
DESCRIPTIONS
OF
NEW GENERA AND SPECIES OF FISHES FROM
THE HAWAIIAN ISLANDS.

By DAVID STARR JORDAN AND BARTON WARREN EVERMANN.

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During the investigations of the aquatic resources of the Hawaiian Islands carried on by us in 1901 under the direction of the Hon. George M. Bowers, United States Commissioner of Fish and Fisheries, very large collections of the fishes and other animals occurring in the waters of those islands were made.

A detailed report, covering the entire aquatic fauna of that group of islands, is now in preparation, which, it is hoped, will be ready for publication within the year.

Among the fishes collected are many species which appear to be new. Descriptions of 57 of these are given in the present paper. Illustrations of these new species, together with more extended notes regarding their abundance, distribution, habits, and commercial value, will be given in the general report to follow.

The types of all the new species have been deposited in the United States National Museum, and, when possible, one or more cotypes have been donated to each of the following museums and institutions: Museum of Leland Stanford Junior University (L. S. Jr. Univ. Mus.), U. S. National Museum (U. S. N. M.), Reserve series of the U. S. Fish Commission (U. S. F. C.), Museum of Comparative Zoology at Cambridge, Mass. (M. C. Z.), American Museum of Natural History, New York City (Am. Mus. Nat. Hist.), Academy of Natural Sciences of Philadelphia (Ac. Nat. Sci. Phila.), University of Indiana (Mus. Ind. Univ.), Field Columbian Museum, Chicago (Field Col. Mus.), California Academy of Sciences, San Francisco (Cal. Ac. Sci.), and the Bernice Pauahi Bishop Museum at Honolulu (Bishop Mus.). When possible, we have given in this paper the numbers which the types and cotypes bear on the records of the various museums to which they have been assigned.

The majority of specimens here described were obtained by us in the market or directly from the fishermen at Honolulu, Oahu Island. Others were obtained in the market or from the fishermen at Hilo, island of Hawaii; others at Kailua, island of Hawaii; others on the reef at Waikiki, near Honolulu, and one at Heeia, Oahu Island.

Family CARCHARIIDÆ. The Sand Sharks.

1. *Carcharias phorcys* Jordan & Evermann, new species.

Head 4.8 in length; depth 6.5; width of head 1.75 in its length; depth of head 1.8; snout about 2.2 in head; interorbital space 2.2; space between tip of snout and front of mouth 2.5; width of mouth 2.5; eye 6 in interorbital space; internasal space 1.8; least depth of caudal peduncle a little over 4.8; caudal 3.5 in body; pectoral 5.75.

Body elongate, rather robust, the tail compressed; head elongate, somewhat narrow and depressed; snout long and narrowly pointed when viewed above, the tip rounded; eyes small, their

posterior margins about midway between tip of snout and first gill-opening; nictitating membrane well developed; mouth large, very convex, the anterior margin of mandible below front rim of orbit; teeth in upper jaw narrow, with broad bases, compressed, serrate, not notched, and with 4 or 5 basal cusps behind; teeth in mandible rather long, pointed, and not serrate, the edges smooth; nostrils without flap, inferior, and nearer eye than tip of snout; interorbital space broad and convex, the upper profile of the head rising gradually in a nearly straight line to back of head; gill-openings of moderate length, the posterior over the base of the pectoral; peritoneum white or pale; body very finely roughened when stroked forward; height of first dorsal less than depth of body, its origin a little nearer tip of snout than origin of second dorsal; origin of second dorsal nearer origin of first dorsal than tip of caudal, the fin small and about over the anal so that the origins of the two fins are opposite; caudal long, with a notch at its tip, deep, the lower lobe 2.25 in the length of the fin; pectoral with margin of fin slightly concave; ventrals small, their origins a little nearer base of lower caudal lobe than origin of pectoral; back convexly ridged, broader between the dorsals; base of caudal with a pit above and below.

Color in alcohol, pale brown, the lower parts pale or whitish with a brown streak the color of the back along side from gill-opening to origin of ventral; tips of dorsals, edge of caudal, and tip of pectoral blackish.

This description is based upon the type, No. 50612, U. S. N. M. (field No. 03747), a specimen 27.5 inches long, obtained by us at Honolulu. The collection contains 4 other examples, all from Honolulu, which we take as cotypes. They are: No. 12715, L. S. Jr. Univ. Mus. (field No. 03745); No. 12715, L. S. Jr. Univ. Mus. (field No. 03746); No. —, M. C. Z. (field No. 03748); and No. 1685, Bishop Mus. (field No. 03749).

We have examined 2 other specimens, each about 29 inches long, obtained by Dr. Jenkins in 1889, and one fœtus obtained by us at Honolulu.

Family OPHICHTHYIDÆ. The Snake Eels.

2. *Microdonophis fowleri* Jordan & Evermann, new species.

Head about 5 in trunk measured from tip of snout to vent; tail shorter than head and trunk by the length of the former; eye nearly 1.6 in snout or 1.5 in interorbital space; snout 6 in head; interorbital space about 6.75; mouth 2.75; pectoral a little over 4.25 in head.

Body elongate, cylindrical, the tail tapering gradually to a conical horny point; head cylindrical and pointed; snout moderately long and pointed, slightly flattened above, projecting over and beyond the mandible; eye elongate, small, anterior and superior, about midway in length of mouth; mouth rather large; lips somewhat fringed; teeth large and canine-like in front of jaws, and on vomer in a single row; tongue small, adnate to floor of mouth; anterior nostrils in short tubes near tip of snout, the posterior with broad flaps on the lips and opening downward; interorbital space concave, each supraocular ridge slightly elevated; peritoneum silvery; skin perfectly smooth; head with mucous pores, a series of which encircle head above and about midway in its length; lateral line well developed, pores about 140; origin of dorsal slightly in advance of gill-opening or base of pectoral; pectoral small, the rays just above the middle the longest, fin rounded; dorsal fin long and low, its height about equal to length of snout; anal similar to dorsal, its height a trifle less.

General color, when fresh, white, rendered somewhat shaded on upper portions by very minute points (seen only with a good lens) of gray; back and upper surface with numerous round brown spots and about 17 indistinct transverse dark brown crossbands which do not extend over the dorsal; the interspaces between the spots on the head yellow, the pectoral bright lemon yellow; end of tail for about 1 inch from point bright yellow; spots on margin of dorsal brown, with yellow borders; a band of yellow runs from under one eye backward, upward, across the top of head, and down under the other eye; the transverse series of pores which encircles the head above and about midway in its length, with black margins, and also a similar series over head along the margin of mouth, and then up, back of eye, over head; pores of lateral line without black margins.

This species is based upon a single specimen, the type, No. 50613, U. S. N. M. (field No. 03431), an example 23 inches long obtained by us in the market at Honolulu, July 21.

Family MURÆNIDÆ. The Morays.

3. *Muræna kailuæ* Jordan & Evermann, new species.

Head 7 in total length; depth 11.5; eye 14 in head; snout 6; interorbital 12; gape 2.75.

Body short, stout, and moderately compressed; distance from tip of snout to vent less than that from vent to tip of tail by a distance equal to two-thirds length of head; head very small and pointed; snout long, quadrate, the jaws equal, the lower curved so that the mouth does not completely close; lips thin, the teeth showing; each side of upper jaw with a single series of unequal, sharpish canine-like teeth, inside of which is a single depressible fang-like tooth near middle of side; front of median line with 2 long, sharp, fang-like, depressible teeth; shaft of vomer with a single series of short, movable teeth; each side of lower jaw with a single series of unequal, sharp canines, those in front largest; eye small, midway between angle of mouth and tip of snout; anterior nostrils each in a pointed filament whose length is about half that of eye, situated at tip of snout just above lip; posterior nostrils each with a long filament, equal to snout in length, and situated just above anterior edge of eye; interorbital space very narrow and flat; gill-opening small, nearly circular; dorsal fin very low anteriorly, increasing much in height on tail; anal low.

Ground color in life, dark brown, with fine yellow and blackish spots and reticulating lines, the yellow predominating on anterior part of body; end of tail dark purplish brown; edge of dorsal and anal dull dark red, with short pale bands bordered with darker and with small pale spots interspersed; ground color of cheek and throat yellow, with pale spots bordered with black; jaw orange red, with pale black-edged bars; tips of jaws bright coral red; tips of nostril filaments bright red.

Color in alcohol, body with a ground color of light grayish brown, marked with fine whitish lines or specks, and profusely covered with numerous small, round, white spots, each ocellated with black; among these are scattered larger black spots and blotches; white spots smallest on back and largest on belly, where some are as large as eye; a broad, dark brown bar over nape, extending on side to level of eye; top of head and snout with fine white spots; side of snout with a well-defined vertical white bar about midway between eye and tip; a short white line downward to mouth from front of eye, and a similar longer one downward and backward from posterior lower angle of eye; lower jaw crossed by 3 V-shaped white bars opening forward and bordered by darker; tip of jaw with 2 oblique white bars separated by a narrow brown line; last V-shaped white bar extending across angle of mouth and forming a large white area at base of upper jaw, behind which the angle of the mouth is dark brown; inside of mouth mottled brown and white; nasal filaments mottled with brown and white; throat light brown, with large white spots, some of which unite to form oblong spots or lines; gill-opening not surrounded by dark; anal fin dark brown, crossed by about 28 short white bars; posterior portion of tail crossed by about 12 distinct but somewhat irregular vertical white bars, which extend upon dorsal and anal fins; tip of tail brownish black, with 1 or 2 whitish specks. Only one specimen known.

Type, No. 50614, U. S. N. M. (field No. 03709), a specimen 19 inches long, obtained August 9, 1901, by Messrs. Goldsborough and Sindo at Kailua, Hawaii.

4. *Gymnothorax vinolentus* Jordan & Evermann, new species.

Head 7.2 in total length, 3.6 in distance from tip of snout to vent; depth 14.5 in total length; eye 14 in head; snout 6.4; gape 2; interorbital 8.6; vent a little nearer tip of snout than tip of tail.

Body long, but stout and not greatly compressed; tail moderately stout and compressed; head much swollen above; snout long and slender, the anterior profile ascending somewhat abruptly from interorbital region; mouth large, extending beyond eye a distance equal to eye and snout; lower jaw projecting, strongly curved, so that the mouth does not completely close; eye small, over anterior half of gape; interorbital narrow, about half greater than diameter of orbit; anterior nostril in a tube whose length is 1.6 times eye, situated near tip of snout; posterior nostril slightly anterior to vertical at front of orbit, oval, surrounded by a narrow, raised, flattened flap whose diameter is two-thirds that of orbit; lips rather thin, not covering the teeth; gill-opening small, its length less than diameter of orbit. Teeth in a single series on each side of upper jaw, the posterior ones short, sharp, and close-set; the anterior ones, about 12 in number, slender, sharp canines of unequal length; inside of these is a series of 5 or 6 long, slender, depressible canines; median line of roof of mouth with 2 long, sharp, depressible canines in front, and a third somewhat farther back; vomer with a single series of short, blunt teeth; lower jaw with a single series of rather close-set, short, backwardly directed canines, somewhat compressed, inside of which anteriorly are 3 or 4 much longer depressible canines on each

side. Origin of dorsal midway between gill-opening and angle of mouth; height of dorsal 2 in distance from tip of snout to posterior edge of orbit; anal much lower than dorsal.

Color in alcohol, rich purplish brown or wine-color, almost uniform over entire body and head; side of head with about 7 shallow longitudinal grooves which are darker than ground-color; under side of lower jaw yellowish white, blotched with brown; throat blotched with yellowish white and brown; gill-opening rather paler than surrounding parts; body everywhere with numerous, but very obscure, dark points, posteriorly with numerous narrow vertical dark lines appearing as shallow grooves in the skin; dorsal and anal fins uniform dark brown, not white-edged; tip of tail not white.

The only specimen of this species which we have is the type, No. 50615, U. S. N. M. (field No. 03726), 29 inches long, obtained by Messrs. Goldsborough and Sindo, at Kailua, Hawaii.

5. *Gymnothorax steindachneri* Jordan & Evermann, new species.

Head 7.3 in length; depth 9.5; eye 9.5 in head; snout 5; interorbital 7.2; gape 2; distance from from tip of snout to vent less than distance from vent to tip of tail by more than half length of head.

Body moderately long and slender, much compressed; head small; snout small and pointed, the anterior dorsal profile concave above the eyes; the nape and sides of head much swollen; gape long, extending far behind eye; lower jaw shorter than the upper, curved so that the mouth does not quite completely close; lips moderately thick, entirely covering the teeth in the closed mouth; eye small, about midway between tip of snout and angle of mouth; teeth on sides of upper jaw in a single series, rather close-set, short, compressed, triangular canines, those in front scarcely enlarged; vomer with a single row of bluntly rounded teeth; each side of lower jaw with a single series of rather strong, backwardly directed canines, the anterior ones somewhat enlarged, those on tip of jaw movable; anterior nostril in a long tube, its length about half diameter of eye, situated near tip of snout just above lip; posterior nostril without tube, just above anterior edge of eye; pores on sides of jaws inconspicuous. Origin of dorsal fin about midway between gill-opening and angle of mouth, its height about equal to length of snout; anal similar to soft dorsal, but much lower; tail moderately slender and pointed; a series of inconspicuous pores along middle of side; gill-opening a long oval slit exceeding diameter of orbit.

Color in alcohol, pale brown or whitish, sprinkled with ragged or dendritic brown spots formed more or less into irregular vertical blotches or crossbands; margins of fins narrowly creamy white or yellowish, that of the anal much wider; corner of mouth and space about gill-opening deep blackish-brown; about 5 longitudinal blackish-brown grooves on lower side of head; under side of lower jaw with 2 blackish longitudinal lines which meet at an acute angle under chin; throat and belly creamy white, with few scattered brownish markings; sides and top of head whitish, with small, sparingly scattered, irregular brownish spots most numerous around and between the eyes.

This species is related to *G. kidako* (Schlegel), from which it differs much in coloration, the present species being much paler and less reticulated, the angle of the mouth with more black, the gill-opening being surrounded by a broad black area (nearly or quite absent in *kidako*), and in having the white border to the dorsal fin much more distinct.

This species is known only from Laysan (whence Dr. Steindachner had 2 examples) and from Honolulu, where the *Albatross* obtained 1 specimen in 1891 and the Fish Commission 3 examples in 1901.

The specimens from Laysan which Dr. Steindachner identified with *Muraena flavomarginata* Rüppell, and of which he gives a good figure, evidently belong to this species. As suspected by Dr. Steindachner, the species is quite different from *G. flavomarginatus*, of which species we have examined several specimens from Pedang, on the west coast of Sumatra. The present species is therefore known from the 2 examples which Dr. Steindachner had from Laysan, one specimen obtained by the *Albatross* at Honolulu in 1891, and 3 specimens secured by us at Honolulu in 1901.

Field No.	Length.	Locality.	Final disposition of specimen.
	<i>Inches.</i>		
03775	24	Honolulu.....	Type, No. 50616, U. S. N. M.
04904	14	.....do.....	Cotype, No. 7447, L. S. Jr. Univ. Mus.
04905	8	.....do.....	Cotype, No. 2697, U. S. F. C.
1318	17	Honolulu (Albatross)	

Muraena flavomarginata var., Steindachner, Denks. Ak. Wiss. Wien, LXX, 1900, 514, pl. VI, fig. 8 (Laysan); not of Rüppell.

6. *Gymnothorax goldsboroughi* Jordan & Evermann, new species.

Head nearly 3 in trunk (exclusive of head and tail), or 9 in total length; head and trunk about 1.5 in tail; eye 1.75 in snout, 1.2 in interorbital space; snout 5 in head; interorbital space 7.5; mouth 2.

Body rather compressed, the tail gradually tapering narrowly behind; head compressed, swollen above; snout pointed, the tip blunt and the sides compressed; eye rather small, a trifle nearer tip of snout than corner of mouth; mouth large, snout slightly projecting beyond mandible; lips rather fleshy and concealing the teeth when the mouth is closed; teeth in a single series in jaws, anteriorly large and canine-like, and the vomer with a single large, depressible fang; anterior nostrils at tip of snout in small tubes; posterior nostrils directly above eye in front; interorbital space more or less flattened like top of snout; gill-opening about equal to eye; skin smooth; head with a number of mucous pores; origin of dorsal a little nearer corner of mouth than gill-opening; caudal small.

Color in alcohol, brown, covered all over body except anal fin with round or roundish white spots, those on anterior part of body small, very small and numerous on head, becoming larger on trunk, and finally increasing very much in size on tail where they are scattered and rather far apart; reticulations around the light spots blackish brown upon posterior part of dorsal fin, same color as base of anal; margins of anal and dorsal fins whitish; gill-opening and anus bordered with blackish brown. General color of body in life, brown, rather pale olivaceous anteriorly, and covered all over with small white spots which are close-set and small on head where the dark color forms a network; spots sparse and irregular on posterior parts, and also much larger; vent and gill-opening dusky; dorsal colored like the body, with a broad white edge, growing broader behind; anal dark brown, unspotted, and with a broad pale border.

This species is known only from the type, No. 50617, U. S. N. M. (field No. 03392), a specimen 21 inches long, obtained by us at Honolulu.

7. *Gymnothorax hilonis* Jordan & Evermann, new species.

Head 8.2 in length; depth 16; eye 7 in head; snout 6; interorbital 6; gape 2.4; distance from tip of snout to vent 1.2 in distance from vent to tip of tail.

Body rather short, moderately compressed, the tail more compressed and bluntly pointed; head short, the nape swollen; interorbital space broad; a distinct median groove from near the tip of snout to origin of dorsal; angle of mouth posterior to eye a distance equal to eye's diameter; lower jaw but slightly curved, shorter than the upper; front of upper jaw with 3 short, bluntly pointed, movable teeth; side of upper jaw with a single series of short, pointed canines directed backward; shaft of vomer with short, blunt teeth; lower jaw on each side with a single series of rather long, pointed canines, longest in front and curved backward; anterior nostril in a long tube, about 2 in eye, near tip of snout just above lip; posterior nostril small, round, without tube, situated just above anterior part of eye; gill-opening small, its direction obliquely forward toward nape; a series of 4 pores on each side of upper jaw; similar pores on lower jaw. Origin of dorsal fin on nape midway between gill-opening and middle of eye; dorsal fin well developed, its greatest height somewhat exceeding length of snout; anal similar to dorsal, but lower.

Color in alcohol, rich, velvety black above, paler below where it is marbled and reticulated with narrow white lines; series of pores on side of upper jaw and those on tip of lower, white; cheek with a few irregular white spots; gill-opening whitish; side of body anteriorly with some small white specks and irregular whitish markings; lower jaw with larger, oblong, white cross-lines; dorsal fin rich brownish black, the edge posteriorly with a narrow, irregular, white border, sometimes interrupted by black; anal brown, with a narrow white edge from which extend narrow intrusions of white, some reaching base of fin; end of tail with a few small white spots, the tip narrowly white.

The only known example of this species is the type, No. 50618, U. S. N. M. (field No. 04902), a specimen 9.5 inches long, obtained by us at Hilo, Hawaii.

8. *Echidna zonophæa* Jordan & Evermann, new species.

Head 3 in trunk, or 6.5 in total; tail longer than head and trunk by a little more than the snout; eye 2 in snout, 1.5 in interorbital space; snout 6; interorbital space 7.75; mouth 2.8.

Body compressed, the tail tapering rather narrowly posteriorly; head deep and compressed, pointed in front; snout rather long and pointed, the tip obtusely rounded and projecting considerably beyond the mandible; eye rather small, midway between tip of mandible and corner of

mouth; mandible shutting completely, arched below so that only the anterior teeth touch the front of the jaw above, though the thick fleshy lips conceal them all; teeth molar, those in front of jaws pointed; anterior nostrils in short tubes, the posterior pair above the eye with a slightly elevated margin; interorbital space convex; top of head more or less swollen or convex in profile; gill-opening 1.67 in eye; skin smooth; head with a few pores; origin of dorsal beginning at last fourth of space between corner of mouth and gill-opening; caudal small.

Color in alcohol, grayish white, the body and tail crossed by about 25 broad rich brown bands, extending upon the dorsal and anal fins; dark bands anteriorly broadest above and not meeting across belly, their width about equal to the distance from tip of snout to middle of eye; first brown band through eye, second across nape, the fourth across gill-opening; gray bands of ground color anteriorly broad, and widening much upon belly; posteriorly the gray bands are narrower and better defined, especially on the fins, their width scarcely greater than half that of the brown bands; tip of tail very narrowly white; body anteriorly, especially within the gray bands, profusely covered with numerous small, roundish, black specks, less numerous and more scattered posteriorly; no black spots on head; angle of mouth black, with a small white blotch immediately in front on lower jaw, continued across under jaw as a broad whitish band; side of head with about 4 or 5 narrow blackish lines between mouth and gill-opening; region of gill-opening marbled with dark brown and whitish, the opening dark.

One example (No. 03545) had much yellow on the head and between the brown zones.

This species is known from the type and 3 cotypes, all obtained by us at Honolulu.

Field No.	Length.	Locality.	Final disposition of specimen.
	<i>Inches.</i>		
04899	21	Honolulu.....	Type, No. 50621, U. S. N. M.
03861	16	.....do.....	Cotype, No. 2698, U. S. F. C.
03545	17	.....do.....	Cotype, No. 7448, L. S. Jr. Univ. Mus.
04900	15	.....do.....	Cotype, No. 3965, Field Col. Mus.

Family MYCTOPHIDÆ. The Lantern-fishes.

9. *Rhinoscopelus oceanicus* Jordan & Evermann, new species.

Head 3.5 in length; depth 4.1; eye 2.5 in head; snout very short, about 6; interorbital 3.5; D. about 12; A. about 18; scales 2-35-3.

Body strongly compressed, particularly posteriorly, where it tapers into the long, slender caudal peduncle; head exceeding depth of body; mouth large, somewhat oblique, the jaws equal, the maxillary reaching beyond the orbit, its posterior end club-shaped; eye large; anterior profile rather evenly convex from tip of snout to nape; teeth difficult to make out, but a single row of minute ones can be seen on the edge of each jaw, the exterior granular or short, villiform stripe, if it exists, being invisible even with the aid of a good lens; teeth on vomer and edges of palatines more distinct than those on jaws, and forming a broader line as if there were 2 or 3 rows; no granular patches visible on disk of palatine bone; an elevated acute mesial line separating one nasal prominence from the other; interorbital space convex, rounded; preopercle nearly vertical, sloping slightly backward from above downward; scales large, undulated and very irregularly and sparingly toothed or crenate, and having about 3 basal furrows; scales of lateral line conspicuous and more persistent; 7 photophores along base of anal, 5 along lower edge of caudal peduncle, 2 at base of caudal, 1 on middle of side above last anal photophore, 4 on each side of belly between ventrals and origin of anal fin, 5 between base of ventral and gill-opening, 1 on side above base of ventral, a row of 3 upward and backward from front of anal, 1 above and 1 below base of pectoral, and 1 on lower anterior portion of opercle; origin of dorsal somewhat behind base of ventrals, the posterior rays, together with those of anal, divided to the base; no spine at base of caudal.

Color in alcohol, uniform brownish, the scales, especially on middle of side, metallic steel blue; top of head brownish; side of head bluish; photophores black with silvery center; fins dusky whitish.

This species was recorded by Fowler from "near the Sandwich Islands," as *Rhinoscopelus coruscans* (Richardson), the record being based upon 4 specimens (Nos. 7972 to 7975) collected by Dr. W. H. Jones, and now in the Philadelphia Academy. During the Agassiz South Pacific expedition of the *Albatross* in 1899-1900, 2 examples of this species were taken in the surface towing net at 8 p. m., September 8, 1899, at latitude 10° 57' N., longitude 137° 35' W., southeast of the Hawaiian Islands. These

2 specimens are doubtless identical with those recorded by Mr. Fowler, and are apparently distinct from *R. coruscans*, the type of which came from between St. Helena and Ascension Islands and others from between Australia and New Zealand. They are near *R. andrew* Lütken, from which they seem to differ in the blunter snout, the more slender tail, and in having the posterolateral photophore somewhat before the adipose fin.

Type, No. 50622, U. S. N. M. (field No. 05805), 1.3 inches long, collected by the *Albatross* at 8 p. m., September 8, 1899, at the surface at 137° 35' W., 10° 57' N.; cotype, No. 2736, U. S. F. C., same size, collected at same time and place.

Rhinospopelus coruscans, Fowler, Proc. Ac. Nat. Sci. Phila. 1900, 498 (near the Sandwich Islands); not of Richardson.

Family SYNGNATHIDÆ. The Pipe-fishes and Sea-horses.

10. *Hippocampus fisheri* Jordan & Evermann, new species.

Eye 2.8 in snout; snout 2 in head; D. 18, on 4 rings; A. 4; P. 15; rings 12 + 34.

Tail longer than head and trunk; trunk rather deep, compressed, its width 1.7 in depth; eye small, equal to interorbital width; interorbital space concave; gill-opening small, high; spines on head and body rather high, sharp; 2 rings on trunk between each pair of larger spines; tail with 3 rings between each pair of larger spines; coronet well developed, with 5 spines; spines over eye blunt; base of dorsal about equal to snout; anal small, long; pectoral broad, rays rather long.

Color in life, trunk below middle row of rings yellowish golden, above middle row blackish brown on orange ground; knobs orange; lower portion of knobs on 8 to 11 rings spotted with dark brown; side and top of tail same as back of trunk; ventral side pale dirty orange; head, crown and snout dirty dark brown; an orange band across snout and one before eyes; pale brownish golden over gills; chin orange; iris yellowish golden with 8 reddish streaks radiating from pupil; fins pale; a red spot before each eye at each side of preorbital spine.

Color in alcohol, pale brown, upper surface with dark brown marblings; side with small roundish dark spots.

The above description is from the type, No. 50625, U. S. N. M. (field No. 03835), a specimen 2.6 inches long, obtained at Kailua, Hawaii, where the species was new to the natives. We have 5 other examples, each about 3 inches long, taken from the stomach of a dolphin (*Coryphæna* sp.) which was captured at Hilo, July 18, 1901.

When fresh, No. 03507, a male, was pink or pale cardinal along and near the keels; plates on back and above middle row of knobs on side mottled blackish on pale red ground; plates below middle row of knobs and on belly porcelain white; egg-pouch uniform pale cardinal-red, paler than rest of body; tail same pink or pale cardinal, mottled with blackish blotches; top of head and crown blackish on pale red; cheek, jaw, and snout pink. Some examples had ventral side of tail and portion behind fourth prominent spine of tail uniform pale cardinal-red.

This species is named for Mr. Walter V. Fisher, of Stanford University.

We have the following specimens:

Field No.	Length.	Locality.	Final disposition of specimen.
03835	Inches. 2.6	Kailua.....	Type, No. 50625, U. S. N. M.
03507	Hilo.....	Cotype, No. 7450, L. S. Jr. Univ. Mus.
.....	do.....	Cotype, No. 2700, U. S. F. C.
.....	do.....	Cotype, No. 3946, Field Col. Mus.
.....	do.....	Cotype, No. 1687, Bishop Mus.
.....	do.....	Cotype, No. —, M. C. Z.

11. *Hippocampus hilonis* Jordan & Evermann, new species.

Eye about 4 in snout; snout 2 in head; D. 16, on 3 rings; rings 12 + 35. Tail a little longer than head and trunk; trunk rather deep, compressed, its width 2 in depth; eye small, equal to interorbital width, which is concave, broader posteriorly; gill-opening high, rather large; spines on head and body very blunt, rounded, or obsolete, though forming knobs of more or less equal size along tail; coronet with rounded knobs, before which is a short keel or trenchant ridge; base of dorsal about 1.35 in snout.

Color in alcohol, dark or blackish brown, more or less uniform.

This species is known to us only from the example described above. It is closely related to the Japanese *Hippocampus aterrimus* Jordan & Snyder, but on comparison with the type of that species was found to differ in the presence of the keel on the top of the head and in other minor characters. It is also close to *H. ringens*.

Type, No. 50626, U. S. N. M. (field No. 03832), a specimen 6 inches long, presented to us by Mr. A. M. Wilson, of Hilo, Hawaii, where he obtained the specimen.

Family ATHERINIDÆ. The Silversides.

12. *Atherina insularum* Jordan & Evermann, new species.

Head 4 in length; depth 4.75; eye 3 in head; snout 4; interorbital 2.8; maxillary 2.5; mandible 2.2; D. VI-1, 11; A. 17; scales 46, 6 rows from anterior base of anal upward and forward to spinous dorsal.

Body oblong, compressed; head triangular, the sides compressed, top flat; mouth large, oblique, maxillary reaching front of pupil, lower jaw included; teeth in rather broad villiform bands on jaws, vomer, and palatines; interorbital space very broad and flat; snout broad, truncate; origin of spinous dorsal slightly posterior to vertical at vent, slightly nearer tip of snout than base of caudal; longest dorsal spine about 2.4 in head, reaching nearly to vertical at front of anal; distance between spinous and soft dorsals equal to distance from tip of snout to middle of pupil; edge of soft dorsal concave, anterior rays somewhat produced, their length 1.9 in head; last dorsal ray about one-half longer than one preceding; base of soft dorsal 1.8 in head; origin of anal considerably in advance of that of soft dorsal, the fins similar, anterior rays about 1.7 in head, base of anal 1.3 in head; caudal widely forked, the lobes equal; ventral short, barely reaching vent; pectoral short, broad, and slightly falcate, its length about 1.4 in head. Scales large, thin, and deep, 19 in front of spinous dorsal, 6 rows between the dorsals and 9 on median line of caudal peduncle.

Color when fresh, clear olive green with darker edges to scales; lateral stripe steel blue above, fading into the silvery belly; fins uncolored.

Color in alcohol, olivaceous above, silvery on sides and below; scales of back and upper part of side with numerous small round coffee-brown specks, disposed chiefly on the edges; median line of back with a darkish stripe; middle of side with a broad silvery band, plumbeous above, especially anteriorly, more silvery below; top of head and snout with numerous dark brownish or black specks; side of head silvery, opercle somewhat dusky, sides and tip of lower jaw dusky; dorsals and caudal somewhat dusky, other fins pale; pectoral without dark tip.

This small fish is common inside the reef in shallow bays everywhere in the Hawaiian Islands. Many individuals were seen off the wharf at Lahaina on Maui. Our collections of 1901 contain 20 specimens from Kailua, from 1.5 to 3.5 inches long; 43 from Hilo, 1.5 to 2.25 inches long; and 1 from Honolulu, 2.25 inches in length. Numerous specimens were obtained by the *Albatross* at Honolulu in 1902, 1 of which is taken as our type and 3 others as cotypes.

Type, No. 50819, U. S. N. M., 4.25 inches long, obtained by the *Albatross* at Honolulu. Cotypes No. 2741, U. S. F. C., 3.9 inches long; No. 2302, Am. Mus. Nat. Hist., 3.9 inches long; and No. 4063, Field Col. Mus., 3.5 inches long, all collected at Honolulu by the *Albatross*.

-Family HOLOCENTRIDÆ. The Squirrel-fishes.

13. *Myripristis berndti* Jordan & Evermann, new species.

Head 2.8 in length; depth 2.4; eye 2.7 in head; snout 4.7; maxillary 1.7; interorbital 4.9; D. X-1, 16; A. IV, 14; P. I, 14; V. I, 7; scales 4-32-7.

Body elongate, deep, compressed, its greatest depth at base of ventral; head large, compressed, its depth less than its length; snout short, blunt, convex, its width about twice its length; upper profile of head straight from above nostril to occiput; eye large, high, its diameter a little less than posterior part of head, and its upper rim hardly impinging upon upper profile of head; mouth very large, oblique; mandible slightly projecting, the maxillary not reaching posterior margin of eye; distal expanded extremity of maxillary 1.7 in eye; several enlarged, blunt teeth on outer front edges of jaw and sides of mandible; teeth in jaws fine, in broad bands, also on vomer and palatines; tongue thick, pointed, and free in front; suborbital rim narrow, finely serrate; lower posterior margin of maxillary with blunt denticulations; lips rather thick and fleshy; nostrils close together, posterior very large, close to front rim of orbit; bones of head all finely serrate; opercle with well-developed spine; gill-

opening large, filaments rather large; gillrakers long, fine, longest longer than longest gill-filaments; pseudobranchiæ very large, outer portions free for half their length; dorsal spines slender, first 3.4 in head, second 2.6, third 2.2, fourth 2.2, tenth 6.4, and last 3.5; anterior dorsal rays elevated, produced into a point, first 1.8, second 1.7, and last 8; first and second anal spines short, third 2.6, and fourth 2.8; soft anal similar to soft dorsal, anterior ray 1.75, third 1.8, and last 6; caudal forked, lobes pointed, 1.2; pectoral rather small, pointed, 1.4; ventral 1.6, reaching .65 distance to anus; caudal peduncle elongate, compressed, 2.2 in head, its depth 3.25; scales large, ctenoid, deep; lateral line slightly arched, running obliquely down on side along upper part of caudal peduncle; 4 rudimentary caudal rays above and below, slender, sharp-pointed, and graduated.

Color in life (No. 03370), deep red, with silvery luster; no stripes on side, a blood-red band across gill-opening and base of pectoral; fins deep red, without white edgings, distal half of spinous dorsal shading into orange.

Color in alcohol, pale straw-color, fins plain and paler; upper margin of opercle blackish, and axil of pectoral black; anterior margins of soft dorsal and anal whitish.

We take pleasure in naming this species for Mr. Louis E. Berndt, superintendent of the Honolulu market. Described from an example (No. 03346) taken at Honolulu, where the species is rather common. Our collections contain the following specimens:

Field No.	Length.	Locality.	Final disposition of specimen.	Field No.	Length.	Locality.	Final disposition of specimen.
03346	9	Honolulu.	Type, No. 50627, U. S. N. M.	04870	9	Honolulu.	Cotype, No. 3947, Field Col. Mus.
03370	8	.....do.....	Cotype, No. 16818, Bishop Mus.	04872	8	.....do.....	Cotype, No. 24212, Ae. Nat. Sci. Phila.
04834	8	.....do.....	Cotype, No. M. C. Z.	04873	8.5	.....do.....	Cotype, No. 7451, L. S. Jr. Univ., Mus.
04886	7	.....do.....	Cotype, No. 2701, U. S. F. C.				
04849	7	.....do.....	Cotype, No. 2282, Am. Mus. Nat. Hist.				
04850	7	.....do.....	Cotype, No. 1489, Cal. Ac. Sci.	04874	7	.....do.....	
04856	7	.....do.....	Cotype, No. 50628, U. S. N. M.	04878	7	.....do.....	
04857	8.5	.....do.....	Cotype, No. 9801, Mus. Ind. Univ.	04882	7	.....do.....	
				04885	8	.....do.....	
				04891	9	.....do.....	

14. *Myripristis chryseres* Jordan & Evermann, new species.

Head 2.75 in length; depth 2.5; eye 2.4 in head; snout 5.5; maxillary 1.9; mandible 1.8; interorbital 5; D. x-1, 14; A. iv, 12; scales 4-34-6.

Body short, stout, and compressed; dorsal profile evenly convex from tip of snout to origin of soft dorsal; ventral outline nearly straight to origin of anal whose base is equally oblique with that of soft dorsal; caudal peduncle short but slender, and not greatly compressed, its length from base of last dorsal ray to first short spinous caudal ray 1.3 in eye, its least width about 3 in its least depth which is 1.8 in eye; head heavy, short; mouth moderately large, the gape in closed mouth reaching vertical of middle of eye; maxillary very broad, triangular, reaching nearly to vertical of posterior line of eye, with a broad, curved supplemental border; surface of maxillary roughly striated, anterior edge near the angle strongly dentate; lower jaw strong, somewhat projecting, the tip with 2 rounded rough prominences fitting into a distinct notch in upper jaw; teeth short, in narrow villiform bands in jaws and on palatines, a small patch on vomer, none on tongue; eye very large, orbit exceeding postocular part of head; lower edge of eye on level with axis of body; snout short, 2 in orbit; interorbital space nearly flat, strongly rugose; 2 long ridges from preorbitals to nape; outside of these a short ridge beginning above front of pupil, extending backward and branching upon nape; supraocular ridge spinose posteriorly; suborbital narrow, strongly dentate below, upper edge in front somewhat roughened; opercular bones all strongly toothed; opercular spine short and obscure (stronger in most of the cotypes); dorsal spines slender, fifth longest and strongest, its length 2.5 in head; first dorsal spine somewhat posterior to base of pectoral, its length 2 in eye, spines gradually shorter from fifth; space between dorsals very short, about equal to length of tenth spine; dorsal rays long, length of longest a little greater than orbit, last equal to pupil; first anal spine very short, second short and triangular, its length about 1.5 in pupil; third anal spine long, strong and straight, longer than fourth, its length equal to diameter of orbit; fourth anal spine slender, its length 1.3 in orbit; anal rays longer than those of dorsal; caudal widely forked, lobes equal, their length 1.5 in head; pectoral long and narrow, its length 1.4 in head, the tip reaching past tips of ventrals; ventrals slender, pointed, nearly reaching vent and nearly as long as pectoral.

Scales smaller than in *M. murdjan*, number in lateral line 34 in type, 35 to 38 in some of the cotypes; scales strongly dentate, and striate near the edges; a strongly dentate humeral scale.

Color in life, bright scarlet, centers of the scales paler; a blackish-red bar behind, and on edge of opercle, continued as red (not black) into the axil; first dorsal golden, with red basal blotches on membranes; second dorsal golden, with crimson at base, spine and first ray white; caudal golden, first ray white above and below; anal golden, the spines and first ray white; all the vertical fins narrowly edged with red; ventrals mostly pink, with golden wash on first rays; pectoral plain crimson; axil light red.

Color in alcohol, yellowish or orange white, the edges of the scales paler; some of the scales with small brownish dustings on the edges; edge of opercle black; opercle and cheek somewhat silvery; fins all pale yellowish, without dark edges. In some individuals the general color is more silvery, and in one example (No. 04860) the axil of the pectoral is somewhat dusky. In life the color is more scarlet than in *M. murdjan* and the fins yellow, not red as in *M. murdjan* and all other Hawaiian species.

Myripristis chryseres is related to *M. murdjan*, from which it differs in the smaller scales, larger eye, less black in the axil, and the absence of black edges to the dorsal and anal fins as in the life colors already noted, the yellow fins being the most conspicuous character in life. It reaches a length of 9 or 10 inches and appears to be moderately abundant at Honolulu and Hilo.

Type, No. 50629, U. S. N. M. (field No. 03463), a specimen 8 inches long, obtained at Hilo, Hawaii. The numerous cotypes and the museums in which they have been deposited are indicated in the following tabular list of specimens:

Field No.	Length.	Locality.	Final disposition of specimen.	Field No.	Length.	Locality.	Final disposition of specimen.
	<i>Inches.</i>				<i>Inches.</i>		
2558	4	Honolulu.		04862	9	Hilo.....	Cotype, No. —, M. C. Z.
03463	8	Hilo.....	Type, No. 50629, U. S. N. M.	04863	9	.....do....	Cotype, No. 9802, Ind. Univ. Mus.
04823	8.5	.....do....	Cotype, No. 7452, L. S. Jr. Univ. Mus.	04867	8	Honolulu.	Cotype, No. 2702, U. S. F. C.
04827	8	.....do....	Do.	04868	7	.....do....	Cotype, No. 1689, Bishop Mus.
04883	6	Honolulu.	Cotype, No. 2283, Am. Mus. Nat. Hist.	04869	8	.....do....	Cotype, No. 1490, Cal. Ac. Sci.
04839	7	.....do....	Cotype, No. 24273, Ac. Nat. Sci. Phila.	04887	8	.....do....	
04860	9.5	Hilo.....	Cotype, No. 50630, U. S. N. M.	04889	7	.....do....	
04861	9	.....do....	Cotype, No. 3948, Field Col. Mus.	04890	8	.....do....	
				04892	8	.....do....	

15. *Myripristis argyromus* Jordan & Evermann, new species.

Head 3.5 in length; depth 2.75; eye 2.4 in head; snout 5; maxillary 1.8; mandible 1.6; interorbital 3.75; D. x-1, 15; A. iv, 13; scales 4-33-5.

Body rather long and compressed, dorsal and ventral outlines about equally and evenly convex from snout to origins of anal and soft dorsal fins; head rather large but short; mouth moderate, maxillary reaching vertical at posterior edge of pupil, the exposed portion broad, triangular, the upper edge concave, the end rounded and the anterior edge with short blunt teeth, strongest at angle; tip of upper jaw with a shallow notch roughened at its outer edges; jaws equal, lower fitting into the notch of upper and with 2 patches of strong blunt tooth-like tubercles at its tip; eye large, its middle above level of tip of upper jaw; interorbital space wide and slightly convex; 2 low, nearly parallel median ridges from tip of snout to nape, diverging slightly at their middle, another low ridge from above orbit backward to nape, and another backward around orbit; ridges on nape divergent; suborbital narrow, dentate on both edges; opercular bones all striate and dentate at the edges; opercle with a short, flat, triangular spine; scales large, rough, striate near the edges which are finely toothed; a series of 4 or 5 large modified scales across nape, and a series of triangular scales along bases of dorsal and anal; about 10 scales in front of dorsal; origin of dorsal about over lower base of pectoral; dorsal spines slender, the first 3.2 in head, third and fourth longest, about equal to orbit; interval between dorsals very short; anterior dorsal rays somewhat produced, their length equal to snout and eye; edge of fin concave, last rays nearly 3, or equal to pupil; anal spines graduated, the first very small, second short but stout, third much longer and stoutest, its length 1.3 in eye, fourth still longer and more slender; anterior anal rays produced, their length about equal to that of longest dorsal rays, free edge of fin concave; caudal evenly forked, the lobes equal to length of head; pectoral long and pointed, reaching beyond tips of ventrals, about 1.3 in head; ventrals shorter, 1.6 in head, their tips equally distant between their bases and that of first anal ray.

Color in alcohol, pale yellowish-white, brightest above, more silvery on side and belly; opercular bones with fine round brownish specks; edge of opercle not black, scarcely dusky; axil dusky inside but not showing above fin; fins pale yellowish-white without any dark on edges.

Type, No. 50631, U. S. N. M. (field No. 04829), a fine specimen 9.5 inches long, obtained by us at Hilo, Hawaii.

M. argyromus is related to *M. berndti*, but is distinguished by the more slender body, the absence of black on the opercle, and the paler axil. It does not appear to be abundant and is represented in our collections by only 8 specimens. All the other specimens are taken as cotypes. The data regarding each will be found in the following list:

Field No.	Length.	Locality.	Final disposition of specimen.
	<i>Inches.</i>		
04829	9.5	Hilo	Type, No. 50631, U. S. N. M.
04830	9.0	Honolulu..	Cotype, No. 7453, L. S. Jr. Univ. Mus.
04835	6.5	.....do	Cotype, No. 1690, Bishop Mus.
04840	6.5	.....do	Cotype, No. 2284, Am. Mus. Nat. Hist.
04877	9.0	Honolulu..	Cotype, No. 2703, U. S. F. C.
04879	8.0	.....do	Cotype, No. —, M. C. Z.
04880	7.5	.....do	Cotype, No. 9803, Ind. Univ. Mus.
04881	9.0	.....do	Cotype, No. 3949, Field Col. Mus.

16. *Myripristis symmetricus* Jordan & Evermann, new species.

Head 3.2 in length; depth 2.4; eye 2.2 in head; snout 5; interorbital 3.8; D. x-1, 15; A. iv, 14; P. i, 14; V. i, 7; scales 4-36-6.

Body elongate, deep, compressed, greatest depth about midway between origin of ventrals and anal; upper and lower profiles evenly convex; head compressed, as long as deep, its width 1.7 in its length; snout short, broad, blunt, and steep; upper profile of head straight from above nostril to occiput; eye very large, high, hardly impinging upon the upper profile of head, its diameter greater than postocular region; mouth very large, oblique; mandible slightly projecting, and reaching posteriorly to below posterior rim of pupil; distal expanded extremity of maxillary 2.35 in eye; several enlarged blunt teeth on outer front edges of mandible; teeth in jaws, on vomer, and palatines very fine, in bands; tongue thick, pointed, free; suborbital rim narrow, finely serrate; lower posterior margin of maxillary smooth; lips rather thick and fleshy; nostrils close together, posterior very large, close to front rim of orbit; bones of head all finely serrate; opercle with well-developed spine; gill-opening large, filaments large; gillrakers long, fine, longest longer than longest gill-filament; pseudobranchiae very large; dorsal spines slender, sharp, first 2.75 in head, second 2.1, third 2, fourth 1.9, tenth 6, and last 3.6; soft dorsal with anterior rays elevated, produced into a point which projects beyond tip of posterior rays when fin is depressed, first ray 1.4 in head, third 1.35, and last 3.75; anal spines graduated to last, third enlarged, 2.5 in head, fourth 2.9; soft anal similar to soft dorsal, anterior rays produced, first 1.4, third 1.3, and last 4.6; caudal elongate, deeply forked, the lobes pointed, 1.2 in head, and reaching slightly behind tips of ventrals; ventrals sharp-pointed, 1.4 in head, spine 2.2; caudal peduncle elongate, compressed, its length 1.8 and its depth 3.2; scales large, finely ctenoid, deep on middle of side; lateral line running obliquely back, slightly curved at first, and posteriorly along upper side of caudal peduncle; 4 rudimentary, slender, sharp-pointed, graduated rays along upper and lower edges of caudal; scales narrowly imbricated along middle of side.

Color in alcohol, pale straw-color; fins paler, except the anterior dorsal and anal rays, which are grayish; margin of opercle above blackish; axil of pectoral black.

This species was found both at Honolulu and Hilo, but does not appear to be abundant. Only 4 specimens are in our collections:

Field No.	Length.	Locality.	Final disposition of specimen.
	<i>Inches.</i>		
04866	5.5	Hilo	Type, No. 50632, U. S. N. M.
04864	5.5	.....do	Cotype, No. 7454, L. S. Jr. Univ. Mus.
04865	5.5	.....do	Cotype, No. 2704, U. S. F. C.
04924	5.0	Honolulu.....	Cotype, No. 3950, Field Col. Mus.

17. *Flammeo scythrops* Jordan & Evermann, new species.

Head (measured to end of flap) 2.75 in length; depth 3; eye 3 in head; snout 4; maxillary 2.1; mandible 1.8; interorbital 5; D. xi, 13; A. iv, 9; scales 5-48-7, 5 rows on cheek; Br. 7.

Body oblong, rather slender; dorsal outline gently and rather evenly curved from tip of snout to origin of soft dorsal, more nearly straight from tip of snout to nape; ventral outline less convex; head long; snout long and pointed; maxillary broad, with a strong supplemental bone whose lower edge forms a broad angle; end of maxillary slightly concave; lower jaw long, much projecting, tip prominent; mouth large, not greatly oblique; maxillary nearly reaching vertical at posterior line of pupil; lips broad, rounded, and soft; eye large, lower edge of pupil on axis of body; interorbital space with a broad, shallow groove between low ridges, one on each side; space between ridge and eye with short, curved ridges; nape on each side with a group of 8 or 10 short, sharp ridges, diverging backward and ending in short, sharp spines; posterior part of supraocular with a patch of short spines; suborbital dentate on its lower edge; preorbital with 2 blunt prominences in front, a strong, recurved spine below, ridges and spines on its upper surface; opercular bones all strongly striate, the striæ ending in short spines; entire surface of interopercle striate; opercle with 2 strong spines, the lower the stronger, its length 1.6 in orbit; preopercle with a very strong spine at angle, its length nearly equaling diameter of orbit, its surface striate, and its base with a series of small spines; under surface of dentary somewhat roughened; surface of articular bone much rougher; jaws each with a broad band of villiform teeth, the outer series on upper jaw stronger; a narrow series on each palatine and a patch on vomer; scales moderate, the surfaces usually nearly smooth, the edges finely toothed; a series of strongly striate scales across nape, and a strong, striated plate at shoulder; lateral line well developed, little arched, with about 45 pores; bases of soft dorsal and anal each with series of modified triangular scales; caudal with small scales on base and fine scales on membranes, extending well toward tips of outer rays; origin of spinous dorsal in advance of base of pectoral or over middle of upper opercular spine; dorsal spines in a broad, deep groove, moderately strong, middle one longest, 2.3 in head, first a little shorter than snout, tenth more than half eye; dorsal rays longer than spines, longest 2.2 in head; first anal spine very short, second about 3 times as long; third anal spine very long and strong, but little curved, reaching past base of anal, its length 1.5 in head; fourth anal spine shorter and more slender, its length 2.25 in head and equaling longest anal rays; last anal ray much shorter, 1.6 in eye; pectoral long and slender, 1.2 in head, the tip nearly reaching vent; ventrals shorter, equal to snout and eye; caudal forked, the lobes equal, not strongly divergent, their length about equaling that of third anal spine; rudimentary caudal spines 5 above, 4 below, strong and sharp.

Color in life, head red above, paler on sides, nearly white below; tips of jaws rich red; side of body with about 10 or 12 narrow yellow stripes separated by red or rosy stripes of about same width, those below paler and somewhat purplish; under parts purplish or pinkish white; the stripes beginning at edge of opercle and ceasing at base of caudal peduncle, which is rich red above, becoming paler on side and below; membranes between the first and third dorsal spines rich blood-red, those between other spines white at base, each with distal portion lemon-yellow in front and red behind, last 2 or 3 membranes with little or no yellow; dorsal spines pale rosy, nearly white; soft dorsal, anal, pectoral, and ventral with rays rosy, membranes pale; ventral with a little yellow at base; anal spines somewhat dusky; caudal rich blood-red, paler distally; eye red, a narrow yellow ring around pupil.

Another example (No. 03041), much faded, was bright red; stripes on side equally bright golden; fins red; edges of dorsal membranes pale; no markings evident on fins.

Color in life of another example (No. 03451), side with 10 or 11 longitudinal golden or yellow bands; spinous dorsal more or less white; membranes between first and third dorsal spines more or less deep vermilion, except the upper marginal portion behind second spine, which is white; a red blotch along margin of membranes just before each of the other dorsal spines.

Color when fresh of another specimen (No. 03490), violet-rose with 10 stripes of bright golden on side; dorsal red, mottled with golden, the first two spines deep red; soft dorsal and other fins rather light red without edgings, and scarcely darker behind third anal spine; pectoral and ventrals pink; a red dash across cheek, space above and below whitish; temporal region deep red; iris red.

All these colors fade in alcohol and the fish becomes a pale yellowish white, the longitudinal lines on side showing faintly as duller and brighter stripes of yellowish white; fins all whitish or yellowish white, membranes of spinous dorsal whiter.

The above description from the type, No. 50633, U.S.N.M. (field No. 03488), a specimen 9 inches long obtained by us at Honolulu. An examination of our large series of cotypes shows but slight variations, the characters appearing quite stable. In some examples the upper opercular spine is the larger, in others the 2 are equal; in 2 examples we find 3 opercular spines.

This species has been several times called *Holocentrum argenteum*. The species described under that name by Quoy & Gaimard from New Guinea resembles this in the slender body and general coloration, but differs in having the lower jaw included, eye much smaller, mouth smaller, and the preopercular spine weaker. It was probably intended for some species with the lower jaw included.

Holocentrus tiere Lesson, from Tahiti, is more likely to be the present fish. It is figured as elongate, with the spinous dorsal low and the opercular spines equal. The plate is, however, too rough to permit certain identification and approaches almost as closely to *Holocentrus diploxiphus* as to *Flammeo*.

This is one of the most abundant species in the markets at Honolulu and Hilo. It reaches a length of 8 to 10 inches. Our collections contain the following specimens, all of which, except the first, are taken as cotypes:

Field No.	Length.	Locality.	Final disposition of specimen.	Field No.	Length.	Locality.	Final disposition of specimen.
	<i>Inches.</i>				<i>Inches.</i>		
03488	9.25	Honolulu.	Type, No. 50633, U. S. N. M.	04965	8.50	Honolulu.	Cotype, No. 7456, L. S. Jr. Univ. Mus.
03041	8.00	.....do.....	Cotype.	04966	8.50	.....do.....	Cotype, No. 2705, U. S. F. C.
03451	8.50	.....do.....	Cotype, No. —, M. C. Z.	04967	7.50	.....do.....	Cotype, No. 2705, U. S. F. C.
03490	8.50	Hilo.....	Cotype, No. 7455, L. S. Jr. Univ. Mus.	04968	8.25	.....do.....	Cotype, No. 24214, Ac. Nat. Sci., Phila.
04925	8.25	.....do.....	Do.	04969	7.50	.....do.....	Cotype, No. 2285, Am. Mus. Nat. Hist.
04926	10.00	.....do.....	Do.	04970	8.50	.....do.....	Cotype, No. 7456, L. S. Jr. Univ. Mus.
04927	9.00	.....do.....	Cotype, No. 1491, Cal. Ac. Sci.	04971	7.75	.....do.....	Do.
04928	9.25	.....do.....	Cotype.	04972	7.75	.....do.....	Do.
04949	6.25	Honolulu.	Cotype, No. 3967, Field Col. Mus.	04973	8.75	.....do.....	Do.
04954	8.75	.....do.....	Cotype, No. 7456, L. S. Jr. Univ. Mus.	04974	8.75	.....do.....	Do.
04956	8.75	.....do.....	Cotype, No. 9804, Ind. Univ. Mus.	04975	8.00	.....do.....	Do.
04957	7.25	.....do.....	Cotype.	04976	5.00	.....do.....	Do.
04958	8.50	.....do.....	Cotype, No. 1691, Bishop Mus.	04977	7.00	.....do.....	Do.
04959	7.50	.....do.....	Cotype.	04978	9.00	.....do.....	Do.
04964	9.00	.....do.....	Cotype, No. 50634, U. S. N. M.				

Holocentrum argenteum, Steindachner, Denks. Ak. Wiss. Wien, LXX, 1900, 492 (Honolulu and Laysan); not of Cuvier & Valenciennes.

18. *Holocentrus xantherythrus* Jordan & Evermann, new species.

Head 2.8 in length; depth 3; eye 3 in head; snout 4; maxillary 2.7; interorbital 5; D xi-14; A. iv, 10; scales 4-47-8.

Body elongate, compressed, greatest depth about base of ventral; upper profile steep; lower profile nearly horizontal; head compressed, its depth about 1.2 in length, width 2.25; eye large, high, impinging upon upper profile in front, anterior, and a little less than postocular region; snout short, pointed, its upper profile obliquely straight; jaws rather large, subequal; maxillary reaching beyond front margin of pupil or to first third of eye, its distal expanded extremity 2.7 in eye; supplemental maxillary large; lips rather thick, fleshy; teeth small, short, in rather broad bands in jaws and on vomer and palatines; tongue elongate, pointed, free in front; nostrils close together, posterior, a deep cavity in front of middle of eye; interorbital space broad, very slightly concave; preorbital with a large spine in front, its margins serrate; suborbital narrow, with finely serrate margin; preopercle with a large dagger-like spine at lower angle; opercle with 2 similar spines on upper margin, upper one much the larger; bones of head with serrate margins; gill-opening rather large, filaments and pseudobranchiæ well developed; gillrakers short, compressed, few, and much shorter than longest filaments; fleshy axillary flap small; dorsal spines sharp-pointed, first 3.2 in head, second 2.8, third 1.9, last 7; anterior dorsal rays high, second 2.4 in head, third 2.2, last 6.5; third anal spine very large, not reaching beyond soft rays, 1.7 in head, fourth 2.25; anterior anal rays longest, first 1.75 in head, second 1.9, last 6; caudal rather small, deeply forked; pectoral small, 1.6 in head; ventral sharp-pointed, 1.4, spine 2; caudal peduncle elongate, compressed, its length 2.1 in head, depth 4; scales rather large, ctenoid; lateral line nearly straight, running obliquely down along upper side of caudal peduncle.

Color in life (No. 02989), bright red, belly more or less silvery; about 10 narrow longitudinal silvery stripes; uppermost pinkish; side of head silvery with pinkish shades; a white stripe from preorbital to base of preopercular spine; spinous dorsal deep red without streaks or black marking, a white spot behind first and second spines at base, tips of third to seventh spines whitish; soft dorsal, anal, caudal, and pectoral plain pink; anal with membrane of third spine and first soft ray deep red; ventral pink, spine and first soft ray white, second soft ray deep red anteriorly, posteriorly whitish.

Another example (No. 03161), was rose red when fresh, with about 10 very faint light rosy streaks along rows of scales, these much less distinct than in other species; cheek rosy with one broad oblique white band; dorsal plain red, the membranes fading to white, no light stripes on dark areas; other fins plain light red; membrane of fourth anal spine not darker; iris pink.

Another example (field No. 03467), deep crimson when fresh, with 10 narrow, sharply defined, white stripes along rows of scales; an oblique white stripe below eye from snout to base of preopercular spine; dorsal clear deep red, clouded with darker; soft dorsal, caudal, and anal light bright red; membrane between third and fourth anal spines blood-red; pectoral deep red; ventrals red, spines white, their membranes blood red.

Color in alcohol, pale brown or brownish white, washed more or less with silvery or brassy white; side with 9 or 10 longitudinal white stripes; fins pale.

This species is related to *Holocentrus ensifer*, differing mainly in the presence of two well-developed spines on the upper margin of the opercle. It is one of the most abundant of the family in Hawaiian waters. It is represented in our collections by 40 examples, as follows:

Field No.	Length.	Locality.	Final disposition of specimen.	Field No.	Length.	Locality.	Final disposition of specimen.
05999	<i>Inches.</i> 6	Honolulu.	Type, No. 50635, U. S. N. M.	04227	<i>Inches.</i> 6.5	Honolulu.	Cotype, No. 9805, Ind. Univ. Mus.
02934	6.5	.....do.....	Cotype, No. 50636, U. S. N. M.	04936	5.75	.....do.....	Cotype, No. 1492, Cal. Ac. Sci.
02933	5.5	.....do.....	Cotype, No. 2706, U. S. F. C.	04938	6.25	.....do.....	
02989	4.5	.....do.....	Cotype, No. 3951, Field Col. Mus.	04939	6.25	.....do.....	
03160	5.25	.....do.....	Cotype, No. 7457, L. S. Jr. Univ. Mus.	04960	5.5	.....do.....	
03161	6.25	.....do.....	Do.	04961	5.5	.....do.....	
03294	5.75	.....do.....	Cotype, No. 1692, Bishop Mus.	04940	5.5 ⁹	.....do.....	
03295	5.75	.....do.....	Cotype, No. —, M. C. Z.	04980	5.75	Kailua ...	
03203	5	.....do.....	Cotype, No. 2256, Am. Mus. Nat. Hist.	04234	5.25	Honolulu.	
03467	5.75	.....do.....	Cotype, No. 24215, Ac. Nat. Sci. Phila.	04230	5.5	.....do.....	
03468	6.5	.....do.....	Cotype, No. 2733, U. S. F. C.	04244	3.25	Kailua ...	
				04978	3.75	.....do.....	
				04226	5.75	Honolulu.	
				05905	5.6	.....do.....	

And 15 other examples from Honolulu, ranging in length from 4 to 6.5 inches.

19. *Holocentrus ensifer* Jordan & Evermann, new species.

Head 3 in length; depth 2.7; eye 3 in head; snout 3.5; maxillary 2.25; interorbital 5; D. xi, 15; A. iv, 11; P. i, 14; V. i, 8; scales 4-47-8.

Body elongate, compressed, greatest depth at ventral fin; upper profile decidedly more convex than lower; head compressed, much longer than deep, pointed, its width a little more than half its length; eye moderate, about 1.2 in postocular part of head, and slightly impinging upon upper profile; snout pointed; mouth moderate, oblique; maxillary broad, with large supplemental bone distally, equal to half diameter of eye; lips thick, fleshy; teeth minute, in broad bands in jaws, and on vomer and palatines; tongue pointed, free in front; nostrils close together, posterior a large cavity with several small spines projecting over; preorbital with 2 large strong spines and about 6 strong serrations on its margin; suborbital rim narrow; bones of head all more or less finely serrate, the opercle above and preopercle below each with a long, strong, dagger-like spine; interorbital space broad, very slightly concave; a fleshy axillary flap; gill-opening large, filaments moderately long, much longer than gill-rakers which are compressed and not very numerous; pseudobranchiae large; spinous dorsal long, membrane between spines not much incised, first 2.2, second 2.1, third 2, last 4.2; anterior dorsal rays longest, fourth 1.8, last 7.5; third anal spine largest, 1.75, fourth 2.3; soft anal similar to soft dorsal, third spine not reaching beyond rays; caudal rather small, forked; pectoral 1.3; ventral 1.4, spine 2; caudal peduncle compressed, its length 2.2, depth 4; scales rather large, ctenoid; lateral line arched a little at first and running down obliquely on upper side of caudal peduncle.

Color in life, bright red; side with about 8 yellow longitudinal bands; spinous dorsal vermilion tinged with yellow; soft dorsal rosy with front margin white and behind this above, red; anal whitish with red between third spine and first ray; caudal red, margined above, and along the emargination with whitish; pectoral whitish with red lines; ventral rosy with front margin white.

Another example (field No. 03454), in life had yellow and red longitudinal bands above and yellow and white below; spinous dorsal vermilion, other fins red with white borders. Another (field No. 03472), was brilliant scarlet red with 11 golden streaks along rows of scales, upper 4 broadest, and third and fourth most distinct and oblique; a white or golden streak across cheek; fins plain scarlet without dark patches. Color, when fresh, of another specimen (field No. 03494), bright red verging to scarlet; side red, with 4 golden stripes along back and 6 silver stripes below these, golden and silver, very bright; head crimson; a white band on cheek; spinous dorsal deep scarlet with crimson edge; soft dorsal light crimson with a white, then a dark crimson edge; caudal blood red, edged above and below with white, posterior part of fin abruptly pale; anal with pale spines, then blood red, then pinkish; ventral with white spine, then dark red, then pink; pectoral light red, axil deep red.

Color in alcohol, pale brown or brownish white, the longitudinal bands on sides, together with scales on cheeks and opercle, silvery; fins pale.

This species was obtained by us at Honolulu and Kailua, and appears to be common at the former place. The collections contain the following specimens:

Field No.	Length.	Locality.	Final disposition of specimen.	Field No.	Length.	Locality.	Final disposition of specimen.
	<i>Inches.</i>				<i>Inches.</i>		
03448	6	Honolulu.	Type, No. 50637, U. S. N. M.	04951	9.5	Honolulu.	Cotype, No. 24216, Ac. Nat. Sci. Phila.
03472	6	Kailua ...	Cotype, No. 7458, L. S. Jr. Univ. Mus.	03454	9.75	.....do.....	Cotype, No. 9806, Ind. Univ. Mus.
04929	8.75	Honolulu.	Cotype, No. 2708, U. S. F. C.	03494	8.5	.....do.....	Cotype, No. 3952, Field Col. Mus.
04930	8.5	.....do.....	Cotype, No. 1693, Bishop Mus.				
04931	8	.....do.....	Cotype, No. —, M. C. Z.				
04950	8.75	.....do.....	Cotype, No. 2287, Am. Mus. Nat. Hist.				

Family CARANGIDÆ. The Pampanos.

20. *Carangus elacate* Jordan & Evermann, new species.

Head 3.6 in length; depth 3.4; eye 4.5 in head; snout 3.8; interorbital 3.8 in snout; maxillary 2.1; preorbital 3.5; mandible 1.9; D. VII-1, 19; A. II-1, 16; scutes 28.

Body slender, compressed, not greatly elevated; snout rather short, profile ascending to nape in a gentle curve, slightly trenchant; mouth large, slightly oblique; lower jaw somewhat projecting; maxillary reaching posterior edge of orbit, its width at tip 1.5 in orbit; supplemental maxillary well developed, its width 3.25 in entire width; gape reaching vertical of posterior edge of pupil; villiform teeth on vomer, palatines and tongue, those on jaws in a single row, small and somewhat canine-like; eye large, anterior; adipose eyelid strongly developed behind; supraocular region with two rays extending to humeral region, the lower the stronger; posterior half of body, beginning at soft dorsal, long and gently tapering to caudal peduncle; caudal peduncle much depressed, depth scarcely half its least width; distance from base of last dorsal ray to origin of caudal fin equal to snout and pupil; fins small; origin of spinous dorsal posterior to base of pectoral fin equal to eye; longest dorsal spine slightly greater than snout; anterior rays of soft dorsal produced, about 1.8 in head; anal similar to soft dorsal, its origin under eighth soft dorsal ray produced, but scarcely equaling longest soft dorsal rays; caudal widely forked, lobes about equal; pectoral long and falcate, reaching past origin of anal, exceeding head in length by 0.65 of eye; ventrals short, 2.4 in head; scales rather large, a low sheath at base of soft dorsal anteriorly; breast entirely scaled; lateral line strongly arched above pectoral, joining straight under sixth dorsal ray, chord of arched portion 1.6 in straight part.

Color in alcohol, rusty olivaceous above, paler on side below lateral line, belly white; top dark olive, side and lower jaw lighter, with strong brassy tinge on postocular and on lower part of opercle; lower jaw profusely covered with fine brown points; a black spot at upper end of opercle; axil black; vertical fins all more or less dark; produced part of soft dorsal almost black.

part of soft dorsal black at base, then lighter, narrowly tipped with dark; anal dark brown, with a subterminal stripe of yellowish white along edge of fin; pectoral and ventrals pale.

The above description based upon the type, No. 50638, U. S. N. M. (field No. 04452), a large example 27 inches long, from Honolulu.

This species somewhat resembles *Carangus marginatus*, from which it differs in the much more slender body, larger eye, and dark anal fin. The type is the only example obtained

Family SERRANIDÆ. The Sea-basses.

21. *Pikea aurora* Jordan & Evermann, new species.

Head 2.5 in length; depth 3; eye 5 in head; snout 4; interorbital 6.2; maxillary 2.25; D. VIII, 13; A. III, 8; scales 5-55-22; Br. 7; gillrakers short and rather weak, about 9+5.

Body moderately stout, the back slightly elevated, head rather long and pointed; snout depressed, the anterior profile nearly straight from tip of snout to occiput; mouth large, maxillary reaching posterior margin of pupil, supplemental bone not developed, the tip broad, 1.5 in orbit; mouth somewhat oblique, the lower jaw strongly projecting; teeth in broad villiform bands on jaws, vomer, and palatines; tongue naked; eye moderate, high up, chiefly above axis of body; anterior nostril in a short tube at edge of prenasal; posterior nostril small, round, near upper anterior edge of orbit; edge of preopercle slightly dentate, especially on lower arm; opercle ending in a broad flap with a weak, flat spine; pseudobranchiæ rather small; interorbital low, very little convex; caudal peduncle stout, compressed, and very deep, the depth equaling snout and eye; fins rather small; origin of dorsal posterior to that of pectoral, slightly nearer base of last ray than tip of snout; dorsal spines low and weak, the third longest, 3.6 in head; soft portion of dorsal somewhat elevated and pointed, with longest ray 1.9 in head; anal similar to soft dorsal but smaller and somewhat posterior, fifth ray 2 in head; caudal truncate or slightly lunate; ventrals short, not nearly reaching vent, their length 1.75 in head; pectoral rather long and slender, reaching origin of anal, its length about 1.4 in head; scales rather small, finely ciliate, somewhat loose; entire head, except interorbital, snout, and under parts, scaled; lateral line well developed, complete, with a strong arch above the pectoral and distinctly decurved under last dorsal ray.

Color in life (field No. 03342), top of head, upper half of anterior part of body, and whole posterior half of body pale rosy; lower part of head, and lower parts of anterior half of body white with faint rosy wash; top of head and back in front of dorsal vermiculated with greenish yellow lines; middle portion of upper jaw yellow with a broad sulphur-yellow stripe from it to eye, then back of eye to opercular opening; a narrow sulphur stripe on posterior edge of maxillary and continued interruptedly downward and backward across cheek to opercle; a few small yellow spots across cheek between the two stripes; tip of lower jaw yellow; yellow of back in about 6 indefinite lines; dorsal pale rosy, spinous part greenish yellow at base, this extending toward tip posteriorly and forming a submarginal yellow stripe on soft part, narrowly bordered above by rosy; rest of fin rosy; caudal dark rosy, paler toward tip, then with blackish red edge, a greenish yellow stripe along upper and lower margins narrowly edged with rosy; anal yellow anteriorly, rest of fin pale rosy; pectoral and ventrals pale rosy; soft part of lower jaw bounded by rosy, rest of jaw and chin whitish; some examples with posterior side with scattered small greenish yellow spots, these extending on caudal; eye with a broad bar through the middle, white above and below.

In alcohol, pale yellowish white, lighter below; body, especially posteriorly, caudal, and soft parts with numerous small distinct brown spots; head pale, a white line extending along upper maxillary and across cheek to opercular opening, a similar but less distinct white line from eye to edge of gill-opening; between these 2 a few white specks; all the fins except caudal and soft part yellowish white.

Specimens of this interesting and handsome species were obtained by us, 2 at Honolulu and

Four others are in the collection made at Honolulu in 1898 by Dr. Wood.

Field No.	Length.	Locality.	Final disposition of specimen.	Field No.	Length.	Locality.
	<i>Inches.</i>				<i>Inches.</i>	
05232	6.2	Hilo.....	Type, No. 50675, U. S. N. M.	O. P. J. 403	4.5	Honolulu.
05233	4.8	.....do	Cotype, No. 3971, Field Col. Mus.	682	5.25	Do.
05231	5.75	Honolulu.	Cotype, No. 7484, L. S. Jr. Univ. Mus.	687	6	Do.
03342	5.2	.....do	Cotype, No. 2734, U. S. F. C.	6074	6	Do.

22. *Anthias kelloggi* Jordan & Evermann, new species.

Head 2.5 in length; depth 2.5; eye 4.5 in head; snout 3.6; maxillary 2; interorbital 5.4; D. xi, 15; A. iii, 7; P. 15; scales 4-36-10; gillrakers 16+4.

Body short, deep, and compressed; dorsal outline greatly arched, profile from origin of spinous dorsal to tip of snout nearly straight, being gently concave over interorbital space; ventral outline nearly straight; caudal peduncle compressed, its greatest depth 3 in head; head longer than deep; snout bluntly pointed, lower jaw prominent, slightly the longer; mouth large, nearly horizontal; a narrow band of small, sharp, conic teeth on palatines, a small patch on vomer, a band of cardiform teeth on upper jaw, a narrower band in lower jaw; several large canine teeth in each jaw anteriorly, 3 of these close together on middle of each side of lower jaw, these hooked backward; 6 or 8 large pores on lower side of mandible and several on upper part of snout; maxillary reaching to posterior edge of orbit, its greatest width 1.5 in eye; edge of preopercle above angle and edge of opercle below the upper middle of base of pectoral denticulate; 2 broad opercular spines, the upper the larger; eye anterior, its lower edge on line with upper base of pectoral; fins large, the second soft dorsal ray and upper rays of upper caudal lobe being produced each as a filament, the dorsal filament being produced half its length beyond rest of fin; dorsal spines stout and strong, the first spine 2.3 in third, the fifth being the highest, 2.5 in head; base of spinous dorsal 1.15 in head; base of soft dorsal 2.3 in head, its fourth ray 3.5 in head, the last ray 1.4 in fourth; caudal truncate, the lower rays produced slightly as a filament, but not nearly so long as the upper lobe; second anal spine longest, 2.5 in head; second soft ray longest, 2 in head; pectoral very long and large, reaching to origin of soft anal, the eighth and ninth rays from the top the longest, 1.4 in head; scales large, finely ctenoid, in regular series; entire body and head scaled; basal portion of all fins except spinous dorsal with small scales; lateral line strongly convex, not concurrent with the dorsal profile, becoming straight on middle of caudal peduncle; one row of scales behind tip of last dorsal ray.

Color in alcohol, pale brown, the fins lighter; in life, red.

Only three specimens of this species were obtained, all having been taken with the hook in deep water off Kailua, in southwestern Hawaii. It is allied to *Anthias japonicus* Steindachner & Doderlein.

Named for Dr. Vernon Lyman Kellogg, professor of entomology in Stanford University.

Field No.	Length.	Locality.	Final disposition of specimen.
05278	Inches. 7.75	Off Kailua	Type, No. 50642, U. S. N. M.
03703	8	.....do.....	Cotype, No. 7460, L. S. Jr. Univ. Mus.
05277	8.5	.....do.....	Cotype, No. 2711, U. S. F. C.

Family APOGONIDÆ. The King of the Mulletts.

23. *Apogonichthys waikiki* Jordan & Evermann, new species.

Head 2.4 in length; depth 3; eye 3.2 in head; snout 4.6; interorbital 6; maxillary 2; D. vii-i, 8; A. ii, 7; scales 2-24-5.

Body short, stout, and compressed; dorsal outline strongly arched from tip of snout to posterior base of soft dorsal; ventral outline comparatively straight from tip of mandible to origin of anal; vent immediately in front of origin of anal; caudal peduncle deep and compressed; head rather large; mouth large, slightly oblique, jaws equal, maxillary reaching posterior edge of pupil; eye rather small, slightly above axis of body; interorbital space narrow, little convex; opercular and preorbital bones entire; a band of small villiform teeth in each jaw, and on vomer and palatines; fins moderate, origin of spinous dorsal nearer base of last soft ray than tip of snout; first dorsal spine very short, second about half length of third, which is equal to eye and snout; base of soft dorsal equal to depth of caudal peduncle; longest dorsal rays 2.25 in head; caudal rounded, its length 1.75 in head; origin of anal slightly posterior to that of soft dorsal, its longest rays 2.4 in head; pectoral slender, reaching past origin of anal, its length 1.5 in head; ventrals short, barely reaching origin of anal, their length nearly 2 in head; scales large, weakly ctenoid, firm and somewhat deeper than long; lateral line strongly developed, following outline of back until under last dorsal ray, where it curves downward, following middle line of caudal peduncle to base of caudal fin.

Color in alcohol, head and body rather dark brownish, a lighter crossband around body at nape and across opercles; another light band surrounding body between the 2 dorsal fins; 3 dark brown lines radiating from the eye, the first downward across cheek to tip of maxillary, the second backward across cheek toward base of pectoral, the third upward and backward to origin of lateral line; spinous dorsal blackish, especially on last spine; soft dorsal, anal, and caudal dusky, narrowly edged with white; pectoral pale, crossed by about 6 obscure brownish crossbars; ventrals black or very dark brown, the outer rays somewhat paler.

The above description is based upon the type, No. 50639, U. S. N. M. (field No. 20), a specimen 1.5 inches long, obtained from the coral rocks in front of Waikiki, near Honolulu, August 22, 1901.

This species is distinctly related to *A. alutus* of the coast of Florida, from which it differs markedly in color and in the more slender body. Only one specimen was obtained.

Genus FOWLERIA Jordan & Evermann, new genus.

Fowleria Jordan & Evermann, new genus of *Apogonidae* (*aurita*).

This genus differs from *Apogonichthys* only in the character of the lateral line, which is developed only on the anterior part of the body.

Several species occur in crevices of coral rock in the South Seas. All of them are of very small size and some are brightly colored.

This genus is named for Mr. Henry Weed Fowler, of the Academy of Natural Sciences of Philadelphia.

24. *Apogon snyderi* Jordan & Evermann, new species.

Head 2.7 in length; depth 3.1; eye 3.7 in head; snout 3.7; interorbital 4.5; maxillary 2.2; mandible 2; gape 3; D. VII-1, 9; A. II, 8; C. 17; P. 10; scales 2-25-5; Br. 6.

Body short and stout, moderately compressed, the dorsal and ventral outlines about equally curved; head rather large, conic; snout conic, the anterior profile very slightly curved from tip of snout to origin of spinous dorsal; mouth oblique, jaws subequal, the lower slightly included; maxillary long, reaching not quite to posterior edge of pupil, its width at tip 2 in eye, supplemental bone well developed; interorbital space rather broad, slightly convex, preorbital narrow, least width 3 in eye; teeth on vomer and jaws, the latter in villiform bands; none on palatines; gillrakers slender, 10 on lower limb of first arch; caudal peduncle compressed and deep, the least width about 4 in its depth; scales large, deep, closely imbricated, strongly ctenoid and loose; lateral line beginning at upper end of gill-opening, nearly straight to base of caudal fin, 4 scales in front of spinous dorsal; nape with a striated shield; edge of opercle thin and smooth; both margins of preopercle and edge of interopercle serrate, teeth strongest at angles; a series of moderately strong teeth along lower edge of orbit; origin of spinous dorsal nearer snout than base of last dorsal ray; first dorsal spine very short, fourth longest, about 2 in head, second 2 in the fourth, seventh 2 in second; first soft rays longest, 1.8 in head; caudal deeply emarginate, longest rays about 1.6 in head; anal similar to soft dorsal; somewhat smaller, its origin under last rays of soft dorsal; ventrals pointed, scarcely reaching vent, 1.9 in head; pectoral reaching vertical of vent, 1.7 in head.

Color in alcohol, pale yellowish brown, darkest above; a darker brownish band extending from upper edge of opercle along side, just above lateral line, to posterior edge of soft dorsal; another broader, more distinct brown band from tip of snout through eye and along middle of side to base of caudal fin, covering lateral line on caudal peduncle; caudal peduncle at base of caudal fin with a broad dusky crossbar, usually darkest on upper half, sometimes obscure, sometimes with a darker blotch or spot in the upper portion; upper parts of head covered with fine dark brown punctulations; lower jaw similar, but somewhat paler; membranes of anterior 2 or 3 dorsal spines black, others finely punctulate; soft dorsal pale at base, above which is a broad indistinct dark crossband, the color confined chiefly to the interorbital membranes, this color extending to near tip of last rays; outer part of soft dorsal pale; anal similar to soft dorsal, the black bar narrower and nearer base of fin, rest of fin white; caudal dusky on membranes of outer 1 or 2 rays, the fin otherwise white, with a few fine punctulations on the interradiate membranes; ventrals pale; distal parts of the first and second rays and their connecting membrane black; pectoral pale; axil and base of pectoral somewhat dusky.

Color in life (field No. 198, O. P. J.), pale red; 2 longitudinal pearly lines on body; first dorsal with a dusky olivaceous anterior border; white lines along fourth, fifth, sixth, and seventh spines, the

membrane olivaceous; second dorsal with many white and some olivaceous spots; anal with a dusky line along base, the distal part red; base of caudal dusky, rest of fin pale red; ventral with a white spot near tip; pectoral pink; iris yellow.

Another example (field No. 03499) was coppery brown when fresh, with trace of dusky band along side; a faint black bar at base of caudal, forming a black spot above end of lateral line; some dusky on opercle; first dorsal dusky; second dorsal brownish red with some dark; anal same with a basal flesh-colored bar below it; caudal reddish brown; ventrals same, with first ray pinkish and dusky behind it; some dusky on opercle.

This species reaches a length of about 6 inches. It was obtained by Garrett in the Hawaiian, Society, and Paumotu islands. Our collections contain numerous specimens from Honolulu and Hilo. We have examined also 12 specimens in the collection made by Dr. O. P. Jenkins.

This species closely resembles *Apogon menesemus*, from which it differs chiefly in coloration; the black caudal crescent, which is such an excellent distinguishing mark in *A. menesemus*, is wholly absent in this species; moreover, the 2 silvery lateral bands, which become dark brown in spirits, are not found in *A. menesemus*; and the black on the anal and soft dorsal is less conspicuous in *A. snyderi*. It belongs to the subgenus *Pristiapogon* of Klunzinger, having both limbs of the preopercle serrate.

This species is figured by Bleeker, Day, and Günther, the figures of Bleeker and Günther being colored. The best figure is that of Günther in *Fische der Südsee*, who calls it *Apogon frenatus*, but the species originally thus named seems to be quite different, as Bleeker has already noticed.

Named for Mr. John O. Snyder, assistant professor of zoology in Stanford University.

Our collection contains the following specimens of this species:

Field No.	Length.	Locality.	Final disposition of specimen.	Field No.	Length.	Locality.	Final disposition of specimen.
	<i>Inches.</i>				<i>Inches.</i>		
03072	5.25	Honolulu.	Type, No. 50640, U. S. N. M.	13	3.4	Honolulu.	
03065	3.8	.....do.....	Cotype, No. 50641, U. S. N. M.	14	3	.....do.....	
03067	4.8	.....do.....	Cotype, No. 7459, L. S. Jr. Univ. Mus.	21	2	Hilo.....	
				16	3.25	Honolulu.	Cotype, No. 9807, Mus. Ind. Univ.
02941	4.5	.....do.....	Do.				
03079	4.4	.....do.....	Cotype, No. 2709, U. S. F. C.	05145	4.8	Hilo.....	Cotype, No. 9808, Mus. Ind. Univ.
03215	4.6	.....do.....	Cotype, No. 2710, U. S. F. C.				
03216	4.5	.....do.....	Cotype, No. —, M. C. Z.	05146	4.8	.....do.....	Cotype, No. 3956, Field Col. Mus.
03217	4.25	.....do.....	Cotype, No. —, M. C. Z.				
03218	4.8	.....do.....	Cotype, No. 2288, Am. Mus. Nat. Hist.	05147	4.6	.....do.....	Cotype, No. 3957, Field Col. Mus.
03219	4.75	.....do.....	Cotype, No. 2289, Am. Mus. Nat. Hist.	05148	4.75	.....do.....	Cotype, No. 1493, Cal. Ac. Sci.
				05149	4.4	.....do.....	Cotype, No. 1494, Cal. Ac. Sci.
02499	5	.....do.....	Cotype, No. 24217, Ac. Nat. Sci. Phila.	05150	4.75	.....do.....	Cotype, No. 1694, Bishop Mus.
				05151	4.5	.....do.....	Cotype, No. 1695, Bishop Mus.
1	4.8	.....do.....	Cotype, No. 24218, Ac. Nat. Sci. Phila.	O. P. J.			
				198	4.75	Honolulu.	
2	4.75	.....do.....		688	5	.....do.....	
3	4.75	.....do.....		411	5	.....do.....	
4	4.5	.....do.....		409	5.4	.....do.....	
5	4.5	.....do.....		406	4.75	.....do.....	
6	4.25	.....do.....		408	4.5	.....do.....	
7	4.5	.....do.....		417	4.4	.....do.....	
8	4	.....do.....		a 428	4.25	.....do.....	
9	4	.....do.....		a 680	4.25	.....do.....	
10	3.5	.....do.....		b 430	4	.....do.....	
11	3.8	.....do.....		b 481	3.75	.....do.....	
12	3.5	.....do.....		b 678	5.5	.....do.....	

^a Dr. Wood.

^b Jordan & Snyder.

Apogon frenatus, Günther, *Fische der Südsee*, 1, 19, taf. 19, fig. A, 1873 (Hawaiian, Society, and Paumotu islands); Steindachner, *Denks. Ak. Wiss. Wien*, LXX, 1900, 484 (Honolulu); not *Apogon frenatus* Valenciennes, *Nouv. Ann. Mus. Hist. Nat.* 1832, 57, pl. 4, fig. 4, nor of Klunzinger.

Family PRIACANTHIDÆ. The Catalufas.

25. *Priacanthus alalaua* Jordan & Evermann, new species. "Alalaua."

Head 3.2 in length; depth 2.65; eye 2.4 in head; snout 3.6; maxillary 2; interorbital 3.8; D. x, 14; A. III, 15; scales 13-85 to 90-45, 70 pores; Br. 6; gillrakers, about 22 on lower arm.

Body short, deep, compressed, ovate; upper profile of head nearly straight; snout very blunt; mandible prominent, produced; mouth very oblique; teeth small, sharp, in bands on jaws, vomer and

palatines; tongue rounded, free in front; maxillary reaching almost to front margin of pupil, its greatest width 2 in eye; edge of preopercle finely serrate, with a sharp, flat, serrated spine directed backward at angle; margins of interopercle, subopercle, and opercle entire; opercle with an obscure flat spine; interorbital space slightly convex; eye very large, its lower edge a little above base of pectoral and in line with axis of body; nostrils small, close together, the anterior with elevated rim; posterior nostril oblong, with broad flap; gillrakers rather slender, about 22 on longer arm of first arch, longest about 3 in eye; origin of spinous dorsal over upper base of pectoral; dorsal spines rather uniform, the longest about equal to orbit; soft portion of dorsal somewhat elevated, rounded, fourth ray 1.7 in head; anal spines rather stronger than those of dorsal, third the longest, 1.1 in orbit; soft portion of anal similar to that of soft dorsal, rays of about equal length; caudal truncate, the middle rays slightly greater than orbit; pectoral short, bluntly pointed, not reaching tip of ventral, length 1.4 in head; ventrals longer, just reaching base of second anal spine, their length 1.2 in head; ventral spine about 1.25 in longest ray, or 1.7 in head; scales small, firm and rugose, those of lateral line somewhat enlarged; entire head, as well as body, densely scaled; lateral line rising abruptly for 6 or 7 pores from gill-opening, thence concurrent with back to caudal peduncle.

Color in life, silvery, light olive above, somewhat flushed with red in irregular blotches; chin red; spinous dorsal olive-yellowish, especially on edge; ventrals black, rays whitish; fins unspotted.

Young of 4 inches in length are dirty gray, browner above, with no trace of red in life; some brown spots along lateral line; fins dusky, anal and ventral darkest; iris a little brownish red.

Color in alcohol, plain yellowish-white; spinous dorsal and anal somewhat dusky; ventral membranes black, the rays white, other fins pale yellowish-white. In some examples the color is much more flushed with red, especially above; the red paler and more evanescent than in the other species; fins red, unspotted; the spinous dorsal edged with golden; upper lip golden; ventral membrane black, pectoral pale.

There seems to be but little variation in this species; the younger individuals appear to be more brightly colored or with more evident wash of red than was shown in the type.

We have examined the following specimens:

Field No.	Length.	Locality.	Final disposition of specimen.
	<i>Inches.</i>		
04170	8.25	Honolulu.....	Type, No. 50643, U. S. N. M.
03895	7	.....do.....	Cotype, No. 7461, L. S. Jr. Univ. Mus.
03420	6	.....do.....	Cotype, No. 2712, U. S. F. C.

Family LUTIANIDÆ. The Snappers.

Genus *BOWERSIA* Jordan & Evermann, new genus.

Bowersia Jordan & Evermann, new genus of *Lutianidæ* (*violascens*).

Body long, rather slender and moderately compressed; top of head evenly rounded, the supra-occipital crest extending forward on cranium; jaws equal, lower not projecting; bands of villiform teeth on both jaws, the outer series somewhat enlarged and canine-like; villiform teeth on vomer, palatines, and tongue; maxillary slipping for its entire length under the rather broad preorbital; eye large; opercle entire, ending in 2 flat, obscure spines, the space between them deeply emarginate, but filled by soft membrane; preopercle scarcely dentate; dorsal fin continuous, the last ray produced nearly twice length of preceding one.

This genus is related to *Apsilus*, with which it agrees in the presence of villiform teeth on the vomer and palatines, but from which it differs in having well-developed teeth on the tongue, and in the produced last dorsal and anal ray. Two species are known.

We take much pleasure in naming this new genus for the Hon. George M. Bowers, United States Commissioner of Fish and Fisheries, in recognition of his active and intelligent interest in promoting scientific work, especially the investigation of the aquatic resources of the Hawaiian Islands.

- a.* Scales rather large, about 60 in lateral line; preorbital broad, 7.75 in head *violascens*.
aa. Scales smaller, about 68 in lateral line; preorbital narrow, 10 in head *ulaula*.

26. *Bowersia violescens* Jordan & Evermann, new species. "*Opakapaka*."

Head 3.25 in length; depth 3.5; eye 4.4 in head; snout 3; maxillary 2.6; mandible 2; interorbital 3; preorbital 7.75; scales 8-60-15; D. x, 10; A. III, 8; Br. 7; gillrakers 5+14.

Body long, rather slender, moderately compressed, tapering gradually into the rather long caudal peduncle; head large, longer than deep; snout moderate, rather bluntly conic; mouth large, maxillary reaching anterior third of pupil, slipping for its entire length under the thin edge of the rather broad preorbital, the width of its tip 2 in eye; mandible strong, but not projecting; broad bands of villiform teeth on jaws, vomer, palatines, and tongue, the outer series in the jaws slightly enlarged and canine-like; eye large, its lower edge in line with axis of body; interorbital broad, gently convex; anterior profile but slightly curved from tip of snout to nape, thence more strongly arched to origin of dorsal, descending in a long, low curve to caudal peduncle; ventral outline but slightly convex; caudal peduncle rather long, 2 in head, its least width about 1.6 of its least depth, which is 1.8 in its length, measured from base of last dorsal ray to base of supporting caudal rays; gillrakers few, rather strong and short, the longest about 2.6 in eye; opercle smooth, ending in 2 flat, obscure spines (more strongly developed in each of the cotypes); preopercle obscurely serrate at the angle (more distinctly so in the cotypes); fins moderately developed, the dorsal fin continuous, without notch, its origin over base of pectoral and equally distant from tip of snout and base of fourth ray, length of entire base of fin and to tip of last ray twice length of head; first dorsal spine moderately short, closely bound to the second, whose length exceeds it by about one-half; seventh dorsal spine longest, its length equal to that of snout; last dorsal ray produced, its length about 1.7 times that of the preceding; anal similar to soft dorsal, its origin under base of third or fourth dorsal ray; first anal spine very short, third longest and strongest, its length equaling diameter of eye; last anal ray produced, its length equaling that of produced dorsal ray; caudal rather widely forked, lobes about equal, their length, measured from base of first supporting ray, equaling head; ventrals pointed, their tips not reaching vent, length 1.4 in head; pectoral long, slightly falcate, the tip about reaching tips of ventrals, its length about 1.2 in head; scales large, deeper than long and rather loose; cheek and opercles scaled, 5 rows on cheek; a large bony humeral scale, from which extends to nape a series of somewhat modified scales, in front of which is a patch of ordinary scales; lateral line complete and well developed, beginning at lower edge of humeral scale and following curvature of back to base of middle caudal rays; the pores little or not at all branched.

Color in life (field No. 03404), light rosy olive, with violet shades, pale below; center of each scale of back shining violet; dorsal reddish flesh-color, its base anteriorly yellowish olive; caudal flesh-color, rosy along the edges; anal similar, its edge light lavender gray; ventrals pale, shaded with light orange; pectoral flesh-color, violaceous at base; snout violet, iris light yellow. A flesh-colored violaceous fish without color markings anywhere. Another specimen (field No. 03417) freshly dead, had the body, head, and caudal light rosy; ventrals white; outer margin of spinous dorsal golden, the membranes with irregular golden areas; pectoral and anal not distinctly colored; iris yellow.

Color in alcohol of type (field No. 03018), above dusky silvery, bases of scales brown; sides and under parts silvery, with pale greenish-yellow tinge; top of head somewhat olivaceous, sides rusty silvery; axil of pectoral dusky; fins all pale or yellowish-white.

This species reaches a length of about 2 feet and is an important food-fish.

Only 4 specimens were secured:

Field No.	Length.	Locality.	Final disposition of specimen.
03018	Inches. 24	Honolulu.....	Type, No. 50660, U. S. N. M.
05040	.....	do	Cotype, No. 7473, L. S. Jr. Univ. Mus.
03404	.....	do	Cotype, No. 2721, U. S. F. C.
03417	.....	do	Cotype, No. 9813, Ind. Univ. Mus.

27. *Bowersia ulaula* Jordan & Evermann, new species. "*Ulaula*."

Head 3.6 in length; depth 3.8; eye 3.8 in head; snout 3.8; maxillary 2.9; mandible 2.4; interorbital 3.6; preorbital 10; scales 8-68-14; D. x, 11; A. III, 8; Br. 7; gillrakers 21+5.

Body long and slender, the dorsal outline in a low, gentle curve from tip of snout to base of caudal, the ventral outline but gently convex; head moderate, bluntly conic; snout rather short; mouth moderate, somewhat oblique, the jaws equal; maxillary moderate, slipping for its entire length under the

narrow, thin preorbital, its width at tip 2.8 in eye; bands of villiform teeth on vomer, palatines, tongue and jaws, those of outer series in the latter scarcely enlarged; opercle ending in 2 obscure, flat spines, the space between them deeply emarginate but filled by membrane; preopercle rather distinctly serrate, the teeth very short; eye rather large, its lower border in line with axis of body; preorbital very narrow, much narrower than in *B. violescens*; interorbital space narrower than in the preceding species, slightly convex; caudal peduncle long, its length from base of last dorsal ray to first supporting rays of caudal 1.7 in head, its least width about 2.1 in its least depth, which is 2.1 in its length; gillrakers rather numerous, close-set, the longest about 2.2 in eye; fins moderately developed, the dorsal continuous, without notch, its origin slightly behind base of pectoral and equally distant between tip of snout to base of fifth or sixth dorsal ray; head 2 in distance from origin of anal to middle of last dorsal ray; first dorsal spine rather short, about 1.9 in length of second; fifth dorsal spine longest, its length equal to distance from tip of snout to pupil; last dorsal ray produced, its length about 1.8 times that of the preceding; anal similar to soft dorsal, its origin under base of third dorsal ray; first anal spine very short, the third longest, its length 1.2 in diameter of eye; soft anal similar to soft dorsal, the last ray produced and of equal length with that of dorsal; caudal densely scaled and widely forked, lobes equal, their length, measured from base of first supporting rays equaling that of head; ventrals not pointed, their tips not reaching vent, their length 1.6 in head; pectoral long, slightly falcate, its tip reaching vent and much beyond that of ventral, its length equaling that of head; scales rather small, closely imbricated, deeper than long, their edges finely ciliated; cheek and opercles scaled, 6 rows on cheek; a large bony humeral scale from which extends a series of modified scales to nape, and in front of which is a patch of ordinary scales; lateral line complete and well developed, beginning at lower edge of humeral scale and following contour of back to base of middle caudal rays, the tubes little branched.

Color in alcohol, brownish or purplish olivaceous above, paler on side; under parts nearly plain white; each scale of back and upper part of side with a darker brown spot, these forming indistinct rows, about 6 above lateral line; side below lateral line with less distinct horizontal lines; upper parts of head olivaceous brown, lower parts paler, spines of dorsal fin purplish, the membranes white, purplish at tips; soft dorsal with rays whitish, membranes purplish; caudal slightly dusky, other fins plain whitish.

This species is related to *B. violescens*, from which it differs chiefly in the shorter snout, larger eye, shorter maxillary, shorter mandible, narrower interorbital space, decidedly smaller scales, more numerous gillrakers, and more posterior insertion of dorsal fin. Only one specimen known, type No. 50661, U. S. N. M. (field No. 04104), 14.25 inches long, from Hilo, Hawaii Island.

28. *Etelis evurus* Jordan & Evermann, new species.

Head 3.2 in length; depth 3.6; eye 3 in head; snout 3.9; maxillary 2.2; interorbital 3.6; D. x, 11; A. III, 8; scales 5-50-11; Br. 6; gillrakers 15+6, longest about 2 in eye.

Body rather long, tapering, moderately compressed; dorsal outline slightly convex, ventral outline nearly straight; head considerably longer than deep, compressed, subconic; snout bluntly pointed, less than eye, equal to portion of eye anterior to posterior edge of pupil; mouth large, oblique; small bands of villiform teeth on vomer, palatines, and anterior part of each jaw; a single row of small, wide-set, slender canine teeth on the outer edge of each jaw, those in upper jaw slightly larger and more wide-set; a single larger canine tooth on the side of each jaw in front, those in the upper jaw the larger; maxillary extending to middle of pupil; eye very large, its lower edge slightly below axis of body; preopercle finely serrate; opercle with 2 broad, flat spines, not produced, the upper rather obscure; fins moderately developed; origin of spinous dorsal slightly posterior to base of pectoral, its distance from tip of snout equaling that to base of sixth dorsal ray; dorsal fin deeply notched, almost divided; first dorsal spine short, its length but slightly greater than diameter of pupil; third dorsal spine longest, 2.1 in head; ninth spine short, its length 2.75 in third; soft dorsal not elevated, the rays about equal, the last 1.75 in third spine; anal similar to soft dorsal, the first spine very short, the third about 1.8 in third dorsal spine, last anal ray about equal to last dorsal ray; caudal deeply notched, the lobes much produced, the upper the longer, its rays greatly exceeding length of head, or about 2.4 in body; ventrals long, but not reaching vent by a distance equaling half diameter of pupil, their length 1.5 in head; pectoral long, reaching vent, the upper rays somewhat produced, their length 1.2 in head; scales moderate, firm, covering body, nape, opercles, and breast; a large humeral scale; lateral line beginning at lower edge of humeral scale and following contour of back to base of caudal fin.

Color in life, of a specimen (field No. 03481) 14 inches long, brilliant rose-red, the side from level of eye abruptly silver, with rosy shades; snout, jaws, eye, and inside of mouth red; fins all rose-color,

the dorsal and caudal bright; ventrals and anal pale, the former washed with red on center; axil pale pink; pectoral pale rosy.

Color in alcohol, uniform yellowish white, paler below; fins all pale yellowish white, the caudal lobes somewhat dark.

This species is related to *Etelis oculatus* of the West Indies, from which it differs in the somewhat larger scales, much longer caudal lobes (9.5 times length of middle rays instead of 4 times, as in *E. oculatus*), and larger eye. From *E. carbunculus* Cuvier & Valenciennes, from Isle de France, it seems to differ in having only 16 instead of 20 scales in a transverse series and in the coloration.

This species, one of the handsomest of all Hawaiian fishes, is thus far known only from Hilo, Hawaii, in the market of which we obtained 13 fine examples, measurements of which are given in the following table:

Field No.	Length.	Locality.	Final disposition of specimen.	Field No.	Length.	Locality.	Final disposition of specimen.
	<i>Inches.</i>				<i>Inches.</i>		
03482	12.5	Hilo	Type, No. 50662, U. S. N. M.	04086	13	Hilo	Cotype, No. 24224, Ac. Nat. Sci., Phila.
04082	13.25	...do	Cotype, No. 2722, U. S. F. C.	04087	12.75	...do	Cotype, No. 3958, Field Col. Mus.
03481	14	...do	Cotype, No. 50663, U. S. N. M.	05287	13	...do	Cotype, No. 9814, Ind. Univ. Mus.
04080	15	...do	Cotype, No. 7474, L. S. Jr. Univ. Mus.	05288	11.6	...do	Cotype, No. 1498, Cal. Ac. Sci.
04081	15.25	...do	Do.	05289	12.6	...do	
04083	15.5	...do	Cotype, No. 1701, Bishop Mus.				
04084	12.75	...do	Cotype, No. —, M. C. Z.				
04085	16.5	...do	Cotype, No. 2296, Am. Mus. Nat. Hist.				

Family KYPHOSIDÆ. The Rudder-fishes.

29. *Sectator azureus* Jordan & Evermann, new species.

Head 4 in length; depth 3; eye 5 in head; snout 3.65; maxillary 4; interorbital 2.4; D. xi, 15; A. iii, 13; scales 14-81-20.

Body elongate, ovoid, greatest depth about at tip of pectoral; head slightly longer than deep, compressed; snout very bluntly convex; jaws about equal, maxillary not reaching front of eye; mouth small, horizontal; teeth very small, compressed, in a single series in each jaw; minute villiform teeth on vomer, palatines and tongue; tongue broad, rounded and free in front; preopercle entire, posterior edge very oblique; lower edge of eye on a line with upper base of pectoral, posterior margin well in front of middle of head; interorbital broad, strongly convex, a deep groove in front of eye to nostril; caudal peduncle rather long, 1.9 in head; origin of spinous dorsal slightly in front of base of ventrals, well behind pectoral, its distance from tip of snout slightly greater than depth of body; longest dorsal spine 3 in head, last dorsal ray elongate, being one-fourth longer than other rays, its length 3.4 in head; third anal spine longest, 4.9 in head; first anal ray longest, 3.4 in head; base of anal 1.8 in base of dorsal; caudal deeply forked, lower lobe the longer, 3.5 in body; pectoral short, slightly longer than ventrals, 1.8 in head, the spine more than half length of longest ray; scales cycloid, present on head except on jaws and in front of eye, very minute on all the fins except ventrals; lateral line concurrent with dorsal outline; peritoneum dark gray.

Color in life, dark steel-blue, becoming paler below; a definite deep blue stripe from snout below eye widening on opercle, and thence straight to center of base of caudal; below it a narrow bright golden stripe from angle of mouth to lower part of caudal, and then a fainter blue stripe below this; a blue stripe from eye to upper part of gill-opening, interspace shaded with green; a deep blue stripe from upper part of eye along each side of back to base of upper caudal lobe; upper fins dusky golden or olivaceous; ventrals yellow; anal and lower lobe of caudal dirty golden; pectoral translucent.

Color in alcohol, deep steel gray, brown above, each scale with a very pale spot, the edge pale; lower surface whitish silvery; a pale streak of gray behind eye to edge of opercle; dorsal fin gray brown like the back; caudal and pectoral whitish; inside of ventrals dusky orange; ventrals and anal dusky; inside of pectoral blackish brown.

Type, No. 50664, U. S. N. M. (field No. 03363), a specimen 15.25 inches long, taken off the shore near Heeia, Oahu Island.

This species must be very rare, being unknown to the fishermen and only the single specimen having been obtained by us.

Family MULLIDÆ. The Surmulletts.

30. *Mulloides flammeus* Jordan & Evermann, new species.

Head 3.6 in length; depth 4; eye 4.3 in head; snout 2.25; interorbital 3.5; maxillary 2.6; mandible 2.1; shortest distance from eye to upper edge of maxillary 1 in eye; D. VII-9, longest dorsal spine 1.75 in head, longest dorsal ray 2.6; A. 7, longest ray 2.7; scales 3-41-6; pectoral 1.5; ventral 1.4.

Body oblong, not much compressed; head heavy, broad, the interorbital space broad and slightly convex; snout rather long and pointed, not abruptly decurved; mouth rather large, somewhat oblique, the lower jaw but slightly included; maxillary broad, slipping for most of its length under the thin preorbital, its tip not reaching orbit by diameter of pupil; eye rather large, high, slightly posterior; gillrakers 18 + 7, the longest about 2 in eye, serrate; opercular spine obscure in adult, more plainly developed in the young; origin of dorsal a little nearer posterior base of soft dorsal than tip of snout; distance between dorsals considerably less than snout, about 2.6 in head; anal similar to soft dorsal, its origin somewhat more posterior; ventrals rather long, reaching slightly beyond tip of pectoral; caudal deeply forked, the lobes equal, about 1.2 in head.

Color in life (field No. 03459), bright rose-red, with 5 broad crossbands of darker clear rose, which vanishes very soon after death; a very faint yellow lateral streak, with yellow shades on scales below; lower side of head rose, snout and lips very red; 2 wavy golden streaks from below eye to angle of mouth, lower conspicuous; first dorsal clear red; second dorsal deep red on the lower half, fading above; caudal deep red at base, fading outward; anal pink, pectoral light yellow; ventral creamy red; barbels red, paler toward tip; iris silvery.

A color note on specimens, field Nos. 03054 and 03055, says that they were rosy in life.

Color in alcohol, pale dirty olivaceous above, yellowish white on sides and belly; head yellowish olive above, pale on cheek and below; a yellowish band from snout under eye; fins all colorless, the spinous dorsal slightly dusky, all with slight yellowish tinge; ventrals with the middle membranes blackish. Smaller examples show considerable rosy on the sides, indicating that the fish in life was probably red or rosy in color.

This species somewhat resembles *Mulloides auriflamma*, from which it differs in the smaller eye, larger, more oblique mouth, longer maxillary, the longer, less decurved, more pointed snout, and fewer gillrakers. It bears some resemblance to *M. pflugeri*, but has the eye larger and the snout longer and more pointed. Compared with *M. samoensis*, it has a much larger and more oblique mouth, and a considerably longer maxillary, as well as a different coloration. It does not agree with any of the plates of Day, Günther, or Bleeker, nor with any current descriptions. In life its banded coloration gives it a very handsome appearance. It is found in deeper water than most of the other species.

M. flammeus seems to be fairly abundant and is represented in our collections by the following 9 specimens, the first of which is taken as the type and all the others as cotypes:

Field No.	Length.	Locality.	Final disposition of specimen.	Field No.	Length.	Locality.	Final disposition of specimen.
03740	<i>Inches.</i> 9.5	Kailua ...	Type, No. 50665, U. S. N. M.	03995	<i>Inches.</i> 11.25	Hilo	Cotype, No. 24225, Ac. Nat. Sci. Phila.
03029	6	Honolulu.	Cotype, No. 1702, Bishop Mus.	03934	9	.....do	Cotype, No. 9815, Ind. Univ. Mus.
03054	6.5	.....do	Cotype, No. 7475, L. S. Jr. Univ. Mus.	03937	12	.....do	Cotype, No. 3953, Field Col. Mus.
03055	6	.....do	Cotype, No. —, M. C. Z.				
03778	9.75	.....do	Cotype, No. 2723, U. S. F. C.				
03459	10	Hilo	Cotype, No. 2297, Am. Mus. Nat. Hist.				

31. *Pseudupeneus chrysonemus* Jordan & Evermann, new species.

Head 2.8 in length; depth 3.4; eye 5.3 in head; snout 1.7; interorbital 3.5; maxillary 2.3; D. VIII-9; A. I, 7; scales 3-30-7.

Body slender, not greatly compressed, the back gently and rather uniformly elevated from tip of snout to dorsal; ventral outline slightly convex; head moderate; snout long; bluntly pointed; mouth moderate, slightly oblique, the lower jaw included; maxillary broad at tip, falling short of vertical of orbit by diameter of pupil; interorbital space convex; eye small, in posterior half of head; teeth rather large, in a single band in each jaw; barbels long, 1.2 in head, reaching nearly to base of ventrals; opercular spine small; fins rather large; third dorsal spine longest, 1.5 in head, or equal to distance

from tip of snout to middle of pupil, third ray longest, 3.2 in head; base of spinous dorsal 1.4 in third spine; base of soft dorsal 1.4 in longest spine; origin of spinous dorsal nearer last dorsal ray than tip of snout by longitudinal diameter of pupil; distance between dorsals 1.5 in eye; length of caudal peduncle 1.5 in head; pectoral long, pointed, slightly falcate, 1.4; ventrals slightly longer, 1.3; last anal ray 2.9, equal to base of fin; caudal shallowly forked, lobes 1.3 in head, middle rays 2.75 in upper lobe; scales finely ctenoid and obscurely dendritic; lateral line concurrent with the back, the pores with few branches, the number usually not exceeding 5 or 6; 2 scales between the dorsals, 8 on dorsal side of caudal peduncle; peritoneum somewhat silvery.

Color when fresh, deep scarlet red, especially a shade from snout through eye toward tail; first dorsal plain scarlet, second paler golden with oblique stripes of scarlet and yellow edge; caudal orange; reddish at base, yellowish at tip; anal like second dorsal; pectoral pale orange; ventrals deep red; barbels bright yellow; iris red. In life, a pale streak backward from eye to middle of side parallel with back; side with 2 blotches of deep red; a row of dark spots along bases of both dorsals; young of 3 inches, from the rock pools, in life, dark olive green above with a dark olive streak along lateral line and 3 dark shades under first dorsal, second dorsal, and back of caudal peduncle; tip of first dorsal cherry-red, edged with white; second dorsal and caudal translucent, scarcely reddish; ventrals and anal bright cherry-red, former mesially dusky; barbels golden.

Color in alcohol, pale yellowish; each scale below dorsal with brownish edgings, generally most distinct in young and often entirely disappearing with age; a series of smaller obscure spots along median line from opercle to tip of pectoral; sides and under parts with faint traces of rosy.

This species may be known by the series of dusky blotches along each side of the dorsal fin and by the simple structure of the lateral line. In life it is at once known by its golden barbels.

The above description based upon a specimen (field No. 03929), 8 inches long, obtained at Honolulu, in 1898, by Dr. Wood. We have examined 4 other specimens of approximately the same size obtained at the same time, and numerous examples collected by us at Honolulu and Hilo.

The following is our list of specimens of this species:

Field No.	Length.	Locality.	Final disposition of specimen.	Field No.	Length.	Locality.	Final disposition of specimen.
	<i>Inches.</i>				<i>Inches.</i>		
03476	6.75	Hilo	Type, No. 50666, U. S. N. M.	03989	8.25	Hilo	Cotype, No. 2298, Am. Mus. Nat. Hist. No. 24226, Ac. Nat. Sci. Phila. Cotype, No. 9816, Ind. Univ. Mus. Cotype, No. 3955, Field Col. Mus. Cotype, No. 1499, Cal. Ac. Sci. Cotype, No. 50676, U. S. N. M.
03920	4.5	Honolulu.					
03928	7	Hilo					
03930	8.5	.....do				
03931	6.5	.....do				
03932	7	.....do				
03933	8.5	.....do				
03935	8.5	.....do				
03936	8.5	.....do				
03938	5.25	.....do				
03939	4.75	.....do				
03983	5	.....do				
03984	5	.....do				
03985	5.25do		Cotype, No. 7476, L. S. Jr. Univ. Mus.	04005	4		Honolulu.
03986	6do	Cotype, No. 7476, L. S. Jr. Univ. Mus.	04006	5do	
03987	6.75do	Cotype, No. 2724, U. S. F. C.	O. P. J.			
03988	6.5do	Cotype, No. 2725, U. S. F. C.	03929	a 8do	
			Cotype, No. 1703, Bishop Mus.		a 5.5do	
			Cotype, No. —, M. C. Z.		a 5.5do	
					b 5.75do	

^a Collected by Dr. Wood, 1898.

^b Collected by Jordan & Snyder in 1900.

32. *Upeneus arge* Jordan & Evermann, new species. "Weke" or "Weke Puco."

Head 3.75 in length; depth 4.1; eye 5 in head; snout 2.25; interorbital 3; maxillary 2.3; shortest distance between maxillary and eye 1.25 in longitudinal diameter of eye; D. VIII-9, second spine 1.5 in head; A. II, 6, longest anal ray 1.9 in head; pectoral 1.5; ventrals 1.45; scales 3-40-7.

Body oblong, compressed, deepest through the anterior base of the spinous dorsal; head moderate, compressed, profile arched from origin of the spinous dorsal to tip of snout, steepest on snout; snout bluntly rounded; lower jaw included; mouth moderate, slightly oblique; tongue short, rounded anteriorly, not broad nor thick, and not free; teeth in villiform bands on each jaw and on vomer and palatines; maxillary moderate, reaching anterior edge of eye, moderately broad and sheathed for more than half of its length; eye rather small, high, median, adipose eyelid well developed; barbels not reaching edge of gill-opening; pseudobranchiæ well developed; gillrakers 16+6, finely

serrate, last 5 or 6 on longer limb very blunt and short, pupil of eye contained 1.5 in longest; spinous dorsal 1.5 in depth, first 2 spines even, longer than the others and longer than base; distance from snout to origin of spinous dorsal one-third distance from snout to last scale on caudal; distance between dorsals slightly less than base of soft dorsal; soft dorsal slightly concave; caudal deeply forked, upper lobe longer; anal similar to soft dorsal, inserted slightly behind the latter; ventrals reaching slightly beyond pectoral, rays of pectoral slightly the longer; lateral line concurrent with dorsal outline; scales large, finely ctenoid; entire body and head scaly.

Color in life, pale green, changing to white below; edges of scales on back and down to lateral line purplish brown, giving the appearance of 3 rather distinct stripes of purplish brown, with greenish centers on the scales; side with 2 broad yellow stripes, the upper beginning on opercle at level of eye and running to caudal just above lateral line, the latter being crossed under soft dorsal; second beginning on base of pectoral and running to base of caudal just below lateral line, this stripe less distinct and narrowing posteriorly; opercle bright rosy; top of head dusky; cheek white with some rosy; lower jaw white; barbels yellow; dorsal fins pale, each crossed by 2 or 3 brownish rosy bars; caudal white, upper lobe with 4 broad brownish red bars running downward and backward, 1 at base narrow; lower lobe with similar but much broader black bars running upward and backward, 2 of them more distinct than the others; 2 longish dark spots on inner rays; anal, ventrals, and pectoral pale, ventrals rather pale yellowish; iris yellowish, pink above.

Color in alcohol, above, bluish olivaceous, the side becoming lighter, almost white on belly; borders of scales dusky; first dorsal spine with 3 or 4 dark spots, and the upper posterior edge of membranes with dark spots; soft dorsal with 3 dark spots on anterior edge and similar spots on upper part of fin; caudal fin with dark bands, upper lobe with about 6, those on lower lobe 4, much broader; other fins pale.

This species resembles *Upeneus vittatus* (Forskål), described from Djidda, Arabia, but the latter has the belly abruptly deep yellow in life.

This is an abundant and important food fish at Honolulu, where we obtained 10 specimens and where 4 others were collected by Dr. Jenkins in 1889. It is equally common at Hilo and in Pearl Harbor. It lives in shallow water along quiet shores, and is known as "Weke" or "Weke Pucó."

The following is our list of specimens:

Field No.	Length.	Locality.	Final disposition of specimen.	Field No.	Length.	Locality.	Final disposition of specimen.
02999	<i>Inches.</i> 8.5	Honolulu.	Type, No. 50667, U.S.N.M.	03795	<i>Inches.</i> 10.25	Honolulu.	Cotype, No. 3954, Field Col. Mus.
03019	10	.....do.....	Cotype, No. 7477, L. S. Jr. Univ. Mus.	03796	10	.....do.....	Cotype, No. 9817, Ind. Univ. Mus.
03148	10.5	.....do.....	Cotype, No. 2726, U.S. F.C.	03797	8.5	.....do.....	Cotype, No. 1500, Cal. Ac. Sci.
03288	8	.....do.....	Cotype, No. 1704, Bishop Mus.				
03791	10	.....do.....	Cotype, No. M. C. Z.	O.P.J.			
03793	9.25	.....do.....	Cotype, No. 2299, Am. Mus. Nat. Hist.	135	9	.....do.....	
					8	.....do.....	
					8	.....do.....	
03794	12.5	.....do.....	Cotype, No. 24227, Ac. Nat. Sci. Phila.		10.5	.....do.....	

Upeneoides vittatus, Streets, Bull. U. S. Nat. Mus., No. 7, 71, 1877 (Honolulu); not of Forskål.

Family POMACENTRIDÆ. The Demoiselles.

33. *Glyphisodon sindonis* Jordan & Evermann, new species.

Head 3.5 in length; depth 1.75; eye 3.4 in head; snout 3.5; maxillary 3.4; interorbital 2.8; D. xii, 19; A. ii, 15; scales 4-28-9, 22 pores.

Body short and deep, dorsal outline evenly arched from tip of snout to soft dorsal; head deeper than long, compressed; snout short and conic; mouth small, horizontal, lower jaw slightly shorter; maxillary reaching to anterior edge of orbit; a single row of small, rather blunt, slightly compressed teeth on each jaw; preopercle entire, opercle ending in 2 small flat spines, upper very small and obscure; eye anterior, high, its lower edge above upper base of pectoral; interorbital broad, steep and convex; fins large, origin of dorsal over base of ventrals, its distance from tip of snout equal to distance from base of last ray to tip of upper caudal lobe; spines strong and long, first 0.7 of fourth, which is 1.9 in head and of same length as following spines; middle dorsal rays produced, longest ray 1.25 in

head; anal similar to soft dorsal, longest ray 1.25 in head, second spine longest, 2 in head; caudal forked, upper lobe the longer; ventrals reaching past vent, outer rays longest, about equal to head; pectoral broad, upper rays longest, equal to head; scales large, ctenoid, covering entire body and head except lower jaw and snout anterior to eye; lower limb of preopercle scaled; large scales covering nearly all of dorsal spines, smaller scales covering as much of soft dorsal and anal and nearly all of caudal; very minute scales on base of pectoral, none on rays of ventrals; lateral line concurrent with dorsal outline, on 22 scales, ending 3 rows of scales short of posterior base of dorsal, then dropping 3 rows of scales and continuing obscurely on middle of caudal peduncle to base of caudal fin.

Color in alcohol, uniform very dark brown, nearly black; 2 narrow wavy bands of white on side, first beginning about under fourth dorsal spine and extending under about middle of pectoral, thence curving slightly backward toward vent, rather indistinct below pectoral; second band beginning under last dorsal spine and first ray, extending toward middle of anal, rather obscure, indistinct for 2 or 3 scales before reaching anal; fins all black, pectoral slightly lighter than others; a large black ocellated spot with a narrow white border on back and lower part of soft dorsal, larger than eye, just back of last white bar.

This species agrees with typical *Glyphisodon* in all respects except that none of the teeth appears to be emarginate. It agrees with *Chrysiptera* in the entire preopercle and preorbital and naked snout, but differs from the type of that genus in having the teeth in a single series.

The above description based on the type, No. 50669, U. S. N. M. (field No. 04524), a specimen 3.75 inches long, from Honolulu. One other specimen obtained. It is taken as a cotype and is No. 2727, U. S. F. C. reserve series (field No. 03732), a specimen 2.75 inches long, from Kailua, where it was first discovered by Michitaro Sindo, for whom the species is named.

34. *Pomacentrus jenkinsi* Jordan & Evermann, new species.

Head 3.4 in length; depth 1.8; eye 3.3 in head; snout 4; maxillary 3.2; interorbital 2.75; D. XIII, 16; A. II, 13; scales 4-29-11; Br. 4.

Body ovate, deep, compressed, dorsal outline rather steep, evenly curved from tip of snout to soft dorsal, following edge of scales on spinous dorsal; head deeper than long, compressed subconic; snout bluntly conic, jaws equal; maxillary reaching anterior edge of eye; mouth small, horizontal; a single row of close-set, incisor teeth in each jaw; posterior edge of preopercle roughly serrate; opercle ending in 2 short flat spines, the upper very obscure; interorbital wide, strongly convex; fins rather large; origin of dorsal over ventral, origin of each equally distant from tip of snout; first 2 or 3 dorsal spines shorter than others; others about of equal length, shorter than the longest dorsal rays, the median rays being longest, 1.5 in head; caudal forked, lobes rounded, upper the longer; anal rounded, longest ray 1.5 in head; second spine rather stout and strong, 2.2 in head; ventrals long, reaching vent, 1.1 in head; pectoral broad, upper rays the longer, 1.2 in head; scales large, finely ctenoid; body and head, except lower jaw and snout, scaled, scales on top of head small; bases of all the fins except ventrals well covered with fine scales, those on spinous dorsal larger; lateral line concurrent with dorsal outline to a line under base of third or fourth dorsal ray, where it drops 3 rows of scales to middle of caudal peduncle, whence it continues to base of caudal fin, the detached portion little developed.

Color in life, ground color dark drab; central portion of scales olivaceous, each one with black on lower part of posterior edge forming vertical bands on body; axil black; outer border of dorsal fin, above scaled part, black; pectoral dusky olivaceous, black at base; ventral and anal black; caudal dusky with posterior border lighter; iris bright yellow.

Color in alcohol, dark brown, edges of scales darker; a dark stripe on upper edge of membranes of spinous dorsal, broadest and most distinct anteriorly; rest of dorsal, and caudal and pectoral dark brownish; ventrals and anal dark, almost black; a black blotch at upper base of pectoral, continuous with the black axil.

This is a very abundant species among the Hawaiian Islands. Numerous specimens were obtained at Honolulu in 1889 by Dr. Jenkins, and others by Dr. Wood in 1898 and Dr. Jordan in 1900. Our own collections, made in 1901, contain numerous specimens, the localities represented being Honolulu, Hilo, and Kailua.

The above description is based chiefly upon a specimen (field No. 04526) 4.8 inches long, obtained by us at Honolulu.

The field numbers and lengths of a few of our specimens are given in the following table:

Field No.	Length.	Locality.	Final disposition of specimen.
	<i>Inches.</i>		
08331	3.75	Honolulu.....	No. 7479, L. S. Jr. Univ. Mus.
04516	4.75	Hilo.....	No. 7480, L. S. Jr. Univ. Mus.
04517	4.5	.....do.....	No. 3959, Field Col. Mus.
04518	4.2	.....do.....	No. 50671, U. S. N. M.
04519	4.2	.....do.....	No. 2728, U. S. F. C.
04520	4	.....do.....	No. 2729, U. S. F. C.
04521	3.8	.....do.....	No. 1705, Bishop Mus.
04522	5.25	Kailua.....	No. —, M. C. Z.
04523	4.8	.....do.....	No. 24228, Ac. Nat. Sci. Phila.
04526	4.8	Honolulu.....	No. 50670, U. S. N. M.
04527	4.5	.....do.....	No. 2300, Am. Mus. Nat. Hist.

Pomacentrus nigricans, Quoy & Gaimard, Voyage Uranie, Zool., 399, 1824 (Sandwich Islands); Cuvier & Valenciennes, Hist. Nat. Poiss., v, 425, 1830; Günther, Cat., iv, 34, 1862 (Sandwich Islands); not *Holocentrus nigricans* Lacépède, Hist. Nat. Poiss., iv, 332 and 367, 1803, locality unknown, collected by Commerson.

Eupomacentrus marginatus Jenkins, Bull. U. S. Fish Comm. for 1899 (June 8, 1901), 391, fig. 5, Honolulu (Type, No. 49700, U. S. N. M., Coll. O. P. Jenkins); not *Pomacentrus marginatus* Rüppell.

Family LABRIDÆ. The Wrasse-fishes.

35. *Lepidoplois strophodes* Jordan & Evermann, new species.

Head 2.75 in length; depth 2.75; eye 4.65 in head; snout 3.25; mouth 3.1; interorbital 4; D. XII, 10; A. III, 12; scales 7-34-13.

Body oblong, compressed; head longer than deep; upper and lower profiles evenly and slightly convex; snout long, pointed, rounded above; jaws produced, pointed, about equal; mouth large, maxillary reaching beyond front of eye; teeth strong, forming a sharp cutting edge on sides of jaws, front of each jaw with 4 large canines; eye rather large, anterior, high in head; posterior margin of preopercle very finely emarginate; interorbital space rather broad, convex; nostrils small, anterior in short tube; dorsal spines pungent, longest 3 in head, last 3.5; third anal spine longest, 2.8; third anal ray 1.9 in head; pectoral rounded, 1.7; ventrals pointed, 1.4; caudal broad at base, truncate; caudal peduncle broad, compressed, its depth 2; scales large, thin, those on front of dorsal, along its base and that of anal, small; lateral line concurrent with back, sloping down at caudal, then running straight to its base.

Color in life, pale rosy white; upper parts of the snout, nape, and side to base of about ninth dorsal spine, lemon-yellow, extending down on side to level of upper edge of pupil; side of head very pale rosy, 2 irregular broken lines of wine-colored spots across snout and through eye to posterior edge of opercle, a similar row of 4 oblong spots from angle of mouth downward and backward to edge of opercle; cheek and side of lower jaw with numerous small irregularly placed orange spots; side with about 16 brighter rosy longitudinal lines, those above less distinct on account of the deeper rosy ground color, those below more distinct, the ground color being more white; side between anal and soft dorsal fins with a broad sooty black spot extending irregularly upon both fins and fading out upon body anteriorly, the posterior edge being nearly vertical and well defined; caudal peduncle and base of the caudal fin whitish, with a slight tinge of rosy, a pale rosy band separating this from the black lateral area; region in front and below the pectoral with about 4 series of small reddish brown spots; pectoral region and the under parts somewhat bluish; dorsal fin rich lemon-yellow, the tips of the soft rays whitish, and a small, round, black spot on middle of membrane of second spine; base of soft rays and last dorsal spines rosy from intrusion of the rosy wash on side of body; last dorsal rays sooty black at the base from extension of the black spot on the side; caudal pale lemon-yellow; anal pale rosy in center, lemon on spines and along tip of fin, base of fin sooty black from intrusion of black spot on side of the body, the black extending farthest down on the interradial membranes; pectoral very pale rosy; ventrals pale rosy, the membranes bluish, the tip of second ray blackish.

Color in alcohol (field No. 04291), gray-brown, gradually darker posteriorly; space between soft dorsal and anal abruptly black, the color extending forward in darker streaks along the rows of scales and forming a large black blotch on soft dorsal and anal; top of head and space before dorsal abruptly

pale; posterior part of caudal peduncle also abruptly pale; a black blotch on dorsal between second and third spines, not involving third and fourth, as in *L. bilunulatus*; dorsal and caudal otherwise pale; a pale blotch at base of posterior dorsal rays; side with narrow dark brown longitudinal lines, coalescing posteriorly with the black blotch; 2 narrow brown streaks from lip to front of eye, then back across side of head above; edged with narrow, darker, wavy lines; a wavy streak from corner of mouth toward base of pectoral, lower side of head with small brown spots or blotches; ventral fin mostly dusky.

This species is very close to *Lepidoplois bilunulatus*, differing chiefly in the dark zone on posterior part of body and in the smaller size of the dorsal spot. Our specimens are all young, but we have the young of *L. bilunulatus* scarcely larger and showing the markings of the adult.

Our collection contains the following specimens of this species, all from Honolulu, where it is not uncommon:

Field No.	Length.	Locality.	Final disposition of specimens.
	<i>Inches.</i>		
04291	4.7	Honolulu.....	Type, No. 50672, U. S. N. M.
03520	3.8	.....do.....	Cotype, No. 2730, U. S. F. C.
03532	4.5	.....do.....	Cotype, No. 7481, L. S. Jr. Univ. Mus.
04292	3.75	.....do.....	Cotype, No. 1706, Bishop Mus.
04293	3.75	.....do.....	Cotype, No. 3963, Field Col. Mus.

VERRICULUS Jordan & Evermann, new genus.

Verriculus Jordan & Evermann, new genus of *Labridae* (*sanguineus*).

Body elongate, subfusiform, compressed, with rather long, pointed snout; snout rather large, with anterior canines strong, $\frac{1}{4}$ to $\frac{1}{3}$; posterior canines present; lateral teeth short, confluent in a serrated cutting edge; cheek and opercle scaly; preopercle entire, both limbs more or less scaly; scales moderate, about 40 in lateral line; lateral line continuous; D. XII, 10; A. III, 12; dorsal spines low, pungent; soft dorsal and anal not elevated, their bases without scales; caudal subtruncate; pectoral short.

This genus is allied to *Verro* and *Nesiotes*. From its nearest relative, *Nesiotes*, it differs in the presence of a posterior canine tooth. The single known species is brilliantly colored.

36. *Verriculus sanguineus* Jordan & Evermann, new species.

Head 2.9 in length; depth 3.5; eye 6.2 in head; snout 3.1; mouth 2.8; interorbital 4.75; D. XII, 10; A. III, 12; scales 5-40-13.

Body elongate, compressed oblong; head long, pointed, conic, its depth 1.7 in its length; eye small, its posterior margin in middle of length of head; snout long, pointed, rounded; jaws produced, equal; mouth large, nearly horizontal, corner reaching below front rim of eye; lips thick, fleshy; teeth strong, those on sides short, close-set, forming a sharp cutting edge on side of jaw; 5 canines in front of upper jaw, 4 in front of lower, a posterior canine on each side of upper jaw; tongue long, pointed, free in front; preopercle not serrate; interorbital space broad, convex; nostrils small, anterior in short tube; dorsal spines strong, sharp-pointed, longest in middle and posteriorly; last dorsal spine 4 in head; anal spines strong, last spine longest, 3.75; seventh anal ray 3; caudal rounded; dorsal and anal fins scaled at base; pectoral rounded, 1.9 in head; ventrals short, spine strong, pointed, two-thirds longest ray, which is 2 in head; caudal peduncle broad, deep, 2.2 in head; scales small, thin, cycloid; head with very small thin cycloid scales on occiput, cheek, greater part of opercle, behind eye, and on opercles, otherwise naked; lateral line slightly curved in front, then obliquely down to base of caudal.

Color in life, deep red; edge of upper jaw and lower tip golden; a long stripe from eye along back to base of caudal golden, with a red shade, a vertical black bar edged with golden above, on opercular region; a long blackish area covering it from eye to above pectoral, with some blackish before, behind and above; a black spot at base of caudal; dorsal and caudal golden, first dorsal edged with violet and with the lower half violet; anal entirely deep blood-red; ventrals golden; pectoral reddish, golden at base.

Color in alcohol, very pale brown; a dusky band from snout across back of head and on side, fading out indistinctly posteriorly; a blackish spot at middle of base of caudal; opercle posteriorly with black vertical blotch; fins all pale or light brown.

Described from the type, No. 50677, U. S. N. M. (field No. 03489), an example 7.5 inches long, taken at Hilo, with hook and line, in deep water with *Etelis evurus*, *Eteliscus marshi*, *Erythrichthys schlegeli*, *Antigonia steindachneri*, and *Anthias fuscipinnis*.

We have examined only one example, the one described above.

37. *Pseudocheilinus evanidus* Jordan & Evermann, new species.

Head 3 in length; depth 3.8; eye 4.5 in head; snout 3; preorbital 6.2; interorbital 5.5; D. ix, 11; A. iii, 9; scales 2-25-6.

Body short, deep and compressed; head long, conic; snout long, sharply conic; anterior profile rising in a relatively straight line from tip of snout to nape, thence gently convex to base of caudal peduncle; ventral outline less convex; mouth large, horizontal, below axis of body, gape reaching anterior line of orbit; upper jaw with 3 pairs of anterior canines, outer strongest, curved outward and backward; lower jaw with a single pair at tip, similar to inner above; jaws laterally with a single series of smaller conic teeth; preorbital narrow, oblique; eye high up, its lower border on axis of body; interorbital space rather broad and flat; depth of caudal peduncle about 2 in head; scales large, surfaces finely striate; head, nape, and breast with large scales; lateral line following contour of back until under base of sixth dorsal ray, where it is interrupted, reappearing 2 rows farther down and continuing on 6 or 7 scales to base of caudal fin; fins rather large; dorsal spines somewhat greater than eye in length, spines with a sheath of large scales reaching nearly to their tips; soft dorsal and anal with a lower sheath; soft dorsal elevated, rays equal to snout and eye; anal similar to soft dorsal, second spine strongest, nearly as long as snout; anal rays somewhat longer, equaling those of soft dorsal; caudal rounded, its length 1.3 in head, its base covered with very large, thin scales.

Color in life, according to Mr. Sindo, body dull brick-red; belly and base of anal pale purplish; about 17 thin, thread-like longitudinal yellowish streaks along side anteriorly; dark greenish blotches above eye and on snout; a bluish horizontal bar on cheek, below which is a yellow bar; median line of throat and tip of snout brick-red; edges of opercle and preopercle bright purple; a purple stripe with reddish edges through middle of dorsal fin, below which the color is dull brick-red, like that of body, and above which the spinous dorsal is orange-yellow, the margin of the membranes bright cardinal-red; above the purple streak in the soft dorsal is a bright yellow streak, above which the fin is cardinal-red, fading gradually upward; dorsal rays purplish; tip of soft dorsal somewhat red; caudal rays purple, the membranes immediately next to the rays yellow, middle part dull brick-red; anal same as caudal; ventrals pale purplish; pectoral pale; iris scarlet-red.

The same specimen after having been in spirits more than a year has the body light brownish-blue; a pale streak along each row of scales, but no trace of the narrow yellowish streaks above noted; top of head and upper part of cheek dusky blue; opercle and edge of preopercle rich blue; dorsal, anal, and caudal fins bright blue, the soft dorsal pale on outer two-thirds, dorsal rays bright blue; ventrals and pectoral light blue, latter darker blue at base. The color of this specimen in spirits is wholly different from that which it possessed in life, and it would be difficult to believe that such changes had taken place except that the specimen was carefully tagged in the field when the color note in life was taken.

Since writing the above, we have noticed similar changes in the Samoan species, *P. hexatania*. The blue shades are permanent in spirits, while the pink or crimson wash soon vanishes in spirits.

The 17 thread-like streaks, mentioned in Mr. Sindo's field notes above, have vanished entirely in the original type. A number of specimens taken by Mr. Snyder at Laysan, while on the *Albatross*, retain these traits, the streaks being almost white, like white threads, covering most of the side anteriorly. This is a very peculiar color mark, which should well distinguish the species in life.

A single specimen, type, No. 50678, U. S. N. M. (field No. 05757), was taken by Mr. Sindo in Henshaw's pool near Hilo, a deep tide-pool in the lava rocks.

38. *Hemipteronotus baldwini* Jordan & Evermann, new species.

Head 3.25 in length; depth 3; eye 5.75 in head; snout 1.75; maxillary 3; preorbital 2.2; interorbital 4.8; D. ii-viii, 13; A. iii, 13; scales 3-27-9.

Body moderately short and deep, greatly compressed; head slightly deeper than long; anterior profile nearly vertical from mouth to front of eye, sharply cultrate; dorsal outline gently convex, sloping to the deep caudal peduncle; ventral outline less convex; caudal peduncle very narrow, the depth 2.25 in head; mouth small, horizontal, the maxillary nearly reaching vertical of orbit; the jaws equal,

each provided anteriorly with a pair of strong curved canines and laterally with a single row of short close-set conic teeth; lower jaw strong, its outline very convex; preorbital nearly vertical and very deep; preopercle and opercle smooth, with membranous edges, the latter produced somewhat in a broad rounded flap; origin of dorsal but little posterior to orbit, far in advance of base of ventrals; first 2 dorsal spines somewhat removed from third but connected to it by a low membrane, their length scarcely greater than the gape of mouth; remaining dorsal spines short and weak, scarcely equaling gape; soft dorsal low, the rays slightly longer than the spines; anal similar to soft dorsal, rays somewhat longer; caudal slightly convex, rays 2 in head; outer ray of each ventral somewhat produced, not reaching vent, the length about 1.9 in head; pectoral broad, the longest rays 1.7 in head; scales large, thin, smooth, firmly attached, those on breast somewhat reduced; head naked, except about 4 series of small scales extending from eye downward to level of mouth; lateral line curving abruptly upward from upper end of gill-opening, following contour of back to the scale under third dorsal ray from last where it drops 3 rows and continues to base of caudal, the pores simple, unbranched.

Color in life (field No. 03123), pale, yellowish white over head and body; a diffuse lemon-yellow blotch under and above pectoral; a large brownish-black blotch on lateral line under seventh to tenth dorsal spines; dorsal fin yellowish-white, tip of detached part with a jet-black crescent (this marking variable in position, it sometimes being farther posterior), rest of fin faintly mottled with yellowish and olive, the latter in narrow oblique lines; caudal yellowish white; anal yellowish white, with narrow, wavy, pale-blue lines, and a large jet-black spot bordered with blue on membrane of last 5 rays; iris whitish.

Color in alcohol, creamy yellowish white; head somewhat orange on cheek and opercles; faint rosy lines downward from eye to mouth and on preopercle; median line of anterior profile bluish; middle of back with a large black or brownish black blotch lying on lateral line, beneath which is a large white blotch under and above pectoral fin; anterior part of spinous dorsal blackish at edge, the color ocellated, rest of dorsal yellowish white with narrow purplish cross-lines; anal similar, with a large jet-black spot on last 4 rays; caudal color of soft dorsal; pectoral and ventrals yellowish white.

Color in alcohol, of one of the female cotypes (No. 03372), pale olivaceous, the general color that of the male; dorsal with black spots on membranes of second, third to fourth, and eighth spines, the latter ocellated; a series of about a dozen small black spots back of the dorsal blotch on side above lateral line; no black spot on anal.

The above description based upon the type, No. 50644, U. S. N. M. (field No. 03414), a male example, 8.5 inches long, obtained at Honolulu.

Another specimen, also a male (field No. 03371), was in life, livid gray; each scale posteriorly with a vertical spot of violet; anterior line of profile bright violet; a violet line downward from eye with a whitish area behind it on cheek; an oblique violet line downward and backward from opercular flap to behind axil; behind this a vague yellow area, behind which is an ovate white spot, each scale around which has a vertical bar of bright violet; above this a large black blotch washed with brick-red; dorsal bluish-gray, the rays posteriorly with an increasing amount of orange, where the blue is reduced to oblique crossbands, an intermarginal line of violet, a small black spot on last ray; membranes of second to fourth dorsal spines with a terminal black ocellus; anal pale golden, with oblique bluish stripes, a large jet-black ocellus bordered with blue on last rays; caudal pale orange, crossed by bluish lines; ventrals and pectoral pale.

Still another male example (field No. 03004) was described as follows: General color very pale smoky white, edges of scales pale bluish, beneath seventh to ninth dorsal spines a large blotch, brick-red above, pale rosy below, all irregularly overlaid with black or brown; median line from tip of snout to base of first dorsal spine bright blue; a narrow bright blue line downward from anterior part of eye to angle of mouth; region above pectoral pale lemon yellow, a short oblique pale blue line above base of pectoral; dorsal pale flesh-color, with short vertical bluish lines, with 3 jet-black spots at tips of first, second, and fourth spines; anal pale yellowish, a black spot on distal half of last 3 rays; caudal pale, with obscure bluish cross-lines; pectoral and ventrals white; iris yellowish, red at lower posterior angle.

Another example, a female (field No. 03372), 7.5 inches long, from Honolulu, which is taken as a cotype, differed in life coloration from the male in lacking the black ocellus on the anal and in having more violet on the white lateral spot, also more golden before it; violet lines and spots obscure, but present; 3 to 8 small blackish points above lateral line behind black dorsal blotch; a small black ocellus on second to third dorsal spines and one on seventh dorsal spine, these wanting in some females; fins otherwise colored as in the males, but the blue fainter and the orange of dorsal brighter.

Another female example (field No. 03005) differed in color from field No. 03004 only in the absence of black on the dorsal and anal fins, the paler blue lines on head, the paler caudal fin, and in having black spots on the back. Another female example (field No. 03271), 7.5 inches long, in life had the head and body smoky white; a large bluish white spot under tip of pectoral; snout bluish around border and surrounded by a broad pale yellow space involving nearly all of anterior half of side below level of eye; a large black spot under fifth to sixth dorsal spines, crossing lateral line and penetrating yellow of side, nearly reaching white spot; back of this a series of about a dozen small black specks, scattered along side above lateral line to near end of dorsal fin; median line of snout and head blue; dorsal pale, with wavy yellow cross-lines, pinkish toward margin; caudal pale; anal pale, with about a dozen pale yellow crossbars; pectoral and ventrals pale; iris yellow and red.

This beautiful and abundant species is represented in our collection by 41 specimens, 19 of which are males and 22 females. The differences in coloration of the two sexes are very marked. The male, in all specimens examined, has the jet-black spot upon the last rays of the anal, a marking which is not present in any of the females examined. The female always has a series of small black specks on the side above lateral line posterior to the large lateral blotch. These markings, the small black spots on the side of the female and the large jet-black spot on the anal of the male, would apparently always serve to distinguish the two sexes.

The extent of variation in color among individuals of the same sex is indicated in the color descriptions given above. We should have added that occasionally there is a small jet-black spot upon the last rays of the dorsal.

This is one of the most abundant and beautiful species found among the Hawaiian Islands. It appears to be related to *H. melanopus* of Bleeker, but differs from it markedly in the presence of the large black lateral blotch and in the absence of the large red lateral blotch shown in Bleeker's figure.

This species is named for Mr. Albertus H. Baldwin in recognition of his paintings of American and Hawaiian fishes.

Field No.	Length.	Sex.	Locality.	Final disposition of specimens.	Field No.	Length.	Sex.	Locality.
	<i>Inches.</i>					<i>Inches.</i>		
03414	3.5	Male	Honolulu	Type, No. 50644, U. S. N. M.	05603	8.5	Male	Honolulu.
03123	8.8	Male	do	Cotype, No. 2713, U. S. F. C.	05604	8.5	do	Do.
03372	7.5	Fem	do	Cotype, No. 2714, U. S. F. C.	05605	8.5	do	Do.
03371	7.5	Male	do	Cotype, No. 7462, L. S. Jr. Univ. Mus.	05606	7.75	do	Do.
03004	7	Male	do	Cotype, No. 3961, Field Col. Mus.	05609	6.75	Fem	Do.
03005	6.25	Fem	do	Cotype, No. 3962, Field Col. Mus.	05627	9.2	Male	Do.
03271	7.25	Fem	do	Cotype, No. 7462, L. S. Jr. Univ. Mus.	05628	7.6	Fem	Do.
03084	6.5	Fem	do	Cotype, No. 50645, U. S. N. M.	05629	8.2	Male	Do.
05438	8.25	Male	Hilo	Cotype, No. —, M. C. Z.	05630	8.5	do	Do.
05589	7.25	Fem	Honolulu	Cotype, No. —, M. C. Z.	05631	8.5	do	Do.
05439	7.5	Male	Hilo	Cotype, No. 2290, Am. Mus. Nat. Hist.	05632	8.6	Fem	Do.
05591	6.2	Fem	Honolulu	Cotype, No. 2291, Am. Mus. Nat. Hist.	05633	7	do	Do.
05465	9.25	Male	do	Cotype, No. 24219, Ac. Nat. Sci. Phila.	05634	7	do	Do.
05599	6.8	Fem	do	Cotype, No. 24220, Ac. Nat. Sci. Phila.	05635	7	do	Do.
05586	8.25	Male	do	Cotype, No. 9809, Mus. Ind. Univ.	05636	6.25	do	Do.
05600	6.5	Fem	do	Cotype, No. 9810, Mus. Ind. Univ.	05637	6.5	do	Do.
05587	8.5	Male	do	Cotype, No. 1493, Cal. Ac. Sci.	05639	6.25	do	Do.
05607	7.4	Fem	do	Cotype, No. 1496, Cal. Ac. Sci.	05640	6.25	do	Do.
05588	8	Male	do	Cotype, No. 1696, Bishop Mus.	05641	6.2	do	Do.
05608	7	Fem	do	Cotype, No. 1697, Bishop Mus.	05642	5.75	do	Do.
03124	8.75	Male	do		O. P. J. α 624	6.5	Male	Honolulu.

α Collected by Jordan & Snyder.

39. *Xyrichtys niveilatus* Jordan & Evermann, new species.

Head 3.3 in length; depth 2.4; eye 6.2 in head; snout 1.8; preorbital 2; maxillary 3; interorbital 4.7; D. II-VII, 12; A. III, 12; scales 3-28-8.

Body short, deep, and very greatly compressed; anterior profile nearly vertical from tip of upper jaw to front of eye, thence in a parabolic curve to dorsal fin; anterior dorsal outline very trenchant; body tapering rather evenly from head to caudal peduncle, which is greatly compressed and very deep, depth at middle equaling preorbital; head short; snout very short and blunt; mouth small, horizontal, the maxillary nearly reaching anterior edge of orbit; jaws equal, each with a pair of strong curved canines in front, and a single series of smaller, conic teeth laterally, the canines of lower jaw most prominent and extending in front of upper jaw; eye small, high up; the interorbital space narrow and trenchant; opercles smooth, without spines or serrations, ending in thin flexible edges; preorbital

vertical and very deep; origin of dorsal fin above posterior line of orbit, far in advance of base of ventrals; first 2 dorsal spines somewhat removed but not detached from third, the membrane between second and third spines moderately notched, length of second spine about 2.7 in head, remaining dorsal spines subequal, weak, about equal to gape; dorsal rays low, the last few somewhat produced, their length 3 in head; anal similar to soft dorsal; caudal short, slightly convex, rays about equal to preorbital; outer ray of ventral somewhat produced, not reaching vent, its length equaling depth of preorbital; pectoral broad, its tip reaching vent, its length equaling distance from snout to edge of preopercle.

Scales large, thin, and with membranous edges, those on breast somewhat smaller; head entirely naked, except for a few small scales below the eye; lateral line beginning at upper end of gill-opening following closely the curvature of back to the scale under the last dorsal ray but 2, where it drops 3 scales and continues to base of caudal, the pores simple, rarely branched.

Color in life, grayish; each scale of posterior half of body with a large violet spot, more narrow and brighter near middle of body, the edge of each scale broadly golden-olive; a large golden area, anteriorly deep orange, above pectoral and on edge of opercle; behind this a large quadrate pure white area extending to tip of pectoral; a few scales in golden area with bright violet markings; head shaded with violet, a bright violet stripe downward from eye to behind angle of mouth; a lunate black area shaded with red just below front of soft dorsal; spinous dorsal violet-gray, edged with reddish; soft dorsal golden, with violet vermiculations at base, its edge orange; anal golden, with bluish vermiculations; caudal similar, with the bluish markings; pectoral faintly reddish; ventrals dirty white.

One of the cotypes, a male (field No. 03373), agreed in life coloration with the type except that behind the opercle is a golden area with the bright violet stripes across anterior basal part; behind this a large milk-white patch beyond tip of pectoral; a violet border was around the white and blackish above the yellow.

Color in alcohol, dirty yellowish white, dusky above; head with some purplish reflections; a thin purplish line downward from anterior edge of orbit to tip of maxillary, a similar but less distinct line from humeral region downward to subopercle; a yellowish white blotch on side above base of pectoral, in the base of which are 2 or 3 small purplish spots; a large white area on middle of side under and above tip of pectoral, separated from the yellowish blotch by purplish brown on 2 or 3 scales; a black spot covering the larger part of 3 scales on side above lateral line under base of first 3 dorsal rays, back at base of last dorsal rays somewhat dusky; anterior portion of dorsal fin dusky olivaceous, soft dorsal, anal and caudal pale yellowish crossed by narrow, wavy, pale purplish lines; ventrals and pectoral plain yellowish white.

This handsome fish is rather common about Honolulu.

Field No.	Length.	Locality.	Final disposition of specimen.
	<i>Inches.</i>		
03345	9.5	Honolulu.....	Type, No. 50646, U. S. N. M.
05464	9.75	.....do.....	Cotype, No. 3960, Field Col. Mus.
03373	9.25	.....do.....	Cotype, No. 2715, U. S. F. C.
05597	8.2	.....do.....	Cotype, No. 7463, L. S. J. Univ. Mus.
05598	7.4	.....do.....	Cotype, No. —, M. C. Z.
05590	6.6	.....do.....	Cotype, No. 2292, Am. Mus. Nat. Hist.

Family SCARIDÆ. The Parrot-fishes.

40. *Scarus jenkinsi* Jordan & Evermann, new species.

Head 3 in length; depth 2.5; eye 6.5 in head; snout 2.6; preorbital 4.7; interorbital 3; D. ix, 10; A. iii, 9; P. 13; scales 2-24-7.

Body short, very deep and greatly compressed; head short, nearly as deep as long, snout short and blunt; mouth small; each jaw with 1 or 2 blunt canines; dorsal and ventral outlines about equally convex; anterior profile rising rather irregularly from tip of snout to origin of dorsal; caudal peduncle deep, its least depth 2 in head. Scales large, deeper than long; 2 rows of large scales on cheek and 1 row on subopercle; a row of thin modified scales at base of dorsal and anal; a few very large, thin scales on base of caudal; lateral line ceasing under last dorsal ray, reappearing 2 rows lower down and continuing to base of caudal, the pores with 2 or 3 irregular branches; dorsal rays soft and flexible, not pungent; dorsal spines somewhat elevated posteriorly, longest a little more than 2 in head; first ventral spine obscure, the others soft and flexible; anal rays somewhat shorter than those of dorsal;

caudal shallowly lunate, the outer rays not greatly produced; ventrals moderate, 1.6 in head, not reaching to origin of anal by a distance equal to two-fifths their length; pectoral broad, 1.2 in head.

Color of a nearly fresh specimen, bright blue-green, brightest on posterior half of body, each scale broadly edged with reddish brown; lower anterior part of body reddish brown, with traces of blue-green; top of head brownish red or coppery, a broad deep blue-green band on the upper lip, extending on side of head to below eye; lower lip with a narrow brighter blue-green band connecting at angle of mouth with the one from upper lip; chin with a broad coppery-red bar, followed by a broader bright blue-green one; caudal green, median part pale, banded with green spots; dorsal bright green at base and tip, the middle pale greenish, translucent; anal similar, the distal band broader; pectorals and ventrals deep vitriol-green with whitish markings.

Color in alcohol, dirty greenish, side with about 8 longitudinal series of greenish blotches; head olivaceous above, paler on cheeks; upper lip broadly pea-green at edge, this color continued backward to under eye; edge of lower lip pale green, continued around angle of mouth uniting with the same color from upper lip; chin with a broad, pale crossbar behind which is a broader, pale green one which extends up on cheek nearly to orbit; back of this is a still broader, white crossbar interrupted in the middle by greenish; subopercle and lower edge of preopercle with a large, irregular, green patch; a median green line on breast to base of ventrals; dorsal green at base and along edge, the middle portion paler; anal similar to dorsal, the green border broader; caudal bright pea-green on the outer rays, the inner ones pale with 4 or 5 cross-series of green spots, tips of rays darker; ventrals pale green, the edges dark pea-green; pectoral pale green, darker green on the upper rays.

This species is related to *Scarus gilberti* from which it differs in the greater depth and the somewhat different coloration. It is also related to *Scarus lauia*, but differs in the much greater depth, the less produced caudal lobes, the greater width of the green head markings, and the color of the fins.

Only one specimen was obtained, type, No. 50647, U. S. N. M. (field No. 02944), 14 inches long, obtained at Honolulu, June 6. Named for Dr. Oliver P. Jenkins.

41. *Scarus lauia* Jordan & Evermann, new species. "*Lauia*."

Head 2.8 in length; depth 2.7; eye 6.75 in head; snout 2.6; preorbital 4.8; interorbital 2.8; D. ix, 10; A. iii, 9; P. 13 on one side, 14 on other; scales 2-25-6.

Body short, stout and compressed; head heavy; snout rather short, bluntly rounded; dorsal and ventral outlines about equally arched, anterior profile slightly concave before the eyes; nape strongly convex; mouth small, nearly horizontal, in axis of body; upper jaw with 1 or 2 moderately strong, backwardly directed canines; a similar but smaller canine sometimes present on lower jaw; cutting edge of upper jaw fitting outside that of lower; teeth white; eye small, entirely above axis of body; opercle with a broad short flap. Scales large, their surface with fine lines and granulations; nape and breast with large scales; cheek with 2 rows of large scales, about 7 scales in each; subopercle and lower limb of preopercle each with a row of scales; opercle with large scales; lateral line broken under last dorsal ray, reappearing one row lower down and continuing to caudal fin, the pores with 2 to 4 branches; a series of these oblong scales along base of dorsal and anal; base of caudal with 3 or 4 very long, thin scales. Dorsal spines soft and flexible, not pungent, the longest about 2.7 in head; soft portion of dorsal somewhat higher, especially posteriorly where the rays are about 2.4 in head; anal spines soft and flexible, the first obscure, the third about 4.3 in head; anal rays higher, the last but one longest, 3 in head; caudal deeply lunate, the 3 or 4 outer rays above and below produced, length of middle rays 2.3 in head, or 2 in outer rays; ventrals moderate, not reaching vent, 1.9 in head; pectoral broad, the free margin oblique, length of longest rays 1.3 in head.

Color in life, head brownish yellow before eyes, the jaws lighter yellow; cheek washed with brownish and blue, throat greenish; nuchal and opercular regions brownish orange; body salmon-color above, the belly lighter yellow, most of the scales with an edging of greenish blue; a deep blue line from nostril before and behind upper part of eye; upper lip deep blue, the streak forming an interrupted line before eye; lower jaw with 2 blue cross-lines, 1 marginal; a dark blue spot behind angle of mouth; deep blue blotches on interopercle; dorsal deep blue with a peculiar jagged stripe of light brownish yellow; anal with blue spots at base, then light yellow, then deep blue, then green with blue edge; caudal brownish yellow, with bright blue edgings and a median area of bright golden green; ventrals golden, trimmed with bright blue; pectoral golden with deep blue above and greenish blue on lower rays, a salmon streak across base with greenish blue behind it.

Color in life of another example (No. 03040, 10 inches long), pale coppery rosy, darker on first 3 rows of scales; the center of each scale in the first 5 rows greenish blue; under parts pale rosy, with

orange wash; head pale rosy, a small postocular blue spot, a short blue line forward from eye, and a second of same color on upper lip and across cheek to eye, where it has a slight break, then continues under eye as a greenish-blue bar; under lip with narrow blue edge; chin faded salmon with a double blue crescent; space from chin to isthmus bright blue; an oblong bright blue spot on subopercle, behind which is a smaller irregular one bordered above by a broad greenish-blue space; dorsal greenish blue, with a broad submedian orange band, the lower greenish-blue band made up of large, scarcely connected, bluish spots, the upper half continuous with a narrow bright blue border; a small orange blotch on base of last dorsal ray; caudal pale rosy at base, then with a greenish bar, followed by a broad rosy bar, then by a broad terminal greenish-blue bar, dark blue in front, greenish in middle and pale blue on outer third; upper and lower edges of caudal blue, below which is a broad rosy orange stripe; anal greenish blue at base, then a broad orange stripe, the outer half greenish blue with narrow bright blue edge; pectoral orange anteriorly, pale bluish behind, the anterior border blue; ventrals orange, anterior edge and tip blue; iris pale orange.

Color in spirits, light dirty grayish white, lighter below; a narrow pea-green stripe on edge of upper lip, breaking up into irregular spots from angle of mouth to lower edge of orbit, a similar stripe from nostril to eye and slightly beyond upper posterior border of eye; these lines sometimes continuous and unbroken; lower jaw edged with green, a broader pea-green cross-stripe at anterior edge of branchiostegal opening; subopercles each with a broad green stripe; line of union of gill-membranes broadly green; dorsal with a series of large olive-green spots at base and a broad band of similar color on distal half, these separated by a paler band and cut by intrusions from it both above and below; dorsal fin with a very narrow paler border; and with a series of greenish spots at base, then a broad pale yellowish white line, bounded distally by an indefinite, wavy, black line shading off into the greenish of the distal half; last ray of anal dusky on its outer third; caudal greenish-olive at base and on produced outer rays, edges of fin above and below green; middle rays with a broad lunate area of pale green, scalloped proximally by dark green, separated from the lighter green base by a broad whitish interspace, the upper and lower edge also darker green; ventrals creamy white, the outer edge pale greenish; pectoral whitish, the upper edge dusky.

There is some variation in the width of the green markings on the head, sometimes the stripes on the lower part of the head being very broad.

This species is related to *Scarus gilberti*, from which it differs in the more strongly produced caudal lobes, in the narrower lines on the snout, the broader green lines on the throat, the absence of a green median line on the breast, and in the very different coloration of the fins.

Field No.	Length.	Locality.	Final disposition of specimen.
	<i>Inches.</i>		
08485	14	Hilo	Type, No. 50648, U. S. N. M.
04152	14	Honolulu	Cotype, No. 7464, L. S. Jr. Univ. Mus.
08040		.....do	Cotype, No. 2716, U. S. F. C.
04353		.....do	Cotype, No. 9811, Ind. Univ. Mus.
04352		.....do	Cotype, No. 3964, Field Col. Mus.

Also one specimen (No. 12046), 9 inches long, obtained by Dr. Wood at Honolulu.

42. *Scarus barborus* Jordan & Evermann, new species.

Head 3.2 in length; depth 3.2; eye 6.6 in head; snout 2.9; interorbital 2.9; preorbital 4; D. ix, 10; A. iii, 9; P. 14; scales 2-25-6.

Body oblong, not very deep nor greatly compressed; head about as long as deep, conic, compressed; snout short, blunt and rounded; upper jaw produced, its lip double, covering entire dental plate; lower lip covering half of dental plate; no canine teeth; eye anterior, high, its lower border considerably above upper base of pectoral; caudal peduncle short and deep, its depth 2 in head.

Origin of dorsal over upper base of pectoral, spines flexible, short, not quite as long as rays; longest ray 2.1 in head; longest anal ray 2.2 in head; caudal truncate; ventrals 1.9 in head, not reaching vent by half their length; pectoral 1.5 in head. Scales large and thin, very slightly roughened by radiating lines of granulations extending to margins of scales; lateral line interrupted, the pores being on 18 scales, then dropping 2 rows to row of scales under posterior base of dorsal, and continuing to base of caudal on middle of caudal peduncle, 7 pores in the shorter part, which begins on the row following the row on which the upper part ends, there not being 2 pores in the same row; the scales extend well

out on the caudal, the last scale of lateral line, very large and thin, being the largest scale on the fish; 4 scales in median line before dorsal; 2 rows of scales on cheek, 5 scales in upper row and 2 to 4 in lower, sometimes only 2 on posterior part; 2 rows on opercle, and 1 on lower margin.

Color in alcohol, grayish leaden brown, lighter below; no markings on fins different from corresponding parts of body evident.

The above description is based on the type, No. 50649, U. S. N. M. (field No. 04316), a specimen 7.75 inches long, from Honolulu; cotype, No. 2735, U. S. F. C. (field No. 04354), 7.5 inches long, from Honolulu; cotype, No. 7465, L. S. Jr. Univ. Mus. (field No. 650), 5.5 inches long, from Honolulu.

Family TEUTHIDIDÆ. The Tangs.

43. *Teuthis atrimentatus* Jordan & Evermann, new species.

Head 3.8 in length; depth 1.9; eye 4.2 in head; snout 1.2; interorbital 3; D. IX, 27; A. III, 25.

Body deep, compressed, ovoid, the upper profile steeper than lower, evenly convex; jaws low, not produced, lower inferior; mouth small, inferior; teeth broad, compressed, edges crenulate; nostrils close together, anterior larger, with small fleshy flap; anterior dorsal spines graduated to posterior, the longest 1.5 in head; fourth dorsal ray 1.4; third anal spine longest, 1.9; first anal ray 1.5; caudal large, emarginate, upper and lower rays produced in sharp angular points, upper much longer than lower; pectoral about 3.5 in body; ventrals sharp-pointed, 3.6 in body, spine half the length of fin; caudal peduncle compressed, 2 in head; caudal spine large, depressible in a groove, 3.1 in head; scales very small, ctenoid, few, and very minute on vertical fins; lateral line high, arched, at first descending under fifth dorsal spine, then straight to below middle of soft dorsal, finally falling down and running along side of caudal peduncle to tail.

Color in life (No. 02996), coppery brown, crossed by numerous, very narrow, pale blue lines, those above axis of body running somewhat upward and backward, and with short broken lines of same interspersed, those below more regular but less distinct; cheek brassy, with about 5 narrow pale blue lines from eye to snout; a conspicuous jet-black spot on caudal peduncle at base of last dorsal ray, each of these extending slightly upon pale rusty, each with 5 or 6 narrow brassy lines parallel with margin; edge of each blackish; last rays of dorsal and anal more brassy; caudal dark, blackest on outer part of middle rays; pectoral pale lemon; ventrals dusky, blacker toward tips; iris brownish, white on posterior part. Another example (No. 03474) was dull olive-gray, unmarked, save a faint whitish band across nape and back part of head; fins plain dusky gray.

Color in alcohol, very dark chocolate brown; side with about 40 narrow irregular or incomplete series of indistinct dark slaty longitudinal lines; cheek with similarly colored lines running obliquely downward; fins, except pectoral, all more or less blackish or dusky; dorsal with about 5 blackish longitudinal bands; anal with several similar indistinct blackish bands; base and axils of last dorsal and anal rays blackish; pectoral brown.

This common species is well distinguished from *Teuthis dussumieri* and other streaked species by the black ink-like spot in the axil of the dorsal and anal fin. It has several times been recorded under the erroneous name of *Acanthurus lineolatus*, but the species originally called by that name must be something else. Numerous specimens were obtained by us at Honolulu, where it was also secured by Dr. Jenkins and Dr. Wood. We have examined the following examples:

Field No.	Length.	Locality.	Final disposition of specimen.	Field No.	Length.	Locality.	Final disposition of specimen.
05481	<i>Inches.</i> 9.5	Honolulu.	Type, No. 50673, U. S. N. M.	05378	<i>Inches.</i> 6.2	Honolulu.	Cotype, No. 1501, Cal. Ac. Sci.
02996	6.8	.....do.....	Cotype, No. 7482, L. S. Jr. Univ. Mus.	.....do.....	6.1	.....do.....	Cotype.
03146	5.7	.....do.....	Cotype, No. 2731, U. S. F. C.	05491	5.2	.....do.....	Cotype.
03205	5.75	.....do.....	Cotype, No. —, M. C. Z.	05486	5.75	.....do.....	Cotype.
03474	4.5	.....do.....	Cotype, No. 2301, Am. Mus. Nat. Hist.	05484	6.7	.....do.....	Cotype.
03729	6.75	.....do.....	Cotype, No. 24229, Ac. Nat. Sci. Phila.	05488	5.5	.....do.....	Cotype.
05018	7	.....do.....	Cotype, No. 3965, Field Col. Mus.	.....do.....	3	.....do.....	Cotype.
05020	5.2	.....do.....	Cotype, No. 9818, Ind. Univ. Mus.	Dr. Wood.	5.8	.....do.....	Cotype.
05365	5.6	.....do.....	Cotype, No. 1707, Bishop Mus.	.....do.....	6.6	.....do.....	Cotype.
				O. P. J.		.....do.....	Cotype.
				141	4.4	.....do.....	Cotype.
				.....do.....	4.6	.....do.....	Cotype.

Acanthurus lineolatus, Günther, *Fische der Südsce*, I, 112, taf. I.XXIII, fig. A, 1873 (Society Islands); Steindachner, *Denks Ak. Wiss. Wien*, I, XX, 1900, 493 (Honolulu); not of Cuvier & Valenciennes.

Family BALISTIDÆ. The Trigger-fishes.

44. *Pachynathus nycteris* Jordan & Evermann, new species.

Head 3.5 in length; depth 1.9; eye 5 in head; snout 1.25; interorbital 2.6; preorbital 1.5. D. III-33; A. 29; scales about 80. Body short, stout, deep, and greatly compressed; head short; dorsal and ventral profiles about equally curved; caudal peduncle short, compressed, its least depth about twice diameter of eye, its least width about equal to diameter of eye; a short horizontal groove in front of eye below nostrils; nostrils small, close together in front of upper part of eye; teeth broad, close-set, forming a continuous plate, the teeth, however, not united; lips thin; mouth small, horizontal, in axis of body; lower jaw very slightly the longer; gill-opening short, nearly vertical; a group of bony scutes under pectoral back of gill-opening, one of these considerably enlarged; scales regularly arranged in rows, their surfaces granular; lateral line beginning at posterior edge of eye, ascending to within 7 scales of spinous dorsal and continuing to near origin of soft dorsal, where it disappears; scales on posterior portion of body and on caudal peduncle each with a slightly raised crest at its center, these forming series of ridges along the side. First dorsal spine strong, blunt, and rough, its length about 2 in head; second dorsal spine shorter and much weaker, its length scarcely more than one-third that of first; third dorsal spine remote from the second and very short, not extending above dorsal groove; soft dorsal gently rounded, its rays of approximately equal length, the longest equaling the distance from tip of snout to posterior edge of eye; base of soft dorsal slightly greater than distance from tip of snout to posterior base of first dorsal spine or equaling distance from tip of snout to lower base of pectoral axil; anal similar to soft dorsal, the rays somewhat longer than those of soft dorsal, the base somewhat shorter; caudal short and rounded, the rays about 1.75 in head; pectoral short, the upper rays longest, about 3 in head.

Color in alcohol, rich brownish or velvety black; spinous dorsal black; soft dorsal pale yellowish or whitish, margined with black, the lower half crossed by 4 narrow parallel black lines; anal similar to soft dorsal, but with only 2 narrow black lines on its basal half; caudal dusky, yellowish at tip; pectoral yellowish.

Only one specimen. Type, No. 50821, U. S. N. M. (field No. 05089), 6.25 inches long, Honolulu.

Family TETRODONTIDÆ. The Puffers.

45. *Lagocephalus oceanicus* Jordan & Evermann, new species.

Head 2.8 in length; depth 3.6; eye 4.5 in head; snout 2.4; interorbital 3.2; depth of caudal peduncle 6; D. 12; A. 12; C. 10; P. 14.

Body rather elongate, moderately compressed, greatest depth at vertical of pectoral; head long; snout long, blunt at tip, the sides flattened; anterior profile from tip of snout to vertical of pectoral in a long, low, even curve; ventral outline little convex when not inflated; mouth small; teeth pointed at median line, the cutting edge sharp; nostrils separate, not in tubes, the anterior somewhat the larger, their distance from eye about half their distance from snout or about half the interorbital space; gill-opening vertical, 1.2 in eye, extending a little above base of pectoral, inner flap entirely hidden by outer; eye rather large, wholly above axis of body; interorbital space very little convex; cheek long; caudal peduncle nearly round, tapering, its length from anal fin equaling snout; back, upper parts of sides and entire head entirely smooth, no spines or prickles evident; belly covered with small 4-rooted spines, most prominent when belly is inflated, spiniferous area not extending on throat anterior to eye, nor on side above base of pectoral, but in front of anal extending upward to level of lateral fold; a line of very small mucous pores curving above eye on interorbital space; a strong cutaneous fold on lower part of side of caudal peduncle from above anterior base of anal to lower base of caudal fin; no dermal fold on head or anterior part of body; mucous pores inconspicuous; dorsal fin somewhat anterior to anal, pointed, anterior rays produced, their length equal to that of snout; anal similar to dorsal, its rays somewhat longer; caudal lunate, outer rays about 2 in head; pectoral broad, its length a little greater than snout, 2.3 in head.

Color in life, back blackish, fading into deep steel-blue on side; side and below from level of upper edge of eye abruptly silvery-blue; sides of belly white, with round black spots about as large as pupil, these most distinct about pectoral, before, below, and behind the fin; upper fins dusky; caudal

mottled black, tipped with white; pectoral black above and behind, pale below; anal pale, broadly tipped with blackish.

Color in alcohol, bluish black above; side from upper level of eye abruptly bluish silvery; back crossed by 7 or 8 narrow darker cross-streaks; belly white, with a series of about 9 to 12 small roundish black spots, chiefly below the pectoral; cheek dusky; pectoral, dorsal, and caudal dusky, tips of the latter paler; anal whitish, a little dusky at tip. A somewhat smaller example (4.5 inches long) has larger dark spots along middle of side above level of pectoral.

This species is known to us from 2 small examples obtained in the market of Honolulu. It is related to *Lagocephalus stellatus* (Donovan) of Europe (*Tetrodon lagocephalus* of Günther, not of Linnaeus), but differs in the much shorter pectoral, more conspicuous spots, and rather greater extension of the prickly region of the breast. The types of *Tetrodon lagocephalus* Linnaeus are reputed to have come from India. According to Linnaeus, this species had 10 dorsal and 8 anal rays. It may have been based on *Lagocephalus scleratus* or some other East Indian species, but there seems to be no evidence that it was identical with the European *Lagocephalus stellatus*. In any event, the Hawaiian form seems different from any other yet known.

Type, No. 50820, U. S. N. M. (field No. 03379), 5 inches long, obtained at Honolulu; cotype, No. 7784, L. S. Jr. Univ. Mus. (field No. 534, paper tag), 4.5 inches long, also from Honolulu.

Family OSTRACIIDÆ. The Trunk-fishes.

46. *Ostracion oahuensis* Jordan & Evermann, new species. "*Momo Awa*."

Head 3.9 in length; depth 2.9; eye 2.9 in head; snout 1.2; preorbital 1.6; interorbital 1; D. 9; A. 9; P. 10; C. 10.

Body 4-sided; dorsal side of carapace evenly convex, its greatest width one-fourth greater than head; lateral dorsal angles not trenchant, slightly convex anteriorly, then evenly convex; snout blunt, the anterior profile ascending abruptly then strongly convex in front of eyes; interorbital space nearly flat; cheek flat; side of body concave, its width about equal to head; ventral keel prominent, evenly convex; ventral surface nearly flat posteriorly, but little convex anteriorly, its greatest width 1.4 times length of head, its length just twice its width; gill-opening short, not exceeding two-thirds diameter of eye; least width of anterior opening of carapace 1.75 in interorbital, or 1.5 times diameter of orbit, the depth nearly twice orbit; mouth small; teeth rich brown; least depth of posterior opening of carapace much less than width of anterior opening, equaling distance from lower edge of preorbital to pupil; length of caudal peduncle less than that of head, its depth 2.2 in its length; no spines anywhere. Dorsal fin high, its edge obliquely rounded, its length 1.3 in head; anal similar to dorsal, the edge rounded, its length 1.2 in dorsal; caudal slightly rounded, its rays nearly equal to head; pectoral with its free edge oblique, the rays successively shorter, length of fin equal to height of dorsal.

Color in life, dark brown with blue tinges; interorbital space showing more or less golden; small whitish spots profusely covering entire dorsal surface; no spots on side of body or on face; no spots on ventral surface except a faint one of a slightly darker color than general gray color of surface; one longitudinal row of golden spots on each side of upper part of caudal peduncle from carapace to base of caudal fin; pectoral, anal, and dorsal fins with transverse rows of faint spots; caudal bluish black at base, white on posterior half; a broad light or yellowish area below eye; iris golden.

Color in alcohol, rich brown above, the sides darker, and the ventral surface paler, brownish about margins, dusky yellowish within; entire back with numerous small, roundish, bluish-white spots; upper half of caudal peduncle with similar but larger spots; forehead and snout dark brown; lips brownish black; cheek dirty yellowish; sides and ventral surface wholly unspotted; base of caudal blackish, paler distally, the dark extending farthest on outer rays; other fins dusky, with some obscure brownish spots.

This species is related to *O. camurum* Jenkins, from which it differs in the smaller, more numerous spots on back, the entire absence of spots on side, the smaller size of the spots on the caudal peduncle, and the brighter yellow of the suborbital region. Only 2 specimens known, both from Honolulu.

Type, No. 50668, U. S. N. M. (field No. 03443), a specimen 5.6 inches long, obtained by us at Honolulu, July 25, 1901. Cotype, No. 7478, L. S. Jr. Univ. Mus. (field No. 2156), an example 5.25 inches long, collected at Honolulu, in 1898, by Dr. Wood.

Family SCORPÆNIDÆ. The Rockfishes.

47. *Pterois spheX* Jordan & Evermann, new species.

Head 2.4 in length; depth 2.65; eye 3.8 in head; snout 3.2; interorbital 5.2; maxillary 2.35; mandible 2; D. XIII, 11; A. III, 7; P. 16; V. I, 5; scales 10-56-13.

Body elongate, compressed, greatest depth at first dorsal spines; back only slightly elevated; snout rather short, rounded; mouth large, oblique; maxillary reaching below anterior rim of orbit, its distal expanded extremity 1.75 in eye; teeth fine, in bands in jaws and on vomer; lips rather thin, fleshy; tongue pointed, compressed and free in front; jaws nearly equal; eighth dorsal spine longest, equal to head; penultimate spine 4; fifth dorsal ray 1.75; third anal spine longest, 2.2; third anal ray longest, 1.5; caudal rounded, elongate, 1.4; pectoral long, the rays more or less free for at least half their length; ventral 1.3 in head, reaching beyond origin of anal; ventral spine 2.1; caudal peduncle compressed, its depth 3.75; nasal spine very small; preocular, supraocular and postocular spines present, the upper bony ridge over eye being serrate; tympanic, coronal, parietal, and nuchal spines present, coronal very small and close together and parietal with 4 serrations; a finely serrate ridge from behind eye over opercle to suprascapula; a finely serrated ridge over preorbital and cheek to margin of preopercle, ending in a strong spine, below this 2 other spines; preorbital with a strong spine over maxillary posteriorly, and with fine serrations above; scales ctenoid, present on top of head, cheeks, and opercles, head otherwise naked; tubes of lateral line single, in straight line to base of caudal; several fleshy flaps on head, 1 above eye, 1 from lower preorbital spine, and 2 from along margin of preopercle.

Color in alcohol, very pale brown, whitish beneath; side with 9 broad, deep brown bands alternating with narrow brown bands on trunk and posterior portion of head; narrow brown bars from below penultimate dorsal spine with a narrower brown line on each side above lateral line; lower surface of head whitish, without crossbands; spinous and soft dorsal and caudal each with 4 dusky brown crossbands; base of anal with 2 broad similar bands, and soft portion of anal with 3 series of irregular crossbands; axil of pectoral above with white blotch; pectoral whitish with 10 blackish crossbands; a brown band in front of base of pectoral extending on lower pectoral rays; ventral with dusky blotch at base, outer portion with about 5 dusky crossbands.

The only example we have seen of this species is the type, No. 50650, U. S. N. M. (field No. 05030), 6 inches long, obtained by us at Honolulu.

48. *Scorpænosis catocala* Jordan & Evermann, new species.

Head 2.1 in length; depth 2.75; eye 7.25 in head; snout 3.1; interorbital 4.3; maxillary 1.8; D. XII, 10; A. III, 5; P. 18; V. I, 5; scales 9-42-22.

Body elongate, greatest depth at first dorsal spines; back elevated, swollen, or convex, below first dorsal spines; snout rather long, with an elevated prominence; mouth large, oblique; maxillary large, expanded extremity broad, 6.5 in head; teeth in broad villiform bands in jaws, those on vomer small; no teeth on palatines; tongue small, pointed, free in front; lips rather thick, fleshy; eye small, a little in front of middle of length of head; a deep pit below eye; top of head with deep square pit just behind interorbital space; anterior nostril with broad fleshy flap; posterior large, without flap; four spines on side of snout above anterior nostril; preocular, supraocular, postocular, tympanic, parietal, and nuchal spines present; a series of spines running across cheek below eye; several large spines on lower part of preopercle; several spines on opercle; side of head above with many small spines; suprascapular with several small spines; dorsal spines rather strong, third longest, 3.75 in head; last dorsal spine 3.8; second dorsal ray 2.7; second anal spine enlarged, a little longer than the third, 3.4 in head; first anal ray longest, 2.4 in head; caudal rounded, 2 in head; pectoral large, lower rays thick, fleshy, curved inward; sixth pectoral ray 1.7 in head, lowest 3.7; base of pectoral broad, 2.25; ventral spine strong, 3.1 in head, second ray longest, 1.9; the innermost ray joined by a broad membrane to belly; caudal peduncle compressed, its depth 4 in head; head and body with many fringed fleshy flaps; scales moderately large, ctenoid.

Color in life (field No. 03382), excessively mottled, streaked, and spotted; body dark purplish brown or claret shaded, the spaces gray tinged with sulphury yellow; head all dull brown, flaps colored like the space about; belly to axillary region whitish with reticulations and irregular marks of yellowish

olive; axillary region wine-brown, finely mottled with yellowish white in streaks and spots; a few round black spots behind and in axil; inside of pectoral with a large jet-black blotch at upper part of base, bordered with orange; around this a large yellow area, then 6 oblong black spots on the membranes of upper rays above middle, then a broad rose-red band, fading into violet below, the rim gray; ventrals bright brown and gray, red shaded on inner face; inside of branchiostegals salmon-color, striped with white, the membranes yellow; membranes of upper jaw salmon-color mottled with light yellow; tip of upper jaw orange with a golden ridge dividing a triangular spot of indigo-blue between vomer and premaxillary; a golden line on each side in front of palatines; tip of tongue light yellow; a triangular indigo-colored spot behind teeth of tip of lower jaw; a golden streak behind it on membrane before tongue; lower lip salmon-color especially behind where hidden.

Color in alcohol, dark purplish, beautifully mottled with dusky and darker; head mottled above with dusky; fins with many fine dusky and brown wavy lines; base of pectoral both outside and inside brownish, the latter variegated with white and blackish brown; outer portion of inside of pectoral covering first 5 rays with a series of broad blackish spots; ventrals more or less brownish variegated with gray and whitish; body whitish, mottled with pale brown; edges of buccal folds, inside of mouth, deep yellow; a deep blue blotch directly behind teeth in front of each jaw.

This species is related to *Scorpaena gibbosa* (well figured by Günther in *Fische der Südsee*), from which it differs in the much rougher and less depressed head, much larger flaps on opercles and mandible, and the presence of a very large fringed flap on the anterior nostril, this being obsolete in *S. gibbosa*. We have compared our specimens with examples of *S. gibbosa* from Apia.

This species was obtained both at Honolulu and Hilo, and appears to be not uncommon. Our collections contain 8 excellent examples, as follows:

Field No.	Length.	Locality.	Final disposition of specimen.
	<i>Inches.</i>		
05298	9.5	Honolulu.....	Type, No. 50651, U. S. N. M.
03382	9.3	.....do.....	Cotype, No. 7466, L. S. Jr. Univ. Mus.
03521	6.8	.....do.....	Cotype, No. 2717, U. S. F. C.
05294	7.75	.....do.....	Cotype, No. 1698, Bishop Mus.
05295	6	.....do.....	Cotype, No. —, M. C. Z.
05296	8.2	Hilo.....	Cotype, No. 3956, Field Col. Mus.
05299	7.5	Honolulu.....	Cotype, No. 2293, Am. Mus. Nat. Hist.
	6.3	Hilo.....	Cotype, No. 24221, Ac. Nat. Sel., Phila.

49. *Dendrochirus hudsoni* Jordan & Evermann, new species.

Head 2.5 in length; depth 2.5; eye 3.4 in head; snout 3.3; interorbital 5; maxillary 2.1; mandible 1.8; D. III, 10; A. III, 6; P. 18; V. I, 5; scales 8-52-13.

Body elongate, compressed, rather deep, the greatest depth at fifth dorsal spine; profiles of trunk above and below more or less even; head compressed; snout short, rounded; mouth large, maxillary nearly reaching below middle of eye, its distal expanded extremity equal to half eye; minute teeth in bands in jaws and on vomer; lips thin; tongue pointed, compressed, free in front; jaws nearly equal; anterior nostrils each with a small fleshy flap; interorbital space deeply concave; fifth dorsal spine longest, 1.25 in head; penultimate spine 5.2; second anal spine longest, 2.1; third anal ray longest, 1.3; caudal rounded, 1.25; pectoral 2.4 in trunk, reaching below middle of base of soft dorsal, rounded, and only membranes between lower rays slightly incised; ventral rounded, reaching base of first anal ray; caudal peduncle compressed, its least depth 3.5 in head; nasal spines very small; preocular, postocular, tympanic and coronal spines present; parietal and nuchal spines forming a single ridge; a ridge of spines behind eye above opercle; a ridge of spines below eye, ending in a spine on margin of preopercle; 2 spines below this also on margin of preopercle; no opercular spines; margin of preopercle with spine projecting down and back; skinny flap above eye equal to its diameter, and another from preorbital spine; scales small, ctenoid; head naked except some scales on opercle, cheek, and side above; lateral line running obliquely down to base of caudal.

Color in alcohol, pale brown or whitish; side with 3 pairs of deep brown vertical bands, first on posterior part of head preceded by a deep brown streak from below eye, second on middle and posterior part of spinous dorsal, and third extending out on soft anal and basal portion of soft dorsal; soft dorsal, caudal, and anal pale or whitish; membranes of dorsal spines deeply incised in front, each

spine with 3 brown crossbands; pectoral grayish with a blackish brown basal blotch and 5 blackish crossbands; ventral blackish with 2 whitish or grayish blotches.

This species is especially characterized by the unspotted soft dorsal, anal, and caudal. From *Dendrochirus barberi* Steindachner, it is distinguished by the longer pectoral which reaches to below the posterior dorsal rays.

Named for Capt. C. B. Hudson, in recognition of the excellence of his paintings of Hawaiian fishes.

We have examined 5 specimens of this species, as follows:

Field No.	Length.	Locality.	Final disposition of specimen.
	<i>Inches.</i>		
03547	1.5	Waikiki	Type, No. 50652, U. S. N. M.
651	1.9	Reef near Honolulu	Cotype, No. 7467, L. S. Jr. Univ. Mus.
652	1.9	Honolulu	Cotype, No. 2718, U. S. F. C.
O. P. J.	4	.....do	
301	3.5	.....do	

Family GOBIIDÆ. The Gobies.

QUISQUILIUS Jordan & Evermann, new genus.

Quisquilius Jordan & Evermann, new genus of *Gobiidæ* (*eugenius*).

Allied to *Asterropteryx*. Body robust, covered with large, ctenoid scales; snout blunt; mouth large, very oblique, with 2 series of sharp teeth in jaws, the inner depressible; side of head with several series of short papillary fringes; ventrals separate, their rays 1, 5, joined at base by a narrow frenum; dorsals short, the first with 6 spines, the second with 12 short rays.

The genus is distinguished from other small Eleotrids by the papillary fringes on preorbital, jaws, and opercles.

50. *Quisquilius eugenius* Jordan & Evermann, new species.

Head 2.8 in length; depth 3.8; eye 3.25 in head; snout 4.25; width of mouth 2.4; interorbital 2 in eye; D. VI-12; A. 10; V. I, 5; scales 25,-12.

Body robust, compressed, greatest depth about middle of belly; head large, elongate, broad, depth 1.4 in its length, width 1.25; snout short, blunt, rounded above; jaws large, lower projecting; mouth large, very oblique, its posterior margin reaching below front of eye; upper jaw with 2 series of teeth, sharp-pointed, outer larger, the inner depressible; mandible with teeth similar to those in upper jaw; no teeth on vomer and palatines; tongue truncate, front margin not notched; eye large, high, anterior; nostrils separated, anterior in small tube, posterior close to upper front margin of eye; interorbital space narrow, very deeply furrowed; a series of fringe-like papillæ running from preorbital along upper margin of maxillary down behind corner of mouth where it joins another series running along under surface of mandible, and continued back and upward on margin of preopercle; anterior margin of opercle with a small vertical series of papillæ, each papilla a little shorter than diameter of eye; gill-opening large, continued forward till nearly below posterior margin of eye; spinous dorsal rather small, spines flexible, with tips produced in short filaments; soft dorsal high, median rays rather longer than others; anal more or less similar to soft dorsal, posterior rays very long; caudal rather large, round; pectoral broad, round, equal to head; ventrals small, 1.25 in head, sharp-pointed, and joined at base of inner rays by a narrow frenum; caudal peduncle compressed, its length 1.6 in head, depth 2.4; scales large, ctenoid, those on upper part of head very small; snout, interorbital space, jaws, and lower surface of head naked; no lateral line.

Color in life (field No. 03554), body with transverse bands of dark brown with olivaceous tinge alternating with dirty white; edges of scales in dark brown portions lighter; dorsal, anal, and caudal dark brown, edged in part with white; pectoral light reddish brown.

Color in alcohol, brown; 12 dark brown crossbands on side, the last 6 very broad, much broader than the pale interspaces; vertical fins dark slaty; pectoral pale slaty; ventral pale on outer posterior portion, blackish slaty on inner.

We have examined the following examples:

Field No.	Length.	Locality.	Disposition of specimens.
03554	<i>Inches.</i> 1.4	Waikiki	Type, No. 50674, U. S. N. M.
	.8	Honolulu.....	Cotype, No. 7483, L. S. Jr. Univ. Mus.
	1.2	do	Cotype, No. 2732 U. S. F. C.
	1.2	do	Cotype, No. 1708, Bishop Mus.
	.9	do	Cotype, No. —, M. C. Z.
	1.1	do	Cotype, No. 3970, Field Col. Mus.
	.9	do	Cotype, No. 24230, Ac. Nat. Sci. Phila.

51. *Gnatholepis knighti* Jordan & Evermann, new species.

Head 3.5 in length; depth 4.25; eye 3.8 in head; snout 3.6; width of mouth 2.5; interorbital 2.25 in eye; D. vi-12; A. 12; P. 16; V. 5.5; scales 32,-9.

Body elongate, compressed, not depressed in front, greatest depth at the middle of belly; head elongate, its depth 1.25 in its length, its width 1.5; snout oblique, blunt, broad; upper profile of the head obtuse, with a prominence over eye in front; mouth rather broad, the maxillary not reaching posteriorly to below front rim of orbit; lips rather thin; teeth small, sharp, in narrow bands in jaws with an outer enlarged series; no teeth on vomer or palatines; interorbital space very narrow, level; nostrils small, close together in front of eye, anterior with flap of very short, fleshy cirri; eye high, small, a little anterior; gill-opening restricted to side, nearly vertical, its length 2.25 in head; scales large, finely ctenoid, and becoming much larger on posterior side of trunk; scales small on belly in front of ventrals, cycloid; scales moderately large, cycloid on the upper part and side of head, head otherwise naked; dorsal fins well separated, spines flexible and with extremities of most free and filamentous; first 1.6 in head, fifth 1.7, last 2.7; soft dorsal long, last rays longest, first 1.7, last 1.25; anal similar to the dorsal, but lower, first ray 2.8, last 1.25; caudal rounded, the median rays very long, a little longer than head; pectoral with upper median rays longest, all rather fine, about equal to length of caudal; ventrals rather large, frenum uniting in front, rather broad, length equal to pectoral; caudal peduncle compressed, length 1.2 in head, depth 2.25.

Color in life, pale flesh-color, upper parts with dark brownish spots and blotches; a series of about 8 brownish blotches along middle of side; a small dark spot on base of pectoral; opercle dusky; fins all pale, spinous dorsal with brown edge; iris bluish white.

Color in alcohol, pale brown, side with numerous small dark brown spots and 7 large dark brown blotches; a dark brown streak below eye, and another across opercle; spinous dorsal very pale brown with about 3 blackish brown cross-lines, very distinct on first spines, running somewhat obliquely, and becoming indistinct posteriorly; soft dorsal with the spines pale or whitish brown and membranes between blackish brown; anal more or less dark gray brown; caudal very pale brown or whitish, spotted in cross-series with brown; pectoral pale brown; ventrals dark brown, paler along edges.

Color when fresh, of example from Hilo, olive-green, rather pale, and with 7 blackish crossbands; caudal spot small and inconspicuous; black bar below eye, narrow and very distinct; back crossbarred with many spots of dusky olive; side with longitudinal streaks of dark brown spots along rows of scales, these irregular and variable, mixed, especially behind, with spots of pale sky-blue; dorsal, anal, and caudal dotted finely with dark olive; pectoral pale olive; ventrals blackish; anal plain blackish, paler at base. In most examples examined the head was finely dotted with bright pale blue on cheeks and opercles.

This small but interesting species is generally common in brackish water about Hilo and Honolulu. Our collections contain a total of 123 specimens; 15 of these have been tagged and their measurements are given in the table; 101 other specimens from Hilo range in length from 1.1 to 2.5 inches, the average length being 1.81 inches. From Waianae we have 5 specimens, 1.3 to 1.8 inches in length, the average being 1.62 inches. From the pond at the Moana Hotel at Waikiki, we have 2 examples, each 0.8 of an inch long. The average length of our 123 specimens is 1.81 inches.

The species is named for Master Knight Starr Jordan, who first noticed it in the pond at the Moana Hotel at Waikiki Beach near Honolulu.

^a The genus *Gnatholepis* Bleeker seems to be equivalent to *Hazcus* of Jordan & Snyder.

The following are some of the specimens examined:

Field No.	Length.	Locality.	Final disposition of specimen.
	<i>Inches.</i>		
2150	2.25	Hilo	Type, No. 50653, U. S. N. M.
778	1.75	.....do	Cotype, No. 7468, L. S. Jr. Univ. Mus.
783	2.5	.....do	Do.
784	2.2	.....do	Cotype, No. 2719, U. S. F. C.
785	2.2	.....do	Cotype, No. —, M. C. Z.
788	2.25	.....do	Cotype, No. 2294, Am. Mus. Nat. Hist.
789	2.2	.....do	Cotype, No. 24222, Ac. Nat. Sci. Phila.
790	2.2	.....do	Cotype, No. 9812, Ind. Univ. Mus.
792	2.1	.....do	Cotype, No. 3969, Field Col. Mus.
793	1.9	.....do	Cotype, No. —.
794	2	.....do	Cotype, No. 1497, Cal. Ac. Sci.
795	1.8	.....do	Cotype, No. 1699, Bishop Museum.
797	1.75	.....do	
799	1.7	.....do	
800	1.5	.....do	

Acentrogobius ophthalmotantia, Streets, Bull. U. S. Nat. Mus., No. 7, 60, 1877 (coral reefs at Oahu); not of Bleeker.

52. *Gobiopterus farcimen* Jordan & Evermann, new species.

Head 3.25 in length; depth 3.5; eye 3.2 in head; snout 3.5; D. vi-11; A. 9; scales 28 (27 to 29)-10.

Body rather robust, compressed, greatest depth at gill-opening; head rather large, depth 1.25 in length, width 1.4; upper profile of head evenly convex from tip of snout to origin of dorsal; jaws large, mandible very large, slightly produced; mouth large, very oblique, maxillary extending beyond front margin of eye; teeth in jaws uniserial, rather large, somewhat canine-like; two small depressible canines on posterior part of bone behind anterior series; lips large, thick, fleshy; tongue not emarginate, large, thick, rounded; nostrils close together, posterior very large, in front of upper margin of orbit with elevated rim; interorbital space very narrow, concave; scales large, ctenoid; a large pore behind and above base of pectoral; gill-opening large, continued forward below; spinous dorsal small, flexible, spines ending in filaments, beginning behind base of pectoral; soft dorsal high, rays of nearly uniform length; anal with posterior rays elongate, much longer than anterior; caudal elongate, rounded; pectoral broad, round, equal to head; ventrals long, equal to head, broad, without any finem in front; caudal peduncle compressed, its length 1.5 in head, depth 2.25.

Color in alcohol, pale brown, trunk covered all over with very pale minute brown dots; fins very pale brown, dorsals dusky, especially the spinous; 3 vertical pairs of pale brown cross-lines over side of head.

Described from an example 1.1 inches long, taken at Hilo. Type, No. 50654, U. S. N. M.

VITRARIA Jordan & Evermann, new genus.

Vitraria Jordan & Evermann, new genus of *Gobiidae*, subfamily *Luciogobiniæ* (*clarescens*).

Body elongate, translucent, covered with very small thin scales; mouth small, oblique; teeth minute; gill-opening rather narrow; dorsals small, the rays v-11; pectoral rather long; ventrals small, united in a circular disk. Small gobies of the coral reefs, allied to the Japanese genus *Clariger*, but with the first dorsal of 7 small spines instead of 3.

53. *Vitraria clarescens* Jordan & Evermann, new species.

Head 4.6 in length; depth 6.7; eye 3.5 in head; snout 4.5; D. viii-11; A. i, 10.

Body elongate, slender, compressed, greatest depth between dorsal fins; head elongate; pointed, conic, depth 1.75 in its length, width 2; snout rather long, rounded; jaws prominent, upper slightly produced; mouth oblique, maxillary reaching a little beyond anterior margin of eye; teeth not evident; tongue broad, truncate; snout above, interorbital space, and top of head more or less flattened; nostrils well separated, anterior nearly midway in length of snout, posterior close to front of eye; eye rather large, anterior; gill-opening restricted to side, rather small; scales very small; dorsal spines flexible, first dorsal small, the last three spines very small (minute stubs, broken in the type) the fin beginning behind tip of ventrals; soft dorsal beginning a little nearer base of caudal than tip of snout, about

over insertion of anal, and anterior rays of both fins longest, those of anal gradually smaller behind, the last 2 minute and close together; caudal emarginate, lobes rounded; pectoral rather long, lower rays longest; ventrals small, united to form a small round disk whose diameter is 2.25 in head; caudal peduncle compressed, elongate, its length equal to head, its depth 2.25 in head.

Color in alcohol, very pale translucent brown, 7 V-shaped pale brown markings on upper side of body united over back; fins whitish.

We have examined 7 examples obtained at Hilo, each about 1.2 inches in length:

Locality.	Final disposition of specimen.	Locality.	Final disposition of specimen.
Hilo.....	Type, No. 50655, U. S. N. M.	Hilo.....	Cotype, No. 2295, Am. Mus. Nat. Hist.
Do.....	Cotype, No. 7469, L. S. Jr. Univ. Mus.	Do.....	Cotype, No. 24223, Ac. Nat. Sci. Phila.
Do.....	Cotype, No. 2720, U. S. F. C.	Do.....	Cotype, No. 1700, Bishop Museum.
Do.....	Cotype, No. —, M. C. Z.		

Family PTEROPSARIDÆ.

OSURUS Jordan & Evermann, new genus.

Osurus Jordan & Evermann, new genus of *Pteropsaridæ* (*Parapercis schauinslandi* Steindachner).

This genus is allied to *Parapercis*, from which it differs in having the caudal fin deeply forked instead of truncate.

Family FIERASFERIDÆ.

54. *Fierasfer umbratilis* Jordan & Evermann, new species.

Head 10.2 in length; depth 15.2; eye 5 in head; snout 4.8; mouth 2.6; interorbital 4.5.

Body very elongate, compressed; tail very long and tapering gradually in a long point; head elongate, conic, its depth 2 in length, width 2.25; snout rather broad, conic, and produced beyond mandible; mandible broad, flattened below; mouth nearly horizontal, broad, the gape reaching below posterior margin of eye; eye rather small, anterior, without eyelid, and placed about first quarter of head; nostrils well separated, anterior with elevated rim, posterior a short, crescent-like slit; interorbital space rather broad, convex; gill-opening low, inferior, rather long; gill-membrane free from isthmus, its angle nearly an eye diameter distant from posterior margin of eye; dorsal fin almost rudimentary, very low and thin; anal rather broad, in middle its height is about 0.75 in eye, from which point it gradually decreases to tip of tail, where it is rudimentary, like dorsal; tail ending in a fleshy point, caudal fin apparently absent; pectoral small but relatively large, 3.1 in head, rays very minute; lateral line distinct, running down along middle of side on posterior half of tail; no scales.

Color when fresh (field No. 03506), pale olivaceous, with pale greenish spots; a pale bluish streak in each spot over lateral line; pale purplish oblong spots on lower half of body; head greenish-olive, with pale green spots closely set on cheek and jaw; pale purplish dots on upper part of cheek and behind eye; first dorsal same as body, but the spots yellowish; a black spot behind first and second rays, tips pale; rays of second dorsal checked alternately with yellowish-green and white; caudal same as second dorsal, but margin yellowish; anal, yellowish-olive; tip blackish; pectoral and ventrals pale; iris greenish-yellow; dull red streaks radiating from pupil.

Color in alcohol, brown; head and end of tail dark sooty or blackish brown, the color formed of dark points; greater part of anal fin, lower surface of body anteriorly and pectoral and branchiostegal membranes, pale straw color; lower surface of trunk more or less blotched with pale brown.

Our collection contains but 2 specimens of this species, both obtained at Hilo. Type, No. 50656, U. S. N. M. (field No. 03506), a specimen 7.6 inches long; cotype, No. 7470, L. S. Jr. Univ. Mus. (field No. 528), an example, 6.4 inches long.

Fierasfer umbratilis occurs also in the South Seas, and is readily distinguished from most related species by its dark, non-translucent coloration.

F. boraborensis from Borabora, briefly described by Kemp, has the pectoral 6 to 7 times in head.

Family PLEURONECTIDÆ. The Flounders.

55. *Engyprosopon hawaiiensis* Jordan & Evermann, new species.

Head 3.8 in length; depth 1.75; eye 3.25 in head; snout 4.25; interorbital 6.3; maxillary 2.8; D. 79, A. 56; P. 1, 10; V. 1, 5; scales 14-46-15.

Body elongate, deep, rather ovoid, greatest depth about end of pectoral; head very deep, its length 0.7 in depth; upper profile very convex in front, steep; snout short, obtuse; jaws small, produced a little, the mandible slightly projecting; lips rather thin; mouth curved a little, very oblique, the small maxillary reaching a little beyond front margin of eye; teeth in jaws very small, sharp-pointed; eyes well separated, lower anterior, placed in first third of head, the upper about two-fifths an eye diameter posterior; nostrils close together, with elevated rims; interorbital space a little more than half an eye diameter in width, deeply concave; gill-opening small; gillrakers rather short; scales large, finely ctenoid, very small on rays of vertical fins; lateral line strongly arched at first for first two-ninths its length, then straight to base of caudal; dorsal beginning on snout, the anterior rays free for only a short portion of their extremities, first 5 in head, fiftieth 2.1, this the highest region of the fin; anal more or less similar, first 3.25, thirtieth 2; caudal rounded, middle rays longest, 1.1; pectoral short, pointed, 1.4; ventrals rather broad, base of left 3, first and last rays about equal; right ventral smaller; caudal peduncle compressed, its depth 1.9.

Color in alcohol, dark olivaceous brown, fins dark gray-brown, each ray finely specked with olivaceous brown; left pectoral specked with dark brown, right pectoral dull creamy or brownish white like the right side of body.

Type, No. 50657, U. S. N. M., taken at Hilo, the only example we have seen, 3 inches long.

56. *Engyprosopon arenicola* Jordan & Evermann, new species.

*Head 3.6 in length; depth 1.9; eye 4.3 in head; maxillary 3; D. 78; A. 57; P. 1, 11; V. 5; scales 14-36-17. Body elongate, very deep, rather ovoid, the greatest depth at tip of pectoral; head much deeper than long, the upper profile steep, strongly convex; snout obtuse; jaws very oblique, mandible slightly projecting; maxillary very oblique, reaching below anterior margin of eye; lips rather thin, fleshy, fringed along margins; teeth in jaws minute, sharp-pointed; eyes close together, lower anterior placed about first third of length of head; upper eye about one-third an eye diameter posterior; nostrils well separated, with raised fleshy rims forming a flap; interorbital space very narrow, concave; gill-opening rather small, restricted to side; gillrakers small, short, few; scales large, finely ctenoid; lateral line strongly arched for anterior fourth of its length, then straight to base of caudal; anterior dorsal rays free distally for one-half their length, first ray 3 in head, forty-fifth 1.8, which is the highest region of the fin; anal similar to dorsal, but anterior rays not free for half their length; first ray 3.5, thirtieth 1.8; caudal elongate, median rays longest, equal to head; pectoral short, pointed, 1.5; ventrals rather large, the left with its base 5 in head, first ray 3.6, last 2.6, almost entirely in front of the right, which is much smaller; caudal peduncle broad, compressed, its depth 2.2 in head.

Color in alcohol, very pale brown; side marked with many large incomplete rings of blackish or dusky and with a number of dusky spots in between; fins whitish, the vertical or unpaired with large blackish spots on membranes between rays and similar small ones scattered about, those of caudal forming about 4 crossbands; several dusky spots at base of pectoral; right side whitish.

We have seen but 2 examples, both taken at Hilo: Type, No. 50658, U. S. N. M., 2.5 inches long. Cotype, No. 7471, L. S. Jr. Univ. Mus., 1.9 inches long.

Family ANTENNARIIDÆ.

57. *Antennarius drombus* Jordan & Evermann, new species.

Head (to end of opercle) 2.5 in length; depth 1.75; eye 5 in head; snout 4; width of mouth 2; D. 1-1-12; A. 7; P. 12; V. 5.

Body very deep, compressed, back elevated; head deep, with blunt conic profile in front, somewhat oblique above; snout broad, obtuse, surface uneven; mouth broad, large, nearly vertical; maxillary concealed under skin, reaching below anterior part of eye; lips fleshy; teeth in jaws minute, in narrow bands; teeth on palatines rather large, sharp-pointed, none on vomer; tongue broad, thick;

mandible large, with fleshy knob at symphysis, projecting; nostrils circular, well separated, with rounded fleshy rims; interorbital space convex, roughened; top of head with rather large concave pit; eye high, anterior; bait rather short, only reaching a little beyond first spine, with fleshy caruncle at extremity; dorsal spines short, first free, rough, depressible in pit on top of head; second dorsal spine twice length of first, equal to width of mouth, depressible, and united with skin of back to its tip; posterior dorsal rays longest, and the last, like that of anal, united to caudal peduncle by a membrane; anal similar, rounded, elongate, 1.5 in head; pectoral broad; ventral small, rounded; caudal peduncle small, compressed, its depth equal to interorbital space; body rather rough, mucous pores on head and in lateral line with excrescences; side of body with many pointed cutaneous flaps; second dorsal spine and first dorsal ray very rough, also with cutaneous flaps; lateral line very convex, running down toward middle of base of anal.

Color in alcohol, pale plumbeous gray, more or less spotted or mottled with darker; belly and lower surface rather pale, the spots distinct; fins all more or less pale with dark spots, some at basal portions of dorsal and anal darker; iris blackish with radiating lines of golden.

The above description is from the type, No. 50659, U. S. N. M. (field No. 541), taken at Waikiki, near Honolulu.

Another example (field No. 539) shows some differences: Head (to end of opercle) 2.5 in length; depth 1.7; eye 3 in head; maxillary 1.8; width of mouth 1.7; interorbital 3.7; D. 1-1-12; A. 7; P. 12; V. 5.

Body very deep, compressed, back elevated; head deep, gibbous, with blunt conic profile in front, somewhat oblique above; snout broad, obtuse, short, surface uneven; mouth large, obliquely vertical; maxillary large, reaching a little beyond front portion of eye; lips fleshy; teeth in jaws minute, sharp, in bands; teeth on roof of mouth large, sharp-pointed; tongue large, broad, thick; mandible large, with knob at symphysis, projecting; nostrils well separated, close to end of snout, each with elevated fleshy rims, the anterior higher; interorbital space broad, elevated, uneven; top of head with rather large pit; eye high, anterior; bait short, reaching tip of first dorsal spine, with caruncle at extremity; dorsal spines short, depressible; first dorsal spine half length of second, free, depressible in pit on top of head; second dorsal spine large, joined by skin to its tip; dorsal rays of about equal height, seventh 1.3 in head, and the last, like lower portion of last anal ray, adnate to caudal peduncle by a membrane; anal rounded; caudal elongate, rounded; pectoral broad; ventral small; body rather rough, mucous pores on head and lateral line with excrescences; along the lateral line and anterior region of dorsal are many cutaneous flaps; lateral line convex, running down to above middle of anal.

Color in alcohol, dark gray-brown; edges of vertical fins whitish, the pale border rather broad and very distinct along posterior, dorsal, anal, and caudal rays; side with about 6 large round blackish spots; caudal with some pale or indistinct mottlings; pectoral and ventral with rather broad margins, median portion dusky; iris more or less silvery.

A. drombus seems nearest related to *A. nummifer* Cuvier & Valenciennes, originally described from Malabar. Probably the specimens from the South Seas referred to the latter belong rather to *A. drombus*. *A. nummifer* is said to be red in color with dark spots, and, as figured by Dr. Day, differs in several respects from *A. drombus*. Both these species differ from *A. commersoni* and its numerous allies or variants (*A. niger*, *A. leprosus*, *A. rubrofuscus*, and *A. sandvicensis* from Hawaii) in the shortness of the first dorsal spine or fishing rod. This is scarcely longer than the second spine in *A. drombus*, but in *A. commersoni* it is twice as long.

Our collections contain but 2 examples of this species, the type, No. 50659, U. S. N. M. (field No. 541), and cotype, No. 7472, L. S. Jr. Univ. Mus. (field No. 539), both taken on the reef at Waikiki, near Honolulu.

DESCRIPTIONS OF A NEW GENUS AND TWO NEW SPECIES OF FISHES FROM THE HAWAIIAN ISLANDS.

BY DAVID STARR JORDAN AND BARTON WARREN EVERMANN.

Since the publication of our recent paper^a on new species of fishes from the Hawaiian Islands, further studies of our large collections have resulted in the discovery of an interesting new species of *Tropidichthys* and a remarkable new genus of *Scorpenidae*. These are described in the present paper. Illustrations of both species will be given in our final report.

Tropidichthys psegma Jordan & Evermann, new species.

Head 3 in length; depth 2; eye 4.5 in head; snout 1.5; interorbital 2.3; D. 11; A. 11; C. 8; P. 16.

Body short, stout, moderately compressed; snout long, conic; anterior dorsal profile rising evenly to region above gill-opening, at which point the body is deepest; interorbital flat; gill-opening nearly vertical, short, its length less than diameter of eye; mouth low, below axis of body; teeth strong, convex, cutting edge sharp; eye small, supraorbital rim not prominent; caudal peduncle deep, its least depth about 2 in head, its least width 4 in its least depth; length of caudal peduncle from dorsal fin to base of caudal fin 1.3 in head; from base of anal fin 2 in head; dorsal prominence equally distant between tip of snout and posterior base of caudal; base of dorsal 1.5 in height of fin, which latter is 2 in head; anal similar to dorsal, its edge rounded; caudal truncate, or very slightly convex, 1.2 in head; pectoral broad, its base 2.6 in head, free edge oblique, posterior rays 1.5 in anterior ones; body mostly smooth; interorbital space and snout above and on side with small prickles; belly with a few prickles; a scattered patch also on side above pectoral.

Color in alcohol, dark brown above, paler below; 3 or 4 short black lines running forward from orbit, and same number backward; lower part of side, especially posteriorly, and lower part of caudal peduncle, with small roundish black spots; snout and interorbital space crossed by about 12 narrow black lines, these extending down on side of snout; side of snout with 3 or 4 narrow black lines from chin toward eye, separated by paler lines; posterior to these small irregular black spots covering entire cheek, dotted over with fine white specks; ends of spines, pectoral, dorsal, and anal pale whitish, their bases largely brownish black; caudal dark brownish or black.

This species is known to us only from the type, No. 50885, U. S. N. M. (field No. 2561) 3.75 inches long, obtained by us at Honolulu in 1901.

We have compared this specimen with examples of *T. coronatus* Vaillant & Sauvage, obtained by the *Albatross* in 1902, and find them quite distinct.

IRACUNDUS Jordan & Evermann, new genus.

Iracundus Jordan & Evermann, new genus of *Scorpenidae* (*signifer*).

Allied to *Helicolenus* and *Pontinus*. Body rather elongate, compressed, covered with small, weakly ctenoid scales; fins not scaly; head not depressed; formed as in *Sebastes*, the spines moderately developed; head and body with dermal flaps; teeth on jaws and vomer, none on palatines; dorsal fin deeply divided, the spines 11 in number, the fourth much elongate; pectoral rays undivided; anal rays III, 5; ventral rays I, 5; caudal rounded; vent at base of first anal spine; air bladder obsolete.

^a Descriptions of new genera and species of fishes from the Hawaiian Islands. <Bull. U. S. Fish Comm. 1902 (April 11, 1903), pp. 161-208.

Iracundus signifer, Jordan & Evermann, new species.

Head 2.4 in length; depth 3.2; eye 4 in head; maxillary 2; D. x, 1, 9; A. III, 5; P. 17; V. I, 5; scales about 9-55-30, about 45 pores.

Body rather elongate, moderately compressed, the head conic, not depressed; mouth large, oblique, the lower jaw slightly projecting, the maxillary reaching to opposite posterior margin of pupil; teeth in moderate bands in the jaws, the inner teeth in the upper jaw slightly largest; vomer with small teeth; palatines toothless; interorbital area deeply concave, little wider than pupil; spines on top of head low and rather sharp, much as in *Sebastodes*; preocular, supraocular, postocular, tympanic, occipital, and nuchal spines present; a ridge with 2 spines outside the tympanic spine; preorbital moderate, about as wide as eye, with a sharp spine turned forward and a blunt spine turned backward; suborbital stay a narrow, simple ridge, reaching base of preopercular spine, which is straight and very short; 3 lower preopercular spines reduced to blunt points; opercle with 2 slender diverging spines, the upper the larger, their points not reaching edge of membrane; head with numerous, broad, fleshy flaps; a fringed flap at the nostril, 2 on edge of preorbital, 2 on lower limb of preopercle, and a high fringed flap above eye, about as long as pupil; small simple flaps on the cheek, the end of the maxillary, and elsewhere on head; large pores on lower jaw, under suborbital stay, and elsewhere; opercle and upper part of cheek with rudimentary, embedded scales; jaws naked; top of head scaleless, occiput covered with thin skin and scarcely depressed; gillrakers very short, thickish, and feeble, all but about six reduced to mere rudiments; no slit behind last gill; body covered with small, close-set scales, which are slightly ctenoid; scales on nape small, on breast minute; lateral line conspicuous, provided with dermal flaps; numerous scattered flaps on sides of body.

Dorsal fin very deeply notched, the spines rather slender, pungent, the first a little longer than eye, the second and third subequal, about half longer, the fourth greatly elevated, 1.5 in head, almost twice height of third and fifth, which are subequal; sixth, seventh, and eighth slightly longer than fifth, tenth very short, eleventh half length of fourth; soft dorsal high, the longest rays nearly half head; rays of all the fins scaleless; caudal long, rounded, 1.4 in head; anal high, the spines graduated, the third a little longer than second, which is 2.6 in head; longest soft rays 1.8 in head; pectoral with the rays all simple, the longest 1.2 in head, lowest rays shortened and thickened; ventral fins inserted below axis of pectoral, rather long, 1.6 in head, not quite reaching anal, inner rays well free.

Color, pale in alcohol, doubtless vermilion red in life, the flaps on body pinkish; a single jet-black spot about half diameter of pupil near tip of membrane between second and third spines of dorsal.

The only example known is the type, No. 50886, U. S. N. M. (field No. 635), a specimen 4.2 inches long, taken by us on the coral reef at Honolulu.