalozona (Bleaker, 1865)

Ophichthus (Microdonophis) altipinnis (Kaup, 1856)

Ophichthus (Microdonophis) polyophthalmus (Bleaker, 1864)

Ophisurus serpens Linnaeus, 1758

Phaenomomas cooperi Palmer, 1970

Phyllophichthus xenodontus Gosline, 1951

*This list is provisional. The snake eels and worm eels of Area 51 require much further study, including particularly examination of original type material on which the names in this list are based. Additional species undoubtedly await discovery as sandy and muddy habitats are explored more adequately

Pisodonophis boro (Hamilton-Buchanan, 1822)
Pisodonophis cancrivorus (Richardson, 1844)

OPHICH Pisod 1
OPHICH Pisod 2

Yirkala lumbricoides (Bleeker, 1864)
Yirkala maculata (Klausewitz, 1964)
Yirkala tenuis Günther, 1870)

Incertae sedis:

Ichthyapus omanensis (Norman, 1939)

Ophichthus (Coecilophis) apicalis Bennett, 1830
Ophichthus macrochir (Bleeker, 1853)
Ophichthus madagascariensis Fourmanoir, 1961
Ophichthus marginatus (Peters, 1855)
Ophichthus melanochir Bleeker, 1865
Ophichthus microcephalus (Day, 1870)
Ophichthus multiserialis (Norman, 1939)
Ophichthus retifer Fowler, 1935
Ophichthus rutidodermatoides (Bleeker, 1852)
Ophichthus ornatissimus (Kaup, 1856)
Ophichthus unicolor Regan, 1908

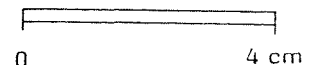
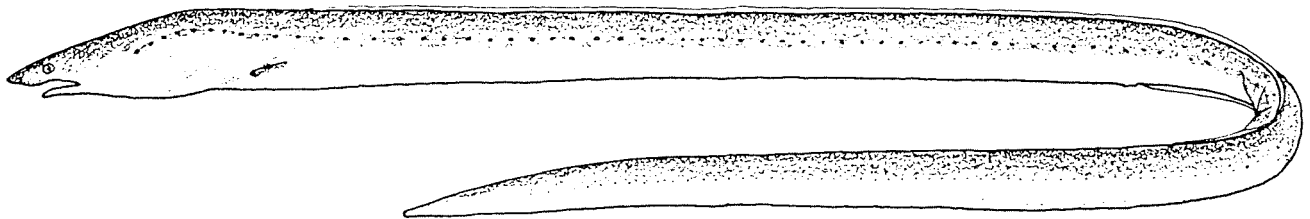
Yirkala fusca (Zieuw, 1793)

FAO SPECIES IDENTIFICATION SHEETS

FAMILY: OPHICHTHIDAE

FISHING AREA 51
(W. Indian Ocean)Caecula pterygera Vahl, 1794

OTHER SCIENTIFIC NAMES STILL IN USE: None



VERNACULAR NAMES:

FAO : En - Finny snake eel
 Fr - Serpention olive
 Sp - Tieso acétuna

NATIONAL:

DISTINCTIVE CHARACTERS:

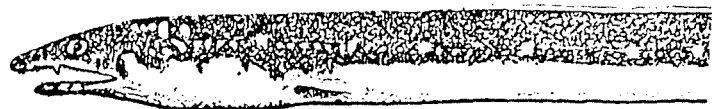
Body elongate, more or less cylindrical, little compressed, with a hard tail tip. Head sharply conical; anterior nostril a downwardly facing tube near tip of snout, posterior nostril an inconspicuous slit in upper lip, guarded by a papilla; mouth large, reaching well behind eye; eye very small, inconspicuous; all teeth small, sharp more or less uniserial; gill opening a longitudinal slit beneath throat with an extra fold of skin alongside. Dorsal fin origin over gill opening, but both dorsal and anal fins are very poorly developed. Vertebrae 126 to 130.

Colour: olive-grey above, fading to creamish-white below, especially on throat and belly.

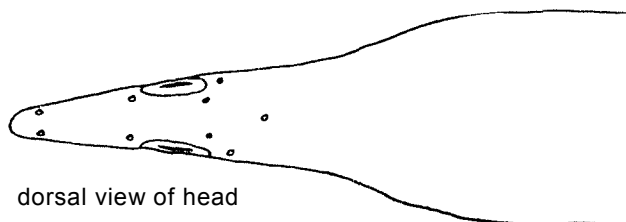
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Lamnostoma orientalis: when viewed from above, head profile indented behind eye so that the snout is conspicuously set off from rear portion of head; top and sides of head, as well as lateral line with a series of prominent light spots; vomerine teeth rather large.

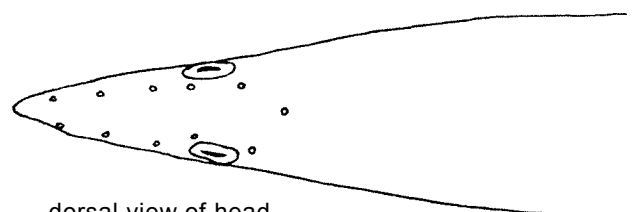
Yirkala species: gill openings lateral and transverse, not ventral and longitudinal.



lateral view of head and anterior part of body

Lamnostoma

dorsal view of head

Lamnostoma

dorsal view of head

Caecula

SIZE:

Maximum: 30 cm; common to about 20 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Southern India and probably most other parts of the Indian Ocean.

Inhabits estuaries and inshore areas of turbid waters.

Habits poorly known but probably feeds on small, sand-dwelling invertebrates.

PRESENT FISHING GROUNDS:

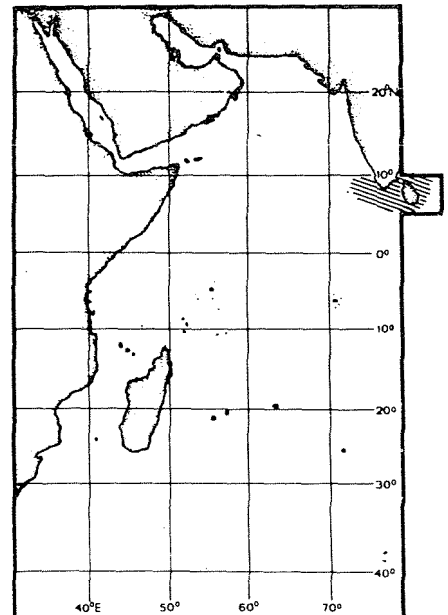
No definite fishing grounds; caught sporadically in Indian coastal waters.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Caught mainly in 'dol' nets and by hand.

Marketed fresh and used mainly for bait.



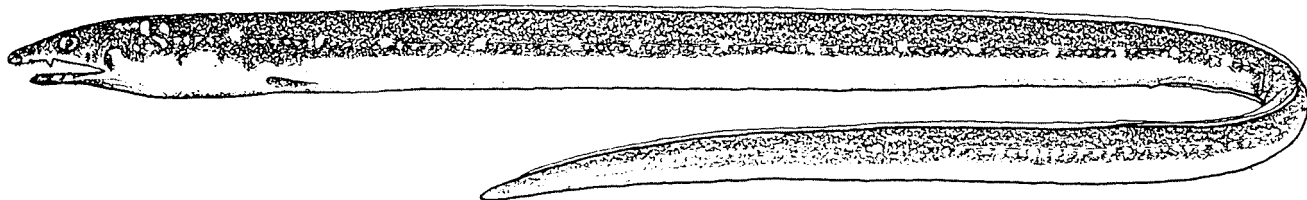
FAO SPECIES IDENTIFICATION SHEETS

FAMILY: OPHICHTHIDAE

FISHING AREA 51
(W. Indian Ocean)

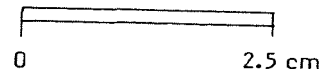
Lamnostoma orientalis (McClelland, 1844)

OTHER SCIENTIFIC NAMES STILL IN USE: Ophichthys orientalis (McClelland, 1844)



VERNACULAR NAMES:

FAO : En - Oriental worm eel
 Fr - Serpention oriental
 Sp - Tieso oriental



NATIONAL:

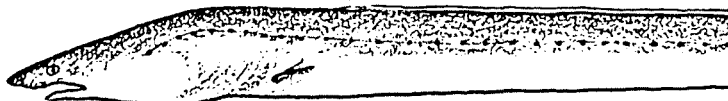
DISTINCTIVE CHARACTERS:

Body elongate, more or less cylindrical, little compressed, with a hard tail tip. Head sharply conical; sharply indented behind eyes when viewed from above; anterior nostril a downwardly facing tube near tip of snout, posterior nostril an inconspicuous slit in upper lip, guarded by a papilla; mouth large, reaching well behind eye; eye small; teeth on jaws small, sharp, recurved; vomerine teeth (on roof of mouth) larger; all teeth more or less uniserial; gill opening a longitudinal slit beneath throat with an extra fold of skin alongside. Dorsal origin just behind gill opening, but both dorsal and anal very poorly developed. Vertebrae 136 to 141.

Colour: dark grey to blue-black above to below lateral line, lighter below; a series of prominent light spots on head and along lateral line; lateral line pores lighter than surrounding skin.

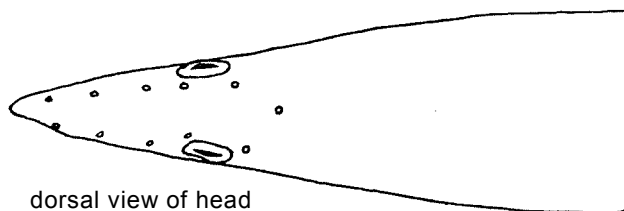
DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Caecula species: outline of head, when viewed from above narrows evenly to tip of snout, and is not sharply indented behind eye; vomerine teeth small; no white spots on top and sides of head or on lateral line.



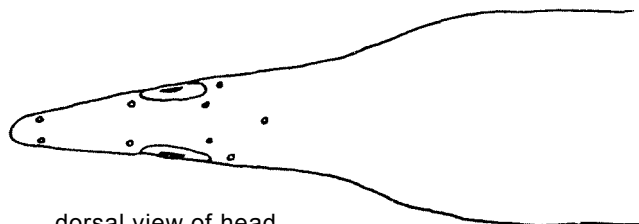
lateral view of head and of anterior part of body
Caecula

Yirkala species: gill openings lateral and transverse, not ventral and longitudinal.



dorsal view of head

Caecula



dorsal view of head

Lamnostoma

SIZE:

Maximum: 30 cm; common to about 25 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Southern Africa to India and probably most other parts of the Indian Ocean.

Inhabits estuaries and inshore areas of turbid waters.

Habits poorly known but probably feeds on small sand-dwelling invertebrates.

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No definite fishing grounds; caught sporadically in Indian coastal waters.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

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Marketed fresh and used for bait.

