

## A new species of cardinalfish (apogonidae) from northern Australia

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### Abstract

*Pseudamia nigra* sp. nov. is described from 29 specimens, 13.5-49.6 mm SL, from coastal localities of Western Australia, Northern Territory and Queensland. It differs from all other species of *Pseudamia* in having smaller scales (43-50 in a longitudinal series), a longer maxilla (extends well past eye), 19-20 pectoral rays (15-17 in other species), and a uniform dark brown to blackish coloration in life. The habitat of *P. nigra* consists of river mouths, tidal creeks, and mangrove shores.

### Introduction

The apogonid genus *Pseudamia* Bleeker was reviewed by Randall *et al.* (1985). They recognised five species: *P. amblyuroptera* (Bleeker) from the Indo-Malayan region, *P. gelatinosa* Smith from the Indo-W. Pacific, *P. hayashii* Randall, Lachner, and Smith from the Indo-W. Pacific, *P. tarri* Randall, Lachner, and Smith from the Persian Gulf, and *P. zonata* Randall, Lachner, and Smith from the far western Pacific. The present paper describes a sixth species collected by the author on a recent Western Australian Museum expedition to the Kimberley Coast of north-western Australia. A single specimen, 49.6 mm SL, was obtained in shallow water in the scenic King George River Gorge. It was subsequently discovered that additional specimens taken between 1981-1990 were amongst the collection of the Northern Territory Museum of Arts and Sciences, Darwin.

Methods of counting and measuring follow those of Randall *et al.* (1985). Proportional measurements for selected type specimens are presented in Table 1. The holotype is deposited at the Western Australian Museum, Perth (WAM) and paratypes at the Northern Territory Museum of Arts and Sciences, Darwin (NTM).

### Systematics

#### *Pseudamia nigra* sp. nov.

#### Figure 1

#### Holotype

WAM P.30300-001, 49.6 mm SL, King George River Gorge, about 500 m downstream from King George Falls, East Kimberley District, Western Australia (approximately 14°03'S, 127°19'E), 0.5-2 m depth, rotenone, G.R. Allen, 12 August 1991.

#### Paratypes

NTM S.10006-028, 3 specimens, 19.3-28.0 mm SL, Burford Island, Cobourg Peninsula, Northern Territory (approximately 11°29'S, 131°57'E), to 0.5 m depth, mangrove shore, rotenone, H. Larson, 13 October 1981; NTM S.10718-058, 22 specimens, 13.5-37.8 mm SL, Pearl Raft Creek, East Arm, Darwin

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**Table 1** Morphometric proportions of selected type specimens of *Pseudamia nigra* n. sp. expressed as percentage of the standard length.

Character	Holotype	Paratypes		
	WAM P.30300-001	NTM S.12870-001	NTM S.10718-058	NTM S.10006-028
Standard length (mm)	49.6	39.7	37.8	33.2
Body depth	27.2	28.5	27.7	25.3
Body width	17.1	13.9	16.1	15.1
Head length	38.3	41.6	37.0	40.7
Snout length	8.1	9.1	8.2	9.3
Eye diameter	6.5	8.1	7.4	8.1
Interorbital width	8.3	8.8	8.5	7.5
Maxillary length	19.8	21.9	21.2	21.1
Caudal peduncle depth	13.1	12.8	14.8	14.8
Caudal peduncle length	22.2	21.2	20.6	22.0
Predorsal length	40.5	43.3	42.1	41.0
Preanal length	65.3	65.2	65.6	62.7
Prepelvic length	32.9	36.0	39.7	42.2
Length 1st dorsal spine	7.9	9.3	8.5	10.2
Length 2nd dorsal spine	8.9	10.3	9.5	12.4
Length longest soft dorsal ray	17.3	20.2	17.7	19.6
Length 1st anal spine	2.4	2.5	3.2	3.6
Length 2nd anal spine	6.0	8.8	*4.8	9.0
Length longest soft anal ray	21.2	21.4	18.0	20.5
length caudal fin	33.1	32.0	31.7	*24.1
Length pectoral fin	34.7	31.2	27.5	33.4
Length pelvic spine	7.1	9.3	9.3	10.2
Length pelvic fin	17.5	19.9	18.3	18.7

\*denotes damaged condition

Harbour, Northern Territory (approximately 12°30'S, 130°55'E), 1.5 m depth, rotenone, 31 December, 1982; NTM S.1124-003, 19.1 mm SL, Woods Inlet, Darwin Harbour, Northern Territory (approximately 12°29'S, 130°46'E), 0-2 m depth, rotenone, H. Larson and R. Williams, 16 March 1984; NTM S.12870-001, 2 specimens, 18.3-39.7 mm SL, Heales Creek, Cape York Peninsula, Queensland (approximately 14°22'S, 141°54'E), S. Blaber, 30 October 1990.

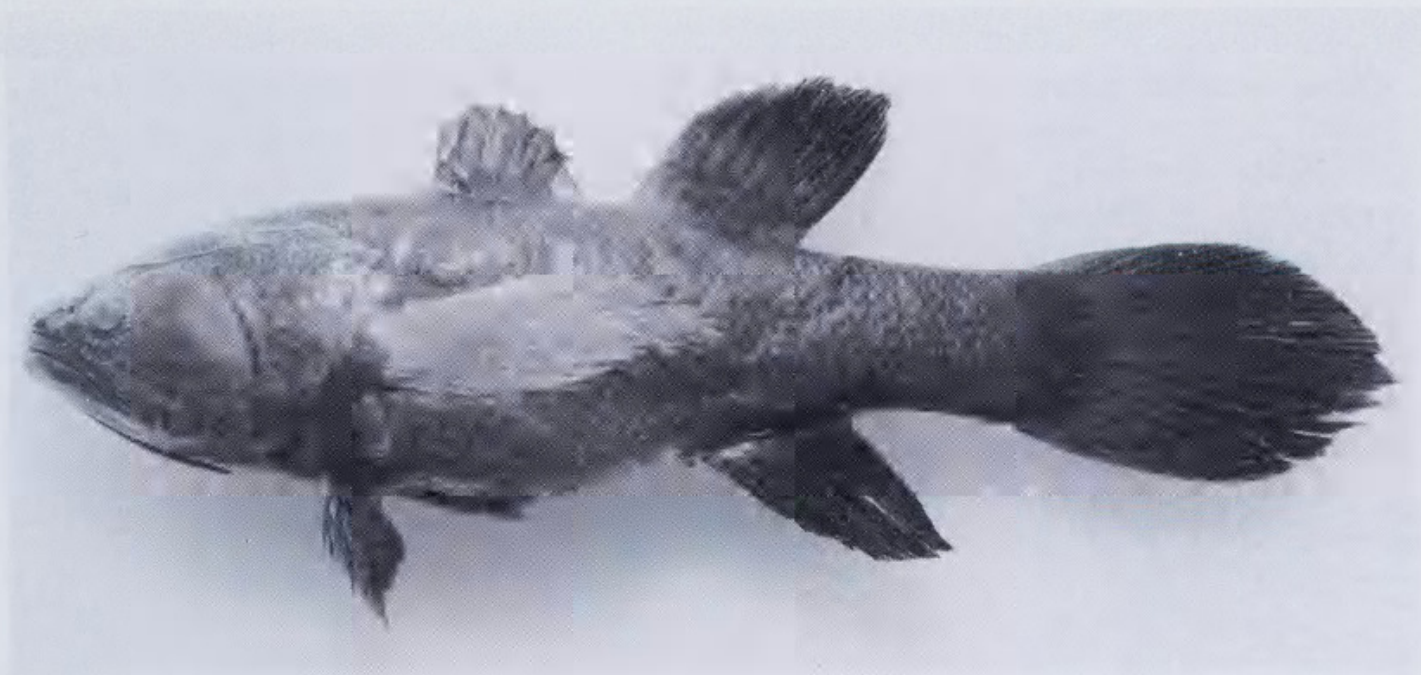
### Diagnosis

A species of *Pseudamia* Bleeker characterised by relatively small scales (43-50 in longitudinal series), an elongate maxilla that extends well past the eye, 19-20 pectoral rays, and a uniform dark-brown to blackish coloration (except for translucent pectoral fins) in life. The other 5 species in the genus differ in having 23-43 scales in a longitudinal series, maxilla extending to about rear edge of eye, pectoral rays 15-17, and more or less distinctive colour patterns.

### Description

Dorsal rays VI-I, 10; anal rays I, 10; pectoral rays 19 (2 paratypes with 20), the uppermost and two lowermost unbranched; principal caudal rays 17, the upper and lower unbranched; upper and lower procurent caudal rays 5; scales in longitudinal





**Figure 1** *Pseudamia nigra*, holotype, 49.6 mm SL.

series 50 (scales missing in most paratypes, but counts of scale pockets indicate range of about 43-50); scales above lateral line to origin of dorsal fin 7; scales below lateral line to origin of anal fin 17; predorsal scales about 20 (embedded anteriorly and therefore difficult to count); circumpeduncular scales 29; gill rakers 5 + 15, the developed rakers 4 + 11 (most paratypes with total raker count of 6-7 + 16-17).

Body relatively slender, the greatest depth 3.7 (3.5-4.0) in standard length; greatest width of body 1.6 (1.7-2.0) in greatest depth; head length 2.6 (2.4-2.7) in standard length; predorsal length 2.5 (2.3-2.4), preanal length 1.5 (1.5-1.7), and prepelvic length 3.0 (2.4-2.7), all in standard length; snout length 4.8 (4.2-4.6), eye diameter 5.9 (5.0-5.3), interorbital width 4.6 (4.1-5.4), maxillary length 1.9 (1.7-1.9), depth of caudal peduncle 2.9 (2.5-3.2), length of caudal peduncle 1.7 (1.6-2.0), length of first dorsal spine 4.9 (3.2-4.5), length of second dorsal spine 4.3 (3.6-4.1), longest soft dorsal ray 2.2 (2.1-2.2), length of second anal spine 1.8 (1.9-2.2), longest soft anal ray 1.8 (1.9-2.2), length of pectoral fin 1.1 (1.2-1.3), length of pelvic fin 2.2 (1.9-2.2), and length of caudal fin 1.2 (1.0-1.3), all in head length. First anal spine very short and inconspicuous, its length 2.5 (2.5-3.5) in length of second anal spine; length of pelvic spine 2.5 (1.8-2.1) in length of pelvic fin.

Mouth oblique, more or less terminal, the lower jaw projecting very slightly; maxilla extending about one full eye diameter beyond rear edge of orbit; posterior margin of maxilla truncate, the corners rounded; teeth of jaws depressible, villiform, in band that narrows in width posteriorly; inner row of teeth caniniform, much larger than anterior teeth, those near symphysis particularly enlarged and aligned almost horizontally; vomer and palatines also with villiform teeth.

Posterior nostril close to orbit in front of centre of eye, ovoid and large, its vertical axis about one-third pupil diameter; anterior nostril small, in a membranous tube which is





**Figure 2** Type locality of *Pseudamia nigra* (arrow indicates where holotype collected).

notched anteriorly, lying in front of posterior nostril by a distance about equal to half pupil diameter.

Margin of opercle broadly membranous with a prominent, very pointed, dorsoposterior flap; margin of preopercle crenulate, the rounded corner with 3 poorly defined serrae.

Scales cycloid, thin, deciduous; scales of opercle slightly larger than those of body; remainder of head scaleless with longitudinal and transverse-vertical rows of sensory pitlines; a pair of inconspicuous lateral lines (mainly indicated by notched scales and narrow pale line), one dorsal and one ventral on body.

**Colour of holotype when fresh:**

Uniform blackish except first dorsal fin brown and pectorals translucent.

**Colour in alcohol**

Holotype generally brown with darker scale centres; fins are dark brown, except pectorals translucent.

The paratypes are generally much lighter brown in colour than the holotype. They possess very small brown spots that are arranged in horizontal lines, one per scale row. The median fins of most paratypes are dark brown and strongly contrasted with the lighter body colouration. Some paratypes under 30.0 mm standard length have a white margin on both dorsal fins and the anal fin.



## Remarks

Members of the genus *Pseudamia* are mainly inhabitants of crevices and caves. They are seldom seen except when flushed out with chemical ichthyocides. The type locality (Figure 2) of *P. nigra* is located at the base of a rock slide in a winding sandstone gorge, about 8 km inland from the river mouth and 500 m from a spectacular 80 m high waterfall, the base of which is the extreme limit of marine conditions. The falls were reduced to a small trickle during the time of our visit, which was during the height of the dry season. The water below the falls and at the nearby type locality was not tested for salinity, but the taste was approximately that of full strength sea water. However, during the summer wet season the site would be exposed to considerable freshwater discharge, particularly at low tide (tidal amplitude is typically in the range of 6-8 m). The holotype was collected next to shore amongst boulders. Paratypes were collected in very shallow (less than 2 m) depths, generally from tidal mangrove creeks.

The habitat requirements of *Pseudamia nigra* appear most similar to those of *P. amblyuroptera* which is usually found in turbid estuarine waters in less than 2 m depth. The other members of the genus generally occur on coral reefs in relatively clear water to a depth of approximately 30-40 m. The genus was previously unknown from the Kimberley coast of north-western Australia. Other species of *Pseudamia* previously recorded (Randall *et al.* 1985) from Western Australia include *P. gelatinosa* (Rowley Shoals and Monte Bello Islands) and *P. hayashii* (Rowley Shoals).

The species is named *nigra* (Latin: black) with reference to the coloration.

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