Japan. J. Ichthyol.
41(2): 215–218, 1994

魚類学雑誌
41(2): 215–218, 1994

New Record of the Tongue Flatfish, *Plagiopsetta glossa* (Samaridae, Pleuronectiformes) from Australia

J. Andrew Cooper,[1] Ken Graham[2] and François Chapleau[1]

[1] Ottawa-Carleton Institute of Biology, Department of Biology, University of Ottawa, P.O. Box 450 Station A, Ottawa Ontario K1N 6N5, Canada
[2] Fisheries Research Institute, NSW Fisheries, P.O. Box 21, Cronulla NSW 2230, Australia

(Received February 3, 1994; in revised form May 27, 1994; accepted May 28, 1994)

An examination of six flatfish specimens captured off the coast of New South Wales (Graham et al., 1993) were confirmed to be *Plagiopsetta glossa* (Pleuronectiformes; Samaridae), a species belonging to a monotypic genus reported only from the coasts of Japan and Taiwan (Franz, 1910; Kuronuma, 1940; Sakamoto, 1984a; Quéro et al., 1989). In this note, we document the important range extension for this species and provide a description of these Australian specimens with additional diagnostic characters for the species.

The holotype described by Franz (1910) cannot be traced (Norman, 1934). Therefore, information from literature was used as comparative material (Table 1). All measurements follow Hubbs and Lagler (1970). Vertebral and median fin-ray counts were taken from radiographs. Institution abbreviations follow Leviton et al. (1985).

Material examined. AMS I.31557-002, 82.3 mm SL, 29°26′–29°28′S, 153°34′E, depth 65–70 m, 1 March 1992; AMS I.26828-001, 2 spec., 142.5 mm and 78 mm SL, 28°04′–28°01′S, 153°48′E, depth 137–139 m, 3 June 1978; AMS I.321242-009, 151 mm SL, 28°27′–28°24′S, 153°50′–153°49′E, depth 118–138 m, 16 February 1991; AMS I. 30409-006, 102.5 mm SL, 29°50′–29°48′S, 153°38′–153°39′E, depth 150–154 m, 1 August 1978; AMS I.33599-002, 81.5 mm SL, 103 mm TL, 29°26′–29°25′S, 153°34′E, depth 68–72 m, 19 March 1992. All specimens were collected by K. Graham, NSW Fisheries, FRV Kapala demersal prawn trawl, off the coast of New South Wales, Australia (Graham et al., 1993).

Diagnosis. *Plagiopsetta glossa* is readily distinguished from other members of the Samaridae by the following characters: 8–10 pectoral rays (rarely 7) on ocular side, lateral line on ocular side with supratemporal extension, feebly pigmented snout, and dark medial spot on mandibles and intermandibular area.

Description. Meristics and morphometrics are listed in Table 1. Eyes on ocular side separated by scaled interorbital space. Scales ctenoid, finely toothed on head. Snout, mouth parts and upper part of eye-balls not scaled. Small villiform teeth nearly symmetrical on both jaws. Pectoral fin (ocular side only) longer than head. Pelvic fin of ocular side longer than blind side. Few pored scales in lateral line on blind side. Supratemporal branch on blind side (Franz, 1910) not observed in all specimens. Rays on caudal fin branched, except for two upper- and lowermost simple rays. Coloration in ethanol (Fig 1A,B) as in Kuronuma (1940) with following additions: distinctive dark bar at base of caudal peduncle, snout feebly pigmented resulting in distinctly lighter rostral region; medial dark spot on mandibles and intermandibular area; pectoral fin with lightly pigmented transverse bands. Pigmentation on blind side covering last quarter of body and dispersed in several patches on margins of body; pelvic fin on blind side less pigmented than on ocular side.

Remarks. The description of our specimens is almost identical to the original description of Franz (1910) and the description of 13 specimens in Kuronuma (1940) (Table 1), with the exception of the number of abdominal vertebrae (8 in Kuronuma [1940] vs. 10 in our study). However, Sakamoto (1984b) observed 10 abdominal vertebrae in 32 specimens of *Plagiopsetta glossa* from Japan, suggesting that Kuronuma's count was erroneous. Norman (1934) used Franz (1910) in his description of the species and placed it (with uncertainty) in *Samariscus*. Though Franz (1910) does not mention the number of pectoral fin rays in the original description, Norman (1931) indicated the presence of 10 pectoral fin rays, a number taken from the figure (plate viii, fig. 58) in Franz (1910). Kuronuma (1940) suggested that *Plagiopsetta* was a valid genus based on the following diagnostic characters: high number of pectoral fin rays, lower caudal peduncle and extremely small nostrils on the blind side. Ochiai and Amaoka (1962) discarded the latter two characters because of similarities with *Samariscus fasciatus* (Table 1). An examination of two species of the genus *Samariscus* (*S. triocellatus* and *S. latus*) corroborated Ochiai and Amaoka's (1962) conclu-

Table 1. Comparative meristics and morphometrics of *Plagiopsetta glossa* and *Samariscus fasciatus*. Morphometrics expressed as number of units within a standard length (SL), TL = total length. Statistics are range (mean)

	P. glossa	*P. glossa*	*P. glossa*	*P. glossa*	*S. fasciatus*
Source	present study	Franz (1910) Norman (1931, 1934)	Kuronuma (1940)**	Sakamoto (1984a)	Fowler (1933)
Locality	Australia	Japan	Japan	Japan, East China Sea and Taiwan	Hong Kong
Dorsal fin rays	66–72 (69.5)	70	67–75 (69.2)	64–75	66
Anal fin rays	51–57 (53.5)	53	50–54 (52.7)	49–55	53
Caudal fin rays	16	16			
Pectoral fin rays (ocular side)	7–8 (7.8)	10	8–10 (9.2)	8–10	7
Pelvic fin rays	5, 5	5, 5		5	
Scales in lateral line	57–67 (62)	66	55–63 (58.7)	55–66	45
Abdominal vertebrae	10*		8		
Caudal vertebrae	27*		26–27 (26.3)		
Length (mm) TL	97–187 (133.8)	110			
SL	78–151 (106.4)		44.5–108 (76.7)		68
Depth of body	2.1–3.2 (2.4)	2.13	2.1–2.4 (2.3)		2.40
Head length	3.9–5.3 (4.8)	4.50	3.9–4.6 (4.2)		3.80
Diameter of lower eye	14.2–20.4 (17.1)	15.75	12.0–16.1 (13.8)		11.40
Snout length	14.7–22.8 (20.4)	22.50	19.6–23.8 (21.9)		
Length of maxillary (ocular side)	10–15.8 (14.1)	15.75–16.52	11.8–14.9 (13.9)		11.40
Length of maxillary (blind side)	12.6–18.4 (16.3)		13.9–16.4 (15.3)		11.40
Width of interorbital space	36.0–54.3 (46.2)		28.6–47.6 (38.5)		28.50
Depth of caudal penduncle	6.6–7.4 (7.0)		6.8–7.7 (7.3)		
Length of pectoral fin	3.9–4.9 (4.4)	<4.5	3.6–4.9 (4.16)		
Length of pelvic fin (ocular side)	6.0–7.6 (6.8)	7.50	6.5–9.2 (7.9)		
Length of pelvic fin (blind side)	10.0–15.9 (12.3)	13.50	8.9–14.7 (12.28)		

*Sample size $n = 4$; **Statistics calculated from Table 8 in Kuronuma (1940).

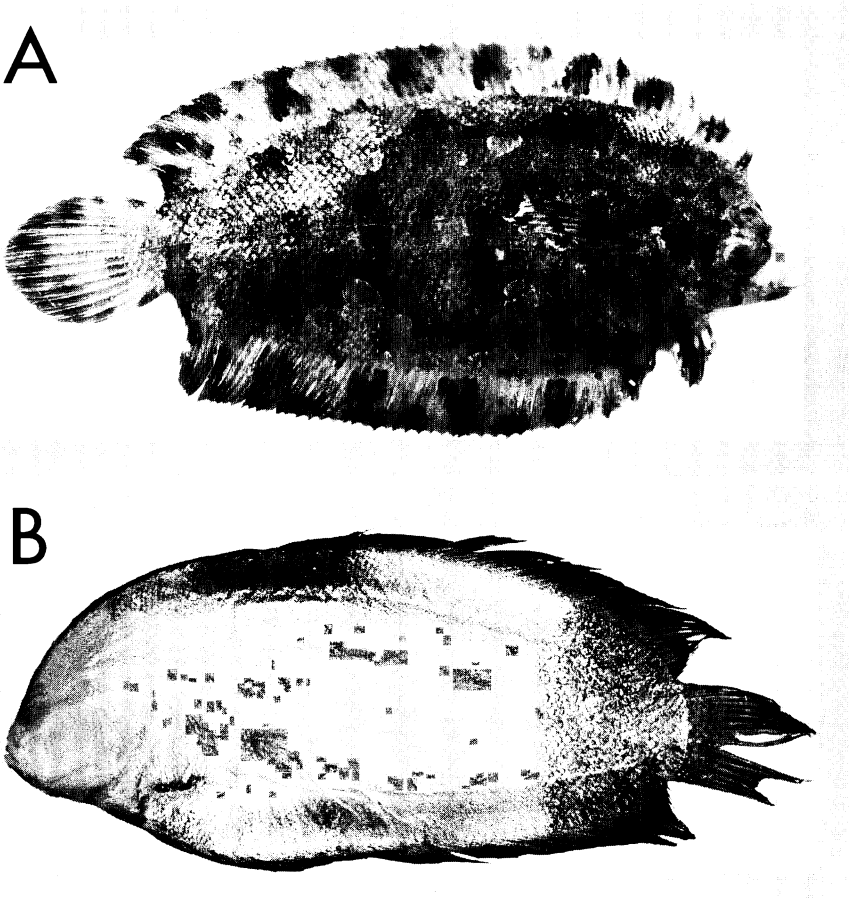

Fig. 1. *Plagiopsetta glossa* from the coast of New South Wales, Australia. A) Ocular side, AMS I.26828-001, 78 mm SL; B) blind side, AMS I.31557-002, 82.3 mm SL.

sion. Three new diagnostic characters can be added to the diagnosis of *P. glossa*: feebly pigmented snout, presence of supratemporal branch on lateral line of ocular side and presence of a medial dark pigmented spot on the mandibles and intermandibular area. These were observed on our specimens, the plate published in Franz (1910) and the photograph in Sakamoto (1984a). Finally, because the sister group of *Plagiopsetta glossa* remains unknown (i.e. one species of *Samariscus* or the whole genus *Samariscus*), there is no basis to challenge the genus designation of this species. This will have to await a cladistic study of the group.

Sakamoto (1984a) and Quéro et al. (1989) indicated that *Plagiopsetta glossa* was only found in Japanese waters and in the East China Sea near Taiwan. We can now extend this range several thousand kilometres to the south and add the eastern coast of Australia.

Comparative material. *Samariscus triocellatus*, BPBM 9776 m, 6 spec., 38–70 mm SL, Hawaiian Islands, Oahu, 45 feet. coll. J. E. Randall and A. R. Emery, April 26, 1970. *Samariscus latus*, UMMZ 159741, 2 spec., 100–102 mm SL, Japan, near Kochi, Shikoku, coll. T. Kamohara, October 11, 1931. *Samaris cristatus*, NTM S.11673-024, 1 spec., 117 mm SL, 19°12′S, 118°32′E, Western Australia, North West Shelf, Station No. BCR 85-5, 76–80 m, coll. N. T. Fisheries.

Acknowledgments

We gratefully acknowledge the following scientists and institutions for providing material and comments: S. Reader (AMS), Y. Suzomoto (BPBM), D. W. Nelson (UMMZ), B. Russel, H. K. Larson and

R. S. Williams (NTM), S. Laframboise and C. B. Renaud (NMC). L. Palmer (USNM) and D. Hensley (University of Puerto Rico) provided a copy of Franz (1910) which was translated by D. Otto and P. Heinermann. K. Amaoka (Hokkaido University) kindly translated the Japanese common name.

Literature Cited

Fowler, H. W. 1933. Descriptions of new fishes obtained 1907 to 1910, chiefly in the Philippine Islands and adjacent seas. Proc. Acad. Nat. Sci. Phil., 85: 233–367.

Franz, V. 1910. Die japanischen Knochenfische der Sammlungen Haberer und Doflein. Abh. Bayer. Akad. Wiss., 4 Suppl.-Bd., 1: 1–135.

Graham, K. J., G. W. Liggins, J. Wildforster and S. J. Kennelly. 1993. Kapala Cruise Report No. 110. Report for cruises 90-08 to 91-05 conducted between May 1990 and April 1991, Fisheries Research Institute, Cronulla, Australia 2230. pp. 63, 69.

Hubbs, C. L. and K. F. Lagler. 1970. Fishes of the Great Lakes region. Univ. Michigan Press, Ann Arbor. xv+213 pp.

Kuronuma, K. 1940. The heterosomate fishes collected in deep waters of Japan. Bull. Biogeogr. Soc. Japan, 10: 29–61.

Leviton, A. E., R. H. Gibbs, Jr., E. Heal and C. E. Dawson. 1985. Standards in herpetology and ichthyology: Part I. Standard symbolic codes for institutional resource collections in herpetology and ichthyology. Copeia, 1985: 802–832.

Norman, J. R. 1931. Notes on flatfishes (Heterosomata). III. Collections from China, Japan, and the Hawaiian Islands. Ann. Mag. Nat. Hist., Ser. 10, 8: 597–604.

Norman, J. R. 1934. A systematic monograph of the flatfishes (Heterosomata). Vol. 1. Psettodidae, Bothidae, Pleuronectidae. Brit. Mus., London. viii+459 pp.

Ochiai, A. and K. Amaoka. 1962. Review of the Japanese flatfishes of the genus *Samariscus*, with the description of a new species from Tonking Bay. Ann. Mag. Nat. Hist., Ser. 13, 5: 83–91.

Sakamoto, K. 1984a. Family Pleuronectidae. Pages 351–354 *in* H. Masuda, K. Amaoka, C. Araga, T. Uyeno and T. Yoshino, eds. The fishes of the Japanese Archipelago. Tokai Univ. Press, Tokyo.

Sakamoto, K. 1984b. Interrelationships of the family Pleuronectidae (Pisces: Pleuronectiformes). Mem. Fac. Fish., Hokkaido Univ., 31: 95–215.

Quéro, J-C., D. A. Hensley and A. L. Maugé. 1989. Pleuronectidae L'île de La Réunion et de Madagascar. II. Genres *Samaris* et *Samariscus*. Cybium, 13: 105–114.

ベロガレイのオーストラリアからの新記録（ベロガレイ科，カレイ目）

J. Andrew Cooper • Ken Graham • François Chapleau

日本及び台湾の沿岸域から知られていたベロガレイがオーストラリアのニューサウスウエルズ沖で6個体捕らえられた．本個体は文献中の本種の記載と比較されたが，ほとんど一致した．本種に次のような新しい3形質の標徴が加えられた．1) 吻上にはあまり色素が発達しない．2) 有眼側の側線に上側頭分枝が存在する．3) 下顎と下顎間域に1個の暗色素斑点が存在する．本種の分布域は従来より数千km南下し，オーストラリアの東岸まで拡大した．