



Scientific Note

First report of albinism in the marine catfish *Genidens barbatus* (Lacepède 1803) in Argentine waters

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Abstract. We report for the first time a case of total albinism in the marine catfish (*Genidens barbatus*) in Argentine waters.

Key words: fish albinism, Ariidae, bony fishes, artisanal fisheries, Argentina

Resumen. Primer registro de un bagre marino albino *Genidens barbatus* (Lacepède 1803) en Argentina. Reportamos por primera vez en aguas de Argentina, un ejemplar albino de bagre marino (*Genidens barbatus*).

Palabras clave: albinismo, Ariidae, peces óseos, pesquerías artesanales, Argentina

Albinism is a rare genetic condition in which there is a congenital absence of pigment (melanin) of eyes, skin and hair caused by a mutation in the genes. Mutations that affect enzymes involved in the metabolism of melanin can inhibit its production, resulting in either partial depigmentation of the body surface (*i.e.* leucism; see Veena *et al.* 2011) or complete loss of coloration (*i.e.* total albinism). There are descriptions of albino animals in virtually all vertebrate groups including fishes. Several instances of albinism in other catfishes have been reported earlier. However, here we document, the first case, to our knowledge, of total albinism in the marine catfish *Genidens barbatus* (Lacepède 1803) in its distribution area.

On 16 January 2012 a mature male (TL: 535 mm; body weight: 1558 g; Fig. 1; INIDEP collection No. 830) of a common marine catfish *Genidens barbatus* was caught using a bottom-fixed gill net by an artisanal fishermen at about 2000 m off the coast of Buenos Aires Province, Argentina (36°48'14''S; 56°39'12''W; Fig. 1). The artisanal fleet operates at up to 25 m water depth and uses 90-120 mm mesh

size stretched mesh gill nets positioned for up to 12 h of fishing. We analyzed the artisanal fisheries landing monthly between October 2008 and March 2012 at the study area. In spite of this consistent and recurrent temporal-spatial sampling, we have never observed before another total albino marine catfish, which differs from a partial albino by a lack of total body coloration and red eyes.

Genidens barbatus is an anadromous sea catfish that inhabits the coasts and estuaries of South America from Bahia (17°S) in Brazil, to San Blás (40°32'S) in Argentina (López & Bellisio 1965, Menni *et al.* 1984). Adults of this species are found in coastal waters and enter estuaries and rivers during the reproductive season (Ringuelet *et al.* 1967, Reis 1986). The males mouthbreed the fertilised eggs and then release the juveniles in the lower estuary or rivers, before leaving to disperse in the coastal zone. Juveniles up to 3 years of age are found throughout the year in this environment (López & Bellisio 1965, Menni *et al.* 1984, Reis 1986, Vieira & Castello 1997). This species can live as long as 45 years attain a length of 120 cm and

mature to the size of 40 cm TL at age 8.5 and males at age 9 (Reis 1986a, Velasco *et al.* 2006). The normal coloration of this catfish species is dark grey,

with dorsal olive green flashes and white-yellow ventral body (Ringuelet *et al.* 1967).

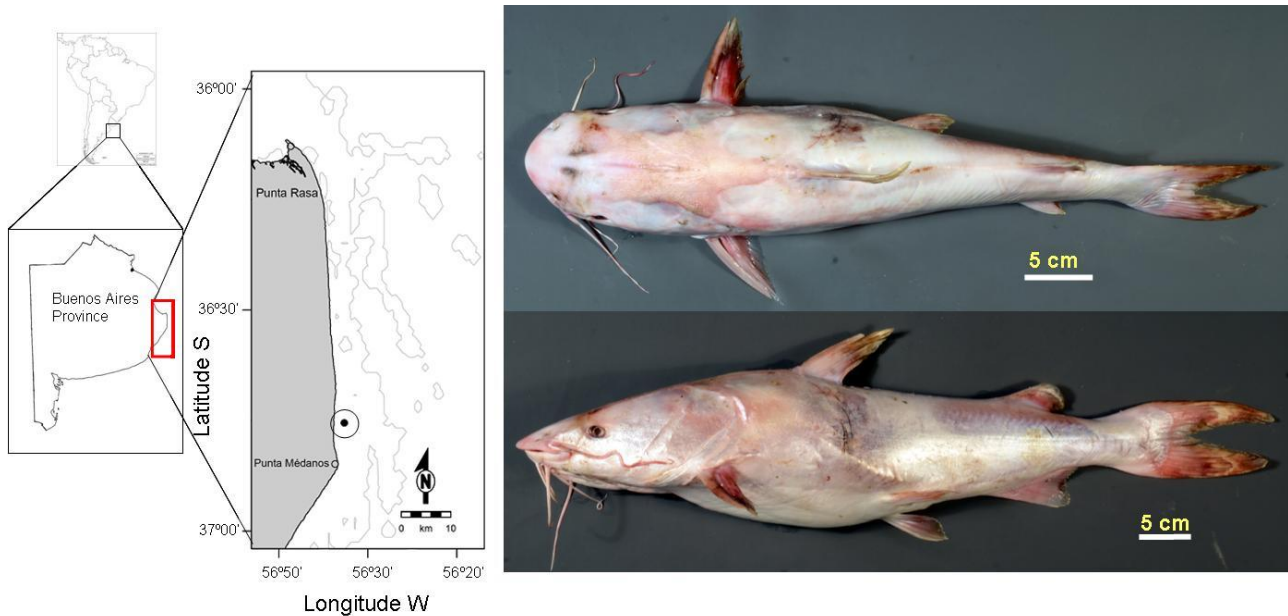


Figure 1. Albino *Genidens barbuis* (INIDEP: No. 830; TL: 535 mm; TW: 1558 g) captured off the coast of Buenos Aires Province (isobath of 10 m are shown).

This catfish is a commercially important resource in various artisanal fisheries operating in Brazil (Velasco *et al.* 2006), Uruguay (Segura *et al.* 2008) and Argentina (Colautti *et al.* 2009). The maximum catches in the Argentine-Uruguayan Common Fishing Zone have been reached 186 t in 2006 (http://ctmf.org/page_id=654). Recently, this species has been considered as vulnerable category (*e.g.* low rate of growth, late maturity and low fecundity) by both fishing pressure and coastal pollution (Capatto & Yanosky 2009).

The incidence of albinism can be artificially increased in fish by exposing the eggs and larvae to heavy metals (*e.g.*, arsenic, cadmium, copper, mercury, selenium, zinc) (Oliveira & Foresti 1996). Albinism could be related to a genetic random alteration or to the exposition of heavy metals. We have examined 868 individuals from 2008 to 2012, and also over 491 individuals from 1994 to 2011 were analyzed in research cruises by National Fisheries Institute of Argentine, INIDEP, and found no other albino specimen. For instance, the frequency of occurrence of this genetic condition is very scarce in nature and is necessary into the knowledge about the sources of this phenomenon.

Acknowledgements

We are very grateful to Marcelo “polaco” Carvalho, the artisanal fisherman who gave us the albino marine catfish. Marcela Tobio took the photographs. We also thank S. Barbini for the curation of the material deposited in the ichthyologic collection of INIDEP. We acknowledged to the anonymous referee that provided helpful comments. This is contribution INIDEP No. 1790.

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Received August 2012

Accepted April 2013

Published online June 2013