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Eviota piperata, a new gobiid species from Palau (Teleostei: Gobiidae)

DAVID W. GREENFIELD¹ & RICHARD WINTERBOTTOM²

¹Research Associate, Department of Ichthyology, California Academy of Sciences, 55 Music Concourse Dr., Golden Gate Park, San Francisco, California 94118-4503, and Professor Emeritus, University of Hawaii. Mailing address: 944 Egan Ave., Pacific Grove, CA 93950. E-mail: greenfie@hawaii.edu

²Curator Emeritus, Department of Natural History, Royal Ontario Museum, 100 Queen's Park, Toronto, Ontario, M5S 2C6; and Department of Ecology & Evolutionary Biology, University of Toronto, Toronto, Ontario, M5S 1A1. E-mail: rickw@rom.on.ca

Abstract

A new species of dwarfgoby, *Eviota piperata* is described from Palau. It belongs to the cephalic sensory-pore system Group II (lacking only the IT pore); has a dorsal/anal-fin formula of 8/8; has some pectoral-fin rays branched; no dark spot over the ural centrum; the male genital papilla is not fimbriate; and the cheek and body are heavily peppered with chromatophores.

Key words: Gobiidae, *Eviota piperata*, Dwarfgoby, Palau

Introduction

The Indo-Pacific gobiid genus *Eviota* is currently represented by 83 described valid species (Eschmeyer, 2014), yet we are aware of many more awaiting description. This situation closely parallels that found in another genus of small Indo-Pacific gobiids, *Trimma*, where there are almost 75 described valid species (Winterbottom, 2011). During synoptic surveys of Indo-Pacific reef fishes, the second author made three collecting trips to Palau (2004, 2006, 2008), each lasting about three weeks and averaging about 40 scuba collections per trip. The Palauan islands, on the fringes of the 'Coral Triangle' which encompasses the world's greatest diversity of coral reef fishes (see. e.g. Allen and Erdmann, 2012), contain a total fish fauna (including freshwater and open sea fishes) of some 1,700 species (Winterbottom, unpub. data). Approximately 50 previously undescribed species of fishes were obtained during these trips, mostly gobies. Here we describe one of these new species in the gobiid genus *Eviota* as part of our ongoing studies of members of this genus (see Greenfield & Winterbottom, 2012 for the descriptions of two other new Palauan species of *Eviota* collected during these expeditions).

The new species fits the description typical of all species of *Eviota*: the pelvic fins are separate and the 5th pelvic-fin ray, if present, is unbranched; the membrane joining the 5th pelvic-fin rays is rudimentary or absent; there are ctenoid scales on the body but no scales on the head, nape or pectoral-fin base; the breast either lacks scales or may have a few embedded cycloid scales; the teeth in the upper jaw are in two or more rows and there are 1–3 enlarged curved canine-like teeth in the innermost row of the lower jaw just behind the jaw symphysis.

Material and methods

Counts and measurements, descriptions of fin morphology and the cephalic sensory-canal pore patterns follow Lachner & Karnella (1980) and Jewett & Lachner (1983). Postanal midline spots, along the posteroventral midline of the body, begin at the anal-fin origin and extend to a vertical drawn 2 to 3 scale rows anterior to the ends of the hypurals where they articulate with the caudal-fin ray bases, the additional smaller spot posterior to this is not counted. "The membrane joining the 5th pelvic-fin rays is always short and weakly developed and the fins lack a frenum. The membranes joining the first four fin rays are considered to be well developed when the membranes

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References

- Akihito, Sakamoto, K., Iwata, A. & Ikeda, Y. (1993) Cephalic sensory organs of the gobioid fishes. *In*: Nakabo, T. (Ed.), *Fishes of Japan with pictorial keys to the species*. Tokai University Press, Tokyo, pp. 1088–1116. [in Japanese]
- Allen, G.R. & Erdmann, M.V. (2012) *Reef fishes of the East Indies. Vols. I-III*. Tropical Reef Research, Perth, Australia, 1260 pp.
- Eschmeyer, W.N. (Ed.) (2014) Catalog of Fishes: Genera, Species, References (<http://research.calacademy.org/research/ichthyology/catalog/fishcatmain.asp>)
- Greenfield, D.W. & Randall, J.E. (1999) Two new *Eviota* species from the Hawaiian Islands (Teleostei: Gobiidae). *Copeia*, 1999 (2), 439–446.
<http://dx.doi.org/10.2307/1447490>
- Greenfield, D.W. & Randall, J.E. (2004) The marine gobies of the Hawaiian Islands. *Proceedings of the California Academy of Sciences*, 55 (27), 498–549.
- Greenfield, D.W. & Winterbottom, R. (2012) Two new dwarfgobies from the Southwestern Pacific Ocean (Teleostei: Gobiidae: *Eviota*). *Zootaxa*, 3572, 33–42.
- Jewett, S.L. & Lachner, E.A. (1983) Seven new species of the Indo-Pacific genus *Eviota* (Pisces: Gobiidae). *Proceedings of the Biological Society of Washington*, 96 (4), 780–806.
- Lachner, E.A. & Karnella, J.S. (1980) Fishes of the Indo-Pacific genus *Eviota* with descriptions of eight new species (Teleostei: Gobiidae). *Smithsonian Contributions to Zoology*, No. 315, 1–127.
<http://dx.doi.org/10.5479/si.00810282.315>
- Nakabo, T. (Ed.) (2002) *Fishes of Japan with pictorial keys to the species. 2 Vols*. English edition, Tokai University Press, Tokyo, 1749 pp.
- Saruwatari, T., Lopez, J.A. & Pietsch, T.W. (1997) Cyanine blue: a versatile and harmless stain for specimen observations. *Copeia*, 1997 (4), 840–841.
<http://dx.doi.org/10.2307/1447302>
- Tornabene, L., Ahmadi, G.N., Berumen, M.L., Smith, D.J., Jompa, J. & Pezold, F. (2013) Evolution of microhabitat association and morphology in a diverse group of cryptobenthic coral reef fishes (Teleostei: Gobiidae: *Eviota*). *Molecular Phylogenetics and Evolution*, 66 (1), 391–400.
<http://dx.doi.org/10.1016/j.ympev.2012.10.014>
- Winterbottom, R. (2011) Six new species of the genus *Trimma* (Percomorpha; Gobiidae) from the Raja Ampat Islands, Indonesia. *aqua, International Journal of Ichthyology*, 17 (3), 127–162.