



A new record of *Formosaneleotris hualienensis* (Gobioidei), from the Solomon Islands

HELEN K. LARSON¹*, DAVID BOSETO², AARON JENKINS³ & I-SHIUNG CHEN^{4,5}*

¹Museum and Art Gallery of the Northern Territory, PO Box 4646, Darwin, NT 0801, Australia

 eviotahkl@gmail.com;  <https://orcid.org/0000-0003-3577-7141>

²Ecological Solutions Solomon Islands, P.O. Box 45, Gizo, Western Province, Solomon Islands



 dboseto@gmail.com;  <https://orcid.org/0009-0003-1199-9921>

³Sydney Institute for Infectious Diseases, Sydney School of Public Health, The University of Sydney, Camperdown, NSW, Australia

 aaron.jenkins@sydney.edu.au;  <https://orcid.org/0000-0001-5079-0045>

⁴Institute of Marine Biology, National Taiwan Ocean University, Keelung, 202301, Taiwan, R.O.C.

⁵Center of excellence for the Oceans, National Taiwan Ocean University, Keelung, 202301, Taiwan, R.O.C.

 iscfish@gmail.com;  <https://orcid.org/0000-0002-4190-7720>

*Corresponding authors

Abstract

The obscure and poorly-known eleotrid *Formosaneleotris hualienensis* is recorded from the Solomon Islands, with colour photographs, and notes on its habitat. Information on a second record of this species from Taiwan is also provided.

Key words: *Formosaneleotris*, second specimen, new record, Solomon Islands, fish fauna

Introduction

Freshwater ichthyological surveys in Tetepare, Solomon Islands, the largest unlogged and uninhabited island in the South Pacific, began in 2006, jointly by Wetlands International-Oceania, and University of the South Pacific (Jenkins & Boseto, 2007). This survey recorded 60 species, including an unknown gobioid from the mid-reaches of the Hokata River. The Tetepare Descendants Association (TDA) rangers who helped collect the fish named it ‘Noodlefish’ (due to its shape). The fish was photographed alive, preserved in 10% formalin, and donated to the Museum and Art Gallery of the Northern Territory (MAGNT), Darwin, Australia. Though morphometric and meristic data as well as radiographs were generated, the fish was not formally described, as its systematic relationship was uncertain, and the authors (HKL, DB & AJ) hoped to collect additional samples. Subsequent surveys in the Hokata and nearby rivers in June 2010 (sponsored by the National Science Foundation, and involving TDA rangers, AJ & DB), in the year 2019 (HKL & DB), and again in November 2022 (P. Keith, DB, & TDA rangers) failed to collect any samples.

In December 2024, I-Shiung Chen described a new genus and species of gobioid fish, *Formosaneleotris hualienensis*, placing it in the family Eleotridae without specifying any reasons, other than the possession of six branchiostegal rays. The senior author of the current paper (HKL) immediately recognised it as the elusive “Noodlefish” from Tetepare Island. This paper serves to extend the distribution of *F. hualienensis* to the Solomon Islands, located at a distance of around 5600 km from its type locality, across the Pacific Ocean, and provide additional information on the species including colour photographs, and notes on its habitat.

Material and Methods

Morphometric measurements were taken using digital calipers and a dissecting microscope, and follow Larson (2001). Our proportions differ from that of the holotype as it appears dehydrated (Chen 2024, Fig. 2). Fin ray and osteological data were taken from radiographs.



FIGURE 1. Stream at Hokata River, Tetepare from where the specimen of *Formosaneleotris hualienensis* was collected. Photo by Aaron Jenkins.



FIGURE 2. Live specimen of *Formosaneleotris hualienensis*, shortly after capture in the Hokata River, Tetepare. Photo by Aaron Jenkins.

Results

Formosaneleotris hualienensis Chen, 2024

Local English name: Noodlefish

Unknown gobioid—Jenkins & Boseto (2007' p 6), Mid-Hokata River, Tetepare.

Formosaneleotris hualienensis Chen (2024; 236–238), Jian Village, Hualien River basin, Hualien County, Taiwan, ROC.

Description. First dorsal fin absent; second dorsal fin small and short-based with 1 spine and 8 branched rays. Anal fin short-based, originating opposite to dorsal fin, with 1 spine and 8 branched rays. Pectoral fin with 14 branched rays. Pelvic fins separate, no frenum. Caudal fin rounded (appears bilobed but the radiograph shows that the split is due to damage) with 19 rays (10+9), branched in 7/6 pattern. Six branchiostegal rays. Vertebrae 11+14. Dorsal pterygiophores 12–22232. Three epurals. Body naked, slender (body depth at anus 9.9% of SL), somewhat

compressed, becoming more rounded anteriorly. Head wider than deep, its width 56.2% of HL, its depth 36.0% of HL, and length 21.4% SL. Opercular and preopercular spine absent. Snout slightly pointed, 23.6% of HL. Eye small, 7.9% of HL. Interorbital wide and flattened, 22.5% in HL. Jaws large, reaching past rear of orbit, 38.2% in HL. Gill opening moderate, not quite reaching below posterior edge of preopercle.

Lateral canals and pores absent. Sensory papillae well-developed on head and side of body (Figs. 2–6). Large, oval to rounded papillae on anterior part of head bulbous and fleshy, with small raised central area. Urogenital papilla flattened, with slightly pointed tip.

Live colour. Body and most of head red, with pale reddish jaws and lower cheek (Fig. 2). Dorsal surface of head with indistinct brown tinge, and a pale brownish bar from lower edge of eye to middle of upper jaw. Fin rays hyaline, membranes transparent.

Habitat. Shallow (≤ 0.5 m depth), clear, freshwater river, about 13 m wide, with a flow rate of 1.5 m/sec, and gravel, cobble and rocks as substrates. The fish was found near a fossilised coral rock.



FIGURE 3. Preserved specimen of *Formosaneleotris hualienensis* from Tetepare, NTM S.16825-001.

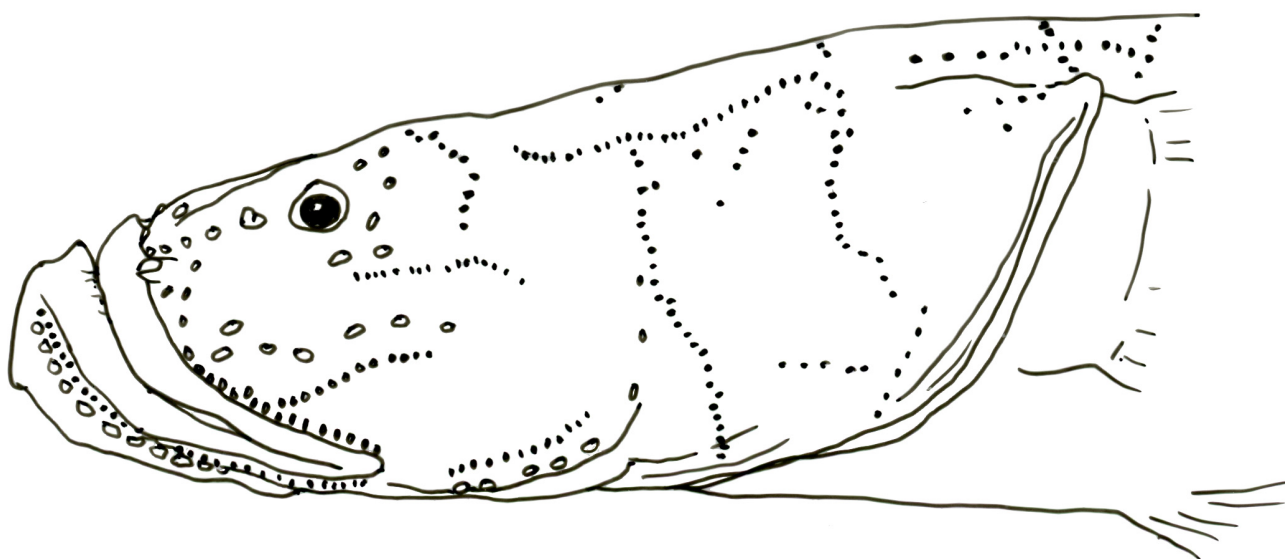


FIGURE 4. Sensory papilla pattern of *Formosaneleotris hualienensis*; lateral view of head.

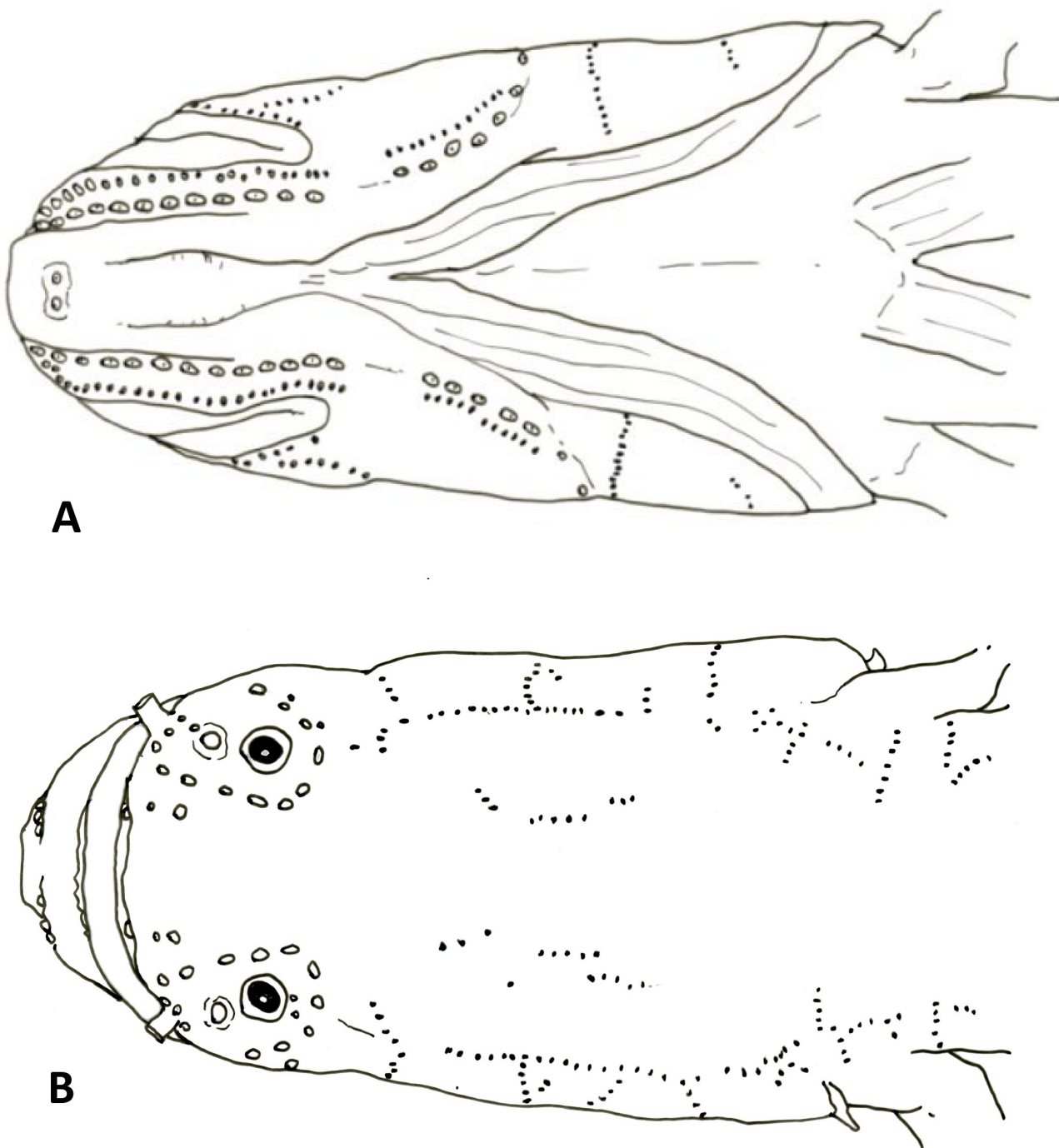


FIGURE 5. Sensory papilla pattern of *Formosaneleotris hualienensis*, A, ventral view of head and B, dorsal view of head.

Remarks. At first sight, the Solomons specimen greatly resembled a *Luciogobius*. Chen's sample of *Formosaneleotris hualienensis* was from lowland habitat near the mouth of the Hualien River in Jian Village, Hualien County, Taiwan. The specimen was obtained from a fisherman, whose son was keeping it as a pet. After the formal description of *Formosaneleotris*, local freshwater ecologists brought Chen's attention to a phone-video of a specimen collected in 2023, from a freshwater habitat in the Tsau-Shan-Shi basin, Fangliao Village, Pingtung County. The specimen, which was not preserved, has female characteristics, with a deeper, broader body. *Formosaneleotris* appears to be a mysterious eleotrid, possibly a butid, that requires further studies to understand its phylogenetic position, evolutionary history and biogeographical relationships (given its interesting distribution in two island localities separated by the vast waters of the Pacific Ocean).

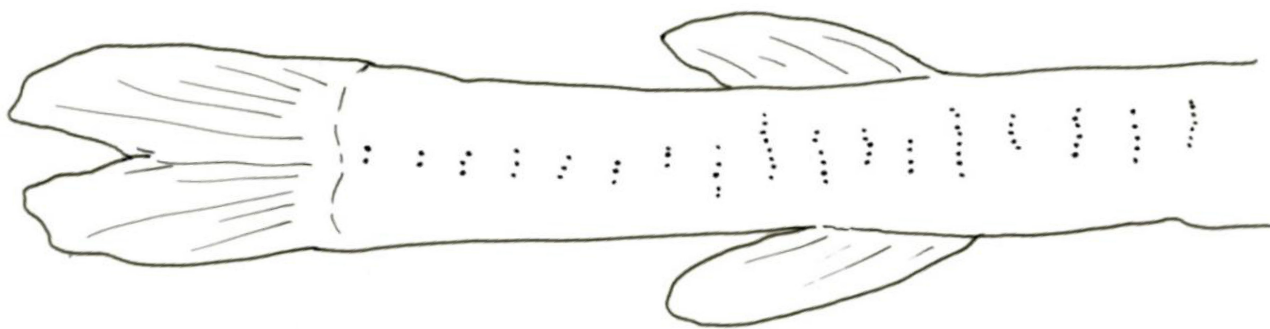


FIGURE 6. Sensory papilla pattern of *Formosaneleotris hualienensis*, along mid-side of the body.



FIGURE 7. *Formosaneleotris* from Pingtung County, Taiwan (possibly a female); image extracted from a phone-video grab by Mr. Wang-Jin Tsai.

Material examined. *Formosaneleotris hualienensis*, NTM S.16825-001, 41.5 mm SL possible male, from mid-Hokata River, 1.5–2 km from the river mouth, northern coast of Tetepare, Western Solomon Islands, 8°43.12.46' S & 157°35.12.35' E. Coll. A. Jenkins, D. Boseto, Mike, Bobby, Tony & Simba. 14 September 2006. Holotype, NTOUP-2006-03-458, 44.2 mm SL male, Jian Village, Hualien River basin, Hualien County, Taiwan. coll. I-S. Chen & J-L. Huang, 20 August 2001

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References

- Chen, I-S. (2024) *Formosaneleotris hualienensis*, a new genus and species of inland water sleeper (Teleostei: Eleotridae) from eastern Taiwan. *Zootaxa*, 5550 (1), 235–239.
<https://doi.org/10.11646/zootaxa.5550.1.23>
- Jenkins, A.P. & Boseto, D. (2007) *Freshwater Fishes of Tetepare Island, Western Province, Solomon Islands. Report to Wetlands International*. Wetlands International, Ede, 35 pp.
- Larson, H.K. (2001) A revision of the gobiid fish genus *Mugilogobius* (Teleostei: Gobiidae), with discussion of its systematic placement. *Records of the Western Australian Museum Supplement*, 62, 1–233.
<https://doi.org/10.18195/issn.0313-122x.62.2001.001-233>
- Polhemus, D.A., Englund, R.A., Allen, G.R., Boseto, D. & Polhemus, J.T. (2008) Freshwater biotas of the Solomon Islands. Analysis of richness, endemism and threats. *Bishop Museum Technical Report*, 45, 1–126.
- Read, J.L. & Moseby, K. (2006) Vertebrates of Tetepare Island, Solomon Islands. *Pacific Science*, 60 (1), 69–79.
<https://doi.org/10.1353/psc.2005.0060>