11

A New Stathmonotid Blenny from the Pacific Coast of Mexico

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(Text-figure 1)

DURING the summer of 1951 a large part of the eastern Pacific collections made under the auspices of the New York Zoological Society was presented to the Natural History Museum of Stanford University. The material from the Eastern Pacific *Zaca* Expedition, 1937-38, disclosed, among other things, a pair of small blennies which proved to be undescribed.

These specimens were immediately referred to the genus *Parastathmonotus* Chabanaud because of the presence of supra-orbital cirri and the absence of vomerine teeth, but the later staining of a specimen showed errors in Chabanaud's generic description great enough to render his genus untenable. The first of these was the discovery of a splint before the ventral rays of *Parastathmonotus sinus-californici* Chabanaud (1942, p. 115, figs. 3-7) and of the new species. Also, several specimens of *Stathmonotus culebrai* Seale (1940, p. 42, pl. 5) were examined and were found to be very similar to the new species except for the absence of a supra-orbital cirrus; *culebrai* lacks vomerine teeth (another of Chabanaud's generic distinctions), a few of which are present in both the nominal Atlantic species. Thus, evidently only the presence of supra-orbital cirri separates *Parastathmonotus* and *Stathmonotus*. In view of the overwhelming similarities between *Stathmonotus culebrai* and the new form, the cirrus difference is considered only specific and the two genera are united. The alternative would be to recognize separate genera in the Atlantic and the Pacific, distinguished by the presence or absence of a few teeth on the vomer. It should also be mentioned that Bean, Jordan & Evermann, Chabanaud and Beebe & Tee-Van, have all made statements to the effect that the stathmonotid blennies have no lateral lines. Lateral lines have been found on specimens of *Stathmonotus sinus-californici, S. culebrai* and the new species, no specimens of the Atlantic species having been examined for this character by the writer.

The following is an artificial key to the stathmonotid blennies (now all of a single genus), based to a large extent upon the literature:

1a. Supra-orbital cirrus present (Pacific).

2a. Cirrus or flap present on posterior rim of anterior nostril; dorsal spines 37-38; anal II, 20-II,22; depth 6.1-6.6 and head 4.5-4.7 in standard length (southern Mexico) *Stathmonotus lugubris,* new species

2b. No cirrus on anterior nostril; dorsal spines 40-45; anal II,22-II,26; depth 7.1-9.9 and head 4.9-5.8 in standard length (Gulf of California) . . . . . *Stathmonotus sinus-californici* (Chabanaud)

1b. Supra-orbital cirrus absent (Tropical American Atlantic and Pacific).

3a. Teeth absent from vomer; dorsal spines 39-42; pectoral fins 2.5 in length of head (Costa Rica, Pacific) *Stathmonotus culebrai* Seale

3b. A few teeth present on vomer; dorsal spines 47-51; pectoral fins about 4.0-6.1 in length of head (Atlantic).

4a. Dorsal spines 49-51; anal II,26-II,29 (Key West; Antigua*) *Stathmonotus hemphilli* Bean

4b. Dorsal spines 47; anal II,25 (Port-au-Prince Bay, Haiti) *Stathmonotus corallicola* Beebe & Tee-Van

STATHMONOTUS LUGUBRIS, new species

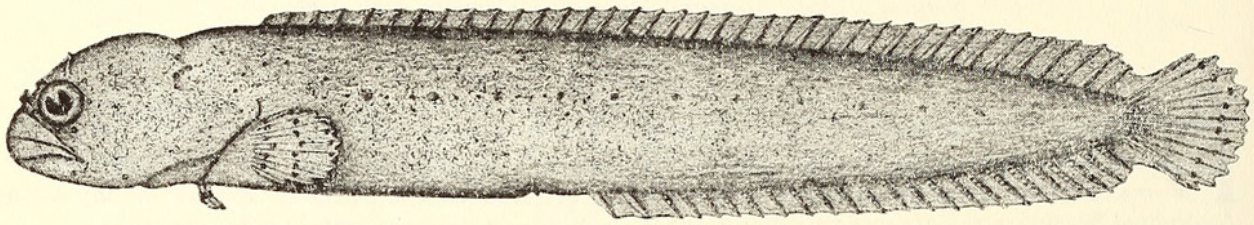
Holotype.—Stanford No. 17748, 23 millimeters in standard length, from Port Guatulco, Golfo de Tehuantepec, Mexico (at approximately 15° 43′ 30″ North Latitude, 96° 08′ West

* See Herre, 1942, p. 19, where the dorsal count is incorrectly given as 50; it is actually 49.

Longitude). Collected on the Eastern Pacific *Zaca* Expedition, 1937-38, of the New York Zoological Society; December 3, 1937.

Paratype.—1 specimen, 19 millimeters in standard length, with the same data as the holotype. This specimen was cleared and stained after being measured and described, to check more closely on the teeth and ventral rays.

Diagnosis.—A new species distinguished mainly by the following combination of characters: a supra-orbital cirrus, a cirrus or flap on posterior rim of anterior nostril and a low number of dorsal spines and anal rays. It is closest to *Stathmonotus sinus-californici* (Chabanaud).



TEXT-FIG. 1. Pencil drawing of the holotype of *Stathmonotus lugubris;* 23 millimeters in standard length. Drawn by Dr. John C. Briggs.

Description.—In the description that follows, the proportions for the holotype are given first, followed, in parentheses, by those for the paratype. Body slender, elongate, resembling the northern "eel-blennies" in general conformation though probably allied most closely to fishes like the emblemariids. Greatest depth at origin of dorsal fin 6.6 (6.1) in standard length. Body only slightly compressed anteriorly; width of body at anus 2.6 (2.6) in length of head.

Head moderate, 4.7 (4.5) in standard length, much more massive on the holotype (a male) than the paratype (a female). Eyes lateral, their diameter 4.9 (4.4) in head. Interorbital narrower than eye, convex, its least bony width 7.5 (7.6) in length of head. Snout slightly shorter than eye, blunter on the holotype than on the paratype, its length 5.4 (5.6) in head. A single short cirrus present above each eye, those of female more expanded, distally, than those of male. Cirri simple with the exception of that above the right eye of the holotype which appears to be very slightly bilobed. However, this condition may be apparent rather than real, and a result of preservation or handling of the specimen. Distance from tip of snout to supra-orbital cirrus contained 2.9 (3.1) times in length of head; length of cirrus 8.2 (7.5) in head. Anterior nostril tubular, projecting up and forward at an angle, bearing a pointed flap or cirrus on its posterior rim; distance of front rim of anterior nostril from tip of snout 9.2 (8.4) in length of head. Posterior nostrils in front part of interorbital area, non-tubular but with a slightly raised, flared border; distance of fore rim of posterior nostril from tip of snout 4.9 (5.5) in head. Gape moderately long, maxillary reaching posterior margin of eye or beyond on the male, failing to reach that point on the female; distance from tip of snout to posterior end of maxillary 2.5 (3.0) in head. This sexual dimorphism parallels that noted by Clark Hubbs (1952, p. 70) for the species of *Paraclinus* Mocquard. Lips wide: upper lip widest, broader than diameter of pupil, continued across tip of snout although incised, with a free edge; lower lip with free edges but not continuous across tip of chin. Gill membranes united, forming a free fold across isthmus which extends posteriorly so as to overlap slightly the bases of the ventral fins. Upper jaw teeth in two series which are separated anteriorly and meet posteriorly; outer series of about 10 (on the paratype) conical teeth whose tips are slightly recurved; inner series of about the same number of similar teeth, though somewhat smaller. Mandibular teeth 11 or 12, irregularly biserial anteriorly, in a single series laterally, similar in shape and size to the outer teeth of the upper jaw. No vomerine teeth. Branchiostegals 6.

Pores of lateral line system of head arranged as shown in figures 4-6 of Chabanaud's original description of *Parastathmonotus sinus-californici* (1942, p. 116). Lateral line also present on body, the pores somewhat indistinct, beginning rather high on shoulder and curving down to the median longitudinal axis of the body below the area between second and fourth dorsal spines; eleven or twelve pores in a horizontal series behind the downward curve to above first anal spine. Head and body completely scaleless.

Dorsal and anal fins long and low, connected by a membrane with outer caudal rays. Dorsal of spines only, 38 on the holotype, 37 on the paratype. Anal with two spines anteriorly, followed by 22 (20) soft unbranched rays. Dorsal origin above or but slightly behind posterior extent of opercular flap, its distance from tip of snout 4.2 (4.0) in standard length. Anal origin

immediately behind anus, below fifteenth dorsal spine, its distance from tip of snout 2.0 (1.9) in standard length. The lengths of certain of the individual rays in the vertical fins are listed in the tabulation of proportions. Ventrals I,2 (the spine a short, thin splint), short, placed before pectoral base, the front portion of their bases partially covered by fold of gill membranes over isthmus. Length of ventrals 3.8 (3.8) in head, 17.7 (17.3) in standard length. Pectoral fins short, rounded, middle rays longest, their length contained 11.8 (10.6) times in standard length, reaching to below fourth dorsal spine. Bases of pectorals vertical, their upper ends covered by opercular flap; pectoral rays 10-10 on both specimens. Caudal fin short, somewhat rounded, the middle rays slightly the longest, their length 2.1 (1.9) in length of head; caudal with 12 (11) unbranched but articulated rays. Total number of vertebrae 43.

Color in Alcohol.—The color has doubtless been largely lost from the types, but a portion of the color pattern still remains. Ground color cream or light buff. A series of evenly spaced, darker spots along midline of body on male, none on female. Spots on individual rays of pectoral and caudal fins in three irregular lines which are roughly parallel to the outer margins of these fins. Ventral fins each with two crossbands, the first just distal to midpoint of fin length, the second near the tips of the fins. Female with several dark markings radiating outward around margin of eye, and with three or four dark transverse bands on either side of lower surface of head which meet on the ventral midline.

Sexual Dimorphism.—The more massive and swollen head of the male, which is so characteristic of *Stathmonotus sinus-californici,* is also exhibited by the holotype of the new species. The crosshatches on the side and lower surface of the female head are also characteristic of both these species. The maxillary does not extend as far posteriorly on the female as on the male.

The following is a tabulation of measurements made on the types of *Stathmonotus lugubris* in thousandths of standard length:

Length of head	213; 221
Greatest depth of body	152; 163
Tip of snout to origin of dorsal	239; 253
Tip of snout to base of ventrals	174; 174
Tip of snout to origin of anal	509; 518
Width of body at anus	83; 84
Tip of snout to anterior nostril	23; 26
Tip of snout to posterior nostril	43; 41
Tip of snout to cirrus	72; 71
Diameter of eye	43; 50
Length of snout	39; 39
Least width of bony interorbital	28; 29
Tip of snout to posterior end of maxillary	85; 74
Length of cirrus	26; 29
Length of pectoral fins	85; 95
Length of ventral fins	57; 58
Length of caudal fin	102; 118
Length of:	
First dorsal spine	18; 20
Tenth dorsal spine	36; 33
Twentieth dorsal spine	51; 42
Thirtieth dorsal spine	58; 54
Last dorsal spine	46; 44
First anal spine	39; 41
Second anal spine	49; 49
First anal ray	51; 57
Tenth anal ray	54; 63
Twentieth anal ray	58; ..
Last anal ray	47; 44

Comparison with Related Forms.—The most closely related species is *Stathmonotus sinus-californici* (Chabanaud) from the Gulf of California, of which specimens from the following localities in the Gulf have been examined:

East side of Isla San Pedro Nolasco (27° 58′ North Latitude, 111° 24′ West Longitude).

West side of Isla Partida–Norte (28° 53′ North Latitude, 113° 04′ 20″ West Longitude).

Point just west of Red Bluff Point, south shore of Isla Tiburon (28° 45′ 25″ North Latitude, 112° 22′ West Longitude).

Northwest shore of Bahia San Francisquito, Baja California (28° 26′ 33″ North Latitude, 112° 53′ 45″ West Longitude).

Along eastern face of point forming north end of Bahia San Francisquito, Baja California (28° 26′ 47″ North Latitude, 112° 53′ 30″ West Longitude).

Northeast shore of Isla Ildefonso (26° 38′ North Latitude, 111° 26′ 30″ West Longitude).

North side of Monument Point, Isla Mejia (29° 32′ 50″ North Latitude, 113° 36′ 05″ West Longitude).

Southwest end of Isla San Pedro Martir (28° 20′ 25″ North Latitude, 112° 20′ 30″ West Longitude).

North shore of Moreno Rocks, Bahia San Carlos, Baja California (25° 12′ 30″ North Latitude, 110° 55′ West Longitude).

Northwest end of Isla Monserrate (25° 43′ North Latitude, 111° 02′ West Longitude).

Rocks off the southwest corner of Isla Partida de Espiritu Santo (24° 30′ North Latitude, 110° 25′ West Longitude). This locality is

only a few miles north of the type locality of *S. sinus-californici.*

San Carlos Bay and the region about Guaymas, Sonora, Mexico.

The specimens from all but the last locality were taken on the 1952 Sefton-Stanford Expedition to the Gulf of California aboard the research ship *Orca* by Daniel Cohen, Jon Lindbergh and the writer. Specimens from several stations around the last locality mentioned were taken by Dr. and Mrs. Giles W. Mead and Mr. and Mrs. Norman Wilimovsky in 1950. All specimens are in the Natural History Museum of Stanford University.

The new species differs from *sinus-californici* in possessing a cirrus or pointed flap on the posterior edge of the anterior nostril, fewer vertical fin rays and a less elongate body. The accompanying table presents several counts and proportions based on the types of *lugubris* and a number of specimens of *sinus-californici* from various of the above localities in the Gulf of California (the proportions and pectoral counts are based on 25 specimens, the vertical fin ray counts on 60).

TABLE 1

	S. sinus-californici			
	Proportion in standard length		In thousandths of standard length	
	Range	Mean	Range	Mean
Head	4.9-5.8	5.4	173-206	186.5
Depth	7.1-9.9	8.2	101-141	123
	S. lugubris			
Head	4.5-4.7	4.6	213-221	217
Depth	6.1-6.6	6.35	152-163	157.5

	S. sinus-californici	
	Range	Mean
Dorsal	40-45	42.8
Anal	II,22-II,26	II,24.25
Pectoral	7-9	8.7
	S. lugubris	
Dorsal	37-38	37.5
Anal	II,20-II,22	II,21
Pectoral	10	10

General Remarks.—There are several errors in Chabanaud's paper (1942) that should be pointed out: (1) in including *Stathmonotus tekla* Nichols (1910, p. 161; 1911, p. 278, pl. 11, fig. 2) in *Parastathmonotus,* he evidently missed Longley's discussion (in Longley & Hildebrand, 1941, p. 265) of *S. tekla* as a synonym of *Auchenistius stahli* Evermann & Marsh, the type of *tekla* still retaining some scales; (2) Chabanaud's diagnosis of *S. hemphilli* Bean is erroneous as to the total length of Bean's types, the anal count, the depth, the head length and the diameter of the eye. The origin of these errors is certainly not apparent, since Chabanaud indicates by a foot-note that his information came from Bean (1885, p. 191) and from Jordan & Evermann (1898, p. 2407). His percentage for depth fits into the variation given by Longley & Hildebrand (which was obviously not seen by him), but the other characters do not; (3) no reference was made to Seale's description (1940, p. 42) of *Stathmonotus culebrai.*

Stathmonotus corallicola Beebe & Tee-Van (1928, p. 249) may eventually prove to be synonymous with *S. hemphilli* Bean. Dr. Herre (1942, p. 19) referred to it as "the doubtful *Stathmonotus corallicola.*"

Stathmonotus sinus-californici exhibits great variation in color and in color pattern. The majority of specimens range through the light browns, tans and reddish-browns, with no spots, small spots or large dark spots variously spaced along midaxis of body. An occasional black specimen is found, some of which have white longitudinal lines along dorsal and anal margins of body, but most of which have these lines broken up into vertical lines, blotches or saddles which are entirely separate from each other. Still other specimens are occasionally found that are pure white in color. The females have the very characteristic dark markings on the lower surface and sides of the head as described above for the new species.

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LITERATURE CITED

BEAN, TARLETON H.

1885. On *Stathmonotus,* a new genus of fishes related to *Muraenoides,* from Florida. Proc. U. S. Nat. Mus., vol. 8, no. 508, pp. 191-192, 1 pl.

BEEBE, WILLIAM, & JOHN TEE-VAN

1928. The fishes of Port-au-Prince Bay, Haiti, with a summary of the known species of marine fish of the island of Haiti and Santo Domingo. Zoologica, vol. 10, no. 1, 279 pp., figs.

CHABANAUD, PAUL

1942. Contribution à la morphologie de téléostéens appartenant à diverses familles de l'ordre des Blennoidea. Description d'une espèce et d'un genre inédits. Bull. Soc. Zool. France, vol. 67, pp. 111-120, 7 figs.

HERRE, ALBERT W. C. T.

1942. Notes on a collection of fishes from Antigua and Barbados, British West Indies. Stanford Univ. Publ., Univ. Ser.; Biol. Sci., vol. 7, no. 2, 21 pp.

HUBBS, CLARK

1952. A contribution to the classification of the blennioid fishes of the family Clinidae, with a partial revision of the eastern Pacific forms. Stanford Ichthyological Bull., vol. 4, no. 2, pp. 41-165, 64 figs.

JORDAN, DAVID STARR, & BARTON W. EVERMANN

1898. The fishes of North and Middle America: a descriptive catalogue of the species of fish-like vertebrates found in the waters of North America, north of the Isthmus of Panama. Bull. U. S. Nat. Mus. No. 47, part 3, pp. i-xxiv + 2183-3136.

LONGLEY, WILLIAM H., & SAMUEL F. HILDEBRAND

1941. Systematic catalogue of the fishes of Tortugas, Florida, with observations on color, habits, and local distribution. Carnegie Inst. Washington Publ. 535, xiii + 331 pp., 34 pls.

NICHOLS, JOHN T.

1910. On two new blennies from Florida. Bull. American Mus. Nat. Hist., vol. 28, p. 161.

1911. Notes on teleostean fishes from the eastern United States. Bull. American Mus. Nat. Hist., vol. 30, art. 11, pp. 275-278, 1 text-fig., pl. 11.

SEALE, ALVIN

1940. Report on fishes from Allan Hancock Expeditions in the California Academy of Sciences. Allan Hancock Pacific Expeds., vol. 9, no. 1, 46 pp., 5 pls.