

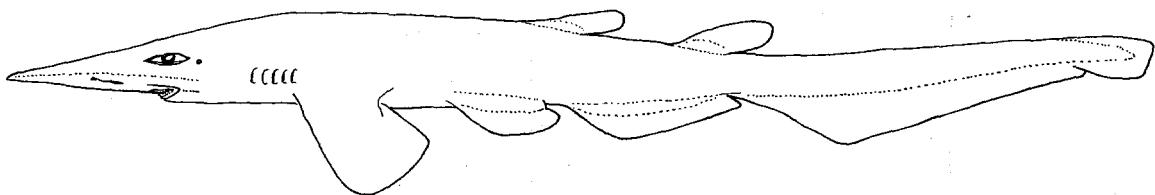
**Apristurus longicephalus** Nakaya, 1975

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**Apristurus longicephalus** Nakaya, 1975, Mem.Fac.Fish.Hokkaido Univ., 23(1):32, fig. 15-16. Holotype: Hokkaido University Laboratory of Marine Zoology, HUMZ 42399, 375 mm immature male. Type Locality: 33°13'N, 133°44'E, Tosa Bay, Kochi Prefecture, Honshu, Japan, western Pacific.

**Synonymy :** None.

**FAO Names :** En - Longhead catshark; Fr - Holbiche a grande trite; Sp - Pejegato cabezón.



**Field Marks :** An Apristurus with an unusually long snout, about 12% of total length.

**Diagnostic Features :** Body relatively slender, trunk slightly tapering toward head. Snout long, basally broad but distally narrowly parabolic and bell-shaped, preoral snout about 12% of total length; gill slits small, less than eye length; gill septa without projecting medial lobes or pleats, hardly incised; eyes rather small in the type, about 3% of total length; nostrils broad, their width about 1.3 times in internarial space; incurrent and excurrent apertures very large and oval, anterior nasal flaps long and angular; mouth fairly short, moderate-sized and broadly arched, with dental bands slightly expanded and with lower ones falling just behind uppers; mouth under eyes and upper labial furrows extending slightly in front of them; labial folds somewhat enlarged, with lower nearly transverse to body axis. Interdorsal space slightly greater than first dorsal base, about half preorbital snout; first dorsal fin smaller than second, its base about 2/3 length of second; origin of first dorsal opposite rear third of pelvic bases; second dorsal insertion opposite to anal insertion; pectoral fins rather small, anterior margins about 12% of total length; inner margins long, nearly length of pectoral bases; interspace between pectoral and pelvic bases very short, slightly less than prenarial length and about 6% of total length in holotype; pelvic fins moderately high and broadly rounded; anal fin very long, low, and angular, about a fifth as high as long, its base almost equal to prespiracular space and 15% of total length; caudal fin long and narrow, without a dorsal crest of enlarged denticles. Lateral trunk denticles of body with crowns fairly flat and well-separated, surface apparently smooth and without a feltlike or fuzzy texture. Colour grey-black, without conspicuous markings. Adult size unknown.

**Geographical Distribution :** Known only from the type locality (near Misaki, Japan).

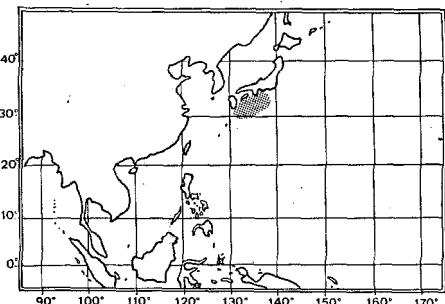
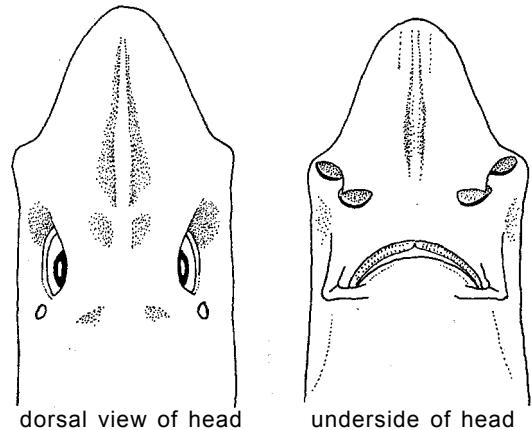
**Habitat and Biology :** Almost totally unknown, inhabits deep water, probably near the bottom.

**Size :** Maximum over 37.5 cm, but adult size unknown.

**Interest to Fisheries:** None.

**Literature :** Nakaya (1975); Springer (1979).

**Remarks :** Data from Nakaya (1975); this species was not examined by the writer. There are somewhat similar long-nosed Apristurus from off Australia and New Zealand, but these among other things differ from this species and all other members of the genus in having much longer, narrower, almost Mitsukurina-like snouts. At least one and possibly two new species may be represented.



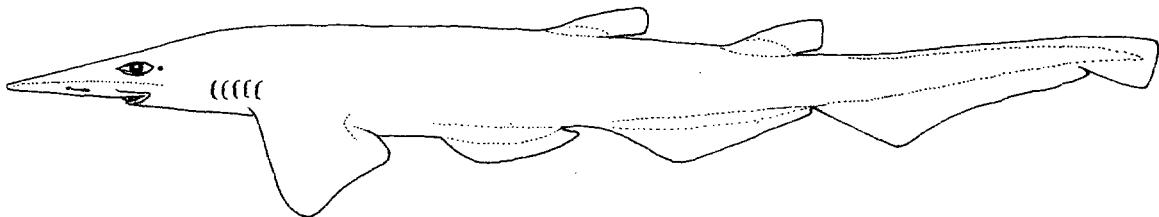
## **Apristurus macrorhynchus** (Tanaka, 1909)

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Scyliorhinus macrorhynchus Tanaka, 1909, J.Coll.Sci., Imp.Univ.Tokyo, 23:1. Holotype: Imperial University of Tokyo, no. 2153, 470 mm immature male. Type Locality: Near Misaki, Japan.

**Synonymy :** None.

**FAO Names :** En - Flathead catshark; Fr - Holbiche torazame; Sp - Pejegato chato.



**Field Marks :** See diagnostic features and key to species.

**Diagnostic Features :** Body relatively slender, trunk slightly tapering toward head. Snout moderately long, broad, and bell-shaped, preoral snout about 10 to 11% of total length; gill slits small, less than eye length; gill septa without projecting medial lobes; eyes rather small in adults, about 3% of total length; nostrils broad, their width 1.1 times the internarial space; encurrent and excurrent apertures moderately large and elongate-oval, anterior nasal flaps low and rounded; mouth long, large, and broadly arched, with dental bands not greatly expanded and with lower ones just behind uppers; mouth and labial furrows below eyes; labial folds not enlarged, with lower diagonal to body axis; mouth and teeth probably not enlarged in males. Interdorsal space almost twice first dorsal base, about equal to preorbital snout; first dorsal fin about two thirds as large as second, second dorsal base about 1.2 times the length of first; origin of first dorsal above posterior half of pelvic bases; second dorsal insertion somewhat in front of anal insertion; pectoral fins rather small, anterior margins about 11 to 13% of total length; inner margins fairly long, nearly length of pectoral bases; interspace between pectoral and pelvic bases short, about equal to preoral snout and about 8% of total length in adults; pelvic fins fairly low and broadly rounded; anal fin long, low, and angular, about four times as long as high, its base about equal to prebranchial space and 18 to 19% of total length in adults; caudal fin fairly long and narrow, without a dorsal crest of enlarged denticles. Lateral trunk denticles of body with crowns fairly flat and close-set, surface smooth and without a feltlike or fuzzy texture. Colour light grey brown above, whitish below and on fins. Adults moderately large, to about 67 cm.

**Geographical Distribution :** Western North Pacific: Japan (south eastern Honshu), and China (Taiwan Island).

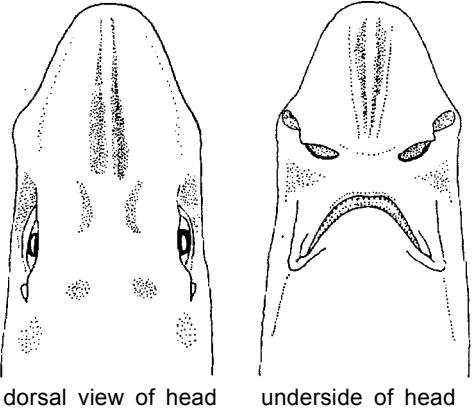
**Habitat and Biology :** A little-known deepwater bottom shark from the slopes off Japan and Taiwan Island. Oviparous, with one egg per oviduct.

**Size:** Maximum about 66 cm (adult female).

**Interest to Fisheries:** None.

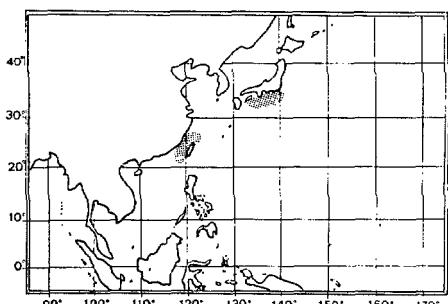
**Literature :** Nakaya (1975); Springer (1979).

**Remarks :** The account of this species follows Nakaya (1975).



dorsal view of head

underside of head



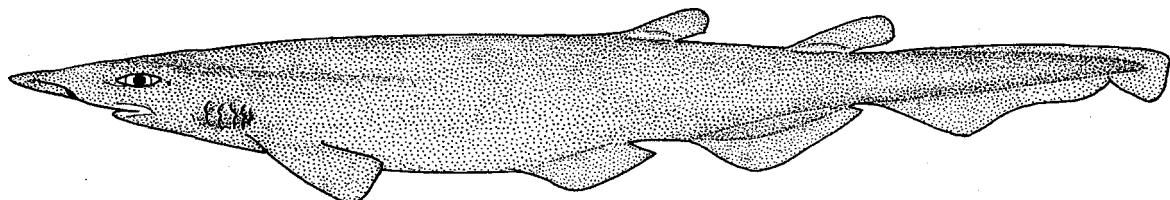
## **Apristurus maderensis** Cadenat & Maul, 1966

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Apristurus maderensis Cadenat & Maul, 1966, Bull. Inst. Fondam. Afr. Noire (A Sci. Nat.), 28(2):769, figs 1-4. Holotype: Museu Municipal do Funchal, MMF 18750, 668 mm adult female. Type Locality: Camara de Lobos, Madeira, eastern Atlantic, depth from 600 to 1000 m.

**Synonymy :** None.

**FAO Names :** En - Madeira catshark; Fr - Roussette de Madère; Sp - Pejegato de Madera.



**Field Marks :** At least in the holotype, greatly elongated medial projections on gill septa, possibly less developed in other specimens.

**Diagnostic Features :** Body relatively slender, trunk slightly tapering toward head. Snout moderately long, broad, and 'bell-shaped', preorbital snout about 8% of total length; gill slits short, considerably less than eye length; gill septa without pleats but moderately incised and with strongly projecting medial lobes; eyes rather small in adults, about 3% of total length; nostrils broad, their width about 1.1 times the internarial space; incurrent and excurrent apertures very large and oval, anterior nasal flaps long and angular; mouth long, large, and broadly arched, with dental bands slightly expanded and with lower ones falling well behind uppers; mouth and labial furrows extending slightly in front of eyes; labial folds not enlarged, with lower diagonal to body axis. Interdorsal space about twice length of first dorsal base, about equal to preorbital snout; first dorsal fin about half area of second, base of first about 3/4 of second; origin of first dorsal opposite last fourth of pelvic bases; second dorsal insertion slightly in front of anal insertion; pectoral fins rather small, anterior margins about 12% of total length; inner margins long, nearly length of pectoral bases; interspace between pectoral and pelvic bases moderately long, about equal to preorbital length and about 18% of total length in adult holotype; pelvic fins low and angular; anal fin fairly short, high, and angular, slightly more than three times as long as high, its base slightly greater than prespiracular space and 15% of total length in adults; caudal fin fairly short and broad, apparently without a dorsal crest of enlarged denticles. Lateral trunk denticles of body with crowns fairly flat and closely imbricated, surface fairly smooth and without a feltlike or fuzzy texture. Colour blackish, without conspicuous markings. Adults moderately large, adult female 67 cm.

**Geographical Distribution :** Eastern North Atlantic, Madeira; possibly also from Iceland and Bill Bailey, Lousy and Great Sole Banks, eastern North Atlantic slope. .

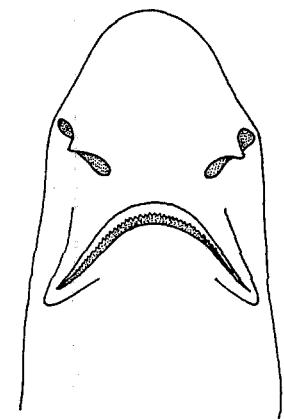
**Habitat and Biology :** Continental slopes of eastern North Atlantic on or near bottom at depths from 700 to 1500 m. Oviparous, apparently with a single egg per uterus.

**Size :** Maximum at least 68.1 cm for adult males and 66.8 cm for adult females.

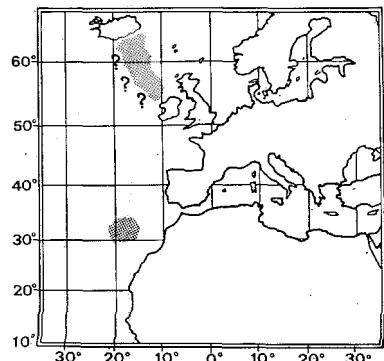
**Interest to Fisheries:** None.

**Literature :** Cadenat & Maul (1966); Nakaya (1975); Springer (1979).

**Remarks :** The account of this species follows Cadenat & Maul (1966). Seven specimens of an *Apristurus* in the collections of the Institut für Seefischerei, Hamburg, were examined by the writer in 1979 and found to be very similar to the type of *A. maderensis* as described by Cadenat & Maul. These specimens (labelled as LJVC "Apristurus F") were collected off Iceland and the Bill Bailey, Lousy and Great Sole Banks and are tentatively placed in *A. maderensis*.



underside of head



***Apristurus manis* (Springer, 1979)**

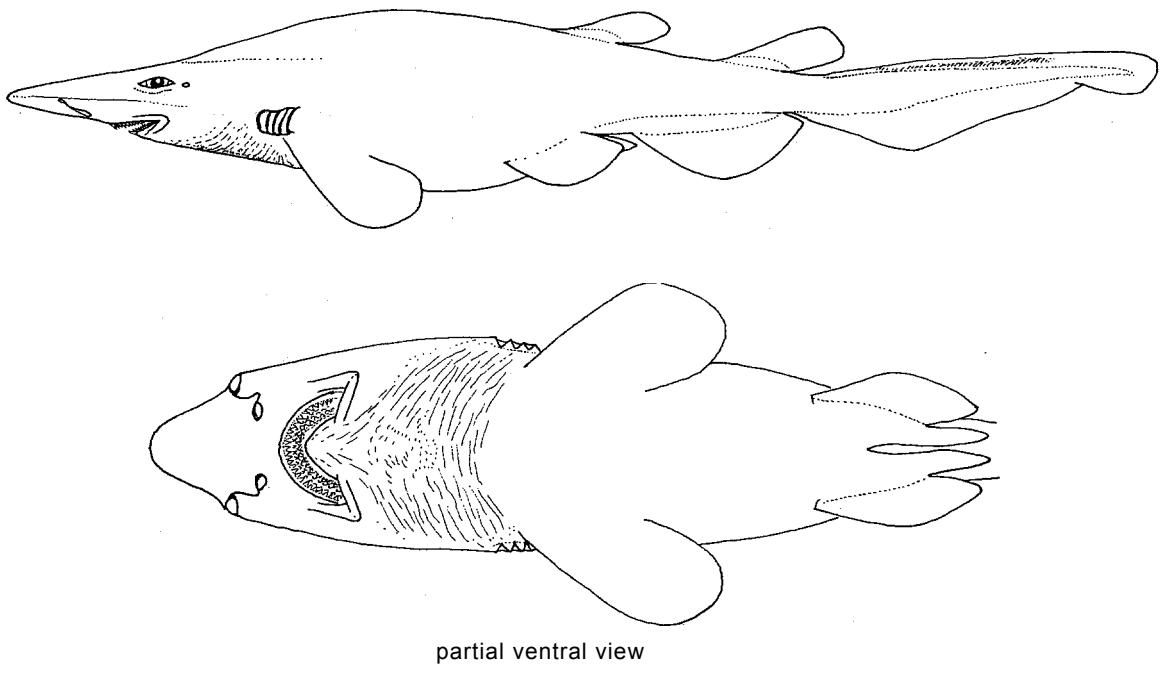
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*Parmaturus manis* Springer, 1979, NOAA Tech.Rep.NMFS Circ., (422):102, figs 60-63. Holotype: Museum of Comparative Zoology, Harvard, MCZ 38299, 328 mm immature female. Type Locality: 39°52'N, 70°50'W, southwest of Nantucket, Massachusetts, USA, in 731 to 841 m depth.

**Synonymy :** None.

Other Scientific Names Recently in Use : Apristurus profundorum (not Goode & Bean, 1896) of Springer (1966; see also Springer, 1979); Parmaturus manis Springer, 1979.

**FAO Names** : En - Ghost catshark; Fr - Holbiche fantôme; Sp - Pejegato fantasma.



partial ventral view

**Field Marks** : An Apristurus with a distinctively thick body tapering anteriorly as a wedge to the snout tip, very small eyes, anteriorly expanded mouth, very sparse erect denticles on body, a prominent caudal crest of denticles, and sometimes white fin tips.

**Diagnostic Features**: Body relatively stout (especially in adults), trunk strongly tapering toward head. Snout long, relatively narrow and bell-shaped, preorbital snout about 9 to 11% of total length; gill slits moderately large, but somewhat less than eye length; gill septa without pleats or projecting medial lobes, well incised; eyes rather small and all sizes, between 2 and 3% of total length; nostrils fairly broad, their width about 1.1 times in internarial space; incurrent and excurrent apertures very large and circular, anterior nasal flaps long and angular; mouth long, large, and broadly arched, particularly in adult males, with dental bands prominently expanded and with lower ones falling well behind uppers; mouth and labial furrows extending well in front of eyes; labial folds somewhat enlarged, but with lowers diagonal to body axis; mouth and teeth enlarged in adult males. Interdorsal space slightly greater than first dorsal base, about two-thirds of preorbital snout; first dorsal fin slightly smaller than second, its base of first over 3/4 length of second. Origin of first dorsal over or slightly anterior to pelvic midbases; second dorsal insertion opposite anal insertion; pectoral fins small, anterior margins about 8 to 13% of total length; inner margins long, nearly length of pectoral bases; interspace between pectoral and pelvic bases short, equal or less than preorbital length and about 9 to 12% of total length in young and adults; pelvic fins high and broadly rounded; anal fin rather short, high, and rounded, about three times as long as high, its base about equal to prespiracular space and 13 to 16% of total length in young and adults; caudal fin long and narrow, with a conspicuous crest of enlarged denticles on its dorsal margin. Lateral trunk denticles of body with crowns erect, unusually far from one another and not imbricate, and with a prickly but not feltlike texture. Colour grey or blackish, with light tips on pectorals and dorsals of young at least. Adults large, adult male 85 cm.

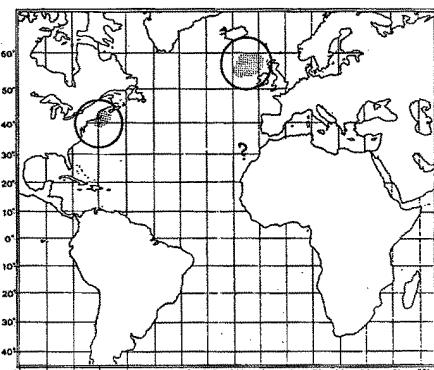
**Geographical Distribution**: Western North Atlantic off Massachusetts; eastern North Atlantic from Porcupine Bank west of Ireland; nominal "Apristurus profundorum" from off Mauritania (Golovan, 1976) possibly are this species also.

**Habitat and Biology** : A little known but singular bottom-dwelling catshark of the Atlantic continental slopes at depths from 658 to 1740 m.

**Size** : Females to at least 75.8 cm, adult males to 85.2 cm.

**Interest to Fisheries**: None.

**Literature** : Springer (1966, 1979).



**Remarks :** Springer (1966) confused small western North Atlantic examples of this species with A. profundorum, which also has a caudal crest of denticles. Later Springer (1979) named a new species for it, manis, and placed it in Parmaturus along with his new stensenii in a new subgenus Compagnoia. In 1979 the writer examined two large eastern Atlantic scyliorhinids in the Institut fur Seefischerei, Hamburg, that are apparently conspecific with manis, and the largest of which (an 852 mm adult male), is illustrated above. The rationale for placing this species and stensenii in Apristurus rather than Parmaturus is discussed in the remarks for this genus.

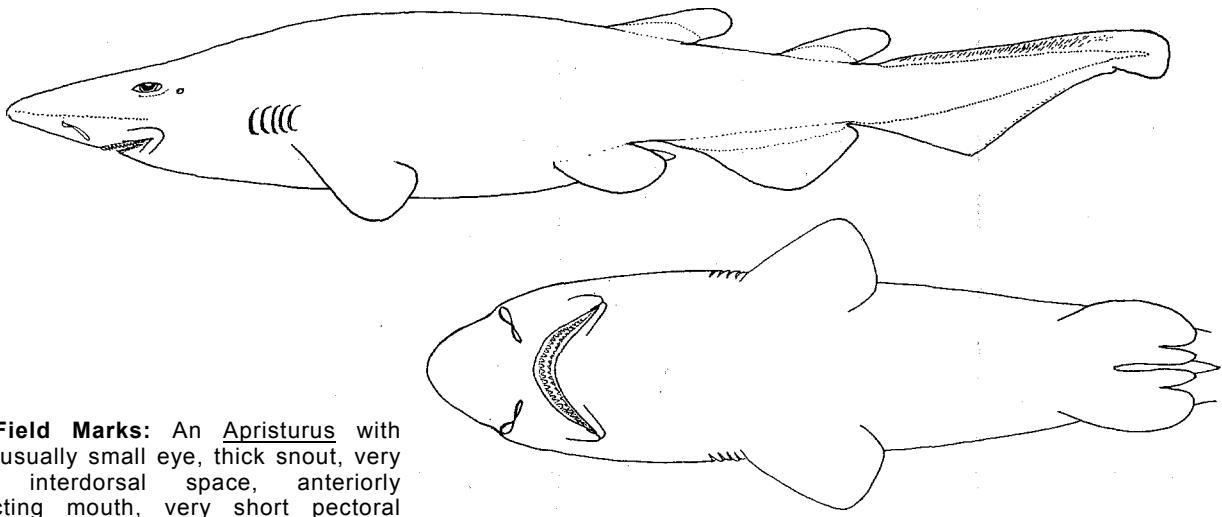
**Apristurus microps** (Gilchrist, 1922)

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Scyliorhinus microps Gilchrist, 1922, Rep. Fish. Mar. Biol. Surv. Union of South Africa, 2(Spec.rept. 3):46, pl. 7, fig. 1. Holotype: A specimen of unknown size (but probably small and below 300 mm judging from its proportions), now lost. Type Locality: Eastern South Atlantic west of Cape Town, South Africa, 33°45.8'S, 17°17.1'E, 1445 m depth.

**Synonymy :** None.

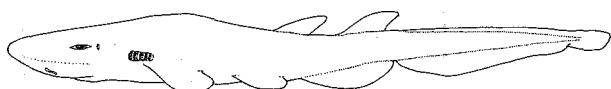
**FAO Names :** En - Smalleye catshark; Fr - Holbiche porc; Sp - Pejegato puerco.



partial ventral view

**Field Marks:** An Apristurus with an unusually small eye, thick snout, very short interdorsal space, anteriorly projecting mouth, very short pectoral inner margins, and a supracaudal crest of denticles.

**Diagnostic Features :** Body relatively stout, especially in subadults, trunk slightly tapering toward head. Snout moderately long, broad, and bell-shaped, preoral snout about 9 to 10% of total length; gill slits moderately large, somewhat less than or equal to eye length; gill septa without projecting medial lobes or pleats, well-incised; eyes very small, especially in subadults, less than 3% of total length; nostrils broad, width about 1.2 times in internarial space; incurrent and excurrent apertures very narrow and slitlike, anterior nasal flaps very low; mouth long, large, and broadly arched, with dental bands prominently expanded and with lower ones falling just behind uppers; mouth and labial furrows extending well in front of eyes; labial folds enlarged, but with lower diagonal to body axis. Interdorsal space equal to or slightly less than first dorsal base, one-third to two-fifths of preorbital snout; first dorsal fin about as large or slightly smaller than second, bases about equally long or first slightly shorter than second; origin of first dorsal about opposite last third of pelvic bases; second dorsal insertion behind anal insertion; pectoral fins rather small, anterior margins about 9 to 11% of total length; inner margins extremely short, about a third of pectoral bases; interspace between pectoral and pelvic bases short to moderately long, two-fifths to subequal to prespiracular length and about 6 to 14% of total length; pelvic fins high and broadly rounded; anal fin short, fairly high, and rounded, between three and four times as long as high, its base about equal to prespiracular space and 14 to 16% of total length; caudal fin slender to moderately broad, with a loose crest of enlarged denticles on dorsal caudal margin. Lateral trunk denticles of body with crowns erect and not closely imbricate, skin surface with a feltlike or fuzzy texture. Colour dusky brown or grey-brown to purplish-black, without conspicuous markings on fins. Adults probably large, adolescents to 54 cm.



holotype, after Gilchrist

**Geographical Distribution :** Eastern South Atlantic: Southwestern Cape Province, South Africa. ? Eastern North Atlantic: between Scotland and Iceland. ? Western North Atlantic: Off Newfoundland.

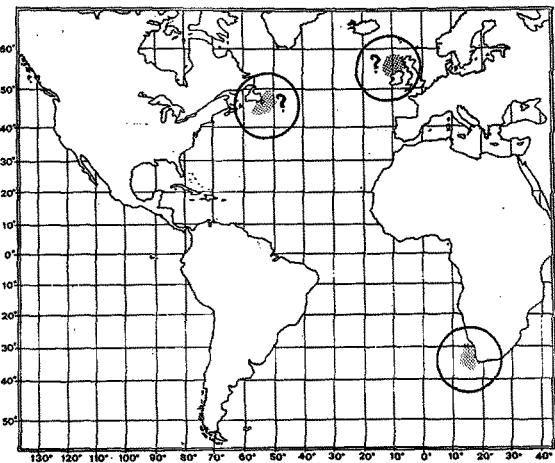
**Habitat and Biology :** A poorly known bottom-dwelling shark of the eastern and western Atlantic continental slopes, on or near the bottom, at depths of 1000 to 2000 m.

**Size :** Maximum over 54 cm (adolescent male tentatively referred to this species).

**Interest to Fisheries:** None.

**Literature :** Gilchrist (1922); Springer (1979).

**Remarks :** The holotype, of unknown size, was apparently discarded (P.C. Heemstra, pers.comm.). Ten specimens in the Institut fur Seefischerei, Hamburg, examined by the writer in 1979 (and labelled as LJVC "Apristurus B") fit this species well in most details, but disagree with Gilchrist's (1922) and Springer's (1979) characterizations in a few particulars, especially in having somewhat longer abdomen and shorter caudal fin, that may be size-related (assuming that the holotype was small). However, they agree with microps in having exceptionally short pectoral inner margins, thick snouts, thick bodies, broadly rounded fins, equal-sized dorsals with the origin of the first over the pelvic bases, unusually short interdorsal spaces, and very small eyes. These specimens are tentatively identified as Apristurus microps here, and were taken off the Cape region of South Africa (2 specimens), the eastern North Atlantic between Iceland and Scotland (4), and on the Newfoundland Bank (4) in the western Atlantic. The largest specimen, a 54 cm adolescent male from the eastern North Atlantic, is illustrated above.



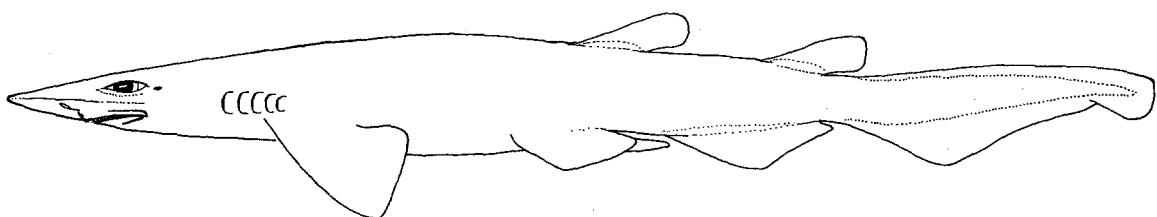
**Apristurus nasutus** de Buen, 1959

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Apristurus nasutus de Buen, 1959a, Bal.Mus.Nac.Hist.Nat., Chile, 27(3):176. Holotype: Estación de Biología Marina, Universidad de Chile, EBMCh. 10.184, 594 mm adult male, apparently lost? Type Locality: Near Valparaiso, Chile, eastern South Pacific, 400 m depth.

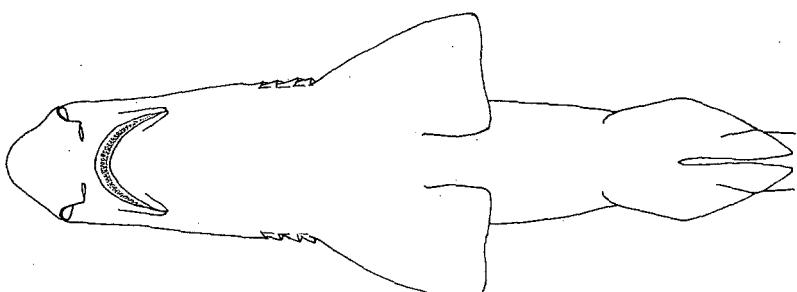
**Synonymy :** None.

**FAO Names :** En - Largenose catshark; Fr - Holbiche cyrano; Sp - Pejegato hocicón.



**Field Marks:** See diagnostic features and key to species.

**Diagnostic Features :** Body moderately slender, trunk slightly tapering toward head. Snout moderately long, broad, and bell-shaped, preoral snout about 7 to 8% of total length; gill slits of moderate size, much less than eye length; gill septa without projecting medial lobes or pleats but with incised margins; eyes small in adults, between 3 and 4% of total length; nostrils narrow, their width about equal to inter-narial space; incurrent and excurrent apertures moderately large and oval, anterior nasal flaps long and angular; mouth long, moderately large, and broadly arched, with dental bands not expanded and with lower ones falling just behind uppers; mouth and labial furrows extending slightly in front of eyes; labial folds not enlarged, with lowers



partial ventral view

diagonal to body axis; mouth and teeth not enlarged in males. Interdorsal space about 1.5 times first dorsal base, slightly greater than preorbital snout and considerably greater than preoral snout; first dorsal fin about as large as second, bases about equally long; origin of first dorsal about opposite pelvic midbases; second dorsal insertion about opposite anal insertion; pectoral fins moderately large, anterior margins about 12 to 14% of total length; inner margins long, about 3/5 of pectoral bases; interspace between pectoral and pelvic bases fairly short, about 2/3 of prebranchial length and about 14% of total length in adults; pelvic fins low and angular; anal fin moderately long, high, and angular, slightly more or less than three times as long as high, its base slightly greater than prespiracular space and 12 to 15% of total length in adults. No dorsal crest of enlarged caudal denticles. Lateral trunk denticles of body with crowns fairly flat, skin surface smooth and without feltlike or fuzzy texture. Colour medium brown, grey or grey-blackish, without conspicuous markings on fins. Adults moderately large, to 56 cm.

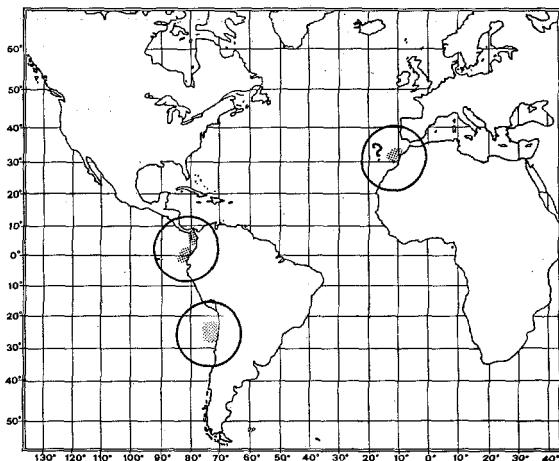
**Geographical Distribution :** Eastern Pacific: Gulf of Panama, Ecuador and central Chile. Also nominally recorded from the eastern North Atlantic off Morocco, but identification uncertain.

**Habitat and Biology :** A little-known bottom-dwelling shark of the upper continental slopes on or near the bottom at 400 to 925 m depth in the eastern Pacific. Nominal records off Morocco have this species at 500 to 1000 m depth, but this is uncertain.

**Size :** Maximum total length 59 cm, adults males from 51 to 59 cm, females not reported.

**Interest to Fisheries:** None.

**Literature :** Golovan (1978); Springer (1979).



**Remarks :** It is uncertain at present if this species occurs in the eastern North Pacific or not, where it may have been confused with *A. brunneus*. Eastern Atlantic records by Golovan (1978) may be based on some other species. The illustration is based on drawings by the writer of an adult male from Valparaiso, Chile.

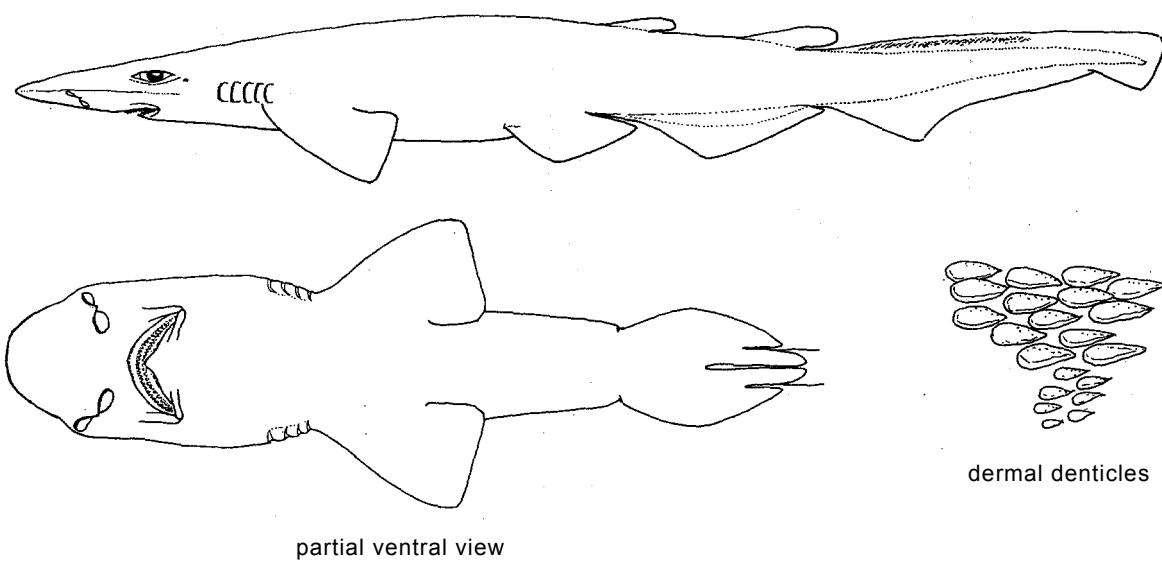
**Apristurus parvipinnis** Springer & Heemstra, 1979

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**Apristurus parvipinnis** Springer & Heemstra, in Springer, 1979, NOAA Tech.Rep.NMFS Circ., (422):25, fig. 15. Holotype: U.S. National Museum of Natural History, USNM 206178, 476 mm male. Type Locality: Gulf of Mexico off Pensacola, Florida, USA, in 1115 m depth.

**Synonymy:** None.

**FAO Names:** En - Smallfin catshark; Fr - Holbiche petites ailes; Sp - mocho.



partial ventral view

dermal denticles

**Field Marks:** One of several species of Apristurus with the first dorsal fin about half the area of the second. See diagnostic features and key to species for other characters.

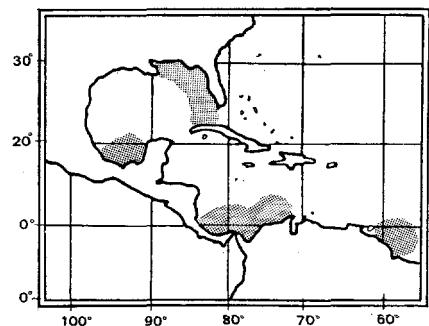
**Diagnostic Features :** Body relatively slender, trunk slightly tapering toward head. Snout moderately long, broad, and bell-shaped, preoral snout about 9 to 10% of total length; gill slits small, considerably less than eye length; gill septa without projecting medial lobes or pleats but more or less incised; eyes rather small in adults, about 3% of total length; nostrils broad, their width about 1.2 times in internarial space; incurrent and excurrent apertures fairly broad and oval, anterior nasal flaps high and angular; mouth short, relatively small and broadly arched, with dental bands moderately expanded and with lower ones falling slightly behind uppers; mouth and labial furrows hardly extending in front of eyes; labial folds not enlarged, with lowers diagonal to body axis; mouth and teeth not enlarged in males. Interdorsal space about twice the first dorsal base, slightly less than preorbital snout; first dorsal fin half to one fourth the area of second, base of first about two-thirds of second; origin of first dorsal behind pelvic insertions, between them and anal origin; second dorsal insertion well in front of anal insertion; pectoral fins small to moderately large, anterior margins about 10 to 15% of total length; inner margins moderately long, at least half length of pectoral bases; interspace between pectoral and pelvic bases moderately long, slightly less than prespiracular length and about 11 to 14% of total length in adults; pelvic fins low and subangular; anal fin long, low, and angular, about five times longer than high, base slightly greater than prespiracular space and 16 to 18% of total length in adults; caudal fin fairly broad, with moderately enlarged denticles present along its dorsal margin. Lateral trunk denticles of body with flat, close-set crowns, body surface fairly smooth and not with a feltlike or fuzzy texture. Colour blackish, without conspicuous markings. Adults moderately large, to 51 cm.

**Geographical Distribution :** Western North Atlantic, northeastern Gulf of Mexico off Florida, USA, Gulf of Campeche, Mexico, Caribbean Panama, Caribbean Colombia, and off French Guiana.

**Habitat and Biology :** Found on the continental slope, on or near the bottom, at depths of 636 to 1115 m. One of the commonest Apristurus species in the Gulf of Mexico, along with A. laurussonii. Oviparous, apparently laying one egg per oviduct at a time.

**Size :** Maximum 52.1 cm for females, 47.6 cm for males.

**Interest to Fisheries :** Relatively common in deep trawl catches, but apparently not utilized commercially.



**Literature :** Springer (1966, 1979).

**Remarks :** Springer (1966) had originally termed this species A. indicus, but it is apparently not conspecific with that Indian Ocean species and was renamed by Springer & Heemstra (in Springer, 1979).

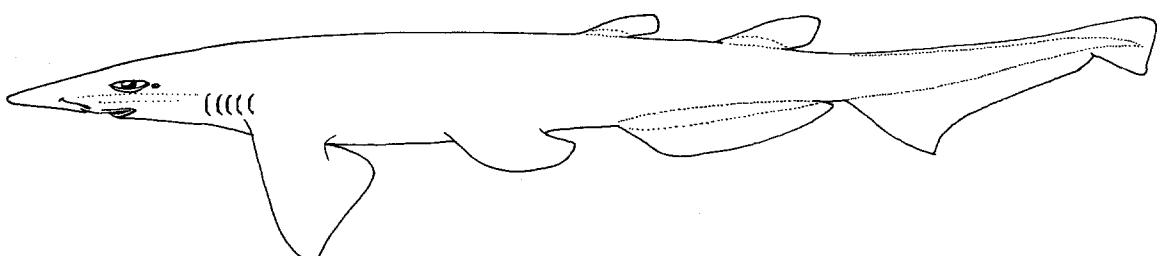
**Apristurus platyrhynchus (Tanaka, 1909)**

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Scyliorhinus platyrhynchus Tanaka, 1909, J.Coll.Sci.Imp.Univ.Tokyo, 23:4. Holotype: Imperial University collection, Tokyo, Japan, no. 2154, 800 mm male, presumably adult. Type Locality: Off Japan.

**Synonymy :** None.

**FAO Names :** En - Spatulasnout catshark; Fr - Holbiche spatule; Sp - Pejegato espatulado.



**Field Marks:** One of several Apristurus with the first dorsal fin half area of second or less. See diagnostic features and key to species for further characters.

**Diagnostic Features:** Body relatively slender, trunk slightly tapering toward head. Snout moderately long, broad, and bell-shaped, preoral snout about 8% of total length; gill slits small, less than eye length; gill septa without projecting medial lobes or pleats, not strongly incised; eyes rather small in adults; about 3% of total length; nostrils broad, their width about 1.2 times internarial space; incurrent and excurrent apertures narrowly oval, anterior nasal flaps low and angular; mouth short, moderate-sized, and broadly arched, with dental bands little expanded and with lower one falling just behind uppers; mouth and labial furrows mostly below eyes; labial folds not enlarged, with lowers diagonal to body axis. Interdorsal space about twice first dorsal base, slightly less than preorbital snout; first dorsal fin about half as large as second, base of first about two-thirds length of second; origin of first dorsal posterior to pelvic insertions; second dorsal insertion well in front of anal insertion; pectoral fins moderate sized, anterior margins about 14% of total length; inner margins long, nearly length of pectoral bases; interspace between pectoral and pelvic bases short, slightly less than prespiracular length and about 10% of total length in adults; pelvic fins fairly high and broadly rounded; anal fin long, low and subangular, about five times as long as high, base slightly greater than prebranchial space and 19% of total length in adults; caudal fairly broad, without a dorsal crest of enlarged denticles. Lateral trunk denticles of body with crowns flat and closely imbricating, surface smooth and without a feltlike or fuzzy texture. Colour probably dark, without conspicuous markings. Adults moderately large, adult female 64 cm.

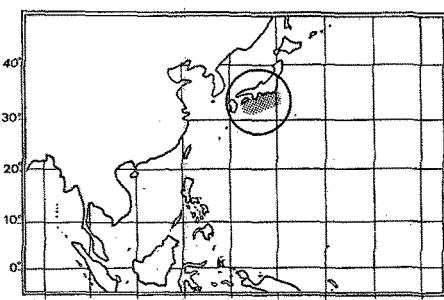
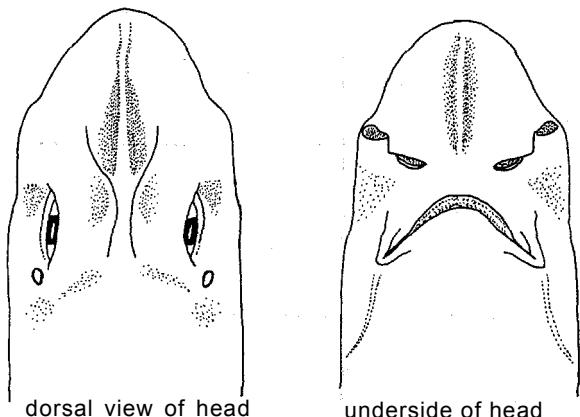
**Geographical Distribution :** Western North Pacific: Japan (Honshu).

**Habitat and Biology :** A little-known deepwater species of the continental slopes. Oviparous, probably one egg per oviduct laid at a time.

**Size:** Maximum about 80 cm.

**Interest to Fisheries:** None at present.

**Literature :** Nakaya (1976); Springer (1979).



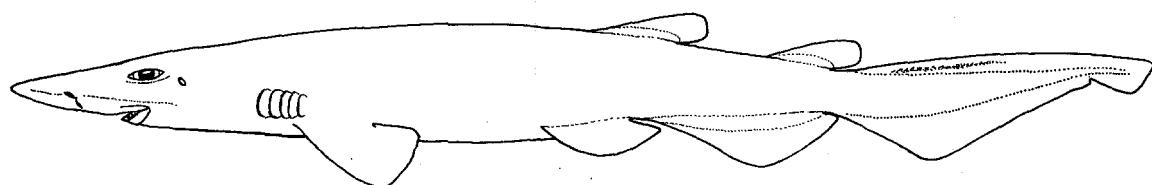
**Apristurus profundorum (Goode & Bean, 1896)**

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Scylliorhinus profundorum Goode & Bean, 1896, Oceanic Ichthyol., Smithson. Inst., Spec-Bull., 17, pl. 5, fig. 16. Holotype: U.S. National Museum of Natural History, USNM 35646, 510 mm adolescent male. Type Locality: Off Delaware Bay, in 1492 m depth.

**Synonymy :** None.

**FAO Names :** En - Deepwater catshark; Fr - Holbiche papoila; Sp - Pejegato abisal.



**Field Marks:** Thick snout, anteriorly extended mouth with expanded dental bands, rather large gill slits, narrow internarial, erect denticles and fuzzy skin texture, high rounded fins, caudal crest.

**Diagnostic Features:** Body relatively slender, trunk slightly tapering toward head. Snout moderately long, very broad, and bell-shaped, preoral snout about 9% of total length; gill slits moderately large but longest somewhat less than eye length; gill septa without projecting medial lobes or pleats, but well-incised; eyes rather small, about 3% of total length; nostrils broad, their width about equal to internarial space; incurrent and excurrent apertures rather narrowly oval, anterior nasal flaps low and broadly triangular; mouth moderately long, large, and broadly arched, with dental bands partly expanded and with lower ones falling just behind uppers; mouth and labial furrows extending well in front of eyes; labial folds somewhat enlarged, with lower nearly transverse to body axis. Interdorsal space slightly greater than first dorsal base, about two-thirds of preorbital snout; first dorsal fin about as large as second, bases about equally long; origin of first dorsal slightly behind pelvic midbases; second dorsal insertion about opposite anal insertion; pectoral fins rather small, anterior margins about 11% of total length; inner margins fairly long, about half length of pectoral bases; interspace between pectoral and pelvic bases moderately long, slightly less than prespiracular length and about 15% of total length; pelvic fins high and broadly rounded; anal fin moderately long, fairly high, and subangular, short, high and rounded, slightly more than three times as long as high, its base slightly greater than prespiracular space and 14% of total length; caudal fin fairly broad, with a well-developed crest of enlarged denticles on dorsal caudal margin, with crest denticles directed obliquely downward. Lateral trunk denticles of body with crowns partly erect, giving skin surface a feltlike or fuzzy texture. Colour brownish, probably dark brown in life. Adults moderately large, as adolescent male is 51 cm long.

**Geographical Distribution :** Western North Atlantic: Off Delaware Bay (Atlantic coast of USA). ? Eastern North Atlantic: Mauritania.

**Habitat and Biology :** A poorly-known species, from the western Atlantic continental slopes at 1492 m; depth range in the eastern North Atlantic (if this species and not *A. manis*) 1300 to 1600 m.

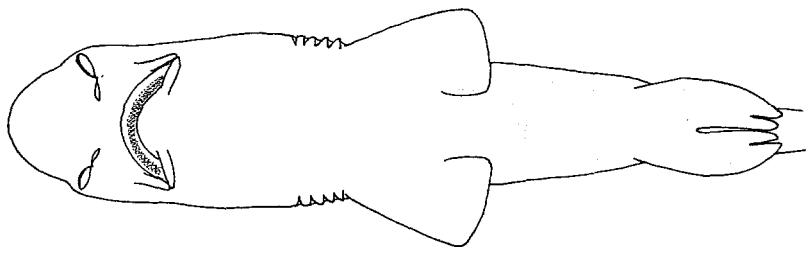
**Size:** Adolescent at 51 cm, maximum unknown.

**Interest to Fisheries:** None.

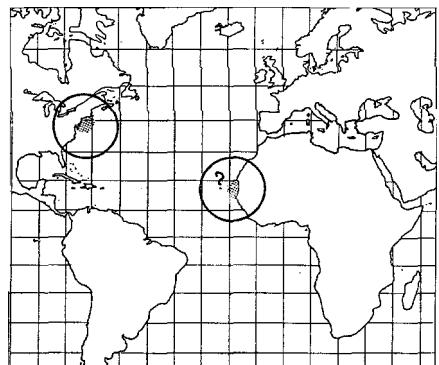
**Literature :** Bigelow & Schroeder (1948); Springer (1966, 1979); Golovan (1976, 1978).

**Remarks :** This catshark is only known for certain from the badly preserved holotype, which is here illustrated from original drawings by the writer. Springer (1966) had previously mistaken another species for *A. profundorum*, but later (1979) redescribed it as *Parmaturus manis*. This was supposed to differ from *A. profundorum* in having a caudal crest of enlarged denticles, but examination of the holotype of *A. profundorum* showed that it too has a noticeable caudal crest.

It is uncertain whether eastern Atlantic records of *A. profundorum* by Golovan (1976, 1978) are this species or *A. manis*.



partial ventral view



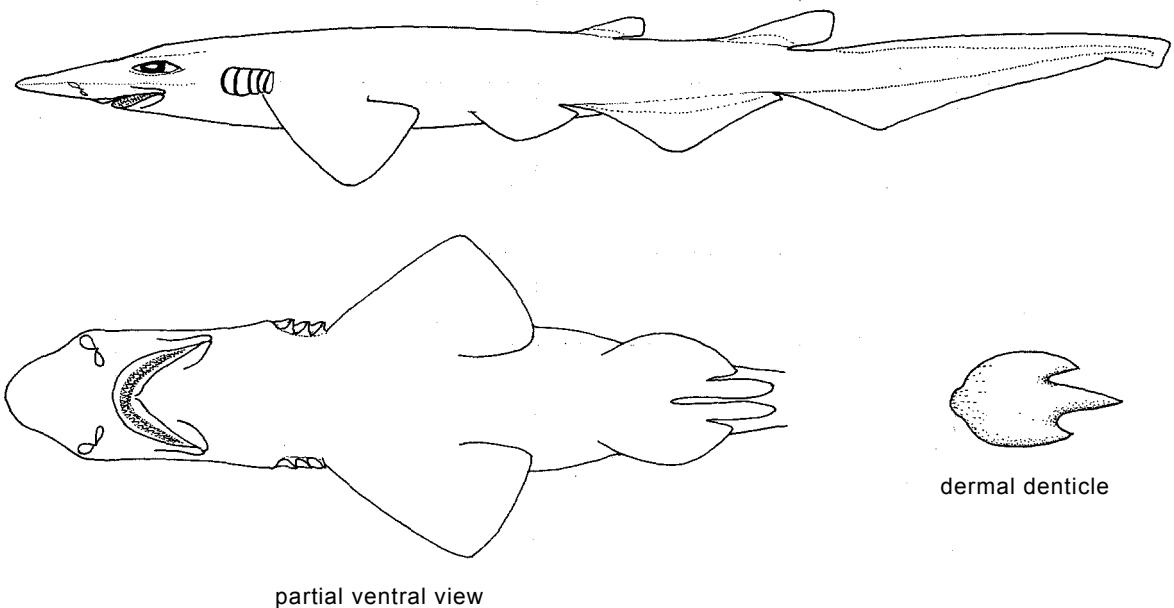
**Apristurus riveri** Bigelow & Schroeder, 1944

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**Apristurus riveri** Bigelow & Schroeder, 1944, Proc. New England Zool. Club, 23:23, pl. 7. Holotype: Museum of Comparative Zoology, Harvard, MCZ 36092, 407 mm female. Type Locality: North coast of Cuba, 23°24'N, 80°44'W, western North Atlantic, at 1061 m.

**Synonymy :** None.

**FAO Names :** En - Broadgill catshark; Fr - Holbiche grandes oreilles; Sp - Pejegato agallón.



partial ventral view

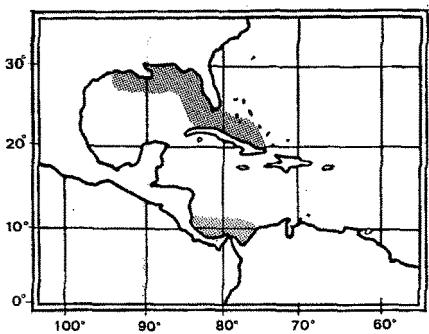
dermal denticle

**Field Marks :** An Apristurus with a slender body, broad internarial, large gill slits, long anteriorly expanded mouth, first dorsal fin half area of second, moderately high and angular anal fin, narrow caudal fin, dark coloration with unmarked fins.

**Diagnostic Features :** Body relatively slender, trunk slightly tapering toward head. Snout moderately long, rather narrow, and bell-shaped, preoral snout about 7 to 10% of total length; gill slits large, the longest 2/3 to slightly greater than eye length; gill septa without projecting medial lobes or pleats, but well-incised; eyes small in adults, about 3 to 4% of total length; nostrils narrow, their width about 1.4 to 1.7 times in internarial space; incurrent and excurrent apertures broadly oval, anterior nasal flaps high and angular; mouth long (especially in adult males), large, and broadly arched, with dental bands prominently expanded and with lower ones falling well behind uppers; mouth and labial furrows extending well in front of eyes; labial folds somewhat enlarged, with lower diagonal to nearly transverse to body axis; mouth and teeth greatly enlarged in males. Interdorsal space almost or quite twice first dorsal base, half to two-thirds of preorbital snout; first dorsal fin half area of second or less, base of first about two-thirds the length of second; origin of first dorsal over rear half of pelvic bases; second dorsal insertion over or in front of anal insertion; pectoral fins rather small, anterior margins about 10 to 12°10 of total length; inner margins moderately long, half to two-thirds length of pectoral bases; interspace between pectoral and pelvic bases moderately short, somewhat less than preorbital length and about 9 to 12% of total length in adults; pelvic fins fairly low and rounded or subangular; anal fin fairly long, moderately high, and angular, about four times as long as high, base slightly less than or greater than prespiracular space and 13 to 16% of total length in adults; caudal fin narrow, without a developed crest of enlarged denticles on dorsal caudal margin, though denticles there are slightly enlarged. Lateral trunk denticles of body with crowns close-set and partly erect, giving the skin surface a feltlike or fuzzy texture. Colour dark brown, without conspicuous markings. Adults small, to 48 cm.

**Geographical Distribution :** Western North Atlantic: Cuba, northern Gulf of Mexico, Panama.

**Habitat and Biology :** An uncommon catshark of the western Atlantic continental slopes on or near bottom at 860 to 1098 m depth. Oviparous, with one egg per oviduct laid at a time. This shark has sexual dimorphism unusually well-developed in adults, with the males having much larger conical teeth without cusplets (cusplets present in females) and much longer and wider mouths and jaws than females. Springer (1979) interpreted this as a male adaption for grasping females in courtship and copulation, and suggested that the enlarged conical teeth of males would do less damage than smaller teeth with cusplets. It is uncertain, however, why one species of Apristurus has sexual heterodonty (and 'heterognathia') so strongly developed, while others that may live in the same habitat alongside it do not.



**Size :** Maximum 46 cm, adult males 43 to 46 cm, adult females 40 to 41 cm.

**Interest to Fisheries :** None.

**Literature :** Bigelow & Schroeder (1944, 1948); Springer (1966, 1979).