

## ***Odontesthes humensis* de Buen, 1953 (Atheriniformes: Atherinopsidae: Sargentini) from the La Plata River, first record from Argentina.**

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### **Abstract**

The area of La Plata River and Buenos Aires Delta in Argentina has records of at least three species of freshwater silversides (*Odontesthes bonariensis*, *O. perugiae* and *O. retropinnis*). *Odontesthes humensis* was originally described in 1953 by the Spanish ichthyologist Fernando de Buen from the Río Negro Basin in Uruguay. It was listed on several occasions as borderline species in Argentina but its presence could never be confirmed. The aim of this study is to confirm that *Odontesthes humensis* is present in argentine waters. The morphological characters of the specimens discussed in this work allow a clear taxonomic assignment.

### **Resumen**

El área del Río de la Plata y delta bonaerense en Argentina cuenta con los registros de por lo menos tres especies de pejerreyes dulceacuícolas (*Odontesthes bonariensis*, *O. perugiae* y *O. retropinnis*). La especie *Odontesthes humensis* fue descrita originalmente en el año 1953 por el ictiólogo español Fernando de Buen para la cuenca del río Negro en Uruguay. Fue listada en varias ocasiones como especie limítrofe para Argentina pero nunca pudo confirmarse taxativamente su presencia. El objetivo del presente trabajo es confirmar que *Odontesthes humensis* habita en aguas argentinas. Los caracteres morfológicos de los ejemplares aquí tratados permiten una clara asignación taxonómica.

### **Introduction**

All fishes commonly known as 'silverside' or 'pejerrey' are species of the family Atherinopsidae. The genus *Odontesthes* Evermann & Kendall, 1906 groups all species of silversides from the subfamily Atherinopsinae present in Argentina. This genus, which shows wide ranges in both, geographical distribution and ecological habits, includes at least 19 species, with coastal marine and estuarine, as well as freshwater representatives (Dyer, 2000, 2006). The marine forms are distributed from the coast of Peru, around Southern tip of Tierra del Fuego and the Falkland Islands, up to the South of Brazil. Freshwater representatives extend from Patagonia (Santa Cruz River, Argentina) to the North of the Brazilian state of Río Grande do Sul (White, 1985; Dyer, 1998, 2000, 2003, 2006).

The area of the La Plata River and the Paraná Delta just upstream of Buenos Aires has

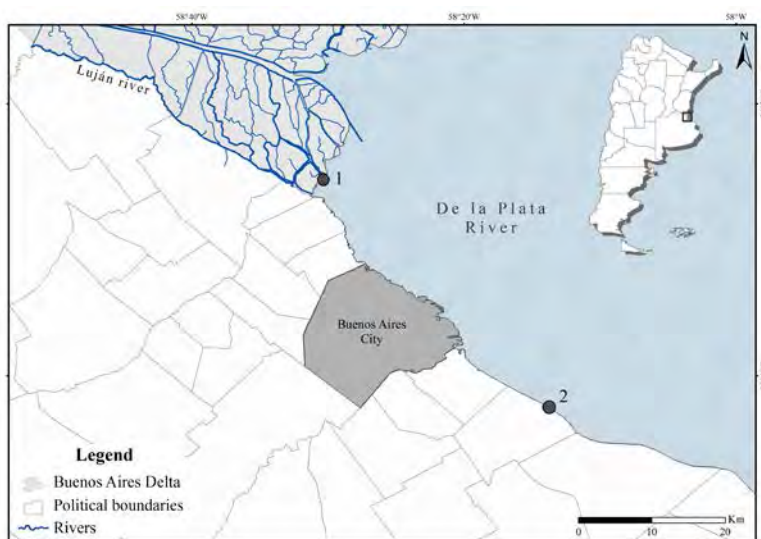


fig. 1. La Plata River and Buenos Aires Delta, indicating the sites where *Odontesthes humensis* was collected: 1. San Antonio River and 2. La Plata River in Quilmes.



fig. 2. (above) *Odontesthes humensis* (CFA-IC-4600) 17.2 mm total length and 14.5 mm standard length.

fig. 3. (below) Details of the right first branchial arch of *Odontesthes humensis* (CFA-IC-4600)

fig. 4. (right) Details of the face of the fresh water species of *Odontesthes* from the La Plata River. A: *O. humensis* (CFA-IC-4600) B: *O. bonariensis* (CFA-IC-3094) C: *O. perugiae* (CFA-IC-2790) D: *O. retropinnis* (CFA-IC-2250).

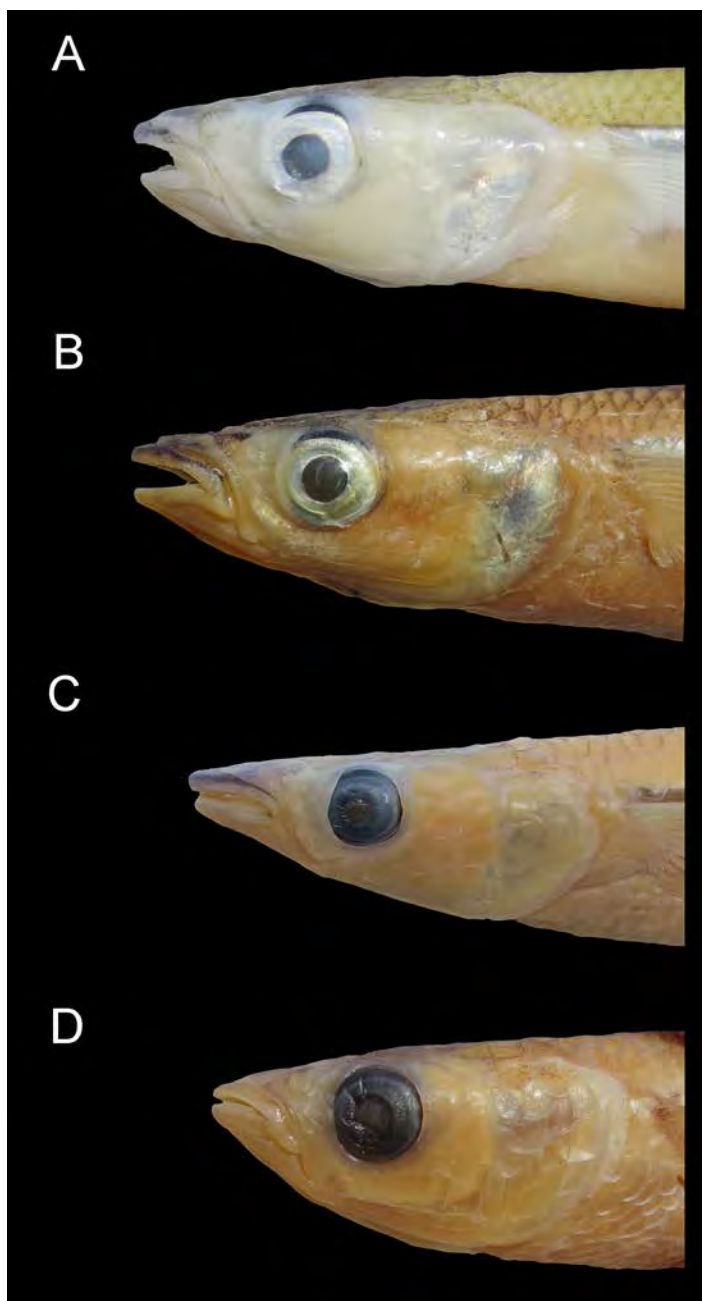




fig. 5. San Antonio River at its confluence with the La Plata River, collecting site of CFA-IC-4600

yielded records of at least three species of freshwater silversides. The 'flecha de plata' (*Odontesthes bonariensis*) and the 'Juncalero' (*O. perugiae*) are the most widely distributed and common species in this biome (Ringuelet et al. 1967; Brancolini et al. 2014), while only some findings have been reported for *O. retropinnis* from the La Plata River and lagoons related to it in the districts of Magdalena and La Plata (Nion, 1999; Bemvenuti, 2002; Liotta, 2006; López et al. 2009). Other species are reported only from the estuary of La Plata River and its ocean front, as 'Escardón' (*O. argentinensis*), 'Panzón' (*O. platensis*) or 'Corno' (*O. smitti*) (Nion, 1999).

*Odontesthes humensis* was originally described in 1953 by the Spanish ichthyologist Fernando de Buen based on a specimen of 164 mm total length and 137 mm standard length and twelve paratypes (from 112-191 mm total length) collected in July 1947 in Legrand wetland, Río Negro dam, Uruguay Republic (de Buen, 1953). The aim of this study is to confirm the presence of *Odontesthes humensis* in La Plata River and Buenos Aires Delta waters (fig. 1), representing the first record from Argentinian freshwaters.

#### Abbreviation

CFA-IC: Colección ictiológica de la Fundación Azara, Buenos Aires, Argentina

#### *Odontesthes humensis* de Buen, 1953

##### Material examined

*Odontesthes humensis*: CFA-IC-4600, (1 specimen) San Antonio River at its confluence with La Plata River, Lower Delta of the Paraná River (first section), Tigre (34° 25,890' S / 58° 29,864' W), Buenos Aires province. Coll. J. M. Meluso, S. Bogan y E. Carini. 06/07/2015 (fig 2).

CFA-IC-706, (2) De la Plata River in Quilmes (34° 42,289' S / 58° 13,763' O), Buenos Aires province. Coll. S. Bogan y J. Bogan. 03/11/2004.

#### Discussion

Due to the large phenotypic similarity among the species *Odontesthes* taxonomic identification on species level might result challenging. However the CFA-IC-706 and CFA-IC-4600 specimens present a combination of characters that allows the unequivocal assignment to *Odontesthes humensis*: only 16 very short and stout gill rakers on lower limb of first gill arch (fig 3); lack of vomerine teeth; scales absent along shaft of cleithrum; scales present only in posterior half of interoperculum; upper jaw prognathous and premaxillary protrusion directed ventrally (fig. 4A); presence of molariform

pharyngeal teeth; absence of teeth on endopterygoid; and scales large, with less than 10 rows of dorsal scales between lateral bands.

Habitat: CFA-IC-4600 was collected on the shore of an incipient island in the confluence of San Antonio River in La Plata River, in turbid waters, well oxygenated, with lime/sandy substrate bottoms and between abundant vegetation of *Schoenoplectus californicus* (fig. 5).

On the other hand, the specimens CFA-IC-706 were found in coastal waters of La Plata River in Quilmes, in the Southern suburban zone of greater Buenos Aires. In the sampling site, we confirm the presence of a sandy substrate. All the samples were obtained with trawling nets in depths no higher than 1,5 meters. It should be pointed out that the west coast of La Plata River, in all its extent, suffers from high contamination due to industrial waste, and the effluent of sewage waste, mainly from Buenos Aires city and its surroundings.

*Odontesthes guazu* de Buen, 1953 is considered a junior synonym of *O. humensis* because the only characters that distinguish them were the position and extent of the pectoral and ventral fins, a character considered highly variable within the genre (Dyer, 2006).

*Odontesthes humensis* is present in lakes and large waterbodies of the La Plata basin in Uruguay and in the Dos Patos and Mirim coastal lagoons in southern Brazil (Bemvenuti, 2004).

The presence of few, short and robust rakes or spines on the branchial arches added to pharyngeal teeth molariform type and mouth morphology were interpreted as typical characteristics of species with benthonic diet based on the consumption of shellfish mollusk (Rodrigues & Bemvenuti 2001; Bemvenuti, 2004; Dyer, 2006).

Ringuelet et al. 1967 included *Basilichthys guazu* (actually *Odontesthes humensis*) as a boundary species for Argentina, an opinion followed 36 years later by López et al. (2003)

The materials reported on here allow us to confirm the presence of *Odontesthes humensis* in Argentina for the first time.

### Acknowledgements

We thank Lic. Leticia Villalba, Secretaría de Control Urbano y Ambiental, Unidad Ejecutora Plan de Manejo del Delta, Municipio de Tigre. Fundación Félix de Azara and Universidad Maimónides have supported the authors. Special thanks are due to Martín Ledesma and Germán G. Bergara "Kelo" from Universidad Maimónides for their technical assistance in the preparation of nets that allowed the capture of one of the specimens discussed here.

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recommended form for reference:

Bogan, S., V. Bauni, J.M. Meluso, E. Carini & M. Homberg (2015):  
*Odontesthes humensis* de Buen, 1953 (Atheriniformes: Atherinopsidae:  
Sorgentinini) from the La Plata River, first record from Argentina.  
*Ichthyological Contributions of PecesCriollos* 38: 1-5  
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