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Nannoperca pygmaea, a new species of pygmy perch (Teleostei: Percichthyidae) from Western Australia

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Abstract

A new species of pygmy perch (Percichthyidae) from south-western Australia is described on the basis of 15 specimens collected from the Hay River system. *Nannoperca pygmaea* **sp. nov.** differs from the sympatric congener *N. vittata* (Castelnau) by the absence of dark pigment on the ventral surface anterior to the anus, the possession of thin latero-ventral stripes, generally fewer dorsal rays and fewer anal rays, hind margin of scales on caudal peduncle without distinct pigment, and a more pronounced spot (ocellus) that is surrounded by a halo at the termination of the caudal peduncle. The new species is distinguished from congeners *Nannoperca australis* Günther, *N. oxleyana* Whitley and *N. variegata* Kuitert and Allen in possessing an exposed and serrated preorbital bone and jaws that may just reach to below the anterior margin of the eye, versus a smooth and hidden preorbital and the jaws reaching to at least below the pupil; and from the remaining congener, *N. obscura* (Klunzinger) in possessing a distinct haloed ocellus at base of caudal fin versus an indistinct barring, as well as a dark spot behind operculum, and the lack of dusky scale margins. It differs from the other sympatric pygmy perch found in the region, *N. balstoni* Regan, by the presence of an exposed rear edge of the preorbital (vs. hidden under skin), fewer transverse scale rows (13 vs. 15–16), small mouth (rarely reaching eye vs. reaching well beyond eye), ctenoid (vs. cycloid) body scales, generally fewer pectoral rays and smaller maximum size. Allozyme analyses unequivocally demonstrate that sympatric populations of *N. pygmaea* **sp. nov.** and *N. vittata* belong in different genetic lineages, display no genetic intermediates, and are diagnosable by fixed allozyme differences at 15 different loci. Due to its extremely restricted range, where it is known from only 0.06 km², *N. pygmaea* **sp. nov.** requires urgent legislative protection.

Key words: sympatric species, *Nannoperca vittata*, *Nannatherina balstoni*, Hay River, Mitchell River, South West Coast Drainage Division, endemic fishes

Introduction

The pygmy perches, *Nannoperca* and *Nannatherina*, are represented by six species that are restricted to southern Australia and are placed either within the Nannopercidae (e.g. Allen 1989, Kuitert *et al.* 1996, Allen *et al.* 2002) or Percichthyidae (e.g. Kuitert & Allen 1986, Jerry *et al.* 2001, Paxton *et al.* 2006, Unmack *et al.* 2011). Jerry *et al.* (2001) demonstrated that the pygmy perches are monophyletic with *Macquaria* and placed them within the Percichthyidae. Jerry *et al.* (2001) and Kuitert *et al.* (1996) suggest that the pygmy perch genus *Edelia* should be incorporated with *Nannoperca*, based on molecular genetic criteria and reflecting minor anatomical differences, such as the posterior margin of the preorbital bone being either hidden by skin (*Edelia*) or exposed (*Nannoperca*), however Allen *et al.* (2002) and Paxton *et al.* (2006) retain *Edelia*. Jerry *et al.* (2001), based on 12S rRNA, found no basis for recognising *Edelia*, with *E. vittata* and *E. obscura* being unmistakably sister taxa to *Nannoperca australis*, *N. oxleyana* and *N. variegata*. Unmack *et al.* (2011) in their phylogenetic revision of the pygmy perches support the use of *Nannoperca* for all species of pygmy perch except *Nannatherina balstoni*.

We accept that there are currently three described endemic species of percichthyid in south-western Australia belonging to three genera, *Nannoperca*, *Nannatherina* and *Bostockia* (Fig. 2b, c, d) (Morgan *et al.* 1998, Jerry *et al.*