

A CATALOGUE OF THE SHORE FISHES COLLECTED BY THE STEAMER ALBATROSS ABOUT THE HAWAIIAN ISLANDS IN 1902.

By JOHN OTTERBEIN SNYDER,

Assistant Professor of Zoology in Leland Stanford Junior University.

This paper contains a list of the species of fishes obtained by the United States Fish Commission steamer *Albatross*, Chauncey Thomas, commander, in the shore and reef work about the Hawaiian Islands during the spring and summer of 1902, under the general direction of Dr. David Starr Jordan and Dr. Barton Warren Evermann. In addition to the fishes collected from the tide pools and from the shallow water near shore, a few are included which were taken from depths of 75 fathoms or more, while some have come from near the surface far out at sea. Several species occurring in the rivers and ponds are also noted. Many of the rarer forms, which are only occasionally caught by the fishermen, were secured through the kindly interest of Mr. E. Louis Berndt, inspector of fisheries in Honolulu.

The writer takes pleasure in expressing his obligations to Dr. Charles H. Gilbert, who had immediate supervision of the zoological work of the *Albatross*, and also to Dr. Jordan, for much help and for many valuable suggestions in the preparation of this paper. Dr. Jordan's advice has been followed in all matters of nomenclature.

The following genera and species, believed to be new to science, are described:

Veternio, new genus of Leptocephalidæ.	Gymnothorax berndti.	Apogon erythrinus.
Collybus, new genus of Bramidæ.	Gymnothorax mucifer.	Cirrhitilabrus jordani.
Carcharias insularum.	Gymnothorax xanthostomus.	Pseudojulis cerasina.
Carcharias nesiotes.	Gymnothorax waialuæ.	Hemipteronotus jenkinsi.
Veternio verrens.	Uropterygius leucurus.	Chaetodon corallicola.
Sphagebranchus flavicaudus.	Exonantes gilberti.	Holacanthus fisheri.
Callechelys luteus.	Carangus cheilio.	Stephanolepis pricei.
Moringua hawaiiensis.	Carangoides ajax.	Antennarius nexilis.
Gymnothorax nuttingi.	Collybus drachme.	Antennarius duescus.

CARCHARIIDÆ.

1. *Carcharias melanopterus* Quoy & Gaimard. Honolulu market.

The following measurements, recorded in centimeters, were taken from a female specimen: Total length 156; tip of snout to dorsal 52; to eye 12.8; to first gill-opening 30.5; to pectoral 36.2; length of gill area 7.7; height of first, second, third, and fourth gill-slits 6.3; fifth 5.6; anterior margin of pectoral 28; base of pectoral 10.8; posterior margin of pectoral 27.3; axil of pectoral to ventral 36.8; anterior margin of ventrals 12; free margin of ventrals 10; base of ventrals 10; axil of ventrals to front of anal 13.3; base of anal 8.3; anterior margin of anal 10; base of anal to caudal pit 9; base of dorsal 11; anterior margin of dorsal 19.5; free edge of dorsal 15.3; distance between dorsals 38; base of second dorsal 7.6; second dorsal to caudal pit 10; upper lobe of caudal 38; spread of caudal 35.5; lower lobe of caudal 19; width of mouth 17; preoral length of snout 9.5; girth behind pectorals 63.5; girth at front of ventrals 53.

2. *Carcharias phorcys* Jordan & Evermann. Honolulu; Hanalei Bay, Kauai.

3. *Carcharias insularum* Snyder, new species. Plate 1, fig. 1.

Head, measured to last gill-opening, 0.32 of length (tip of snout to caudal pit); depth at front of pectorals 0.163; at front of ventrals 0.16; snout 0.33 of head; interorbital width 0.5; pectoral 0.25 of length; upper lobe of caudal 0.38.

Mouth semicircular, its width equal to distance between tip of snout and posterior border of eye, distance between edge of mouth and tip of snout 1.7 times width of mouth, or a little more than distance between nostrils; upper teeth serrated from base to tips, the lower ones smooth on base, upper parts weakly serrated; teeth of upper jaw a little broader at base than they are high, the cutting edges of median ones straight; lateral teeth with edges slightly concave, concavity of outer edges deepening somewhat as they approach corners of mouth; teeth not pointing outward in either jaw, those of lower jaw much more slender than those above, the bases somewhat wider than height of teeth; cutting edges concave. There are 30 rows on each jaw, those of the two median rows minute or absent. Tip of pectoral fin acutely rounded; first dorsal broadly rounded; second dorsal slightly smaller than anal; caudal very large, under side of upper lobe with a deep notch; free edges of dorsals, pectorals, and ventrals concave; claspers of male 1.5 times as long as ventral fin is high.

In life, bluish slate color, somewhat lighter below; first dorsal broadly tipped with lighter color; second dorsal, pectorals, ventrals, and caudal with slightly darker tips. In alcohol the fins and upper parts of the body are rather indistinctly spotted with a darker shade than that of body; spots of body somewhat larger than eye, the spaces between them somewhat wider than diameters of spots; spots on fins smaller and more closely crowded.

The following measurements were taken before the specimen, a male, was preserved: Total length 213 centimeters; tip of snout to dorsal 71; to eye 17.8; to first gill-opening 40.5; to pectoral 48; length of gill area 10; height of first gill-slit 7.5; of second 8.2; of third 8.8; of fourth 8.2; of fifth 5.7; length of pectoral 39; base of pectoral 14; free edge of pectoral 37; axil of pectoral to ventral 47; anterior margin of ventral 14; free margin of ventral 12; base of ventral 12.7; axil of ventral to front of anal 17.8; base of anal 9; anterior margin of anal 12.7; anal to caudal pit 8.2; base of dorsal 21; anterior margin of dorsal 32; free edge of dorsal 23.5; first to second dorsal 47; base of second dorsal 6.3; front margin of second dorsal 9; second dorsal to caudal pit 12.7; upper lobe of caudal 59.5; lower lobe of caudal 30; spread of caudal 61; girth at front of ventrals 66; girth at front of pectorals 78.5.

Type, No. 50859, U. S. Nat. Mus., station 3815, off Diamond Head, Oahu.

Seven young were obtained from a large female of the same species taken at station 4111, between Molokai and Oahu. They measured 61 cm. in length. Color bluish, pectorals, second dorsal, anal, and lower caudal lobe broadly tipped with black; ventral surface of body and paired fins, except the terminal dark areas, yellowish; tip of first dorsal yellowish. The head measured to last gill-opening 0.35 of length; depth at front of pectorals 0.18; depth of caudal peduncle 0.18 of head; snout 0.34; interorbital width 0.48. Curve of mouth elongate instead of circular, as in adult, its width being an eye's diameter less than distance between tip of snout and anterior border of orbit. Distance between edge of mouth and tip of snout 1.1 times width of mouth. Height of dorsal 0.16 of length of head and body; length of pectoral 0.29; upper lobe of caudal 0.38. Dorsal and pectorals broadly rounded. Two of the specimens are kept as cotypes, Nos. 12788 and 12789, L. S. Jr. Univ. Mus.

This shark appears to be closely related to *Carcharias lamia* Rafinesque, of the Atlantic.

4. *Carcharias nesiotus* Snyder, new species. Plate 1, fig. 2.

Head, measured to last gill-opening, 0.32 of length (tip of snout to caudal pit); depth at front of pectorals 0.18; at front of ventrals 0.16; snout 0.32 of head; interorbital width 0.42; pectoral 0.27 of length; upper lobe of caudal 0.36. Mouth elliptical, not semicircular in shape, width equal to distance from tip of snout to posterior edge of orbit; width of space between tip of snout and anterior edge of mouth equal to distance between outer edges of nostrils, 0.26 of head; teeth of upper jaw strongly serrated, those near center of jaw symmetrical in shape, the width at base equal to or a little greater than height; laterally the outer edges of teeth grow concave, then notched; inner edges becoming convex, teeth pointing away from symphysis; teeth of lower jaw narrow, with wide bases, their edges smooth or very slightly serrated; symmetrical in shape on both middle and lateral parts of jaws. Pectorals pointed at tips when depressed, reaching as far back as posterior part of first dorsal, free edge concave; first dorsal bluntly pointed; second dorsal and anal equal in size, edge of anal deeply notched; edge of upper caudal lobe notched, distance from notch to tip of lobe contained 0.22 of length of lobe.

Color, bluish gray above, the fins growing darker toward the tips; ventral surface lighter.

The following measurements were made of a male taken at station 3902, off the northern coast of Molokai. Total length 224 cm.; tip of snout to dorsal 71; to eye 17.8; to gill-opening 44; to pectoral 54; length of gill area 13.5; height of first gill-slit 6.5; of second 7; of third and fourth 6.5; of fifth 5.8; anterior margin of pectorals 49; base of pectoral 14; posterior margin of pectoral 42; axil of pectoral to ventral 49.5; anterior margin of ventral 12.8; free margin of ventral 12.8; base of ventrals

10.8; axil of ventral to front of anal 19; base of anal 8.3; anterior margin of anal 12; anal to caudal pit 13.4; base of first dorsal 19.7; anterior margin of first dorsal 30.5; free edge of dorsal 26; distance between dorsals 58; base of second dorsal 7; second dorsal to caudal pit 19; upper lobe of caudal 61; spread of caudal 66; lower caudal lobe 29; width of mouth 20.5; preoral length of snout 15.

Type, No. 50860, U. S. Nat. Mus., a female about 1.48 meters long, taken at French Frigate Shoals. A smaller specimen, also a female, from Laysan Island, does not differ from the type except that it is darker in color, the under parts being quite dusky. Cotype, No. 12790, L. S. Jr. Univ. Mus.

A large and voracious shark seen everywhere about the islands. Compared with *Carcharias japonicus* of Japan, it is more robust in form, having a shorter and broader head.

5. *Prionace glauca* (Linnaeus). Station 3801, 28° 31' N., 141° 47' W.

A female taken with a handline contained 47 embryos measuring 39 centimeters in length. The following measurements of the adult were made: Tip of snout to end of caudal lobe 274 cm.; to dorsal fin 110; to eye 23; to first gill-opening 55; to pectoral 65; length of gill area 18; height of first gill-slit 5; of second and third 7.5; of fourth 7; of fifth 5; length of pectoral 62; base of pectoral 23; free edge of pectoral 56; axil to ventral 77; anterior margin of ventral 17.5; free margin of ventral 20.5; base of ventral 16.5; axil of ventral to front of anal 24; base of anal 13.5; anterior margin of anal 17; anal to caudal pit 22; base of dorsal 23; anterior margin of dorsal 30.5; free edge of dorsal 28; posterior edge of first dorsal to second dorsal 63.5; base of second dorsal 13; front margin of second dorsal 13.5; posterior end of second dorsal to caudal pit 21.5; upper lobe of caudal 58.5; spread of caudal 67; lower caudal lobe 37; girth at front of ventral 76; girth at front of pectorals 91.

SPHYRNIDÆ.

6. *Sphyrna zygaena* (Linnaeus). Station 3844, southern coast of Molokai.

SQUALIDÆ.

7. *Squalus mitsukurii* Jordan & Snyder. Honolulu; station 4085, off the north coast of Maui.

Head, measured to last gill-opening, 0.263 of length (snout to caudal pit); measured to first gill-opening 0.22; width of head 0.5 its length to last gill-opening; snout 0.417 of head measured to first gill-opening; interorbital space 0.417; height of first dorsal fin 0.5; second dorsal 0.29.

Teeth in both jaws similar, except that the lower ones are slightly larger than those above; placed in three closely apposed rows, pointing away from middle of jaw; outer edge with a deep notch, inner serving as cutting edge; distance between mouth and tip of snout 0.5 of length of head to first gill-opening; width of mouth 0.29; length of fold at corner of mouth equal to distance between nostrils; distance between nostril and tip of snout 0.26 of head; between nostril and middle of mouth equal to distance between nostril and tip of snout; distance between spiracles 0.44 of head; length of gill area 0.22; diameter of eye 0.21.

Length of exposed portion of first dorsal spine equals the distance from tip of spine to tip of fin; height of spine equal to length of base of fin. Second spine 0.75 as high as fin; distance between dorsals 3.66 times length of snout; pectoral, when depressed, reaching to a vertical through posterior edge of base of dorsal, the tip bluntly pointed; edges of pectoral and first dorsal concave, that of second dorsal emarginate; edge of ventrals straight; distance from anterior edge of anal opening to tip of depressed ventral 0.417 of head; upper caudal lobe 0.27 of the length; a low lateral keel on caudal peduncle.

Color, dark slaty blue above, lighter below.

Some of the specimens examined have the heads slightly narrower than examples of the same species from Japan, while others are like them in every particular.

DASYATIDÆ.

8. *Dasyatis sciera* Jenkins. Honolulu.

MYLIOBATIDÆ.

9. *Aetobatus narinari* (Euphrasen). Honolulu.

LEPTOCEPHALIDÆ.

10. *Leptocephalus marginatus* (Valenciennes). Honolulu; Hanalei Bay, Kauai.

11. *Congrellus bowersi* Jenkins. Honolulu.

VETERNIO Snyder, new genus.

Veternio Snyder, new genus of *Leptocephalidae*; type, *Veternio verrens*, new species.

Body without scales; lateral line present; tail much longer than head and trunk; head long, snout pointed; lower jaw much shorter than upper. No teeth; vomer, maxillaries, and mandibles with broad, smooth, hard areas; tongue free; nostrils not tubular; the anterior ones near tip of snout, with narrow rims; posterior ones oblong, near the eyes; gill-openings separate, with broad, lunate slits; fins well developed, dorsal inserted above base of pectorals. Color uniform.

The absence of teeth serves to distinguish *Veternio* from closely related genera.

12. *Veternio verrens* Snyder, new species. Plate 2, fig. 3.

Head, from tip of snout to upper edge of gill-opening, 0.64 of trunk; depth 0.42 of head; eye 0.13; snout 0.26; length of pectoral 0.36. Color plain; fins edged with black.

Head very long and pointed, upper profile sloping gently from tip of snout to occiput; interorbital space flat, its width 0.16 of head; snout slender, projecting beyond lower jaw a distance equal to 0.5 of diameter of eye; cleft of mouth somewhat oblique, extending beyond eye a distance equal to 0.3 of pupil; no teeth, the vomer, maxillaries, and mandibles with broad, flat, smooth surfaces; tongue free, tip rounded; lips thin, simple; anterior nostrils at end of snout, with low rims and posterior flaps; posterior nostrils close to upper anterior part of eye, without rims, rounded oval in shape; a pair of large mucus tubes at tip of snout, a tube immediately behind anterior nostril and one on each side of snout just above the latter; gill-openings lunate, their width about 0.15 of length of head; lateral line somewhat above middle of body anteriorly, gradually extending downward and reaching middle of body a short distance beyond the vent. Pectoral inserted just below middle of body, obtusely pointed, upper rays longest, lower border convex; dorsal inserted above middle of base of pectoral; height of dorsal fin at a point above tip of pectoral equal to vertical diameter of eye; at a point twice the length of head behind vent the length of rays equals length of snout; 65 rays between its insertion and a vertical through anal opening; anal inserted immediately behind vent, its height equal to 0.5 the length of snout.

Color in spirits brown, darker above than below; pectorals brownish, growing black toward tips; dorsal brownish, shading into black along edge; anal bordered with black, the band about half as wide as pupil and sharply defined.

A single mutilated specimen from the Honolulu market measures 270 mm. from snout to vent. The tail was severed 320 mm. behind the vent.

Type, No. 50862, U. S. Nat. Mus., Honolulu.

(*verrens*, trailing, in reference to the long tail.)

OPHICHTHYIDÆ.**13. *Leiuranus semicinctus* (Lay & Bennett).**

Two specimens from Honolulu. One measures 275 mm., its tail equal in length to head and body; 23 black bands behind interorbital band. The other measures 177 mm., its tail the length of snout longer than head and body; 24 dark bands behind the interorbital band. An example from Ishigaki, Japan, measures 435 mm., length of tail equal to distance between vent and gill-opening; 22 bands behind interorbital; teeth uniserial.

14. *Microdonophis fowleri* Jordan & Evermann. Honolulu.**15. *Sphagebranchus flavicaudus* Snyder, new species. Plate 2, fig. 4.**

Head, measured to upper edge of gill-opening, 0.055 of the length, 0.105 of trunk including head, 0.12 of tail; depth 0.26 of head; snout 0.18. Snout long, slender, and sharp, projecting beyond lower jaw, tip of latter reaching beyond eye a distance equal to diameter of pupil; eye midway between tip of snout and angle of mouth, its diameter contained 3 times in length of snout; anterior nostril with a short tube on ventral side of snout a little nearer its tip than to border of eye; posterior nostril without tube, placed below anterior margin of eye; upper lip with a fold extending from nostril to angle of mouth; teeth of jaws in a single series; a group of 4 canines at end of upper jaw, all being beyond end of lower jaw when it is closed; a few sharp teeth on anterior part of vomer; gill-openings inferior, converging, the distance between them about equal to diameter of eye; width of gill-opening 0.13 of head. No fins; tail pointed.

Color in alcohol, pale olive, the tail nearly white.

The description is from the type, No. 50863, U. S. Nat. Mus., 367 mm. long, from station 3874, between Maui and Lanai, 21 to 28 fathoms.

Two examples from off the northeast coast of Hawaii. One from station 4055, depth 50 to 60 fathoms (cotype, 7509, L. S. Jr. Univ. Mus.), measures 245 mm. The head equals 0.06 of the length; 0.1 of head and trunk. In life it was pinkish anteriorly, the posterior third tinged with lemon yellow. The other specimen, from station 4061, depth 24 to 83 fathoms, measures 220 mm.; head 0.065 of length, 0.12 of head and trunk. In life it was light orange, fading to lemon yellow posteriorly; an indistinct, light, median, dorsal stripe extending from occiput to tip of tail; ventral surface slightly tinged with purple, the tint extending about twice the length of head beyond anal opening; side of head with two white spots, the anterior one just behind eyes, the posterior one indistinctly connected over the occiput with its fellow on opposite side.

16. *Callechelys luteus* Snyder, new species. Plate 3, fig. 5.

Head, measured to upper edge of gill-opening, 0.06 of the length, 0.095 of head and trunk, 0.15 of tail; snout 0.14 of head; cleft of mouth 0.29. Body extremely long and slender, tapering gradually from head to tail; depth at gill-opening 0.37 of head; width of body 0.72 of depth; gill-pouches greatly expanded, making head deeper and broader than body; snout sharp, projecting two-thirds of its length beyond lower jaw; eye midway between tip of snout and angle of mouth; tongue small, free, on sides and at tip; teeth on jaws and vomer projecting backward, movable though not depressible; 3 large canines just posterior to nostril tubes, the median one being anterior to tip of lower jaw; 2 short rows of teeth on vomer, a single row on maxillaries and on lower jaw; anterior nostril with a tube equal in length to diameter of eye, inferior in position, halfway between tip of snout and end of closed lower jaw; posterior nostrils on lip, below the eye, provided with an anterior, valve-like flap; gill-openings slit-like, inferior, distance between lower edges of openings equal to half the length of snout; width of gill-opening equal to distance from tip of snout to posterior border of eye. Dorsal inserted on occiput above angle of mouth; height at a point above gill-slit equal to distance between the tip of the snout and the posterior border of the eye, above anal opening equal to width of gill-slit; fin not reaching tip of tail; membrane thin, the rays distinctly visible. Anal inserted immediately behind vent, its height equal to half the width of gill-opening. Tip of tail sharp; no caudal fin; pectorals absent.

Color in alcohol white, rather finely blotched with brownish black, the spots not so numerous on ventral surface as elsewhere; fins colored like body. In life, the upper parts, including dorsal fin, are white mottled with black and lemon yellow; under parts white, rather sparsely mottled with black, except on throat, where the spots are numerous.

One specimen, 83 cm. long, from station 3821, near the southern coast of Molokai. Caught while swimming about the ship at night, attracted by the lights.

Type, No. 50864, U. S. Nat. Mus., southern coast of Molokai.

MORINGUIDÆ.

17. *Moringua hawaiiensis* Snyder, new species. Plate 3, fig. 6.

Head, measured to gill-opening, 0.065 of length; tail 0.3; depth 0.24 of head. Body cylindrical and extremely elongate, the tail tapering to a sharp point; snout pointed, its length 0.15 of head; lower jaw projecting beyond upper a distance equal to diameter of pupil; cleft of mouth extending beyond eye a distance equal to pupil; teeth on jaws and vomer sharp, long, and fang-like anteriorly; tongue adnate to floor of mouth; eye very small, the diameter equal to about 0.2 of snout; gill-opening a vertical slit, equal to 0.6 of length of snout; lateral line slightly arched above branchial chamber, discontinued about a head's length from tip of tail; number of pores 113. Pectorals present, minute, the rays easily distinguishable; the base equal to half the gill-opening, length a little less than diameter of pupil; dorsal and anal fins scarcely developed, indicated by slight ridges commencing about a head's length behind anal opening, growing larger and more distinct in region where lateral line ceases; caudal fin distinct, pointed, its length equal to width of interorbital space.

Color in alcohol pale brown, no spots or bars.

One specimen, 320 mm. long, from Honolulu reef. Type, No. 50865, U. S. Nat. Mus., Honolulu.

Closely related to *M. javanica* of the East Indies, but differs from that species as described, in having pectoral fins with distinct rays, longer head, and longer tail.

MURÆNIDÆ.

18. *Muræna kailuæ* Jordan & Evermann. Station 3881, Napili Harbor, Maui; Honolulu.

Muræna lampra Jenkins, Bull. U. S. Fish Com. 1902, 423, fig. 3.

Muræna kauila Jenkins, l. c., 424, fig. 4.

Color in life, light brown; dorsal half of body with dark-brown vertical bars, which fade out and disappear below and become indistinct on tail; everywhere with light-colored ocellated spots, elongate vertically, fused together, forming narrow vertical bands on dorsal and anal fins; crossbands on belly and chevrons on lower jaw and throat; white spots and bands clear and bright below and on throat; soiled white or light gray on upper and posterior parts; dark portions bounding the spots and bars, brownish black; snout, throat, and sides of head suffused with bright orange red; both pairs of nasal tubes bordered with same color; traces of brick red on anterior part of dorsal fin and on body

19. *Gymnothorax laysanus* (Steindachner). Honolulu; Hilo.

20. *Gymnothorax meleagris* (Shaw). Honolulu.

21. *Gymnothorax gracilicauda* Jenkins. Station 3834, southern coast of Molokai.

One specimen, 130 mm. long, from the coral rocks.

Head, measured to gill-opening, 0.125 of length, 0.23 of tail.

Color in spirits white, tinged with brown, spotted or clouded with dark brown, the markings rather indefinitely arranged in crossbands. The brown figures of the body extend upward on the dorsal; the fin is bordered with white; anal white.

22. *Gymnothorax steindachneri* Jordan & Evermann. Honolulu.

23. *Gymnothorax undulatus* (Lacépède). Honolulu; station 3824, off the southern coast of Molokai, in 222 to 498 fathoms.

24. *Gymnothorax thalassopterus* Jenkins. Honolulu.

25. *Gymnothorax nuttingi* Snyder, new species. Plate 4, fig. 7.

Head, measured from tip of snout to gill-opening, 0.145 of the length, 0.28 of head and trunk, 0.31 of tail; depth 0.5 of head; cleft of mouth 0.45; snout 0.19. Brown with white spots. Snout rounded, jaws equal, closing completely; lips very thick; teeth in a single series, firmly embedded, close-set; largest below middle of snout, growing gradually smaller posteriorly; basal halves with finely serrated edges; no median fangs; vomer with very short, blunt teeth; eye on vertical passing midway between tip of snout and corner of mouth; distance between eyes 0.74 of the snout; anterior nostril tube equal in length to half diameter of eye; posterior nostril located above and just anterior to margin of eye, its opening with a low rim; gill-opening a narrow slit equal to vertical diameter of eye, situated on a level with pupil; origin of dorsal on a vertical anterior to gill-opening a distance equal to length of snout, the membrane fleshy, though not greatly thickened; height in region of vent equal to length of snout; anal inserted just behind vent, its height near middle of tail equal to diameter of orbit; tail not slender and pointed, but rather stubby, the dorsal, caudal, and anal forming a bluntly rounded terminal fin.

Color in spirits brown, covered with white spots; those on head minute and close together, scarcely discernible on snout and end of lower jaw; on the body, larger and more elongate, growing round on tail, where their diameter is about equal to half that of pupil; gill-opening and corner of mouth brown; dorsal spotted like tail, the spots on edge of fin elongate, narrow, and close together, coalescing posteriorly to form a white border; anal spotted, with a white border.

The species is represented by a single individual, 79 cm. long, obtained in the Honolulu market. Type, No. 50866, U. S. Nat. Mus.

Of the spotted Hawaiian eels this species can only be confused with *Gymnothorax goldsboroughi*. The latter may be distinguished at a glance by the slender, pointed tail, the larger, circular spots, and dark throat-patch, its most striking characters.

Named for Prof. Charles Cleveland Nutting.

26. *Gymnothorax goldsboroughi* Jordan & Evermann. Honolulu.

27. *Gymnothorax leucacme* Jenkins. Honolulu.

28. *Gymnothorax pictus* (Ahl). Honolulu; Puako Bay, Hawaii.

29. *Gymnothorax berndti* Snyder, new species. Plate 4, fig. 8.

Head, measured to gill-opening, 0.15 of the length, 0.27 of tail; depth 0.58 of head; snout 0.21; cleft of mouth 0.5. Profile, a gently sloping straight line between tip of snout and posterior part of

interorbital space, whence it abruptly curves upward over the greatly swollen occipital region; snout slender and pointed; lower jaw projecting slightly beyond upper; mouth closing completely; teeth in a single series in each jaw, large, smooth-edged, close set, firmly embedded, the anterior ones somewhat longer than the others; median canines absent; five small teeth on the vomer; nostril tubes equal in height to diameter of pupil; posterior nostrils without rims, located above and just posterior to border of eye; orbit round; width of space between eyes equal to half the distance between tip of snout and center of pupil; gill-opening located on a level with eye, the slit equal in width to diameter of eye; origin of dorsal on a vertical midway between gill-opening and corner of mouth, fin membrane thick and fleshy; height of fin near middle of tail equal to half the length of snout; anal inserted immediately behind vent, appearing as a ridge of skin, the highest part about 0.6 diameter of eye; length of caudal equal to vertical diameter of eye.

Color gray, with fine brown reticulations over which is a coarse network of brown bands.

Color in alcohol white, tinged with brown, more clear along the upper lip, on lower jaw, and on belly; finely clouded and reticulated with brown, except on jaws and anal fin, all overlaid with a brown-colored, coarse network of rather broad bands, the meshes becoming finer on head and broken up into elongate, crooked spots on jaws; gill-opening brown; dorsal with oblique bars which connect with reticulations of body; anal blackish brown, with a broad, white border.

This description is of the type, No. 50867, U. S. Nat. Mus., an example 93 cm. long, obtained in the Honolulu market through the kindness of Mr. E. Louis Berndt. Two other specimens of about the same size were likewise obtained. One has the fine reticulations less distinct than those of the type and the bands of the coarse ones a little narrower, about equal to width of pupil; the snout measures 0.22 of the head, jaws equal. The other, a female, 78 cm. long (cotype, No. 12791, L. S. Jr. Univ. Mus.), when compared with the type has a more slender head, the occipital region being less swollen; the color is similar, except that the bands of the large reticulations are narrower and the dorsal is conspicuously, though narrowly, edged with white; there are two large, depressible fangs in the anterior median portion of the upper jaw.

G. berndti may be distinguished from all other Hawaiian eels by the broad brown reticulations on the body.

Named for Mr. E. Louis Berndt, the efficient inspector of fisheries in Honolulu.

30. *Gymnothorax mucifer* Snyder, new species. Plate 5, fig. 9.

Head, measured to gill-opening, 0.43 of trunk; depth 0.44 of head; snout 0.21; cleft of mouth 0.43. Snout rather slender and pointed, jaws equal, closing completely; teeth in one series, slender, lance-like with slight constrictions near base, their edges smooth; 3 depressible median canines in upper jaw, the longest (posterior) one equal in length to diameter of eye; a row of small, sharp teeth on the vomer; eye midway between tip of snout and angle of mouth; width of space between eyes contained twice in snout; gill-opening a narrow slit equal to diameter of eye, located on a level with upper lip; nostril tubes equal in length to half diameter of eye; posterior nostrils with scarcely perceptible rims, located above and just anterior to eye; origin of dorsal anterior to gill-opening a distance equal to space between tip of snout and posterior border of eye; height of fin above gill-opening equal to diameter of eye, about 1.33 times as high near middle of tail; the membrane not very fleshy; anal inserted immediately behind vent, appearing for much of the length like a thickened fold of the skin.

Color in alcohol, rich dark brown with flakes of white, which are gathered in clouds and more or less definite vertical bars; the flakes scattered rather evenly on head, scarcely perceptible on lower jaw and snout; throat and belly lighter than other parts, the white and brown being about equal; dorsal growing darker toward the edge, where it is nearly black, with white flakes like those of the body arranged in oblique bars; anal edged with white; corner of mouth dark; no spot at gill-opening.

The species is represented by a single example, type, No. 50868, U. S. Nat. Mus., from the Honolulu market. It measures 34 cm. from tip of snout to vent. The tail, which has been injured, several centimeters having been lost, is 37.5 cm. in length.

31. *Gymnothorax xanthostomus* Snyder, new species. Plate 5, fig. 10.

Head, measured to gill-opening, 0.125 of the length, 0.22 of tail; depth 0.68 of head; snout 0.2; cleft of mouth 0.62. Snout acutely rounded, lower jaw projecting slightly; profile from tip of snout to interorbital area convex and gently rising, that of occipital region rising abruptly, nuchal muscles well developed; diameter of eye 0.4 length of snout; width of space between eyes 0.78 of snout; mouth closing completely, the cleft extending about one-third its length beyond posterior margin of

orbit; teeth of jaws in a single series close-set and firmly imbedded; those at symphysis small; lateral ones large anteriorly, growing gradually smaller posteriorly, the basal two-thirds of their edges denticulate; a median, depressible canine near tip of upper jaw; vomer without teeth; anterior nostril tube equal in length to diameter of pupil; posterior nostril with a minute rim; gill-opening oval, the diameter equal to 1.5 times that of eye, the lower margin on a level with mouth. Origin of dorsal on a vertical passing midway between corner of mouth and anterior edge of gill-opening; membrane fleshy; height of fin near vent, 0.75 of the snout; anal inserted immediately behind the vent, where it is but a low ridge of skin; much higher and less fleshy posteriorly; height near its middle portion equal to half the length of snout; caudal slightly longer than diameter of eye.

Color in life, yellowish olive on anterior third, becoming a rich brown posteriorly. Head and body covered with conspicuous, light, ocellated spots, the light part of which is clearly defined, the dark part more intense next the white, growing diffuse without; spots on head very small, 0.1 to 0.2 diameter of eye, placed from 1 to 3 times their width from each other, their centers tinged with yellow; behind the gill-opening the spots grow rapidly larger for a short distance, then very gradually increase in size to the tail, where they are nearly as large as the eye and 1 to 2 or 3 times their diameter apart; posteriorly and on the fins the spots are pure white or cream colored; opercles with a brownish black margin; mouth, within and at corners, bright lemon yellow.

The color in alcohol differs but little from that of the living specimen.

Described from the type, No. 50869, U. S. Nat. Mus., 91 cm. long, obtained in the Honolulu market. Of two other examples from the same place, one agrees closely with the type, except that the lower jaw projects beyond the upper a distance equal to the diameter of the eye; belly without spots. The other (cotype, No. 12792, L. S. Jr. Univ. Mus.) has the body very thick and robust, nuchal region greatly enlarged; head 0.134 of length, 0.23 of tail; depth 0.6 times length of head.

This species may be known from all other Hawaiian eels by the yellow mouth and the very large, dark-bordered, white spots.

32. *Gymnothorax waialuæ* Snyder, new species. Plate 6, fig. 11.

Head, measured to gill-opening, 0.125 in the length; depth 0.5; tail 0.55; snout 0.2 of head; cleft of mouth 0.4. Body compressed, the width in middle of trunk equal to half the depth; interorbital space slightly convex; jaws equal; cleft of mouth extending beyond eye a distance equal to longitudinal diameter of eye; width of suborbital space equal to vertical diameter of eye; gill-opening an oblique slit equal to vertical diameter of eye; teeth in jaws mostly long, sharp, and depressible, the two in anterior median part of upper jaw longest; those below eye in two series, the outer ones short and close-set; three short, sharp teeth on vomer; anterior nostril tubes near tip of snout, their height equal to diameter of eye; posterior nostrils without rims, located above and a little anterior to eyes; dorsal inserted on head anterior to gill-opening; fin highest posteriorly, its height behind middle of tail equal to longitudinal diameter of eye; anal inserted immediately behind the vent, about half as high as dorsal; caudal slightly longer than height of dorsal.

Color in alcohol, white tinged with yellow, with 20 black bands, nearly all encircling the body and extending on fins; tip of snout white, tip of tail black; the first black band covers snout except the tip between the nostrils, extends backward beyond eye, and sends a line downward to corner of mouth, where it meets a round, black blotch; chin and throat white; sides of lower jaw black; a white space between eye and corner of mouth; the second band passes over occiput, not complete below; third band incomplete, passing over back between gill-openings, a dusky prolongation passing downward behind gill-opening; other bands complete, anterior ones broader above than below, posterior ones of about equal width throughout; a narrow, dusky stripe extends forward along lower surface from vent to a point a little anterior to gill-openings.

This species closely resembles *G. leucacme* and may eventually prove to be the young of that form. The species differ in color and in dentition. The light spaces on the body of *G. leucacme* are reddish brown; on the anal fin they are white, on the dorsal reddish brown bordered with white near edge of fin. Caudal tipped with white; snout reddish brown. Teeth in a single series, those of the jaws not depressible, except 2 or 3 on anterior median portion of upper jaw.

A single specimen, 107 mm. long, from a small tide pool in the reef at Waialu Bay, Oahu. Type, No. 50870, U. S. Nat. Mus.

33. *Echidna zebra* (Shaw). Honolulu.

34. *Echidna nebulosa* (Ahl). Honolulu.

35. *Echidna vineta* Jenkins. Honolulu.

36. *Uropterygius marmoratus* (Lacépède). Many young individuals collected, as follows:

No. of specimens.	Length.	Station.	Locality.	Depth.
	<i>mm.</i>			<i>Fath.</i>
5	33 to 50	3847	South coast of Molokai	23 to 24
2	73 87	3850	.....do.....	43 46
1	110	3872	Between Maui and Lanai	32 43
12	76 120	3876	.....do.....	28 43

In life, the young are dark brown, the throat and lower jaw much lighter, almost white in some specimens. There are no dark markings as in the adult. The mucus pores on the head are white.

The following measurements are in hundredths of the length:

Length in millimeters	119	109	106	.79
Length of head	0.10	0.11	0.105	0.11
Length of head and trunk .....	.45	.47	.46	.44
Depth of body .....	.035	.035	.04	.045

37. *Uropterygius leucurus* Snyder, new species. Plate 6, fig. 12.

Head, measured to gill-opening, 0.12 of the length; tail 0.54; depth 0.38 of head; snout 0.2; cleft of mouth 0.36; lower jaw shorter than upper, tip extending to base of nostril tubes; teeth of jaws in two series, outer ones small and close-set, inner ones fang-like and widely spaced; a median, depressible fang in upper jaw; a single row of sharp teeth on vomer; anterior nostrils with tubes equal in length to diameter of eye; posterior nostrils without rims, located above eyes; eye located above middle of cleft of mouth; gill-opening a horizontal slit equal to diameter of eye. The dorsal fin becomes evident at a point about half the length of head from tip of tail, it being represented anteriorly by a mere fold of the skin which extends to occiput; caudal pointed; a mere trace of an anal which joins the caudal.

Color brown, finely spotted above with white; ventrally the spots become elongate and unite, also increasing in size until on the belly the color is white with fine reticulations of brown; upper parts with figures formed by the union of elongate spots; end of snout, upper lip, lower jaw, and throat white; fin around end of tail white.

This species resembles the young of *U. marmoratus*. It differs in color, that form being neither spotted nor otherwise figured with white. The jaws of *U. marmoratus* are equal, and no dorsal fin is evident on the tail.

One specimen, 112 mm. long, was taken in 28 fathoms of water, station 3874, between Maui and Lanai. Type, No. 50871, U. S. Nat. Mus.

ALBULIDÆ.

38. *Albula vulpes* (Linnaeus). Hanalei Bay, Kauai.

CLUPEIDÆ.

39. *Etrumeus micropus* (Schlegel). Honolulu.

ENGRAULIDÆ.

40. *Anchovia purpurea* (Fowler). Honolulu.

SYNODONTIDÆ.

41. *Trachinocephalus myops* (Forster). Honolulu; Hanalei Bay, Kauai.

42. *Synodus varius* (Lacépède). Honolulu.

43. *Saurida gracilis* (Quoy & Gaimard). Hanalei Bay, Kauai.

BELONIDÆ.

44. *Belone platyura* Bennett. Honolulu.

45. *Athlennes hians* (Cuvier & Valenciennes). Lahaina, Maui.

HEMIRHAMPHIDÆ.

46. *Hyporhamphus pacificus* (Steindachner). Laysan Island.
 47. *Hemiramphus depauperatus* Lay & Bennett. Honolulu; station 3834, southern coast of Molokai, depth 13 fathoms.
 48. *Euleptorhamphus longirostris* (Cuvier). Honolulu.

EXOCETIDÆ.

49. *Exocetus volitans* Linnæus.

An example came aboard ship at night somewhere between stations 3804 and 3805, about 24° N. by 151° W.; another at station 3808, near Oahu. These have not been compared with specimens from the Atlantic. The ventrals are inserted midway between tip of snout and base of eighth ray of anal in one individual; between snout and tenth ray in the other. The pectorals extend to the base of the caudal; the first ray simple, the second divided, the third forming tip of fin. The dorsal and anal each have 13 rays, the former inserted immediately above the latter; base of anal longer than that of dorsal by an amount equal to space between the two posterior rays. The length of the ventrals is 0.56 of the base of anal. There are 35 scales in a series between upper edge of base of pectoral and the caudal, 21 or 22 between occiput and dorsal fin. Head measured to end of opercular flap equals 0.25 the length; snout 0.22 of head, including opercular flap; eye 0.31; interorbital space 0.35. The pectorals are dusky with a light posterior margin. Dorsal, anal, and ventrals without color.

50. *Parexocetus brachypterus* (Solander). Honolulu; station 3829, off southern coast of Molokai.

51. *Exonautes gilberti* Snyder, new species. Plate 7, fig. 13.

Head, to end of opercular flap, 0.215 of length; depth 0.147; width of body at base of pectorals 0.145; depth of caudal peduncle 0.28 of head; eye 0.32; snout 0.28; interorbital space 0.38; D. 10; A. 10; scales in lateral series beginning above base of pectoral 48; between occiput and base of dorsal 32; between lateral line and dorsal 6.

As indicated by the above measurements of the body, this is one of the most slender of the flying fishes. Body quadrangular in section; back broader than belly, convex; some of the median scales of back with low keels; interorbital space concave; snout a little shorter than diameter of eye; lower jaw slightly projecting beyond upper; maxillary extending to posterior border of nostril. No teeth on tongue or roof of mouth, those on jaws scarcely perceptible; gillrakers on first arch 25, long and slender; lateral line disappearing near end of anal fin.

The pectoral fin extends to within about an eye's diameter of base of caudal; of 18 rays, first and second simple; second a third of its length longer than first, which is 3.81 times diameter of eye; third ray divided near tip of first; tip of fin formed by branches of fourth ray, those of fifth being slightly shorter; second ray of dorsal fin longest, 0.52 of head; base of fin equal to 2 times diameter of eye; anal inserted the width of a scale posterior to dorsal, its base shorter than that of dorsal by an amount equal to the space between 2 rays; height of first and second rays about equal to that of fourth dorsal; ventrals inserted midway between base of caudal and a point anterior to edge of opercle, a distance equal to diameter of pupil; extending posteriorly a little beyond the base of anal, not beyond tip of last ray when depressed. Upper lobe of caudal pointed, its length 3 times the width of the interorbital space; lower lobe an eye's diameter longer.

Color in alcohol, dark brown above, silvery below, pectoral without spots, dusky; the free edge with a white area as wide as pupil, proximal to which is a blackish band two-thirds as wide as the eye; upper or anterior edge of fin light, an indistinct dark area extending along the first to fourth rays; lower or posterior edge of fin along the last four rays white. Middle rays of ventrals dusky, the fin indistinctly bordered with white. Free edge of caudal bordered with white. Dorsal dusky; anal white.

In life, steel blue above, silvery below.

The species is seemingly related to *Exonautes rondeletii* (Cuvier & Valenciennes) of the Atlantic. It is represented by one individual 26.5 centimeters long (snout to end of lower caudal lobe), which came aboard the *Albatross* at night, between stations 3799 and 3800, somewhere near 28½° N. by 140° W.

Type, No. 50872, U. S. Nat. Mus.

Named for Dr. Charles Henry Gilbert.

52. *Cypsilurus simus* (Cuvier & Valenciennes). Honolulu; Waimea and Hanamaula Bay, Kauai; station 3860, Napili, Molokai.

AULOSTOMIDÆ.

53. *Aulostomus valentini* (Bleeker). Honolulu; Laysan Island.

FISTULARIIDÆ.

54. *Fistularia petimba* Lacépède. Honolulu; Hilo; Hanalei Bay, Kauai; Necker Island. Skeletons found at Hecker Island, where fishes had been carried ashore by birds.

SYNGNATHIDÆ.

55. *Doryichthys pleurotænia* Günther. Honolulu.

ATHERINIDÆ.

56. *Atherina insularum* Jordan & Evermann. Laysan Island; station 3834, southern coast of Molokai; 3860 and 3870, between Maui and Molokai; station 3905 north coast of Molokai. Taken at night with the surface net.

MUGILIDÆ.

57. *Mugil albula* Linnaeus. Waimea River, Huleia River, Hanapepe River, Kauai; Honolulu; station 3844, off southern coast of Molokai.

SPHYRÆNIDÆ.

58. *Sphyræna commersonii* Cuvier & Valenciennes. Honolulu.

POLYNEMIDÆ.

59. *Polydactylus sexfilis* (Cuvier & Valenciennes). Honolulu.

HOLOCENTRIDÆ.

60. *Holotrachys lima* (Cuvier & Valenciennes). Honolulu; Laysan Island.
 61. *Myripristis murdjan* (Forskål). Laysan Island.
 62. *Myripristis berndti* Jordan & Evermann. Honolulu.
 63. *Myripristis multiradiatus* Günther. Laysan Island.
 64. *Flammeo sammara* (Forskål). Honolulu; Laysan Island.
 65. *Holocentrus erythræus* Günther. Honolulu.
 66. *Holocentrus xantherythrus* Jordan & Evermann. Honolulu.
 67. *Holocentrus diploxiphus* Günther. Honolulu; Puako Bay, Hawaii; Laysan Island.
 68. *Holocentrus diadema* Lacépède. Honolulu; Laysan Island; station 3834, southern coast of Molokai, depth 8 fathoms.

SCOMBRIDÆ.

69. *Germo sibi* (Schlegel). Honolulu.
 70. *Acanthocybium solandri* (Cuvier & Valenciennes). Honolulu.

LEPIDOPIDÆ.

71. *Ruvettus pretiosus* Cocco. Honolulu.

XIPHIIDÆ.

72. *Xiphias gladius* Linnaeus. Honolulu.

CARANGIDÆ.

73. *Scombroides sanctipetri* (Cuvier & Valenciennes). Honolulu.
 74. *Seriola purpurascens* Schlegel. Honolulu.
 75. *Trachurops crumenophthalma* (Bloch). Hanalei Bay, Kauai.
 Said to appear in large schools. One of the most important food-fishes at Hanalei.
 76. *Carangus latus* (Agassiz). Hanalei Bay, Kauai; Puako Bay, Hawaii.
 77. *Carangus affinis* (Rüppell). Honolulu.

78. *Carangus helvolus* (Forster). Honolulu.

The locality from which Forster obtained this species is not known, but as he visited the Hawaiian Islands with Captain Cook it is possible that his specimen came from that region. An example 38 cm. long, from the Honolulu market, agrees perfectly with the description of this species.

Head, including opercular flap, equal to 0.3 the length to base of caudal fin; depth 0.4; snout 0.35 of head; lower jaw projecting somewhat beyond upper; maxillary 0.4, reaching to a vertical through anterior edge of pupil; eye 0.23, a horizontal from tip of snout passing through center of pupil; width of interorbital space 0.35. No teeth on vomer, palatines, or tongue, those of jaws in a single series. Tongue dead white in color; roof of mouth similar, becoming abruptly blue-black posteriorly, the white extending backward as a V-shaped prolongation; the membranous flap white on the part touched by tongue, black on sides; lower jaw below tongue dark, the flap white beneath tongue, dark on sides. Head with scales behind the eye and on the cheeks; a narrow, naked space on the occiput, extending backward to spinous dorsal; breast naked; plates in straight portion of lateral line 35, each plate with a keel forming a sharp ridge. D. v, 28; A. i, 22.

79. *Carangus cheilio* Snyder, new species. Plate 8, fig. 14.

Head, measured to end of opercular flap, 0.32 of length to base of caudal; depth 0.36; depth of caudal peduncle 0.15 of the length of head; diameter of eye 0.14; width of interorbital space 0.31; length of snout 0.43; maxillary 0.37; pectoral fin 0.9; ventrals 0.41; height of first dorsal ray 0.32; anal ray 0.28; length of upper lobe of caudal 0.88; D. VIII-I, 24; A. II, 21; scales in lateral series about 116; between lateral line and spinous dorsal, counting upward and forward, about 23; plates in straight portion of lateral line about 38. Snout pointed, anterior contour of head somewhat concave in the region of interorbital area. Lower jaw slightly shorter than upper; maxillary not reaching a vertical through anterior edge of orbit by a distance about equal to diameter of pupil; lips very thick, the width of upper near its middle equal to half diameter of eye; teeth short and blunt, in a single series on the jaws; none on vomer and palatines; a few very short teeth on tongue; gillrakers 7+25, the longest equal in length to diameter of iris.

Scales on occiput, interorbital area, cheek, and upper parts of opercles; other parts of head naked; body, including breast and a sheath along base of dorsal and of anal with small scales, scales of posterior part of body with minute ones along their edges; no scales on membranes of fins; lateral line a little more curved than contour of back, the straight part beginning below tenth articulated ray. Plates highest and broadest near middle of caudal peduncle, their width at that point equal to half the width of maxillary at posterior part. First dorsal spine short and closely adnate to second; second spine longest, 0.33 of length of head; rayed portion of fin with a scaled sheath along its base, the height of anterior part of which is equal to diameter of pupil; posteriorly the sheath gradually grows lower, disappearing near end of fin; anal spines thick and strong, their height a little less than diameter of pupil; base of fin with a sheath similar to that of dorsal. Caudal deeply forked, the lobes sharply pointed; pectoral falcate, sharply pointed; ventrals not reaching anal opening.

Color silvery, a little darker above than below; upper edge of opercular flap with a dark spot about half the size of pupil; axil dusky.

A single specimen, 77 cm. long, from the Honolulu market.

Type, No. 50873, U. S. Nat. Mus.

80. *Carangoides ajax* Snyder, new species. Plate 8, fig. 15.

Head, measured to end of opercular flap, 0.28 of the length to base of caudal; depth 0.37; depth of caudal peduncle 0.13 of the length of head; diameter of eye 0.2; width of interorbital space 0.29; length of snout 0.42; maxillary 0.41; D. 19; A. 16; plates in straight portion of lateral line about 32.

Anterior profile elevated, the contour rising abruptly to a point above posterior margin of orbit. Lower jaw slightly longer than upper; cleft of mouth almost horizontal, maxillary reaching a vertical passing through center of pupil; width of suborbital area 0.26 of length of head. Teeth villiform, in bands on jaws, vomer, palatines, and tongue. Gillrakers on lower limb of first arch 14, the longest equal in length to width of posterior part of maxillary.

Head naked, except a small area behind and below eye, where there are small, deeply imbedded scales. Body mostly naked, there being an irregularly outlined area along lateral line with small, imbedded scales; lateral line much more arched than dorsal contour, the highest point of curve just anterior to insertion of dorsal, the straight part beginning below base of twelfth dorsal ray; 3 or 4 posterior plates large, their length about half the depth of caudal peduncle; other plates growing

smaller anteriorly, almost disappearing before curved portion of lateral line is reached. Spinous dorsal not present; anal spines absent; anterior rays of both fins elevated, their height about 0.4 of length of head. Caudal deeply forked, lobes of equal length, 0.85 of head; pectoral falcate, 0.95 of head; ventrals short, pointed, 0.43 of head.

Color silvery, darker above, indistinctly marbled with dusky along the back; base of pectoral colored on posterior side, upper half brownish black, lower dead white; dorsal fin with a dusky margin.

One specimen 97 cm. long, from the market at Honolulu. Type, No. 50874, U. S. Nat. Mus.

81. *Caranx speciosus* (Forskål). Honolulu.

82. *Alectis ciliaris* (Bloch). Honolulu; Hanalei Bay, Kauai.

BRAMIDÆ.

COLLYBUS Snyder, new genus.

Collybus Snyder, new genus of *Bramida*; type, *Collybus drachme*, new species.

Body deep, ovate, greatly compressed. Teeth in narrow bands, about 2 or 3 rows on jaws, none on vomer or palatines; 2 small fangs on each side of lower jaw near tip; teeth all small, weak, sharply pointed. Gillrakers long and slender; pseudobranchiæ large. Pyloric cæca 4; 2 of them about equal in length to diameter of pupil, the others nearly as long as stomach. Vertebrae 38. Mouth very oblique, nearly vertical. Opercle, subopercle, interopercle, and preopercle smooth. Scales short; very broad (vertically), the upper and lower edges sharply pointed; strongly ctenoid, each scale with a median, thickened, vertical ridge having a conspicuous tubercle in the center; number of scales in a lateral row between opercle and base of caudal about 50. No lateral line. Dorsal inserted on a vertical passing just behind base of ventral, rays 34, the anterior 3 or 4 without articulations; anal 30; a row of scales along base of fin. Caudal deeply forked. Ventral inserted on a vertical through posterior half of base of pectoral.

Color silvery, dusky on head and back.

The genus *Collybus* differs from *Turactes* in not having teeth on the vomer and palatine bones, in having the caudal deeply cleft, the ventrals inserted posterior to the middle of the bases of pectorals, and in not having the opercular bones denticulated.

83. *Collybus drachme* Snyder, new species. Plate 9, fig. 16.

Head, measured to end of opercular flap, 0.3 of length (snout to base of caudal); depth 0.6; depth of caudal peduncle 0.28 of head; eye 0.37; snout 0.21; maxillary 0.45; interorbital space 0.29; D. 34; A. 30; scales in lateral series 51; in a vertical series counting upward and backward from insertion of anal 19.

Body greatly compressed, its width at the widest part equal to length of maxillary; upper contour rather evenly curved from snout to caudal peduncle; lower contour much more convex, the base of anal not curved; mouth nearly vertical; lower jaw projecting somewhat beyond upper; posterior edge of maxillary reaching a vertical through anterior edge of pupil. Teeth small, weak, sharply pointed, in narrow bands (2 or 3 rows) on jaws; 2 larger, fang-like teeth on each side of tip of lower jaw; no teeth on vomer and palatines. Pseudobranchiæ large, the filaments equal in length to twice diameter of pupil. Gillrakers 4+10, slender, long, and sharply pointed; edges of opercle, interopercle, subopercle, and preopercle smooth; lower jaw, snout, and interorbital area naked; other parts of head, including the maxillary and the body, closely scaled. Scales strongly ctenoid, the ridges with minute tubercles; each scale with a high vertical ridge, on the middle of which is a prominent knob; the ridges of the scales are hidden by the overlapping softer parts, while the knobs project, lying in longitudinal rows. The scales are short, but very broad vertically, the upper and lower edges sharply pointed. Scales of head, at base of pectoral and along the back are much smaller than the others. No evident lateral line.

Dorsal inserted on a vertical passing behind base of pectoral a distance equal to diameter of pupil; rays 34, the anterior 3 or 4 without articulations; fin elevated anteriorly, the longest ray 0.7 of length of head; posterior rays 0.28. Anal rays except first one or two articulated; length of anterior rays 0.28 of head; caudal deeply forked; pectoral pointed, 0.35 of the length; ventrals inserted on a vertical passing through posterior half of base of pectoral.

Color bright silvery, dusky on upper part of head and along back; a silvery spot about the size of pupil at insertion of dorsal. Upper and lower rays of caudal dusky, central part yellowish white; anterior rays of dorsal dusky.

The type, No. 50875, U. S. Nat. Mus., is a specimen 0.81 mm. long, from station 4176, off Niihau, evidently near the surface. Other examples, among which are cotypes, 7737, L. S. Jr. Univ. Mus., were obtained from the stomach of a *Coryphæna* at Honolulu. Small squids and fishes were taken from the stomach of the species here described.

KUHLIIDÆ.

84. *Kuhlia malo* (Cuvier & Valenciennes).

Puako Bay, Hawaii; Hanalei Bay, Huleia River, Waimea River, Kauai; Laysan Island; station 3844, southern coast of Molokai.

APOGONIDÆ.

85. *Apogonichthys waikiki* Jordan & Evermann.

Honolulu; station 3872, between Maui and Lanai, depth 32 to 43 fathoms; station 3876, between Maui and Lanai, depth 28 to 43 fathoms. In 8 specimens, measuring 45 to 55 mm., the depth of body is contained 2.5 times in length. D. VII-1, 9; A. II, 8.

86. *Fowleria brachygramma* Jenkins.

Honolulu; stations 3847 and 3849, southern coast of Molokai; stations 3872, 3873, 3875, 3876, between Maui and Lanai; in 23 to 73 fathoms.

Color in life, bright carmine, pale pink on throat and belly, snout lighter and suffused with yellow; basal half of caudal suffused with brassy; base of dorsal yellowish, otherwise the fins are of same color as the body.

87. *Apogon maculiferus* Garrett.

Station 3875, between Maui and Lanai, depth 34 to 65 fathoms.

88. *Apogon snyderi* Jordan & Evermann.

Honolulu; Hanalei Bay, Kauai; Laysan Island; station 3834, southern coast of Molokai, depth 8 fathoms.

89. *Apogon menesemus* Jenkins.

Honolulu; Laysan Island; station 3834, southern coast of Molokai, depth 8 fathoms.

90. *Apogon erythrinus* Snyder, new species. Plate 9, fig. 17.

Head, including opercular flap, 0.39 of length; depth 0.4; depth of caudal peduncle 0.17; eyes 0.37 of head; snout 0.21; maxillary 0.45; D. VI, 1 + 9; A. II, 8; P. 14; scales in lateral line 26; between lateral line and spinous dorsal 3; between lateral line and insertion of anal 7; between insertion of spinous dorsal and occiput 5. Width of body at pectorals about half the depth; caudal peduncle slender, distance between last anal ray and base of caudal 0.32 of length.

Head short, snout blunt and rounded, lower jaw included; interorbital space flat with a slight median elevation, width equal to diameter of the eye; mouth oblique, the maxillary extending to the posterior border of eye, the expanded portion with a slightly convex posterior border: both margins of preopercle weakly serrated; teeth on jaws, vomer, and palatines, the latter covering a small anterior area of bones; gillrakers on vertical limb of arch mere papillæ except a long slender one at the angle; those on horizontal limb long and slender near the angle, gradually reduced in length to near middle of limb, where they are short and rudimentary; scales weakly ctenoid; cheeks and opercles with scales; first dorsal spine short and weak; second very strong, its length equal to 0.6 of head, when depressed reaching base of second dorsal ray; remaining spines graduated in length to the last, which is about 0.3 length of second; spine of soft dorsal very slender, equal in length to fourth spine of first dorsal; longest rays 0.65 of head. Anal rays about equal in length to those of dorsal. Caudal 0.3 of the length; its margin with a deep notch. Pectorals 0.22 of the length, ventrals 0.22.

Color reddish orange, scales edged with a narrow band of a somewhat deeper hue; occiput and a spot on opercle dusky; a small black spot at origin of spinous dorsal; minute dark specks on nape, along base of dorsals, at base of caudal, on breast and on opercles; fins immaculate.

Distinguished from the other Hawaiian species by the bright reddish color, the absence of large spots or bars on the body and fins, and by having the second dorsal spine largest.

Type, No. 50876, U. S. Nat. Mus., Puako Bay, Hawaii. Length 0.36 mm. Other specimens, among which are cotypes, No. 7733, L. S. Jr. Univ. Mus., are from Honolulu, Hanalei Bay, Kauai, Laysan Island.

SERRANIDÆ.

91. *Pikea aurora* Jordan & Evermann. Honolulu.
 92. *Epinephelus quernus* Seale. Honolulu.
 93. *Anthias fuscipinnis* Jenkins. Honolulu.

PRIACANTHIDÆ.

94. *Priacanthus alalaua* Jordan & Evermann. Honolulu; Laysan Island.

LUTIANIDÆ.

95. *Aphareus flavivultus* Jenkins. Honolulu.
 96. *Platyinius microdon* (Steindachner). Honolulu.
 97. *Apsilus brighami* (Seale). Honolulu.
 98. *Aprion virescens* Cuvier & Valenciennes. Honolulu.
 99. *Etelis evurus* Jordan & Evermann. Honolulu.

One specimen 70 cm. long, measured to base of caudal. Upper lobe of caudal about 34 cm. long.

SPARIDÆ.

100. *Monotaxis grandoculis* (Forskål). Honolulu.

KYPHOSIDÆ.

101. *Kyphosus elegans* (Peters). Laysan Island.

MULLIDÆ.

102. *Mulloidides auriflamma* (Forskål). Honolulu.
 103. *Mulloidides flammeus* Jordan & Evermann. Puako Bay, Hawaii.
 104. *Mulloidides samoensis* Günther. Honolulu.
 105. *Pseudupeneus chryseredros* (Lacépède). Honolulu.
 106. *Pseudupeneus porphyreus* Jenkins. Hanalei Bay, Kauai; Honolulu.
 107. *Pseudupeneus multifasciatus* (Quoy & Gaimard). Puako Bay, Hawaii; Laysan.
 108. *Pseudupeneus pleurostigma* (Bennett). Honolulu.
 109. *Upeneus arge* Jordan & Evermann. Honolulu.

CIRRHITIDÆ.

110. *Paracirrhites forsteri* (Bloch & Schneider). Honolulu.
 111. *Paracirrhites cinctus* (Günther). Honolulu.
 112. *Paracirrhites arcatus* (Cuvier & Valenciennes). Honolulu.
 113. *Cirrhites marmoratus* (Lacépède). Honolulu; Puako Bay, Hawaii.

POMACENTRIDÆ.

114. *Dascyllus albisella* Gill. Honolulu; station 3968, French Frigate Shoals.
 115. *Pomacentrus jenkinsi* Jordan & Evermann. Honolulu; Waialua Bay, Oahu; Napili Bay, Molokai; Hanalei Bay, Kauai; Puako Bay, Hawaii; Laysan Island; station 3881, between Maui and Molokai.
 116. *Glyphisodon abdominalis* Cuvier & Valenciennes. Honolulu; Hilo; Hanalei Bay, Kauai; Puako Bay, Hawaii; Laysan Island; station 3834, southern coast of Molokai, 8 fathoms.
 117. *Glyphisodon sordidus* (Forskål.) Honolulu; Puako Bay, Hawaii; Napili Bay, Molokai; Necker Island; Laysan Island.

LABRIDÆ.

118. *Lepidaplois bilunulatus* (Lacépède). Honolulu.

119. *Anampses cuvier* Quoy & Gaimard. Honolulu.

120. *Anampses evermanni* Jenkins. Honolulu.

121. *Stethojulis axillaris* (Quoy & Gaimard).

Honolulu; Puako Bay, Hawaii; Hilo; off southern coast of Molokai at stations 3829, depth 20 fathoms; 3834, depth 8 fathoms; 3837, depth 13 fathoms. Individuals of this species were frequently attracted by an electric light hung just below the surface of the water.

122. *Stethojulis albovittata* (Kölreuter). Honolulu.

123. *Halichoeres ornatissimus* (Garrett). Honolulu.

The species described by Dr. Jenkins as *Halichoeres iridescens* (Bull. U. S. F. C. 1899, p. 47) is no doubt identical with this. The anal has 3 spines, 12 rays. Garrett, having probably mistaken a spine for a ray, gives 2 spines, 13 rays.

124. *Pseudojulis cerasina* Snyder, new species.

Head, measured to end of opercular flap, 0.32 of length to base of caudal; depth 0.23; depth of caudal peduncle 0.125; length of snout 0.35 of head; eye 0.2; interorbital space 0.19; D. ix, 11; A. iii, 12; pores in lateral line 28; scales in lateral series 26; between lateral line and dorsal fin 1; between lateral line and anal 7. Body notably long and slender, head conical, snout pointed; mouth very small, the cleft smaller than eye; 2 canines in each jaw, the upper pair wide apart, allowing the lower ones to fit between them; canines but little longer than the other teeth, which grow gradually smaller posteriorly; no posterior canines; preopercle not serrated. Head naked; scales of breast smaller than those of body; lateral line abruptly bent downward below ninth dorsal ray; dorsal low, the longest, eighth, spine equal in length to snout, the rays about a tenth longer; longest anal ray 0.32 of head; spines slender, the third with a short cutaneous filament. Caudal slightly rounded, 0.65 of length of head; pectoral 0.48 of head; ventral pointed, 0.5 of head.

Color in spirits (perhaps somewhat similar in life), head pale orange, upper part of opercle with a purple tint, the lower part silvery; nape purple; a narrow dorsal area, reddish orange fading ventrally to light orange; a rather indefinitely outlined, broad, pinkish stripe from opercle to base of caudal; lower part of body light orange; a reddish orange spot somewhat smaller than the pupil at lower edge of base of pectoral; each scale row with a narrow line of a darker shade than the color area on which it occurs. Fins orange, the spinous dorsal suffused with red; scaled portion of caudal reddish orange.

One specimen, the type measuring 87 mm. long, was collected at Honolulu by Mr. Berndt. No. 50877, U. S. Nat. Mus.

125. *Julis pulcherrima* Günther. Honolulu.

126. *Julis eydouxi* Cuvier & Valenciennes. Honolulu.

127. *Julis flavovittata* Bennett. Laysan Island.

Only one specimen; length 46 mm. Head, measured to end of opercular flap, 3.12 in length; depth 4; snout 3.3 in head; eye 4.5; D. ix, 12; A. iii, 12; scales in lateral series 88; above lateral line 7; between lateral line and insertion of anal 27.

Color in alcohol white with black longitudinal stripes. A black stripe, pointed anteriorly, broken and irregular posteriorly, extends from middle of snout to end of dorsal; a second runs from tip of snout, through eye to base of caudal, where it is connected with the one on opposite side by a band passing over the caudal peduncle; a third extends from lower jaw over base of pectoral to base of caudal; a fourth passes from throat to end of anal; breast and belly dusky; dorsal black, edged with white, a few white blotches along middle of fin; caudal white at base and on margin, middle of fin with a black lunate band; anal black, bordered with white; pectorals white; ventrals dusky at base; a posterior canine tooth is present.

128. *Hemicoris ballieui* (Vaillant & Sauvage). Honolulu.

129. *Hemicoris rosea* (Vaillant & Sauvage). Honolulu.

130. *Hemicoris venusta* (Vaillant & Sauvage). Honolulu.

131. *Cheilio inermis* (Forskål). Honolulu.

132. *Thalassoma purpureum* (Forskål). Honolulu.

133. *Thalassoma quadricolor* (Lesson). Honolulu.

134. *Thalassoma duperrey* (Quoy & Gaimard).

Honolulu; Puako Bay, Hawaii; station 3881, between Maui and Molokai; Laysan Island.

The young have a black stripe, about as wide as the eye, extending from the snout to the upper half of the base of caudal, where its end is slightly broadened and rounded. Below and parallel with the dark stripe is a pinkish white one of about equal width. Some specimens have a narrow, short, indistinct, dusky stripe below the latter. With increasing age the stripes become indistinct and disappear, the general color grows darker, while the broad, light band behind the head appears. The caudal is at first rounded, later becoming concave, the upper and lower rays being much produced in the adult. The colors here noted are of alcoholic specimens.

135. *Thalassoma umbrostigma* (Rüppell). Laysan Island.**136. *Thalassoma ballieui*** (Vaillant & Sauvage). Honolulu; Laysan Island.**137. *Gomphosus varius*** Lacépède. Honolulu.**138. *Gomphosus tricolor*** Quoy & Gaimard. Honolulu; Puako Bay, Hawaii.**139. *Cirrhilabrus jordani*** Snyder, new species. Plate 10, fig. 18.

Head measured to end of opercular flap 0.36 of length; depth 0.29; depth of caudal peduncle 0.14; length of snout 0.32 of head; eye 0.25; interorbital space 0.23; D. XI, 8; A. III, 8; scales in lateral line 16+8; between lateral line and dorsal 1; between lateral line and anterior part of anal 5.

Snout pointed; cleft of mouth equals 0.66 diameter of eye; 6 rather widely spaced canines in upper jaw; inner pair projecting forward; the others, of which the outer pair are much the longer, curve outward and backward; 2 small canines in lower jaw; no posterior canines; other teeth very small, sharp, and closely apposed; preopercle with a finely serrated margin. Cheeks and opercles with scales; bases of dorsal and anal, each with a row of long, pointed scales; 3 large scales covering the greater part of basal half of caudal. Dorsal and anal fins high. Dorsal spines slender, the longest (posterior ones) equal in length to twice diameter of eye, each with a fleshy, spine-like prolongation, a continuation of the thickened membrane surrounding the spine, extending upward and backward and acting as a support for the membrane which extends above spines. First ray equal in height to preceding spine and its thickened attachment, the following rays gradually growing shorter. Anal spines with thickened membranous attachments similar to those of dorsal, the rays longer than the spines, their length contained about 1.5 times in head; caudal rounded; ventrals sharply pointed, not greatly elongated, reaching to vent when depressed; upper rays of pectoral longest.

Color in spirits plain, a few small, white spots below base of dorsal.

Flesh color in alcohol, probably red in life; a pale purple stripe indistinctly outlined extends along body between base of dorsal and lateral line; a few small white spots scattered along the back above lateral line; three distinct, narrow, light stripes along side of abdomen. Fins plain, probably yellow in life; anal with a narrow dusky band on margin.

The specimen described is a male, type, No. 50878, U. S. Nat. Mus., from station 3876, between Maui and Lanai; depth 28 to 43 fathoms.

Other examples, females from the same locality, among them cotypes No. 7728, ichthyological collections Stanford University, have the spinous dorsal lower than the rayed portion of the fin. The thickened portions of the membrane are less developed. The anal has no dusky border.

Named for Dr. David Starr Jordan.

The following measurements of the type and cotypes are given in hundredths of the length:

	No. 1.	No. 2.	No. 3.
Length from tip of snout to base of caudal, in millimeters.....	65	56	50
Length of head, including opercular flap.....	.96	.83	.83
Length of longest (11th) dorsal spine.....	.16	.15	.15
Length of longest (1st) dorsal ray.....	.23	.2	.18
Length of longest (3d) anal spine.....	.13	.19	.1
Length of longest (4th) anal ray.....	.25	.17	.2
Length of caudal fin.....	.27	.26	.29
Length of pectoral fin.....	.22	.23	.24
Length of ventral fin.....	.23	.21	.2
Number of dorsal rays.....	XI, 8	XI, 8	XI, 9
Number of anal rays.....	III, 8	III, 9	III, 9
Number of scales in lateral line.....	16+8	15+7	16+8

This species belongs with *Cheilinoidea* Bleeker, a section of the genus *Cirrhilabrus*, having short ventrals.

140. *Pseudocheilinus evanidus* Jordan & Evermann.

Stations 3873, depth 32 fathoms, and 3876, depth 28 to 43 fathoms, between Maui and Lanai; 4073, depth 69 to 78 fathoms, southern coast of Oahu.

The eye of this species, and probably of all the others^a included in the genus, is remarkably modified. The cornea is greatly thickened, the tissue being differentiated to form two lens-like structures. The iris and lens show no unusual characters. The retina has thickened areas which superficially appear as folds extending forward and backward from the point of entrance of the optic nerve.

141. *Pseudocheilinus octotaenia* Jenkins. Honolulu.**142. *Cheilinus hexagonatus* Günther.**

Honolulu; station 3834, in 88 fathoms, off the southern coast of Molokai.

The example from Molokai is 203 mm. in length. Color in life: Head on upper part and on snout and maxillary bright olive; chin, throat, and under parts of head blue green, shading to olive along a horizontal line extending backward from mouth, finally becoming brassy red on cheeks; sides of head with orange-red lines radiating from eye, fading to orange on subopercle; body orange red below and on lower half of sides, shading into greenish blue on back, each scale with a dark, brick red, semilunar mark; caudal peduncle yellowish olive, an indistinct pale band crossing it at end of dorsal and anal; dorsal greenish olive with two longitudinal orange bands, which broaden and become diffuse posteriorly; pectoral pale orange on base, becoming lilac toward the tip; ventrals reddish, with a wide, brown crossband; anal bright orange red, each ray dusky; rays of caudal greenish olive with reddish tips, the membrane pale orange.

143. *Cheilinus bimaculatus* Cuvier & Valenciennes. Honolulu.**144. *Novaculichthys tæniurus* (Lacépède). Honolulu.****145. *Novaculichthys kallosoma* (Bleeker).**

A single specimen, 114 mm. long, was obtained at Honolulu. It has been compared with a specimen of this species recently received by Stanford University from the island of Negros, Philippine Islands (coll. Dr. Bashford Dean), and they are found to agree perfectly.

146. *Hemipteronotus jenkinsi* Snyder, new species. Plate 10, fig. 19.

Head, including opercular flap, 0.28 of the length measured to base of caudal; depth 0.36; depth of caudal peduncle 0.44 of head; eye 0.17; width of interorbital space 0.2; length of maxillary 0.34; D. IX, 12; A. III, 12; lateral line 22 + 6.

Eye located 2.66 times its diameter above angle of mouth; mouth nearly horizontal, on a level with upper edge of base of pectoral, the maxillary extending to a vertical through anterior edge of orbit; lower jaw slightly longer than upper; lips with rather thin, fleshy folds. Outer row of teeth strong, conical; those on sides of jaws posterior to canines gradually decreasing in size from before backward; canines curving outward and forward, the lower pair, which are slightly the larger, fitting between the upper ones; inner teeth short and blunt, in narrow bands. Pseudobranchiæ present; gillrakers on the first arch 6 + 11, short and sharply pointed. Edge of preopercle smooth.

Head naked, except for a narrow, vertical, scaled area extending downward from eye to a horizontal passing along edge of flap of upper lip; first row with 7 scales, curving upward behind eye; second row with 5, the third with 4 scales. Scales of breast about half as large as those on sides of body; 27 series of scales between upper edge of gill-opening and caudal fin; 9 in series between insertion of anal and lateral line, 2 between dorsal and lateral line; lateral line curving upward over first 6 scales, then following the dorsal contour, approaching the back near end of dorsal, discontinued after twenty-second scale, beginning again on third scale below and passing along middle of caudal peduncle. First two dorsal spines somewhat closer together than others, but not separated from them, the membrane being continuous; height of first spine 0.39 of length of head; the second shorter; remaining spines equal in height to 0.25 of length of head; height of rays 0.35; end of soft dorsal when depressed just reaching base of caudal fin. Anal spines small and slender, the rays equal in height to those of the dorsal; base of anal and also the tips of the rays when depressed extending farther posteriorly than corresponding parts of dorsal. Caudal rounded, the basal fourth with scales, the length 0.65 of the head; pectoral 0.66 of the head; outer rays of ventral filamentous, just reaching vent.

Color in spirits, head plain, without spots, bars, or lines; a conspicuous black spot on back covering 2 scales above sixteenth in lateral line, its distance behind the opercular flap equal to distance between that point and tip of snout; a yellowish white spot on side of body, rather indistinctly out-

^a*P. evanidus*, *P. octotaenia*, and *P. hexataenia* have been examined.

lined, covering an area equal to width of 5 scales and height of 3 or 4, the spot partly covered by pectoral when depressed; scales of body, except on breast, belly, and part covered by the large light spot, each with a vertical pearly bar which grows wider on the ventral scales, covering over half the scale in region above base of anal; soft dorsal and anal with oblique dark bars, those of the anal not so broad as those of dorsal; caudal, pectorals, and ventrals plain.

Described from a single specimen 25 cm. long. Type, No. 50879, U. S. Nat. Mus., from Puako Bay, Hawaii. The species may readily be distinguished from other closely related Hawaiian forms by the great depth of the body and by the small dark spot, the posterior location of which is notable.

Named for Dr. Oliver Peebles Jenkins.

147. *Iniistius pavoninus* (Cuvier & Valenciennes). Honolulu; Puako Bay, Hawaii.

An individual measuring 105 mm. represents the bright juvenile color phase described by Dr. Jenkins as *Iniistiusleu cozonus*.^a Two dark lines pass over the interorbital space connecting the eyes, and 2 similar lines pass from the eye downward to lower part of opercle; a few small spots on nape and opercle behind eye; corresponding with the rows of scales, the body has longitudinal rows of small spots, darker and more distinct on crossbands; first dorsal spine with narrow black bars; first spot on dorsal very distinct, second and third ocellated; ventrals almost black, anal very dark below each vertical band of the body; caudal black at base. With increasing age, the lines of the head, the small spots of head and body, the bars of first dorsal spine, and the spots of dorsal fin, all or in part disappear; the dark bands of the body and fins grow less conspicuous. The black scale below spinous dorsal always remains distinct.

148. *Cymolutes lecluse* (Quoy & Gaimard). Honolulu.

SCARIDÆ.

149. *Scarus ahula* Jenkins. Honolulu.

150. *Scarus paluca* Jenkins. Honolulu.

151. *Scarus perspicillatus* Steindachner. Puako Bay, Hawaii.

CHÆTODONTIDÆ.

152. *Forcipiger longirostris* (Broussonet). Honolulu.

153. *Chætodon multicinctus* Garrett. Honolulu.

154. *Chætodon setifer* Bloch. Honolulu.

155. *Chætodon ornatissimus* Solander. Honolulu.

156. *Chætodon miliaris* Quoy & Gaimard. Honolulu; Hanalei Bay, Kauai; Laysan Island.

157. *Chætodon lineolatus* Cuvier & Valenciennes. Honolulu.

158. *Chætodon fremblii* Bennett. Honolulu; Laysan Island.

159. *Chætodon lunula* (Lacépède). Honolulu; Waialua Bay, Oahu; Hilo; Puako Bay, Hawaii.

160. *Chætodon unimaculatus* Bloch. Honolulu.

161. *Chætodon quadrimaculatus* Gray. Honolulu.

162. *Chætodon corallicola* Snyder, new species. Plate 11, fig. 20.

Head, measured to edge of opercle, 0.32 of length to base of caudal fin; depth 0.6; depth of caudal peduncle 0.32 of head; eye 0.42; snout 0.31; interorbital space 0.32. D. XIII, 21; A. III, 18; scales 4-30-12. Anterior profile between snout and dorsal almost straight, with a slight convexity over eye; snout short, its length somewhat less than diameter of eye; jaws equal; teeth fine and brush-like; pseudobranchiæ very large; gillrakers on first arch 5+14, short and pointed; scales on top of head and on snout very minute, those on cheeks, opercles, and breast larger; width of scales near middle of body about equal to diameter of pupil; those on caudal peduncle greatly reduced in size; rayed portions of dorsal and anal closely scaled, the scaled area extending forward on spinous portion of dorsal fin, decreasing in height from near tip of eighth spine to base of first, leaving the membranes of the anterior spines largely naked; lateral line curved upward and constantly approaching the back until it disappears near end of dorsal fin, not extending on caudal peduncle, with 36 pores, scales very small. Except the first the dorsal spines are high anteriorly; height of second to sixth equal to distance between tip of snout and center of eye; height of first spine about equal to diameter of pupil; length

^a *Iniistius leucozonus* Jenkins, Bull. U. S. Fish Commission 1900, p. 55.

of longest rays about equal to that of longest spines; membrane deeply notched between anterior spines, the notches growing shallow posteriorly as the scales approach edge of fin; second anal spine longest, about equal to highest dorsal spine; membrane deeply notched between first and third spines, the latter closely connected with rayed portion of fin; border of anal fin extending a little farther posteriorly than that of dorsal; caudal truncate, upper rays slightly longer than lower, 0.78 of head; pectoral 0.85 of head; ventrals not quite reaching vent.

Color in alcohol, dull silvery, brownish along the back, the dark color extending downward in region of pectoral fin; scales on greater part of body with darker centers and lighter edges; posterior part of body with many dark spots about half as large as pupil; head with a vertical brownish-black band, the posterior border of which passes from insertion of dorsal through posterior border of eye, thence curving backward to origin of ventrals; width of band somewhat less than diameter of eye; interorbital area, snout, and upper lip dark brown; dorsal and anal narrowly bordered with dusky, rays tipped with white; scaled portion of dorsal with large irregular dusky spots separated by narrow light spaces, which take the form of a network; caudal light, broadly bordered with dusky; pectoral plain; ventrals blackish toward the free margins.

Described from the type, No. 50880, U. S. Nat. Mus., 59 mm. long, from station 4032.

Other specimens, among which are cotypes, No. 7732, L. S. Jr. Univ. Mus., differ little from the type. Specimens were taken off the southern coast of Oahu at station 4032, depth 27 to 29 fathoms; station 4031, depth 27 to 28 fathoms; station 4034, depth 28 fathoms.

163. *Microcanthus strigatus* (Cuvier & Valenciennes). Honolulu.

164. *Heniochus macrolepidotus* (Linnæus). Honolulu.

165. *Holacanthus fisheri* Snyder, new species. Plate 11, fig. 21.

Head, measured to end of opercle, 0.29 of length (to base of caudal fin); depth 0.46; depth of caudal peduncle 0.12; eye 0.34 of length of head; snout 0.4; interorbital space 0.32; D. xiv, 15; A. 17; scales in lateral series 28; in a slanting series from origin of anal toward origin of dorsal 21. Suborbital with 3 prominent spines which curve downward and backward; lower or anterior one very small, in some specimens preceded by a fourth minute spine; the upper or posterior two about equal in length to diameter of pupil; preopercle with a strong, slightly curved spine at its angle, which extends to a vertical through posterior border of opercle, excluding the flap; length of spine 0.34 of head; margin of preopercle above spine with sharp denticulations; below spine with 2 small spines, the upper of which is the larger; opercular spines not grooved; interopercle with denticulations; teeth fine, brushlike, trilobed, the lateral lobes much shorter than the median, all being sharply pointed; pseudobranchiæ large; gillrakers 5 + 15, slender, pointed.

Scales large, regular, strongly ctenoid; those on snout, chin, and interorbital space minute; dorsal, anal, and caudal densely scaled; lateral line arched over the pectoral, extending along back near base of dorsal, disappearing near end of soft dorsal fin. Dorsal spines growing gradually longer from the second to the last; the first half as long as the second; the last equal in length to distance between tip of snout and posterior border of eye; membranes of first 5 spines notched, membrane between first and second spines nearly cleft to base, the notches growing successively more shallow between the following spines; membranes between first and third spines without scales, the scaled area beginning behind third spine; fin rounded posteriorly, its edge reaching a vertical through base of caudal; third anal spine longest; membranes between spines deeply cleft, without scales except on a narrow area along the base; third spine closely attached to rayed portion of fin; posterior edge of fin pectoral extending nearly to a vertical through middle of caudal; edge of caudal truncate or slightly concave; tips of rays without scales. Ventral sharply pointed, the first ray being filamentous at tip, extending to origin of anal; pectoral when depressed extending to a vertical through vent.

Color in alcohol, light brown with a yellowish tinge; lips, interorbital area, chin and throat somewhat dusky; membranes covering suborbital and opercular spines dark; scales of body with rather indistinct dusky edgings; a round, brownish-black spot somewhat larger than eye, just above base of pectoral; dorsal narrowly edged with black, the border widening on posterior edge to form a well-marked spot; anal narrowly bordered with pearly white, posterior part of fin blackish; spine and first ray of ventral pearly white; caudal with upper and lower borders dusky, the lower part much the darker, the central area yellowish; pectorals immaculate.

Color in life, bright reddish orange, posterior two-thirds suffused with dusky; spot above pectoral brownish black; preopercular spine dark blue; dorsal and anal colored like body, the dorsal narrowly edged with black, the black spot on posterior part with an indistinct boundary; anal with a

broad blackish margin narrowly edged with blue on the outside; middle of caudal lemon-yellow; pectorals orange; ventrals orange suffused with dusky near margins, spine and first ray pearly blue.

Different examples vary somewhat in intensity of color. Small specimens have a broad lemon band on the anal edged above and below with blue, the outer blue line narrowly edged with black.

Type, No. 50881, U. S. Nat. Mus., a specimen measuring 78 mm.; cotype, No. 7738, L. S. Jr. Univ. Mus.; from station 4032 off Diamond Head, Oahu; depth 27 to 29 fathoms. Other specimens are from station 3847, southern coast of Molokai; stations 3872 and 3876, between Maui and Lanai; stations 4031, 4033, and 4034, southern coast of Oahu, in 14 to 43 fathoms.

Named for Walter Kenrick Fisher.

The following measurements are recorded in hundredths of the length measured from snout to base of caudal fin:

	Station 4032.			Station 3876.	
	56	58	54	51	44
Length (in millimeters) to base of caudal fin.....	56	58	54	51	44
Head to edge of opercle.....	.30	.28	.29	.29	.30
Opercular spine.....	.11	.125	.11	.105	.10
Fourth dorsal spine.....	.13	.125	.12	.13	.13
Seventh dorsal ray.....	.19	.18	.19	.185	.19
Third anal spine.....	.19	.16	.165	.16	.15
Ninth anal ray.....	.23	.20	.195	.22	.20
Length of caudal.....	.26	.25	.23	.285	.26
Length of pectoral.....	.23	.24	.22	.24	.25
Length of ventral including filament.....	.32	.26	.27	.29	.30

ZANCLIDÆ.

166. *Zanclus canescens* (Linnaeus). Honolulu; Puako Bay, Hawaii; Laysan Island.

TEUTHIDIDÆ.

167. *Teuthis achilles* (Shaw). Honolulu; Puako Bay, Hawaii.

168. *Teuthis olivaceus* (Bloch & Schneider). Honolulu; Puako Bay, Hawaii.

169. *Teuthis umbra* Jenkins. Puako Bay, Hawaii.

170. *Teuthis argenteus* (Quoy & Gaimard). Honolulu.

171. *Teuthis atramentatus* Jordan & Evermann. Laysan Island.

172. *Teuthis bipunctatus* (Günther). Puako Bay, Hawaii; station 3834, southern coast of Molokai, depth 8 fathoms.

173. *Teuthis sandvicensis* (Streets).

Teuthis elegans Garman, Deep Sea Fishes, p. 70, Plate L, fig. 2.

Honolulu; Waiialua Bay, Oahu; Hanalei Bay, Kauai; Puako Bay, Hawaii; Hilo; Necker Island; Laysan Island.

A series of specimens showing all stages of growth from the larval to the adult form was secured. In the young measuring about 20 mm. the body is perfectly transparent except a broad, vertical, silvery band extending across the head and visceral region. Anterior edge of band passes obliquely downward and backward, just in front of orbit, to a point a little in advance of insertion of anal fins. The posterior boundary extends from nape, behind axil of pectoral, to insertion of anal. Between the dorsal fin line and the pectoral is a posterior prolongation of the silvery band, about as large as eye. No⁽⁴¹⁾ interorbital space, and a narrow band at base of caudal dusky; a row of dark dots along base of anal and a dusky spot on tip of caudal. The dusky, vertical bands of adult are first seen faintly outlined in the young of 31 mm. length; in others, no larger, the color pattern of the adult is perfectly developed. In the young the snout is shorter, anterior profile more rounded, and body deeper than in adult; head and body covered with long, narrow, vertically placed, scale-like plates; first dorsal spine serrated on anterior edge. Shortly after assuming the adult color, the length being about 32 mm., the serrations of the spine disappear and the plates are replaced by minute scales.

Teuthis elegans Garman is the young of this species. Living examples of the larval form are almost perfectly transparent except the silvery area and dusky spots, there being no blue or red tints.

174. *Teuthis guttatus* (Bloch & Schneider). Puako Bay, Hawaii.

175. *Zebbrasoma hypselopterus* (Bleeker). Honolulu.

176. *Scopas flavescens* (Bennett). Honolulu; Puako Bay, Hawaii.

177. *Ctenochætus strigosus* (Bennett). Honolulu.
 178. *Acanthurus brevirostris* (Cuvier & Valenciennes). Honolulu.
 179. *Acanthurus unicornis* (Forskål). Honolulu; Puako Bay, Hawaii.
 180. *Callicanthus lituratus* (Forster). Honolulu; Puako Bay, Hawaii.

BALISTIDÆ.

181. *Balistes vidua* Solander. Honolulu.
 182. *Pachynathus capistratus* (Shaw). Honolulu.
 183. *Pachynathus bursa* (Lacépède). Station 4032, off Diamond Head, Oahu; 27 to 29 fathoms.
 184. *Balistapus aculeatus* (Linnæus). Honolulu.
 185. *Balistapus rectangulus* (Bloch & Schneider). Honolulu; Puako Bay, Hawaii.
 186. *Melichthys radula* Solander. Honolulu; Puako Bay, Hawaii; station 3824, southern coast of Molokai, depth 222 fathoms; 3834, southern coast of Molokai, depth 8 fathoms.

MONACANTHIDÆ.

187. *Cantherines sandwichensis* (Quoy & Gaimard). Honolulu; Puako Bay, Hawaii.
 188. *Stephanolepis spilosomus* (Lay & Bennett).

Honolulu; station 4180, near Niihau, from stomach of *Coryphæna*; Necker Island, carried in by a bird; station 4147, near Bird Island, 26 fathoms; station 4167, near Bird Island, 18 to 20 fathoms; station 4148, near Bird Island, 26 to 33 fathoms.

Color in life: Head and belly pearly blue, shading into light brassy, the color of other parts of the body; head and body with lines and spots of brownish black. Membrane of dorsal deep orange with brownish black spots, the spine bluish; dorsal and anal banded with lemon and pearly blue; caudal deep orange, narrowly bordered with lemon; a subterminal band of black; fin spotted with black. Iris brassy. Teeth orange.

189. *Stephanolepis pricei* Snyder, new species. Plate 12, fig. 22.

Head 0.33 of length measured to base of caudal fin; depth between insertion of dorsal and anal 0.38; eye 0.3 of head; interorbital space 0.3; snout 0.71; depth of caudal peduncle 0.38; D. 39; A. 36.

Snout rather pointed, upper and lower contours concave; gill-slit small and narrow, its height equal to width of base of pectoral, two-thirds diameter of eye; ventral flap notably narrow, its width equal to half diameter of eye; dorsal spine inserted above pupil, its length equal to distance between angle of mouth and upper edge of gill-opening, reaching the insertion of dorsal fin when depressed; with 6 lateral spines which project downward and slightly backward; 3 or 4 small granules in a row below the spines; anterior part of spine with prickles which point upward; length of base of dorsal about equal to length of head; height of fin equal to diameter of eye; length of base of anal equal to distance between tip of snout and posterior edge of orbit; height equal to that of dorsal; rays of dorsal and anal rough on basal halves; caudal round, the alternate rays with strong prickles; length of fin equal to length of snout; length of pectoral equal to twice the length of gill-slit; ventral spine large, length of movable part about equal to length of gill-opening, the sides with large spikes which project backward. Body and head evenly covered with prickles, those of the dorsal parts slightly coarser than the others; no enlarged spines on caudal peduncle.

Color silvery, dusky along top of head and back; membrane of dorsal spine blue-black; 3 small, round, dark spots in a line extending upward from base of pectoral; dark clouds somewhat larger than the eye extending downward at insertion of dorsal, from posterior half of dorsal, and on the caudal peduncle; a similar cloud extending upward from posterior half of base of anal.

One specimen, 65 mm. long, station 4021, vicinity of Kauai, depth 286 to 399 fathoms. Type, No. 50882, U. S. Nat. Mus.

The species is named for Dr. George Clinton Price.

TETRAODONTIDÆ.

190. *Tetraodon hispidus* Linnæus. Honolulu; Necker Island.

A specimen was picked up on the rocks on Necker Island, where it had been carried by a bird.

TROPIDICHTHYIDÆ.

191. *Tropidichthys jactator* Jenkins. Honolulu; Laysan Island.

As was stated by Dr. Jenkins,^a this species is very similar to *T. punctatissimus* (Günther).^b Its distinction rests on a difference in the color pattern, the spots being fewer and generally more widely separated than those of *T. punctatissimus*. The distended belly, an alleged distinctive character seen in the type specimen of *T. jactator*, is merely the result of its having been preserved while distended with air. In 3 specimens from Laysan Island, measuring 65, 78, and 93 mm., respectively, the spots on the sides of the head are nearly as large as those on the body; those on the upper part of the snout are about half as large; there are 7 or 8 on a line between upper part of eye and tip of snout. Those on the snout and upper part of head and nape are narrowly bordered with dark brown. On the body there are about 13 spots in a line between the dorsal and anal fins, and 6 in a vertical line near the middle of caudal peduncle. The largest example has an indefinite dark spot below the base of dorsal fin. In life the spots are light blue. Most of them are as large as the pupil and so close together that the brown ground color appears as a network.

Three examples from the reef at Honolulu measure 37 mm. The spots on the upper part of the snout and head are very small. There are 5 in a line between upper part of eye and tip of snout. They are ocellated, as are also the spots along the back to the base of dorsal. There are 7 or 8 spots in a line between anal and dorsal fins, and 4 in a vertical line near middle of caudal peduncle. The cotype collected by Dr. Jenkins in Honolulu also has large spots on the snout.

T. punctatissimus, represented by 8 specimens from Panama, has from 7 to 10 small ocellated spots in a line on upper part of snout. The spots on the back from nape to base of caudal are small and have dark margins. There are from 11 to 23 spots between anal and dorsal and from 8 to 15 on the caudal peduncle. One example has 4 short lines extending backward from the eye. A specimen from the Galapagos Islands referable to *T. punctatissimus* has the spots on the sides of the snout fused, forming vertical bands. There are 3 short bands or elongate spots radiating backward from the eye.

OSTRACIIDÆ.

192. *Ostracion camurum* Jenkins. Puako Bay, Hawaii.

193. *Ostracion oahuensis* Jordan & Evermann. Honolulu.

194. *Ostracion lentiginosum* Bloch & Schneider. Honolulu.

195. *Lactoria galeodon* Jenkins. Honolulu.

Several specimens were taken from the stomach of a *Coryphæna*.

DIODONTIDÆ.

196. *Diodon hystrix* Linnæus. Honolulu.

197. *Diodon holocanthus* Linnæus. Laysan Island.

One specimen 235 mm. long. The fins are immaculate. There are 10 or 12 small dusky spots scattered over the body. A broad, dark bar, interrupted in the middle, extends between the eyes. There is a similar bar on the nape, a spot as large as the eye above and behind the pectoral, a median brown bar on the back anterior to the dorsal, and a blotch surrounding the base of the dorsal.

198. *Chilomycterus affinis* Günther. Honolulu.

SCORPÆNIDÆ.

199. *Sebastopsis kelloggi* Jenkins. Honolulu.

200. *Sebastopsis parvipinnis* Garrett. Honolulu.

201. *Merinthe macrocephala* (Sauvage). Honolulu.

Two specimens. D. XII, 11; A. III, 5. Orbital tentacles barred with dusky; in one specimen they reach the base of third dorsal spine when depressed, in the other they measure 1.66 times diameter of eye, not reaching base of first dorsal spine; second anal spine large and heavy, a deep groove running lengthwise of each side.

202. *Sebastapistes corallicola* Jenkins. Honolulu; Hilo.

^a *Tropidichthys jactator* Jenkins, Bull. U. S. Fish Com. for 1899 (June 8, 1901), 399.

^b *Tetrodon punctatissimus* Günther, Cat. Fish. Brit. Mus. 1870, VIII, 302.

203. *Sebastapistes coniora* Jenkins. Honolulu.
 204. *Scorpaenopsis catocala* Jordan & Evermann. Honolulu.
 205. *Dendrochirus hudsoni* Jordan & Evermann. Honolulu.

CEPHALACANTHIDÆ.

206. *Cephalacanthus orientalis* (Cuvier & Valenciennes). Honolulu; Pukoo, Molokai; Hanalei Bay, Kauai; Lahaina, Maui.

MALACANTHIDÆ.

207. *Malacanthus parvipinnis* Vaillant & Sauvage. Honolulu; Lahaina, Maui.

GOBIIDÆ.

208. *Eleotris sandwichensis* Vaillant & Sauvage. Honolulu; Waimea River, Hanalei River, Huleia River, Hanapepe River, Kauai; Anahulu River, Oahu.
 209. *Asterropteryx cyanostigma* (Bleeker). Honolulu.
 210. *Quisquilius eugenius* Jordan & Evermann. Laysan Island.
 211. *Gobius albopunctatus* Cuvier & Valenciennes. Honolulu; Waialua Bay, Oahu; Puako Bay; Kealakekua Bay, Hawaii; Hilo.
 212. *Awaous genivittatus* (Cuvier & Valenciennes). Honolulu; Waimea River, Hanapepe River, Hanalei River, Huleia River, Kauai; Anahulu River, Oahu.
 213. *Awaous stamineus* (Eydoux & Souleyet). Anahulu River, Oahu; Waimea River, Hanalei River, Hanapepe River, Hulei River, Kauai; Wailuku River, Maui.
 214. *Sicyopterus stimpsoni* (Gill). Lahaina and Wailuku rivers, Maui.
 215. *Enypnias oligolepis* Jenkins. Honolulu.
 In each of 2 specimens the dorsal has 6 spines, 11 rays; the anal 8 rays.

PTEROPSARIDÆ.

216. *Osurus schauinslandi* (Steindachner). Honolulu.

ECHENEIDIDÆ.

217. *Echeneis remora* Linnaeus. Honolulu market; Hanalei Bay, Kauai; stations 3869, 3879, 3887, 3934, 3938, 3973. Of 14 specimens, 4 have 17 pairs of laminae, the others having 18.

BLENNIIDÆ.

218. *Salarias zebra* Vaillant & Sauvage. Honolulu; Hilo; Puako Bay, Hawaii; Hanalei Bay, Kauai; station 3829, Lanai; Laysan Island; station 3881, between Maui and Lanai.
 219. *Salarias marmoratus* (Bennett). Laysan Island.
 220. *Salarias gibbifrons* Quoy & Gaimard. Honolulu; Hilo.
Salarias saltans Jenkins, Bull. U. S. Fish Com. 1902, 508, fig. 48.
Salarias rutilus Jenkins, l. c., 509, fig. 49.

This species, as with several others of the *Blenniidae*, has a distinct type of coloration for each sex. The one described as *S. saltans*, having the soft dorsal and caudal spotted with white, is the male; the other, described as *S. rutilus*, having the dorsal and caudal narrowly barred with black, is the female; 34 males and 30 females were examined.

221. *Aspidontus brunneolus* Jenkins. Honolulu.

BROTULIDÆ.

222. *Brotula marginalis* Jenkins. Honolulu.

Two specimens 34 cm. long. The maxillary reaches beyond the eye, its length being contained 2 times in the head, including opercular flap. The dorsal, anal, and caudal merge. Dorsal + anal 229; dorsal to near middle of caudal 124. Caudal pointed posteriorly, not notched.

ANTENNARIIDÆ.

223. *Antennarius commersoni* (Lacépède). Honolulu.

One specimen from the coral reef. Color black, with many round spots of a deeper black, clouded with light gray.

224. *Antennarius rubrofuscus* (Garrett). Honolulu.

One example from the reef. This species is admitted as distinct from *A. commersoni* with considerable doubt. The specimen is light orange-red, clouded and spotted with dusky. This and the one identified as *A. commersoni* differ only in color, the one being almost an exact negative of the other.

225. *Antennarius bigibbus* (Lacépède). Honolulu reef. Three specimens 20 to 25 mm. in length.**226. *Antennarius nexilis*** Snyder, new species. Plate 13, fig. 23.

This species differs from all others of the genus in having the third dorsal spine very closely attached or bound down to the back, and in having the soft dorsal extending posteriorly to base of caudal. First spine short, equal in length to longitudinal diameter of eye; the fleshy tentacle half as long as the spine, with 7 filaments. Second spine curved backward, its length equal to 1.5 times the longitudinal diameter of eye; when depressed, the tip not reaching over half way between its base and the base of third spine, no membrane connecting posterior part of spine with the head; third dorsal spine equal in length to distance between its base and tip of snout; very closely bound down throughout its length to the back, the tip with a movable joint; soft dorsal with 12 rays, the middle ones equal in height to distance between tip of snout and base of third spine; fin extending posteriorly to bases of caudal rays; anal rays 7, equal in length to the dorsal rays; edge of fin rounded, extending posteriorly as far as the dorsal. Caudal rounded posteriorly, 3.5 in the length; pectoral rays 12.

Body and fins covered with granules and prickles, the latter usually bifid or trifid, many of them having fleshy tentacles; a lateral line of pores begins on snout, passes over eye, curves downward to a level with lower margin of eye, extends backward to a point below base of second or third dorsal ray, then bending downward and backward to a point above the origin of anal, from which it runs backward to lower edge of base of caudal; another line of conspicuous pores extends from the chin downward, curving far below the mouth, then upward, joining the lateral line behind the eye; other large pores are present on the chin and head.

Color gray, with dusky spots and clouds, large and close together on the dorsal parts of body; eye with radiating dark and light elongate spots; a large, irregular, reddish orange spot on the nape; a few small spots of same color on snout and face; fins closely covered with black spots a little larger than the pupil, the membranes of the fins near their edges white; pectorals and ventrals white and almost without spots on ventral sides; inside of mouth without dark color.

The description is of the type, No. 50883, U. S. Nat. Mus., taken at Honolulu. In another example, cotype, 7735, L. S. Jr. Univ. Mus., the upper parts of the head and body are almost covered with reddish clouds, the tint more intense anteriorly. First spine 1.33 times as long as diameter of eye.

227. *Antennarius duescus* Snyder, new species. Plate 13, fig. 24.

Head, body, and fins, except the edges of the latter, covered with bifid and trifid prickles; small dermal filaments scattered here and there, a conspicuous one, somewhat longer than diameter of eye, above and a little behind base of pectoral; gill-opening small, circular, located far back, half way between axil of pectoral and anal opening; first dorsal spine slender and hair-like, the length equal to depth of caudal peduncle, the fleshy tip a flat, folded membrane with minute tentacles; second dorsal spine seated close to first, slender, without a membrane, its shaft covered with minute granules, the tip with a small, fleshy knob; slightly shorter than first spine, not quite reaching base of third when depressed; third spine strong, curved backward, its length equal to distance between gill-opening and anus; capable of free movement up to a vertical position, the posterior membrane fleshy; dorsal rays 12, the highest contained 3 times in base of fin; fin extending far posteriorly; the length of the free caudal peduncle equal to diameter of pupil; anal rays 7, equal in length to those of the dorsal; caudal rounded posteriorly, its length contained 3.5 times in head and body.

Color in spirits, pale brick red, the dorsal, anal, and caudal darker on the edges; rayed portion of pectorals and ventrals gray below, dusky above; head and body sparsely clouded and spotted with dusky and gray; a large, irregular crossband on chin, extending upward a little beyond mouth; a dusky cloud above pectoral; a large, gray spot, bordered with dusky, on the head between snout and pectoral; a small, ocellated gray spot below the latter, and a similar one on body midway between

gill-opening and dorsal fin; caudal peduncle with a narrow, vertical, gray band bordered with dusky; mouth immaculate within; prickles white.

In life, purplish lilac throughout (the color of the algæ brought up in the trawl), save for a few pinkish spots and the tips of pectorals and ventrals, which were whitish.

Described from type, No. 50884, U. S. Nat. Mus., 40 mm. in length. A smaller one, 19 mm. long, cotype, No. 7736, L. S. Jr. Univ. Mus., differs from type only in size; in life it was light bronze colored on upper parts, yellowish bronze below, a wide pinkish crescent on upper part of opercles; station 3872, between Maui and Lanai, depth 32 to 43 fathoms.

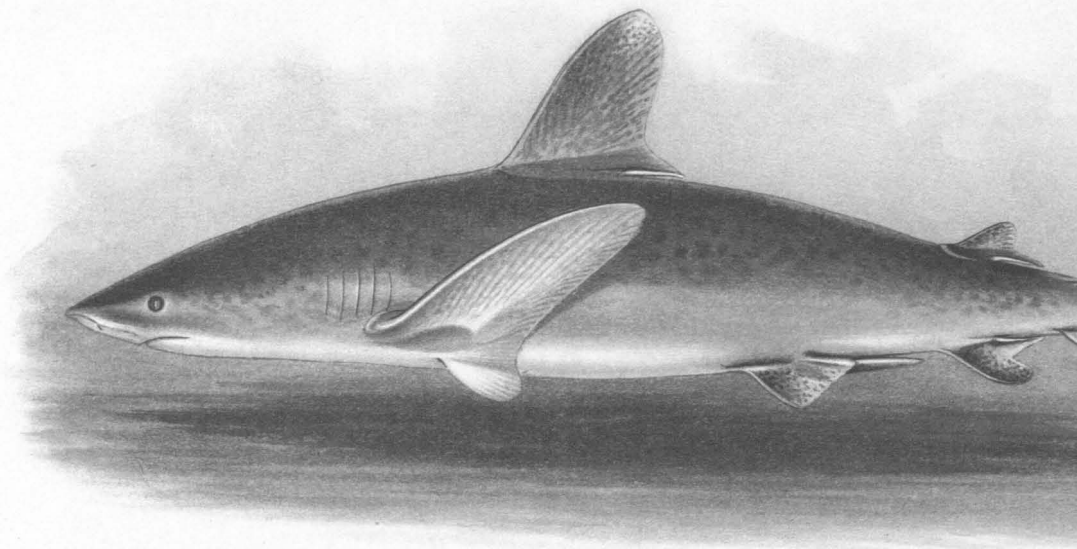
Another, 19 mm. long, is from station 4128, vicinity of Kauai, depth 75 fathoms; body brownish black except on nape, where there is a small cloud of reddish color; fins narrowly edged with red.

The species is distinguished by the following set of characters: First and second dorsal spines with thickened fleshy tips; dorsal and anal extending far posteriorly, length of free caudal peduncle equal to diameter of pupil; gill-opening located midway between axil of pectoral and the anal opening.

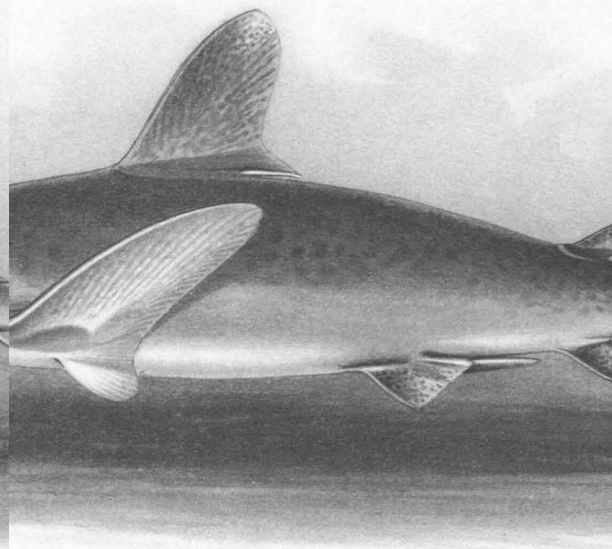
STANFORD UNIVERSITY, CAL., *May 14, 1903.*

LIST OF PLATES.

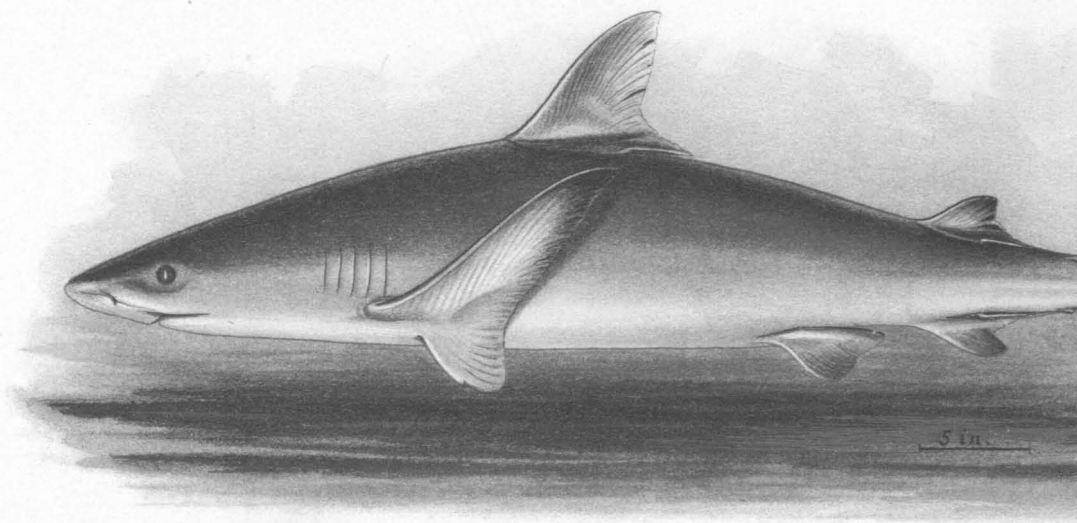
- Pl. 1, Fig. 1. *Carcharias insularum* Snyder. Type. Drawing by W. S. Atkinson, from a specimen about 7 feet long, from station 3815, off Diamond Head, Oahu.
- Fig. 2. *Carcharias nesiotus* Snyder. Type. Drawing by W. S. Atkinson, from a specimen about 5 feet long, from Honolulu.
- Pl. 2, Fig. 3. *Veternis verrens* Snyder. Type. Drawing by Sekko Shimada, from a specimen from station 2587, Honolulu.
- Fig. 4. *Sphagebranchus flavicaudus* Snyder. Type. Drawing by Sekko Shimada, from a specimen 13 inches long, collected at station 3874, Hawaiian Islands.
- Pl. 3, Fig. 5. *Callochelys luteus* Snyder. Type. Drawing by Sekko Shimada, from a specimen about 31 inches long, from station 3821, off southern coast of Molokai.
- Fig. 6. *Moringua hawaiiensis* Snyder. Type. Drawing by Kako Morita, from a specimen about 12 inches long, from Honolulu.
- Pl. 4, Fig. 7. *Gymnothorax nuttingi* Snyder. Type. Drawing by Kako Morita, from a specimen about 30 inches long, from Honolulu.
- Fig. 8. *Gymnothorax bernardi* Snyder. Type. Drawing by R. L. Hudson, from a specimen 35 inches long, from Honolulu.
- Pl. 5, Fig. 9. *Gymnothorax mucifer* Snyder. Type. Drawing by Kako Morita, from a specimen about 26 inches long, from Honolulu.
- Fig. 10. *Gymnothorax xanthostomus* Snyder. Type. Drawing by Sekko Shimada, from a specimen about 36 inches long, from Honolulu.
- Pl. 6, Fig. 11. *Gymnothorax waiatus* Snyder. Type. Drawing by Sekko Shimada, from a specimen about 4.5 inches long, from Hawaiian Islands.
- Fig. 12. *Uropterygius leucurus* Snyder. Type. Drawing by R. L. Hudson, from a specimen 4.5 inches long, from station 3874, Hawaiian Islands.
- Pl. 7, Fig. 13. *Ezonautes gilberti* Snyder. Type. Drawing by Sekko Shimada, from a specimen about 10.5 inches long, from between stations 3799-3300, Hawaiian Islands.
- Pl. 8, Fig. 14. *Carangus chelio* Snyder. Type. Drawing by Sekko Shimada, from a specimen about 29 inches long, from Hawaiian Islands.
- Fig. 15. *Carangoides ajaz* Snyder. Type. Drawing by Sekko Shimada, from a specimen 39 inches long, from Honolulu.
- Pl. 9, Fig. 16. *Collybus drachme* Snyder. Type. Drawing by W. S. Atkinson, from a specimen about 3.5 inches long, from station 4176, Hawaiian Islands.
- Fig. 17. *Apogon erythrinus* Snyder. Type. Drawing by W. S. Atkinson, from a specimen about 2 inches long, from Hawaiian Islands.
- Pl. 10, Fig. 18. *Cirrhitilabrus jordani* Snyder. Type. Drawing by C. B. Hudson, from a specimen about 3.3 inches long, from station 3876, Hawaiian Islands.
- Fig. 19. *Hemipteronotus jenkinsi* Snyder. Type. Drawing by Sekko Shimada, from a specimen about 10.2 inches long, from Hawaiian Islands.
- Pl. 11, Fig. 20. *Chatodon corallicola* Snyder. Type. Drawing by Sekko Shimada, from a specimen 2.4 inches long, from station 4032, Hawaiian Islands.
- Fig. 21. *Holacanthus fisheri* Snyder. Type. Drawing by Sekko Shimada, from a specimen 3 inches long, from station 4032, Hawaiian Islands.
- Pl. 12, Fig. 22. *Stephanolepis pricei* Snyder. Type. Drawing by Kako Morita, from a specimen 2.5 inches long, from station 4021, Hawaiian Islands.
- Pl. 13, Fig. 23. *Antennarius neclis* Snyder. Type. Drawing by Kako Morita, from a specimen 4.2 inches long, from station 3872, Hawaiian Islands.
- Fig. 24. *Antennarius dueucus* Snyder. Type. Drawing by W. S. Atkinson, from a specimen 1.6 inches long, from station 3872, Hawaiian Islands.



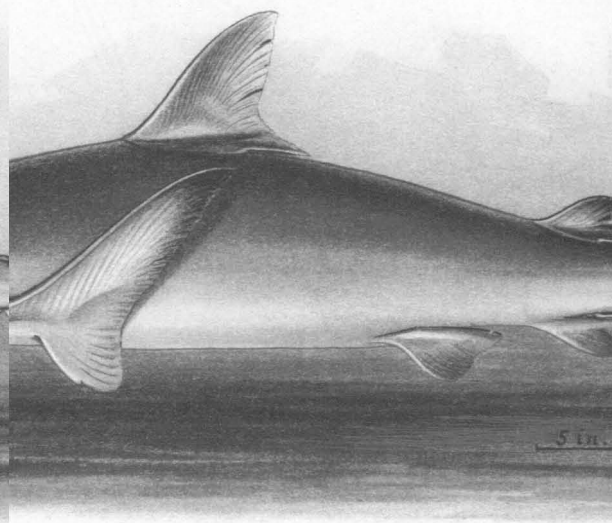
1. CARCHARIAS INSULARUM. TYPE.



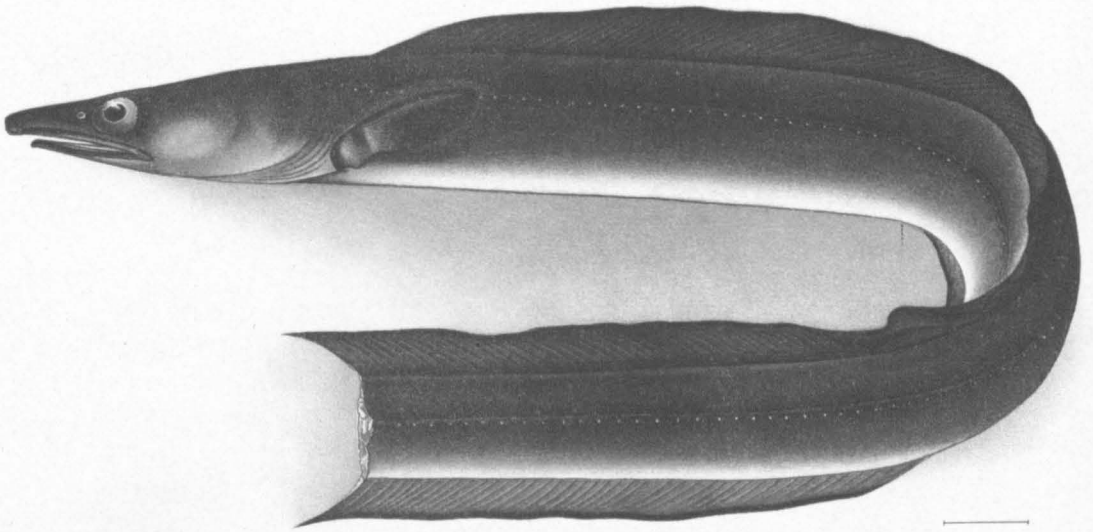
1. CARCHARIAS INSULARUM. TYPE.



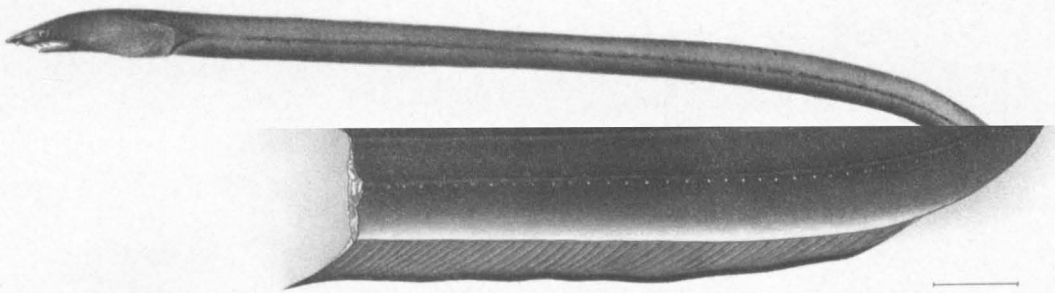
2. CARCHARIAS NESIOTES. TYPE.



2. CARCHARIAS NESIOTES. TYPE.

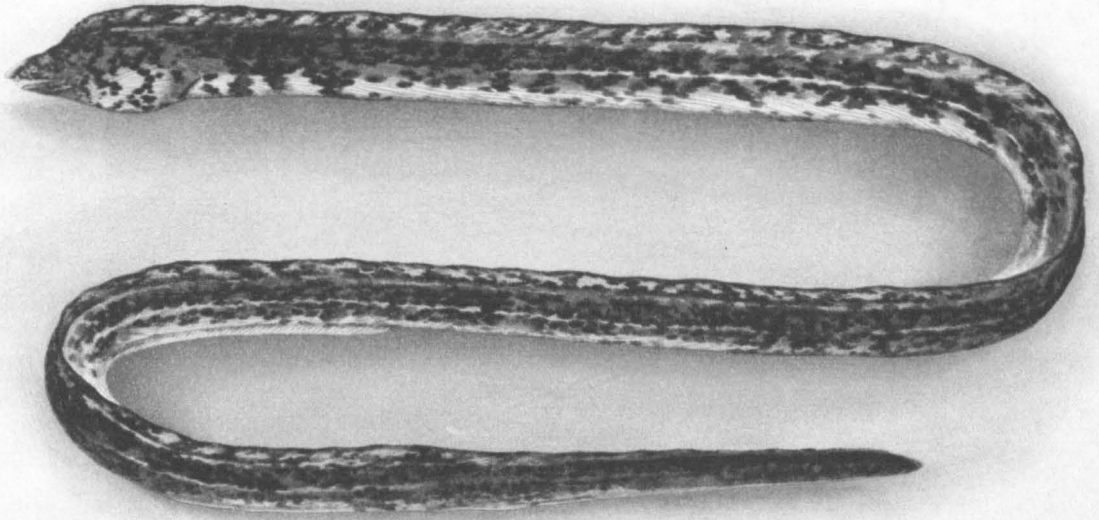


3. VETERNIO VERRENS. TYPE.

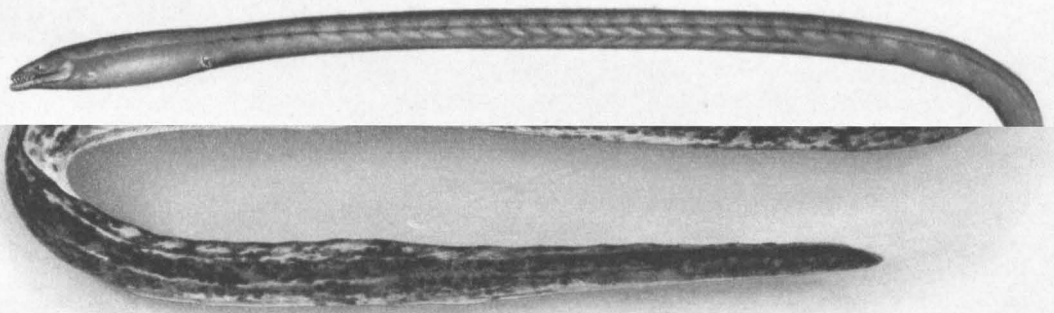


3. VETERNIO VERRENS. TYPE.





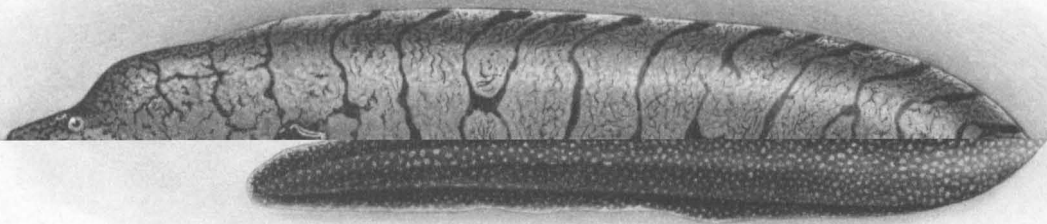
5. CALLECHELYS LUTEUS. TYPE.



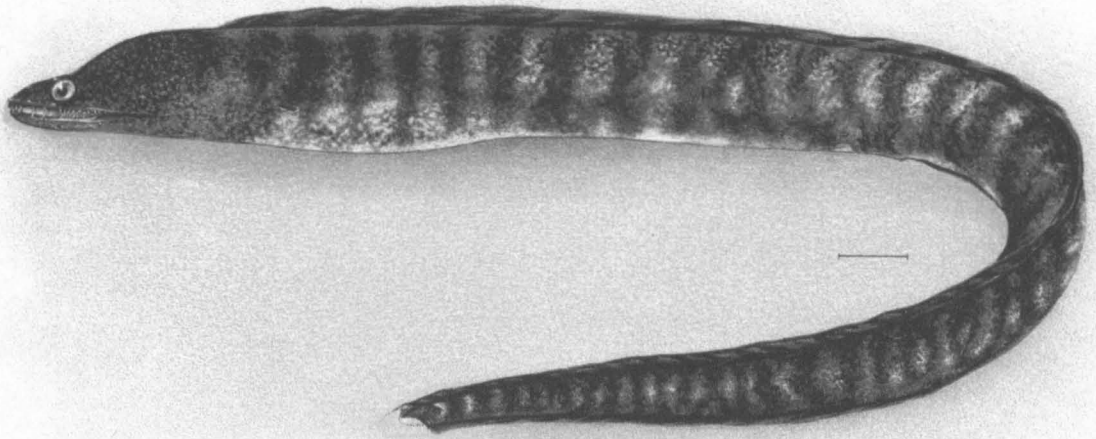
5. CALLECHELYS LUTEUS. TYPE.



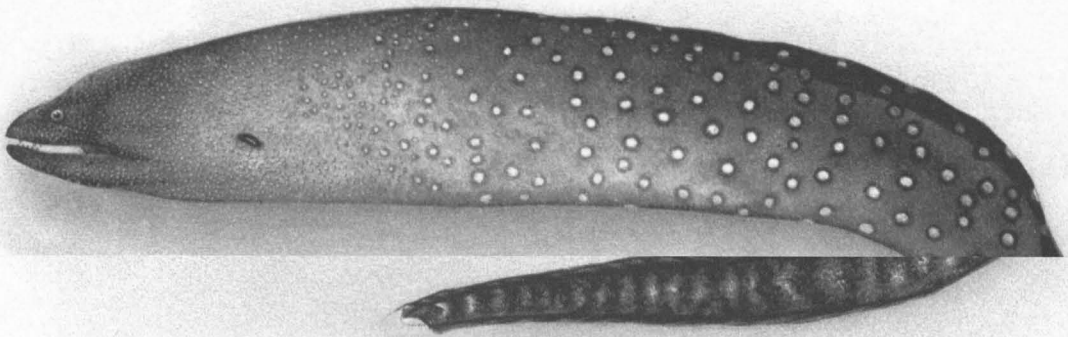
7. GYMNOTHORAX NUTTINGI. TYPE.



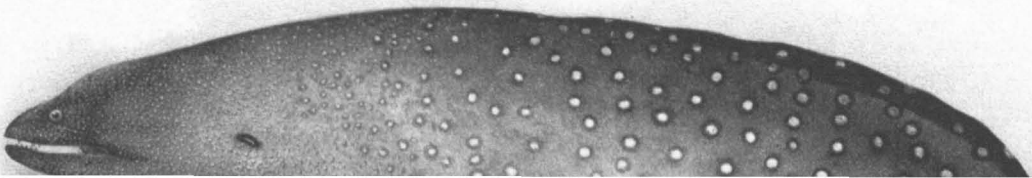
7. GYMNOTHORAX NUTTINGI. TYPE.

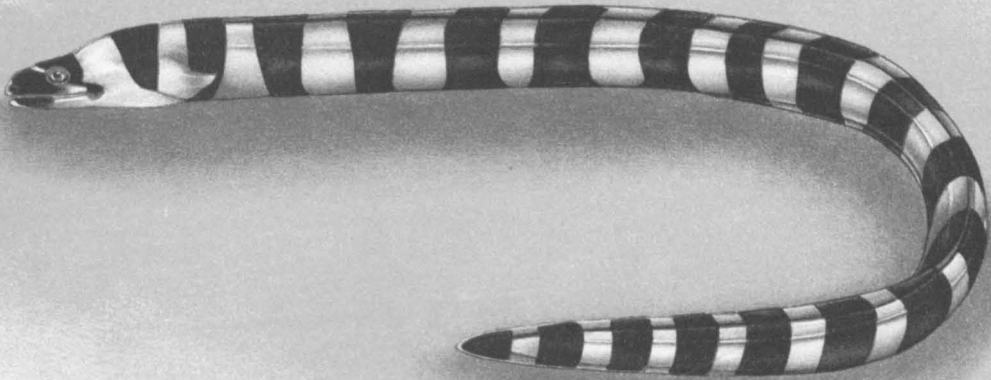


9. GYMNOTHORAX MUCIFER. TYPE.

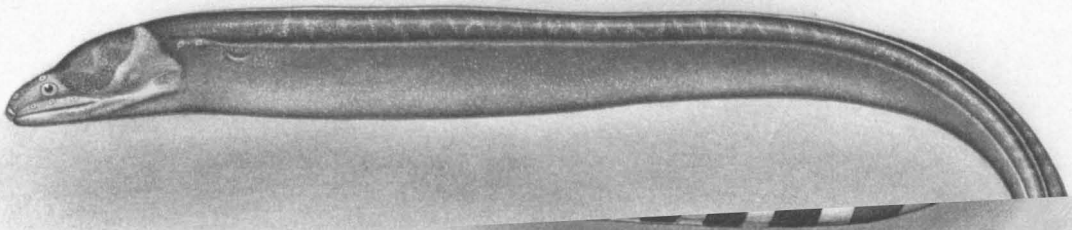


9. GYMNOTHORAX MUCIFER. TYPE.

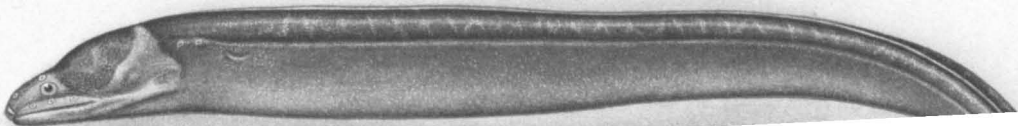


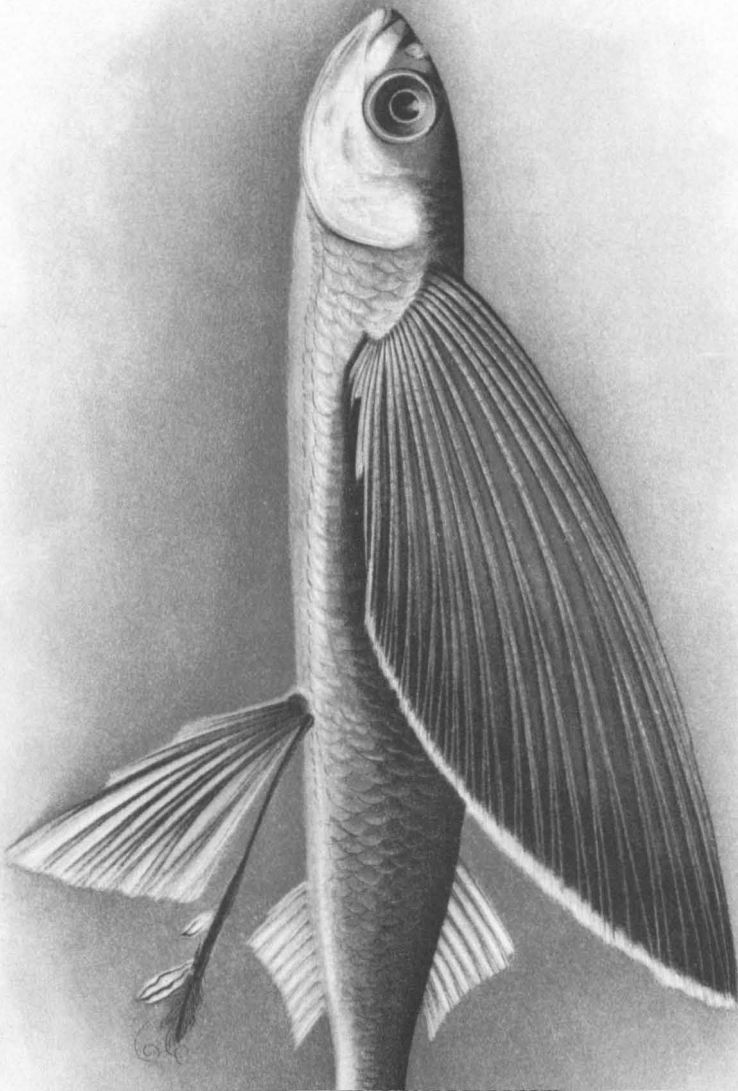


11. GYMNOTHORAX WAIALUAE. TYPE.

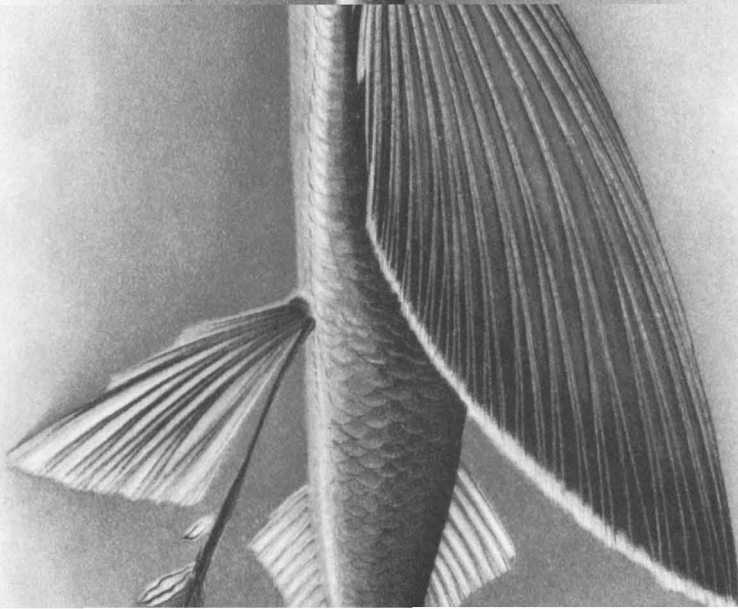


11. GYMNOTHORAX WAIALUAE. TYPE.

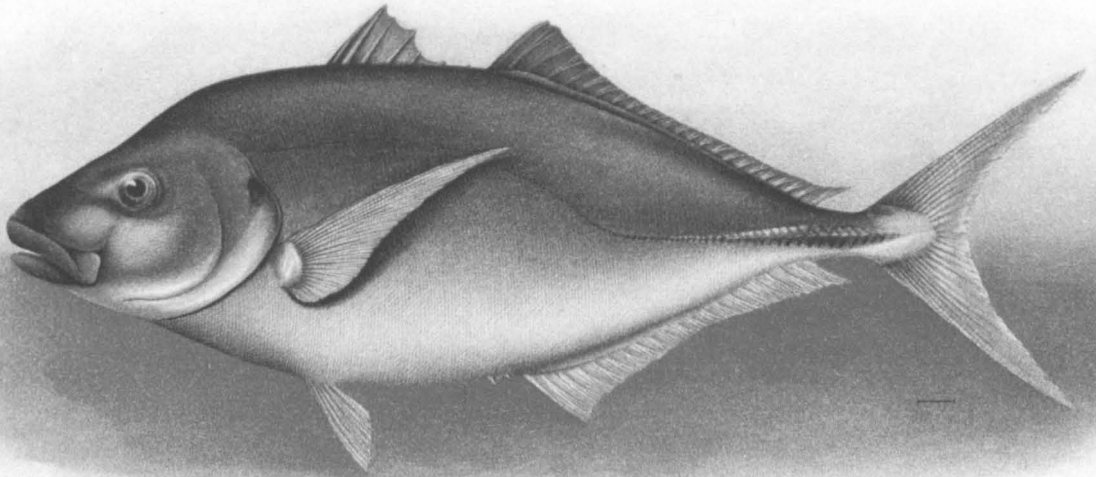




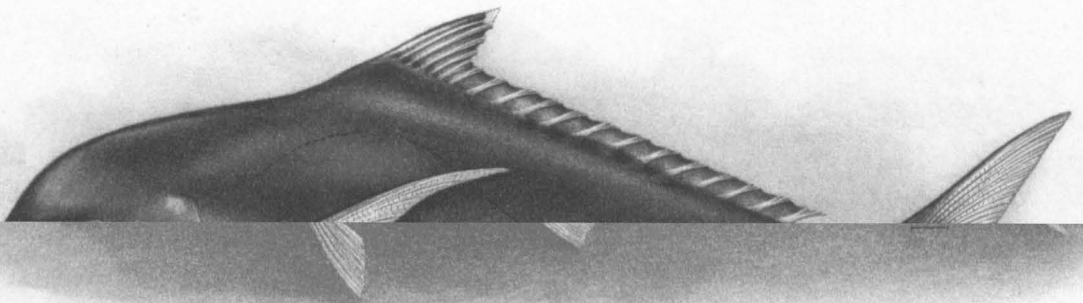
13. EXONAUTES GILBERTI, TYPE.



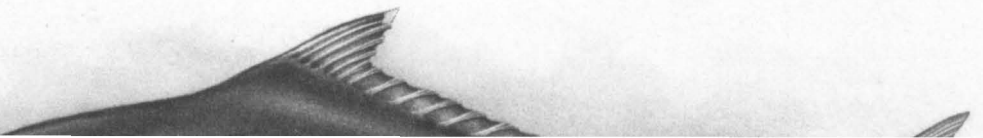
13. EXONAUTES GILBERTI, TYPE.

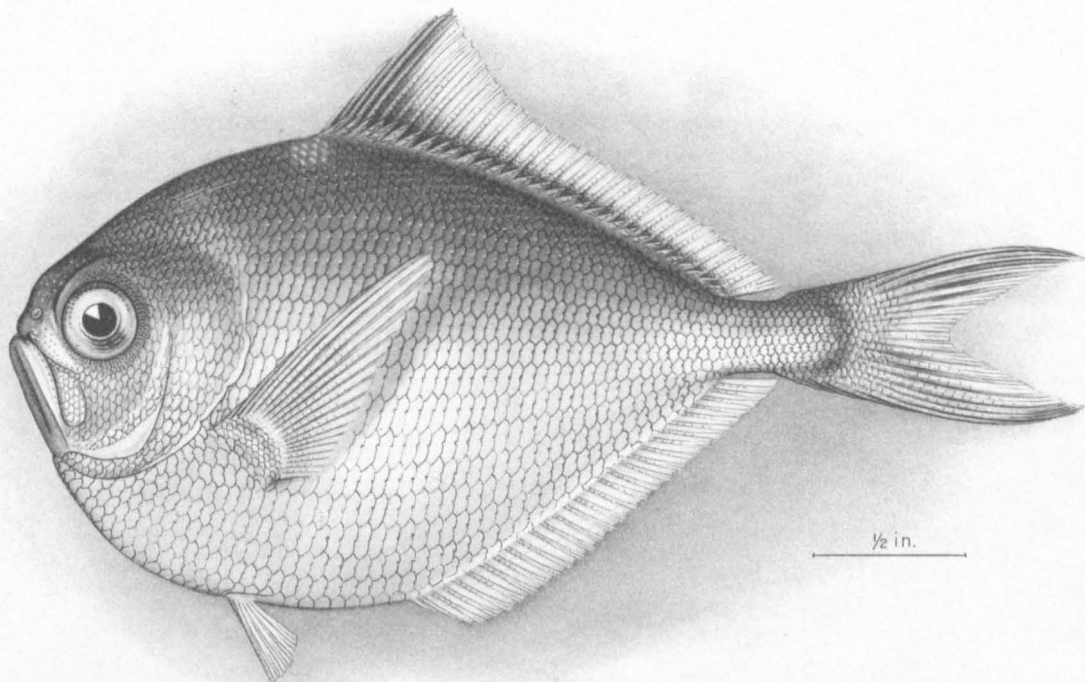


14. CARANGUS CHEILIO. TYPE.

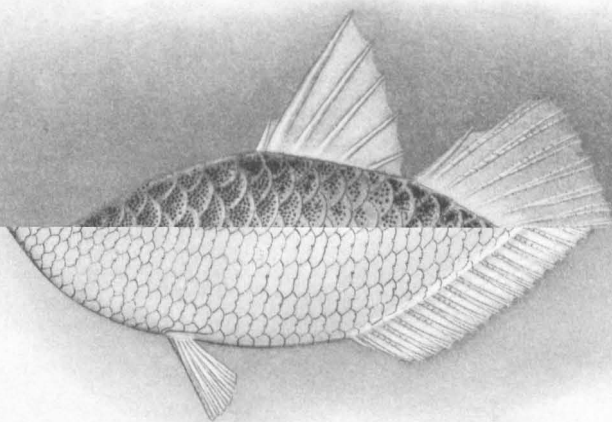


14. CARANGUS CHEILIO. TYPE.

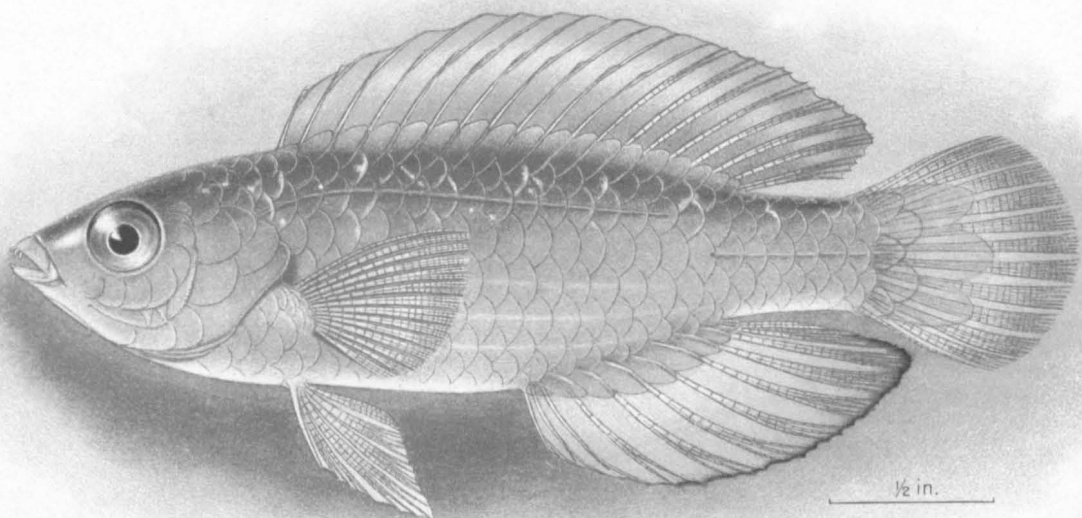




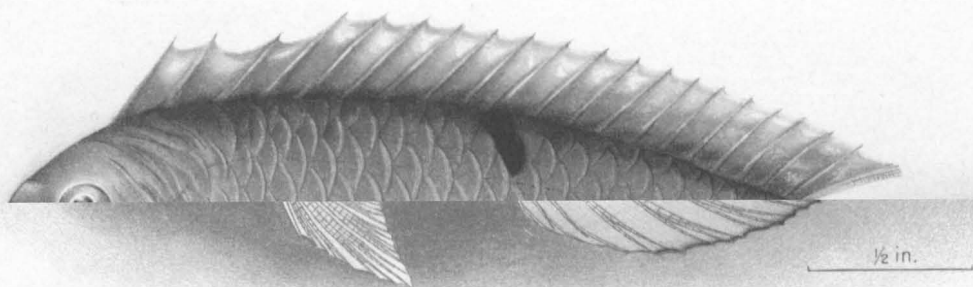
16. COLLYBUS DRACHME. TYPE.



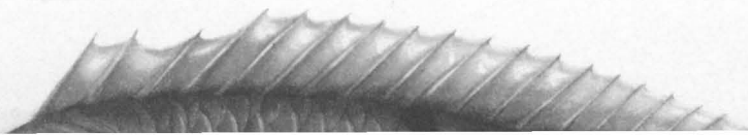
16. COLLYBUS DRACHME. TYPE.

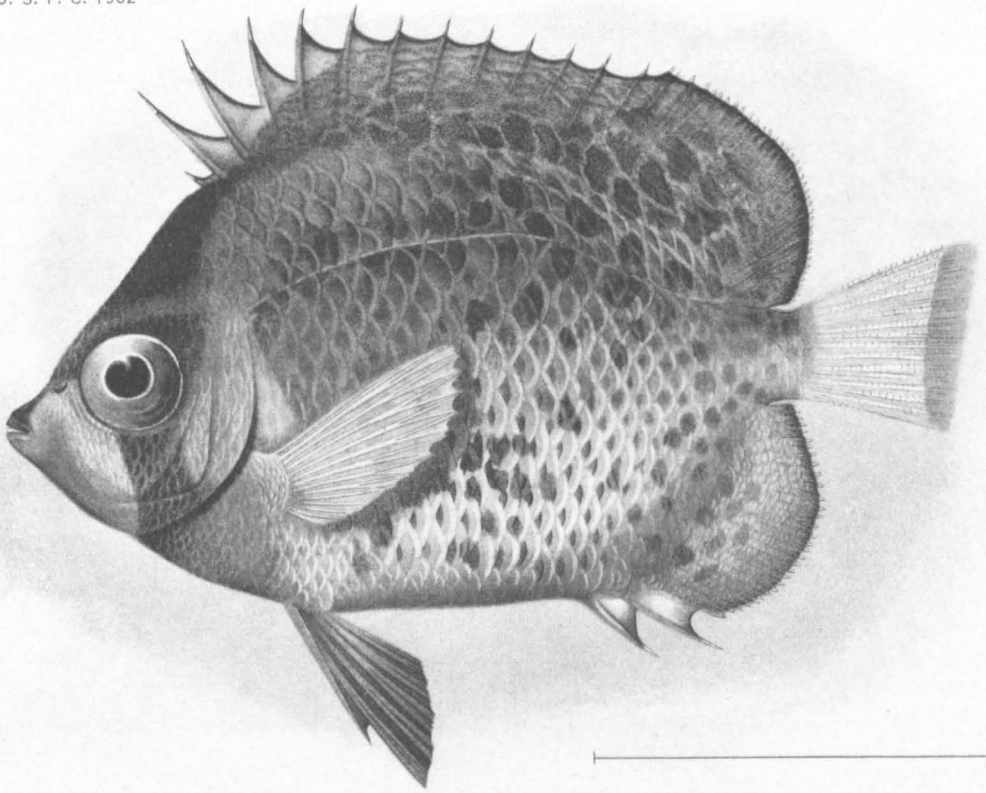


18. CIRRHILABRUS JORDANI. TYPE.

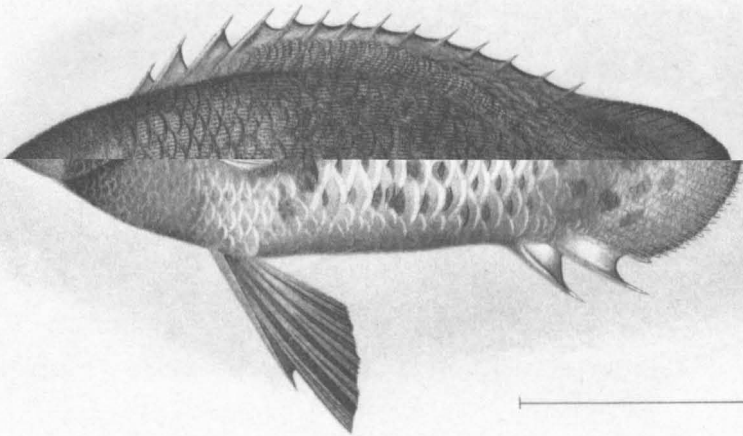


18. CIRRHILABRUS JORDANI. TYPE.

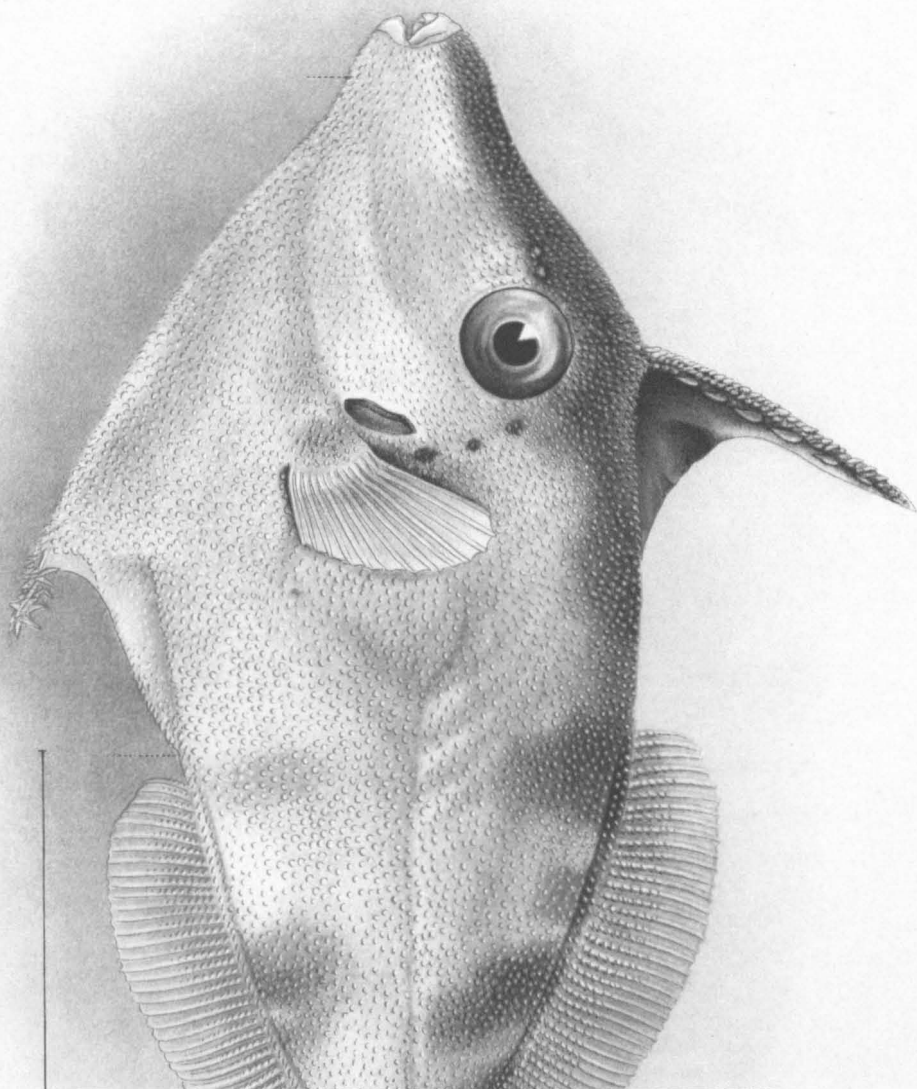




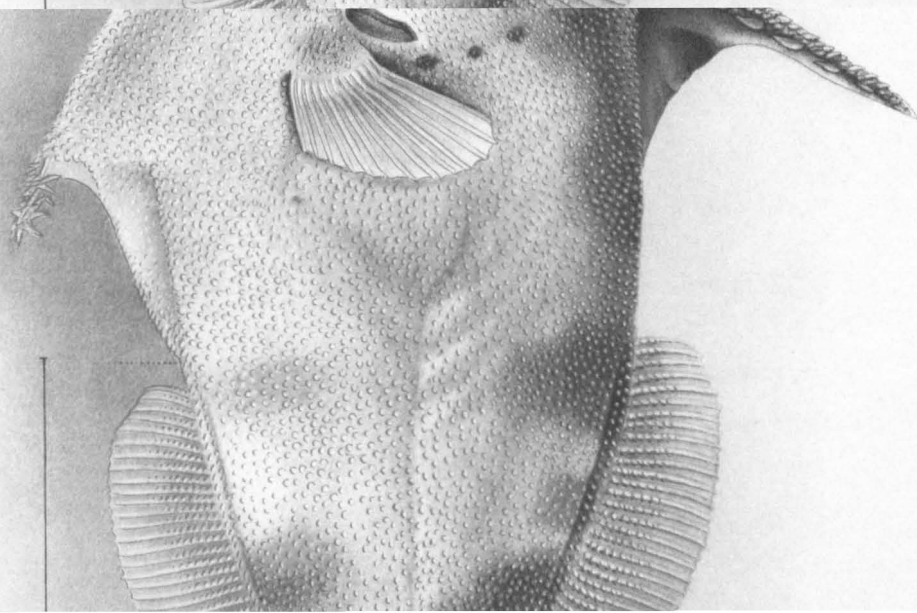
20. CHÆTODON CORALLICOLA. TYPE.



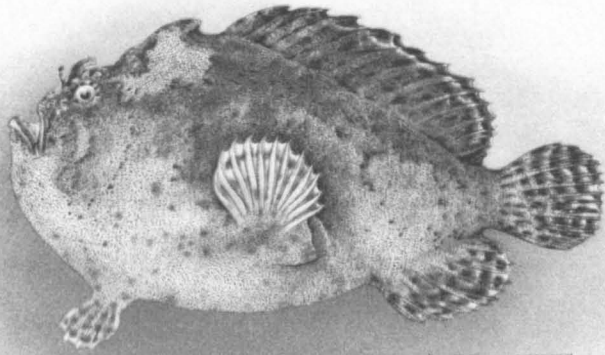
20. CHÆTODON CORALLICOLA. TYPE.



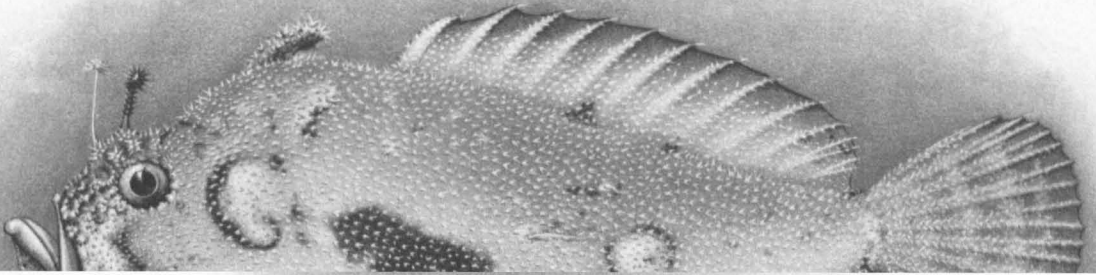
22. STEPHANOLEPIS PRICEI. TYPE.



22. STEPHANOLEPIS PRICEI. TYPE.



23. ANTENNARIUS NEXILIS. TYPE.



23. ANTENNARIUS NEXILIS. TYPE.

