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Early development of fat snook, *Centropomus parallelus* (Poey 1860) (Teleostei, Centropomidae) from Southeastern Brazil

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Abstract

Early development of fat snook, *Centropomus parallelus* (Poey 1860), is described based on embryos and larvae obtained from rearing experiments and from specimens caught in the field, in Cananéia, southeastern Brazil, during December 1999–January 2000. Larvae of common snook, *C. undecimalis*, were also collected to compare the pigmentation pattern and body shape. Eggs of *C. parallelus* were relatively small (0.65 to 0.70 mm in diameter), spherical, and usually with a single oil globule. Notochord length (NL) of newly hatched ranged between 1.1 mm to 1.4 mm. Notochord flexion began at 3.4 mm NL and was usually completed by 4.0 mm SL. Larval and early juvenile of both species were very similar with tenuous distinction, however, some morphological and pigmentation characters were used to distinguish their early stages. The main differences were as follow: trend of lower values of the ratio of body depth to body length (BD/BL) for *C. parallelus* larger than 10.0 mm SL; absence of the post-temporal spine in *C. undecimalis*; absence of pigmentation along the dorsal midline of *C. parallelus* larvae by 2.6–7.0 mm; and presence of a pair of dendritic melanophores posterior to the bases of pelvic fins in *C. parallelus* larger than 6.0.

Key words: *Centropomus parallelus*, Fish eggs, Fish larvae, Cananéia-Iguape estuarine system, southeastern Brazil

Introduction

Centropomid fishes are euryhaline and diadromous that inhabit coastal estuaries and freshwater rivers and lakes (Figueiredo & Menezes 1980, Nelson 2006). The family Centropomidae consists of one genus, *Centropomus*, with 12 species (Nelson 2006). The previously recognized subfamily Latinae was raised to family by Mooi and Gill (1995), based on an analysis of the association of epaxial musculature with dorsal fin pterygiophores. Later, this taxonomic level was confirmed by Otero (2004). Four centropomid species are described in Brazilian waters, *C. ensiferus* (Poey 1860), *C. parallelus* (Poey 1860), *C. pectinatus* (Poey 1860), and *C. undecimalis* (Bloch 1796) (Menezes and Figueiredo 2003). Two species, *C. parallelus* and *C. undecimalis*, are known to occur in the Cananéia-Iguape estuarine system, where they contribute to the local commercial and recreational fisheries (Mendonça & Katsuragawa 2001).

Many biological and ecological aspects concerning the juvenile and adult *C. parallelus* have been studied, e.g. diet and reproduction in Venezuela (Rojas 1972) and in Mexico (Chavez 1963); reproduction, growth and juvenile habitat in the Southeastern Brazil (Radasewsky 1976); physiologic studies involving effect of salinity and time of exposure on metabolism and growth (Rocha *et al.* 2005); nursery habitat and diet of juveniles in the estuaries of Puerto Rico (Aliaume *et al.* 1997).

Because aquaculture of centropomid species is important throughout their range, some rearing experiments of *C. parallelus* and *C. undecimalis* have been carried out (Cerqueira 2002, Álvarez-Lajonchère *et al.* 2004, Álvarez-Lajonchère & Tsuzuki 2009, Wittenrich *et al.* 2009, among others). However, information on development of early