

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREA 51
(W. Indian Ocean)

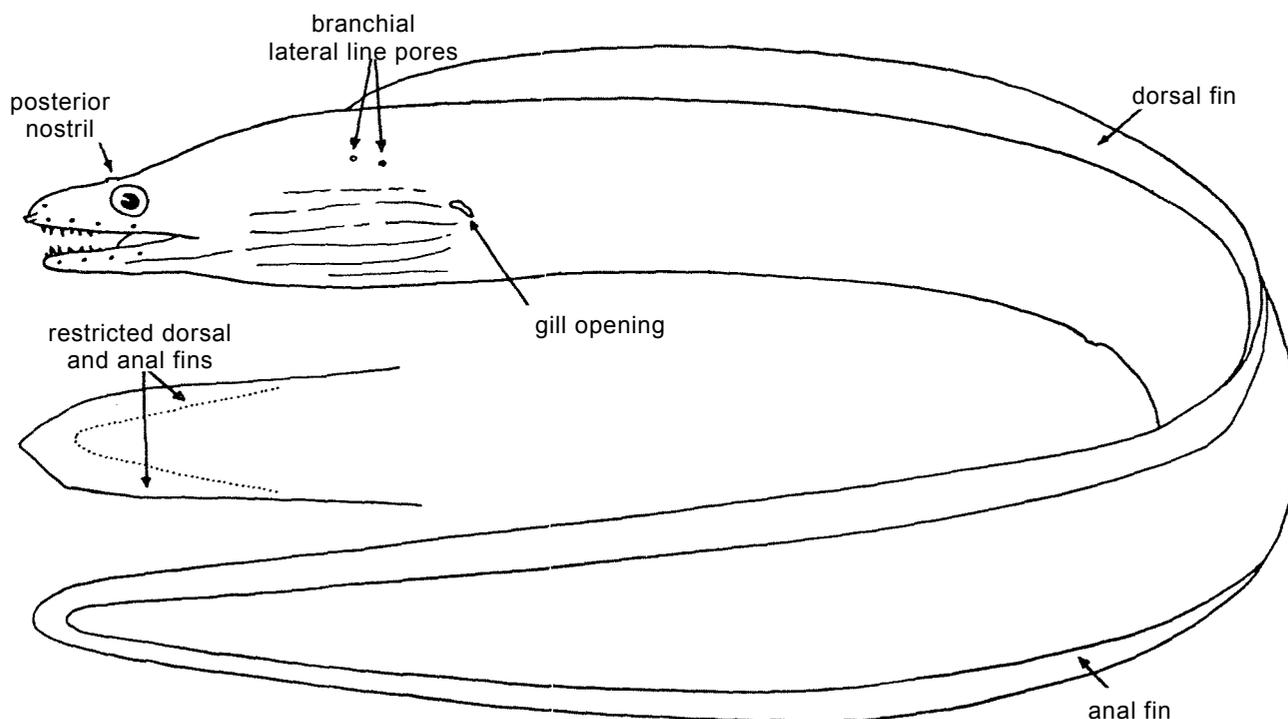
MURAENIDAE

Morays

Robust, powerful eels, their body firm, muscular and somewhat compressed along the tail. Typically, the dorsal profile above and behind the eye is steep due to the development of strong head muscles; anterior nostrils tubular at front of snout, posterior nostrils above anterior portion of eye, usually as a simple hole with a raised rim, but sometimes tubular; teeth in jaws usually strong, ranging from sharply pointed and depressible canines to blunt molars; teeth on vomer (roof of mouth) uniserial or in a median multiserial patch; each gill opening restricted to a small, roundish, lateral hole or slit. No spines in fins; vertical fins variously developed, from dorsal fin originating on head and anal fin immediately behind anus, to both fins restricted to tail tip; pectoral and pelvic fins absent. No scales. No lateral line pores on body, but a reduced complement of lateral line pores on head, including typically 1 or 2 above and before gill opening (bronchial lateral line pores).

Colour: highly variable; sometimes plain creamish, greyish, brownish, purplish or blackish, with minor other markings, but more often with very distinctive and characteristic patterns of marblings, blotches or bands. Colour patterns may change considerably with age.

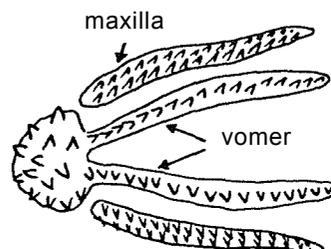
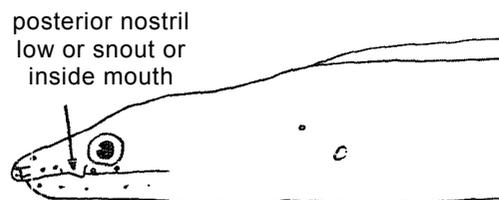
Small to very large fishes (to over 400 cm in total length) inhabiting essentially shallow waters in tropical areas, although a few species have invaded rather deep water (over 200 m) and some others occur in temperate areas. Morays are most abundant on reefs or in rocky areas where they find protection in holes and crevices. They are scavengers and predators which become active mainly at night. They are prone to cause deep wounds with their powerful jaws and teeth if provoked, but usually they do not leave their hiding places to attack swimmers. Their remarkable vitality outside the water, and their slippery bodies contribute to increase the rate of accidents among fishermen, especially in small boats. Morays are most often speared or caught on longlines and in traps. They are eaten in many parts of the world and although a few species are consumed locally in Fishing Area 51, none can be considered to be of significant commercial importance at present. Consumption of large individuals of some morays may cause fatal poisoning (ciguatera) in coral reef areas.



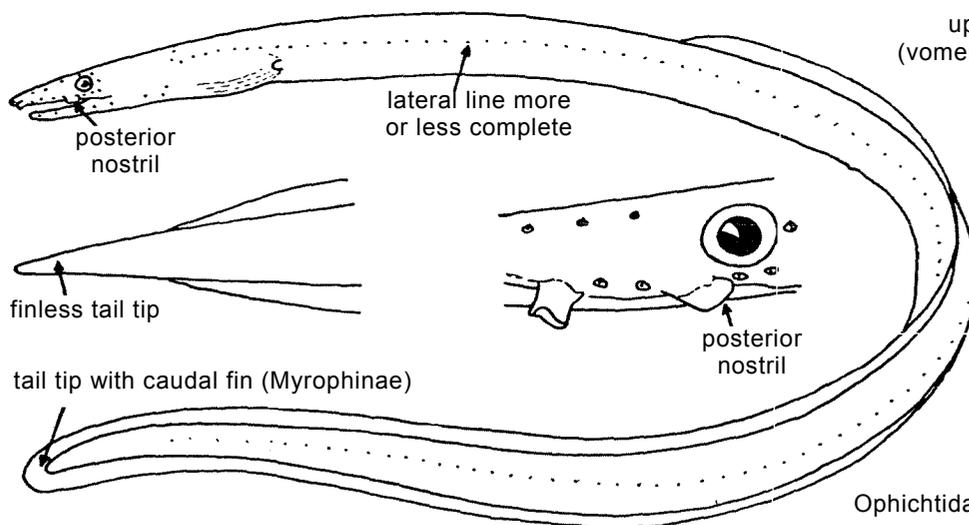
SIMILAR FAMILIES OCCURRING IN THE AREA:

Xenocoelidae: with vomerine tooth series usually widely divergent rather than uniserial or in a median patch; posterior nostril oral (inside mouth), labial or before lower half of eye, rather than above eye or before its upper portion; pectoral fins sometimes present.

Other eel families: none have the elevation of the occipital region of head characteristic of the Muraenidae. Furthermore, many have pectoral fins (Muraenesocidae, Congridae, Anguillidae, and some Ophichthidae). In most Ophichthidae, the body is snake-like, cylindrical rather than compressed, the lateral line pores are obvious all along the body, the posterior nostril is either inside the mouth or close to it, and the tip of the tail is finless except in the Myrophinae.



upper teeth (vomer and maxillae) Xenocoelidae



Ophichthidae lateral line pore

KEY TO GENERA OCCURRING IN THE AREA:

- 1a. Dorsal fin origin above or behind anus
 - 2a A lateral line pore adjacent to each posterior nostril, the pore and nostril separated only by a septum (Fig.1) Anarchias
 - 2b No pores adjacent to posterior nostril (Fig.2)... Uropterygius
- 1b. Dorsal fin origin above gill opening, further forward on head or just before anus

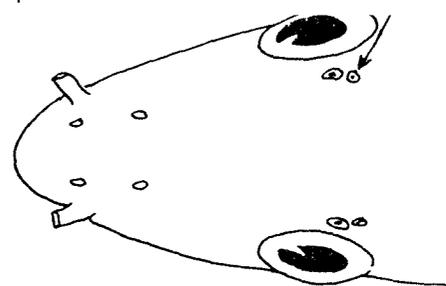


Fig.1

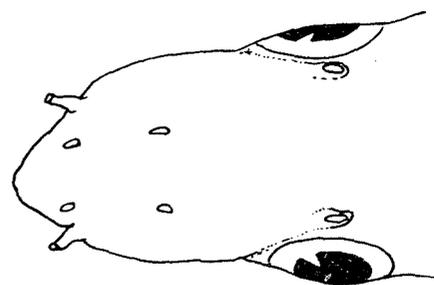


Fig.2

3a. Teeth mostly blunt, some even molar-like, particularly those on roof of mouth (Fig.3) Echidna

3b. Teeth sharp, some of them fang-like or shark-like (Fig.4)

4a. Tail (from anus to posterior end) equal to, or slightly longer than, rest of body

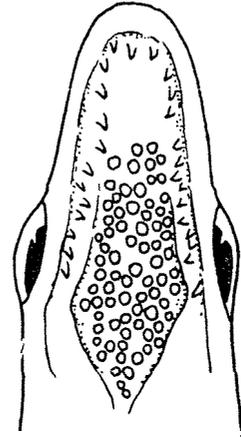
5a. Maximum depth 1 to 2 times in head

6a. Posterior nostril without an obvious tube

7a. Anterior nostril tube with a bilobed flap (Fig.5), jaws arched and teeth exposed when mouth is closed.... Enchelynassa

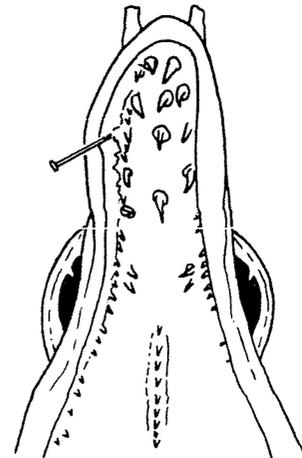
7b. Anterior nostril simple, jaws straight, teeth not exposed

8a. One or more long, depressible fangs in front of intermaxillary (on upper jaw) (Fig.6)



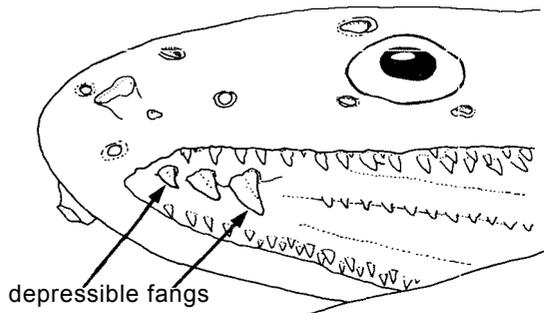
roof of mouth

Fig.3



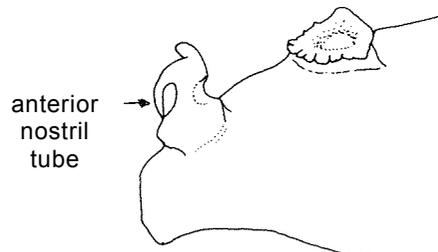
roof of mouth

Fig.4



depressible fangs

Fig.6



anterior nostril tube

tip of snout

Enchelynassa

Fig.5

9a. Lateral jaw teeth with minute serrations on their margins (Fig.7) ...Gymnothorax

9b. Lateral jaw teeth without serrations (Fig.8) Lycodontis

8b. No long, median, depressible fangs at front of upper jaw, at most a single conical tooth on intermaxillary (Fig.9)..... Siderea

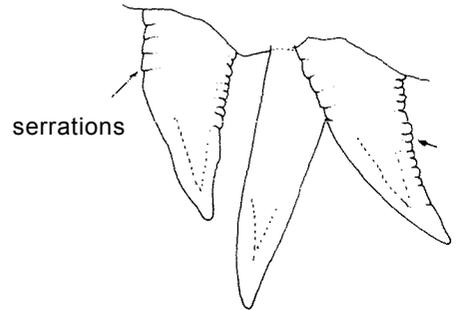
6b. Posterior nostril with a tube (Fig. 10) Muraena

5b. Maximum depth 3 times in head..... Pseudechidna

4b. Tail about twice as long as rest of body

10a. Anterior nostril tube simple..... Thyrsoidea

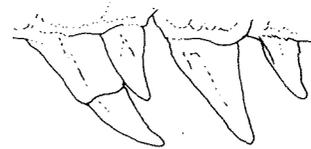
10.b Anterior nostril tube with a prominent flap; barbels present on tip of snout and lower jaw (Fig.11)..... Rhinomuraena



lateral jaw teeth

Gymnothorax

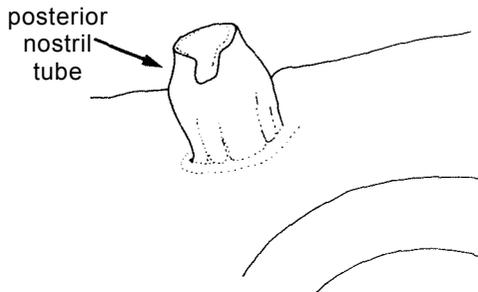
Fig.7



lateral jaw teeth

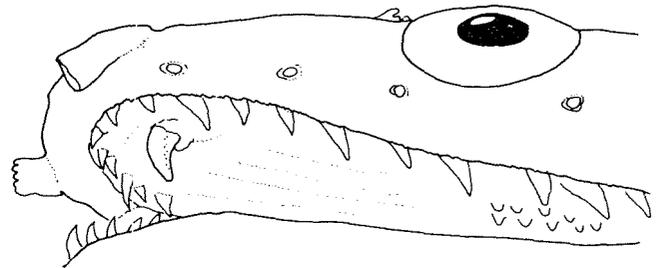
Lycodontis

Fig.8



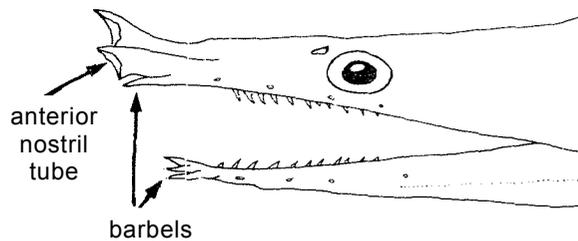
Muraena

Fig.10



Siderea

Fig.9



Rhinomuraena

Fig.11

LIST OF SPECIES OCCURRING IN THE AREA*:

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

Anarchias cantonensis (Schultz, 1943)
Anarchias maldivensis Klausewitz, 1964
Anarchias vermiformis Smith, 1962

Echidna delicatula (Kaup, 1856)
Echidna fasciula (Peters, 1855)
Echidna leucotaenia Schultz, 1943

Echidna nebulosa Ahl, 1789)
Echidna polyzona (Richardson, 1844)
Echidna unicolor Schultz, 1953

MURAEN Echid 2

Echidna xanthospilus (Bleeker, 1859)
Echidna zebra (Shaw, 1797)

MURAEN Echid 3

Enchelynassa canina (Quoy & Gaimard, 1824)

Gymnothorax breedeni McCosker & Randall, 1977
Gymnothorax pindae Smith, 1962
Gymnothorax reticularis Bloch, 1795
Gymnothorax socotrensis Kotthaus, 1968

** Gymnothorax species

Lycodontis berndti (Snyder, 1902)
Lycodontis boschi (Bleeker, 1853)
Lycodontis buroensis (Bleeker, 1857)
Lycodontis chilospilus (Bleeker, 1865)
Lycodontis elegans (Bliss, 1883)
Lycodontis enigmaticus (McCosker & Randall, 1982)
Lycodontis eurostus (Abbott 1860)
Lycodontis favagineus (Bloch & Schneider, 1801)
Lycodontis flavimarginatus (Rüppell, 1828)
Lycodontis fimbriatus (Bennett, 1831)
Lycodontis fuscomaculatus (Schultz, 1953)
Lycodontis hepaticus (Rüppell, 1828)
Lycodontis javanicus (Bleeker, 1859)
Lycodontis johnsoni Smith, 1962

Lycodontis margaritophorus (Bleeker, 1864,
Lycodontis melatremus (Schultz, 1953)
Lycodontis meleagris (Shaw & Nodder, 1795)

MURAEN Lycod 7

Lycodontis monochrous (Bleeker, 1856)
Lycodontis monostigmus (Regan, 1969)
Lycodontis nudivomer (Günther, 1866)
Lycodontis permistus Smith, 1962
Lycodontis erustus Smith, 1962
Lycodontis phasmatodes Smith, 1962
Lycodontis pikei (Bliss, 1883)
Lycodontis polyuranodon (Bleeker, 1852)
Lycodontis pseudothyrsioidea (Bleeker, 1852)
Lycodontis punctatofasciatus (Bleeker, 1863)
Lycodontis punctatus Bloch & Schneider, 1801)
Lycodontis richardsoni (Bleeker, 1852)
Lycodontis rueppelliae (McClelland, 1844)
Lycodontis sagenodeta (Richardson, 1848)
Lycodontis sathete (Hamilton-Buchanan, 1822)
Lycodontis tile (Hamilton-Buchanan, 1822)
Lycodontis undulatus (Lacépède, 1803)

* List provisional. While most of the commoner species of Fishing Area 51 are probably known, additional species to those listed can be expected

**Undescribed species

FAO Sheets

MURAENIDAE

Fishing Area 51

Muraena pardalis Schlegel. 1847

Pseudeehidna brummeri (Bleeker, 1858)

Rhinomuraena quaesita Garman, 1889

Siderea risea (Lacépède. 1803)

Siderea pieta (Ahl, 1789)

Siderea thyrsioidea(Richardson,1844)

MURAEN Sider 1

Thyrsoidea macrura (Bleeker, 1854)

MURAEN Thyrsa 1

Uropterygius albo guttatus Smith. 1962

Uropterygius bennetti (Günther, 1870)

Uropterygius concolor (Rüppell, 1835)

Uropterygius kamar McCosker & Randall, 1977

Uropterygius micropterus (Bleeker. 1852)

Uropterygius polyspilus (Regan, 1909)

Uropterygius tigrinus Lesson, 1828)

Incertae sedis:

Anarchias fuscus Smith, 1962

Anarchias seychellensis Smith, 1962

Lycodontis cinerascens (Rüppell, 1828)

Lycodontis corallinus (Klunzinger, 1871)

Lycodontis interruptus (Kaup, 1856)

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Illustrations provided by author