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Author(s)	Imamura, Hisashi; Shinohara, Gento
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## A New Species of *Cocotropus* (Actinopterygii: Teleostei: Aploactinidae) from South Africa, Western Indian Ocean

Hisashi Imamura<sup>1</sup> and Gento Shinohara<sup>2</sup>

<sup>1</sup>The Hokkaido University Museum, 3-1-1 Minato-cho, Hakodate, Hokkaido, 041-8611 Japan

E-mail: imamura@museum.hokudai.ac.jp

<sup>2</sup>Department of Zoology, National Science Museum, 3-23-1 Hyakunin-cho, Shinjuku-ku,

Tokyo, 169-0073 Japan

E-mail: s-gento@kahaku.go.jp

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A new aploactinid fish, *Cocotropus roseomaculatus* sp. nov., is described from a single specimen collected in coastal waters of Kwazulu-Natal, South Africa, western Indian Ocean. The new species differs from its congeners in having the following combination of characters: 12 dorsal fin spines, 13 pectoral fin rays, 26 vertebrae in total, four dorsal spines anterior to the third neural spine, no papillae on the posterior portion of the maxilla, the first pair of sensory pores of the lower jaw contralaterally fused, the isthmus tip almost reaching to the fifth sensory pore of the lower jaw, no vomerine teeth, the upper jaw longer than the lachrymal, five preopercular spines, lower jaw papillae weakly developed, and pinkish spots on body and fins.

**Key Words:** *Cocotropus roseomaculatus* sp. nov., Aploactinidae, South Africa, western Indian Ocean.

### Introduction

During a taxonomic study of species included in *Cocotropus* Kaup, 1858, we had an opportunity to examine a specimen collected in 1987 from Kwazulu-Natal, South Africa, western Indian Ocean. The specimen satisfied the diagnostic characters of the genus, viz., gill membranes free from isthmus, anus slightly anterior to anal fin origin, dorsal fin rays continuous and comprising a single fin, pelvic fin rays I, 3, and interorbital ridges on both sides parallel (Poss 1999; Imamura and Shinohara 2003), but apparently represented an undescribed species, having a unique combination of several other characters. The following description of the new species brings to 10 in the number of valid species of *Cocotropus* (see Imamura and Shinohara 2003). Of the latter, *C. masudai* Matsubara, 1943 is most similar to the new species. A detailed comparison of the two is presented accordingly.

### Materials and Methods

Methods for making counts and measurements follow Imamura and Shinohara (2003). Counts of vertical and caudal fin rays and vertebrae were based on radiographs. Standard length and head length are abbreviated as SL and HL, respec-

tively. *Cocotropus* specimens used for comparison in this study are listed in Imanura and Shinohara (2003). Institutional acronyms are as follows: NSMT (National Science Museum, Tokyo); SAIAB (RUSI) (South African Institute for Aquatic Biodiversity, formerly J.L.B. Smith Institute of Ichthyology); and SU (Stanford University, specimens now deposited in California Academy of Sciences).

*Cocotropus roseomaculatus* sp. nov.

(Figs 1–3)

**Material examined.** Holotype: SAIAB (RUSI) 39731, 29.2 mm SL, Kosi Bay mouth area, Kwazulu, Kwazulu-Natal, South Africa, western Indian Ocean (26°54'36"S, 32°55'18"E), 7 June 1987, coll. R. Kilburn.

**Diagnosis.** With 12 dorsal fin spines, 13 pectoral fin rays, 26 vertebrae in total, four dorsal spines anterior to third neural spine, no papillae on posterior portion of maxilla, first pair of sensory pores of lower jaw contralaterally fused, isthmus tip almost reaching to fifth sensory pore of lower jaw, no vomerine teeth, upper jaw longer than lachrymal, five preopercular spines, lower jaw papillae weakly developed, and pinkish spots on body and fins.

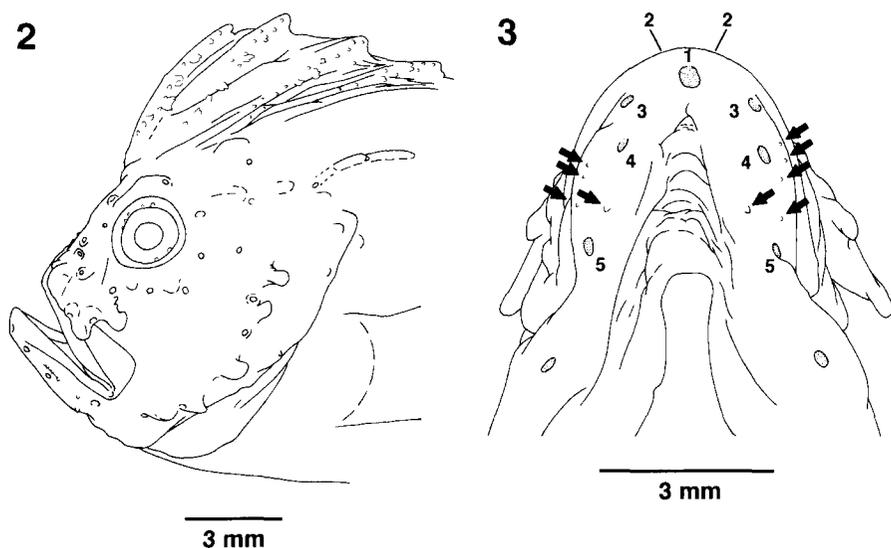
**Description.** Dorsal fin rays XII, 8 (last ray double); anal fin rays II, 6 (last ray double); pectoral fin rays 13 on both sides; pelvic fin rays I, 3; segmented caudal fin rays 6 (upper) +6 (lower); bony sensory tubes on lateral line 9 (left side) and 11 (right side); gill rakers 1+9=10; vertebrae 26 in total. Proportions as % SL: HL 34.6; snout length 9.9; orbital diameter 8.9; lachrymal length 16.1; upper jaw length 17.5; lower jaw length 20.5; interorbital width 9.6; predorsal length 12.7; preanal length 68.8; length of dorsal fin base 80.1; length of anal fin base 21.6; length of caudal peduncle 19.5; depth of caudal peduncle 9.6; pectoral fin length 32.8; pelvic fin length 15.1; length of first dorsal spine 21.6; length of second dorsal spine 21.9; length of



Fig 1. *Cocotropus roseomaculatus* sp. nov., SAIAB (RUSI) 39731, holotype, 29.2 mm SL.

first anal fin spine 7.2. Proportions as % HL: snout length 28.7; orbital diameter 25.7; lachrymal length 46.5; upper jaw length 50.5; lower jaw length 59.4; interorbital width 27.7.

Body and head moderately compressed. Body, base of fins, and head, except for snout region, covered by small, pointed papillae, each underlain by tiny buried scale. Eye large, with small papillae surrounding pupil; orbital diameter slightly shorter than snout length, 3.5 in HL. Snout short, 3.9 in HL, dorsal profile straight. Interorbital ridges parallel, those of either side meeting posteriorly, forming U-shaped ridge. Supraorbital ridge ending in blunt spine. Parietal, pterotic, posttemporal, supracleithrum, and cleithrum each with single blunt spine. Two blunt spines below eye. Two distinct lachrymal spines, five preopercular and two opercular (lower one obscure) spines. Mouth oblique. Upper jaw longer than lachrymal, 2.0 in HL, with posterior end extending beyond posterior tip of second lachrymal spine. Posterior portion of upper jaw without papillae (Fig. 2). Lower jaw extending slightly forward of upper jaw when mouth closed. Upper and lower jaws with villiform teeth. Palatine and vomer lacking teeth. Outer edge of lower jaw with three (right) or four (left) minute papillae; single blunt papilla between fourth and fifth sensory pores of lower jaw; other regions of lower jaw lacking papillae (Fig. 3). Lower surface of lower jaw with five sensory pores; anteriormost pore on each side contralaterally united, comprising single common opening. Gill membranes free from isthmus. Isthmus tip almost reaching to fifth sensory pore of lower jaw (Fig. 3). Lateral line weakly convex on anterior portion of body, mostly straight thereafter. Sensory canal of first bony tube on lateral line continuous with those of supracleithrum anteriorly and second bony tube posteriorly; other bony tubes on lateral line separated from each other on left side, second and third tubes continuous



Figs 2-3. Head of *Cocotropus roseomaculatus* sp. nov., SAIAB (RUSI) 39731, holotype, 29.2 mm SL. 2, Lateral view; 3, ventral view. Small, pointed papillae underlain by tiny buried scales not shown. Arrows indicate small papillae on lower jaw. Sensory pores numbered 1-5.

on right. Posteriormost bony tube on caudal fin base. Anus slightly before anal fin origin. All dorsal spines with papillae. First dorsal spine slightly shorter than second dorsal spine. First and second neural spines bent anteriorly. Anterior four dorsal spines anterior to third neural spine. All soft fin rays unbranched. Pectoral fin reaching level of anal fin origin, its length 3.0 in SL. Pelvic fins not reaching anus, their length 6.6 in SL. Caudal fin rounded posteriorly.

*Color in alcohol.* Head and body largely pale brown, with darker brownish spots. Anterior tip of snout, posterior portion of maxilla, lachrymal, posterior two-thirds of dorsal fin, and base of pectoral fin pinkish. Single small pinkish spots present near tip of sixth dorsal fin spine, on base of third soft dorsal fin ray, on mid-body below fifth (sixth on right side) soft dorsal fin ray, and on lower portion of caudal peduncle and middle of caudal fin base. Dorsal and anal fins with several irregular, oblique brownish bands; two posteriormost bands on dorsal fin somewhat pinkish. Pectoral fin with several brownish bands comprised of coalescent spots. Caudal fin with several irregular brownish bands. Upper and lower edges of caudal fin pinkish.

**Etymology.** The name *roseomaculatus* refers to the characteristic pinkish spots on the body and fins.

**Remarks.** *Cocotropus roseomaculatus* sp. nov. most closely resembles *C. masudai* from Japan among the nine valid species of *Cocotropus* hitherto described, in having 12 dorsal fin spines, 13 pectoral fin rays, 26 vertebrae in total, four dorsal spines anterior to the third neural spine, no papillae on the posterior portion of the maxilla, the first pair of sensory pores of the lower jaw contralaterally fused, and the isthmus tip almost reaching to the fifth sensory pore of the lower jaw (see Imamura and Shinohara 2003). Furthermore, these two species both lack vomerine teeth, contrary to Matsubara (1943) for *C. masudai*, as does a paratype of *C. steinitzi* Eschmeyer and Dor, 1978 (SU 14650), contrary to Eschmeyer and Dor (1978). *Cocotropus roseomaculatus*, however, differs from *C. masudai* in having the upper jaw longer than the lachrymal (length in the former 50.5% HL vs. 42.6% HL in *C. masudai*) and 1+9=10 gill rakers [vs. 2+6=8 (Matsubara 1943; Imamura and Shinohara 2003)]. In addition, the numbers of preopercular spines and lower jaw papillae are also helpful for separating *C. roseomaculatus* from *C. masudai* (five preopercular spines and weakly developed lower jaw papillae in *C. roseomaculatus* vs. four preopercular spines and no lower jaw papillae in *C. masudai*). Nakabo (2002) illustrated five preopercular spines in a species presented as *C. masudai* (Nakabo 2002: cf. figures on p. 601). We examined a single specimen of *Cocotropus* from the Ogasawara Islands, Japan (NSMT-P 45190, 27.3 mm SL) that conforms to the description and figures of "*C. masudai*" in Nakabo (2002). That specimen differs from the holotype of *C. masudai* in having the isthmus tip reaching considerably beyond the fifth sensory pore of the lower jaw and in having many minute papillae on the lower jaw. We consider Nakabo's (2002) figures of *C. masudai* as well as the specimen from the Ogasawara Islands to represent another, undescribed species.

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