RHIN

1983

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREA 51
(W. Indian Ocean)

RHINIODONTIDAE

Whale sharks

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

Rhiniodon typus Smith, 1828 RHIN Rhin 1

Prepared by L.J.V. Compagno, Tiburon Center for Environmental Studies, San Francisco State University, Tiburon, California, U.S.A.

RHIN Rhin 1

1983

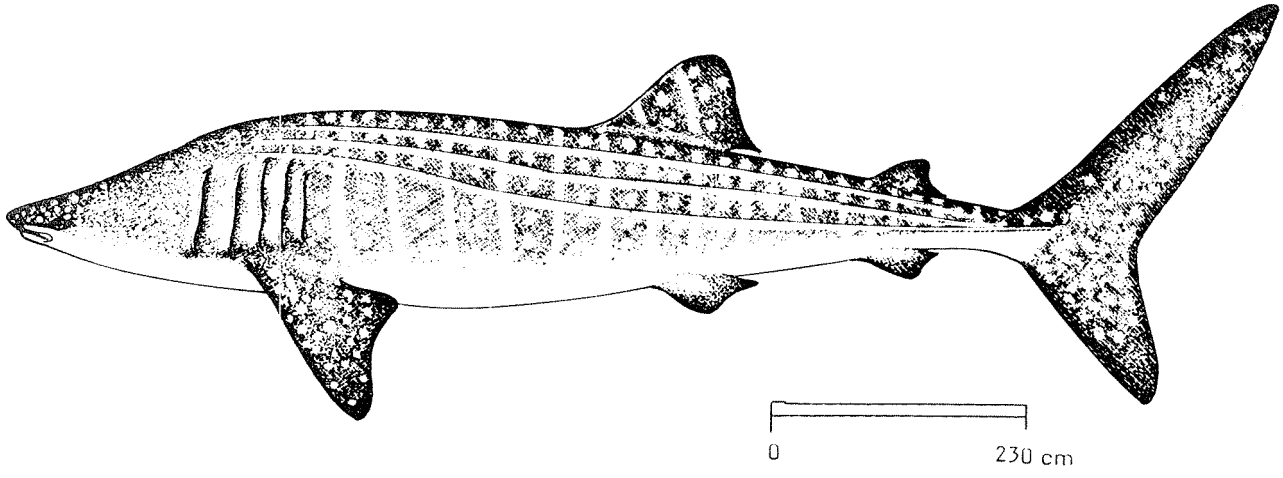
FAO SPECIES IDENTIFICATION SHEETS

FAMILY: RHINIODONTIDAE

FISHING AREA 51
(W. Indian Ocean)

Rhiniodon typus Smith, 1828

OTHER SCIENTIFIC NAMES STILL IN USE: Rhincodon typus Smith, 1829



VERNACULAR NAMES:

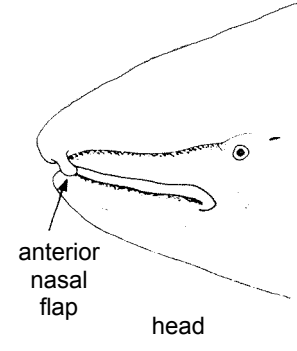
FAO :
En - Whale shark
Fr - Requin baleine
Sp - Tiburón ballena

NATIONAL:

DISTINCTIVE CHARACTERS:

A very large shark. Head with 5 large gill slits, the posterior 3 over the pectoral fin bases; no gillrakers but filter grids of transverse bars and lobes across the internal gill slits; snout extremely short, truncated; nostrils with short, quadrate anterior nasal flaps, minute barbels, and shallow nasoral grooves; no nictitating eyelids; mouth nearly subterminal, very wide, transverse and short, not reaching backward to eyes; teeth very small and extremely numerous, similar in both jaws, not bladelike and with hooked cusps. Two dorsal fins, the first with rear third of base over pelvic fin bases, the second less than half the size of first; anal fin present; caudal fin asymmetrical, crescentic, with a strong lower lobe but no subterminal notch. Caudal peduncle depressed, with a strong keel on each side continuing forward onto the back and over the gill slits as a small ridge and flanked by 2 additional ridges above; upper precaudal pit present.

Colour: dark grey, reddish, or greenish grey above, with white or yellow spots and transverse stripes; white or yellowish below.



head

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

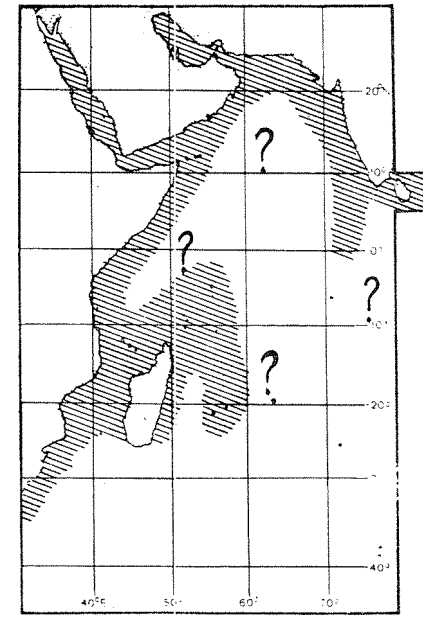
The combination of characters such as the truncated snout, the transverse mouth in front of eyes, the numerous small teeth, the lateral ridges, the precaudal keels and the colour pattern distinguishes the whale shark from all other sharks in the area.

SIZE:

Maximum: to at least 12 m, and possibly to 21.4 m.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

Widespread in the area, from South Africa, Mozambique, and Madagascar to the Red Sea, the "Gulf", Pakistan, India and Sri Lanka, also Seychelles arid Mauritius. Elsewhere circumtropical in the eastern Indian Ocean, Pacific arid Atlantic Oceans.



This huge pelagic filter feeder occurs singly or in schools, often at or near the surface, near shore or on the open sea. Oviparous, deposits huge eggs in large, football-sized cases; eggs hatch when the young are over 35 cm long.

Feeds on small pelagic crustaceans, schooling fishes including anchovies, sardines, and even albacores, and squids. Often seen in a vertical position with head at or near the surface when feeding. Usually harmless, and permitting close approach by divers; rarely ramming small boats, possibly when excited by fish hooked from the boats, but more often struck by ships while basking at the surface.

PRESENT FISHING GROUNDS:

Off Pakistan and India.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Captured in floating gillnets and sometimes in trawls.

Utilized dried-salted for human consumption; liver processed for oil; offal probably also used for fishmeal.

SCYL

1983

FAO SPECIES IDENTIFICATION SHEETS

FISHING AREA 51
(W. Indian Ocean)

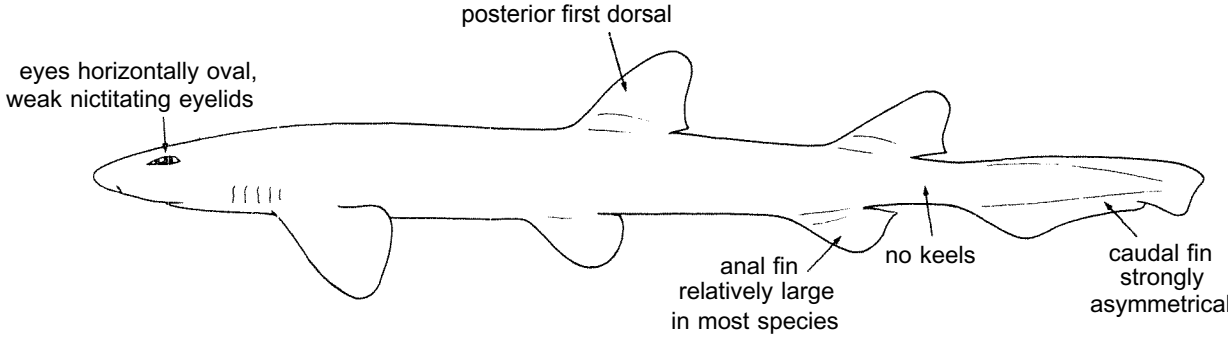
SCYLIORHINIDAE

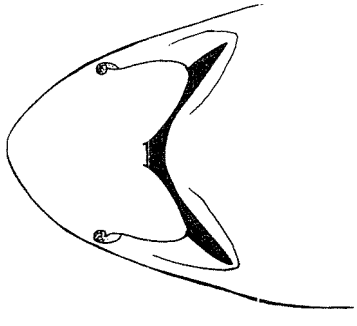
Catsharks

Small sharks with slender and elongated to moderately stout bodies. Head with 5 gill slits, the last two posterior to pectoral fin origins; gill arches with or without small papillose gillrakers; nostrils with or without barbels and lacking deep nasoral grooves or circumnarial grooves; eyes horizontally oval, elongated, with weakly differentiated nictitating lower eyelids delimited below by a variably developed subocular pouch; mouth moderately large, with rear corners behind front margins of eyes; labial furrows present in species from the area; teeth very small, numerous, with a single medial cusp and usually one or more cusplets on each side near the center of mouth, the rear teeth often comblike. Two dorsal fins, the first originating over or posterior to pelvic fin bases, the second dorsal smaller, as large, or larger than the first dorsal, but never greatly reduced; anal fin usually considerably longer than, and originating in advance of, second dorsal fin; caudal fin strongly asymmetrical, its lower lobe absent or only weakly indicated. upper edge unrippled, and subterminal notch present. Caudal peduncle not flattened dorso-ventrally, without lateral keels or precaudal pits. Intestine with a corkscrew or auger-like spiral valve, with 5 to 22 turns.

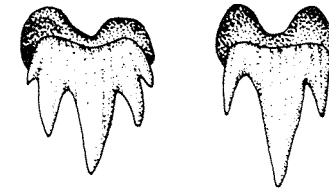
Colour: grey, brown, yellowish or black, often with light or dark spots and dark blotches, bars and saddles.

This family includes numerous small to moderate-sized species (rarely reaching to 1.5 m total length) from tropical and temperate latitudes ranging from shallow coastal waters to depths greater than 2 000 m. They are generally poor swimmers arid do not migrate over great distances. Most species live on or near the bottom, feeding chiefly or, invertebrates and small fishes. Some are rather common and regularly taken as bycatch in the trawl fisheries off South Africa and Mozambique. Scyliorhinids are common sports catches in South Africa but are not utilized to any extent. Elsewhere in the area they are little utilized as the species present are small and mostly occur in deep wafer. Separate statistics are not reported for this family.





intestinal valve
of spiral type



examples of teeth
(with a central cusp and one
or more pairs of lateral cusplets)

SIMILAR FAMILIES OCCURRING IN THE AREA:

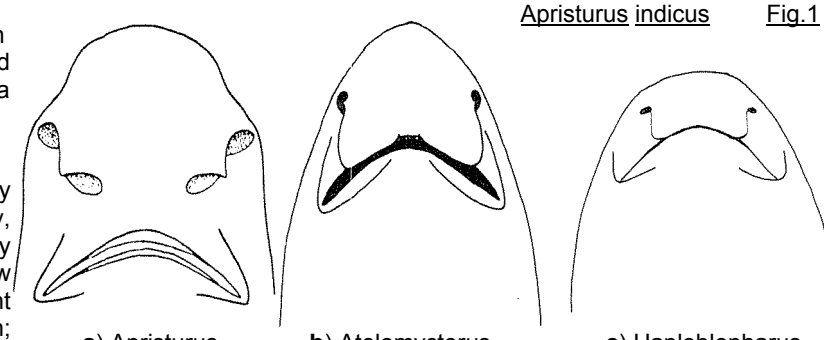
The catsharks are easily distinguished from superficially similar families by the combination of characters such as their small size, the location of the last two gill slits behind the pectoral fin origins, the posterior position of the first dorsal fin, the comparatively large anal fin, the strongly asymmetrical caudal fin, the absence of keels or precaudal pits on the caudal peduncle and the presence of a spiral intestinal valve.

KEY TO GENERA AND SPECIES OCCURRING IN THE AREA:

1a. Snout elongated, snout equal to or greater than mouth width (Fig.2a). base of anal fin ending close to lower caudal fin origin (Fig.1) ..... Apristurus indicus

Apristurus indicus Fig.1

1b. Snout shorter, less than mouth width; base of anal fin separated from lower caudal fin origin by a considerable space



a) Apristurus indicus **b**) Atelomycterus marmoratus **c**) Haploblepharus fuscus

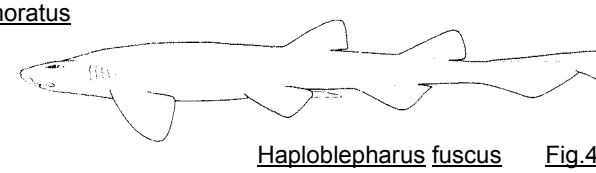
underside of head Fig.2

2a. Anterior nasal flaps greatly expanded posteromedially, overlapping mouth and nearly meeting medially; shallow nasoral grooves present between nostrils and mouth; labial furrows very long, uppers reaching level of mouth

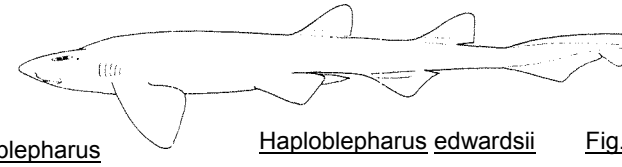
3a. Head narrow, snout narrowly rounded (Fig. 2b); gill openings lateral, not well above pectoral fin bases; supraorbital crests present on cranium; colour pattern bold black and white spotting, not forming saddles (Fig.3) .... Atelomycterus marmoratus

Atelomycterus marmoratus Fig.3

3b. Head broad, snout broadly rounded (Fig. 2c); gill openings dorsolateral, well above pectoral bases; supraorbital crests absent from cranium; colour pattern of saddles and small light spots on a brown background, or plain golden brown (Figs 4,5)..... Haploblepharus



Haploblepharus fuscus Fig.4

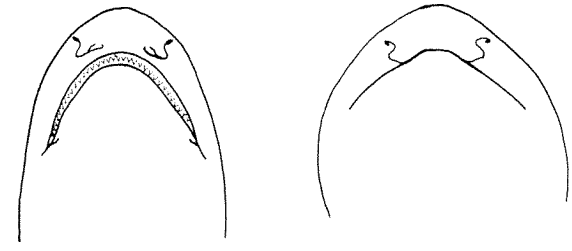


Haploblepharus edwardsii Fig.5

4a. Dorsal surface plain golden brown, without saddles or white spots (Fig.4) .....Haploblepharus fuscus

4b. Dorsal surface with dark brown saddles and numerous white spots on a pale to reddish brown background (Fig.5) ..... Haploblepharus edwardsii

2b. Anterior nasal flaps not expanded posteriomedially, may reach mouth but do not meet medially; no nasoral grooves; labial furrows absent or short to moderately long; upper furows, when present, not reaching mouth level (Figs 6,9,14)



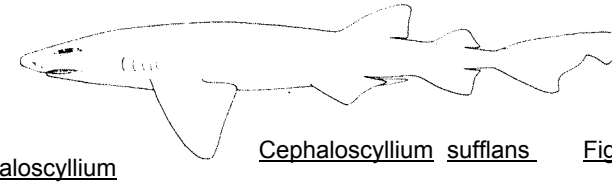
a) Cephaloscyllium sufflans **b**) Cephaloscyllium silasi

underside of head

Fig.6

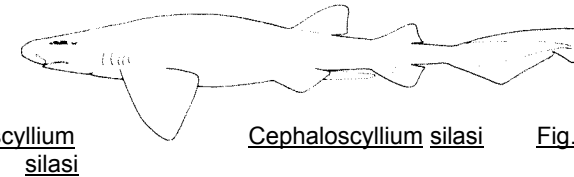
5a. Second dorsal fin about half the size of first; cranium with supraorbital crests

6a. Labial furrows absent or vestigial (Fig. 6); second dorsal fin base entirely above anal fin base (Figs 7,8)..... Cephaloscyllium



Cephaloscyllium sufflans Fig.7

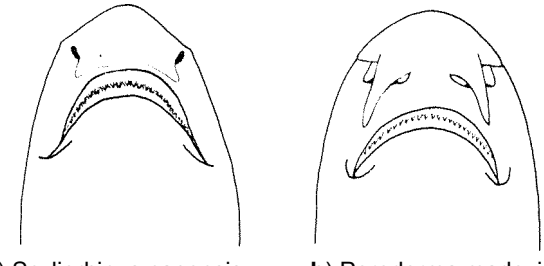
7a. Colour pattern of indistinct dusky saddles present or not; snout rounded; anterior nasal flaps not reaching mouth (Fig.6a); size large, adults exceeding 100 cm (Fig.3)..... Cephaloscyllium sufflans



Cephaloscyllium silasi Fig.8

7b. Colour pattern of prominent dark bars and saddles; snout wedge-shaped; anterior nasal flap, reaching mouth (Fig.6b); size small, adults probably not exceeding 40 cm (Fig.8).... Cephaloscyllium silasi

6b. Labial furrows present on lower jaw or on both jaws (Fig.9); second dorsal fin base party posterior to anal base (Figs 10,11)

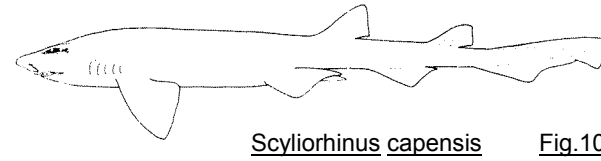


a) Scyliorhinus capensis **b**) Poroderma marleyi

underside of head

Fig.9

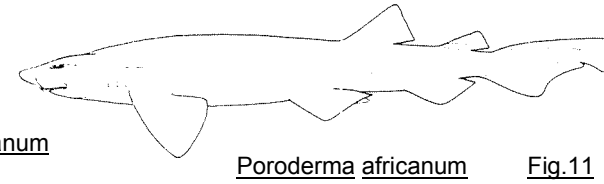
8a. Anterior nasal flaps not notched, without barbels; labial furrows on lower jaw only (Fig.9a); colour pattern of white spots on dark background (Fig. 10)..... Scyliorhinus capensis



Scyliorhinus capensis Fig.10

8b. Anterior nasal flaps deeply notched, with centre ridge expanded as prominent barbels; labial furrows present on both jaws, upper furrows short (Fig. 9b); colour pattern consisting of rows of dark spots or rosettes of spots or horizontal lines on light background (Figs 11-13) ..... Poroderma

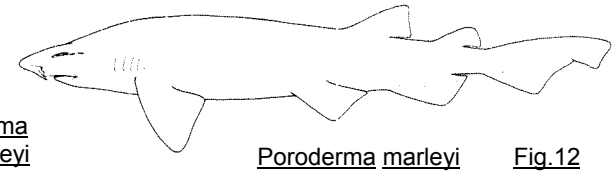
9a. Colour pattern of horizontal dark stripes (Fig.ll); nasal barbels shorter, usually not reaching mouth (Fig.9b) ..... Poroderma africanum



Poroderma africanum Fig.11

9b. Colour pattern of spots; nasal barbels longer, reaching mouth (Figs 12,13)

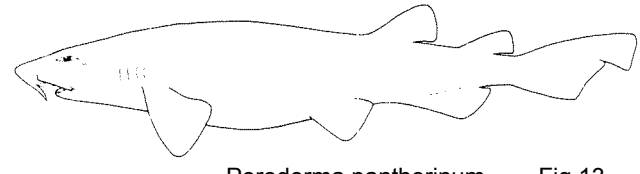
10a. Colour pattern consisting of large black spots (Fig.12) ..... Poroderma marleyi



Poroderma marleyi Fig.12

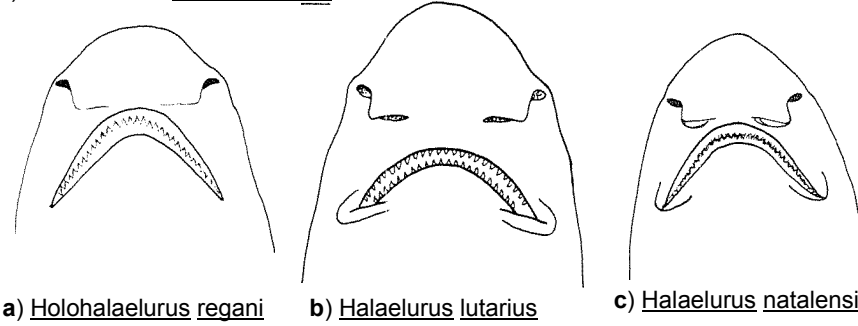
10b. Colour pattern consisting of rosettes of small spots or lines and spots (Fig.13) ..... Poroderma pantherinum

5b. Second dorsal fin nearly as large, as large, or larger than first dorsal (Figs 15-22); no supraorbital crests on cranium



Poroderma pantherinum Fig.13

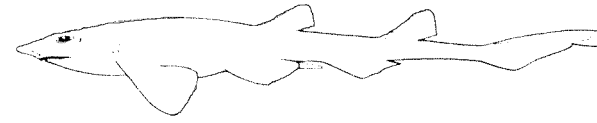
11a. Labial furrows absent; head very broad (Fig. 14a); small black dots on underside of head and abdomen (Figs 15,16) ..... Holohalaelurus



a) Holohalaelurus regani **b**) Halaelurus lutarius **c**) Halaelurus natalensis

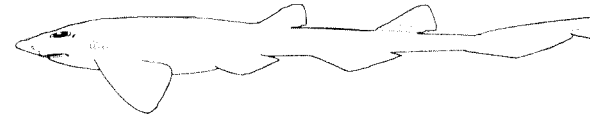
Fig.14

12a. Anal fin base 3.5 times the fin height or less; denticles on dorsal surface of head and on back uniform in size; colour pattern of small dark spots on light back ground, background not forming a reticulated network (Fig.15) ..... Holohalaelurus punctatus



Holohalaelurus punctatus Fig.15

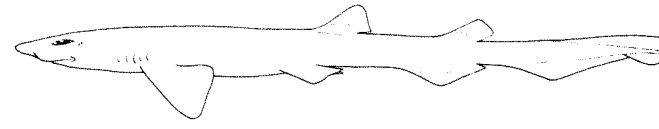
12b. Anal fin base more than 3.5 times the fin height; dorsal surface of head and back with scattered large pointed denticles among smaller flat denticles, giving surface a very rough texture; colour pattern of typically large dark spots and rings on light background, crowded together and providing effect of reticulated light network (Fig.16) .... Holohalaelurus regani



Holohalaelurus regani Fig.16

11b. Labial furrows present; head relatively narrow (Fig.14b); no black dots on undersurface (Figs 17-22) ..... Halaelurus

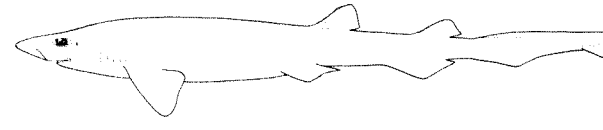
13a. No colour pattern, or at most indistinct dark crossbars, or saddles and white spots; gill openings not elevated above pectoral fin bases, lateral in position (Figs 17,18)*



Halaelurus hispidus Fig.17

14a. Second dorsal fin usually larger than first; colour blackish ..... Halaelurus alcocki**

14b. Second dorsal fin usually slightly smaller than first (Figs 17,18); colour grey-brown



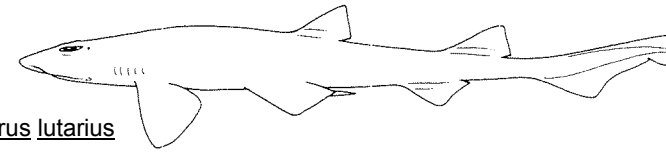
Halaelurus lutarius Fig.18

*Character not known for H. alcocki. Generic placement of this species is provisional

**This species has never been illustrated

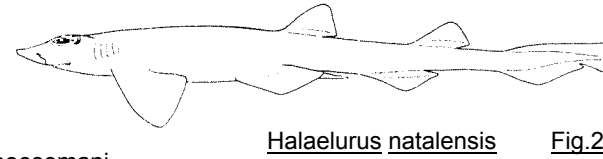
15a. Palate with small papillae; eyes larger, their length in adults 14 times in distance from snout tip to first dorsal fin origin (Fig.17) ..... Halaelurus hispidus

15b. Palate without papillae; eyes smaller, their length in adults over 14 times in distance from snout tip to first dorsal origin (Fig.18) .....Halaelurus lutarius



Halaelurus boesemani Fig.19

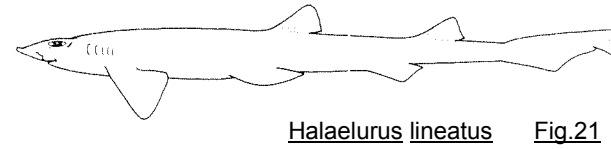
13b. A distinct colour pattern of dark bars or saddles and spots on light background; gill openings elevated well above pectoral fin bases, dorsolateral in position (Figs 19-22)



Halaelurus natalensis Fig.20

16a. Tip of snout bluntly rounded, without a terminal knob; colour pattern of broad obscure saddles and numerous dark spots (Fig.19) ..... Halaelurus boesemani

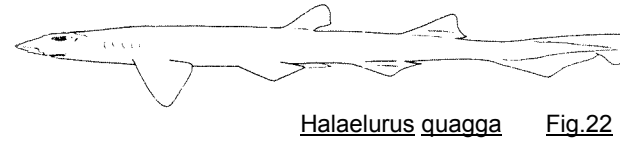
16b. Tip of snout pointed, with a small terminal knob; colour pattern of narrow vertical bars. with or without spots (Figs.20-22)



Halaelurus lineatus Fig.21

17a. Colour pattern of pairs of dark bars forming saddles with enclosed light spaces; mouth relatively large (Fig.20) ..... Halaelurus natalensis

17b. Colour pattern of dark bars not forming saddles with enclosed light spaces; mouth relatively small (Figs 21,22)



Halaelurus quagga Fig.22

18a. Numerous small spots between crossbars and on head; snout tip upturned (Fig.21)…Halaelurus lineatus

18b. No spots or few spots between crossbars or on head; snout tipnot upturned (Fig.22) .....Halaelurus quagga

LIST OF SPECIES OCCURRING IN THE AREA:

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

Apristurus indicus (Brauer, 1906)

Atelomycterus marmoratus (Bennett, 1830) SCYL Atel 1

*Cephaloscyllium silasi (Talwar, 1974)
**Cephaloscyllium sufflans (Regan, 1921)

***Halaelurus alcocki Garman, 1913
Halaelurus boesemani Springer & D'Aubrey, 1972
Halaelurus hispidus (Alcock, 1891)
Halaelurus lineatus Bass, D'Aubrey & Kistnasamy, 1975
Halaelurus lutarius Springer & D'Aubrey, 1972
Halaelurus natalensis (Regan, 1904)
Halaelurus quagga (Alcock, 1899)

Haploblepharus edwardsii (Voigt, in Cuvier, 1832)
Haploblepharus fuscus Smith, 1950

Holohalaelurus punctatus (Gilchrist, 1914)
Holohalaelurus regani (Gilchrist, 1922)

Poroderma africanum (Gmelin, 1789)
Poroderma marleyi Fowler, 1934
Poroderma pantherinum (Smith in Müller & Henle, 1838)

****Scyliorhinus capensis (Smith in Müller & Henle, 1838)

Prepared by L.J.V. Compagno, Tiburon Center of Environmental Studies, San Francisco State University, Tiburon, California, U.S.A.

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*Formerly placed in Halaelurus, but examination of types at Zoological Survey of India, Calcutta showed that this species clearly falls in Cephaloscyllium

** Specimens referred to C. sufflans from Gulf of Oman possibly not identical with this species, known from Natal, South Africa, and southern Mozambique

*** A poorly known species, tentatively referred to the genus Halaelurus

****A record of this species from India may be referrable to a different species, presumably undescribed

SCYL Atel 1

1983

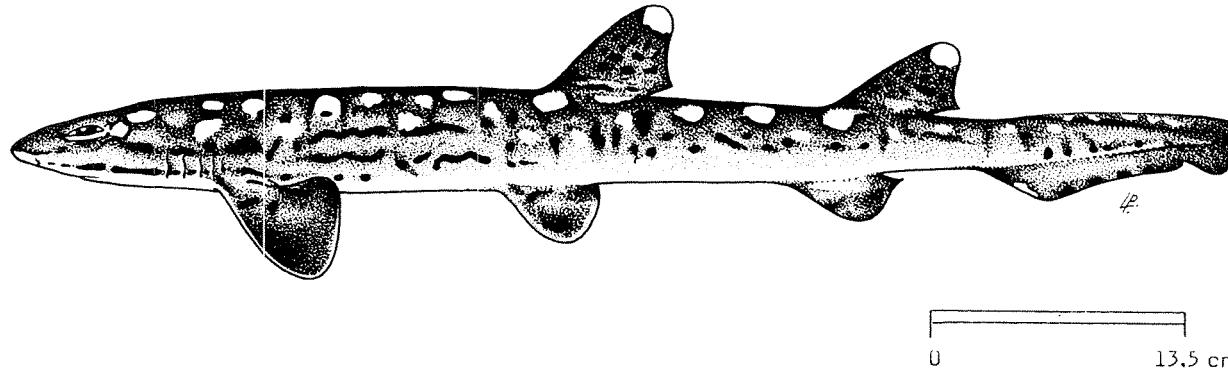
FAO SPECIES IDENTIFICATION SHEETS

FAMILY: SCYLIORHINIDAE

FISHING AREA 51
(W. Indian Ocean)

Atelomycterus marmoratus (Bennett, 1830)

OTHER SCIENTIFIC NAMES STILL IN USE: None



VERNACULAR NAMES:

FAO:
En - Marbled catshark
Fr - Chien corail
Sp - Pintarroja coral

NATIONAL:

DISTINCTIVE CHARACTERS:

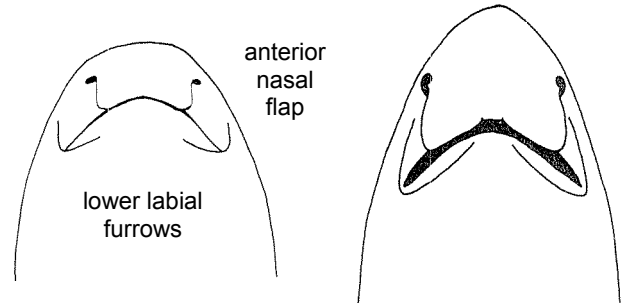
A small shark. Body slender, head narrow; head with 5 pairs of small gill slits, the last 2 above the pectoral fin bases; nostrils without barbels, with greatly enlarged anterior nasal flaps, separated from each other by a very narrow space posteromedially and overlapping the mouth posteriorly; shallow nasoral grooves between nostrils and mouth but no perinasal grooves; mouth extending posteriorly behind front margins of eyes; labial furrows present on both jaws, very long and extending anteriorly to front of mouth; eyes horizontally elongated, in dorsolateral position, with weakly differentiated nictitating lower eyelids and shallow subocular pouches below them; snout short and narrowly rounded; teeth small and numerous, similar in both jaws and not bladelike, with a slender primary cusp and usually a cusplet on each side, not comblike at rear of mouth; anterior teeth of upper jaw smaller than lateral teeth and gradually increasing in size toward the sides, not separated from the laterals by minute intermediate teeth. First dorsal fin about as large as the second, originating over pelvic fin midbases; second dorsal fin originating over first third of anal fin base; anal fin smaller than second dorsal; caudal fin short, asymmetrical, with a subte!rminal notch but with no lower lobe, and its lower origin well separated from anal fin. Caudal peduncle without keels or precaudal pits. Supraorbital crests present on cranium.

Colour: grey above, white below, with numerous black bars and spots on back and sides, interspersed with large white spots to form a striking and conspicuous colour pattern; fins with dark spots an blotches, dorsals conspicuously white-tipped.

DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

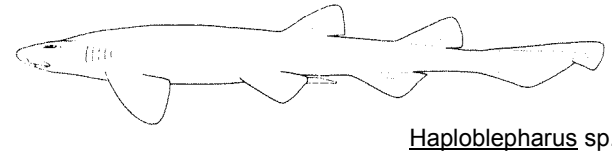
Haploblepharus species: the only other scyliorhinids in the area with expanded anterior nasal flaps and nasoral grooves, but differ from this species in their broader, more bluntly rounded snouts, dorsolateral gill slits, a different colour pattern with dark brown saddles and white spots or plain brown, without white-tipped dorsals, anal fin about as large as second dorsal, second dorsal over last half of anal fin base, and no supraorbital crests on the cranium.

The combination of characters including the bold colour pattern, small size and slender body, enlarged anterior nasal flaps and nasoral grooves, lack of barbels or perinasal grooves, first dorsal origin over the pelvic fin bases, equal-sized dorsal fins, long eyes with nictitating eyelids, mouth under the eyes, spiral valve, and short caudal fin without a lower lobe, separates this shark from all others in the area.

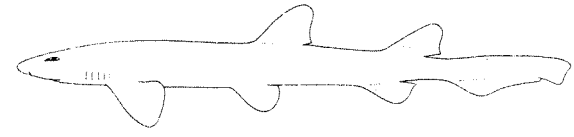


Haploblepharus sp. ***Atelomycterus mormoratus***

underside of head



Haploblepharus sp.



Atelomycterus marmoratus

SIZE:

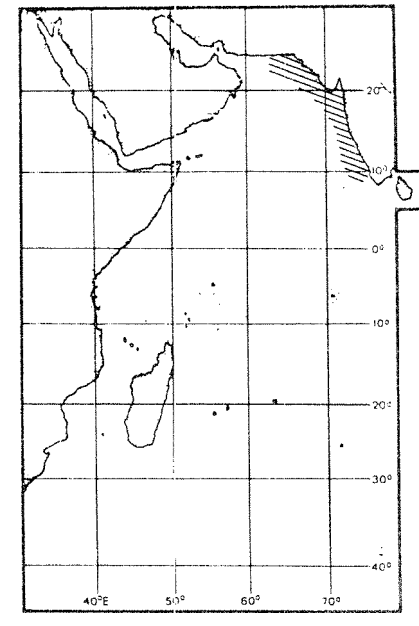
Maximum: about 70 cm.

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

In the area, confined to the northeastern part, off Pakistan arid India. Elsewhere, Malaya, Singapore, Indonesia, New Guinea, Thailand, Vietnam, Philippine Islands, South China, and Taiwan Island, but records from some parts of its range, including the present area, need to be confirmed by specimens. Western Australian records are apparently based on other species.

An inshore species, found on coral reefs. Oviparous.

Although common in parts of its range, the habits of this species are little known.



PRESENT FISHING GROUNDS:

Off India and Pakistan.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

Separate statistics are not reported for this species.

Probably caught with line gear and gillnets, relatively unimportant.

Utilized fresh and dried-salted or processed for fishmeal and oil.