

# Validity of *Platycephalus grandispinis* Cuvier, 1829, with Priority over *Platycephalus longispinis* Macleay, 1884 (Actinopterygii: Scorpaeniformes: Platycephalidae)

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The taxonomic status of *Platycephalus grandispinis* Cuvier, 1829 was investigated. Although the holotypes of *P. grandispinis* and *Platycephalus longispinis* Macleay, 1884 closely resemble each other, having several characters in common (e.g., 14 second dorsal and anal fin rays, ca. 80 lateral line scales, the interorbit much narrower than the orbital diameter, no distinct interopercular flap, the supraoccipital with a ridge, and the lower preopercular spine much longer than the upper), they differ in the development of the skinny sensory tubes of the preopercle, which are more numerous and better developed in the former. After a detailed examination of the two holotypes and specimens referable to *P. grandispinis* and *P. longispinis* from southwestern to southeastern Australia, it was determined that these two nominal species are synonyms. Furthermore, the skinny sensory tubes tend to become more well developed with growth and to show a geographic cline, such a cline in any feature being recognized in the Platycephalidae for the first time. A cline was also recognized in the sub-orbital width, with a tendency for a greater width in the western population than the eastern. This study provides a detailed redescription of *P. grandispinis*, which has priority over *P. longispinis*.

**Key Words:** Platycephalidae, synonym, *Platycephalus grandispinis*, *Platycephalus longispinis*, cline, Australia.

## Introduction

Cuvier in Cuvier and Valenciennes (1829) described a platycephalid fish, *Platycephalus grandispinis* Cuvier, 1829, based on a single specimen without locality data (Fig. 1). Since the original description, no researcher has paid any attention to the taxonomic status of this species. Macleay (1884) described another platycephalid fish, *Platycephalus longispinis* Macleay, 1884, on the basis of a single specimen collected from Port Jackson, New South Wales, Australia (Fig. 2). The holotypes of these two nominal species closely resemble each other, having such characters in common as 14 second dorsal and anal fin rays, ca. 80 lateral line scales, the interorbit much narrower than the orbital diameter, no distinct interopercular flap, the supraoccipital with a ridge, and the lower preopercular spine much longer than the upper, usually nearly reaching the posterior margin of the opercle. However, the two holotypes differ from each other in the degree of development of the skinny sensory tubes of the preopercle: the former has well developed tubes covering the cheek region except for its anterior portion (Fig. 3A), but the latter has only a few, poorly developed tubes with slight dorsal extensions (Fig. 3B). Inasmuch as the two specimens are similar in length (212 mm vs 233 mm in standard length, respectively), this difference cannot be explained merely as change with growth in a single species. A detailed examination of the two holotypes and 44 non-type specimens from across southern Australia identical with

them has shown that the skinny sensory tubes indeed tend to become more developed with growth and also show a geographic cline. A cline was also recognized in suborbital width. I conclude that all 46 specimens belong to a single species.

The purposes of this study are to demonstrate the synonymy of *P. grandispinis* and *P. longispinis*, the former having priority, and to redescribe *P. grandispinis*, the former having priority, and to redescribe *P. grandispinis*, as a detailed description of the species has not previously been given. In addition, this represents the first record of a geographic cline in the family Platycephalidae.

## Materials and Methods

Counts and measurements were generally made according to Imamura (2012) and were routinely taken from the left side. However gill rakers, defined as depressible bony elements, not including tooth plates, were counted on the right side. Anterior small, isolated dorsal fin spines appear before a plus sign in counts. Counts of pectoral fin rays are expressed as “upper unbranched rays+middle branched rays+lower unbranched rays=total rays”. Measurements were made with calipers to the nearest 0.1 mm. Orbital diameter was measured from the orbit’s anteroventral to posteromedial margins, which is the longest distance in many species of *Platycephalus* Bloch, 1795. Interorbital width was measured at the mesial portion to the center of the eye. Ter-