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***Parapercis nigrodorsalis* (Perciformes: Pinguipedidae), a new species of sandperch from northern New Zealand and the Norfolk Ridge, Tasman Sea and remarks on *P. binivirgata* (Waite, 1904)**

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Abstract

A new species of pinguipedid fish, *Parapercis nigrodorsalis*, is described from 17 specimens collected off the North Island of New Zealand and Wanganella Bank, Norfolk Ridge, Tasman Sea, in depths of 56–280 m. The species has also been photographed underwater off the Poor Knights Islands Reserve and Burgess Island, Mokohinau Group, in New Zealand. It is most similar to *Parapercis binivirgata* (Waite, 1904) in morphology, coloration and meristic values, but is unique among the genus in having a combination of dorsal-fin rays V, 23, anal-fin rays I, 19, lateral-line scales 57–63, vomer with 1–2 irregular rows of robust conical teeth, palatines with 1–2 rows of small teeth, angle of subopercle smooth, 10 abdominal and 22 caudal vertebrae, and coloration, including seven broad reddish-brown bands on the upper body between the spinous dorsal-fin and the caudal peduncle, most bands bifurcated into close-set double bars with black smudge-like blotches below, and membrane of the spinous dorsal fin black. Comparison of the mitochondrial cytochrome c oxidase subunit 1 (CO 1) genetic marker utilised in DNA barcoding produced a genetic divergence of 5.38% and 7.63% between the new species and its two closest sampled congeners. The holotype of *P. binivirgata* is identified from two specimens previously regarded as syntypes, some revisions are made to meristic data in the original description of the latter, and a detailed description of the revised geographic range of *P. binivirgata* is provided.

Key words: Pinguipedidae, *Parapercis*, new species, *Parapercis nigrodorsalis*, *Parapercis binivirgata*, DNA barcoding, New Zealand, New Caledonia, Norfolk Ridge, Australia

Introduction

Many species of *Parapercis* Bleeker, 1863 are distinguished by relatively minor variations in meristic formulae and subtle differences in coloration. Several species (e.g. *Parapercis allporti* (Günther, 1876), *Parapercis binivirgata* (Waite, 1904), *Parapercis decemfasciata* (Franz, 1910) and *Parapercis multifasciata* Döderlein in Steindachner & Döderlein, 1884) have a pattern of seven or more dark transverse bars across the upper body. In 2003, a consortium of Australian, New Zealand and French scientific organisations collaborated to investigate the biodiversity of benthic communities on the Norfolk Ridge and Lord Howe Rise of the Tasman Sea on the NORFANZ cruise. During the cruise, seven small specimens of *Parapercis* with numerous dark transverse bars were collected on Wanganella Bank, at a depth of 121–126 m. The species was very similar to *P. binivirgata* in meristic values and coloration, but it had a distinctly black spinous dorsal fin and fewer transverse bars, the first of which was situated below the posterior portion of the spinous dorsal fin, instead of on the nape. Initially it was surmised that the colour differences between the NORFANZ specimens and larger available specimens of *P. binivirgata* from Australia may be due to the immature status of the former, so additional specimens of various size classes were sourced from across the known range of *P. binivirgata* for direct comparison. It was then discovered that the two forms occurred sympatrically in New Zealand waters, but not in Australia. The coloration of several large male specimens from

loan material; Dr K. Clements of the University of Auckland, New Zealand, forwarded an underwater image of the new species; Dr R. Ward and Dr W. White (CSIRO) provided helpful advice on barcoding protocols and previously unpublished DNA sequences for several specimens; and Geoff Thompson (QM) assisted with digital imaging and prepared the plates. Many specimens of the new species were collected during the NORFANZ survey in May–June 2003, which was supported by funding from the Australian and New Zealand governments through the National Oceans Office, Hobart, and the Ministry of Fisheries (Mfish), Wellington, and the efforts of NIWA Vessel Management and their staff. In addition to the latter, we thank the scientific staff and crew aboard the NORFANZ vessel RV *Tangaroa*. Recent specimens were collected as part of the Biogenic Habitats on the Continental Shelf project (voyages TAN1105 & TAN1108), funded by New Zealand Ministry of Fisheries (Biogenic Habitats: ZBD200801), New Zealand Foundation for Research, Science and Technology (CCM: CO1X0907), NIWA Capability Fund (CF111358) and Oceans Survey 20/20. RV *Tangaroa* sea time for the latter was funded by Land Information New Zealand. Other collections were supported in part by the New Zealand NIWA Research Core Funded Coasts & Oceans Programme 2: Biological Resources subcontract for fundamental knowledge of marine biodiversity, with the Museum of New Zealand Te Papa Tongarewa. We also thank the reviewers for their helpful comments on the manuscript.

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