

ICHTHYOLOGY.—*Pontinus clemensi*, a new scorpaenid fish from the tropical eastern Pacific. JOHN E. FITCH,<sup>1</sup> California Department of Fish and Game. (Communicated by Leonard P. Schultz.)

The single specimen upon which this description is based was one of several fish species taken with hook and line in 300 feet of water by H. B. Clemens, May 3, 1954, lat. 02° 25' N., long. 79° 00' W. Clemens, a guest aboard the tuna clipper *Mayflower*, was biologist in charge on an official tuna tagging trip for the California Department of Fish and Game.

This new scorpaenid is referable to the genus *Pontinus*, which is predominantly deep-sea and tropical. Five species of the genus have previously been described from the eastern Pacific: *Pontinus sierra* (Gilbert, 1890), from specimens taken in 71 to 112 fathoms by the *Albatross* in the Gulf of California; *P. furcirhinus* Garman, 1899, from numerous specimens taken in 66 to 210 fathoms by the *Albatross* off Panama, and near Cocos and Malpelo Islands; *P. dubius* Steindachner, 1902, from a specimen taken at Paita, Peru; *P. strigatus* Heller and Snodgrass, 1903, from a single individual found in the stomach of a shark taken near Wenman Island, Galápagos; and finally *P. vaughani* Barnhart and Hubbs, 1946, from an adult caught off Cedros Island, Baja California, in relatively shallow water.

*Diagnosis*.—*Pontinus* differs from other genera in the family Scorpaenidae in having all pectoral rays simple. The eighth ray of the left pectoral of the present specimen is branched for most of its length. This throws doubt upon the value of using "absence of branched pectoral rays" as a character for distinguishing *Pontinus* from *Helicolenus*, *Hozukius*, and *Neomerinthe*, closely related genera having few to several upper pectoral rays branched. Large series of *Pontinus* would have to be examined before one could

properly evaluate the taxonomic significance of this occurrence.

The greatly produced second and third dorsal spines, which are largely free from their membranes, distinguish *Pontinus clemensi* from all species within the genus except *P. vaughani*. The large eye (contained 4.5 times in head), the large head (contained 2.1 times in standard length), the more numerous pored scales on lateral line (33 as compared to 28), and the generally red coloration, numerous dark spots over the entire head, body and fins, and numerous other characters (Table 1) readily distinguish *clemensi* from *vaughani*.

*Description*.—The holotype, a well-preserved specimen 282 mm in standard length, has been deposited in the collections of the United States National Museum, Washington, D. C. (no. 163597).

Because of the greatly produced second and third dorsal spines, which suggest a close affinity to *P. vaughani*, a direct comparison of the two species would have been desirable; however, a search through the Barnhart collection at Scripps Institution of Oceanography as well as a careful check of other preserved material at that institution failed to produce the holotype (and only known specimen) of *vaughani*. As a result, for ease in comparing *clemensi* to *vaughani*, the ensuing description purposely closely parallels that of Barnhart and Hubbs (1946) for *P. vaughani*.

Head relatively large (468)<sup>2</sup> contained 2.1 times in standard length; length of orbit (104) enters head 4.5 times; greatest diameter across cornea (83) contained in head 5.7 times; length of snout (154) measures 3.0 times in head; least bony interorbital (66) measures 7.1 times; fleshy suborbital width (59) measures 8.1 times in head. When mouth is tightly closed tip of mandible fails to extend to a vertical from margin of upper lip by approximately one millimeter. The maxillary (247) extends to nearly vertically beneath

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<sup>2</sup> Corresponding figures in parenthesis throughout the description represent the proportional measurements expressed in thousandths of standard length. Measurements, unless otherwise indicated, were taken according to the recommendations of Hubbs and Lagler (1941).

posterior margin of cornea and in greatest width (63) is contained 7.4 times in head length.

Spines of head are moderately strong and for the most part closely agree with the arrangement ascribed by Barnhart and Hubbs (1946) for *P. vaughani*. The strong, slightly convergent nasal spines are separated at their tips by a distance (33) equal to one-half bony interorbital width; tips of trifid left and simple right pre-orbital spines separated by a distance (70) only slightly less than separation (71) of blunt supra-orbital spines; right postorbital bifid as is left tympanic; left postorbital, right tympanic, and

both parietal and nuchal spines simple; tips of these spines separated by distances slightly greater than least bony interorbital (80, 73, 67, and 78, respectively); below and behind tympanic spine is a thick, prominent ridge somewhat less than one-fourth as long (23) as orbit but does not end in a spine; below this ridge, near edge of orbit, behind and slightly above middle of eye lies a cluster of tiny spines (5 on the left side, 4 on the right); these spines not connected with definite ridges, but they lie in advance of and just below a strong horizontal ridge that ends in a spine and that lies just above upper end of preopercle; two spines lie on shoulder near upper edge of opercle and just anterior to lateral line; more anterior of these quite strong and in length (30) enters orbit 3.5 times; posterior spine scarcely noticeable; shoulder girdle above base of pectoral fin bears a very flat bony ridge directed more upward than backward and ends in a single flat spine, tip of which is a distance (63) above pectoral insertion nearly equal to least bony interorbital width; the rather strong suborbital keel bears four spines on right side and only three definite spines on the left; first of these, weak on right and obsolescent on left, lies slightly behind and on a vertical beneath hind margin of posterior nostril; between first and second spines the ridge arched upward; second spine, bifid on right side, lies almost directly beneath center of eye; third and strongest lies on a vertical below posterior margin of orbit; fourth, almost at margin of preopercle, slightly above and anterior to upper preopercular spine; before origin of sub-orbital ridge on preorbital are two other, non-spinous ridges, divergent forward; three strong, triangular spines on preorbital margin project downward, central one slightly forward and other two slightly backward; uppermost of the five preopercular spines by far strongest, ridge of the right side bears a secondary spine at its base; broadly triangular third spine next strongest; second, much nearer first than third (roughly one-third distance between the two), also rather strong; fifth spine, obsolescent on right and weak on left, partially embedded on both sides; two strong opercular spines lie at end of slightly divergent ridges.

The teeth are in villiform bands on jaws, vomer and palatines; medially premaxillary band strongly arched; anteriorly, under cover of upper lip, it becomes moderately expanded; anterior process of premaxillary tooth band somewhat

TABLE 1.—COMPARISON OF PONTINUS CLEMENSI WITH *P. VAUGHANI*

Measurements and counts	<i>P. clemensi</i>	<i>P. vaughani</i> <sup>2</sup>
MEASUREMENTS: <sup>1</sup>		
Standard length	282	427
Total length	1227	
Head length	468	417
Eye diameter (cornea)	83	61
Fleshy orbit	104	81
Maxillary length	247	244
Least suborbital width	59	70
Bony interorbital width	66	56
Snout length	154	136
Third dorsal spine (longest)	221	208
Second anal spine (longest)	152	126
Fourth dorsal ray (longest)	156	169
Second anal ray (longest)	197	221
Eleventh pectoral ray (longest)	248	246
Pelvic length	230	254
Snout to first dorsal insertion	431	
Snout to second dorsal insertion	741	
Snout to anal insertion	738	
Snout to pelvic insertion	429	
Snout to pectoral insertion	426	
Pectoral insertion to first dorsal insertion	241	
Pelvic insertion to first dorsal insertion	355	
Anal insertion to dorsal contour (perpendicular)	266	
Least caudal peduncle depth	106	
Greatest body width (shoulders)	202	168
Dorsal peduncle length	142	
Anal peduncle length	181	
First gill raker below angle (length)	32	
COUNTS:		
Dorsal	XI, I, 9	XI, I, 9
Anal	III, 5	III, 5
Pectoral	19	20
Pelvic	I, 5	I, 5
Caudal (principal rays)	7 + 6	13
Lateral line scales (pored)	33	28
Oblique scale rows above and parallel to lateral line	50	39
Scales down and back from D <sub>1</sub> insertion to lateral line	10	8
Gill rakers (functional)	4 + 1 + 8	2 + 1 + 9

<sup>1</sup> Standard length in millimeters, all others expressed in thousandths of standard length.

<sup>2</sup> From Barnhart and Hubbs (1946).

extroverted yet lies posterior to and somewhat concealed by thick, upper lip; premaxillary teeth lie outside those of mandible when mouth is closed; vomerine band very narrow posteriorly but broadens anteriorly just behind anterior semicircular section; palatine band, weakly arched inward, is narrow though slightly expanded toward posterior end and moderately dilated at inward-hooked anterior end.

Six branchiostegals; pseudobranchiae short; gill rakers on outer arch number  $8 + 1 + 14 = 23$ ; of these, ten may be considered rudimentary or non-functional (4 on upper limb and 6 on lower); On right side first raker below angle bifurcate and its length (32) measures 3.3 times in diameter of orbit.

Body covered with finely ctenoid scales; on average about one-half of surface of each scale covered by small accessory scales, also strongly ctenoid; oblique rows, rather irregular and difficult to count, number 50 just above and parallel to lateral line; 10 scales in series running obliquely downward and backward between first dorsal insertion and lateral line; lateral line has 33 pores to caudal base; scales like those of body, but somewhat smaller, cover all opercles, postorbital region and cheeks; ctenoid accessory scales occur over these areas in abundance and somewhat similar minute ctenoid scales cover interorbital

region and extend thence forward to near nasal spines; such scales also occur on suborbital and preorbital regions; before nasal spines, on the lips, and on anterior half of mandible are numerous somewhat scalelike villi and fimbriae; small to minute ctenoid scales cover most of maxillary except near edges; small scales roughen the upper surface of eyeball and edge of branchiostegal rays; minute ctenoid scales cover most of outer surfaces of nearly all fin rays, including dorsal spines and also pectoral rays except where 9 of 10 lower rays are thickened.

Two forward directed, round pores open at tip of lower jaw, one on either side of symphyseal knob; following this five pairs of slitlike pores from anterior to posterior are located as follows: under tip of lower jaw; under margin of lower lip half-way between first and third pairs; on center of dentary at a distance equal to half length of maxillary; behind and on a level with lower edge of maxillary; and between fourth and fifth preopercular spines; of these pores, those on dentary are largest and most obvious.

Dermal filaments consist primarily of a slender supraorbital cirrus somewhat flattened at its tip (length, 12), posterior border of anterior nostril produced into a flat, fimbriated flap, no cirri apparent on body.

Dorsal rays number XI, I, 9; all soft rays

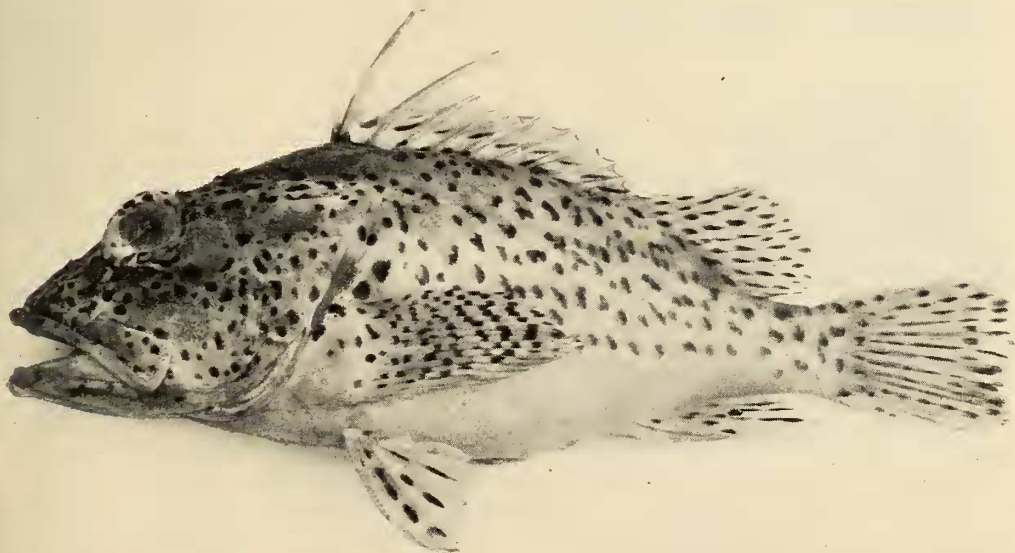


FIG. 1.—*Pontinus clemensi*, n. sp., holotype (U.S.N.M. 163597), from 50 fathoms, 22 miles off the coast of Colombia (lat.  $02^{\circ} 25' N.$ , long.  $79^{\circ} 00' W.$ ); 282 mm in standard length.



branched and in last one the two elements widely separated; anal rays III, 5 and all soft rays branched; principal caudal rays number 13, 11 branched and two unbranched rays extend nearly to tips of lobes; pelvic fin has one stiff spine and five branched rays; pectoral fin of 19 rays.

Second and third dorsal spines greatly elongated, second almost completely exerted; membrane behind second spine deeply indented and on distal one-half reduced to a slight membranous keel, terminating in a leathery flap that projects beyond bony point; behind third spine membrane curves gently for entire length to connect with fourth spine approximately two-thirds distance from base to tip; distally membrane of third spine terminates in a flap similar to that of second; lengths of dorsal spines in thousandths of standard length are respectively: 47, 207, 221, 128, 119, 111, 111, 106, 89, 67, 53, 99. Soft dorsal fin abruptly higher than last dorsal spines; fourth ray longest but its length (156) scarcely greater than that of either third or fifth.

Second anal spine slightly longer than third and both somewhat more than twice as long as first, in thousandths of standard length these measure, respectively, 57, 152 and 131; first and second soft anal rays longest, essentially of equal length (197).

Width of pectoral base (111) considerably less than half lengths (248) of tenth and eleventh (longest) rays; eighth ray on left side branched for much of its length, all others simple; all membranes incised to varying degrees, particularly between lowermost 10 pectoral rays; first nine of lowermost ten rays swollen distally.

Length (230) of pelvic fin somewhat less than that of pectoral, contained 2.0 times in head length.

Spinous dorsal, pectoral and pelvic fins inserted almost equal distances from tip of snout (431, 429, and 426, respectively); similarly distances from tip of snout to anterior insertion of dorsal spine XII (second dorsal insertion) and insertion of first spine of anal almost equal (741 and 738).

An examination of the otoliths (sagittae) indicates an age of eight years.

When fresh the specimen was generally rose pink over most of head, back and sides, grading to silvery pink on belly; body and fins were profusely spotted; most of spots were dark brown,

and sharply outlined with rust-orange rings; there were several yellow-orange blotches on and around head; most noticeable of these were on posterior part of maxillary; on cheek just posterior to maxillary, directly beneath eye; on nape, between dorsal insertion and a point above opercle, thence ventrally almost to a level with pectoral fin; lips were a bright orange with some yellow, membrane at hind border of eye was yellow, cirri on supraorbitals and anterior nostrils were a bright scarlet; dark brown blotches on interspinal membranes of dorsal bore overcolors of greenish yellow; otherwise, all fins had a pinkish-red cast; lining of buccal cavity was clear white; areas under opercles and around pseudo-branchiae were a dusty pink.

It is an especial pleasure to be able to associate with this new and interesting scorpaenid the name of Harold B. Clemens, a biologist with the California Department of Fish and Game, whose untiring collecting efforts have resulted in quantities of exceedingly fine specimens.

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