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BY
SAMUEL F. HILDEBRAND
AND
OTIS BARTON



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A COLLECTION OF FISHES FROM TALARA, PERÚ

BY SAMUEL F. HILDEBRAND¹ AND OTIS BARTON²

An unusually interesting collection of fishes was obtained at Talara, Perú, from January to April, 1946, by the junior author. Two new species from this collection have already been described (Barton, 1947), and descriptions of seven others are included in these pages. In addition to the apparently new forms, three species previously not reported from Perú are included. Descriptions of these species also are offered herein, as the present paper is to serve as a supplement to "A Descriptive Catalog of the Shore Fishes of Peru" (Hildebrand, 1946). Most of the specimens were obtained from fishermen who fished on the banks west of Talara, at depths down to 250 feet. The carefully executed drawings of the new species herein described were made by Mrs. Ann S. Green of the U. S. Fish and Wildlife Service. The paper was prepared in the Division of Fishes, United States National Museum.

Family ALBULIDAE: Ladyfishes; Bonefishes

Body elongate, little compressed; head rather low, flat above; snout conic, projecting far in advance of lower jaw; mouth moderately small, nearly horizontal; maxillary reaching nearly to front of eye or below it, never beyond eye; premaxillaries not protractile; no gular plate; teeth all small, present in bands on jaws, vomer, palatines, pterygoids, basibranchials, and sphenoid; branchiostegals 13 or 14; gill membranes separate and free from the isthmus; gill rakers very short, stout, tubercular in large examples; lateral line straight; scales rather small, with membranous borders, not extending on head, a modified row on back in front of dorsal fin; dorsal fin beginning in advance of ventral fins; caudal fin forked; anal fin very small, far behind dorsal; ventral and pectoral fins similar, each with an axillary scale.

¹ Ichthyologist, United States Fish and Wildlife Service. Dr. Hildebrand died on March 16, 1949, before this paper went to press.

² Explorer.

Genus *ALBULA*

This genus differs from *Dixonina*, the only other genus of the family, chiefly in the last ray of the dorsal and anal being short; not produced and filamentous as in *Dixonina*. Other characters are included in the description of the family.

ALBULA VULPES (Linnaeus)

Esox vulpes LINNAEUS, 1758, ed. 10, p. 313, Bahama Islands. (Diagnosis, based on *Vulpes bahamensis* Catesby, pre-Linnaeus.)

Albula vulpes JORDAN and EVERMANN, 1896, p. 411, fig. 179 (description; synonymy); Meek and Hildebrand, 1923, p. 179 (synonymy; description).

Head 3.0, 3.4; depth 4.9, 5.0; eye 4.2, 4.0 in head; snout 3.1, 2.8; maxillary 3.0, 2.9; interorbital 5.25, 5.5; caudal peduncle 4.1, 4.0; anal base 4.5, 5.1; ventral fin 2.2, 2.3; and pectoral fin 6.2, 6.7. D. 17, 17; A. 8, 8; P. 16, 17; scales 70, 70; gill rakers 7+11, 9+12.

Two young adults, 68 and 80 mm. in total and 55 and 64 mm. in standard length are included in the collection. The proportion or enumeration given first in each instance pertains to the larger specimen. The family and generic characters, together with the data given in the preceding paragraph are sufficient to identify the species. These specimens retain the dark cross bands on the back of the juvenile, which generally disappear at about the length attained by the larger specimen.

Range.—Reported from nearly all warm seas: On the Pacific coast of America from Monterey Bay, Calif., southward to Panamá Bay, and now to northern Perú; and on the Atlantic from Woods Hole, Mass., to Rio de Janeiro, Brazil.

Family MURAENIDAE: Moray eels

PRIODONOPHIS EQUATORIALIS Hildebrand

Priodonophis equatorialis HILDEBRAND, 1946, p. 134, fig. 31, Cabo Blanco, Perú (original description).

A single specimen, 490 mm. in total length, is included in the collection. It, in general, agrees very well with the holotype and a paratype of this species. Minor differences are evident, however, from a comparison of the specimens. The skin seems to be thinner and smoother in the Talara specimen, which may be the result of different methods of preservation, or possibly of a difference in age, as this specimen is smaller than the type and paratype. One eye in the Talara specimen definitely is smaller (probably abnormal) than in the type specimens, but the other one is larger and just about bridges the gap. There seems to be virtually complete agreement in the size and shape

of the teeth, which are in a single series in each jaw, have broad bases, are flattened, and have definite serrations at least on the posterior margins. However, the Talara eel has two small teeth on the median line far back on the roof of the mouth, which are missing in the other specimens. In color the Talara specimen is darker brown than the other specimens, and it has fewer pale spots than the holotype, but more than the paratype, becoming larger on the distal part of the tail than in the other specimens. The differences indicated are regarded as variations within the species.

Range.—Northern Perú, from off Mount Organos and from Talara.

PRIODONOPHIS SERRATIDENS, new species

FIGURE 1

Body with smooth skin, somewhat compressed, its thickness at vent about four-fifths of its depth at same place; tail more strongly compressed, tapering to a rather narrow point; length anterior to vent slightly greater than length posterior to vent, 1.9 in total length; head more strongly compressed than body, its width just in front of gill opening equal to about half its depth at the same place, its length anterior to gill opening 8.3 in total length and 4.25 in length anterior to vent; greatest depth (at gill opening) 6.8 in length anterior to vent, 1.6 in head; snout moderately robust, rather broader than deep in cross section, 5.1 in head; eye small, 12.2 in head, 2.4 in snout; mouth large horizontal, the gape extending about half its length beyond middle of eye, 2.25 in head; lips with small papillae; upper lip and lower jaw with prominent pores; teeth in jaws in a single series, definitely compressed, with rather broad bases, and with both margins strongly serrated, none on vomer, though present in a single series far back on shaft (see insert, fig. 1) and none on palatines; anterior nostril with a tube about two-thirds length of eye, situated well above margin of lip, posterior nostril a round pit, situated at dorsal edge of snout, a little in advance of vertical from anterior margin of eye; gill opening an oblique slit, about 1.5 times length of eye; vertical fins very low, especially anteriorly, not incased in thick skin, fully confluent around the tail, the origin of dorsal a little in advance of gill opening, its origin to tip of snout 4.2 in length anterior to vent; caudal fin rather broadly rounded.

General ground color brown; sides of head with dark brown longitudinal stripes, extending on anterior part of body, becoming cross lines and reticulations below and somewhat behind gill opening; upper surface of head and body everywhere, except on ventral surface of head and trunk, with pale spots, mostly larger than eye, extending more or less on the dorsal and anal fins; dorsal fin with an intra-

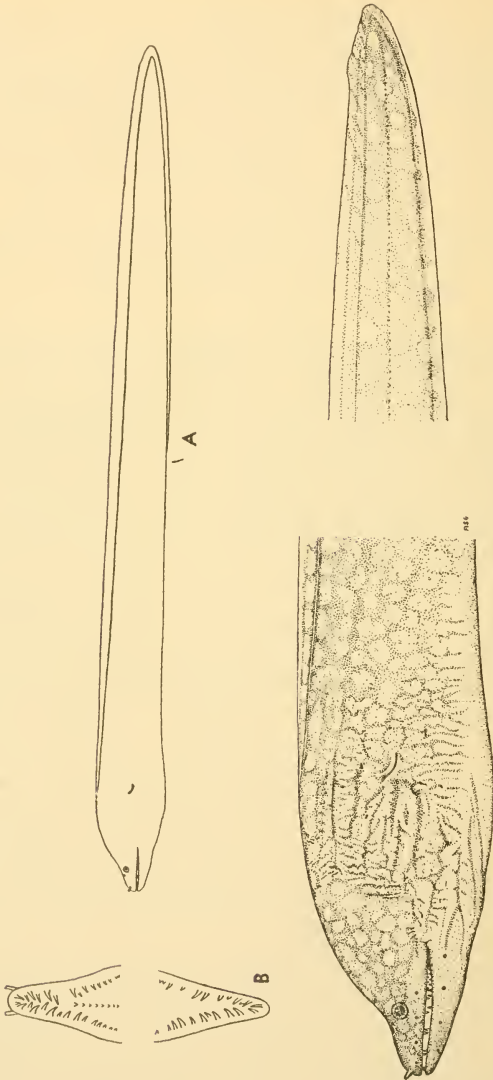


FIG. 1.—*Priodonophis serratidens*. From the type, 510 mm. long, Talara, Perú (U.S.N.M. No. 144253). A, diagram showing shape and proportions; B, mouth spread open showing teeth.

marginal pale streak anteriorly, becoming marginal over the mid-caudal section, soon fading into the general pale brown color of the posterior section of the fin.

This species is represented by a single specimen (U.S.N.M. No. 144253) 510 mm. in total length. Its chief distinguishing characters are shown in the parallel comparison of the three species of this genus herein recognized, which follows the description of *P. angusticeps*.

The name *serratidens* is in reference to the serrated teeth in the jaws.

PRIODONOPHIS ANGUSTICEPS, new species

FIGURE 2

Body with wrinkled skin, compressed, its thickness at vent a little less than three-fourths its depth at same place; tail more strongly compressed, becoming strongly compressed and broadly rounded distally; length anterior to vent equal to length of rest of body; head deep, rather strongly compressed, its width just in front of gill opening equal to about half its depth at same place, its length anterior to gill opening 6.4 in total length and 3.25 in length anterior to vent; greatest depth (at gill opening) 6.6 in length anterior to vent, 2.0 in head; snout fairly robust, not much deeper than broad, about square in cross section, 6.1 in head; eye small, 11.4 in head, 1.85 in snout; mouth very large, horizontal, the gape extending about half its length beyond middle of eye, 2.3 in head; lips with small papillae; upper lip and lower jaw with prominent pores; teeth in jaws in a single series, rather small, not prominently compressed, with finely serrated margin visible only under magnification, none on vomer or palatines; anterior nostril with a tube about two-thirds length of eye, situated well above margin of upper lip, posterior nostril a roundish pit surrounded by a slightly raised membrane, situated near edge of dorsal surface of snout just in advance of vertical from anterior margin of eye; gill opening an oblique slit, nearly twice diameter of eye; dorsal fin high, more than twice as high as the anal, its greatest height about equal to length of snout and eye, fully confluent with the caudal and anal, its origin from tip of snout 4.9 in length anterior to vent; caudal fin broadly rounded.

General color rather light chocolate brown, the furrows of the wrinkled skin dark brown, mostly horizontal on head and vertical on body, some wavy or even slightly cross hatched, disappearing on distal part of tail; fins of about same color as body, dark lines following the furrows of the wrinkles in the skin, paralleling the rays.

This apparently new eel is represented in the collection by a single specimen (U.S.N.M. No. 144254), 510 mm. in total length. The

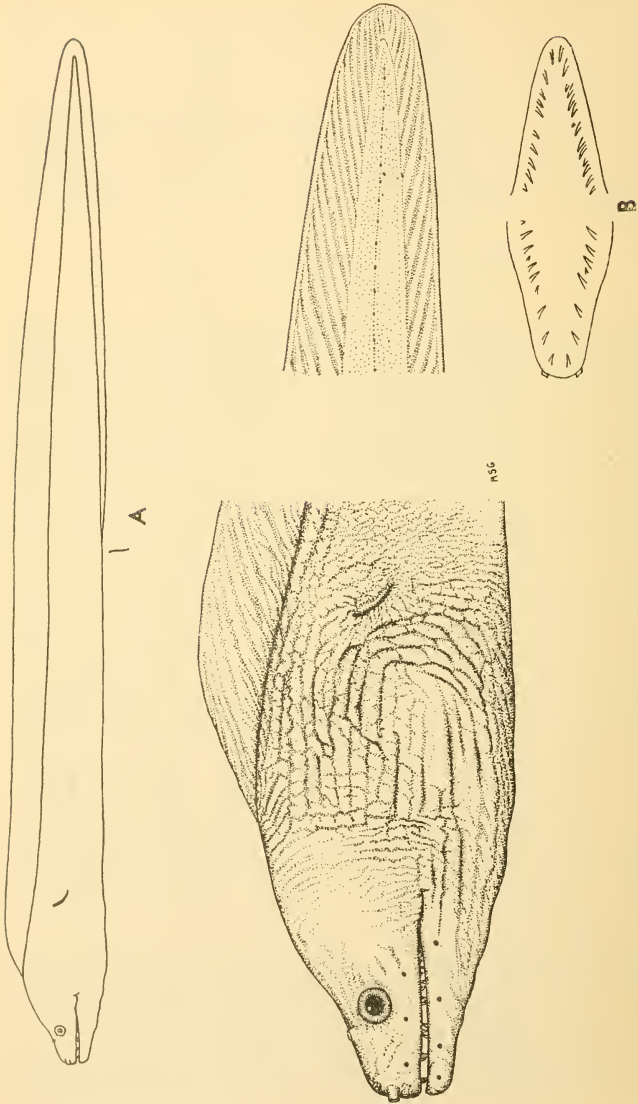


FIG. 2.—*Prionodonophis angusticeps*, new species. From the type, 510 mm. long, Talara, Perú (U.S.N.M. No. 144254). A, diagram showing shape and proportions; B, mouth spread open showing teeth.

principal differences among the three species of this genus, recognized in these pages, are shown in the parallel comparison that follows.

The name *angusticeps* was suggested by the rather narrow compressed head.

<i>equatorialis</i>	<i>serratidens</i> , new species	<i>angusticeps</i> , new species
Teeth in jaws compressed, with broad bases, the posterior margin of each tooth always and the anterior margin generally serrate.	Teeth in jaws compressed, with broad bases, each margin of tooth definitely serrate.	Teeth in jaws little compressed, with minute serrae, present only at base of most of the teeth.
Skin on body mostly smooth, wrinkles if present not extending on dorsal fin.	Skin on body and fins smooth.	Skin on body very wrinkled, the wrinkles extending on dorsal fin.
Head and trunk definitely shorter than tail, length anterior to vent 2.3 in total length.	Head and trunk about equal to length of tail.	Head and trunk about equal to length of tail.
Head large, its length to gill opening 3.0 in length anterior to vent, 6.8 in total length.	Head small, its length to gill opening 4.25 in length anterior to vent, 8.3 in total length.	Head moderately large, its length to gill opening 3.25 in length anterior to vent, 6.4 in total length.
Snout about square in cross section, 6.0 in head.	Snout rather broader than deep in cross section, 5.1 in head.	Snout a little deeper than broad in cross section, 6.1 in head.
Origin of dorsal well in advance of gill slit, its distance from tip of snout 4.1 in length anterior to vent, 9.4 in total length.	Origin of dorsal little in advance of gill slit, its distance from tip of snout 4.2 in length anterior to vent, 8.2 in total length.	Origin of dorsal far in advance of gill slit, its distance from tip of snout 4.9 in length anterior to vent, 9.6 in total length.
Dorsal fin rather low, its height nowhere exceeding length of snout, not enveloped in thick skin.	Dorsal fin very low, its greatest height about half length of snout, enveloped in thin skin.	Dorsal fin high, its greatest height about equal to length of snout and eye.
Head and body with pale spots, very small (dots) on head, becoming larger posteriorly, all smaller than eye.	Head and body with much larger pale spots, many of them equal to or larger than eye.	Head and body unspotted, but with dark lines in the furrows of the wrinkled skin.

Family GADIDAE: Codfishes

Body generally quite elongate, tapering toward the tail; mouth large, terminal or more usually inferior; chin with a barbel; gill openings wide; gill membranes separate or somewhat united, generally free from the isthmus; gills 4, a slit behind the fourth; vent generally more or less median in position; air bladder rarely missing in adults; scales small, cycloid; fins without spines; dorsal fin generally occupying nearly the full length of back, single or divided into 2 or 3 sections; caudal fin separate or united with the dorsal and anal; anal fin long, single or divided into 2 parts; ventral fins jugular, each consisting of 1 to 8 rays.

This is a large family, which includes many important food fishes. In tropical regions it is represented by species inhabiting deep water.

Genus *PHYSICULUS* Kaup, 1858

Body elongate, robust anteriorly, tapering sharply posteriorly; head large, generally more or less depressed; mouth broad, more or less inferior; snout broad; chin with a short barbel; teeth in jaws in villiform bands, none on vomer or palatines; scales small, extending forward on snout and on chin; dorsal fins 2, the first one small; caudal fin round, free from dorsal and anal; anal fin single; ventral with 5 to 7 rays, the outer ones more or less filamentous.

About seven species are known from off the American coasts, generally living in rather deep water.

PHYSICULUS TALARAE, new species

FIGURE 3

Head 3.85; depth 4.6; D. 10-60; A. 63; P. 26 and 27; scales partly lost, about 110.

Body robust anteriorly, tapering sharply and becoming rather strongly compressed posteriorly, its depth at base of pectorals scarcely an eye's diameter greater than its width at the same place; caudal peduncle very slender, strongly compressed, its depth 11.5 in head; head rather large, a little broader than deep at margin of preopercle, its depth at this point 5.5 in standard length; snout low and broad, 4.1 in head; eye moderate, 4.4; interorbital flat, 4.75; mouth rather large, its gape about as broad as long; lower jaw definitely shorter than the upper one, included; maxillary almost reaching vertical from posterior margin of eye, 1.9 in head; teeth in jaws in villiform bands,

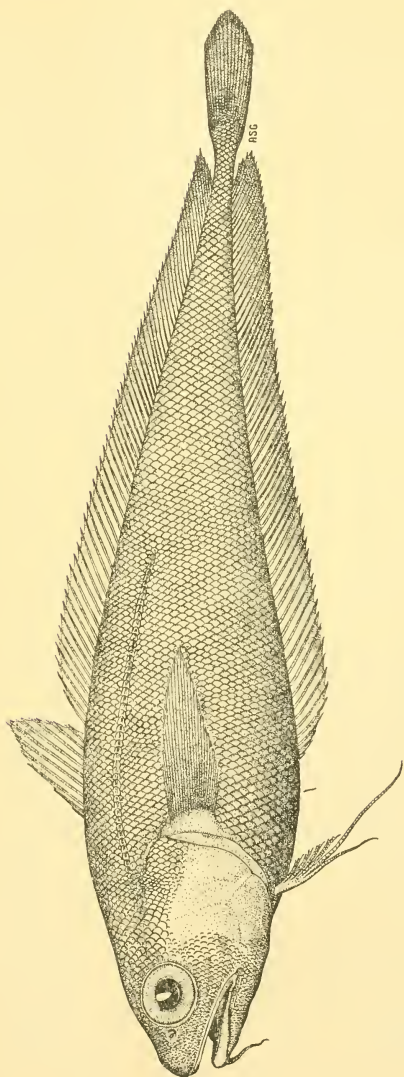


FIG. 3.—*Physiculus talarae*, new species. From the type, 265 mm. long, Talara, Perú (U.S.N.M. No. 144355).

the one in upper jaw the broader, mostly exposed with mouth closed; preorbital scarcely as broad as pupil; gill rakers short, expanded at tips, spiny, 12 on lower limb and 4 on the upper one of first arch; lateral line incomplete, ending near midbody length, or about 2 diameters of eye behind tip of pectoral, with a long low arch anteriorly, being highest under origin of second dorsal; scales small, extending forward to margin of snout and on chin, but not on fins except on base of caudal, 8 longitudinal rows between lateral line and middle of first dorsal; dorsal fins 2, definitely separate, the first short, more or less triangular in shape, its middle rays longest, 2.33 in head, the second long and low, with a straight margin; caudal fin small, round, about as long as snout and half the eye; anal fin similar to second dorsal; ventral fin narrow, with 6 rays, the outer rays produced, the second the longest, reaching about an eye's diameter beyond origin of anal, but failing to reach tip of pectoral by about an equal distance, definitely shorter than head, 5.3 in standard length; pectoral rather large, pointed, shorter than head, 5.3 in standard length.

Color uniform gray, except for underneath surface in advance of origin of anal which is darker brown; margin of gill covers quite dark; dorsal pale, with a brownish margin; caudal rather darker brown than body, anal similar to dorsal, except that it has a darker margin; ventral dark at base, otherwise colorless; pectoral brownish like the body.

This apparently new species is represented by a single specimen (U.S.N.M. No. 144255), 265 mm. in total and 243 mm. in standard length. It seems to be nearest *P. nematopus* Gilbert, known from many specimens taken at depths ranging from 71 to 221 fathoms in the Gulf of California, of which five "type" specimens, 78 to 147 mm. in total length (U.S.N.M. No. 46555), are at hand for comparison. The most outstanding difference between those specimens and the one from Perú is the difference in the number of pectoral rays. This and other differences are shown in the parallel comparison that follows. Some of the other differences, consisting of proportions such as the depth of the body and the length of the ventral fins, may be affected by age and growth, and therefore are not entirely reliable.

Another closely related species is *P. longipes*, known from specimens taken in 127 to 695 fathoms in Panamá Bay or in the vicinity thereof, of which one of the "type" specimens, 113 mm. in total length (U.S.N.M. No. 57876), is at hand. The Peruvian specimen differs from this one in the greater number of pectoral rays, just as

it does from *nematopus*, but it agrees in the depth of the body and more or less in the length of the head. These and other differences are shown in the parallel comparison. The validity of this species, that is, its distinctness from *nematopus*, has been questioned by Norman (1937, p. 56). In view of the present study it seems advisable to retain *nematopus* and *longipes* as distinct species. Garman (1899, p. 189) stated that *longipes* differs from *nematopus* in having a greater number of dorsal rays and a smaller number of ventral rays. All specimens of 4 species examined have uniformly 6 ventral rays, and the difference in the number of dorsal rays is at most very small, and instead of being more numerous, they actually are slightly fewer according to the specimens examined.

The only other species of this genus reported from off the Pacific coast of tropical America, *rastrelliger*, of which several "type" specimens are at hand (U.S.N.M. No. 44281), differs from all the others of that region in having more gill rakers, 18 to 20 being present on the lower limb of the first arch.

<i>nematopus</i>	<i>longipes</i>	<i>talarae</i> , new species
Pectoral rays 20 to 23.	Pectoral rays 20 and 21.	Pectoral rays 26 and 27.
Dorsal rays 10-56 to 59.	Dorsal rays 11-54.	Dorsal rays 10-60.
Scales in lateral series 86 to about 100, and 6 longitudinal rows between lateral line and middle of first dorsal.	Scales in lateral series lost in part, about 76, and 6 longitudinal rows between lateral line and middle of first dorsal.	Scales in lateral series lost in part, about 110, and 8 longitudinal rows between lateral line and middle of first dorsal.
Ventral fin longer than head, 3.0 to 3.55 in standard length.	Ventral fin longer than head, 3.3 in standard length.	Ventral fin shorter than head, 5.3 in standard length.
Head moderate, its length 3.9 to 4.0 in standard length.	Head large, its length 3.5 in standard length.	Head moderate, its length 3.8 in standard length.
Depth 5.1 to 5.25 in standard length.	Depth 4.7 in standard length.	Depth 4.6 in standard length.
Eye 3.4 to 4.1 in head.	Eye 4.65 in head.	Eye 4.4 in head.
Gill rakers blunt, not definitely expanded at tips, quite spiny, nearly as long as pupil.	Gill rakers pointed, not expanded at tips, not very spiny, nearly as long as pupil.	Gill rakers broad, greatly expanded at tips, very spiny, scarcely half length of pupil.

Family SERRANIDAE: Seabasses

Genus ANTHIAS Bloch, 1792

Body oblong, compressed; mouth large; premaxillaries protractile; maxillary exposed, covered with scales, with a supplemental bone; teeth in jaws villiform, intermixed with canines, a triangular patch on vomer and an elongate one on palatines, a few or none on tongue; gill rakers long and slender; preopercle serrate, without antrorse spines; lateral line complete, running close to dorsal outline, abruptly decurved under last rays of dorsal; scales covering head and body, smooth or ctenoid; dorsal fin X, 12 to 18; anal fin III, 6 to 8; pectoral fin about 17 or 18; ventral fin long, inserted under base of pectoral, I, 5.

This genus was not represented in the collections on which U. S. National Museum Bulletin 189, 1946, was based. However, Mr. Barton obtained two specimens from fishermen at Talara, Perú, from January to April, 1946, which he described (1947, p. 2) under the name *Holanthias sechurae*. It seems now, however, that the nominal genus *Holanthias* is not well founded, and that it is advisable to refer the species to the genus *Anthias* for the present, along with other related American species.

This genus, although widely distributed in tropical and temperate seas, until recently was known from the Western Hemisphere from only one species reported from the Atlantic coast of South America. Two very closely related species were described recently from the eastern Pacific, one from off Cape San Lucas, México, and the other from Talara, Perú.

ANTHIAS SECHURAE (Barton)

FIGURE 4

Holanthias sechurae BARTON, 1947, p. 2, fig. 2, Talara, Perú (description, based on the holotype, 235 mm. in total length (A.M.N.H. No. 17082), and a paratype 192 mm. in total length).

Head 3.1; depth 3.1; D. X, 15; A. III, 7; P. 19; scales 55 or 56, 52 or 53 in lateral line.

Body rather deep, compressed, dorsal outline more strongly convex than the ventral; snout a little longer than eye; eye 4.0 in head measured to tip of opercular spine; interorbital 4.0; mouth oblique; lower jaw projecting; maxillary extending just beyond center of eye, its greatest width two-thirds diameter of eye; tongue with a considerable patch of fine granular teeth; upper jaw anteriorly with small canine teeth; lower jaw with similar teeth anteriorly and lat-

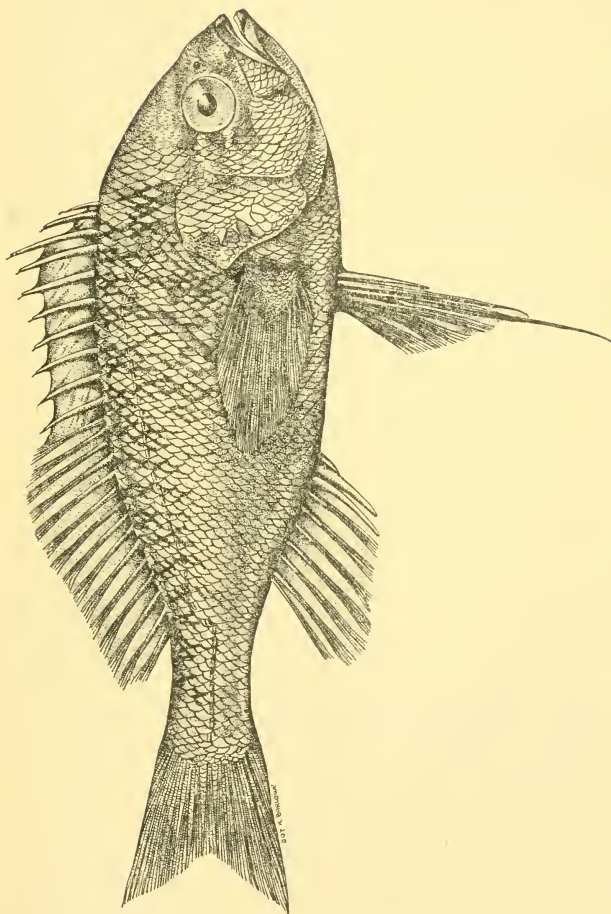


FIG. 4.—*Anthias sechurae* (Barton). From the type, 235 mm. long, Talara, Perú (A.M.N.H. No. 17082).
(After Barton, 1947.)

erally, the anterior ones projecting obliquely forward; preopercle finely serrate, the paratype with two small flat spines at angle in addition to fine serrations on vertical margin; opercle with three spines, the middle one the largest; gill rakers long, slender, 26 on lower limb of first arch; lateral line running close to back, abruptly decurved under last rays of dorsal, thence a little below middle of caudal peduncle to base of caudal fin; scales present on head and body, exclusive of premaxillary, and upper border and tip of mandible; dorsal fin beginning above middle of opercle, the spines increasing in length to the third, then slowly decreasing, the third spine 2.3 in head; soft dorsal with gently convex margin, middle rays longest, no notch between spinous and soft portions; caudal forked, the outer rays not produced; anal fin small, its origin a little behind vertical from beginning of soft part of dorsal, its first spine short, the second one nearly as long as the third, and stronger; ventral fin with first and second soft rays filamentous, the second the longer, extending about to end of anal base; pectoral with narrowly rounded margin, extending a little beyond origin of anal, 1.2 in head.

Color of type "masked by purple stain." Paratype, "yellowish with brown mottling above, a little paler below, fins all pale. It shows traces of three radiating dark lines behind the eye, each line about as wide as pupil, a dark patch between the eyes extending onto snout, and a dark line in front of the eye carried onto tip of lower jaw." (Reorganized and largely reworded after Barton's description and figure.)

This species was described by Mr. Barton, as shown above, from two specimens, the type 235 mm. in total and 188 mm. in standard length, and a paratype 192 mm. in total length, both from the vicinity of Talara (exact place of collection uncertain), Perú. It already has been pointed out by John T. Nichols in a footnote in Mr. Barton's paper that this species is close to *Anthias gordensis* Wade (1946, p. 225). *A. gordensis* was described from two small specimens, 127 and 129 mm. in standard length, taken at 70 to 78 fathoms on Inner Gorda Banks, off Cape San Lucas, México.

Whether *sechurae* and *gordensis* actually are distinct cannot be definitely determined from the published accounts. The number of fin rays and gill rakers, indeed, are virtually the same in the two, but a slight difference in the number of scales in a lateral series is indicated, 55 or 56 being given for *sechurae* and 48 to 50 for *gordensis*. It is not stated, however, exactly where and how the enumerations were made. The eye may be a little smaller in *sechurae*, 4.0 in head, than in *gordensis*, 3.61 and 3.75 in head, but then the specimens of

sechurae are larger. The snout was described as a little longer than the eye in *sechurae* and as shorter than the eye in *gordensis*. The teeth on the tongue were described as granular and as in a "considerable patch" in *sechurae*, and as blunt, few and scattered in *gordensis*. According to the figures the lobes of the caudal are pointed in *sechurae* and about as long as the head without the snout, whereas they are rounded and almost as long as the head in *gordensis*. Although the number of anal rays was given as equal in the two species, the illustrations show the base to be shorter than the soft dorsal by 5 rays in *sechurae*, and by only 2 rays in *gordensis*. Furthermore, the mouth is shown as notably more oblique in *sechurae* than in *gordensis*. In view of these several apparent differences the two may be regarded as distinct at least until further evidence is obtained.

This species, as well as *A. gordensis*, differs from *A. asperilinguis* from the Atlantic coast of South America in having a more elongate body, smaller scales, longer snout, smaller eye, and in the absence of filaments on the outer rays of the caudal.

Range.—Known only from the vicinity of Talara, Perú.

Family PRIACANTHIDAE: Bigeyes

Body oblong, or ovate, compressed; head short, deep; snout short; eye very large; mouth large, oblique; lower jaw projecting; teeth in jaws in villiform bands, present also on vomer and palatines; posterior nostril large, elongate; preopercle serrate, with 1 or more spines or enlarged serrations at angle; opercle short, with 1 to 3 points or spines; lateral line complete, not extending on caudal fin; scales firm, ctenoid, extending on head, snout and maxillaries, but not on the fins; dorsal fin continuous, with about 10 spines; anal with 3 spines; ventrals thoracic, with I, 5 rays.

Two genera, *Priacanthus* and *Pseudopriacanthus*, occur in American waters, which have not heretofore been recorded from Perú. The last mentioned genus is represented by a fine specimen in the collection from Talara, Perú.

Genus PSEUDOPRIACANTHUS Bleeker, 1869

Body very deep, its depth usually equal to or greater than half its length to the base of caudal; scales moderately large, about 35 to 55 in a lateral series; dorsal with about X, 10 or 11 rays; anal with about III, 10 or 11.

This genus, which occurs in the Atlantic and Pacific, is new to the fauna of Perú.

PSEUDOPRIACANTHUS SERRULA (Gilbert)

- Priacanthus serrula* GILBERT, 1890, p. 450, Albatross Station 2797, 8°6'30" N., 78°51' W., Panamá Bay, in 33 fathoms (original description).
Pseudopriacanthus serrula JORDAN and EVERMANN, 1896, p. 1239 (description); Meek and Hildebrand, 1925, p. 490 (description).
?*Pseudopriacanthus lucasanus* CLARK, 1936, p. 388, Cape San Lucas, Baja California (original description).

Head 2.6; depth 1.8; D. X, 11; A. III, 10; P. 17; scales 53.

Body short and deep, moderately compressed, the ventral outline anteriorly more strongly convex than the dorsal; caudal peduncle short and deep, 2.8 in head; snout only about half length of eye, 4.35 in head; eye extremely large, 2.25; interorbital 4.3; mouth strongly oblique; lower jaw projecting prominently, entering general dorsal outline of head; maxillary nearly as broad as pupil, not quite reaching vertical from anterior margin of pupil, 1.85 in head; teeth in jaws in villiform bands, some of the outer ones in anterior part of each jaw slightly enlarged, also present in villiform bands on vomer and palatines; preorbital bone scarcely half width of pupil, rather finely serrate above and below; supraorbital ridge finely serrate; preopercle with fine serrae on its vertical margin and with larger ones at its angle and on the horizontal margin; gill rakers fairly short, 17 on lower limb of first arch; lateral line arched anteriorly, running rather close to back; scales small, strongly ctenoid, extending forward on head, covering it fully except for the premaxillaries and the lower lips; dorsal fin long continuous, the spines fluted, graduated to fourth, the fourth to seventh of nearly equal length, the rest shorter, the fifth 1.45 in head, the margin of the soft part convex, the rays spinous at base, the longest ones only a little shorter than the longest spines; caudal fin round, about as long as head without snout; anal with three graduated, fluted spines, the third 2.3 in head, the longest soft rays much longer than the longest spine, about equal to longest rays of dorsal; ventral fin large, reaching opposite base of second anal spine, nearly as long as head, its spine 1.1 in head; pectoral fin shorter, rather broadly rounded, 1.6 in head.

Color uniform light gray, scarcely paler below than above; fins uniform pale except for dark tips or margins of the soft parts of the dorsal and anal, and the caudal and ventral.

The description was based on a single large specimen, 280 mm. in total length, which was taken off Talara, Perú. It was compared with the small type, which is only 38 mm. in total length. The comparison, although not entirely satisfactory, shows fair agreement. The two agree in the number of fin rays present, and perhaps more signifi-

cantly the two agree in the small number of gill rakers present, wherein this species seems to differ from related ones. It is close to *P. altus*, from the West Indies and the Atlantic coast of the United States, apparently differing principally in having 17 gill rakers on the lower limb of the first arch, instead of 20 as in *P. altus*. *P. serrula* also is close to *P. niphonius*, a Japanese species, from which it also differs in having fewer gill rakers, a broader interorbital, and rather longer fin spines. The small specimen, 73 mm. in total length, from Cape San Lucas, Baja California, described by Clark (1936, p. 388) as *P. lucasanus*, probably is the same as *P. serrula*, though a few characters as given are in disagreement. The anal formula, "II, 10," perhaps may be dismissed as a typographical error, as the presence of 3 spines is the normal number for the members of the family. The oversight of teeth on the vomer and palatines, also a family character, presumably led to the assertion that none were present.

Range.—Previously reported only from Panamá Bay. The known range is now extended southward to Talara, Perú, and somewhat doubtfully, northward to Cape San Lucas, Baja California.

Family POMADASIDAE: Grunts

ORTHOPRISTIS CHALCEUS (Günther)

Orthopristis chalceus HILDEBRAND, 1946, p. 284 (description).

A single specimen, 59 mm. in standard length (caudal fin broken), is present in the collection. The species probably is not common in Perú, as the U. S. Fish and Wildlife Service Mission to Perú in 1941 did not obtain any specimens. It has been recorded, however, from two places in Perú, namely, from Lobos de Afuera, and from Callao (Hildebrand, 1946, p. 248).

Range.—Gulf of California to the Galápagos Islands and northern Perú.

Family SCIAENIDAE: Croakers, Drums, etc.

Genus EQUETUS Rafinesque, 1815

Body oblong, compressed; back much elevated anteriorly, descending rapidly posterior to first dorsal fin; mouth small, inferior, lower jaw included; snout with rather prominent pores and slits; preopercle with serrated membranous border; teeth in jaws in villiform bands, some of them occasionally enlarged; gill rakers short and rather few, about 8 to 12 on lower limb of first arch; scales rather small, ctenoid; soft part of dorsal very long, with about 35 to 55 rays; anal small, with only about 5 to 8 soft rays.

This genus was not known from Perú when U. S. National Museum Bulletin 189, 1946, was prepared. However, Mr. Barton obtained a specimen of this genus at Talara, Perú, in 1946, which he described (1947, p. 1) as *Eques*³ *lanfeari*.

EQUETUS LANFEARI (Barton)

FIGURE 5

Eques lanfeari BARTON, 1947, p. 1, fig. 1, Talara, Perú, from a depth of 250 feet. (Description, based on the holotype (A.M.N.H. No. 17081), 290 mm. in total length.)

Head 3.2; depth 2.7; D. XII, 35 or 36; A. II, 7; scales in 80 transverse series above lateral line, 12 rows between lateral line and middle of first dorsal.

Body deep, much compressed; head compressed; snout blunt, not protruding beyond premaxillaries, 3.0 in head; eye 4.7; interorbital 3.7; mouth nearly horizontal; maxillary reaching about under middle of eye, 2.6 in head; tip of lower jaw with a fleshy knob; posterior nostril oval, the anterior one somewhat triangular and smaller; teeth in wide bands in both jaws, the outer ones in upper jaw enlarged; gill rakers very short, 9 exclusive of rudiments on lower limb of first arch; lateral line not distinct, rather strongly arched; scales strongly ctenoid, extending on soft dorsal, caudal, and anal; dorsal fins barely continuous, spinous dorsal short, the first spine very short, the second and third high, the third 1.8 in head; second dorsal very long and rather low; caudal fin rounded; anal small, the second spine enlarged, 2.2 in head; ventral nearly as large as the pectoral, inserted almost under base of pectoral, 1.6 in head; pectoral 1.7 in head.

Color gray, purplish along back, a little lighter on belly; all fins dusky at edges; snout, opercles and preopercles darker; four distinct, horizontal, dark stripes, the first about one-third of the pupil in width, starting below middle of first dorsal and running along base of fin to middle of soft dorsal; the second, about one-half of the pupil in width, starting about the length of snout below the first dorsal spine and curving backward to base of third hindermost ray of soft dorsal; the third slightly wider, from back of opercular angle to upper third of peduncular base; the fourth a little narrower, starting a little behind lower pectoral base and running back to above posterior anal base. (Reorganized and somewhat reworded after Barton.)

³ *Eques* Linnaeus (1758, p. 459) is preoccupied in Lepidoptera, but *Equetus* Rafinesque (1815, p. 86) is available.

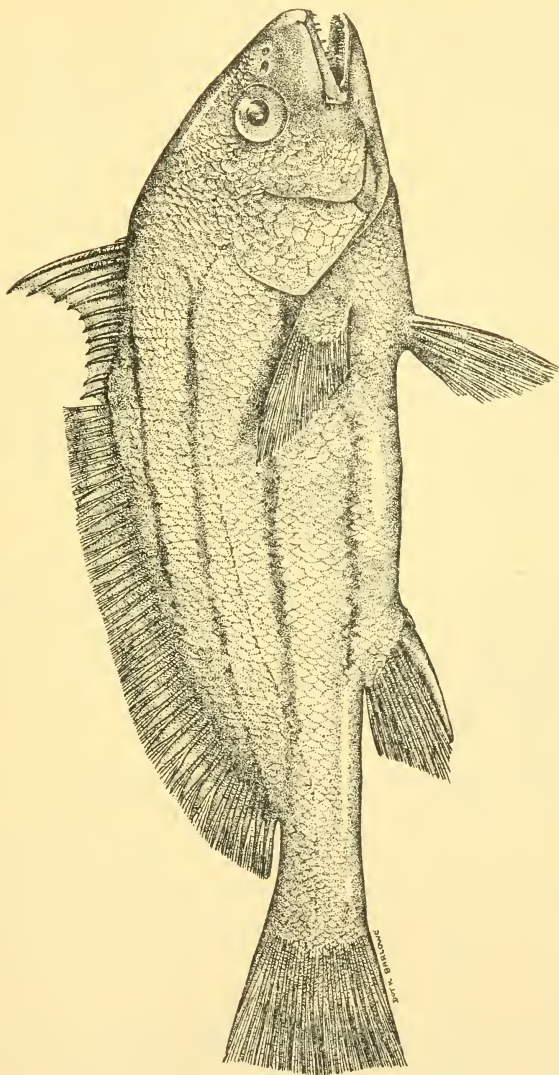


FIG. 5.—*Equetus laufeari* (Barton). From the type, 290 mm. long, Talara, Perú (A.M.N.H. No. 17081). (After Barton, 1947.)

This species probably is nearest *E. acuminatus* (Bloch and Schneider) from the Atlantic, from which it differs prominently in the much smaller scales. From the other two species, *E. viola* (Gilbert) and *E. fuscovittatus* (Kendall and Radcliffe), known from the Pacific coast of America, it differs in color and in the lower spinous dorsal.

Range.—Known only from off Talara, Perú.

Family CHAETODONTIDAE: Butterflyfishes, Angelfishes

Genus **HOLACANTHUS** Lecépède, 1803

Body oblong, rather robust, the depth usually about equal to half the total length; back round; head short, blunt; preopercle serrate along vertical margin, with a large spine at angle, preceded by 1 to 3 spines in lower margin of preopercle; interopercle anteriorly with 1 to 4 short spines; preorbital anteriorly with coarse serrae; scales firm, strongly serrate, fluted, accessory scales generally present; dorsal with about 12 to 15 spines; soft part anteriorly sometimes elevated; anal with three graduated spines, the soft part similar to that of dorsal. Color usually brilliant.

The genus is now reported from Perú for the first time.

HOLACANTHUS PASSER Valenciennes

Holacanthus passer VALENCIENNES, 1855, p. 327, Galápagos Islands (original description; figure published in atlas, 1846, as plate 6); Jordan and Evermann, 1898, p. 1682 (description); Meek and Hildebrand, 1928, p. 778 (description; range).

Holacanthus strigatus GILL, 1862, p. 243, Cape San Lucas, Baja California (original description).

Head 4.0; depth 1.65; D. XIV, 19; A. III, 19; P. 17; scales along middle of side 46.

Body short and deep, well compressed, its ventral profile anteriorly strongly convex, its dorsal profile slightly concave over eyes, steep at nape; caudal peduncle short, strongly compressed, 1.6 in head; head short, deep; snout blunt, 2.6; eye small, 4.5; mouth small, terminal; maxillary under preorbital, reaching about to vertical from anterior nostril, 3.3 in head; teeth in jaws, slender, bristlelike, movable, mostly in 2 series; preopercle with a rather finely serrate vertical margin, at angle, a large spine exceeding diameter of eye, preceded on lower margin by 3 smaller spines; interopercle anteriorly with 2 spines; preorbital anteriorly coarsely serrate; gill rakers short, 12 somewhat developed on lower limb of first arch; lateral line pores undeveloped; scales strongly ctenoid, fluted, mostly with accessory scales at base, extending forward on snout and chin, covering soft parts of the

vertical fins completely, and extending more or less on the rays of the paired fins; dorsal fin very long, its origin a little in advance of margin of opercle, its spines rather short, slightly graduated, the third 2.3 in head, the soft part with a produced lobe about twice as long as head; caudal round, about as long as head; anal with 3 graduated spines, the soft part similar to that of dorsal; ventral fin long, the 2 outer rays filamentous, the longest filament reaching origin of anal, about 3.0 in length, its spine slender, 1.45 in head; pectoral broad, with slightly convex margin, about as long as head.

Color satin-black; a white vertical bar under sixth dorsal spine, about as broad as eye, ending under tips of middle rays of pectoral; caudal, ventrals and pectorals and distal parts of lobes of dorsal and anal pale; the margin of the caudal black.

This species, which is new to the fauna of Perú, is represented in the collection by one fine specimen, 220 mm. in total length.

Range.—Previously known from Acapulco, México, to the Galápagos Islands. Now for the first time reported from Perú from a specimen caught off Talara, Perú.

Family CALLIONYMIDAE: Dragonets

Genus SYNCHIROPUS Gill, 1860

The single small specimen in the collection, which apparently represents a new species, seems to belong to the genus *Synchiropus* Gill, as understood by at least some modern ichthyologists.⁴ This genus seems to be characterized by the broad, smooth body; the absence of a tentacle above the eye; the single lateral line; the superior gill opening, with at least a slight free opercular flap in front of and below it; and by the two well-separated dorsal fins, with the rays in the second fin divided in adult fish.

SYNCHIROPUS TALARAE, new species

FIGURE 6

Head 3.1; depth 9.3; D. IV, 9; A. 8; P. 24; V. 6.

Body strongly depressed, broader than deep except at base of caudal; head large, very strongly depressed, its depth only about half its width, and 3.0 in its length; snout depressed, triangular, much shorter than eye, 4.7 in head; eye definitely more superior than lateral, 3.5; interorbital very narrow, slightly grooved, about 12 in eye;

⁴I am indebted to Dr. Leonard P. Schultz, who has recently examined many specimens of the family Callionymidae from many parts of the world to determine generic and specific relationships, for suggesting that this Peruvian species belongs to the genus *Synchiropus*. (S.F.H.) (See Schultz and Woods, Journ. Washington Acad. Sci., vol. 38, No. 12, pp. 419-420, 1948.)

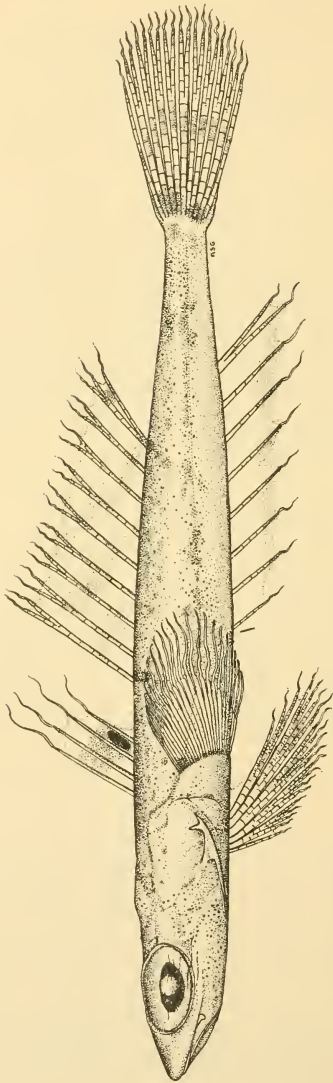


FIG. 6.—*Synchiropus talarae*, new species. From the type, 35 mm. long, Talara, Perú (U.S.N.M. No. 144258).

mouth rather large, lower jaw shorter than upper, included; maxillary reaching nearly to anterior margin of pupil, 3.75 in head; teeth in jaws minute, apparently in a narrow band; preopercular spine strong, curved upward posteriorly, bifurcate distally, the upper spine the stronger, directed upward; gill opening superior, being an elongate transverse slit; lateral line single; first dorsal with four slender spines, each bearing a short filament, none reaching second dorsal without filament, origin of fin over the space between gill opening and base of pectoral, distance from snout 3.1 in standard length; second dorsal well separated from the first, the anterior rays a little higher than the posterior ones, each with a short filament and all falling far short of reaching base of caudal with filaments included; caudal fin apparently somewhat rounded about equal to distance from tip of snout to base of preopercular spine; anal with widely separated rays, increasing gradually in length, but not reaching base of caudal, each ray with a short filament, origin of fin a little nearer base of caudal than tip of snout, its distance from tip of snout 1.8 in standard length; ventral rather large, inferior, the rays slightly filamentous distally, longest filament scarcely reaching opposite vent, inserted nearly equidistant from tip of snout and vent, 1.3 in head; pectoral inserted about over midlength of ventral, the rays filamentous distally, reaching slightly beyond origin of anal, 1.8 in head.

General color brownish above, pale underneath; back with a dark cross line at base of first ray of second dorsal and another one at base of its last ray; side with indefinite dark spots and punctulations; first dorsal with a black spot at base of last ray; rays of second dorsal with an elongate dusky spot somewhat above midlength; caudal fin with a dark bar on its base, its midsection and its margin slightly darker than rest of fin; each anal ray, exclusive of the first two, distally dusky, the filaments pale; ventral pale, with a few dusky dots along the rays; pectoral with a dusky spot at base of upper rays, fin otherwise plain translucent.

This apparently new species is represented in the collection by a single specimen, the holotype (U.S.N.M. No. 144258), 35 mm. in total and 28 mm. in standard length, which is in good condition except that the abdomen has been excavated. *S. talarae* is the third species of this genus to be described from the Pacific coast of America. The other species are *S. atrilabiatius* (Garman) (1899, p. 122), described from specimens dredged by the *Albatross* off Colombia in 112 fathoms and in Panamá Bay in 127 fathoms; and *S. garthi* (Seale) (1940, p. 36, pl. 3), described from a specimen taken at Port Utria, northern Colombia, by one of the Allan Hancock expeditions. The first-mentioned species is well described, but the size of the specimens upon

which it is based is not stated and no figure is offered. The species mentioned last is rather inadequately described, but it was figured. The length of the single specimen upon which the description and figure were based was given as 30 mm. The differences among the three species as determined from descriptions and in part from the figure of *S. garthi* are set forth in the parallel comparison offered. *S. talaræ* seems to be unique in the very low broad head.

<i>atriliabatus</i>	<i>garthi</i>	<i>talaræ</i> , new species
Dorsal rays IV-9.	Dorsal rays IV-8 (according to figure).	Dorsal rays IV-9.
Pectoral rays 23.	Pectoral rays 15 (according to figure).	Pectoral rays 24.
Depth of body ? in head.	Depth of body 2.0 in head.	Depth of body 3.0 in head.
Depth of head two-thirds its width; its width scarcely two-thirds its length.	Depth of head ? in its width; its width ? of its length.	Depth of head one-half its width; its width a little less than half its length.
Length anterior to vent less than half the length to base of caudal.	Length anterior to vent about one-half total length (according to figure).	Length anterior to vent a little more than half the length to base of caudal.
Snout as long as eye.	Snout one-half "width of eye."	Snout about three-fourths length of eye.
Eye "less than one-third of length of head."	Eye 2.5 in head.	Eye 3.5 in head.
Gill opening ?	Gill opening round.	Gill opening elongate.
Posterior rays of dorsal and anal reaching base of caudal.	Posterior rays of dorsal and anal not nearly reaching base of caudal (according to figure).	Posterior rays of dorsal and anal not nearly reaching base of caudal.
Anal and ventral rays with filaments ("fringed").	None of fin rays with filaments (according to figure).	Nearly all rays of fins with short filaments.
Upper part of body with numerous closely placed brown cross streaks; first dorsal with a dark spot on outer half between the third and fourth rays.	Body without cross streaks, but with many brown specks; first dorsal dusky at base, but without a black spot.	Body with a very narrow brownish cross streak at base of first ray of second dorsal and another at base of its last ray, and with indefinite dark spots and punctulations; first dorsal with a large black spot.

Family BROTULIDAE: Brotulid eels

BROTULA ORDWAYI, new species

FIGURE 7

Head 4.25; depth 4.4; D. 110; A. 85; P. 23; scales about 225 (too small and irregular to enumerate accurately).

Body moderately elongate, rather strongly compressed throughout, its thickness at tips of pectoral fins only about half its depth at same place; head compressed, rather narrow and definitely convex above, its depth at margin of preopercle 6.0 and its width at same place 9.1 in standard length; snout a little longer than eye, 4.1 in head; eye elongate, 5.4; interorbital narrow, convex, 8.0 in head; mouth moderate, slightly oblique; lower jaw notably shorter than the upper, included; maxillary broad, reaching vertical from posterior rim of orbit, 2.25 in head; anterior pair of barbels of snout larger than the lateral pair and of about the same length as the nasal barbels, 2 prominent flaps of skin between the anterior and lateral barbels, the 6 mandibular barbels all of about equal length; a pair of pores between the anterior barbels, and 1 between the anterior and the lateral barbels; lips rather thick, rugose; teeth small, pointed, in bands on jaws, vomer, and palatines, the band on vomer broadly triangular, approaching a U-shape; 3 gill rakers and 10 rudiments on lower limb, and 4 rudiments on upper limb of first arch; lateral line running high, broadly arched anteriorly, nearly complete; scales small, strongly striate, extending forward on the snout, and on the fins, about 30 oblique rows between posterior rim of orbit and base of opercular spine; dorsal fin long and low, its origin about half an eye's diameter in advance of base of pectoral, its distance from tip of snout 4.0 in standard length, the longest rays about as long as snout and half the eye; caudal fin rounded, fully united with the dorsal and anal, only a little longer than snout; anal similar to the dorsal, its origin well in advance of midlength without caudal fin, its distance from tip of mandible 2.4 in standard length; ventrals short, the longest filament 3.1 in head; pectoral fin broadly rounded, scarcely reaching halfway to origin of anal, 2.0 in head, 8.7 in standard length.

Color very dark brown; sides and upper surface of head and body, to or a little beyond vertical from origin of anal, with many round black spots, the largest ones nearly as big as pupil; ventral fins dusky; other fins very dark brown, nearly black, with a very narrow pale margin.

The foregoing description is based on the holotype (U.S.N.M. No. 144259) and only specimen known, which is 375 mm. in total and 347 mm. in standard length. It differs rather prominently from the

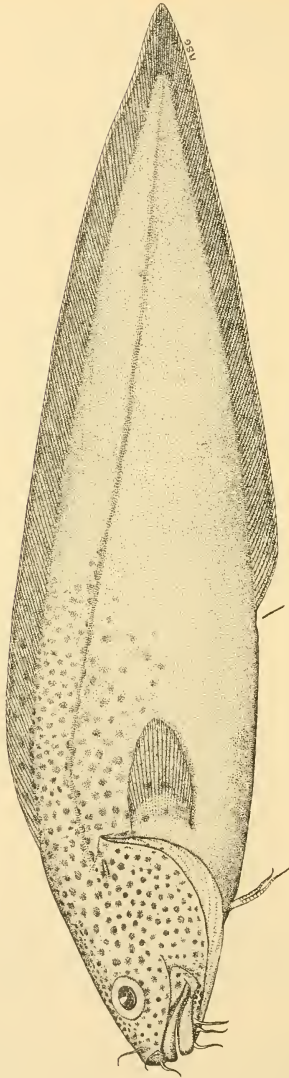


FIG. 7.—*Brotula ordwayi*, new species. From the type, 375 mm. long, Talara, Perú (U.S.N.M. No. 144359).

other American species recognized by Hubbs in his revision (1944, pp. 162-178), as shown in the parallel comparison that follows.

The species was named for Samuel Ordway, the judicious trustee of the New York Zoological Society.

<i> barbata</i>	<i> clarkae</i>	<i> ordwayi</i> , new species
Body quite elongate, its depth 5.5 to 6.0 in standard length.	Body quite elongate, its depth 5.9 in standard length.	Body deeper, its depth 4.4 in standard length.
Head low, somewhat flattened above, its depth at margin of preopercle 6.6 to 6.9 in standard length.	Head low, somewhat flattened above, its depth at margin of preopercle 6.7 in standard length.	Head more convex above, its depth at margin of preopercle 6.0 in standard length.
Mouth large, the maxillary reaching well beyond posterior rim of orbit, 2.0 to 2.1 in head; jaws of about equal length.	Mouth large, the maxillary reaching rather far beyond eye, 2.0 in head; lower jaw slightly longer than the upper.	Mouth smaller, the maxillary reaching under posterior rim of orbit, 2.25 in head; lower jaw notably shorter than upper, included.
Vomerine teeth in a triangular patch, each arm of triangle with a constriction, nearly but not quite pinching off a posterior patch.	Vomerine teeth roughly in a triangular patch, rounded at apex, arms of triangle without a constriction.	Vomerine teeth in a broad triangular patch, approaching the shape of a U, the arms without a constriction.
Origin of dorsal behind base of pectoral, its distance from tip of snout 3.6 to 3.8 in standard length.	Origin of dorsal behind base of pectoral, its distance from tip of snout 3.6 in standard length.	Origin of dorsal definitely in advance of base of pectoral, its distance from tip of snout 4.0 in standard length.
Origin of anal at midlength without caudal fin, its distance from tip of lower jaw 1.9 in standard length.	Origin of anal a little in advance of midlength without caudal fin, its distance from tip of lower jaw 2.1 in standard length.	Origin of anal rather far in advance of midlength without caudal fin, its distance from tip of lower jaw 2.4 in standard length.
Ventral fins rather long, the longest filament reaching a little beyond base of pectoral, 1.8 to 2.2 in head.	Ventral fins long, reaching about an eye's diameter beyond base of pectoral, 2.1 in head.	Ventral fins short, the longest filament scarcely reaching base of pectoral, 3.1 in head.
Pectoral fin reaching much less than halfway to origin of anal, 8.4 to 8.8 in standard length, with 24 or 25 rays.	Pectoral fin reaching about halfway to origin of anal, 8.3 in standard length, with 27 rays.	Pectoral fin scarcely reaching halfway to origin of anal, 8.7 in standard length, with 23 rays.

<i> barbata</i>	<i> clarkae</i>	<i> ordwayi</i> , new species
Scales moderately small, about 210 in a lateral series, about 32 between posterior rim of orbit and base of opercular spine.	Scales very small, about 220 in a lateral series, about 45 between posterior rim of orbit and base of opercular spine.	Scales very small, about 225 in a lateral series, about 30 between posterior rim of orbit and base of opercular spine.
Head and body (at least in adults) plain, without round black spots; the dorsal and anal fins more or less pale at base, with dark margins.	Head and body (at least in adults) plain, without round black spots; the dorsal and anal pale at base, with dark margins.	Head and anterior part of body profusely spotted with black; the dorsal and anal black, with narrow pale margins.

Family OPHIDIIDAE: Cusk eels

Genus LEPOPHIDIUM Gill, 1895

Body quite elongate, compressed, tapering regularly and rather gradually to more or less of a point posteriorly; head low, somewhat compressed; snout with or without a spine (present in all Pacific coast species); mouth rather large and broad, nearly horizontal; teeth in jaws in villiform bands, the outer ones in each jaw more or less enlarged, rather shorter and blunter on vomer and palatines; gill rakers short and few; lateral line present at least anteriorly; scales very small, with many radiating striae, extending forward on head to or beyond interorbital region; dorsal and anal fins continuous with the caudal fin.

Occurring in rather deep water on both coasts of America. About nine species have been recognized. Now reported from Perú for the first time.

LEPOPHIDIUM NEGROPINNA, new species

FIGURE 8

Head 4.6; depth 7.5; D. 128;⁵ A. 114;⁵ P. 23;⁵ scales 220.⁵

Body moderately slender, compressed, its greatest thickness about two-thirds its depth; head long, low, a little deeper than broad over margin of preopercle; snout blunt, 4.8 in head, with a strong spine extending beyond premaxillaries; eye moderate, 5.0 in head; interorbital 5.0; mouth large, nearly horizontal; lower jaw shorter than

⁵ The enumerations are only approximately correct because the fin rays are enveloped in rather thick skin and are not all visible, and the scales are too small and the series too irregular to count accurately.

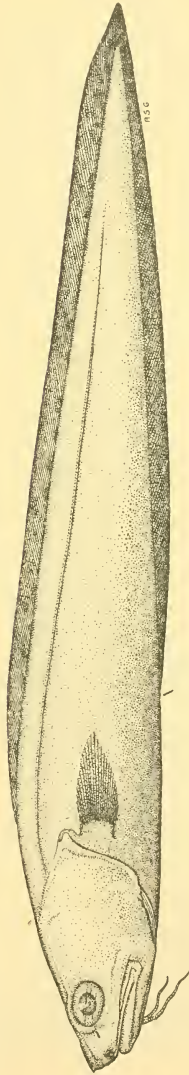


FIG. 8.—*Lepophidium negropinna*, new species. From the type, 280 mm. long, Talara, Perú (U.S.N.M. No. 144256).

	<i>provaris</i>	<i>microlepis</i>	<i>pardale</i>	<i>stigmatismum</i>	<i>emmelas</i>	<i>negropinus</i> , new species
Dorsal rays	127.*	120.*	117.*	117.*	102.*	128.*
Anal rays	106.*	103.*	100.*	103.*	80.*	114.*
Scales in lateral series	212, between nape and origin of dorsal 30.*	248, between nape and origin of dorsal 45.*	228, between nape and origin of dorsal 28.*	210, between nape and origin of dorsal 36.*	Scales in lateral series 225, between nape and origin of dorsal 49.*	Scales in lateral series 225, between nape and origin of dorsal 36.*
Gill rakers	3 + 9, 4 developed.	4 + 9, 4 developed.	3 + 6, 4 developed.	4 + 13, 7 developed.	4 + 16, 9 developed.	3 + 14, 5 developed.
Body moderately slender, its depth	7.8 in standard length.	7.1 in standard length.	8.4 in standard length.	8.2 in standard length.	deep, its depth 5.9 in standard length.	moderately slender, its depth 7.5 in standard length.
Rostral spine	not prominent, scarcely reaching beyond margin of premaxillaries.	fairly prominent, reaching margin of premaxillaries.	spine prominent, reaching well beyond margin of premaxillaries.	rather prominent, reaching well beyond margin of premaxillaries.	short, failing notably to reach margin of premaxillaries.	spine very prominent, extending far beyond margin of premaxillaries.
Origin of dorsal	in advance of midlength of pectoral.	well in advance of midlength of pectoral.	dorsal well in advance of midlength of pectoral.	dorsal over midlength of pectoral.	dorsal over base of pectoral.	littoral.
Pectoral reaching	rather less than halfway to origin of anal, 10.5 in standard length.	reaching less than halfway to origin of anal, 8.3 in standard length.	reaching less than halfway to origin of anal, 11.0 in standard length.	scarcely reaching halfway to origin of anal, 7.5 in standard length.	long, failing to reach origin of anal by diameter of pupil, 7.5 in standard length.	reaching notably more than halfway to origin of anal, 10.7 in standard length.
Inside of gill covers	pale.	of gill covers pale.	of gill covers pale.	of gill covers dark brown.	of gill covers dark brown.	of gill covers pale.
Dorsal and anal	with dark margins.	with dark blotches on margin, anal with continuous dark margin.	with dark blotch near beginning, anal with continuous dark margin.	with a dark blotch near beginning, anal with continuous dark margin.	and anal dusky, without dark margins.	with dark margin and dark blotches along base, anal uniform black.
Peritoneum	pale.	pale.	pale.	pale.	dark brown.	pale.

* These enumerations are not accurate because the fin rays are enveloped in rather thick skin and are not all visible, and the scales are too small and irregularly arranged to count unerringly.

the upper, included; maxillary reaching well beyond posterior margin of eye, 2.1 in head; teeth in jaws in villiform bands, the outer ones in both jaws enlarged, those on vomer and palatines stronger, short and blunt; opercle with a concealed point; gill rakers 14 on lower limb, 5 somewhat developed, and 3 tubercles on upper limb; lateral line running rather high anteriorly, disappearing posteriorly; scales very small, rather difficult to enumerate accurately, extending forward on head to snout, 36 rows crossing back between nape and origin of dorsal; dorsal fin very long and low, the rays rather difficult to enumerate because of heavy skin, the origin of fin a very short distance behind base of pectoral, its distance from tip of snout 4.0 in standard length; caudal fin scarcely as long as eye, slightly rounded, fully continuous with dorsal and anal; anal fin similar to dorsal, its origin behind that of dorsal a distance about equal to postorbital length of head; the outer (or posterior) filament of ventral fin much the longer, 2.9 in head; pectoral rather long, reaching notably more than halfway to origin of anal, 10.7 in standard length and 2.3 in head.

Color uniform dark brown, scarcely paler below than above; inside of gill covers pale; outer edge of dorsal fin black, base lighter with dark spots; caudal and anal fins blackish; ventral filaments pale; pectoral a little darker than the general color of the body, with numerous dark punctulations visible under magnification; these punctulations present on the lower parts of the head and body.

This apparently new *Lepophidium* is represented by a single specimen (U.S.N.M. No. 144256), 280 mm. in total and 269 mm. in standard length. To identify this fish it was compared with the holotypes of all the species of the genus reported from off the Pacific coast of America. Its relationship with the other species, as indicated by the holotypes, is shown in the parallel comparison offered herewith. The numerous dorsal rays, the very small scales, the rather high number of gill rakers, the very prominent rostral spine, the anterior origin of the dorsal, the uniform dark brown body, and the black vertical fins characterize this species.

The name, *negropinna*, was suggested by the black vertical fins.

Genus *OTOPHIDIUM* Gill, 1885

Body elongate, considerably compressed; head compressed; snout without a spine; opercle with a strong spine; scales not in regular series and not imbricated (except in *indefatigable*, in which they are in fairly regular series and more or less imbricated), but partly or mostly at right angles to each other; dorsal and anal fins fully continuous with the caudal.

This genus is said to differ from *Ophidion* in having a short thick air bladder with a large foramen. However, several species have not been examined for this character.

OTOPHIDIUM FULVUM, new species

FIGURE 9

Head 5.6; depth 8.6; D. about 115; A. about 83; P. 26 or 27.

Body elongate, definitely compressed, its greatest thickness about two-thirds its depth; head rather deep, compressed; snout somewhat pointed, no rostral spine, extending beyond premaxillaries, 5.7 in head; eye slightly elongate, 3.4; interorbital very narrow, 12; mouth large, nearly horizontal; lower jaw shorter than the upper, included; maxillary extending well beyond posterior margin of pupil, 2.4 in head; teeth in jaws in villiform bands, the outer ones in each jaw somewhat enlarged, those on vomer and palatines strong, low, and bluntly pointed; opercle with a strong spine; gill rakers consisting of spiny tubercles, 4 on the lower limb (2 somewhat developed), and 2 on the upper one; lateral line rather high, absent posteriorly; scales not in regular series, more or less embedded, elongate, many at right angles to each other; dorsal very long and low, the rays difficult to enumerate, origin of fin well behind midlength of pectoral, its distance from tip of snout 4.2 in standard length; caudal fin very short, continuous with the dorsal and anal; anal fin similar to the dorsal, though shorter, its origin about length of head behind that of dorsal, and its distance from tip of mandible 2.8 in standard length; ventral inserted at vertical from middle of eye, the outer filament the longer, 2.0 in head; pectoral fin short and broad, with rounded margin, with many rays,⁶ reaching notably less than halfway to origin of anal, 11.6 in standard length, 2.05 in head.

Color uniform brown, though somewhat lighter on chest and abdomen than elsewhere; many dark punctulations visible on the body under magnification; dorsal and anal fins with narrow dark margins, extending around the tail.

This apparently new species is represented by a single specimen (U.S.N.M. No. 144257) 72 mm. in total and 69 mm. in standard length. It seems to be nearest *O. galeoides* Gilbert, known from the Gulf of California, the type of which is at hand. From that species it differs, however, in several characters, as shown in the parallel comparison offered herewith. From *indefatigable* Jordan and Boll-

⁶ To obtain an accurate enumeration of the rays the skin was cut behind the fin and near the base.

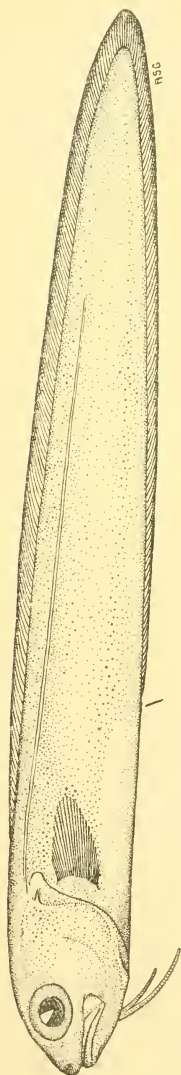


FIG. 9.—*Otophidium fulvum*, new species. From the type, 72 mm. long, Talara, Perú (U.S.N.M. No. 144257).

man, which is known from Panamá Bay to the Galápagos Islands, it differs prominently in the arrangement of the scales, which are in irregular series and at right angles to each other in *fulvum*, while they are nearly all in regular series and more or less imbricated in *indefatigable*. It differs prominently from *O. scrippsi* Hubbs in the fewer, shorter, spiny gill rakers, and slenderer body.

The specific name *fulvum* is in allusion to the brown color of the specimen described.

galeoides

Pectoral fin moderate, reaching notably more than halfway to origin of anal, 7.25 in standard length, and 1.35 in head, with 21 rays.

Gill rakers strong, 4 on lower limb all fairly well developed, and 2 tubercles on upper limb of first arch.

Maxillary reaching posterior margin of pupil, 2.15 in head.

Origin of dorsal over midlength of pectoral, its distance from tip of snout 3.75 in standard length.

fulvum, new species

Pectoral fin shorter, reaching notably less than halfway to origin of anal, 11.6 in standard length, and 2.05 in head, with 26 or 27 rays.

Gill rakers all spiny tubercles, none well developed, 4 on lower limb and 2 on the upper one of first arch.

Maxillary reaching a little beyond posterior margin of pupil, 2.4 in head.

Origin of dorsal well behind midlength of pectoral, its distance from tip of snout 4.2 in standard length.

Family MUGILIDAE: Mulletts

MUGIL CEPHALUS Linnaeus

Mugil cephalus HILDEBRAND, 1946, p. 422 (description).

Two small specimens, 30 and 43 mm. in total and 24 and 33 mm. in standard length, are included in the collections. The juvenile anal fin formula, II, 9, has been retained in these specimens. *M. cephalus* seems to be a common species in northern Perú. Numerous specimens of young and a few adults were included in the collections made by the U. S. Fish and Wildlife Service mission to Perú in 1941 (Hildebrand, 1946, p. 422).

Range.—Shores of nearly all warm seas; on the Pacific coast of America from California to Chile.

MUGIL CUREMA Cuvier and Valenciennes

Mugil curema HILDEBRAND, 1946, p. 426 (description).

One small specimen 45 mm. in total and 37 mm. in standard length is included in the collection. This specimen still has the juvenile anal

fin formula, II, 10, the third ray having not yet developed into a spine. Only a few young and no adults were included in the collections made by the U. S. Fish and Wildlife Service mission to Perú in 1941 (Hildebrand, 1946, p. 426).

Range.—Known from both coasts of America; on the Pacific coast from the Gulf of California to Chile.

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