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NEW AUSTRALIAN FISHES. PART 18. A NEW SPECIES OF *COCOTROPUS* (APLOACTINIDAE)

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Abstract

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A new species of velvetfish (Aploactinidae), *Cocotropus larvatus,* is described from specimens taken from the Marshall Islands, the Ryukyus, Great Banda Island, and from Christmas Island in the Indian Ocean. *C. larvatus* can be distinguished from other species of *Cocotropus,* except *C. roseus,* by its combination of high pectoral, dorsal, and anal counts. It differs from *C. roseus* in having a more convex snout profile, a more compressed body, and in coloration. The new species is the first aploactinid reported from the Central Pacific.

Introduction

The Aploactinidae contains 30 species belonging to 15 genera (Poss and Eschmeyer, 1978, 1979, 1980; Poss, 1982). The family is closely related to the Scorpaenidae and is confined to the western Pacific and Indian Oceans. Most species occur in the Australian and Indo-Malaysian regions. Twelve species and nine genera are currently known from Australia. Although there is scant information on their ecology, most appear to live in crevices on rocky, coral rubble, or coralline algae substrata. Some species frequently appear in trawls.

The present paper describes a new species of the genus *Cocotropus,* expanding the largest genus of velvetfishes to 8 species. In addition to this new species, the genus contains the following taxa: *Cocotropus echinatus* (Cantor, 1850) from Malaysia, *C. dermacanthus* Bleeker, 1852 from Indonesia, *C. roseus* Day, 1878 from India, *C. altipinnis* Waite, 1903 from Lord Howe Island, *C. monacanthus* Gilchrist, 1906 from South Africa, *C. masudai* Matsubara, 1943 from Japan, and *C. steinitzi* Eschmeyer and Dor, 1978 from Indian Ocean localities. Several closely related species, previously placed in *Cocotropus,* have been transfered to *Paraploactis* by Poss and Eschmeyer (1978).

Cocotropus larvatus sp. nov.

Figure 1

Material examined. Holotype: Marshall Is., Kwajalein Atoll, outside reef off Ennubuj Islet, rubble bottom, caught by hand under rubble, by day, Scott Johnson, 2 Jun 1983, BPBM 29211 (1 male 49.8 mm SL).

Paratypes: Ryukyu Is. West side of Sesoke Is., on sand and rubble bottom at base of reef front, 15-18 m, rotenone, J. Randall and T. Yoshino, 12 Sep 1977, BPBM 22297 (1, 41.2 mm SL), URM P4282 (2, 36.7, 14.0).

Banda Is. Just west of northern-most tip of Great Banda Is. (04°30′30″S, 129°56′10″E), stn VGS 74-11, 0-18.3 m, rotenone, V.G. Springer, 9 Mar 1974, USNM 280267 (1, 34.7).

Christmas Is. (10°26′S, 105°40′E), 35-40 m, rotenone, collected from vertical drop-off, G.R. Allen and R. Steene, 2 Jul 1986, WAM P29008-001 (1, 22.0).

Description. Dorsal XIII, 9(5)*, XIII, 10(1) (counts for holotype denoted by asterisk; last two rays borne on one pterygiophore and counted as one ray, anal II, 8(3), II, 9(3)* (last two rays counted as one); pectoral 13(1)*, 14(5); pelvic 1, 3; vertebrae 27(5)*, 28(1).

Head markedly compressed, and covered with modified scales, each of which ends in a spinous point; few scales on snout, none in interorbit. Dorsal profile of head concave, anterior part inclined dorsoposteriorly about 45° from horizontal, posterior part steeper, inclined about 60°

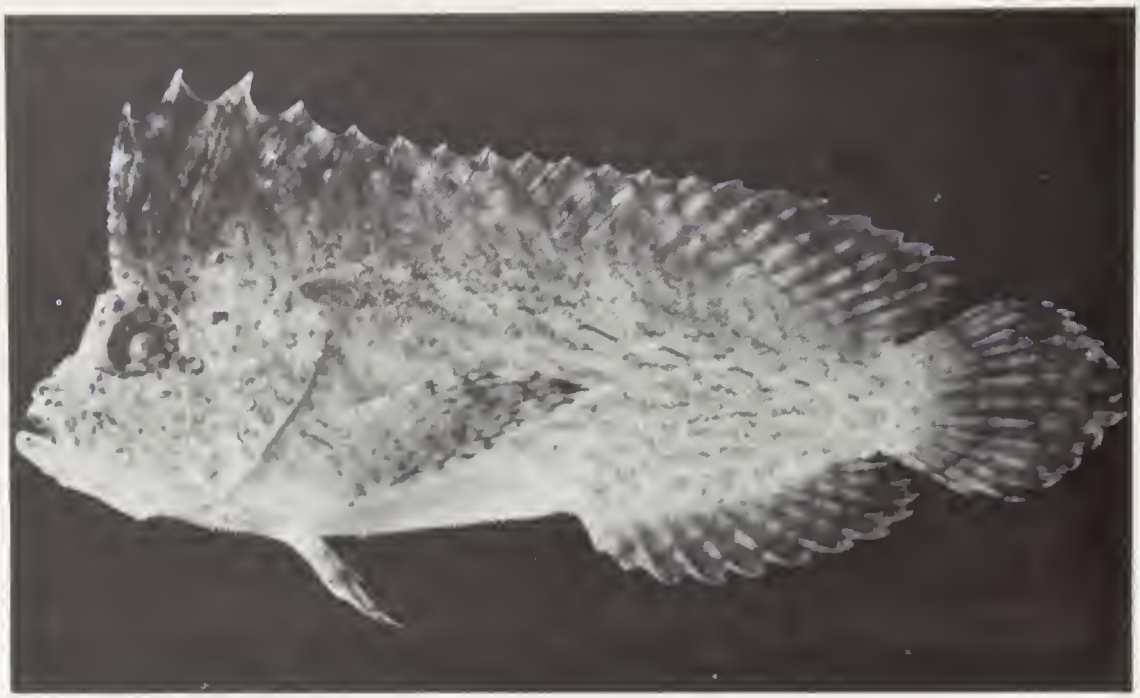

Figure 1. Holotype of *Cocotropus larvatus* (BPBM 29211; 49.8 mm SL) in lateral view.

from horizontal. Lacrimal spines connected at base. First spine points ventrally and slightly posteriorly over maxilla. Second spine of about equal size, points posteroventrally. A small blunt spinous knob at base of first spine; similar but larger knob at base of second spine near middle of bone on a ridge which runs to lateral ethmoid. Second infraorbital bone with a blunt spine that projects laterally from near centre of raised margins. Third infraorbital bone with a prominent blade-like but blunt spine that projects laterally. Interorbital ridges prominent, converge posteriorly to meet at midline. Posterior end of each ridge with a short tufted cirrus; better developed in smaller specimens. Nasal bone tubular, without spine. Anterior nostril prominent, pore midway between eye and tip of snout. Posterior nostril just anterior to orbit with slightly raised margin. Preopercular and supraorbital lateral-line pores of moderate size; form short tubes. Preopercle with 5 blunt spines; dorsalmost project laterally and slightly dorsally as well as posteriorly; about equal in size to third from above. Second from above also projects laterally as well as posteriorly; about equal or slightly smaller than those above and below. Ventral preopercular spines smaller. Opercle with 2 ridges, more dorsal better developed; each ends in spine. Dorsal margin of opercle inclined dorsoposteriorly about 20° above horizontal. Interopercle without spine on dorsoposterior margin. Parietal spine a prominent blunt knob. Pterotic spine strong, blunt. Ventral margin of posttemporal with a strong blunt spine. Cleithrum without spine. Ventral margin of dentary strongly projects medially. Mandibular lateral-line pores of moderate size, 5 on each side. Ventral surface of lower jaw with numerous papillae and two rows of tufted or papillose cirri, outer row usually larger; more papillose in smaller specimens. Angular bone projects ventrally. Mouth slightly upturned. Maxilla extends to below anterior margin of pupil. Maxilla with prickles but without cirrus. Minute teeth on the vomer, none on the palatines. Gill rakers short knobs; 7-10 total, 2-3 on upper arch, 5-7 on lower

arch. Pseudobranch with 4-6 filaments. No slit behind posterior hemibranch. Branchiostegal rays 6. Branchiostegal membranes of each side not fused to isthmus. Isthmus with a fleshy extension anteriorly.

Body extremely compressed. Body depth 2.8 to 3.2 in SL. Longest spinous points on scales on dorsum behind head about 2-3 times as long as wide near base. Lateral line not high on body; with 9-11 tubed scales, each with small paired projections which extend laterally, last extends over base of caudal fin.

Dorsal fin originates over anterior margin of pupil. First dorsal spine longest, spines decrease in length posteriorly until eighth or ninth spine; decrease most pronounced in smaller specimens. Dorsal fin membrane weakly incised. Pectoral fin rounded, with 14 rays, longest (4th from above) reaches just past anus. Pelvic fin membrane not adnate to body. Caudal fin rounded, somewhat elongate with 18(5) or 19(1) total (9 upper / 9-10 lower) fin ray elements. Caudal skeleton with parhypural and hypurals 1 and 2 fused, hypurals 3 and 4 fused, hypural 5 autogenous; 2 epurals; preural neural spine long, narrow.

Colour in life tan or cream coloured, covered with numerous rather regularly scattered small dark brown spots each of which is usually surrounded by larger but lighter and more diffuse brown spot or splotch. Diffuse spots arranged in nearly oblique bands in holotype but not in smaller specimens. The dark brown spots are often elongate and form dash-like lines; those between lateral line scales particularly prominent; intensity of elongate spots decreases in larger specimens. Snout and dorsal surface of head covered with brown and greyish brown spot or splotches, similar but somewhat larger and more distinct than those over body and usually surrounded and accentuated by a thin whitish border; those around eye, particularly ventrally, especially dark and radiate from pupil. Prominent dark spot on pterotic spine; another on parietal spine. Ventral side of head and pelvic fins notably pale and cream coloured. A conspicuous chalk white spot on or just above lateral line between scales 3 to 5.

Dorsal and anal fins notably lighter in colour than body and transparent posteriorly. Brownish grey spots or splotches, similar in size and shape to those on snout and dorsal part of head, cover fins. They are smaller, more transparent, and more closely set posteriorly than anteriorly, giving the fins a laced, reticulate appearance posteriorly. Dorsal fin more densely pigmented subterminally. Caudal fin pattern like that of posterior part of dorsal and anal fins; in holotype small spots coalesce to form a narrow band near base of fin. Pectoral fin with conspicuous brown or greyish brown spots or splotches like those on dorsal surface of head.

Colour in 70% ethanol light brown or tan. Small darker brown specks and brown elongate markings scattered over head, body, and fins; most prominent on head and fins and in smaller specimens. Belly and ventral side of head with few such marks. A cream coloured spot just dorsal to lateral line. A district, but narrow and intermittent brown stripe runs between lateral-line scales.

Measurements for the six type specimens are as follows (holotype first followed by paratypes; percent SL in parentheses): Standard length 49.8, 41.2, 36.7, 34.7, 22.0, 14.0. Head 18.2(36), 14.8(36), 13.1(36), 12.5(36), 7.6(34), 5.6(40). Snout 5.2(10), 4.1(11), 3.6(10), 3.4(10), 2.2(10), 1.6(11). Orbit 4.3(9), 3.5(8), 3.1(8), 3.3(9), 1.9(9), 1.4(10). Interorbit 4.0(8), 2.6(6), 2.3(6), 2.5 (7), 1.1(5), 1.2(8). Upper-jaw length 6.9(14), 5.4(13), 4.9(13), 4.9(14), 3.1(14), 2.6(16). Postorbital 7.9(16), 6.5(16), 5.6(15), 5.5(16), 3.6(16), 2.6(19). Greatest body depth 16.7(33), 12.7 (31), 11.7(31), 11.0(32), 7.0(32), 4.9(35). Anal fin 19.5(39), 16.0(39), 13.8(38), 13.9(40), 8.2(37), 5.3(38). Caudal fin 14.5 (29), 13.2(32), 11.6(32), 10.7(31), 6.5(29), 4.6(33). Pectoral fin 15.3(31), 12.6(31), 10.9(30), 9.5(27), 6.2(28), 4.3(31). Pelvic fin 8.2(16), 7.1(17), 6.1(17), 4.9(14), 4.0(18), 2.5(18). Length of first dorsal spine 11.2(22), 10.5(25), 9.3(25), 8.5(24), 5.5 (25), 3.2(23); second 12.2(24), 10.0(24), 9.4(26), 8.7(25), 5.0 (23), 3.3(24); third 11.9(24), 8.9(22), 7.9(21), 7.7(22), 4.3(19), 2.3(16); fourth 9.6(19), 6.6(16), 4.9(13), 5.7(16), 2.8(13), 1.7 (12); fifth 7.2(14), 5.3(13), 3.7(10), 3.7(11), 2.3(10), 1.2(9); penultimate 6.7(13), 5.5(13), 4.4(12), 4.1(12), 2.6(12), 1.7(12); last 7.0(14), 5.8(14), 4.8(13), 4.4(13), 2.8(13), 2.0(14). Length of first anal spine 2.8(6), 2.8(7), 2.1(6), 2.2(6), 1.5(7), 0.9 (6); second 3.8(8), 3.7(9), 3.0(8), 3.0(9), 2.1(9), 1.2(8). Least depth of caudal peduncle

5.7(11), 3.8(9), 3.6(9), 3.6(10), 2.3 (10), 1.6(11). Distance from tip of snout to first dorsal spine (predorsal length) 8.7(17), 6.4(15), 5.7(15), 5.5(16), 3.2(14), 2.3(16); to second spine 10.7(21), 8.0(19), 6.7(18), 6.5(19), 4.0 (18), 3.0(29); to third 12.1(24), 9.6(23), 8.3(23), 8.4(24), 4.6 (21), 3.8(27); to fourth 15.5(31), 12.7(31), 11.0(30), 11.0(32), 6.3(29), 4.8(34); to fifth 19.4(39), 16.4(40), 13.9(38), 13.5 (39), 8.0(36), 5.5(39). Transverse width of first dorsal spine at midlength 0.5(1.0), 0.4(1.0), 0.3(0.8), 0.5(1.4), 0.3(1.4), 0.1(0.7). Incision of dorsal-fin membrane at fourth dorsal spine (from tip to membrane) 0.1(0.2), 0.1(0.2), 0.3(0.3), 0.2(0.6), 0.2(0.9), 0.2(1.4).

Etymology. From the Latin *larva* (ghost), referring to its ghost-like appearance and small size.

Comparisons. The new species can be distinguished from most other members of the genus by its high counts when considered in combination. Only *Cocotropus roseus* has a pectoral fin ray count as high as 14 and equally high dorsal and anal fin ray counts. However, *C. roseus* is a much less compressed species and lacks the pronounced development of the blunt head spines and the combination of distinct, often elongate, dark spots and intermittent dashed lines along the lateral line and a reticulate colour pattern on its fins. *C. larvatus* also differs in having the snout and interorbit distinctly more concave in lateral view.

Distribution. Cocotropus larvatus has been collected from Kwajelein Atoll in the Marshall Is., Sesoko Is. in the Ryukyu Is., from Great Banda Is., and from Christmas Is. in the eastern Indian Ocean. This species occurs inshore from near the surface to 40 m. This species is the first aploactinid to be described from the Pacific Plate (see Springer, 1982).

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