

A NEW SPECIES OF *PARIOGLOSSUS* (GOBIOIDEI, PTERELEOTRIDAE) FROM SEYCHELLES ISLANDS

by

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ABSTRACT. - *Parioglossus multiradiatus* n. sp. is described on the basis of 9 specimens collected from streams in the Seychelles Islands. It differs from other species belonging to the genus by a combination of characters including the absence of preopercular pore, the presence of posterior nasal pore, the presence of a dark lateral body stripe, the number of scales in lateral series (98-109), the number of soft rays in second dorsal (I, 16-17) and anal (I, 17-18) fins and the number of pectoral rays (18-19).

RÉSUMÉ. - Une nouvelle espèce de *Parioglossus* (Gobioidei, Ptereleotridae) des Seychelles.

Parioglossus multiradiatus n. sp. est décrit sur la base de 9 spécimens collectés dans les rivières des Seychelles. Il diffère des autres espèces du genre par plusieurs caractères incluant l'absence du pore préoperculaire, la présence du pore nasal postérieur, la présence d'une bande noire longitudinale, le nombre d'écailles en ligne longitudinale (98-109), le nombre de rayons mous à la seconde nageoire dorsale (I, 16-17) et à la nageoire anale (I, 17-18), et le nombre de rayons à la nageoire pectorale (18-19).

Key words. - Ptereleotridae - *Parioglossus multiradiatus* - Seychelles - Freshwater - New species.

The freshwater ichthyofauna of Seychelles Islands is poorly known. Few authors have worked on it. Smith and Smith (1963) have listed some freshwater and estuarine fish species in their great work about "Marine Fishes of Seychelles" and later Rennis and Hoese (1985) and Larson (2001) have worked on some estuarine and freshwater fishes of Seychelles in their specific taxonomic work.

In their revision of the genus *Parioglossus*, Rennis and Hoese (1985) have cited one species, *P. taeniatus* Regan, 1912, as present in the lagoon of the island of Aldabra in the south of Seychelles Islands. They noted also that "little material was available from the Indian Ocean and the material that was available indicated that additional species may exist in that region". Nevertheless, until 2003, no exhaustive inventories were made in the rivers of Seychelles Islands.

During October 2003, the Ministry of Environment of Seychelles, the French Embassy, the Reunion Association for the Aquaculture Development (ARDA) and the National Museum of Natural History of Paris have made inventories on the rivers of the islands of Praslin and Mahé to improve the knowledge about freshwater biodiversity.

During this survey, 16 species of fishes were collected in Seychelles rivers (Bosc *et al.*, 2004) and one new species of *Parioglossus* was caught.

The genus *Parioglossus*, belonging to the Ptereleotridae (family named by Thacker (2003)), consists of 17 species (Rennis and Hoese, 1985; Dingerkus and Séret, 1992; Suzuki and Senou, 1994, Zhong, 1994; Williams and Lecchini,

2004) that inhabit warm temperate to tropical regions of the western Pacific and Indian Oceans (McDowall, 2001). These fishes are normally found around the roots of mangroves, or around algae in estuaries, tidal areas of rivers and coastal coral reefs.

Parioglossus is readily distinguishable from other gobioids by the following combination of characters: pelvics I, 4 (I, 3 for *Parioglossus* sp. in Suzuki and Senou, 1994); first dorsal pterygiophore formula (as defined by Birdsong, 1975) 3(22110); gill opening narrow to moderate, ending ventrally below the operculum; interorbital head pores paired laterally when present; second dorsal I, 13-19 (Rennis and Hoese, 1985).

The purpose of this paper is to provide a description of *Parioglossus multiradiatus*, a new species known only from Seychelles.

MATERIAL AND METHODS

Measurements and counts follow those described by Rennis and Hoese (1985). All measurements were taken with dial calipers and are expressed as percent of standard length unless otherwise stated. Body depth was taken at the anal fin origin. Head pores include both circumorbital pores (above and behind eye) and preopercular pores, and the counts are from one side of the head. Longitudinal scale counts were taken from the upper posterior edge of the pectoral fin base

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to the last scale on the caudal peduncle excluding scales on the base of the caudal fin. The last dorsal and anal ray as counted is branched through the base.

Abbreviations used for institutions and collections follow Leviton *et al.* (1985) and Kottelat *et al.* (1993).

Meristics and morphometrics are summarized in table I.

Comparative material

Parioglossus neocaledonicus. - MNHN-1991-6858 (holotype) (22 mm SL); Tité River, New Caledonia, Jul. 1991. - MNHN-1991-6859 (paratype) (17 mm SL), Tité River, New Caledonia, Jul. 1991. - MNHN-1992-0017 (paratype) (13 specimens, 12-25 mm SL); Dumbéa River, New Caledonia, 30 Sept 1991. - MNHN-2000-1280 (22.5 mm SL); Néhu River, New Caledonia, 6 Apr. 1999.

Parioglossus formosus. - USNM-11611 (neotype) (23.5 mm SL); Koh Samet, Thailand.

Parioglossus lineatus. - CAS-36928 (holotype) (33.4 mm SL); Babelthuap Island, Palau Islands, Oct. 1956. - CAS-53330 (2 spms, 24.7-25.1 mm SL). Babelthuap Island, Palau Islands, Oct. 1956.

Parioglossus raoi. - USNM-211056 (4 spms, 14-17 mm SL); Saparua, Molluccas.

Parioglossus taeniatus. - BMNH-1912.5.3 (syntypes) (2 spms, 19-23.1 mm SL); Pacard Lagoon, Aldabra, Seychelles.

Parioglossus interruptus. - USNM-261555 (18 mm SL); coast of Misool, Irian Jaya.

For the other species, characters were taken from Rennis and Hoese (1985), Zhong (1984) and Williams and Lecchini (2004).

Description

Counts and proportions of the holotype are given first, followed by those of the paratypes in parentheses (Tab. I).

Head and body compressed; body elongate; ventral and dorsal profiles straight. Cheek, preoperculum and operculum naked. Mouth superior, protractile; snout short, blunt. Anterior nostril a simple pore; posterior nostril a simple pore. No teeth on vomer, tongue or palatines; teeth conical; upper jaw with two rows of teeth anteriorly, outer row enlarged, lower jaw uniserial posteriorly. Gill opening vertical, extending ventrally from point immediately above upper pectoral fin base to point just below lower pectoral base. Nuchal crest a low fold on male, barely evident in female. Two dorsal fins: dorsal fin rays VI-I, 17 (VI-I, 16 to 17); anal fin rays I, 18 (I, 17 to 18); pectoral fin rays 18 (18 to 19); pelvic fin rays I, 4, branched caudal fin rays 7 + 6; scales in longitudinal series 109 (98 to 109), branchiostegals 5.

Scales on body, non imbricate, extending posteriorly onto base of caudal fin; belly and prepelvic area scaled; pectoral fin base naked or with few scattered scales. Head pores: posterior nasal pore, anterior interorbital pore, posterior interorbital pore, supraocular pore, infraorbital pore.

Males with dorsal spines 4 to 6 longest, spines 4-6 extending to the origin of second dorsal fin; females with

Table I. - Morphometrics and meristics of *Parioglossus multiradiatus*. [Données morphométriques et méristiques de *Parioglossus multiradiatus*.]

	Holotype MNHN- 2004-0166	Paratypes MNHN- 2004-0167
Morphometrics		
Number of specimens	1	8
Standard length (SL)	34.60	18.75-25.4
Head length (% SL)	22.08	20.24-25.07
Body depth (% SL)	14.74	15.34-19.17
Predorsal length (% SL)	30.06	30.36-35.39
Eye diameter (% SL)	4.34	5.91-6.93
Snout length (% SL)	4.13	5.62-5.87
Caudal peduncle length (% SL)	14.22	10.63-17.07
Caudal peduncle depth (% SL)	9.71	9.06-9.97
Caudal fin length (% SL)	21.73	15.85-20.16
Pectoral fin length (% SL)	14.45	14.37-20.16
Pelvic fin length (% SL)	17.05	9.45-14.52
Pectoral fin rays	18	18-19
Dorsal fin rays	VI-I, 17	VI-I, 16-17
Anal fin rays	I, 18	I, 17-18
Pelvic fin rays	I, 4	I, 4
Branched caudal fin rays	7+6	7+6
Lateral scales	109	98-105
Branchiostegals	5	5

PARIOGLOSSUS MULTIRADIATUS N. SP.

(Fig. 1, Tab. I)

Holotype

MNHN-2004-0166, male (34.6 mm SL), Bel Ombre river (S 04.61610, E 055.41772), Mahé, Seychelles, 12 Oct. 2003, P. Keith, P. Bosc, P. Valade and H. Grondin coll.

Paratypes

MNHN-2004-0167, 8 specimens (18.75-25.4 mm SL), Bel Ombre River (S 04.61610, E 055.41772), Mahé, Seychelles, 12 Oct. 2003, P. Keith, P. Bosc, P. Valade and H. Grondin coll.

Diagnosis

Dorsal fins VI-I, 16-17; anal fin I, 17-18; pectoral fin 18-19; branched caudal rays 7 + 6. Longitudinal scale count 98-109, scales non imbricate. 5 circumorbital pores (including posterior nasal pore) around dorsal and posterior margins of each eye, no preopercular pores. Dorsal spines 4 and 6 elongate to filamentous in males; the fourth is the longest. Caudal fin truncate in females, truncate to emarginate in males; dark lateral stripe present, dorsal edge of band along midside; vertical dark bar on base of caudal fin connected to the lateral band.

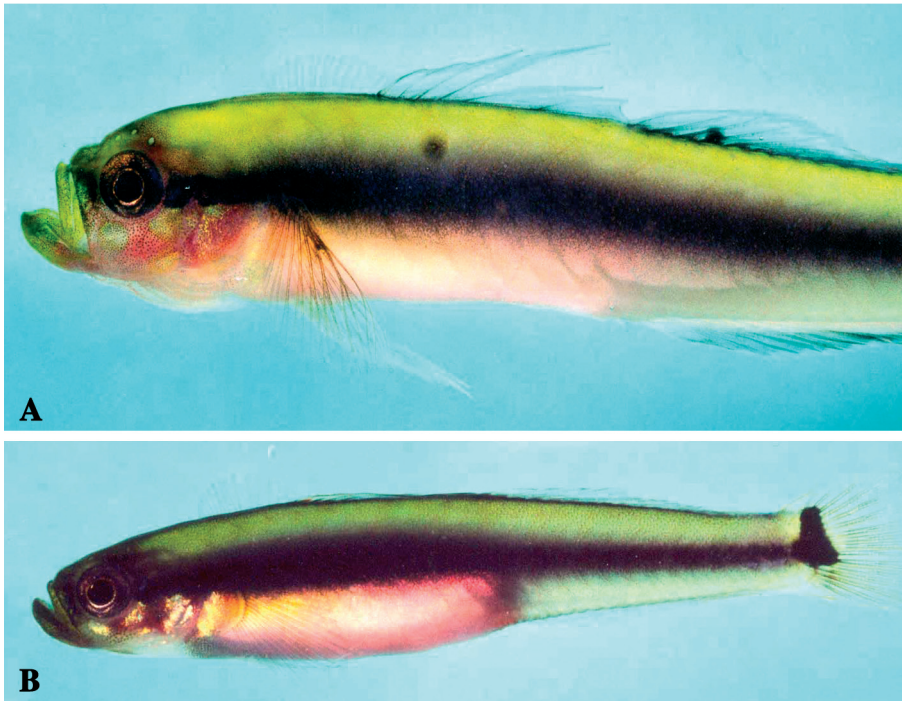


Figure 1. - *Parioglossus multiradiatus*. **A:** Male, MNHN-2004-0166 (holotype), 34.6 mm SL. **B:** Female, MNHN-2004-0167 (paratype), 25.4 mm SL. (Photos P. Keith).

dorsal spines 4 and 5 elongate. Pectoral fin pointed, its length shorter than head length.

Colour

In life. - Males (Fig. 1A), female (Fig. 1B).

Head and upper part of the body yellowish to pale green, translucent, a wide black lateral band extending from anterior edge of eye through upper part of opercle and along the flank ending at the posterior edge of caudal peduncle. A black vertical blotch on caudal fin connected to the lateral band. Abdomen whitish to rose. Inferior part of cheek and operculum reddish. All fins hyaline. Anal fin with blackish and whitish margins. Color dimorphism absent except for anal fin, hyaline in female, blackish and translucent in male.

In preservative. - Body greyish, black lateral stripe extending from anterior edge of eye, across upper operculum and pectoral fin base, along trunk and tail with dorsal edge of stripe along midside; black vertical bar on base of upper caudal rays connected to lateral band. Brown stripe on dorsal midline from beginning of nuchal part to caudal fin extending onto caudal fin rays; fins pale. Anal fin with a blackish margin in male.

Distribution and ecology

Found in the lower part of rivers of Mahé Island (Seychelles) in tidal and freshwater area.

Affinities

Seventeen valid *Parioglossus* species were recognized (Rennis and Hoese, 1985; Dingerkus and Séret, 1992; Suzuki and Senou, 1994; Zhong, 1994; Williams and Lecchini, 2004): *P. aporos* Rennis & Hoese, 1985; *P. dotui* Tomiyama, 1958; *P. formosus* (Smith, 1931); *P. lineatus* Rennis & Hoese, 1985; *P. marginalis* Rennis & Hoese, 1985; *P. nudus* Rennis & Hoese, 1985; *P. palustris* (Herre, 1945); *P. philippinus* (Herre, 1945); *P. rainfordi* McCulloch, 1921; *P. raoi* (Herre, 1939); *P. taeniatus* Regan, 1912; *P. triquetrus* Rennis & Hoese, 1985; *P. verticalis* Rennis & Hoese, 1985; *P. neocaledonicus* Dingerkus & Séret, 1992; *P. interruptus* Suzuki & Senou, 1994; *P. sinensis* Zhong, 1994; and *P. galzini* Williams & Lecchini, 2004.

The new species must be compared to species of *Parioglossus*, which have cephalic pores and a distinct black lateral stripe on the flanks. They are: *P. interruptus*, *P. formosus*, *P. lineatus*, *P. raoi*, *P. sinensis* and *P. taeniatus*. *P. neocaledonicus* has also cephalic pores and a distinct black lateral band along the upper part of flanks, but the males have vertical stripes on the latero-dorsal surface and the two sexes have a fluorescent green spot below the eye (and larger than it) *in vivo* (Marquet *et al.*, 2003).

Parioglossus multiradiatus n. sp. is closest to *P. lineatus*, but differs from it in having lateral scales 98-109 versus 75-83, second dorsal fin I, 16-17 versus I, 15-16, anal fin I, 17-18 versus I, 15-16 and the fourth ray of first dorsal longest versus the fifth. *Parioglossus multiradiatus* n. sp. differs from *P. taeniatus*, *P. raoi* and *P. interruptus* in having scales

non imbricate *versus* imbricate, preopercular pore absent *versus* present and posterior nasal pore present *versus* absent. It differs from *P. formosus* in having preopercular pore absent *versus* present, second dorsal I, 16-17 and anal I, 17-18 *versus* second dorsal I, 13-15 and anal I, 13-15, lateral scales 98-109 *versus* 66-78. It differs from *P. sinensis* in having second dorsal I, 16-17 and anal I, 17-18 *versus* second dorsal I, 14-15 and anal I, 14-15.

Etymology

The new species is named *multiradiatus* (in Latin means having many rays) with reference to the second dorsal, anal and pectoral fin rays counts, which is higher than in several related species of the genus.

Acknowledgments. - We thank the following persons for their help during the expedition: Mr. Loustau Lalanne, Main Secretary of the Seychelles Environment Ministry, Mr. Selby Remie, Conservation Manager of the Seychelles Environment Ministry, Miss W. Accouche, from the Seychelles Environment Ministry, Mr. B. Wendling, from the French Embassy and Mr. H. Grondin, hydrobiologist in ARDA.

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Reçu le 23 février 2004.

Accepté pour publication le 10 juillet 2004.