

Pseudamia rubra, a New Cardinalfish (Perciformes: Apogonidae) from the Ogasawara Islands

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Abstract *Pseudamia rubra* is described as a new species of apogonid fish from a single 55-mm specimen collected in a cave in 3–4 m off Chichi-jima, Ogasawara Islands. It can be differentiated, collectively, from the six other species of the genus by the following characters: 8 dorsal and anal soft rays, 17 pectoral rays, 23 scales in longitudinal series, lateral-line scales notched, without pores; developed gill rakers 2+9; body depth 4.55 in SL; caudal fin 3.65 in SL; pectoral fins 3.55 in SL, and in color. It is translucent, the edges of the scales orange-red; a diffuse dusky spot posteriorly on caudal peduncle; snout and chin blackish; a black spot behind eye.

The cardinalfish family Apogonidae is divisible into two subfamilies, Pseudaminae and Apogoninae. The Pseudaminae was defined by Fraser (1972). He recognized three genera: *Pseudamia* Bleeker, *Pseudamiops* Smith, and *Gymnapogon* Regan, the species of which are confined to the Indo-Pacific region. *Gymnapogon* is readily distinguished by lacking scales and having a conspicuous spine at the corner of the preopercle. *Pseudamiops* has scales (though deciduous), lacks epipleurals on the pleural ribs, and has a small spinous process extending downward from the ventroposterior corner of the maxilla. *Pseudamia* has also deciduous scales, lacks a spine on the preopercle and a spinous process on the maxilla, and has epipleurals on all but the last 3 or 4 pleural ribs.

Randall et al. (1985) revised the genus *Pseudamia*; they recognized five species, three of which were described as new. Allen (1992) named *P. nigra* as a sixth species of the genus from northern Australia.

Like other apogonids, in general, the species of *Pseudamia* are nocturnal. They are more secretive than most apogonids, living deep in recesses in the reef, often in crevices within caves. They are rarely seen by divers, even at night.

During a collecting trip to the Ogasawara Islands in 1991 the authors and John L. Earle collected a single specimen of still another species of *Pseudamia*. The objective of the present paper is to describe this fish. The description is presented after a key to the species of the genus.

Methods of counting and measuring follow Ran-

dall et al. (1985). The holotype is deposited at the National Science Museum, Tokyo (NSMT).

Key to the Species of *Pseudamia*

- 1a. Pectoral-fin rays 19–20; scales in longitudinal series 43–50; head and body uniform dark brown to black (northern Australia)*nigra*
- 1b. Pectoral-fin rays 15–17; scales in longitudinal series 23–432
- 2a. Scales in longitudinal series 39–43; anterior nostril with a long posterior flap3
- 2b. Scales in longitudinal series 23–31; anterior nostril with a short posterior flap4
- 3a. Anal soft rays 9 or 10; developed gill rakers 2 + 9 (rarely 10); caudal fin 2.45–2.8 in SL; posterior half of upper jaw pale (almost white), usually with a single small dark spot on side of maxilla (Indonesia and Philippines to the western Caroline Islands)*amblyuroptera*
- 3b. Anal soft rays 8; developed gill rakers 1 + 7 (rarely 8); caudal fin 2.7–3.3 in SL; posterior half of upper jaw light brown with dark brown spots (Indo-Pacific)*gelatinosa*
- 4a. Dorsal soft rays 8; anal soft rays 8; developed gill rakers 1–2 + 7–10; interorbital space convex; no teeth externally on side of jaws; longest soft rays of second dorsal and anal fins 1.7–1.9 in head; no dark bars on body or caudal-fin base5

- 4b. Dorsal soft rays 9 or 10; anal soft rays 9; developed gill rakers 6+16-18; interorbital space flat; small teeth externally on side of jaws; longest soft rays of second dorsal and anal fins 1.5-1.65 in head; two broad dark bars on body and one on caudal-fin base (western Pacific)*zonata*
- 5a. Scales in longitudinal series 31; body depth 3.75 in SL (Persian Gulf)*tarri*
- 5b. Scales in longitudinal series 23-24; body depth 3.9-4.55 in SL6
- 6a. Caudal-fin length 2.65-2.9 in SL; pectoral-fin length 3.75-4.6 in SL; developed gill rakers 1+7; no dusky spot midposteriorly on caudal peduncle; no black spot behind eye; snout and chin not blackish (Gulf of Aden to the Caroline and Samoa Islands)*hayashii*
- 6b. Caudal-fin length 3.65 in SL; pectoral-fin length 3.55 in head; developed gill rakers 2+9; a dusky spot midposteriorly on caudal peduncle; a prominent black spot behind eye; snout and chin blackish (Ogasawara Islands) ..*rubra* sp. nov.

Pseudamia rubra sp. nov.

(Figs. 1, 2; Table 1)

(New Japanese name: Usubeni-tenjikudai)

Holotype. NSMT-P 35678, male, 55.0 mm SL, Ogasawara Islands, Chichi-jima, south end; cave in 3-4 m, J. E. Randall, H. Ida and J. L. Earle, 25 July 1991.

Diagnosis. A species of *Pseudamia* with dorsal and anal soft rays 8; pectoral rays 17; longitudinal scale series 23; lateral-line scales notched (none with pores); developed gill rakers 2+9; body depth 4.55 in SL; head length 2.75 in SL; interorbital space convex; caudal-fin length 3.65 in SL; longest dorsal and anal soft rays 4.85-5.1 in SL; pectoral-fin length 3.55 in SL; color in alcohol pale (translucent, the scales rimmed with orange-red in life), the edges of the scales dorsally on body dusky; a diffuse dusky spot midposteriorly on caudal peduncle; a vertically elongate black spot behind eye; snout and chin blackish.

Description. Dorsal rays VI-I,8; anal rays II,8, the bases of last two rays adjacent and counted as one ray; all dorsal and anal soft rays branched; pectoral rays 17 (upper four and lower three rays unbranched); pelvic rays I,5; principal caudal rays

17, the upper and lower unbranched; upper and lower procurent caudal rays 6 (none segmented); scales in longitudinal series 23, the first 19 of upper lateral line notched (none with an external tube and pore); a second series of notched scales beginning above origin of anal fin and ending three scales from caudal-fin base; scales above lateral line to origin of dorsal fin 2; scales below lateral line to origin of anal fin 8; predorsal scales 9; circumpeduncular scales 18; gill rakers 4+12 (2+9 as developed rakers, i.e. longer than width of their base); pseudobranchial filaments 6; no supraneural (predorsal) bones; vertebrae 10+14.

Body elongate, the depth 4.55 in SL, and moderately compressed, the width 1.8 in depth; head length 2.75 in SL; dorsal profile of head smoothly convex; snout length 3.8 in head; eye small, the orbit diameter 4.4 in head; interorbital space convex, the least bony width 4.85 in head; caudal peduncle more than twice as long as deep, the least depth 2.95 in head.

Mouth terminal, oblique (the gape slightly curved, forming an average angle of about 25° to horizontal axis of body), and large, the maxilla reaching slightly posterior to a vertical at rear edge of orbit, the upper jaw length 1.9 in head; posterior edge of maxilla truncate, the lower corner beveled by a short straight segment; no supramaxilla; a band of villiform teeth in jaws, broader anteriorly; largest teeth in upper jaw a pair of long symphyseal canines which project strongly inward and medially from inner edge of villiform band of teeth; upper jaw with an outer row of slender conical teeth, the longest anteriorly at side of jaw about 0.5 mm in length; teeth in inner and outer rows of villiform band of lower jaw enlarged as slender canines; largest teeth at front of lower jaw also a pair of symphyseal inward-projecting canines; two large recurved and incurved canines, about 1 mm in length, half way back in lower jaw at medial edge of villiform band; an irregular row of slender conical teeth on palatines and in a V-shape on vomer, one tooth posteriorly on each side of vomer somewhat enlarged. Tongue slender and short. Longest gill raker at angle of first gill arch, three-fourths orbit diameter.

Posterior nostril an oval opening about 0.6 mm in greatest diameter near edge of orbit in front of upper end of pupil; anterior nostril a thin membranous tube nearly a half orbit diameter in front of center of eye, with a short triangular posterior flap.

Opercular spines not apparent; posterior margin of opercle, subopercle, and interopercle thin and mem-



Fig. 1. Holotype of *Pseudamia rubra* sp. nov., NSMT-P 35678, 55 mm SL, Ogasawara Islands (J. E. Randall).

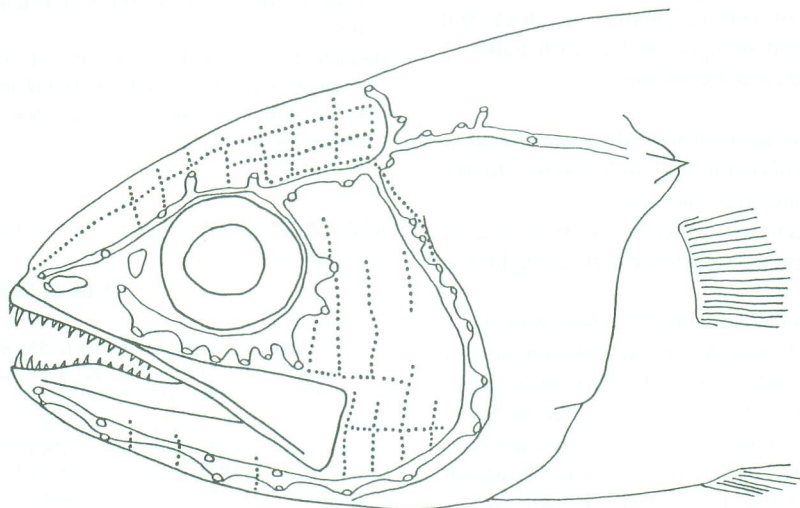


Fig. 2. Head of holotype of *Pseudamia rubra* sp. nov. to show sensory pores and papillae (H. Ida).

branous; a pointed opercular flap at level of upper edge of orbit, its tip extending slightly posterior to upper base of pectoral fin; edge of preopercle smooth except for two serrae at the rounded corner.

Scales thin and cycloid; scales dorsally on nape reaching within half orbit diameter of a vertical at rear edge of orbit; large scales on opercle, subopercle, and interopercle, but none on rest of head; head with rows of sensory papillae as shown in Figure 2; fins naked except for small scales at base of caudal fin (most of which seem to be lost).

Origin of first dorsal fin above tip of opercular flap; dorsal spines slender, the first 3.35 in head;

second dorsal spine longest, 3.0 in head; third and fourth dorsal soft rays longest, 1.85 in head; origin of anal fin below base of first dorsal soft ray; anal spines slightly more robust than dorsal spines; first anal spine short, 9.05 in head; second anal spine 3.1 in head; fourth anal soft ray longest, 1.75 in head; caudal fin rounded, 3.65 in SL; pectoral fins pointed, the middle rays longest, 3.55 in SL; pelvic fins nearly reaching anus, 2.0 in head.

Color in alcohol.—Pale, the scales dorsally on body with dusky edges, the darkest pigmentation at base of second dorsal fin and middorsally on caudal peduncle; a dusky band at base of anal fin, continuing

midventrally on caudal peduncle; a diffuse dusky spot smaller than eye posteriorly on side of caudal peduncle, followed by two narrow vertical dusky bands on base of caudal fin; snout and chin blackish; a vertically elongate triangular black spot behind eye; rest of cheek, maxilla, and ventral part of head irregularly blotched with dusky pigment; fins unmarked except for dusky bands at base of caudal fin.

Color when fresh.—Translucent (became opaque whitish soon after death), the edges of the scales orange-red, overlaid with melanophores dorsally on body, most of which are on scale edges; a concentration of orange-red dotted with melanophores at base of median fins; a diffuse dusky spot mixed with orange-red midposteriorly on caudal peduncle; a vertically elongate black spot behind eye; snout and chin blackish, the lips black; a suffusion of orange-red over opercle and ventral part of head; cross-hatch pattern of rows of sensory papillae on cheek and dorsal part of head orange-red; fins with light orange-red rays and clear membranes.

Remarks. This species is named *Pseudamia rubra* from the Latin *ruber* for red, in reference to the prevalence of orange-red coloration.

The single specimen was collected from a cave which was dark enough at the back that a light was needed.

Of the species of *Pseudamia*, *P. rubra* seems most closely related to *P. hayashii*, having the same fin-ray and longitudinal scale counts. It differs from *hayashii* in having more gill rakers, a more elongate body, shorter caudal fin, longer pectoral fins, and in color. *P. hayashii* lacks the dark markings on the head and body as seen on *rubra*; it is purplish brown overall, with iridescence anteriorly on the side and lower part of the body; the caudal fin is blackish with bluish white upper and lower corners.

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小笠原諸島から採集されたテンジクダイ科の1新種ウスベニテンジクダイ

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小笠原諸島の父島南部で得られた体長 55 mm の1標本に基づき新種ウスベニテンジクダイを記載した。本属には従来6種が知られていたが、本種は体が淡橙紅色であること (*Pseudamia hayashii* を除く4種の体は暗色, *P. hayashii* は淡褐色) および次の形質の組合せで明瞭に識別できる。背鰭8軟条、臀鰭8軟条、胸鰭17軟条、縦列鱗数23、発達した鰓耙数2+9、側線鱗に欠刻があり開孔がないこと、体長は体高の4.55倍、尾鰭長の3.65倍、胸鰭長の3.55倍であること。

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