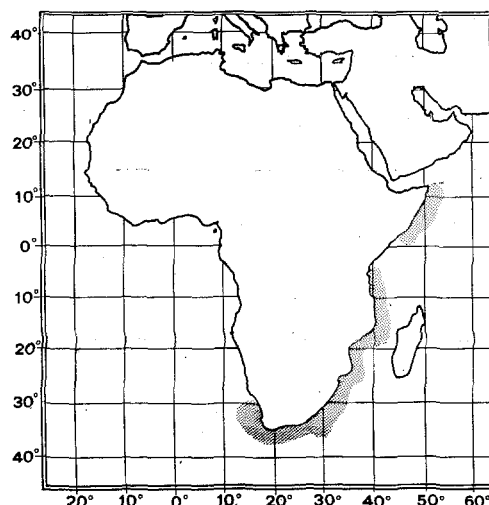


Geographical Distribution : Eastern South Atlantic and western Indian Ocean: South Africa, Mozambique, Tanzania, Somalia ?

Habitat and Biology : A common, deepish-water temperate and tropical catshark with a broad depth range from the outer continental shelf and upper slope on or near bottom at depths of 160 to 740 m. The species may occur in shallower water (160 to 460 m) at the Cape of Good Hope in the temperate region than off tropical-subtropical Tanzania and southern Mozambique (240 to 740 m).

Oviparous, one egg per oviduct laid at a time. Egg-cases about 3.5 by 1.5 cm. Hatchlings not recorded, but a 13 cm immature illustrated by Bass, D'Aubrey & Kistnasamy (1975a, fig. 15) is remarkable in being quite divergent in morphology from adults and subadults, with an all-dark body with white spots and black bars on fins, slender body, minute fins, and an extremely long tail.



Feeds heavily on cephalopods, with lesser amounts of bony fishes and crustaceans.

Size : Maximum 61 cm, males maturing at 50 to 54 cm and reaching 61 cm, females maturing at 38 to 39 cm and reaching 41 cm. As in H. punctatus, males are substantially larger than females. Size at hatching unknown, below 13 cm.

Interest to Fisheries : None at present, commonly taken by commercial bottom trawlers.

Literature : Fowler (1941); Bass, D'Aubrey & Kistnasamy (1975a); Springer (1979).

Remarks : Bass, D'Aubrey & Kistnasamy (1975a) note that the holotype of Scyliorhinus (Halaelurus) melanostigma and three of its four paratypes (all from off Zanzibar) are conspecific with H. regani (the fourth paratype is H. punctatus or a closely related species). These writers note considerable colour differences between H. regani specimens from the southwestern Cape Province of South Africa and those from Northern Natal and southern Mozambique. Without taking the problem further, Bass, D'Aubrey & Kistnasamy suggest that the wide-ranging H. regani might represent a group of closely related species (presumably with H. melanostigma one of these, as contrasted with the Cape H. regani), but with insufficient coverage of material these writers quite justifiably include all of the regani-like catsharks in one species.

Parmaturus Garman, 1906

SCYL Parm

Genus: Parmaturus Garman, 1906, Bull.Mus.Comp.Zool.Harv.Coll., 46(11): 203.

Type Species : Parmaturus pilosus Garman, 1906, by subsequent designation of Jordan (1920:518).

Synonymy : Genus Dichichthys Chan, 1966.

Field Marks: Flabby, soft-bodied catsharks with crests of saw-like denticles on dorsal (and sometimes ventral) caudal margin, rather small pectoral fins with width less than mouth width, usually short, rounded snouts less than mouth length, and subocular ridges well developed under eyes.

Diagnostic Features: Body not tadpole-shaped, slender and cylindrical, tapering slightly to caudal fin; body soft and flabby, with weakly calcified dermal denticles; stomach not inflatable; tail moderately long, length from vent to lower caudal origin about 4/5 of snout-vent length. Head slightly depressed, narrowly pointed-rounded in lateral view and not wedge-shaped; head short to moderately long, between 1/4 and 1/5 to less than 1/5 of total length in adults; snout short to moderately long, less than 4/5 of mouth width, thick, and slightly flattened, bluntly pointed in lateral view; snout not expanded laterally, rounded-parabolic and slightly bell-shaped in dorsoventral view; ampullar pores not greatly enlarged on snout; nostrils of moderate size, with incurrent and excurrent apertures only partly open to exterior; anterior nasal flaps broadly triangular, elongated and lobate, or reduced and pointed, without barbels, well separate from each other and falling somewhat anterior to mouth; internarial space about 0.8 to 1.1 times in nostril width; no nasoral grooves; eyes dorsolateral on head, narrow subocular ridges present below eyes; mouth angular or semiangular, moderately long with lower symphysis well behind upper so that upper teeth are exposed in ventral view; labial furrows present along both upper and lower jaws, these short and ending well behind level of upper symphysis of mouth; branchial region not greatly enlarged or slightly enlarged (*P. xaniurus*), distance from spiracles to fifth gill slit 2/5 to 3/5 of head length; gill slits lateral on head. Two dorsal fins present, about equal-sized or with second definitely larger than first; origin of first dorsal varying from slightly in front of the pelvic origins to about over their insertions; origin of second dorsal varies from about over the anal origin to slightly behind the anal midbase; pectoral fins moderately large, their width subequal or somewhat less than mouth width; inner margins of pelvic fins not fused over claspers in adult males; claspers moderately long, fairly thick, and distally pointed, extending about half of their lengths behind the pelvic fin tips; anal fin moderately large but not greatly elongated, about as large as pelvic fins or larger, subequal to larger than the second dorsal and larger than the first dorsal, its base length subequal to about 1.7 times second dorsal base; origin of anal close behind to far behind pelvic bases, and insertion separated from lower caudal origin by a narrow notch to a broad space over half the anal base; caudal fin moderately elongated, over or less than a fourth of total length in adults. A well-developed crest of denticles on the dorsal caudal margin, and sometimes on the preentral margin, dorsal crest rounded on its upper surface and somewhat asymmetrical in adults; small median denticles between upper crest denticles usually in more than five rows; supraorbital crests absent from cranium. Colour light grey or brown to dark grey or blackish-grey, without a conspicuous colour pattern.

Remarks : The genus *Dichthys* was proposed by Chan (1966) for *D. melanobranchius*. Springer (1979) reduced *Dichthys* to a subgenus of *Parmaturus*, with *P. melanobranchius* and his new species *P. campechiensis*, while including *P. pilosus* and *P. xaniurus* in the nominate subgenus *Parmaturus*. Springer also proposed a new subgenus, *Compagnoia*, for *P. manis* and *P. stenseni*, which are *Apristurus*-like species more properly placed in that genus.

Recently Chu *et al.* (1983) placed *P. melanobranchius* and *Galeus boardmani* in the genus *Figaro*, along with their new species *F. piceus*. However, as a tentative measure I retain Springer's (1979) arrangement, however unsatisfactory, and retain *melanobranchius* in *Parmaturus*; *Figaro piceus* is considered a possible synonym based on the adult of *P. melanobranchius*. See the remarks under the genus *Galeus* for further comments on the genus *Figaro*, which, if constituted as Chu *et al.* (1983) suggest to include all the *Parmaturus-Galeus*-like species with subcaudal crests of denticles, would have to include *Parmaturus pilosus*, the type species of *Parmaturus*. This would make *Figaro* a junior synonym of *Parmaturus*, and would orphan *P. xaniurus* and *P. campechiensis*, species without subcaudal crests that are respectively close to *P. pilosus* and *P. melanobranchius*. There may be a new species of *Parmaturus* off New Zealand, but this is uncertain at present.

Key to Species :

- 1a. Origin of first dorsal well behind pelvic origins **P. melanobranchius**
- 1b. Origin of first dorsal nearly or quite opposite pelvic origins
 - 2a. Anterior nasal flaps reduced to low points. Second dorsal larger than first and about as large as anal fin **P. campechiensis**
 - 2b. Anterior nasal flaps large. Second dorsal about as large as first and much smaller than anal fin
 - 3a. Nasal flaps triangular. Second dorsal insertion well in front of anal insertion. No crest of enlarged denticles on preentral caudal margin **P. xaniurus**
 - 3b. Nasal flaps narrowly lobate. Second dorsal insertion about opposite anal insertion. A crest of enlarged denticles on preentral caudal margin **P. pilosus**

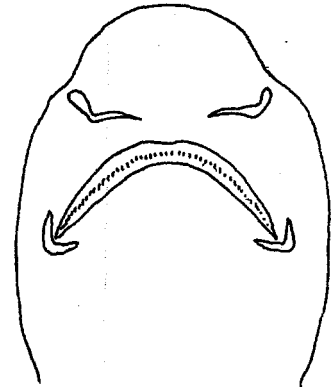
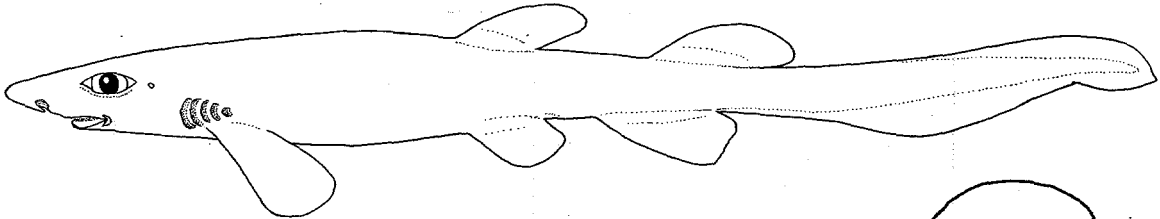
Parmaturus campechiensis Springer 1979

SCYL Parm 1

Parmaturus campechiensis Springer, 1979, NOAH Tech.Rep.NMFS Circ., (422):100, fig. 59. Holotype: U.S. National Museum, USNM 206184, 157 mm immature female. Type Locality: 21°33'N, 96°48'W, northwestern Bay of Campeche, Gulf of Mexico, 1097 m depth.

Synonymy : None.

FAO Names: En - Campeche catshark; Fr - Holbiche campèchoise; Sp - Pejegato campechano.



underside of head

Field Marks: A deepwater, soft-bodied, plain catshark with a short snout, first dorsal origin about opposite pelvic origins, second dorsal larger than first, crest of denticles on dorsal caudal margin.

Diagnostic Features: Snout broadly rounded; anterior nasal flaps reduced to low points; gill septa excavated and concave posteriorly. First dorsal fin smaller than second; first dorsal origin over pelvic origins; first dorsal insertion slightly in front of pelvic insertions; second dorsal about as large as anal fin; second dorsal origin well behind anal origin; second dorsal insertion well behind anal insertion; ventral edge of caudal peduncle and preentral caudal margin without a crest of enlarged denticles.

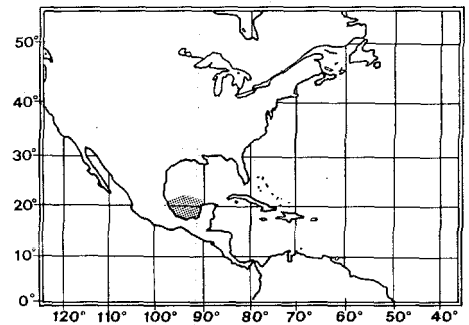
Geographical Distribution : Known only from the type locality.

Habitat and Biology : A little-known deepwater catshark, from the western Atlantic continental slope on or near the bottom at 1097 m depth, Known only from the holotype.

Size: Maximum 16+cm (immature holotype).

Interest to Fisheries: None.

Literature : Springer (1979).



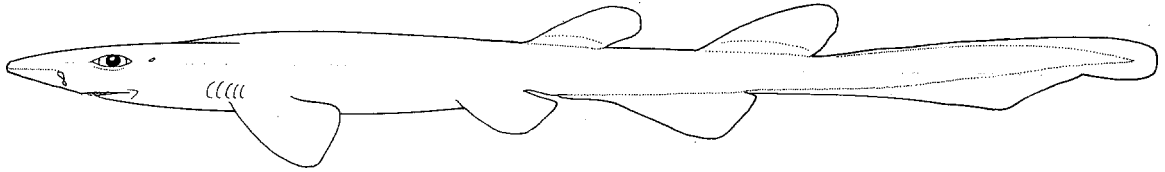
Parmaturus melanobranchius (Chan, 1966)

SCYL Parm 2

Dichthys melanobranchius Chan, 1966, J.Zool., Lond., 148:226, figs. 2-3, pl. 1b. Holotype: British Museum (Natural History), BMNH 1965.8.11.6, 235 mm immature female. Type Locality: 20°05'N, 115° 03'E, 549 m depth.

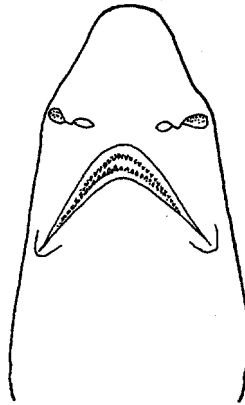
Synonymy : ? Figaro piceus Chu, Meng & Liu, 1983

FAO Names : En - Blackgill catshark; Fr - Holbiche à joues noires; Sp - Pejegato de agallas negras.

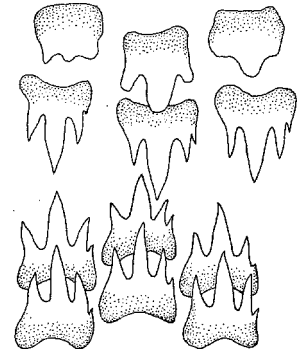


Field Marks : A deepwater, soft-bodied, plain catshark with a moderately short snout, first dorsal origin about opposite last half of pelvic bases, second dorsal larger than first, crest of denticles on dorsal and preventral caudal margins.

Diagnostic Features: Snout narrowly rounded; nasal flaps small and angularly pointed; gill septa excavated and concave posteriorly. First dorsal fin considerably smaller than second; first dorsal origin opposite last half of pelvic bases or over pelvic insertions; first dorsal insertion far behind pelvic insertions; second dorsal about as large as anal fin; second dorsal origin far behind anal origin; second dorsal insertion far behind anal insertion; ventral edge of caudal peduncle and preventral caudal margin with a partial crest of enlarged denticles.



underside of head



upper and lower teeth

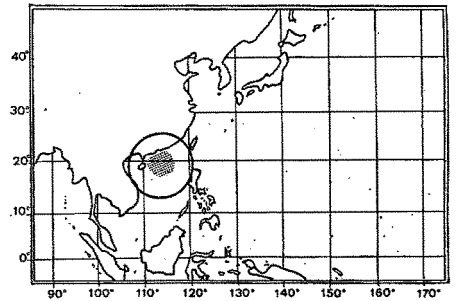
Geographical Distribution : Western North Pacific: South China Sea.

Habitat and Biology : A poorly known deepwater bottom-dwelling shark from the upper continental slopes off China, on mud bottom at depths of 549 to 810 m.

Size : Maximum 85 cm (female, possibly adult).

Interest to Fisheries: None.

Literature : Chan (1966); Springer (1979); Chu *et al.* (1983).



Remarks : Chu *et al.* (1983) recent described Figaro piceus from the South China Sea at 19°40'N, 115°E, 810 m (holotype, 85 cm) and 19°03'N, 113°27'E, 660 m paratype, 46 cm). They distinguished this species from P. melanobranchius by its longer predorsal space (greater than first dorsal origin to caudal tip in piceus, less in melanobranchius), shorter caudal fin (distance from second dorsal insertion to caudal tip about 4.5 in piceus, 3.4 in melanobranchius as examined by the writer), and colour (uniform blackish brown *versus* light brown with blackish-brown distal parts and anterior margins of fins, snout tip, nostrils, and gills in melanobranchius). Unfortunately, the first two characters are much influenced by growth in scyliorhinids, and may merely indicate changes in proportions within a species (the holotype of melanobranchius being much smaller than the two piceus types). Changes in coloration with growth are also known for some deepwater scyliorhinids, such as Holohalaelurus regani. Chu *et al.* stated that their new species differed from the present one in having only the last 2 rather than, last 4) gill slits over the pectoral bases, but examination of the holotype of melanobranchius revealed the same condition as in piceus.

The writer is inclined to include Figaro piceus in tentative synonymy of the present species because of their general similarity in morphology, but notes that the first dorsal origin as pictured for piceus is about over the last half of the anal base, but is about over its insertion in the holotype of melanobranchius. This may or may not be significant, particularly as only 3 specimens of these sharks are currently known and it is uncertain how variable they are in this feature. The illustration is taken from the holotype of melanobranchius.

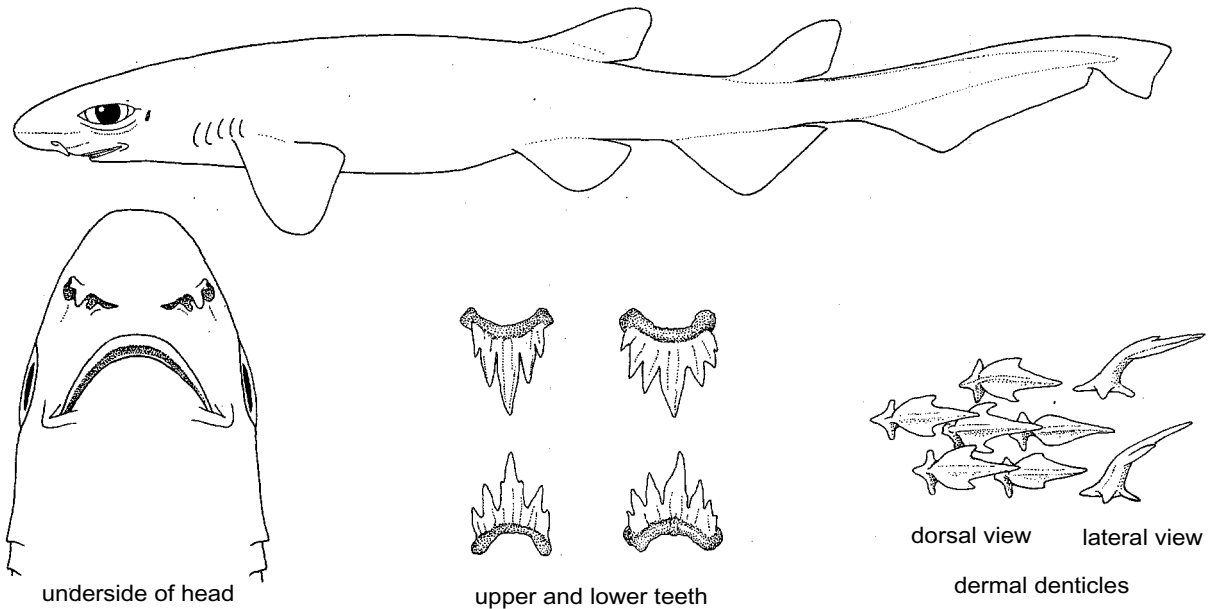
Parmaturus pilosus Garman, 1906

SCYL Parm 3

Parmaturus pilosus Garman, 1906, Bull. Mus.Comp.Zool.Harv.Coll., 46(11):204. Holotype: Museum of Comparative Zoology, Harvard, MCZ-1107, ca. 544 mm, immature male. Type Locality: Sagami Bay, Japan, 34°59'N, 139°31'E, 786 m depth.

Synonymy : Pristiurus hertwigi Engelhardt, 1912

FAO Names : En - Salamander shark; Fr - Holbiche salamandre; Sp - Pejegato salamandra.



Field Marks : A deepwater, soft-bodied, plain catshark with a moderately short snout, first dorsal origin just behind pelvic origins, second dorsal about as large as first, crest of denticles on dorsal and preventral caudal margins.

Diagnostic Features: Snout broadly rounded; nasal flaps large, narrow-based and lobate; gill septa not excavated and concave posteriorly. First dorsal fin about as large as second; first dorsal origin just behind pelvic origins; first dorsal insertion slightly behind pelvic insertions; second dorsal smaller than anal fin; second dorsal origin well behind anal origin; second dorsal insertion about over anal insertion; ventral edge of caudal peduncle and preventral caudal margin with a crest of enlarged denticles.

Geographical Distribution : Western North Pacific: Japan (south-eastern Honshu).

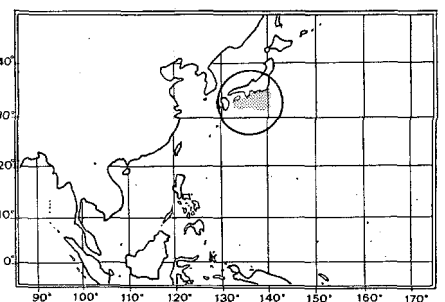
Habitat and Biology: A little-known, but possibly common deepwater bottom-dwelling shark, on the continental slopes off Japan at 786 m depth (depth for the holotype, the only specimen for which this was recorded). Has a high concentration of squalene in its liver, as in many deepwater squaloids.

Size : Maximum at least 64 cm; males immature at 56 cm; state of maturity uncertain for females 59 to 64 cm.

Interest to Fisheries : Probably of minor importance in the past to some Japanese fishermen using deep-set longlines, but apparently seldom caught at present.

Literature : Garman (1913); Nakaya (1975); Springer (1979).

Remarks : Synonymy follows Springer (1979), who examined the holotype (now lost) of Pristiurus hertwigi.



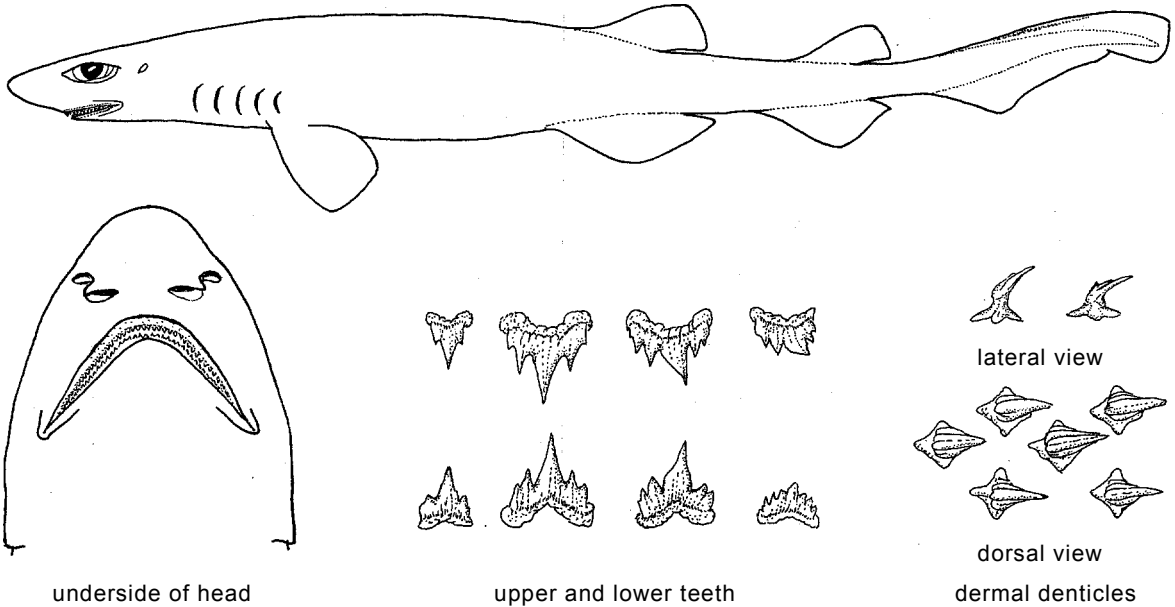
Parmaturus xaniurus (Gilbert, 1892)

SCYL Parm 4

Catulus xaniurus Gilbert, 1892, Proc.U.S.Nat.Mus., 14(880):540. Lectotype: U.S. National Museum of Natural History, USNM-46719, 550 mm female, presumably adult, one of 8 syntypes designated lectotype by Springer (1979:108). Type Locality: Off southern California, USA, 33°55.5'N, 128°28'W in 687 m depth.

Synonymy : None.

FAO Names: En - Filetail catshark; Fr - Holbiche râpe; Sp - Pejegato lima.

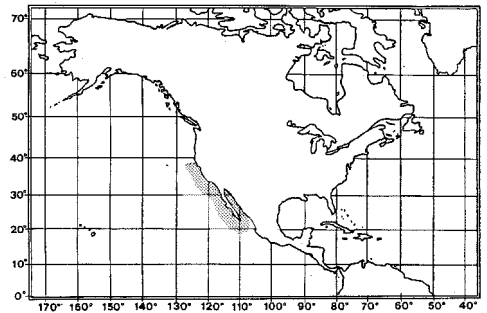


Field Marks: A deepwater soft-bodied, plain catshark with a short snout, first dorsal origin just behind pelvic origins, second dorsal about as large as first, crest of enlarged denticles on dorsal caudal margin.

Diagnostic Features: Snout broadly rounded; nasal flaps broad and triangular; gill septa not excavated and concave posteriorly. First dorsal fin about as large as second; first dorsal origin just behind pelvic origins; first dorsal insertion slightly in front of pelvic insertions; second dorsal smaller than anal fin; second dorsal origin nearly over anal origin; second dorsal insertion well in front of anal insertion; ventral edge of caudal peduncle and preentral caudal margin without a crest of enlarged denticles.

Geographical Distribution : Eastern North Pacific: Central California, USA, to Gulf of California, Mexico.

Habitat and Biology : A common but little-known deepwater shark of temperate to subtropical waters on the outer continental shelf and upper slope, often on or near the bottom but up to 490 m above, at depths of 91 to 1251 m. Has been seen from a deep-diving submersible on or near the bottom in the Santa Barbara Basin, an anoxic area with few if any other vertebrates commonly living in it. Apparently the enlarged gill region of this shark is an adaption to living in areas of low oxygen, as in the triakid lago omanensis and presumably the bizarre, long-headed catshark Cephalurus cephalus.



Oviparous, egg-cases about 7 to 11 cm long by 3 to 4 cm wide, with unusual T-shaped lateral flanges. An egg collected in water at a temperature 6 C was kept in a refrigerator, but was only half developed when it died about a year later.

Probably eats a variety of small fish and invertebrate prey. Individuals were seen eating moribund lanternfish in the anoxic Santa Barbara Basin.

As in P. pilosus this species has a high concentration of squalene in its liver, which probably helps to adjust it to approximately neutral buoyancy.

Size : Maximum 55 cm; adult males 37 to 45 cm; adult females 47 to 55 cm.

Interest to Fisheries : Regularly caught by bottom trawlers, but apparently not utilized at present.

Literature : Roedel & Ripley (1950); Miller & Lea (1972); Springer (1979).

Pentanchus Smith & Radcliffe, 1912

SCYL Pent

Genus : Pentanchus Smith & Radcliffe, 1912, Proc.U.S.Nat.Mus., 41(1872):490.

Type Species : Pentanchus profundicolus Smith & Radcliffe, 1912, by original designation.

Synonymy : None unless Apristurus Garman, 1913, is a junior synonym.

Diagnostic Features : Essentially those of Apristurus, but without a first dorsal fin (possibly abnormal, see below). Body not tadpole-shaped, stocky and compressed, increasing in height up to the pectoral and trunk region and tapering posteriorly; body soft and flabby, with thin skin and weakly calcified dermal denticles; stomach probably not inflatable; tail short, length from vent to lower caudal origin about 3/5 of snout-vent length. Head greatly depressed, pointed and wedge-shaped in lateral view; head elongated, but slightly less than 1/4 of total length (adult male); snout elongated, its length greater than mouth width, greatly flattened, narrow and pointed in lateral view; snout expanded laterally, narrowly spatulate and bell-shaped in dorsoventral view; ampullar pores enlarged and prominent on snout; nostrils enlarged, with incurrent and excurrent apertures broadly open to exterior; anterior nasal flaps reduced to angular lobes, without barbels, widely separate from each other and falling far anterior to mouth; internarial space 0.9 times in nostril width; no nasoral grooves; eyes dorsolateral on head, broad subocular ridges present below eyes; mouth broadly arched, with lower symphysis well behind upper so that upper teeth are exposed in ventral view; labial furrows present along both upper and lower jaws; these long and reaching to level of upper symphysis of mouth; branchial region not greatly enlarged, distance from spiracles to fifth gill slits less than half head length; gill slits lateral on head. Origin of second dorsal fin about over the anal midbase; pectoral fin width less than mouth width; inner margins' of pelvic fins not fused over claspers in adult males; claspers short, thick, and distally pointed, not extending more than 2/3 of their length behind the pelvic fin tips; anal fin enlarged and greatly elongated, larger than pelvic fins and dorsal fin, base length over twice second dorsal base; origin of anal just behind pelvic bases, and insertion separated from lower caudal origin by a narrow notch; caudal fin elongated, over a fourth of total length. No crests of enlarged denticles on the caudal margins; supraorbital crests absent from cranium. No colour pattern, uniformly dark brown.

Remarks : This genus, which differs from the closely similar Apristurus only in lacking a first dorsal fin, has been recognized by Garman (1913), Bigelow & Schroeder (1948), and Springer (1979), although Fowler (1934, 1941), following a suggestion by Regan (1912), considered the single species undorsate only by abnormality or injury and the genus a senior synonym of Apristurus Garman, 1913. Springer (1979) noted that Pentanchus profundicolus, known from the holotype only, also differed from Apristurus species in its very short body cavity, narrower snout, and longer anal fin base. However, I compared the holotype of P. profundicolus with the 'holotype and only known specimen of Apristurus herklotsi (both specimens from the Philippines) and found that these specimens were very close in numerous details, including the additional characters cited by Springer (1979) as separating Pentanchus from Apristurus. This comparison suggested that the two holotypes are conspecific, that P. profundicolus is a senior synonym of A. herklotsi, that the holotype of P. profundicolus is abnormal in lacking a first dorsal fin, and that Pentanchus is a senior synonym of Apristurus. The writer hesitates to substitute Pentanchus for the extensively used Apristurus at present, especially with the lack of further specimens of herklotsi-profundicolus catsharks from the Philippines, and tentatively retains herklotsi in Apristurus pending collection of more Philippine Apristurus.

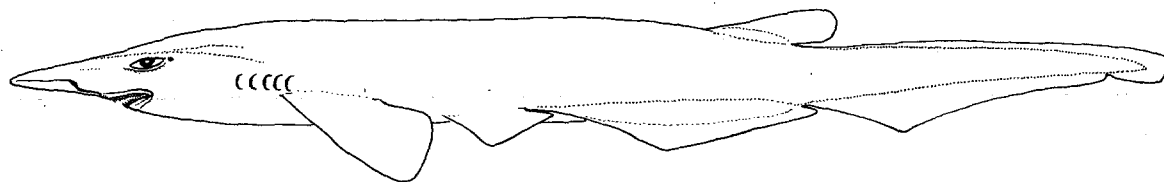
Pentanchus profundicolus Smith & Radcliffe, 1912

SCYL Pent 1

Pentanchus profundicolus Smith & Radcliffe, in Smith, 1912, Proc.U.S.Nat.Mus., 41(1872):490, fig., pl. 42. Holotype: U.S. National Museum of Natural History, USNM 70260, 508 (now 495) mm adult male. Type Locality: Between Mindanao and Leyte Islands, Mindanao Sea, the Philippines, 10°02'N, 125°19.3'E, 1070 m.

Synonymy : See remarks under genus.

FAO Names : En - Onefin catshark; Fr - Holbiche voile; Sp - Pejegato velero.



Field Marks : If its unidorsate condition is normal, this is the only shark with 5 pairs of gill slits and one dorsal fin. It otherwise resembles *Apristurus herklotsi*.

Diagnostic Features: See genus.

Geographical Distribution: Western North Pacific: The Philippines (Mindanao Sea).

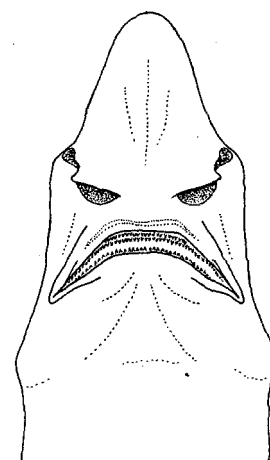
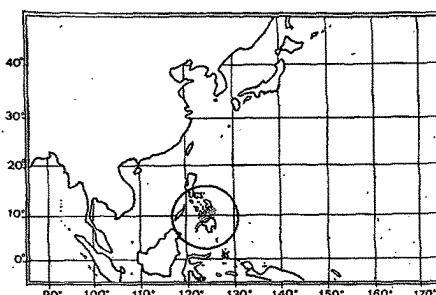
Habitat and Biology : A poorly known deepwater bottom-dwelling shark inhabiting the insular slopes of the Mindanao Sea.

Size : The holotype and only known specimen is a 508 mm adult male.

Interest to Fisheries : None.

Literature : Smith (1912); Fowler (1941); Springer (1979).

Remarks : See discussion above under the genus *Pentanchus* for notes on the possible synonymy of *Apristurus herklotsi* with *P. profundicolus*. The illustration is taken from the holotype.



underside of head

Poroderma Smith, 1837

SCYL Por

Genus : *Poroderma* Smith, 1837, *Proc.Zool.Soc.Lond.*, 5:85 (no description, but with allocation of 4 species including one previously named, "*Scyllium africanum* Cuvier", = *Squalus africanus* Gmelin, 1789).

Type Species : *Squalus africanus* Gmelin, 1789, by subsequent designation of Fowler (1908:53).

Synonymy : Subgenus *Conoporoderma* Fowler, 1934 (genus *Poroderma*).

Field Marks: Very stocky, compressed scyliorhinids with conspicuous trilobate anterior nasal flaps that include prominent conical barbels, second dorsal fin much smaller than first, short labial furrows on both jaws, and bold colour patterns of horizontal bars or rows of dark spots.

Diagnostic Features : Body not tadpole-shaped, very stout and rather compressed, tapering considerably to caudal fin; body firm and thick skinned, with well-calcified dermal denticles; stomach not inflatable; tail moderately short, length from vent to lower caudal origin between 1/2 and 3/5 of snout-vent length. Head slightly depressed, narrowly rounded and not wedge-shaped in lateral view; head short, less than 1/5 of total length in adults. Snout short, less than 3/4 of mouth width, thick, and slightly flattened, bluntly pointed in lateral view; snout not expanded laterally, rounded-parabolic in dorsoventral view; ampullal pores not greatly enlarged on snout; nostrils not enlarged, with incurrent and excurrent apertures only slightly open to exterior; anterior nasal flaps divided into three prominent lobes, a subangular medial lobe, elongated, pendulous lateral lobe, and a long conical barbel between them; anterior nasal flaps well separated from each other but with barbels falling short of mouth or reaching it; internarial space 0.6 to 0.8 times in nostril width; nasoral grooves absent; eyes dorsolateral on head, broad subocular ridges present below eyes; mouth broadly arched, moderately long, with lower symphysis somewhat behind upper so that upper teeth are well-exposed in ventral view; labial furrows present along both upper and lower jaws, these relatively short; uppers little expanded in front of mouth corners and falling well behind level of upper symphysis of mouth; branchial region not greatly enlarged, distance from spiracles to fifth gill slits 1/2 to 2/5 head length; gill slits lateral on head. Two dorsal fins present, with the second considerably smaller than the first; origin of first dorsal about over pelvic insertions; origin of second dorsal over the anal midbase; pectoral fins large, their width considerably greater than mouth width; inner

margins of pelvic fins partly fused over claspers in adult males, forming a partial 'apron'; claspers very short, thick, and distally rounded, not extending behind the pelvic fin tips; anal fin moderately large but not greatly elongated, subequal to pelvic and first dorsal fins but much larger than second dorsal; anal base length 1.6 to 2.2 times that of second dorsal base; origin of anal well behind pelvic bases, and insertion separated from lower caudal origin by a space less than half as long as the anal base; caudal fin very short and broad, less than a fifth of total length in adults. No crest of denticles on the dorsal caudal margin; supraorbital crests present on cranium. Colour light grey with a striking variegated colour pattern of horizontal rows of dark spots or rosettes of spots and bars, or horizontal bars, on dorsal surface and sides of body.

Remarks : Poroderma was without description until Garman's (1913) account of it, in which it was restricted to P. africanum and P. pantherinum and fully diagnosed and described. Earlier, Fowler (1908) had revived the genus for P. africanum and P. stellare (= Scyliorhinus stellaris), but did not distinguish it.

Poroderma is close to Scyliorhinus but differs in being generally stouter-bodied and more compressed, having smaller spaces between the anal and caudal fin, definite short upper labial furrows, and trilobate, deeply notched anterior nasal flaps, with the medial ridge expanded to a prominent conical barbel and flanked basally by a pair of lobes. At most, Scyliorhinus species have a low medial ridge with a posterior low point on the triangular anterior nasal flaps, which are not subdivided and do not have conspicuous barbels. Scyliorhinus species often have colour patterns that are variants on dorsal saddles and spots, while Poroderma has longitudinal dark stripes or lines of spots or rosettes of spots and bars. Poroderma bears a similar relationship to Scyliorhinus as does the squaloid Cirrhigaleus to its close relative Squalus.

Bigelow & Schroeder (1948) used the genus Conoporoderma for P. pantherinum and P. marleyi, stating that Poroderma and its type species P. africanum were properly placed in the genus Scyliorhinus. The writer follows the arrangement of Fowler (1934, 1941), Bass, D'Aubrey & Kistnasamy (1975) and Springer (1979), who include these three species in the genus Poroderma.

Key to Species

- 1a. Colour pattern of dark horizontal stripes, no spots **P. africanum**
- 1b. Colour pattern of dark spots or rosettes of spots and bars
 - 2a. Colour pattern of large dark spots **P. marleyi**
 - 2b. Colour pattern of rosettes of spots or spots and bars **P. pantherinum**

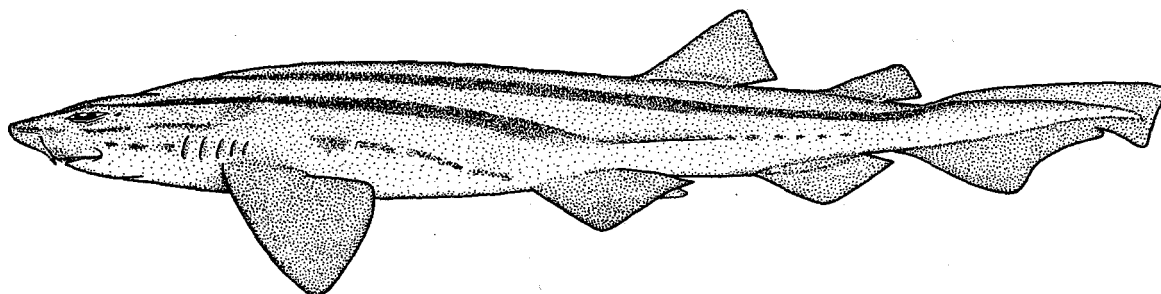
Poroderma africanum (Gmelin, 1789)

SCYL Por 1

Squalus africanus Gmelin, 1789, Caroli Linnaei Syst.Nat., 1(3):1494. Holotype: ?. Type Locality: "Mari Africanum".

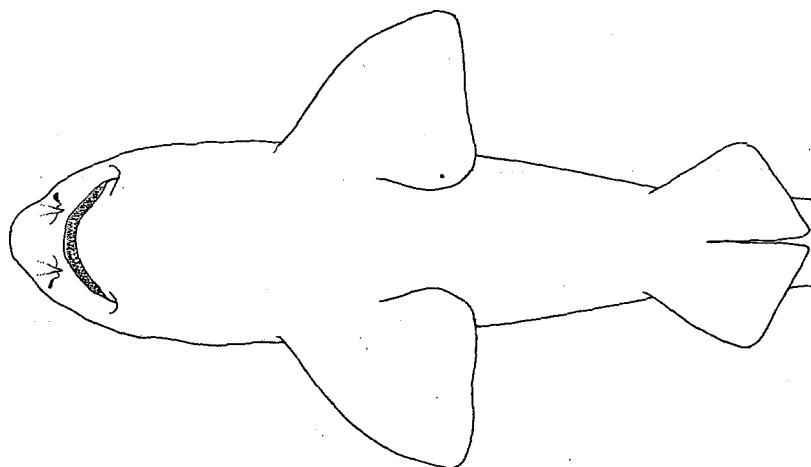
Synonymy : Squalus vittatus Shaw & Nodder, 1798; Squalus striatus Lichtenstein, 1844.

FAO Names : En - Striped catshark; Fr - Roussette rubanée; Sp - Alitán listado.



Field Marks : The striking longitudinal stripes, nasal barbels and posterior dorsal fins of this catshark make it unmistakable.

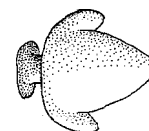
Diagnostic Features : Barbels of anterior nasal flaps short, less than half the nostril width, and usually not reaching mouth. Colour pattern of dark longitudinal stripes.



partial ventral view



tooth



dermal denticle

Geographical Distribution: Eastern South Atlantic and western Indian Ocean: South Africa; also old records from Madagascar and Mauritius, but these require confirmation.

Habitat and Biology : A common inshore temperate shark in waters of the Cape Province of South Africa, especially the south-western Cape, on or near the bottom from close inshore at the surfline to 100 m. Commonly found in caves and in rocky areas. A hardy nocturnal species, readily kept in captivity.

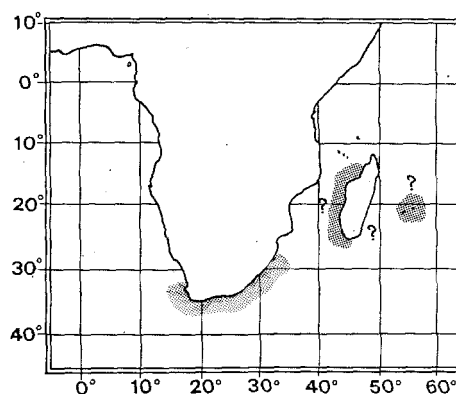
Oviparous, laying a single egg-case per oviduct; in an aquarium an egg hatched after about 5 1/2 months.

Feeds heavily on crustaceans but also eats bony fishes and cephalopods:

Size.: Maximum 101 cm; males maturing between 58 and 78 cm and reaching 101 cm, females maturing between 65 and 72 cm and reaching 93 cm. Size at hatching from 14 to 15 cm.

Interest to Fisheries : Limited, frequently taken by bottom trawlers and shore and boat anglers.

Literature : Garman (1913); Fowler (1941); Smith (1949); Bass, D'Aubrey & Kistnasamy (1975).



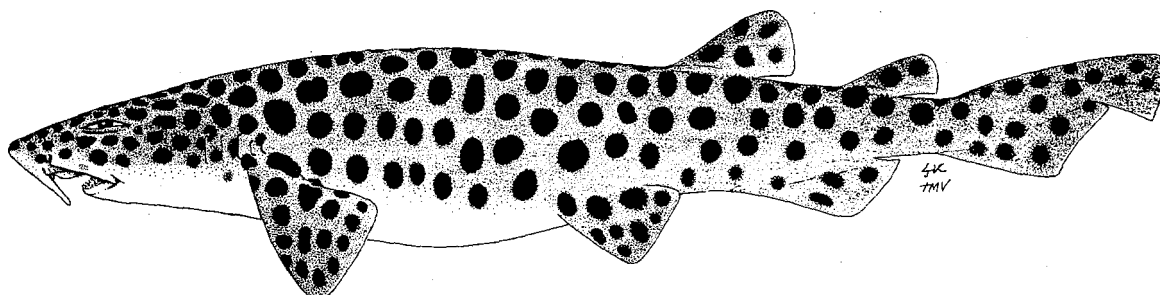
Poroderma marleyi Fowler, 1934

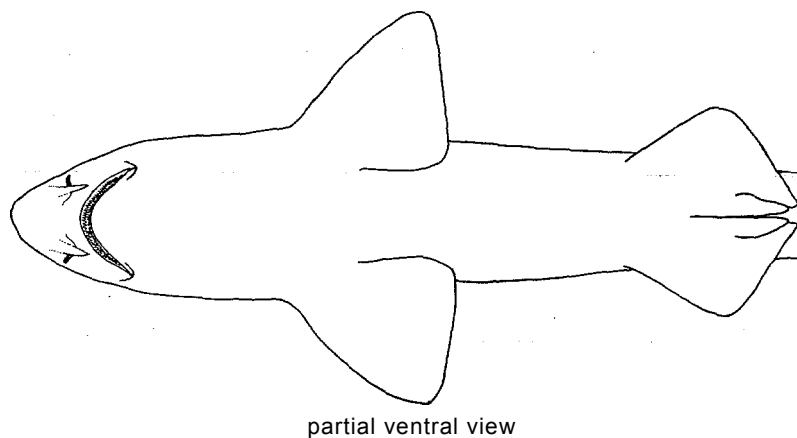
SCYL Por 2

Poroderma marleyi Fowler, 1934, Proc.Acad.Nat.Sci.Philad., 75:234. Holotype: Academy of Natural Sciences, Philadelphia, ANSP 53427, 225 mm immature female. Type Locality: Natal, South Africa, 37 m depth.

Synonymy : Scyliorhinus leopardus Fowler, 1935 (error for P. marleyi).

FAO Names: En - Barbeled catshark; Fr - Roussette barbichette; Sp - Alitán de barbilla.





tooth



dermal denticle

Field Marks : Long nasal barbels, nictitating eyelids, mouth extending behind front of eyes, posterior dorsal fins with the first much larger than the second, and bold, spotted colour pattern with large dark spots.

Diagnostic Features: Barbels of anterior nasal flaps longer, nearly or quite equal to nostril width, and usually reaching mouth. Colour pattern of very large dark spots in irregular longitudinal rows, not forming rosettes.

Geographical Distribution : Known only from the Natal and Transkei coasts of South Africa, southwestern Indian Ocean.

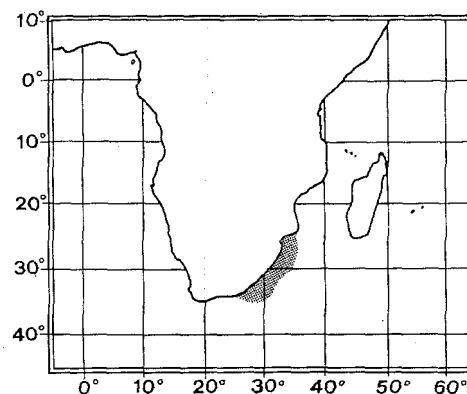
Habitat and Biology : A rare, poorly known, small temperate and subtropical shark, found down to at least 37 m depth in South African waters. About 5 specimens known.

Size : Maximum recorded 65 cm, males adult at 58 cm.

Interest to Fisheries: None at present.

Literature : Fowler (1934, 1941); Smith (1949); Bass, D'Aubrey & Kistnasamy (1975).

Remarks: A specimen of this species was taken off Port St. Johns, Transkei, South Africa, while the writer was in South Africa in 1982. The possibility exists that this rare shark, which apparently differs from *P. pantherinum* only in its colour pattern, is a colour morph of the latter species. Bass, D'Aubrey & Kistnasamy (1975) suggested that this species differed from *P. pantherinum*, in having its anal origin slightly behind the first dorsal insertion (below or ahead of it in the latter species), but this is incorrect as shown by the Port St. Johns specimen.



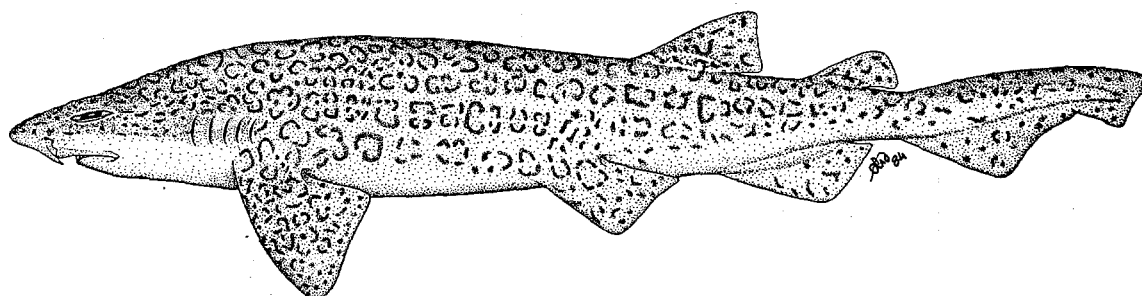
Poroderma pantherinum (Smith, 1838)

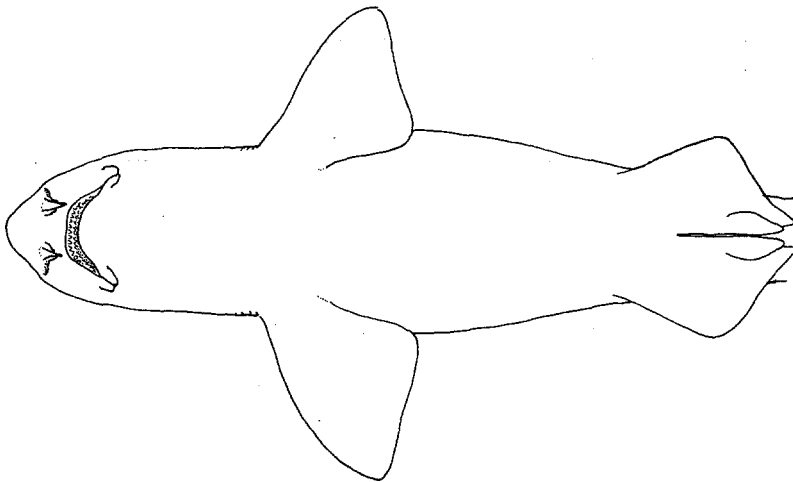
SCYL Por 3

Scyllium pantherinum Smith, in Müller & Henle, 1838, *Syst.Beschr.Plagiost.*, (pt.1):13. Holotype: British Museum (Natural History), BMNH 45.7.3.145, 650 mm female. Type Locality: Cape of Good Hope, South Africa.

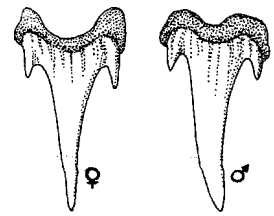
Synonymy : *Poroderma pantherinum* Smith, 1837 (name only); ? *Poroderma submaculatum* Smith, 1837 (name only); *Poroderma variegatum* Smith, 1837 (name only); *Scyllium variegatum* Smith, in Müller & Henle, 1838; *Scyllium leopardinum* Müller & Henle, 1838 (name only); *Scyllium malandrinum* Rapp, in Müller & Henle, 1838 (name only).

FAO Names : En - Leopard catshark; Fr - Roussette panthère; Sp - Alitán leopardo.

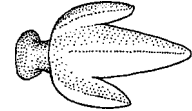




partial ventral view



teeth



dermal denticle

Field Marks : Striking leopard-like colour pattern, nasal barbels, first dorsal fin positioned posteriorly.

Diagnostic Features: Barbels of anterior nasal flaps longer, nearly or quite equal to nostril width, and usually reaching mouth. A striking, very handsome, leopard-like colour pattern of rosettes of dark spots, and lines surrounding light centres, arranged in irregular longitudinal rows.

Geographical Distribution : Eastern South Atlantic and western Indian Ocean: South Africa, Mauritius, Madagascar. Mauritius and Madagascar records require confirmation.

Habitat and Biology : This attractive, small, stocky catshark is common in shallow temperate continental waters of South Africa, particularly in the vicinity of Algoa Bay, southeastern Cape region, but also to the west Cape and rarely up to Natal. Depths range from close inshore at the surf zone to the uppermost slopes at 256 m, on or near the bottom. Apparently nocturnal, and readily kept in captivity.

Reproduction oviparous.

Food includes small bony fishes, crustaceans and cephalopods.

Size : Maximum 84 cm; males maturing between 54 and 59 cm and reaching 84 cm; females maturing between 58 and 61 cm and reaching at least 73 cm.

Interest to Fisheries : None or limited, commonly taken by bottom trawlers and shore and boat anglers.

Literature : Garman (1913); Fowler (1941); Smith (1949); Bass, D'Aubrey & Kistnasamy (1975).

Remarks : As noted by Bass, D'Aubrey & Kistnasamy (1975a), this species is rather variable in colour pattern, showing ontogenetic and geographic variation as well as individual differences. Examination of considerable series of specimens in the collections of the J.L.B. Smith Institute of Ichthyology suggest that the range of variation in this species, from numerous small dark spots, lines of rosettes of spots and circular bars, lines of mostly circular bars partially enclosing light centres, through lines of mixed large light centred dark spots and circular bars, may grade into colour pattern of Poroderma marleyi with lines of large dark spots. This problem is being studied by the writer.

