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## The genus *Orestias* (Teleostei: Cyprinodontidae): nomenclatural errors in the assignment of species names

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*Orestias Valenciennes* 1839 is a fish genus of the family Cyprinodontidae Gill, 1865, endemic to the Altiplano in the Andes range. The genus includes 45 species (44 valid and one *species inquirenda*) according to Eschmeyer & Fong (2013); more than half inhabit the Lake Titicaca basin (23 species). The rest of the species have been described from different Altiplano aquatic systems, from Lake Lacsha in the center of Peru to the Ascotán salt pan in northern Chile (9°S to 22°S) (Lauzanne 1982; Vila 2006; Vila *et al.* 2011). Due to the high species diversity, the genus *Orestias* has been used as a study model for speciation processes. Sympatric speciation has been proposed for Lake Titicaca (Baker *et al.* 2001), and allopatric speciation for the rest of its geographic distribution (Parker & Kornfield 1995).

The genus *Orestias* was originally proposed by Valenciennes (1839). This author indicated “Puisqu’ils habitent les points les plus élevés des Andes, et qu’il faut les nommer comme nouveaux, je propose, pour désigner ce genre, le nom d’Orestie (d’Ορεστίας, nymphe des montagnes)”. Along with the description of the genus, Valenciennes (1839) assigned specific binominal names to species that he mentioned by their common names, but provided no descriptions. These names are *nomina nuda* and are excluded from the nomenclature by Article 12.3 of the International Code of Zoological Nomenclature (ICZN 1999).

Later, Valenciennes (1846) repeated the etymological origin of the name *Orestias* and made a detailed (in ICZN terms) description of the following species (those mentioned in 1839 without descriptions or valid indications are indicated with \*):

*Orestias cuvieri*,\* dedicated to Georges Cuvier (1769–1832); type species of the genus by the subsequent designation of Eigenmann (1910); common name: umanto.

*Orestias albus*;\* common name: carache blanco.

*Orestias luteus*;\* common name: carache amarillo.

*Orestias humboldti*,\* dedicated to Alexander von Humboldt (1769–1859) (synonym of *O. cuvieri*, according to Parenti 1984); common name: peje reye.

*Orestias pentlandii*,\* dedicated to Joseph Barclay Pentland (1797–1873); common name: boga or boguilla.

*Orestias jussiei*, dedicated to Joseph de Jussieu (1704–1779); common: ispis.

*Orestias agassizii*, *O. agassii* or *O. agassisii*, dedicated to Jean Louis Rodolphe Agassiz (1807–1873) (see comments below); common name: puru.

*Orestias mulleri*, possibly dedicated to Johann Friedrich “Fritz” Theodor Müller, (1822–1897).

*Orestias owenii*, dedicated to Richard Owen (1804–1892) (synonym of *O. jussiei*, according to Parenti 1984).

Valenciennes did not mention the grammatical gender of the word *orestias*; however, he clearly specified its Greek origin and meaning. The word ὀρεστιάς (*orestias*) is a feminine noun<sup>1</sup>, which in Greek mythology corresponds to the singular of ὀρεστιάδες (*orestiades*), which refers to feminine divinities (nymphs) who live in the mountains<sup>2</sup>.

According to the ICZN (Art. 31.2), all names of species, if they correspond to a Latin or Latinized adjective, must concur in gender with the generic name with which they combine. It is thus surprising that Valenciennes (1846) assigned adjectives with masculine suffixes as specific names to species of the genus *Orestias* (e.g. *albus* and *luteus*, Latin adjectives which mean white and yellow, respectively).

1. Morwood, J. & Taylor J. (2002) Pocket Oxford Classical Greek Dictionary, p 233.

2. Smith, W. (1867) Dictionary of Greek and Roman Biography and Mythology, Vol. II, 1216.

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