

FRESH-WATER FISHES  
FROM THE MARQUESAS AND  
SOCIETY ISLANDS

By

HENRY W. FOWLER

BERNICE P. BISHOP MUSEUM

OCCASIONAL PAPERS

VOLUME IX, NUMBER 25

PACIFIC ENTOMOLOGICAL SURVEY

PUBLICATION No. 4

PUBLISHED BY THE MUSEUM

HONOLULU, HAWAII

1932



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ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA

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## INTRODUCTION

The fish reported in this paper were obtained by the Pacific Entomological Survey for Bernice P. Bishop Museum. The collection consists of 229 specimens, most of which are from the Marquesas. Nine species are represented, several of which are rare or uncommon and are noted in detail or figured here. In the Gobiidae a new genus, *Bryanina*, together with its genotype, *B. inana*, and a new species, *Sicyopterus marquesensis*, were collected.

## MURAENIDAE

### *Muraena mauritiana* (Bennett).

One, 262 mm., from Vaikeu, Taiohae Valley, Nukuhiva, Marquesas Islands, October 11, 1929, Mumford and Adamson. Native name, *kuee*.

## OPHICHTHYIDAE

### *Caecula polyophthalmus* (Bleeker).

Depth  $28 \frac{3}{5}$  to  $30 \frac{1}{5}$ ; tail  $1 \frac{1}{8}$  to  $1 \frac{1}{5}$  in rest of body; head 9 to  $10 \frac{2}{5}$ ,  $4 \frac{5}{6}$  to 5 to vent, width  $3 \frac{3}{4}$  to 4 in its length. Snout  $4 \frac{1}{2}$  to  $5 \frac{1}{5}$  in head; eye 15 to 20,  $3 \frac{2}{5}$  to  $3 \frac{1}{2}$  in snout, 1 to  $1 \frac{1}{3}$  in interorbital; mouth cleft  $2 \frac{1}{5}$  to  $2 \frac{1}{4}$  in head; 4 or 5 premaxillary teeth in angular series, several of largest visible with jaws closed; teeth in jaws pointed, slender, recurved, uniserial, also uniserial row on vomer; front nostril slit nearly midway in snout length, followed by small fleshy papilla; hind nostril slit in upper lip before eye, with conspicuous barbel or papilla-like point; interorbital 20 to 22, narrow, level. Gill opening well inclined, with larger duplicature anteriorly, interspace less than gill opening, which  $1 \frac{1}{3}$  to  $1 \frac{2}{3}$  in snout.

Dorsal origin behind gill opening space equal to  $3 \frac{1}{4}$  to  $3 \frac{3}{4}$  in head.

Brown above, under surface cream white, with median narrow band of dark or dusky dots on head below and belly, also group just before vent. Head and predorsal above with double row of buff round spots and transverse buff band or bar across head posteriorly. Row of yellow spots, wide spaced, along lateral line. Lips pale or creamy, with groups of dark dots. Iris gray.

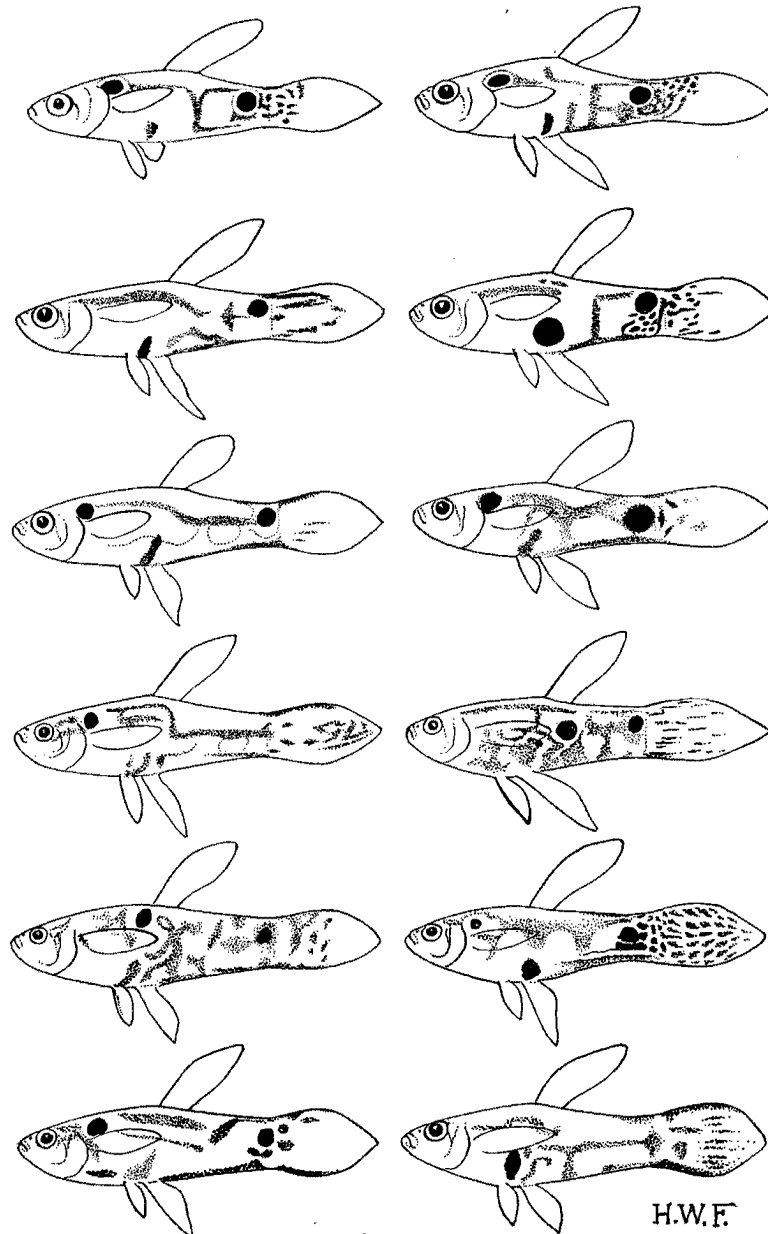


FIGURE 1. Variation of color pattern of males, *Lebistes reticulatus* (Peters).

Six, 180 to 212 mm., found burrowing in sand at mouth of stream, Tahauku Bay, Hivaoa, Marquesas Islands, Mumford and Adamson.

## POECILIIDAE

**Lebistes reticulatus** (Peters) (fig. 1).

Twenty-one males, 20 to 28 mm., and eleven females, 25 to 42 mm., Lake Vaihiria, Tahiti, Society Islands, November 1, 1929, A. M. Adamson.

All these examples agree well with the descriptions of this introduced species. All show the scales of the back and upper surfaces darker marginally. They differ, however, in one feature which I do not find in either description or figure. In the females not only the dorsal, but also the anal, have a dark subbasal horizontal band. None shows the variegated markings of the male.

## MUGILIDAE

**Mugil macrolepis** A. Smith (fig. 2).

Depth  $3\frac{2}{3}$  to  $3\frac{3}{4}$ ; head  $3\frac{1}{4}$  to  $3\frac{1}{3}$ , width  $1\frac{2}{3}$  to  $1\frac{7}{8}$ . Snout  $3\frac{1}{5}$  to 4 in head; eye  $3\frac{1}{5}$  to  $3\frac{1}{2}$ , greater than snout, 1 to  $1\frac{1}{8}$  in interorbital, without adipose lids; mouth as seen below forms broadly obtuse angle, width  $3\frac{1}{4}$  to  $3\frac{1}{3}$  in head; maxillary well exposed below pectinate lower edge of preorbital, reaches eye, length in profile  $3\frac{2}{5}$  to  $3\frac{2}{3}$  in head; row of equal minute teeth only in upper jaw; interorbital  $2\frac{3}{4}$  to  $2\frac{7}{8}$ , nearly level. Gill rakers 24 + 35, fine, slender,  $\frac{3}{4}$  of gill filaments, which  $\frac{1}{2}$  of eye.

Scales 29 to 30 in median lateral series to caudal base; 11 transversely between second dorsal and anal origins; 20 or 21 predorsal; 3 rows on cheek.

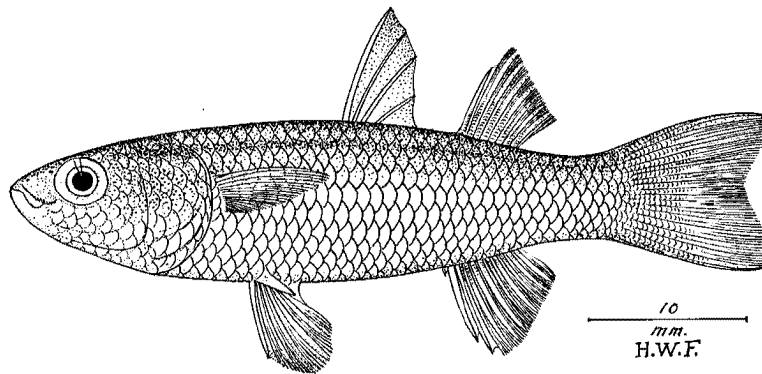


FIGURE 2. *Mugil macrolepis* A. Smith.

Few small scales on soft dorsal basally. Caudal scaly basally. No long pectoral axillary scale. Scales with 6 or 7 basal radiating striae; circuli fine, obscure apically.

D. IV-I, 8, 1, first spine  $1\frac{1}{2}$  to  $2\frac{1}{3}$  in head, first branched ray  $1\frac{4}{5}$  to 2; A. III, 9, 1, first branched ray  $1\frac{3}{4}$  to  $2\frac{1}{10}$ ; caudal 1, well forked; least depth of caudal peduncle  $2\frac{1}{4}$  to  $2\frac{2}{5}$ ; pectoral  $1\frac{2}{5}$  to  $1\frac{3}{5}$ ; ventral  $1\frac{2}{5}$  to  $1\frac{3}{5}$ .

Back olive with gray-brown tinge, sides grayish and under surfaces whitish. Muzzle dusted with brown. Iris silver gray. All fins brown, except whitish ventrals and pectorals darker basally.

Five, 39 to 60 mm., near sea level, Hakahetau Valley, Uapou, Marquesas Islands, December 4, 1931, LeBronnec. Native name, *eava*.

#### SYNGNATHIDAE

##### *Coelonotus platyrhynchus* (Duméril).

Five, 95 to 119 mm., near mouth of river, Hanavave Valley, Fatahiva, Marquesas Islands, September 12, 1930, LeBronnec. Native name, *potu hoone*.

Five, 100 to 113 mm., at mouth of river, Hakahetau, Uapou, Marquesas Islands, December 4, 1931, LeBronnec. Native name, *tokevai*.

Curiously, only in the largest specimen is the snout depressed, as shown in my previous Uahuka material.<sup>1</sup> All the others have it strongly compressed, so that its width is less than its depth. Also interesting is the brood pouch, abdominal, containing 34 eggs longitudinally and 5 rows transversely, all agglutinated in a single layer. In a smaller specimen I count 28 longitudinally and 4 rows transversely. The eggs are gray to yellowish. The black ocelli are variable and may extend on the tail anteriorly. Dunker and Mohr's figure of this species fails to show the black ocelli, which are small though always prominent on the trunk.

#### ELEOTRIDAE

##### *Eleotris fusca* (Schneider).

Four, 55 to 100 mm., Papuaei Valley, Hivaoa, Marquesas Islands, August 30, 1929, Mumford and Adamson.

<sup>1</sup>Fowler, H. W., Fishes of the Pinchot expedition: U. S. Nat. Mus., Proc., vol. 80, art. 6, p. 7, fig. 2, 1932.

Six, 54 to 155 mm., near sea level, Omoa [Oomoa]<sup>2</sup> Valley, Fatuhiva, Marquesas Islands, September, 1930, LeBronnec. Native names *topu* and *hahutu*.

In small examples 2, or sometimes 3, blackish blotches before pectoral base, of which uppermost usually darker and more persistent.

## GOBIIDAE

***Sicyopterus marquesensis***, new species (fig. 3).

Depth  $5\frac{2}{3}$  to  $6\frac{1}{2}$ ; head 4 to  $4\frac{1}{5}$ , width  $1\frac{3}{5}$  to  $1\frac{4}{5}$ . Snout  $2\frac{1}{2}$  to  $2\frac{3}{4}$  in head; eye 4 to 5,  $1\frac{1}{4}$  to 2 in snout,  $1\frac{2}{5}$  to  $2\frac{1}{4}$  in interorbital; maxillary reaches  $\frac{1}{2}$  in eye, length 2 to  $2\frac{1}{5}$  in head; upper lip entire, toothless, with slight median notch and more conspicuous lateral one each side below nostril; within upper lip small whitish papilla below median notch and dozen each side before teeth; upper teeth of three contracted cusps, long, conic, pointed, tip of each bent, appearing bifid or simple; lower teeth with outer row of fine, short, flexible, uniserial slender points, tips bent or slightly recurved inward; lower jaw with inner row of six strong, erect, simple, conic teeth on each ramus, first largest, each little curved and sixth next in size after first; interorbital 3 to  $3\frac{1}{5}$ , broad, level. Gill rakers as 12 small rudimentary papillae, much shorter than gill filaments, which  $\frac{3}{4}$  of eye.

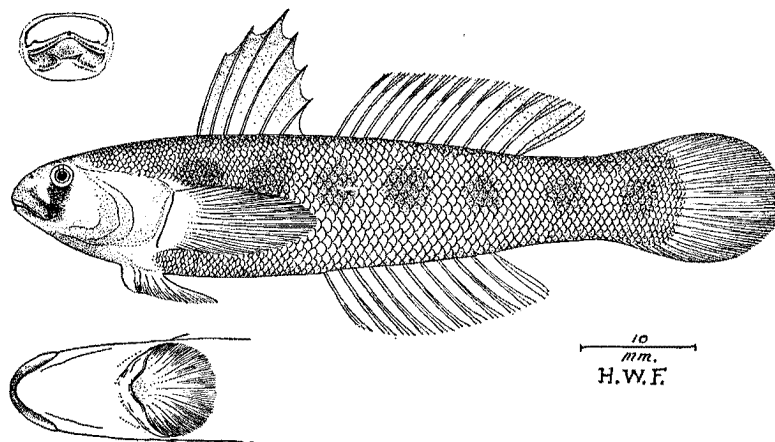


FIGURE 3. *Sicyopterus marquesensis*, new species. Type.

Scales 55 to 62 in median lateral series to caudal base and 7 or 8 more on latter; 16 to 18 transversely at soft dorsal and anal origins, 23 predorsal. Head largely naked, except scaly occiput. Scales small and crowded on predorsal, front of back and belly. Scales with 13 to 16 straight slender apical uenticles, in one row; 12 to 13 basal radiating striae; circuli very fine.

<sup>2</sup> Geographical names in the collection records of the Pacific Entomological Survey are preserved in brackets where they differ from Museum usage.

D. VI-12, 1, third spine  $1\frac{1}{8}$  to  $1\frac{2}{3}$  in head, second ray  $1\frac{1}{2}$  to 2; A. 11, 1, fourth ray  $1\frac{3}{4}$  to  $2\frac{1}{5}$ ; caudal 1, rounded; least depth of caudal peduncle  $1\frac{2}{3}$  to 2; pectoral  $1\frac{1}{8}$  to  $1\frac{1}{5}$ ; ventral  $1\frac{2}{5}$ .

Dark olive brown generally. About 7 large, indistinct, dark or neutral black blotches along side. Under surface of body, belly, and tail whitish. Lips neutral gray. Iris dark neutral gray. Fins, except pale or whitish ventrals, all dark neutral gray. Upper and lower edges of both caudal and pectorals sometimes pale to light or even whitish.

Diagnosis. Apparently differs from *Sicyopterus cynocephalum* (Valenciennes), as described from the Moluccas by Ogilvie-Grant<sup>3</sup> from three specimens 124 mm. long, in the smaller eye and fewer scales. He gives the eye as "half the interorbital space" and scales "L. lat. 75-80." He also says, "Dorsal and anal fins orange, second dorsal sometimes with large regular brown spots on the rays."

Type no. 3493, Bernice P. Bishop Museum, elevation, 1,700 feet, Tohetaivau, Omoa [Oomoa] Valley, Fatuhiva, Marquesas Islands, August 27, 1930, LeBronnec. Native name, *tuiwi*. Length, 65 mm. Also 12 others with same data, paratypes, 42 to 63 mm.

Three, 31 to 46 mm., Omoa [Oomoa] Valley, Fatuhiva, Marquesas Islands, elevation 300 feet, September 16, 1930, LeBronnec. Native name, *tuiwi*.

### ***Stiphodon elegans* (Steindachner) (fig. 4).**

Depth  $5\frac{3}{4}$  to  $6\frac{2}{5}$ ; head  $4\frac{4}{5}$  to 5, width  $1\frac{2}{5}$  to  $1\frac{3}{5}$ . Snout  $3\frac{4}{5}$  to 4 in head; eye  $3\frac{1}{5}$  to  $3\frac{1}{4}$ , greater than snout or interorbital; maxillary reaches  $\frac{1}{3}$  to  $\frac{2}{5}$  in eye, length 3 to  $3\frac{1}{5}$  in head; lips entire; teeth slender, clavate, appearing as simple swollen conic points, though evidently contracted tricuspid with median cusp of each longest; inner pair of lower wide set front canines; interorbital  $3\frac{1}{5}$  to  $3\frac{1}{2}$ , level or but slightly concave. Gill rakers very minute or vestigial papillae; gill filaments  $1\frac{4}{5}$  in eye.

Scales 27 or 28 in median lateral series to caudal base and 3 more on latter; 10 transversely between soft dorsal and anal origins; 10 or 11 predorsal to occiput. Head naked. Scales smaller on belly than elsewhere. Scales with row of 17 or 18 parallel, slender, rather long, apical spinules; 11 to 16 basal radiating striae; circuli moderately coarse.

D. in male VI, in female VII-10, third spine  $1\frac{1}{3}$  in head in male,  $1\frac{1}{8}$  times head in female, second ray  $1\frac{1}{4}$  to  $1\frac{1}{2}$  in head; A. 10, second ray  $1\frac{1}{5}$  to  $1\frac{3}{4}$ ; caudal  $1\frac{1}{3}$  times head; pectoral  $1\frac{1}{8}$  to  $1\frac{1}{3}$ ; least depth of caudal peduncle  $1\frac{2}{3}$  to  $1\frac{7}{8}$  in head; ventral  $1\frac{1}{5}$  to  $1\frac{3}{5}$ .

Male with back and tail above light brown. Under surface of head, abdomen, and tail whitish, peritoneum showing through on abdomen silvery gray. Dark or dusky brown streak each side of snout above, over eye, and then forks to form single dark line to predorsal. Dark or dusky brown line from behind eye bounding brown color of back to upper surface of caudal peduncle. Down middle of back row of 5 pale spots. Blackish band around snout, below

<sup>3</sup> Ogilvie-Grant, W. R., A revision of the genera *Sicydium* and *Lentipes*: Zool. Soc. London, Proc., p. 166, 1884.



eye back to pectoral, then brownish black as broad dark lateral band to caudal base, appearing as if with about 10, still darker blotches in its course, with rounded jet black spot less than eye at caudal base. Iris dark gray. Each dorsal spine and ray with 3 or 4 dark spots, on soft dorsal subbasal spot blackish. Anal with similar, though much paler, dark spots. Caudal pale or whitish, with 4 blackish transverse bands. Pectoral pale, with 4 or 5 very indistinct transverse bands. Ventral transparent whitish.

Female dark or dusky brown on back. Sides with numerous indistinct, parallel, vertical, close-set, obscure brownish streaks. Under surface of body paler, head below and belly tinged with grayish. Iris dark gray. Fins all dark gray to dusky, upper and lower caudal edge paler. Ventrals gray.

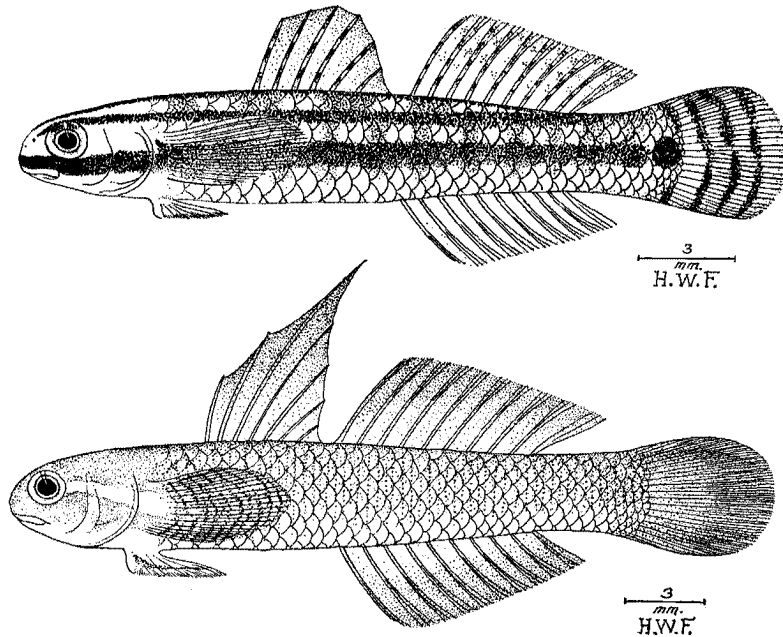


FIGURE 4. *Stiphodon elegans* (Steindachner): upper, male from Hakahe-tau River, Uapou, Marquesas; lower, female from Vai Tuoru River, Tahiti, Society Islands.

Twenty-three, 16 to 30 mm., elevation 350 feet, Vai Tuoru River, Papenoo Valley, Tahiti, Society Islands, October 26, 1928, A. M. Adamson. Native name, *tuivi*.

Twenty-three, 14 to 17 mm., Taiohae, Nukuhiva, Marquesas Islands, September, 1929, Mumford and Adamson.

Twenty-four, 17 to 28 mm., elevation 300 feet, Omoa [Oomoa] Valley, Fatuhiva, Marquesas Islands, September 16, 1930, LeBron-nec. Native name, *tuivi*.

Seventy-eight, 15 to 28 mm., Hakahetau River near sea level, Uapou, Marquesas Islands, December 4, 1931, LeBronnec. Native name, *inaka*.

This species is figured by Beaufort,<sup>4</sup> who identifies the genotype of *Stiphodon* (*Stiphodon semoni* Weber) with the present species. His figures, especially that of the female, do not show exactly the type of color pattern of my material.

#### BRYANINA new genus

Type *Bryanina inana*, new species.

Body elongate, moderately slender, trunk and tail compressed. Head moderate. Muzzle obtuse. Eye large, high, anterior. Mouth small, inferior. Lips entire. Lower labial teeth fine, slender, small. Pair of wide-set inner lower canines. Scales large, begin on posterior half of trunk, ctenoid, uniform. Dorsal spines 6, rays 10. Anal rays 11. Caudal longer than head.

Diagnosis. Differs from *Sicyoptus* Gill in the presence of distinct lower labial teeth and greater anterior scaleless region of trunk. Not only is the head scaleless, but also the entire front half of the trunk. Named for Edwin H. Bryan, Curator of Collections, Bernice P. Bishop Museum.

***Bryanina inana***, new species (fig. 5).

Depth  $5\frac{1}{4}$  to  $7\frac{3}{4}$ ; head  $4\frac{1}{8}$  to  $4\frac{1}{5}$ , width  $1\frac{1}{3}$  to  $1\frac{7}{8}$ . Snout  $3\frac{1}{2}$  to  $3\frac{3}{4}$  in head; eye  $3\frac{2}{5}$  to  $3\frac{1}{2}$ , subequal with snout or interorbital; maxillary reaches  $\frac{1}{5}$  to  $\frac{1}{4}$  in eye, length  $2\frac{1}{2}$  to  $2\frac{4}{5}$  in head; upper lip entire; teeth fine, slender, close-set, upper simple and lower forked or bifid; pair of lower wide set, rather large, inner curved canines; interorbital  $2\frac{2}{3}$  to  $3\frac{1}{2}$ , level. Gill rakers as minute or vestigial papillae; gill filaments  $1\frac{3}{4}$  in eyes.

Scales 30 to 32 in median lateral series to caudal base and 3 more on latter, beginning on body below middle of spinous dorsal; 14 transversely. Head, predorsal, chest and trunk till opposite middle of first dorsal and belly nearly to vent, naked. Caudal base scaly. Scales with row of 6 to 8 slender, long, straight, apical denticles; 10 basal radiating striae; circuli rather large and coarse.

D. VI-10, third spine  $1\frac{1}{2}$  to  $1\frac{4}{5}$  in head, third ray  $1\frac{1}{2}$  to  $1\frac{4}{5}$ ; A. 11, third ray  $1\frac{1}{3}$  to  $1\frac{3}{4}$ ; caudal  $1\frac{1}{8}$  times head; least depth of caudal of peduncle  $1\frac{7}{8}$  to 2 in head; pectoral  $1\frac{1}{5}$  to  $1\frac{1}{4}$ ; ventral  $1\frac{2}{3}$  to  $1\frac{3}{4}$ .

Pale or light brown, still paler to whitish on under surfaces. Along side

<sup>4</sup> Beaufort, Fishes of the eastern part of the Indo-Australian archipelago . . . : Bijdr. tot de Dierkunde kon. zoöl. genoots. nat.-art. magistra, Aflv. 19, p. 143, 1913.

of head 3 large darker brown blotches and 7 or 8 on rest of body, of which third forked above and sprinkled with some minute black dots. Dark or dusky spot below eye. Iris gray. Dorsals and caudal grayish, other fins pale to whitish.

Diagnosis. Contained in the genus. Differs from *Sicyopus zosterophorus* (Bleeker) and *S. multisquamatus* Beaufort, in coloration.

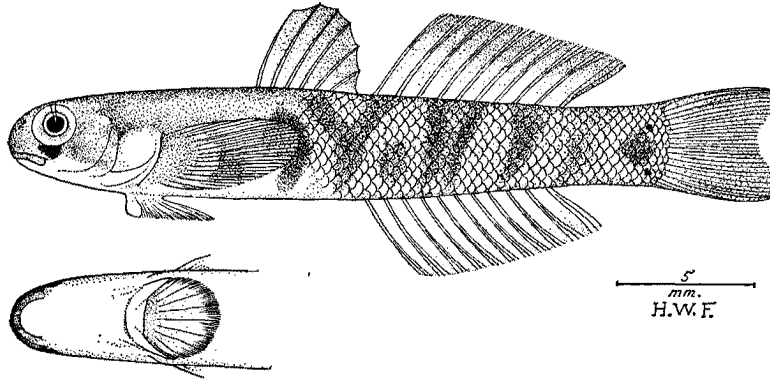


FIGURE 5. *Bryanina inana*, new species. Type.

Type no. 3494, Bernice P. Bishop Museum, elevation 350 feet, Vai Tuoru River, Papenoo Valley, Tahiti, Society Islands, October 26, 1928, A. M. Adamson. Length, 33 mm. Also two paratypes, same data, 30 to 32 mm.

Eight, 19 to 29 mm., at mouth of river, Hanavave Valley, Fatuhiva, Marquesas Islands, September 12, 1930, LeBronnec. Native name, *inana*.

One, 25 mm., elevation 300 feet, Omoa [Oomoa] Valley, Fatuhiva, Marquesas Islands, September 16, 1930. Native name, *inana*.

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