

## Descriptions of three new pseudochromid fishes of the genus *Pseudoplesiops* from Australia and surrounding regions

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### Abstract

Three new pseudochromid fishes are described from the tropical eastern Indian and western Pacific Oceans. *Pseudoplesiops howensis* is described from 22 specimens collected at Lord Howe Island in 1973. It is closely related to *P. knighti*, also described herein, but differs in predorsal scalation and coloration. The latter species is described from 55 specimens, mainly collected on the northern Great Barrier Reef, but it also occurs off north-western Australia, at Manus Islands, and possibly at the Molucca Islands. *Pseudoplesiops multisquamatus*, the third new species, differs from other members of the genus on the basis of its high (usually more than 60) number of scales in a horizontal series. It is described from 44 specimens collected mainly below 30-40 m depth at the Fiji Islands, New Britain, Manus Island, Coral Sea, northern Great Barrier Reef, off north-western Australia, Christmas Island, and the Cocos-Keeling Islands.

### Introduction

The marine fish family Pseudochromidae contains about 100 known species, which are mainly confined to the tropical western Pacific and Indian Oceans. They are small fishes (usually under 10 cm standard length) that inhabit caves, crevices, ledges, or rubble habitats. Apart from the outdated work of Fowler (1931) there has been no comprehensive review of the group, although Lubbock (1975, 1976, and 1977) provided regional treatment of the pseudochromid faunas of the Red Sea, and western and central Indian Ocean.

Evidence provided by Springer *et al.* (1977) indicated that *Anisochromis* Smith and *Pseudoplesiops* Bleeker, previously recognised as separate families (Anisochromidae and Pseudoplesiopidae) should be placed in Pseudochromidae. More recently, Godkin and Winterbottom (1985) provided good evidence for the incorporation of the Congrogadidae within the Pseudochromidae. Other genera recognised by recent authors include *Pseudochromis* Rüppell (with over 50 species), *Labracinus* Bleeker, and *Chlidichthys* Smith.

The present paper describes three new species collected by the author and associates, primarily from Australia and adjacent regions. Although they exhibit some

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features of *Chlidichthys* (i.e., a single tubed lateral-line scale, presence of palatine teeth, and ctenoid scales in two species), the three are provisionally placed in *Pseudoplesiops* on the advice of A. Gill, who is engaged in revisionary studies of the family. The discovery of new species during the past decade necessitates a revision of generic lines within the family. According to Edwards and Randall (1982) it is doubtful if *Chlidichthys* as traditionally defined can be maintained as distinct from *Pseudoplesiops*.

The format of the new species descriptions is based on those of Lubbock (1975, 1976, and 1977) with certain modifications. Type specimens were deposited at the following institutions (abbreviations are used in the subsequent text): Academy of Natural Sciences, Philadelphia (ANSP); Australian Museum, Sydney (AMS); Bernice P. Bishop Museum, Honolulu (BPBM); Queensland Museum, Brisbane (QM); Royal Ontario Museum, Toronto (ROM); United States National Museum of Natural History, Washington, D.C. (USNM); and Western Australian Museum, Perth (WAM).

## Systematics

### *Pseudoplesiops howensis* sp. nov.

Figures 1 and 2; Tables 1 and 2

#### Holotype

AMS I.17358-018, 30.5 mm SL, Lord Howe Island, Australia (31°32'S, 159°04'E), 20-25 m, G. Allen *et al.*, rotenone, 5 February 1973.

#### Paratypes (all from Lord Howe Island)

AMS I.17422-010, 31.6 mm SL, Australian Museum party, rotenone, February 1973; AMS I.17357-013, 3 specimens, 24.2-26.4 mm SL, off Phillip Point, 20-25 m, G. Allen *et al.*, rotenone, 5-16 February 1973; AMS I.17358-008, 2 specimens, 28.7-30.2 mm SL, collected with holotype; AMS I.17362-027, 31.5 mm SL, 18-25 m, G. Allen *et al.*, rotenone, 18-25 February 1973; BPBM 14925, 8 specimens, 28.0-32 mm SL, collected with holotype; BPBM 14944, 4 specimens, 28.0-30.0 mm SL, Phillip Rock, 30 m, J. Randall *et al.*, rotenone, 26 February 1973; WAM P.28622-001, 2 specimens, 26.5-28.8 mm SL, collected with AMS I.17357-013.

#### Diagnosis

A species of pseudochromid fish differing from other members of the family by the following combination of characters: dorsal rays usually I,23; anal rays I,14; pectoral rays 16 or 17; pelvic rays I,4; branched caudal rays 14 (rarely 13); vertical scale rows 33 to 38; a single tubed lateral-line scale. It is closely allied to *P. knighti*, described herein, but differs in having the predorsal scales extending forward to the rear margin of the preopercle (scales and well forward of this point in *P. knighti*; compare Figs 2 and 4). In addition, the dorsal and anal fins tend to be dusky brown in *P. howensis* and pale (yellow in life) in *P. knighti*.

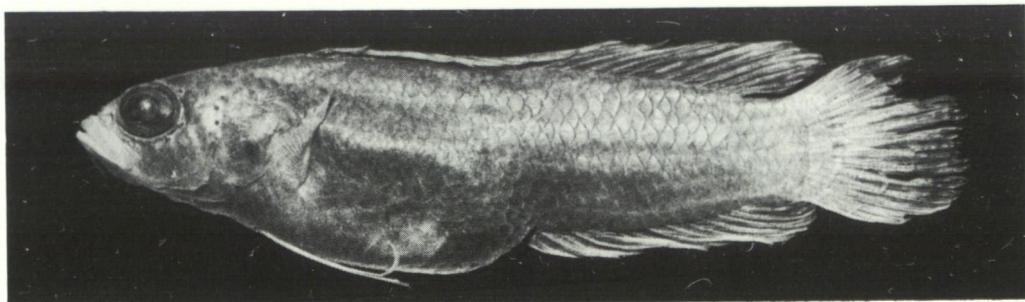


Figure 1 *Pseudopleysiops howensis*, holotype, 30.5 mm SL, Lord Howe Island.

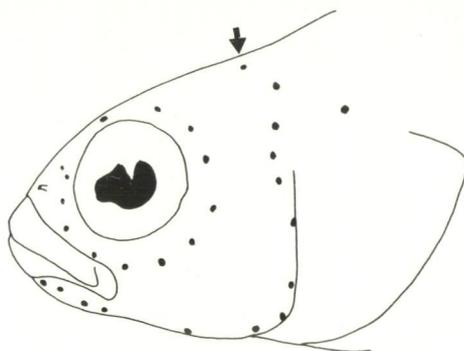


Figure 2 Camera lucida drawing of head of *Pseudopleysiops howensis* showing sensory pores of head. Arrow denotes extent of predorsal scalation.

### Description

Dorsal fin rays I,23 (single paratype with I,24); anal fin rays I,14; pectoral fin rays 17 (16 or 17); pelvic fin rays I,4; segmented caudal fin rays 14 (13 or 14), with four or five small supplementary rays above and below. Vertical scale rows from origin of lateral line to base of caudal fin 35 (33 to 38); a single tubular lateral line scale above upper limit of operculum; transverse scale series, counted forwards and upwards from anal fin origin 14 (12 to 14); predorsal scales 9(9 to 11); 3(2 or 3) rows of scales on preoperculum; 8(8 or 9) sensory pores in the post- and sub-orbital series, starting on the vertical above eye centre and extending down the hind margin of the eye to the upper edge of the maxilla (the first pore adjacent to the maxilla is included in the count); median interorbital pore absent. Gill rakers on first arch  $4 + 8 = 12$  (3 or  $4 + 7$  to  $11 = 10$  to 15).

Greatest body depth 3.6 (3.6 to 4.0), head length 3.4 (3.2 to 3.4), length of dorsal fin base 1.7 (1.6 to 1.7), length of anal fin base 3.0 (2.9 to 3.3), all in standard length. Snout length 6.1 (5.3 to 6.4), eye diameter 3.4 (3.2 to 3.9), predorsal distance 0.9 (0.9 to 1.0), least depth of caudal peduncle 2.1 (1.9 to 2.1),

Fishes of the genus *Pseudoplesiops*

pectoral fin length 1.3 to 1.6 in paratypes (damaged in holotype), pelvic fin length 1.2 (0.9 to 1.2), all in head length.

**Table 1** Fin-ray and gill raker counts for new species of *Pseudoplesiops*. Dorsal and anal counts include both spinous (unsegmented) and soft (segmented) elements.

	Dorsal rays	Anal rays	Pectoral rays	Total gill rakers on first arch
Species	24 25 26 27 28	15 16 17	16 17 18	10 11 12 13 14 15 16 17 18 19
<i>P. howensis</i>	21 1	22	9 13	1 7 9 3 1 1
<i>P. knighti</i>	26	24 2	22 4	3 13 8 2
<i>P. multisquamatus</i>	3 20 2	8 17	18 10	3 2 10 8 2

**Table 2** Morphometric proportions (as percentage of standard length) for selected type specimens of *Pseudoplesiops howensis*.

Character	Holotype	Paratypes				
	AMS I.17358-018	AMS I.17422-010	AMS I.17358.008	AMS P.28622-001	AMS I.17357-013	AMS I.17357-013
Standard length (mm)	30.5	31.6	30.2	28.8	25.5	24.2
Body depth	27.9	25.0	26.5	26.0	24.7	26.4
Head length	29.8	28.5	29.8	31.3	31.0	30.2
Snout length	4.9	4.7	4.6	5.9	5.9	5.4
Eye diameter	8.9	8.9	7.6	9.0	9.4	8.7
Predorsal distance	32.1	31.0	29.8	33.0	32.2	31.4
Caudal peduncle depth	14.4	13.6	14.9	14.9	15.3	15.7
Pectoral fin length	*	20.3	21.2	21.5	23.5	23.6
Pelvic fin length	24.9	27.8	28.1	*	32.9	34.3
Dorsal fin base length	57.7	62.0	59.9	62.8	63.5	62.0
Anal fin base length	33.8	34.2	33.1	34.7	34.1	34.7

\* denotes damaged or missing

Small, elongate, reef fish; head and body moderately compressed. Jaws nearly equal anteriorly, reaching posteriorly to below pupil; cleft of mouth oblique. Eye with pear-shaped pupil. Scales on head and anteriormost part of body cycloid, remainder ctenoid; predorsal scales extending to about level of rear margin of preopercle; snout, preorbital, interorbital and frontal portion of nape, chin and maxilla naked; scales irregular and large on operculum. Upper part of operculum, edge of preoperculum, orbital and supraorbital region of head, lower jaw and snout bearing sensory canals (Fig 2); preopercular and opercular edges entire.

Upper jaw with 1-2 lateral series of subconical teeth on posterior part of jaw; at symphysis several series of teeth, those of the anterior series caniniform and en-

larged, the teeth behind these small and setiform; anteriorly 5 or 6 enlarged curved canines. Lower jaw dentition similar, but with single lateral series on posterior part of jaw; 6 enlarged canines anteriorly. Vomer with an irregular, chevron-shaped series of fine teeth; palatines with similar teeth. Tongue tip rounded, its upper surface finely papillate.

Dorsal fin with single feeble spine, little differentiated from soft rays; last 5 (5 to 7) rays of dorsal fin branched; last 5 (3 to 5) rays of anal fin branched. Pectoral fins rounded, principal rays branched. Pelvic fins inserted below pectoral fins, pointed, soft rays unbranched, second soft ray longest; pelvic fin tips extending nearly to anus (except damaged in some specimens). Caudal fin rounded, with basal scaly sheath.

Colour in alcohol: overall brown, tan on breast, belly, and lower part of head; dorsal and anal fins slightly dusky; pectoral and pelvic fins pale tan.

Colour when fresh: overall medium brown, including dorsal and anal fins; breast, belly, and lower part of head tan; pelvic, pectoral, and outer part of caudal fins tan to translucent; margins of dorsal and anal fins and tip of pelvic fins narrowly blue.

#### Remarks

This species inhabits reef crevices in the lagoon at Lord Howe Island in 5-10 m depth, and also occurs outside the lagoon to at least 30 m. Two specimens (AMS 1.15485-002 and 1.19338-020), from Heron and One Tree Islands in the Capricorn Group on the southern Great Barrier Reef are provisionally identified as *P. howensis*. They seem to agree in most respects with material from Lord Howe Island, although it would be desirable to examine additional specimens to confirm the identification.

It was reported from Lord Howe Island as *Pseudoplesiops* sp. by Allen *et al.* (1976). They mentioned the presence of a fleshy keel in the intermandibular space. Although this feature is apparent in several of the type specimens it is nevertheless poorly developed, and easily overlooked. The only member of the genus possessing a well developed intermandibular keel is *P. revillei* Schultz, a widespread species in the tropical Indo-Pacific region.

The species is named *howensis* in reference to the type locality.

#### *Pseudoplesiops knighti* sp. nov.

Figures 3 and 4; Tables 1 and 3

#### Holotype

WAM P.28534-001, 29.2mm SL, Number 8 Ribbon Reef, Great Barrier Reef, Queensland, Australia (14°58'S, 145°44'E), north end, 25-40 m, G. Allen, rotenone, 13 November 1985.

#### Paratypes

Great Barrier Reef, Queensland: AMS I.18739-063, 7 specimens, 13.0-17.5 mm SL, Lizard Island (14°42'S, 124°32'E), 3-10m, AMS party, rotenone, 21 November 1975; AMS I.18740-

070, 2 specimens, 23.9-28.4 mm SL, Yonge Reef (14°35'S, 145°37'E), 8-10 m, AMS party, rotenone, 8 November 1975; AMS I.19454-034, 26.0 mm SL, Yonge Reef, 1-18 m, AMS party, rotenone, 11 November 1985; AMS I.19472-119, 11 specimens, 12.0-26.5 mm SL, Yonge Reef, 7-15 m, AMS party, rotenone, 23 November 1975; AMS I.19472-126, 26.5 mm SL, Yonge Reef, 7-15 m, AMS party, rotenone, 23 November 1975; AMS I.20775-008, 2 specimens, 19.1-29.3 mm SL, Raine Island (11°35'S, 144°01'E), 0-20 m, AMS party, rotenone, 11 February 1979; AMS I.22640-002, 31.0 mm SL, Escape Reef (15°49'S, 145°50'E), 15-17 m, W. Starck, rotenone, 9 November 1980; BPBM 30930, 2 specimens, 22.8-24.7 mm SL, collected with holotype; QM I.22340, 2 specimens, 26.1-26.6 mm SL, outer reef 20 km west of Lizard Island (14°54'S, 145°40'E), 15 m, G. Allen, rotenone, 4 November 1985; ROM 40459, 2 specimens, 25.0-28.5 mm SL, Escape Reef, T. Ayling *et al.*, rotenone, 1 November 1981; ROM 40479, 2 specimens, 23.6-24.7 mm SL, Escape Reef, J. Paxton *et al.*, rotenone, 7 November 1981; USNM 278457, 23.4 mm SL, same data as QM paratypes; WAM P.25322-004, 24.6 mm SL, Pixie Reef (16°33'S, 145°52'E), 12 m, G. Allen, rotenone, 3 July 1972; WAM P.28531-004, 3 specimens, 15.5-26.8 mm SL, same data as QM paratypes; WAM P.28533-013, 3 specimens, 26.0-30.0 mm SL, south end of Number 9 Ribbon Reef (15°00'S 145°42'E), 15 m, G. Allen, rotenone, 11 November 1985; WAM P.28534-002, 3 specimens, 26.8-27.7 mm SL, north end of Number 8 Ribbon Reef (14°58'S, 145°44'E), 25-40 m, G. Allen, rotenone, 13 November 1985; WAM P.28535-015, 2 specimens, 29.0-31.5 mm SL, south end of Number 10 Ribbon Reef (14°56'S, 145°41'E), 4-5 m, G. Allen, rotenone, 14 November 1985. **North-west shelf of Australia:** AMS I.21316-018, 24.3 mm SL, Scott Reef (14°10'S, 121°55'E), 7-10 m, F. Talbot, rotenone, 20 September 1979. **Papua New Guinea:** WAM P.27826-067, 5 specimens, 23.0-25.0 mm SL, Manus Island (2°04'S, 147°25'E), 35-41 m, G. Allen and R. Knight, rotenone, 6 October 1982. **Solomon Islands:** ROM 45993, 2 specimens, 15.5-27.0 mm SL, 12 km west of Honiara, Guadalcanal (9°26'S, 160°03'E), shipwreck in 20-22 m, P. Nichols and D. Evans, rotenone, 24 April 1982.

### Diagnosis

A species of pseudochromid fish differing from other members of the family by the following combination of characters: dorsal rays 1,2,3; anal rays usually 1,1,4; pectoral rays 17 or 18; pelvic rays 1,4; branched caudal rays 13 (rarely 14); vertical scale rows 32 to 35; a single tubed lateral-line scale. It is closely allied to *P. howensis*, described herein, but differs in having a larger eye (2.5-3.0 in head length v. 3.2-3.9) and in the extent of the predorsal scalation, which reach to the rear part of the interorbital region (scales end well behind this point in *P. howensis*; compare Figs 2 and 4). It is also similar in appearance to *P. annae* (Weber) of the Indo-Australian Archipelago but different in fin ray counts (*annae*: dorsal rays 1,25-27; anal rays 1,16 or 17; pelvic rays 1,3) and predorsal scalation (not reaching interorbital). In addition, *P. annae* appears to be more restricted to deep water (23-113 m). It is also similar to *P. inornatus* (Lubbock) from the central Indian Ocean (Sri Lanka, Maldives, Chagos) but differs in fin ray counts (*inornatus*: dorsal rays II,21 or 22; anal rays III,13; pectoral rays 19 or 20) predorsal scalation (only to level of preoperculum), and a larger maximum standard length (45.5 mm v. 31.5 mm).

### Description

Dorsal fin rays I,2,3; anal fin rays I,1,4 (2 paratypes with II,1,4); pectoral fin rays 17 (17 or 18); pelvic fin rays 1,4; principal caudal fin rays 13 (one paratype

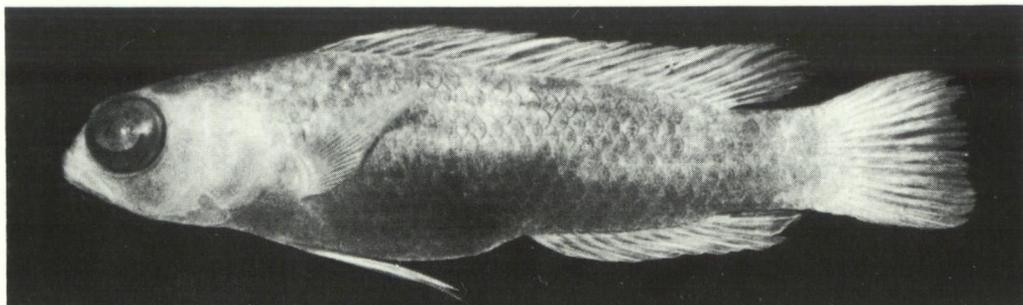


Figure 3 *Pseudoplesiops knighti*, holotype, 29.2 mm SL, Great Barrier Reef, Queensland.

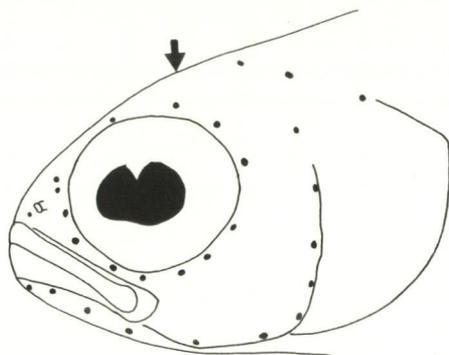


Figure 4 Camera lucida drawing of head of *Pseudoplesiops knighti* showing sensory pores of head. Arrow denotes extent of predorsal scalation.

Table 3 Morphometric proportions (as percentage of standard length) for selected type specimens of *Pseudoplesiops knighti*.

Character	Holotype	Paratypes				
	WAM P.28534-001	AMS I.18740-070	WAM P.27826-067	WAM P.27826-067	WAM P.27826-067	WAM P.27826-067
Standard length (mm)	29.2	28.5	26.5	24.9	23.7	22.9
Body depth	26.0	25.6	27.9	29.7	29.5	28.8
Head length	30.8	33.3	30.6	31.3	32.5	32.3
Snout length	5.1	5.3	5.7	5.6	5.1	6.1
Eye diameter	12.3	11.9	12.5	12.4	12.7	12.7
Predorsal distance	35.6	35.8	36.6	34.5	36.3	36.7
Caudal peduncle depth	13.4	14.4	15.1	16.1	15.2	17.0
Pectoral fin length	20.5	20.7	22.6	22.5	21.5	21.0
Pelvic fin length	27.4	26.7	27.2	30.5	27.0	29.3
Dorsal fin base length	56.2	54.7	58.9	59.0	57.8	59.4
Anal fin base length	25.7	26.7	26.4	25.7	24.9	28.4

with 14), with 5 or 6 small supplementary rays above and below vertical scale rows from origin of lateral line to base of caudal fin 34 (32 to 35); a single tubular lateral line scale above upper limit of operculum; transverse scale series, counted forwards and upwards from anal fin origin 12 (11 or 12); predorsal scales 10(9 to 10), 3 (2 or 3) rows of scales on preoperculum; 8 sensory pores in the post- and sub-orbital series, starting on the vertical above eye centre and extending down the hind margin of the eye to the upper edge of the maxilla (the first pore adjacent to the maxilla is included in the count); median interorbital pore absent. Gill rakers on first arch  $4 + 10 = 14$  (3 to 5 + 9 or 10 = 12 to 15).

Greatest body depth 3.8 (3.4 to 3.9), head length 3.2 (3.0 to 3.3), length of dorsal fin base 1.8 (1.7 to 1.8), length of anal fin base 3.9 (3.5 to 4.0), all in standard length. Snout length 6.0 (5.3 to 6.4), eye diameter 2.5 (2.5 to 3.0), predorsal distance 0.9 (0.8 to 0.9), least depth of caudal peduncle 2.3 (1.9 to 2.3), pectoral fin length 1.5 (1.4 to 1.7), pelvic fin length 1.1 (1.0 to 1.6), all in head length.

Small, elongate, reef fish; head and body moderately compressed. Jaws nearly equal anteriorly, reaching posteriorly to below pupil; cleft of mouth oblique. Eye with pear-shaped pupil. Scales on head and anterior part of body cycloid, remainder ctenoid; predorsal scales extending to rear of interorbital; snout, preorbital, most of interorbital area, chin and maxilla naked; 3 transverse scale series on preoperculum; scales irregular and large on operculum. Upper part of operculum, edge of preoperculum, orbital and supraorbital region of head, lower jaw and snout bearing sensory canals (Fig 4); opercular and preopercular edges entire.

Upper jaw with 1-2 lateral series of subconical teeth on posterior part of jaw, at symphysis several series of teeth, those of the anterior series caniniform and enlarged, the remaining teeth behind small setiform; anteriorly 6-8 enlarged curved canines. Lower jaw dentition similar, row of enlarged canines anteriorly. Vomer with irregular, chevron-shaped series of fine teeth; palatines with similar teeth. Tongue tip rounded or truncate, its upper surface finely papillate.

Dorsal fin with single feeble spine, little differentiated from soft rays; last 7 (4 to 8) rays of dorsal fin branched; last 7(4 to 7) rays of anal fin branched. Pectoral fins rounded, principal rays branched. Pelvic fins inserted below pectoral fins, pointed, soft rays unbranched, second soft ray longest; pelvic fin tips extending to anus or nearly so. Caudal fin slightly rounded, with basal scaly sheath.

Colour in alcohol: overall medium brown to tan with pale tan to whitish fins.

Colour when fresh: varies from bright yellow, including fins, to overall brown, lighter on breast, belly and lower half of head; caudal fin of brown variety yellow, other fins translucent to pale yellow; iris orange, perimeter of eye often narrowly blue or purple.

### Remarks

This species inhabits coral rubble and reef crevices, usually at depths ranging from about 10 to 30 m, although specimens from as shallow as 4 m and as deep as 41 m are known.

Most specimens have been collected from the northern Great Barrier Reef of Australia between Pixie Reef (16°33'S) and Yonge Reef (14°35'S). It is also known from Manus Island in the Bismark Archipelago, the Solomon Islands, and from Scott Reef, near the edge of the north-western continental shelf of Western Australia. A specimen (WAM P. 25235-0220, 25 mm SL) from Ambon, Molucca Islands is provisionally identified as *P. knighti*, agreeing in most respects with the type material except it has a lower dorsal fin-ray count (I,21).

The species is named *knighti* in honour of Mr Ronald Knight Sr of Manus, Papua New Guinea for his generous hospitality during a collecting visit to the island in 1982.

*Pseudoplesiops multisquamatus* sp. nov.

Figures 5 and 6; Tables 1 and 4

**Holotype**

WAM P. 27470-002, 41.8 mm SL, Escape Reef (15°50'S, 145°50'E), Great Barrier Reef, Queensland, Australia, outside of northern passage, 40 m, G. Allen and W. Starck, rotenone, 3 November 1981.

**Paratypes**

**Fiji Islands:** ROM 50734, 4 specimens, 23.8-48.7 mm SL, Astrolabe Reef (18°42'S, 178°30'E), outer reef, 20-23 m, A. Emery, R. Winterbottom *et al.*, rotenone, 21 March 1983. **Papua New Guinea:** USNM 278458, 2 specimens, 31.0-37.0 mm SL, Rabaul, New Britain (4°08'S, 152°10'E), off Japanese submarine base, 23-30 m, G. Allen, rotenone, 8 October 1983; WAM P.28172-007, 4 specimens, 24.0-42.0 mm SL, same data as USNM specimens; WAM P.28170-010, 3 specimens, 32.7-39.5 mm SL, Rabaul, New Britain, near Bai Village, 25-34 m, G. Allen, rotenone, 7 October 1983; WAM P.28174-028, 38.6 mm SL, Rabaul, New Britain, east side of harbour entrance, 25-30 m, G. Allen, rotenone, 9 October 1983; WAM P.27826-041, 3 specimens, 30.8-38.4 mm SL, Manus Island, Los Negros Islet (2°04'S, 147°25'E), 3 km east of Momote Aerodrome, 35-41 m, G. Allen and R. Knight Jr, rotenone, 6 October 1982. **Coral Sea:** WAM P.28541-030, 3 specimens, 15.8-37.0 mm SL, Holmes Reef (16°31'S, 147°50'E), south-western corner of Eastern Reef in lagoon, 12-14 m, G. Allen, rotenone, 20 November 1985. **Great Barrier Reef:** AMS I.20775-007, 4 specimens, 30.9-35.7 mm SL, Raine Island (11°36'S, 144°01'E), off western tip, 0-20 m, AMS party, rotenone, 11 February 1979; AMS I.22627-012, 33.0 mm SL, Escape Reef (15°49'S, 145°50'E), north reef on outer slope, 52-60 m, G. Allen, A. Ayling, and D. Blake, rotenone, 4 November 1981; BPBM 30929, 2 specimens, 25.7-32.0 mm SL, Escape Reef, outer slope, 58-60 m, G. Allen and W. Starck, rotenone, 5 November 1981; WAM P.27476-001, 38.8 mm SL, same data as BPBM specimens. **Western Australia:** WAM P.27659-025, 31.7 mm SL, Clerke Reef (17°16'S, 119°22'E), Rowley Shoals, outer reef east of Bedwell Islet, 32 m, G. Allen, rotenone, 22 July 1982. **Christmas Island** (10°27'S, 105°40'E): WAM P.26082-019, 47.4 mm SL, off Ethel Beach, 30-40 m, G. Allen and R. Steene, rotenone, 19 May 1978; WAM P.26087-012, 2 specimens, 35.6-43.1 mm SL, same data as preceding paratypes except 40-45 m, 22 May 1978; WAM P.26097-010, 37.6 mm SL, off West White Beach, 30-40 m, G. Allen and R. Steene, rotenone, 26 May 1978; WAM P.26099-011, 2 specimens, 23.8-38.8 mm SL, Flying Fish Cove, off cantilevers, 25-35 m, G. Allen and R. Steene, rotenone, 27 May 1978; WAM P.26116-010, 23.9 mm SL, 1 km south-east of North West Point, 35-45 m, G. Allen and R. Steene, rotenone, 7 June 1978; WAM P.26121-003, 29.2 mm SL, 2 km south-east of North West Point, 40-50 m, G. Allen and M. Kitney, rotenone, 10

June 1978. Cocos-Keeling Islands: ANSP 137860, 3 specimens, 35.3-45.0 mm SL, Turk Reef (12°06'S, 96°50'E), drop-off in 51-58 m, W. Smith-Vaniz *et al.*, rotenone, 25 March 1974; ANSP 137861, 3 specimens, 35.9-37.6 mm SL, same locality as preceding paratypes, 67-73 m, W. Smith-Vaniz and P. Colin, rotenone, 26 March 1974.

### Diagnosis

A species of pseudochromid fish differing from other members of the family by the following combination of characters: dorsal rays II,24 to 26; anal rays I,15 or 16; pectoral rays 17 or 18; pelvic rays I,4; branched caudal rays 15 (rarely 14); vertical scale rows 57 to 68 (usually more than 60); a single tubed lateral-line scale; all scales cycloid. It appears to have no close relatives and is particularly unique among pseudoplesiopines in relation to the combination of its very small scales and presence of only a single tubed lateral-line scale. It is further distinguished by the presence of a median interorbital pore and in having most dorsal fin rays branched.

### Description

Dorsal fin rays II,25 (24 to 26); anal fin rays II,15 (15 or 16); pectoral fin rays 18 (17 or 18); pelvic fin rays I,4; principal caudal fin rays 15 (rarely 14), with 4 to 7 small supplementary rays above and below. Vertical scale rows from origin of lateral line to base of caudal fin about 67 (57 to 68, usually more than 60); a single tubular lateral line scale above upper limit of operculum; transverse scale series, counted forwards and upwards from the second anal spine 22 (19 to 22); predorsal scales 15 (12 to 16); 6 (5 to 7) rows of scales on preoperculum; 10 (9 to 13) sensory pores in the post- and sub-orbital series, starting on the vertical above eye centre and extending down the hind margin of the eye to the upper edge of the maxilla (the first pore adjacent to the maxilla is included in the count); median interorbital pore present. Gill rakers on first arch  $4 + 13 = 17$  (4 to 6 + 11 to 14 = 15 to 19).

Greatest body depth 4.3 (3.6 to 4.4), head length 3.3 (2.9 to 3.3), length of dorsal fin base 1.7 (1.5 to 1.7), length of anal fin base 3.4 (2.5 to 3.4), all in standard length. Snout length 5.1 (4.1 to 5.0), eye diameter 3.0 (2.8 to 3.3), predorsal distance 1.0 (0.9 to 1.1), least depth of caudal peduncle 2.4 (2.2 to 2.6), pectoral fin length 1.5 (1.3 to 1.7), pelvic fin length 1.5 (1.4 to 1.6), all in head length.

Small, elongate, reef fish; head and body moderately compressed. Jaws nearly equal anteriorly, reaching posteriorly to below middle part of pupil; cleft of mouth oblique. Eye with pear-shaped pupil. Scales on head and body cycloid, predorsal scales extending to slightly anterior of level of rear margin of preoperculum; snout, preorbital, interorbital and frontal portion of nape, chin and maxilla naked; scales irregular and large on operculum. Upper part of operculum, edge of preoperculum, orbital and supraorbital region of head, lower jaw and snout bearing sensory canals (Fig 6); opercular edges entire, inconspicuously serrated dorsally; edge of preoperculum entire.

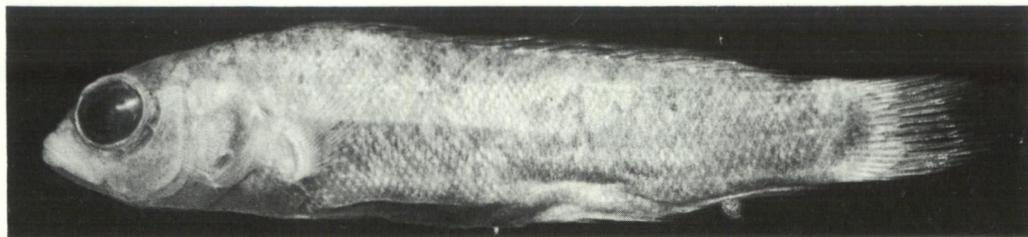


Figure 5 *Pseudoplesiops multisquamatus*, holotype, 41.8 mm SL, Great Barrier Reef, Queensland.

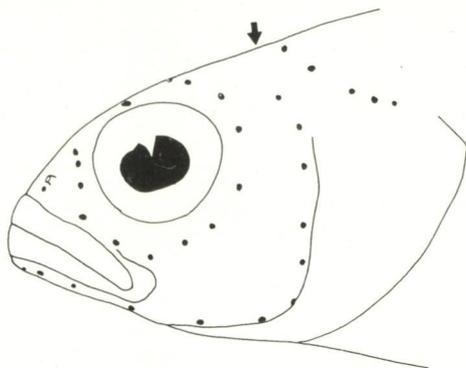


Figure 6 Camera lucida drawing of head of *Pseudoplesiops multisquamatus* showing sensory pores of head. Arrow denotes extent of predorsal scalation.

Table 4 Morphometric proportions (as percentage of standard length) for selected type specimens of *Pseudoplesiops multisquamatus*.

Character	Holotype	Paratypes				
	WAM P.27470-002	WAM P.26082-019	WAM P.26087-012	WAM P.26097-010	WAM P.27476-001	WAM P.26121-003
Standard length (mm)	41.8	47.4	43.1	37.6	31.7	29.2
Body depth	23.2	23.2	27.6	26.6	23.3	25.3
Head length	30.6	31.6	33.4	32.7	30.9	34.2
Snout length	6.0	6.5	7.0	8.0	6.3	6.8
Eye diameter	10.3	10.5	10.7	10.6	9.8	11.3
Predorsal distance	32.1	32.5	34.3	33.5	32.8	31.8
Caudal peduncle depth	12.9	12.7	13.5	14.1	12.0	13.0
Pectoral fin length	20.8	23.6	21.1	21.8	18.9	20.0
Pelvic fin length	20.3	23.0	23.2	21.3	20.0	21.6
Dorsal fin base length	58.6	60.3	63.1	63.6	65.6	67.1
Anal fin base length	30.0	31.4	33.9	34.0	30.6	39.7

Upper jaw with 2-3 lateral series of fine, subconical teeth on posterior part of jaw, the outer series enlarged; at symphysis 4 to 6 series of teeth, those of the outer series caniniform and irregular in size, the remainder small and setiform;

anteriorly 4 to 8 enlarged curved canines, outer canines largest. Lower jaw dentition similar, with 1 or 2 lateral series on posterior part of jaw; 4 to 8 enlarged canines anteriorly. Vomer with 2 or 3 rows of fine teeth, about 3 rows of fine teeth on palatines. Tongue tip pointed, its upper surface finely papillate.

Dorsal fin with two feeble spines anteriorly, little differentiated from soft rays; branching of segmented dorsal and anal rays variable, but usually with anterior 3 to 10 rays unbranched. Pectoral fins rounded, principal rays branched. Pelvic fins inserted below pectoral fins, pointed, soft rays unbranched, second soft ray longest; extent of pelvic fin tips variable, from about half the distance between pelvic fin base and anus to nearly reaching anus; caudal fin slightly rounded, with basal scaly sheath.

Colour in alcohol: overall tan to brown, head and breast region often lighter (light tan to whitish); dorsal, anal, and caudal fins dusky grey, frequently with darkish grey patch at base of caudal fin; pelvic and pectoral fins translucent.

Colour when fresh: overall red, reddish-brown, or pink, usually with yellow suffusion on head; breast, belly and lower part of head lighter (frequently pink); dorsal fin translucent to reddish or yellow (juveniles), sometimes with narrow fuscia margin; other fins mainly translucent or whitish except caudal fin yellow.

### Remarks

This species inhabits reef crevices and rubble, usually on outer reef slopes, at depths ranging from about 12 to at least 60 m. Most specimens have been collected below 25-30 m. The stomach contents of several paratypes indicate a diet of small crustaceans.

The known range extends from the Fiji Islands westward to Cocos-Keeling Atoll in the eastern Indian Ocean and also includes New Guinea, the Coral Sea, northern Western Australia, and Christmas Island. It is most likely widespread over a large area of the tropical Indo-Pacific region, but has remained largely unsampled because of its small size and relatively deep habitat.

It was previously reported from Christmas Island by Allen and Steene (1979) as *Chlidichthys* sp. 2. They also reported a *Chlidichthys* sp. 3 on the basis of two specimens, 23.4-38.6 mm SL, that differed from sp. 2 (i.e. *P. multisquamatus*) mainly on the basis of a more slender body shape and shorter pelvic fins. The status of these specimens (WAM P.26116-009) remains questionable, but they are possibly conspecific with *multisquamatus*. The larger specimen is a mature female with ripe ova.

The species is named *multisquamatus* (Latin: "many scales") in reference to this diagnostic feature.

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