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A. Seale: New Hawaiian Fishes.

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FIG. 1. EPINEPHELUS QUERNUS SP. NOV.

Seale: New Hawaiian Fishes.

481. *Epinephelus quernus* sp. nov. Fig. 1.

Head 2.50 into length, exclusive of caudal; depth 2.50; D. XI 14; A. III 9; P. 19; V. 1-5. Scales ctenoid, very small, 130 in the lateral line. Opercles and top of head scaled; eye 5.75 into head, equal to interorbital space. Snout 3.85. Body compressed. Mouth protractile. Teeth: Cardiform teeth on jaws, vomer and palatines; those on jaws in two or more rows, the inner ones depressable; two rather prominent anterior canines in each jaw. Tongue smooth. Maxillary reaches posterior of orbit and is without a supplemental bone, its length 2.79 into head. Preopercles serrated, the serri larger at angle. Opercle with three flat spines, the middle one nearer the lower than upper. Pseudobranchiæ developed. Gill-rakers rather flat and triangular in shape, 15 on the lower limb, the longest equal to one-half the diameter of eye. Fins: Caudal rounded, about equal in length to pectorals—1.75 into head. Dorsal spines long and strong, the fourth spine the longest, 2.16 into head, and three times as long as first spine. Ventrals situated directly below the lower base of pectorals and about equal to pectorals in length. Third anal spine the longest, equal in height to caudal peduncle; base of anal 3.20 into base of dorsal; posterior of soft dorsal and anal rounded.

Color in life: Reddish brown, the lower third of belly bluish, with irregular splotches of brown; there are a few indistinct white spots scattered over the body. Basal half of pectorals, ventrals and anal bluish, their outer half black. Dorsal dusky, with a bluish wash on webs of spinous dorsal. Caudal dusky. Iris yellow.

Color in spirits: Reddish brown, lower third of fish with wash of bluish; a few indistinct bluish white dots on body. These dots seem to be arranged in about five vertical rows, but are so indistinct as to be readily passed over without being seen. Fins dusky.

One specimen. Length 10 inches. Honolulu, August 9, 1901.
Hab. Hawaiian Islands. Type No. 481, B. P. B. M.

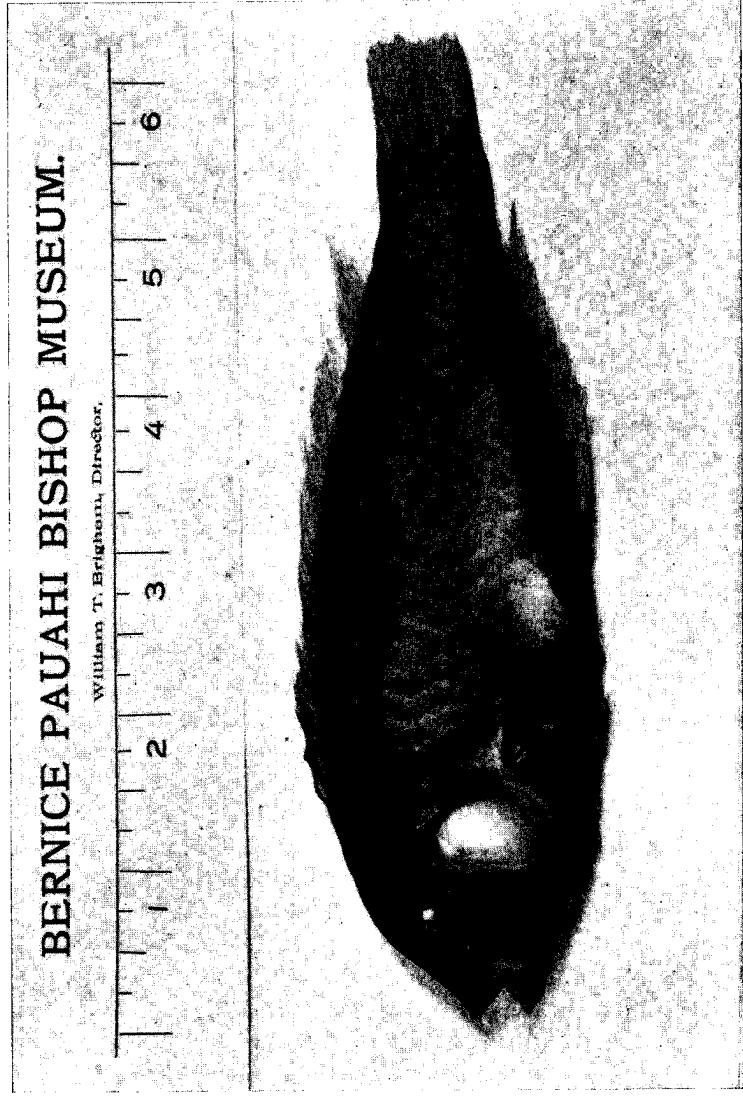


FIG. 2. NOVACULICHTHYS TATTOO SP. NOV.

611. *Novaculichthys tattoo* sp. nov. Fig. 2.

Head, from tip of opercle flap to base of caudal, 3.30; depth 3.20; eye 5.12; interorbital equal to eye; snout 2.75 into head; D. IX 12; A. III 12; V. 1-5; P. 12. Scales 2-27-8. Head naked. Lateral line interrupted. Body oblong, compressed. Teeth: A single row of small sharp-pointed teeth in each jaw, the two anterior ones enlarged canines; the upper jaw has a few minute teeth just inside the outer row near tip; no canine tooth at angle of jaw. Branchiostegals 7. Pseudobranchiæ well developed. Fins: Dorsal spines rather short and weak, the longest spines equal to interorbital space. Caudal rounded. The first ventral spine is somewhat elongate, 1.50 into head. Base of anal 1.50 into head.

Color in life: Very light yellowish brown, with a wash of pinkish. A large yellow splotch on the sides of the belly, from which five pairs of narrow but bright and distinct yellow lines extend entirely around the belly almost like ribs, or the tattoo marks used by the blacks of Australia. Fins all uniform yellowish white, except the spinous dorsal which has a round black dot between each spine along the middle of the fin. In spirits the general color becomes more pink.

One specimen. Length 6 inches. Honolulu, August 9, 1901.
Hab. Hawaiian Islands. Type No. 611, B. P. B. M.



FIG. 3. SERRANUS BRIGHAMI SP. NOV.

625. *Serranus brighami sp. nov. Fig. 3.**

Head, with opercular flap, 3 into length to base of caudal; depth 3; D. x 11; A. III 8; V. 1-5; P. 15. Scales 8-70-17. Lateral line continuous. Top of head, the snout and chin naked. Eye 3.75 into head; interorbital 4; snout 3.10. Body oblong and compressed. Maxillary without a supplemental bone; the entire maxillary, except the distal end, hidden in the preorbital. Preopercle serrated. Opercle with two flat spines at posterior edge. Teeth: Patches of small teeth in jaws, vomer and palatines; jaws with an enlarged outer row of canines; no teeth on tongue. Gill-rakers rather long and flat, 12 on lower limb, the longest equal to diameter of pupil. Preorbital wide. Fins: Caudal deeply forked, the lobes equal; middle ray of fin about equal to diameter of eye. The fourth dorsal spine the longest, 2.75 into head; the last rays of the soft dorsal and anal slightly prolonged, 2 into head; base of anal 3 into base of dorsal. Pectorals long and somewhat falcate, equal to length of head. Ventrals situated slightly posterior of line with pectorals, long, reaching to anus.

Color in life: Ground color pinkish white; three distinct wide yellow bands, as wide as interspaces, extending obliquely down and back on sides of the body; the first from nuchal region to a little posterior of axis of pectorals; the second, from third to sixth dorsal spines, ending above and anterior of vent on a line with lower base of pectorals; the third, from eighth dorsal spine to third dorsal ray, ending above and on a line with fifth-eighth anal rays; posterior of this last band, above the lateral line, there is a wash of yellowish reaching to base of caudal. Dorsal fin cadmium yellow; caudal yellow, the upper lobe with tint of pink; pectorals pinkish. Ventrals and anal white; iris whitish, the pupil deep blue. Sides of head and jaws with a few deeper splotches of pinkish. In spirits the yellow bands fade so that the interspaces show more distinctly than the bands. The fish also becomes a deeper pinkish, the fins becoming whitish.

One specimen. Length 15.50 inches. Honolulu, October, 1901.
Hab. Hawaiian Islands. Type No. 625, B. P. B. M.

*Named in honor of my esteemed friend Wm. T. Brigham, Director of the Bernice Pauahi Bishop Museum.

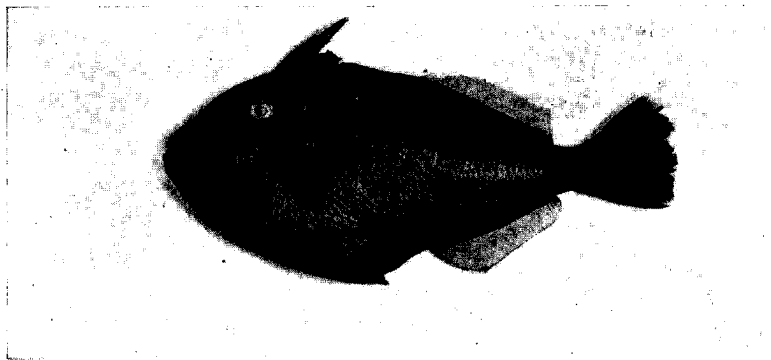


FIG. 4. BALISTES FUSCOLINEATUS SP. NOV.

664. *Balistes fuscolineatus* sp. nov. Fig. 4.

Head 3.50 into length, exclusive of caudal; depth 2; eye 4.50 into head; interorbital 2.50; D. III, 32; A. 29. Scales: Body and head entirely covered with medium-sized scales, ctenoid and scute-like, about 57 on a line from orbit to caudal, 16 in a series from base of pectorals to gape of mouth; six or seven enlarged scute-like plates just back of gill openings. The centre of the scales on the caudal peduncle is slightly raised, forming about five short, roughened lines. Teeth: A single series of white uneven cutting incisors in each jaw—eight in upper. A distinct groove in front of eye. Fins: The ventral spine is immovable, except at tip, the membranous portion of the ventral does not reach beyond the spine. The first dorsal spine is very strong with four lines of barbs pointing down; the length of spine equal to snout; the second and third spines are very small, less than half the length of first. Caudal is slightly rounded, its middle ray 2 into head. Base of soft dorsal very little longer than base of anal.

Color in life: Silvery, with more or less opalescent reflections. Three narrow dusky lines extend from anterior margin of orbit horizontally forward over snout; another dusky line over snout just above upper lip; two dusky lines over interorbital space; two rather indistinct dusky lines along base of dorsal fins, the lower of these lines beginning at orbit; also a narrow indistinct dusky line extends from posterior margin of orbit obliquely back and down to slightly above anal fin; another short dark line from upper posterior edge of orbit to axis of pectorals; two narrow dusky lines extending along bases of ventrals and anal fins. Spinous dorsal black; soft dorsal, pectorals, ventral spine, and anal fin white; caudal dusky. Color in spirits: Similar, excepting the dusky lines are less distinct.

Two specimens. Length 3-5.50 inches. Honolulu, October 20, 1901. *Hab.* Hawaiian Islands. Type of species is No. 664, B. P. B. M.



FIG. 5. SCORPAENOPSIS COCOPSIS JENKINS.

666. *Scorpaenopsis cocopsis* Jenkins.* Fig. 5.

Head 2.45, exclusive of caudal; depth 2.75; eye 6.20 into head; snout 3; interorbital 4; D. XII 10; A. III 5; V. 1-5; P. 18. Scales of moderate size, 44 in lateral line. Head naked, but with many spines and dermal flaps; there are also many dermal flaps all over the body. Teeth villiform in jaws and vomer; no teeth on palatines. A deep fossa below anterior of orbit; interorbital and nauchal regions also deeply concave. Conspicuous dermal flaps just posterior of and overhanging anterior nostril, with a cluster of three spines just above them. Premaxillaries reaching to below hind margin of eye, 1.85 into head. About 12 spines on each side of nauchal fossa, and about 12 on each side of the face, exclusive of the spines at posterior margin of opercle and preopercle. Fins: The caudal is rounded. The dorsal spines are strong, the fourth is the longest, being equal to length of snout; the second anal spine is the longest, 2.88 into head. The base of the anal is contained 3.75 into base of dorsal. Pectorals very large, the upper six rays branched, the longest ray 1.50 into head; the base is 2 into head. Ventrals 1.88 into head.

Color in life: A mottled grayish and dusky, some specimens with reddish. A large dusky splotch covering the highest part of the back from nauchial region to seventh dorsal spine, and down on sides to axis of body; the belly is covered with fine vermiculations of brownish; there is a lighter area on sides of caudal peduncle. The fins are gray, specked and mottled with dusky; a broad submarginal band on caudal somewhat darker; a dark splotch on anterior and posterior of soft dorsal; a black band at base of caudal. The simple rays of the pectorals are yellow, banded with dusky; the branched rays have a dark area near their base. The under surface of the pectorals are yellowish white, with a black band on the middle of the branched rays, and a black area in the axis. The upper surface of the ventrals is almost uniform brown tipped with white. Two specimens. Length 8-9 inches. Honolulu, October 19, 1901. *Hab.* Hawaiian Islands.

*Dr. Jenkins' description of this species was received just as this MS. was going to press. It was thought best to let the description go in, as there seems to be a few slight variations in coloring, etc.



FIG. 6. MONOCANTHUS ALBOPUNCTATUS SP. NOV.

667. *Monocanthus albopunctatus* sp. nov. Fig. 6.

Head 3 into length, exclusive of caudal; D. 11, 38; A. 33; P. 15; eye 5 into head; snout 1.20 into head, its profile concave. First dorsal spine long and strong, about equal in length to snout, and with four rows of small barbs directed down; the insertion of the spine is directly over anterior half of eye. Teeth: Uneven cutting incisors in each jaw; a single row of three on each side of lower jaw; an additional row of small inner teeth in upper jaw. Caudal peduncle with four short round spines on each side. Skin without distinct scales, everywhere rough with a velvety feeling to the touch. Fins: Caudal rounded, its longest ray 1.75 into head. Ventral spine coalesced to the pelvic bone, the membrane rather well developed, extending slightly beyond the spine. Dorsal and anal rays of about equal length; the base of the anal is contained 1.20 into base of dorsal; pectorals short, 2.50 into head.

Color: Light gray, with slight silvery gloss everywhere covered with scattered round white spots about size of pupil. On the lower half of fish there are also a small number of scattered black dots, smaller than the white dots. Dorsal and anal with the basal fourths black, the remaining yellowish white. Caudal dusky. Iris yellow.

One specimen. Length 6 inches. Honolulu, October, 1901.
Hab. Hawaiian Islands. Type No. 667, B. P. B. M.



FIG. 7. THALASSOMA BERENDTI SP. NOV.

681. *Thalassoma berendti* sp. nov. Fig. 7.

Head 2.80 into length, exclusive of caudal; depth 2.80; eye 9 into head; snout 3 into head; interorbital 4. Scales: The scales are very large, cycloid, 3-27-9; head naked; lateral line continuous. D. VIII 13; A. III 12; V. 1-5; P. 14. Teeth: A single row of round canines in each jaw, the two anterior ones enlarged; no canines at angle of jaw. Fins: Dorsal low, the spines rather weak; ventral small, 2.50 into head, and situated below base of pectorals; longest ray of pectorals 1.50 into head; caudal almost square, with its outer rays slightly produced. Base of anal 2 into base of dorsal.

Color in life: Ground color pea green, bluish on belly and chin; three wide, bright red lines, as wide as eye, from head to caudal, the upper one more or less disconnected; the lower one beginning at lower axis of pectorals, extends to lower third of caudal; the second extends from opercular flap to a little above middle of caudal; the upper line extends along base of dorsal. A broad wedge-shaped red line extends from lower posterior margin of orbit obliquely back and down on sides of head, dividing into two on posterior edge of preopercle and extending to lower posterior edge of opercles. A red triangular spot on each side of snout. A row of six round red spots just below base of pectoral fins. Dorsal red at base, a dark green line through middle and the outer half of fin bright green. Anal is similarly colored. Ventrals green. Caudal green, the middle yellowish. Pectorals bluish green. In spirits the fish becomes greenish blue; the red markings become whitish.

One specimen. Length 14.50 inches. Honolulu, October, 1901. *Hab.* Hawaiian Islands. Type No. 681, B. P. B. M.

Ordered printed October 11, 1901.
