SCORP

1983

FAO SPECIES IDENTIFICATION SHEETS

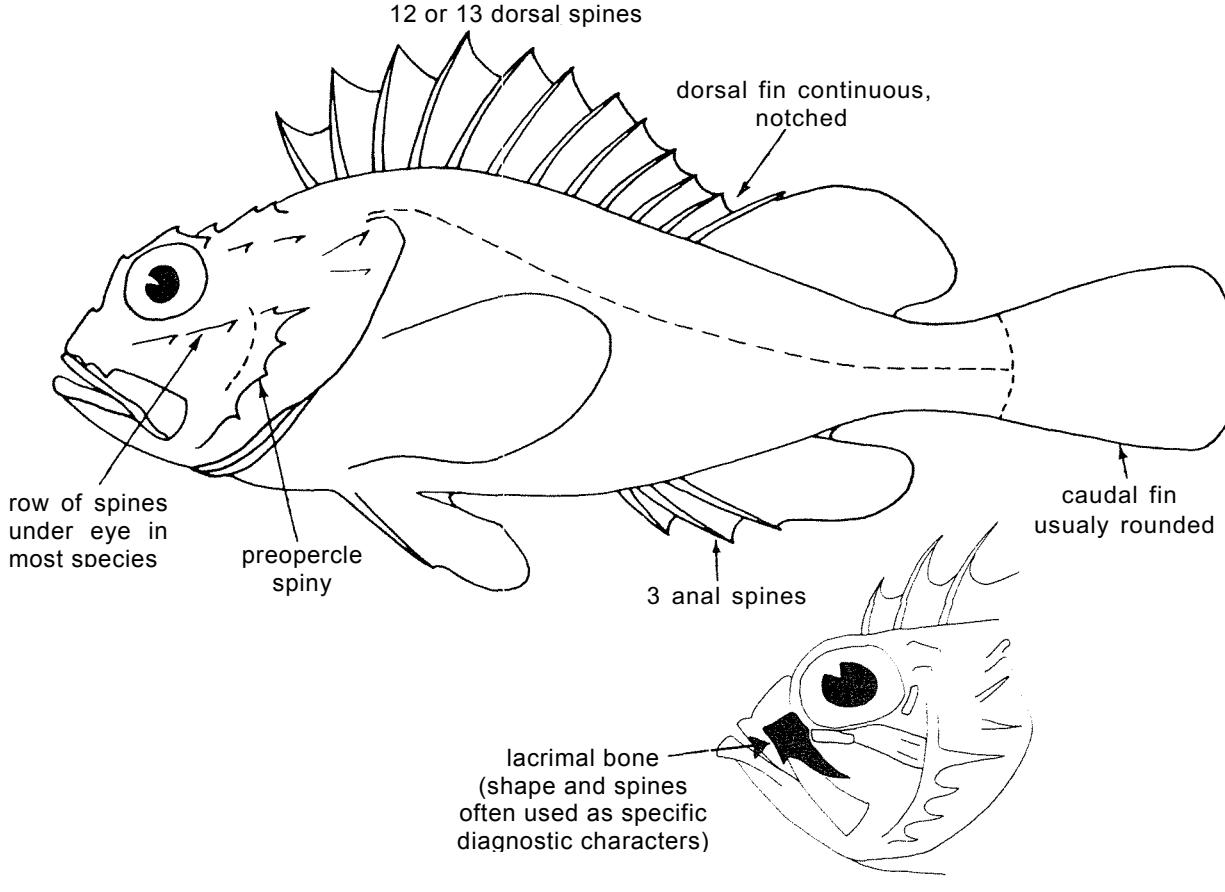
FISHING AREA 51
(W. Indian Ocean)

SCORPAENIDAE

Scorpionfishes, rockfishes, rosefishes, stingfishes,
stonefishes, turkeyfishes and waspfishes

Moderately compressed to robust fishes, usually basslike in appearance, with large spiny heads. Mouth moderate to large, terminal, oblique, protractile; teeth usually villiform (small canine teeth present in some species) arranged in bands or patches on upper jaw (premaxilla only), lower jaw (mandible), and roof of mouth (always on vomer, sometimes on palatines); eyes moderate to large; a ridge of bone (suborbital stay) below eye extending posteriorly and firmly attaching to preopercle; preopercular margin with 3 to 5 spines (usually 5), the uppermost 3 better developed; opercle with 2 divergent spines or a single spine; other spines scattered on head; gill openings usually wide (restricted in some species), gillrakers usually short, tubercular in form. A single dorsal fin, usually notched at posterior end of spinous part, with 8 to 18 spines and 4 to 14 segmented rays; anal fin with 2 to 4 spines and 5 to 14 segmented rays; posteriormost segmented rays of dorsal and anal fins split to base in most species, appearing as two rays but counted as one; pectoral fin broad-based, large, fanlike, with 11 to 23 rays; lower rays sometimes thickened; in some species, the lowermost 1 to 3 pectoral rays detached from remainder of fin; in others pectoral-rays greatly elongate; pelvic fins thoracic in position, with 1 spine and 3 to 5 branched or simple rays; caudal fin rounded to square-cut, never forked. Venom glands associated with fin spines. Body with or without scales (excluding lateral line). In species which have them, scales may be ctenoid (rough to touch), cycloid (smooth), both ctenoid and cycloid, or rudimentary and deeply embedded in skin. Lateral line always present, sometimes incomplete or represented only as a scaleless groove. Fleshy skin flaps, cirri, tentacles, or warts present on head and body of many species.

Colour: inshore scorpionfishes are mostly brown or variously mottled and barred with dark pigment on a lighter background, often with a pale or reddish belly. Those from deeper water are mostly red, often with spots of darker red, brown or black and with white skin filaments.



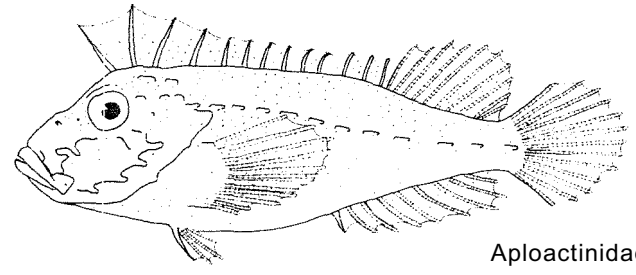
Small to moderate-sized marine bottom-living fishes, Adults range in size from 5 to 40 cm, with most reaching 8 to 25 cm. They occur in tropical, temperate, and cold waters of all seas. Most are found inshore, living among rocks, coral reefs and seaweeds. Others live on sandy or muddy bottoms. Some occur in deeper water to a depth of 2 359 m. There are about 375 species in the family, of which 82 occur in the Western Indian Ocean.

Within Fishing Area 51, these fishes are usually not of great commercial importance, since many species are rather small and not abundant enough to support large-scale fisheries. However, larger scorpaenids are often taken in subsistence fisheries and as bycatch of industrial trawl fisheries and are commonly seen in local markets. There are no separate statistics by species reported from Area 51. The flesh is white and very highly valued as food. Some species are greatly prized as aquarium fishes. In other fishing areas, especially the North Atlantic and North Pacific, some scorpionfishes (Sebastes) are abundant and support important fisheries.

Scorpionfishes have venomous spines and should be handled with extreme care. This is especially true for species of Pterois (turkeyfishes) and Synanceia (stonefishes) and their relatives. Wounds can cause intense pain. swelling and respiratory distress. Wounds caused by stonefishes have resulted in fatalities and require immediate medical attention. Immerse wound in hot water to relieve pain. See a physician for treatment of shock and prevention of infection.

SIMILAR FAMILIES OCCURRING IN THE AREA:

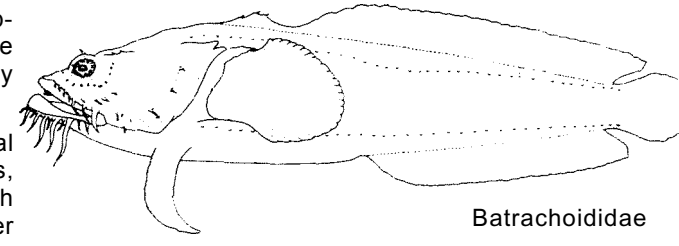
Aploactinidae (velvetfishes): also with a suborbital stay and dorsal fin origin over head as in some scorpaenids, but have unbranched rays in all fins, pelvic fin with 1 spine and 2 or 3 segmented rays, usually blunt head spines and scales which, if present, form spinous points. In velvetfishes there is a fleshy extension on the anterior-most part of the isthmus (absent in species with the branchiostegal membranes fused to the isthmus).



Aploactinidae

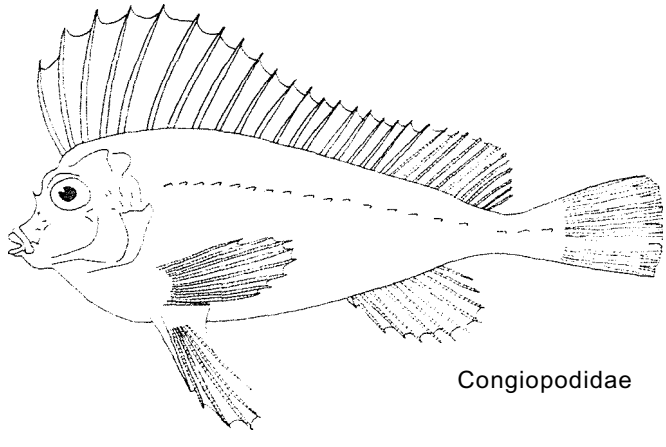
Batrachoididae (toadfishes): without a suborbital stay; 2 or 3 dorsal spines; head strongly depressed; body often with more than one lateral line.

Caracanthidae (coral crouchers): also with a suborbital stay but have rudimentary pelvic fins, an ovate body covered with soft papillae but without scales; body strongly compressed. Live in intersticies in coral.

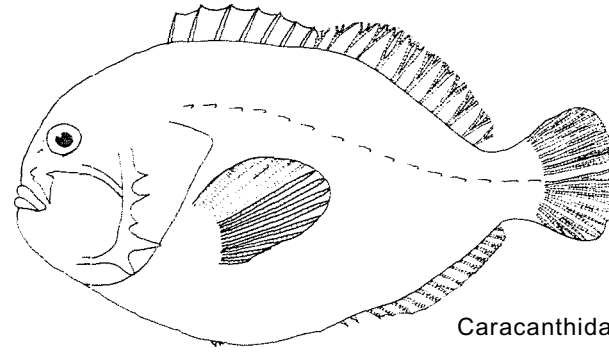


Batrachoididae

Congiopodidae (horsefishes): also with a suborbital stay, and dorsal origin over head as in some scorpaenids, but have a protruded snout and a single nostril on each side (2 on each side in scorpaenids); restricted to colder waters of the southern hemisphere.



Congiopodidae

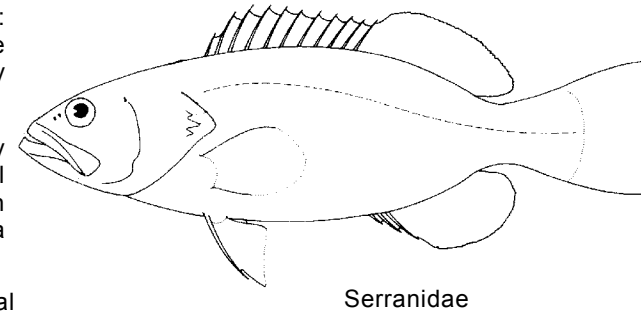


Caracanthidae

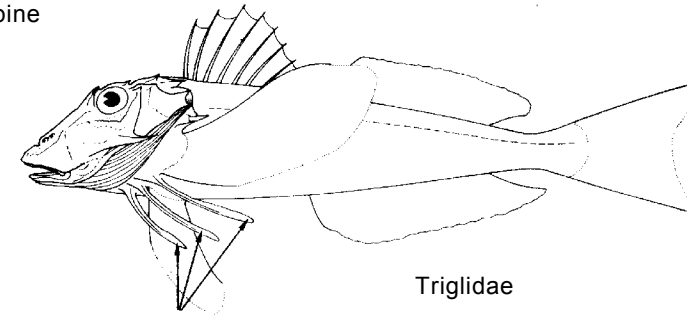
Serranidae (sea basses) and other bass-like families: resemble some red coloured scorpionfishes and have spines on the opercle, but they lack the suborbital stay and other head spines characteristic of scorpaenids.

Triglidae (sea robins): also have a suborbital stay but head very bony (almost encased); 2 separate dorsal fins and lower 3 pectoral fin rays always free from each other and from fin membrane (lower 3 rays free only in a few species of scaleless scorpaenids).

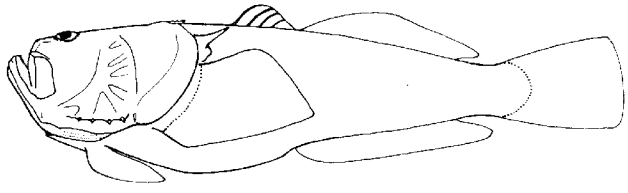
Uranoscopidae (stargazers): without suborbital stay; spinous dorsal fin short, with 1 to 5 spines; pelvic fins insert well in front of pectorals (below pectorals in scorpaenids); a large venomous humeral (cleithral) spine (usually small or absent in scorpaenids).



Serranidae



Triglidae



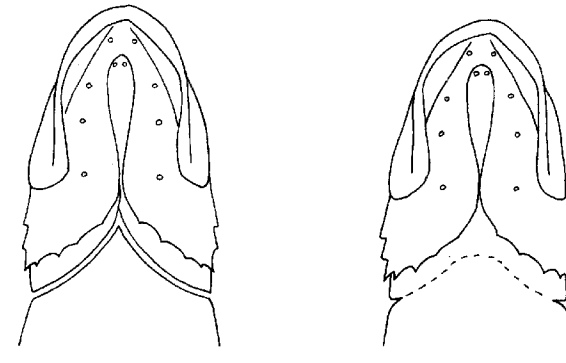
Uranoscopidae

KEY TO THE SUBFAMILIES AND GENERA IN THE AREA*:

1a. Ventralmost pectoral fin ray not detached or separate from remainder of fin

2a. Branchiostegal membranes not broadly fused to isthmus (Fig.1a)

3a Lateral line forms a broad groove, without tubed scales (Fig.2a); head cavernous and rather weakly ossified ... Setarchinae

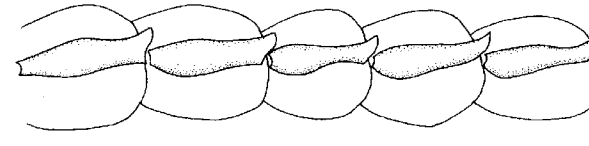


a) branchiostegal membrane not fused to isthmus

b) branchiostegal membrane fused to isthmus

underside of head Fig.1

a) Setarchinae



lateral line scales

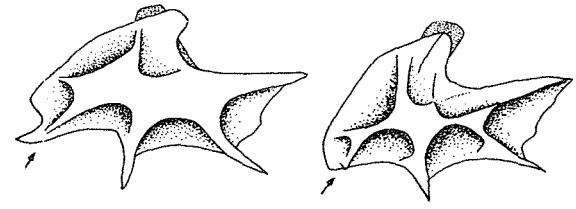
b) other Scorpaenoids

Fig.2

* Key does not apply to some genera outside of the Western Indian Ocean. Last segmented ray in dorsal and anal fins often split to base and counted as one ray

4a. Anterior preorbital spine on lacrimal boned as long as the posterior two (Fig. 3a); top of head scaleless; orbit diameter subequal to interorbital width; anal fin with 3 spines and usually 5 segmented rays; pectoral fin rays 20 to 25 ..... Setarches

4b. Anterior preorbital spine much shorter than the posterior two (Fig.3b); top of head with scales; orbit diameter contained about 2 times in interorbital width; anal fin with 3 spines and usually 6 segmented rays; pectoral rays 18 to 20..... Ectroposebastes



a) Setarches b) Ectroposebastes

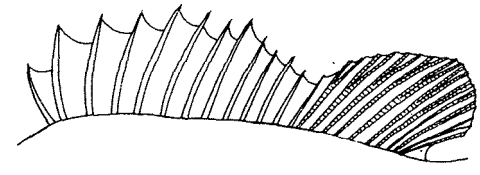
lacrimal bone Fig.3

3b. Lateral line with tubed scales (Fig.2b); head not cavernous, ossification normal

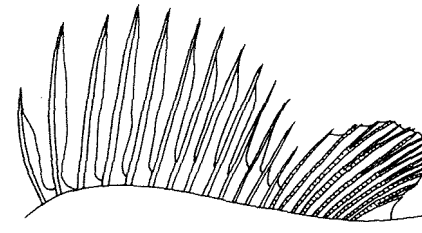
5a. Pectoral fin rays greatly elongate, the longest reaching beyond base of posteriormost segmented anal ray; a single strong spine on opercle (Figs. 5a.b) ... Pteroinae

6a. Dorsal fin spines short; dorsal fin membrane between spines moderately incised (Fig.4a) .....Brachypterois

6b. Dorsal fin elongate; dorsal fin membrane between spines deeply incised (Fig.4b)



a) Brachypterois



b) other Pteroinae

dorsal fin Fig.4

*Position of this bone above mouth can be seen on family illustration (page 1)

7a. Upper pectoral fin rays branched; pectoral fin membrane between upper rayas only slightly incised (Fig.5a)

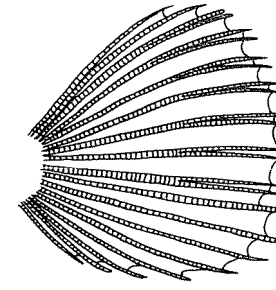
8a. Anal fin with 3 spines and 5 segmented rays ..... Dendrochirus

8b. Anal fin with 2 or 3 spines and 7 to 9 segmented rays

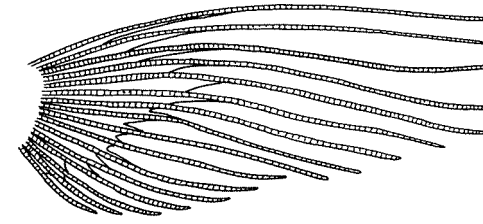
9a. Parietal ridges elevated, each forming a thin bony crest in males (Fig.6a); small or slightly developed in females (Fig.6b); anal fin with 3 spines and 8 or 9 segmented rays; upper and lower segmented rays of caudal fin not filamentous at any size.....Ebosia

9b. Parietal ridges not elevated in either sex. Anal fin with 2 (3 at small sizes) and 7 or 8 segmented rays; upper and lower rays of caudal fin produced, filamentous in larger individuals (Fig.7)..... Parapterois

7b. All pectoral fin rays unbranched; pectoral fin membrane between upper rays strongly incised (Fig.5b) ..... Pterois



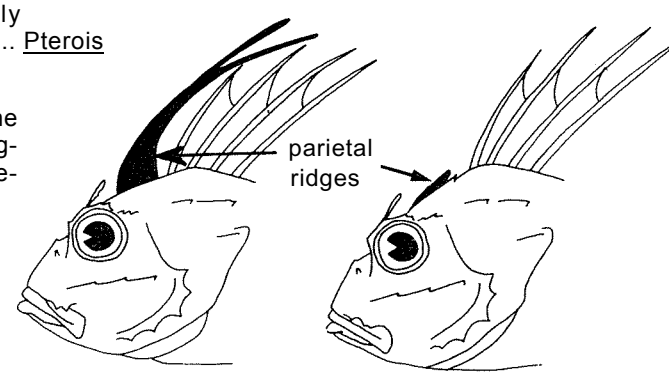
a) slightly incised



b) deeply incised (Pterois) pectoral fin

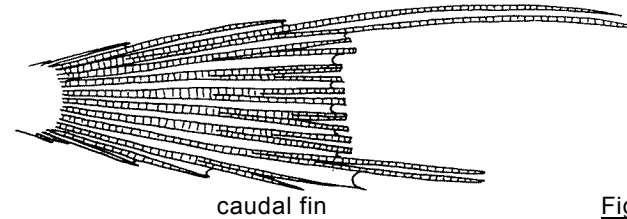
Fig.5

5b. Pectoral fin rays not greatly elongate, the longest not reaching base of posteriormost segmented anal ray; 2 spines on opercle sometimes weak)



a) male b) female

Fig.6



caudal fin

Fig.7

10a. Dorsal fin originates behind eye; lacrimal bone not movable (can be rotated only slightly, if at all); scales usually not rudimentary

11a. Suborbital stay tapered posteriorly, rather narrowly attached to preopercle, without spines; profile of nape relatively steeply inclined; spines on top of head relatively moderately developed (Fig.8a) ... Sebastinae (Helicolenus)

11 b. Suborbital stay rounded or square posteriorly, broadly attached to preopercle; profile of nape relatively depressed; spines on top of head strongly developed (Fig.8b)..... Scorpaeninae

12a. Lateral line incomplete, not extending beyond spinous part of dorsal fin, with 3 to 5 tubed scales.....Phenacoscorpius

12b. Lateral line complete, extending posteriorly to or near base of caudal fin, with 11 to 35 tubed scales

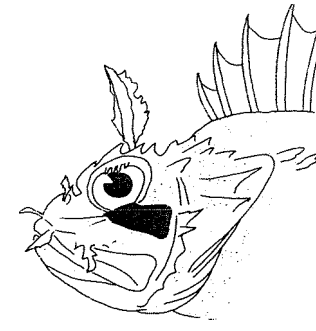
13a. Dorsal fin with 13 spines ..... Scorpaenodes

13b. Dorsal fin with 12 spines

14a. All pectoral fin rays unbranched in adults..... Pontinus

14b. Some upper pectoral fin rays branched in adults

a) Sebastinae (Helicolenus)



b) Scorpaeninae (Scorpaena)

Fig.8

15a. Palatine teeth present (Fig.9a)

16a. Prepelvic region without scales or with deeply embedded cycloid scales (Fig.10a). Scorpaena

16b. Prepelvic region fully scaled (Fig.10b)

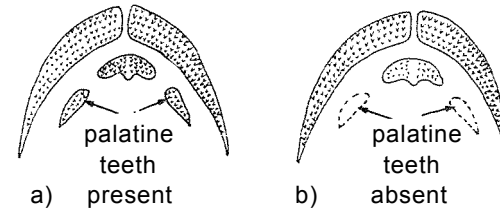
17a. Scales mostly ctenoid (Fig.11a); posterior preorbital spine on lacrimal bone points posteroventrally (Fig.12a)..... Sebastapistes

17b. Scales mostly cycloid (Fig.11b); posterior preorbital spine on lacrimal bone points anteroventrally (Fig.12b) ..... Parascorpaena*

15b. Palatine teeth absent (Fig.9b)

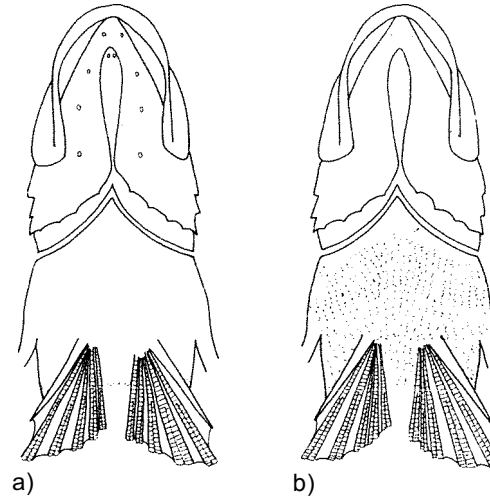
18a. Fourth dorsal spine especially elongate in specimens longer than about 60 mm standard length; black pigment between dorsal spines 1 to 3 or 2 or 3 (Fig. 13) ..... Iracundus

18b. Fourth dorsal spine not especially elongate in specimens longer than 60 mm standard length; no black pigment between dorsal spines 1 to 3



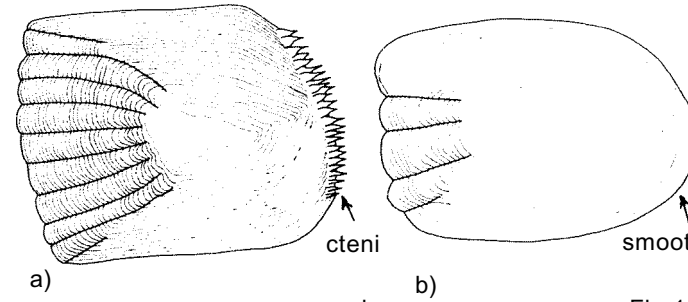
roof of mouth

Fig.9



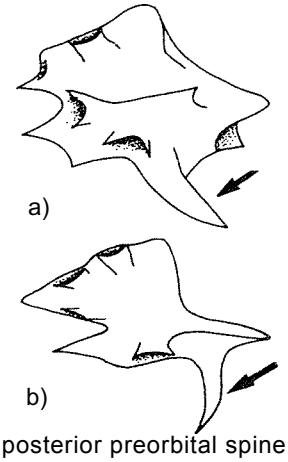
underside of anterior part of body

Fig.10



scale

Fig.11



posterior preorbital spine on lacrimal bone

Fig.12

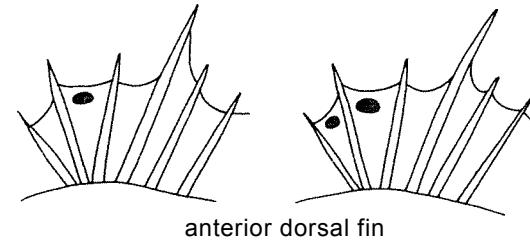

anterior dorsal fin spines of Iracundus

Fig.13

*Limits between this genus and Scorpaena poorly defined

19a. Body strongly compressed

20a. Dorsal fin originates well behind eye (Fig.14); pectoral rays 17 or 18; scales cycloid ..... Rhinopias

20b. Dorsal fin originates just behind eye (Fig.15); pectoral rays 14 or 15; scales forming spiny papillae ..... Taenianotus

19b. Body robust, not strongly compressed ... Scorpaenopsis*

10b. Dorsal fin originates over or before eye; lacrimal bone with strong spines. capable of much rotation, highly movable (Fig.16); scales small, rudimentary or absent ..... Tetraroginae

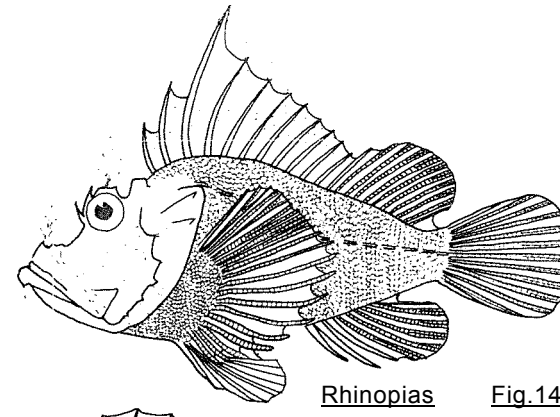
21 a. Palatine teeth present (Fig.9a)

22a. Body scaleless (except for lateral line)

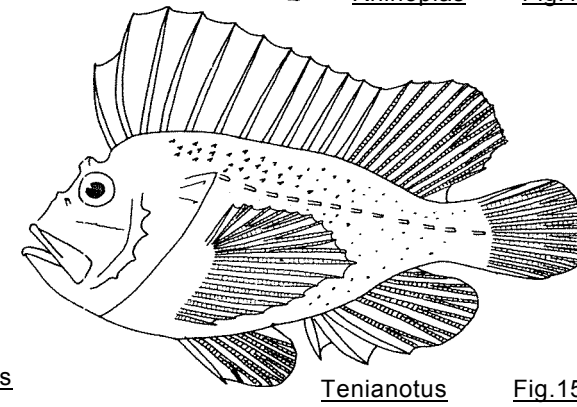
23a. Body robust, not strongly compressed; head profile rounded (Fig.17); 14 to 16 (rarely 13) pectoral rays; dorsal fin with 12 to 14 spines and 5 to 9 segmented rays..... Richardsonichthys

23b. Body notably compressed; head profile angular (Fig.18); 11 to 13 (usually 12) pectoral rays; dorsal fin with 14 to 17 spines and 7 to 9 segmented rays..... Ocosia

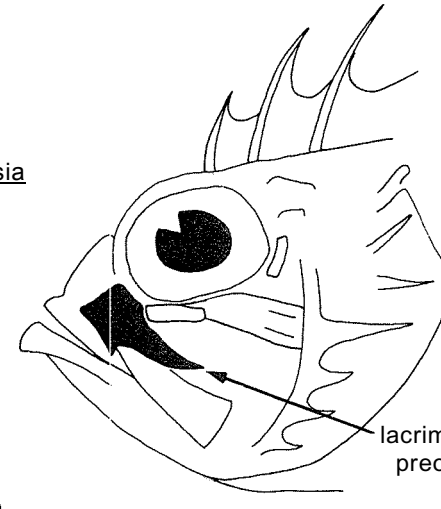
22b. Body with minute, deeply embedded rudimentary cycloid scales



Rhinopias Fig.14

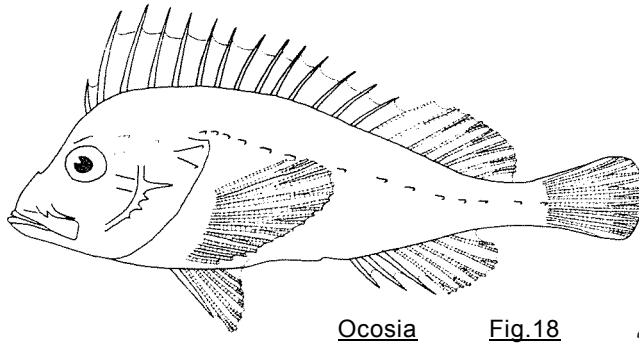


Tenianotus Fig.15

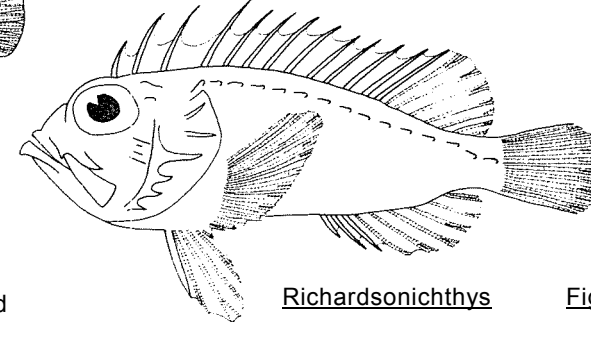


lacrimal bone with preorbital spine

Fig.16



Ocosia Fig.18



Richardsonichthys Fig.17

*Limits between this genus and Scorpaena poorly defined

24a. Anterior 3 dorsal fin spines widely separated from remainder of fin; mouth strongly upturned (Fig.19)..... Vespicula

24b. Anterior 3 dorsal fin spines not widely separated from remainder of fin; mouth not strongly upturned (Figs.20,21,22)

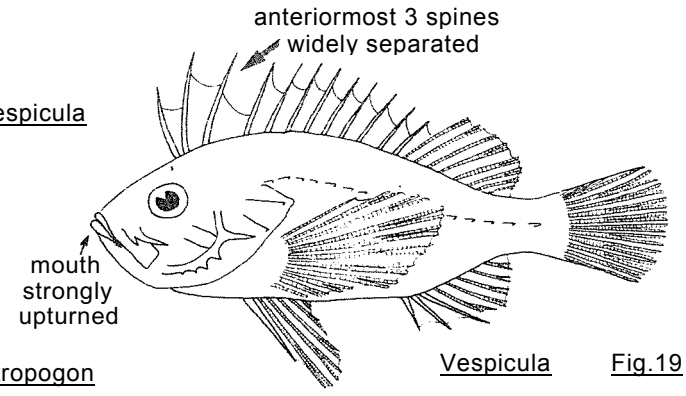
25a. A simple cirrus over eye, on or near posterior end of interorbital ridge (Fig.20) ..... Paracentropogon

25b. No cirrus over eye, on or near posterior end of interorbital ridge

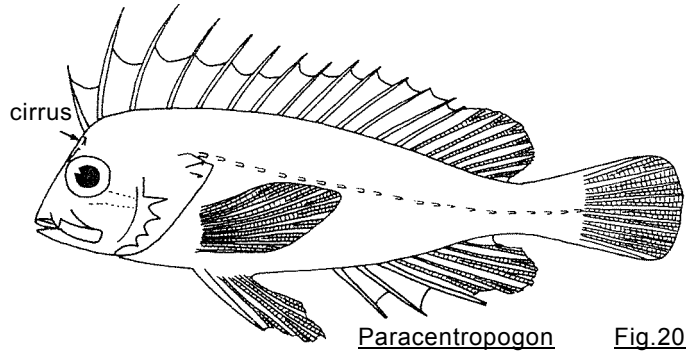
26a. Origin of dorsal fin before or at anterior margin of eye; dorsal fin membrane not strongly incised; body strongly compressed; gillrakers 5 to 8; dorsal fin with 15 to 18 spines and 6 or 7 segmented rays; 10 to 13 pectoral rays (Fig.21) ..... Ablabys*

26b. Origin of dorsal fin at posterior margin of eye; dorsal fin membrane strongly incised; body robust, not strongly compressed; gillrakers 12 to 19; dorsal fin with 13 to 15 spines and 7 or 8 segmented rays; pectoral rays 13 to 16 (Fig.22) ..... Neocentropogon

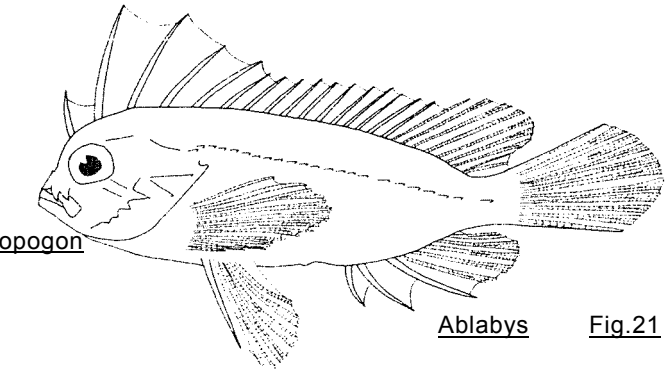
21b. Palatine teeth absent (Fig.9b)

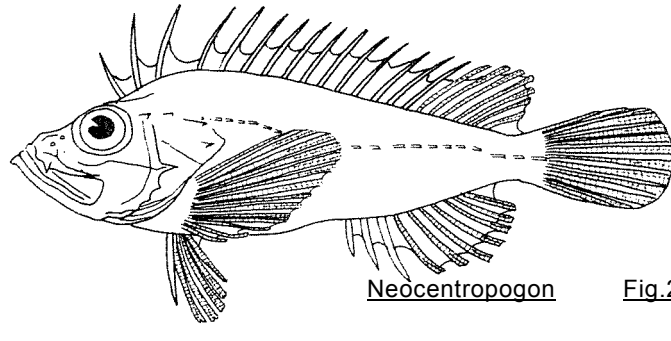


Vespicula Fig.19



Paracentropogon Fig.20

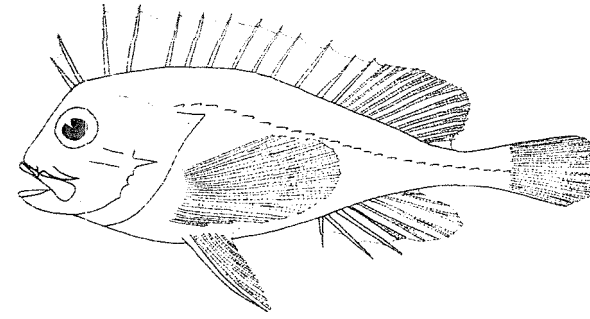

Ablabys Fig.21


Neocentropogon Fig.22

*Ablabys is a senior synonym of Amblyapistus

27a. Pelvic fin with 1 spine and 5 segmented rays; segmented rays of all fins branched (except at small size); body with small embedded cycloid scales; 20 to 29 lateral line scales (Fig.23) ..... Snyderina

27b. Pelvic fin with 1 spine and 3 segmented rays; segmented rays of all fins simple, unbranched; body scaleless (except for lateral line); 8 to 11 lateral line scales (Fig.24) ..... Coccotropsis



Snyderina Fig.23

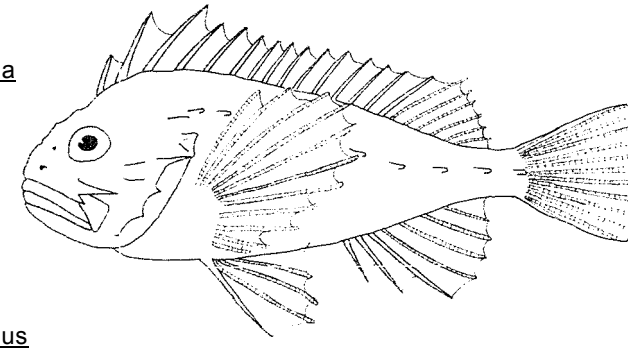
2b. Branchiostegal membranes broadly fused to isthmus (Fig.1b)

28a. Dorsal fin with 16 or 17 spines (rarely 15) and 3 to 5 segmented rays; pelvic fin with 1 spine and 3 segmented rays..... Pseudosynanceia

28b. Dorsal fin with 12 to 15 spines and 4 to 7 (usually 6) segmented rays; pelvic fin with 1 spine and 4 or 5 (rarely 3) segmented rays

29a Anal fin with 2 spines and 11 to 14 segmented rays ..... Trachicephalus

29b. Anal fin with 3 spines and 4 to 6 segmented rays ..... Synanceia



Coccotropsis Fig.24

1b. Ventralmost pectoral fin rays(s) detached. separate from remainder of fin

30a. Body covered with Scales; branchiotegal membranes not fused to isthmus (Fig.1a); posterior half of spinous dorsal fin with a large black blotch ..... Apistinae (Apistus)

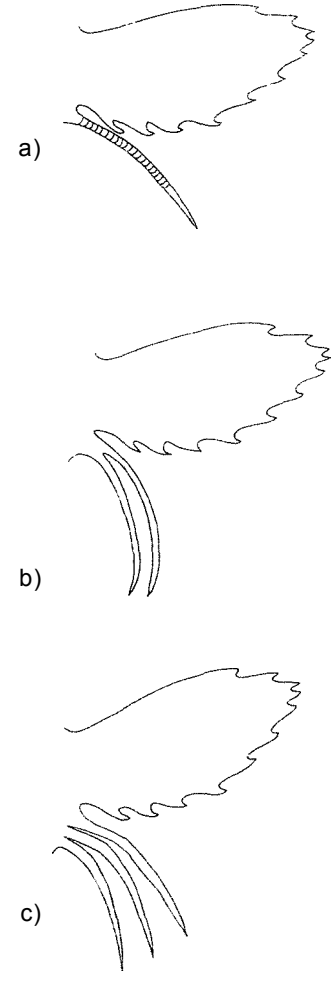
30b. Body scaleless, except for lateral line and sometimes a few deeply buried scales above lateral line; branchiostegal membranes broadly fused to isthmus (Fig.1b); posterior half of spinous dorsal fin without large black blotch

31a. Pectoral fin with a single free ray ventrally (Fig.25a) ..... Minoinae (Minous)

31b. Pectoral fin with 2 or 3 free rays ventrally (Figs.25b,c) ..... Choridactylinae

32a. Ventralmost 2 pectoral fin rays free and detached from remainder of fin (Fig.25b); dorsal fin with 15 to 18 spines..... Inimicus

32b Ventralmost 3 pectoral fin rays free and detached from remainder of fin (Fig.25c); dorsal fin with 12 to 15 spines..... Choridactylus



pectoral fin Fig.25

LIST OF SPECIES OCCURRING IN THE AREA:

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

Ablabys binotatus (Peters, 1855)
Ablabys macracanthus (Bleeker, 1852)
Ablabys taenianotus (Cuvier, 1829)

Apistus carinatus (Bloch & Schneider, 1801) SCARP Apis 1

Brachypterois serrulatus (Richardson, 1846)

Choridactylus multibarbus Richardson, 1848	SCORP Chor 1
Choridactylus natalensis (Gilchrist, 1902)	
Coccotropsis gymnoderma (Gilchrist. 1906)	
Dendrochirus biocellatus (Fowler, 1824)	
Dendrochirus brachypterus (Cuvier, 1829)	
Dendrochirus zebra (Quoy & Gaimard, 1824)	
Ebosia falcata Eschmeyer & Rama-Rao, 1977	
Ectroposebastes imus (Garman, 1899)	
Helicolenus dactylopterus (Delaroche, 1809)	SCORP Helic 1
Helicolenus mouchezi (Sauvage, 1875)	
Inimicus filamentosus (Cuvier, 1829)	SCORP Inim 1
Inimicus sinensis (Valenciennes, 1833)	
Iracundus signifer Jordan & Evermann, 1903	
Minous coccineus Alcock,1890	
Minous dempsterae Eschmeyer, Hallacher & Rama-Rao, 1979	
Minous inermis Alcock, 1899	
Minous longimanus Regan, 1908	
Minous monodactylus (Bloch & Schneider, 1801)	SCORP Mino 1
Minous trachycephalus (Bleeker, 1854)	
Neocentropogon profundus (Smith, 1958)	
Ocosia ramaraoi Poss & Eschmeyer, 1975	
Paracentropogon longispinis (Cuvier, 1829)	
Parapterois heterurus (Bleeker, 1856)	
Parascorpaena aurita (Rüppell, 1838)	
Parascorpaena maculipinnis Smith, 1957	
Parascorpaena mossambica (Peters, 1855)	
Parascorpaena picta (Cuvier, 1829)	
Phenacoscorpius adensis Norman, 1939	
Pontinus macrocephalus (Sauvage, 1882)	
Pontinus tentacularis (Fowler, 1938)	
Pseudosynanceia melanostigma Day, 1875	
Pterois antennata (Bloch, 1787)	
Pterois mombasae (Smith, 1957)	SCORP Pter 1
Pterois radiata (Cuvier, 1829)	
Pterois russellii (Bennett, 1831)	SCORP Pter 2
Pterois volitans (Linnaeus, 1758)	
Rhinopias eschmeyeri Conde, 1977	
Rhinopias frondrosa (Günther, 1891)	
Rhinopias sechellensis (Regan, 1908)	
Richardsonichthys leucogaster (Richardson, 1848)	

Scorpaena aquabe Fowler & Steinitz, 1956
Scorpaena scrofa Linnaeus, 1758

Scorpaenodes albaiensis (Evermann & Seale, 1907)
Scorpaenodes corallinus Smith, 1957
Scorpaenodes guamensis (Quoy & Gaimard, 1824)
Scorpaenodes hirsutus (Smith, 1957)
Scorpaenodes investigatori Eschmeyer & Rama-Rao, 1972
Scorpaenodes littoralis (Tanaka, 1917) SCORP Scorpa 1
Scorpaenodes minor Smith, 1958
Scorpaenodes muciparus (Alcock,1889)
Scorpaenodes parvipinnis (Garrett, 1863)
Scorpaenodes steinitzi Klausewitz & Froiland, 1970
Scorpaenodes tribulosus Eschmeyer, 1969
Scorpaenodes varipinnis Smith, 1957

Scorpaenopsis barbata (Rüppell, 1838)
Scorpaenopsis diabolus (Cuvier, 1829)
Scorpaenopsis durbanensis (Gilchrist & Thompson, 1909)
Scorpaenopsis gibbosa (Bloch & Schneider, 1801) SCORP Scorpaen 1
Scorpaenopsis lactomaculata (Herre, 1945)
Scorpaenopsis novaeguinea (Cuvier, 1829)
Scorpaenopsis rosea (Day, 1867)

Sebastapistes albobrunea (Günther, 1873)
Sebastapistes bucephalus (Alcock, 1896)
Sebastapistes erostris (Alcock, 1896)
Sebastapistes hassi Klausewitz, 1970
Sebastapistes oglinus (Smith, 1947)
Sebastapistes neilseni Smith, 1964
Sebastapistes nuchalis (Günther, 1871)
Sebastapistes strongia (Cuvier, 1829)
Sebastapistes tristis (Klunzinger, 1884)

Setarches guentheri Johnson, 1862 SCORP Seta 1
Setarches longimanus (Alcock, 1894)

Snyderina guentheri (Boulenger, 1899)

Synanceia nana Eschmeyer & Rama-Rao, J.973
Synanceia verrucosa Bloch & Schneider,1801 SCORP Syria 1

Taenianotus triacanthus Lacepéde, 1802

Trachicephalus uranoscopus (Bloch & Schneider,1801)

Vespicula dracaena (Cuvier, 1829)

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Most drawings provided by S.G. Poss