

Engraulisoma taeniatum Castro, 1981 (Characiformes: Characidae): Range extension with new records in the rio Madeira basin, Rondônia and Amazonas states, Brazil

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ABSTRACT: *Engraulisoma taeniatum* is a rare fish recorded in few collections around the world. In Brazil *E. taeniatum* was only known from the rio Paraguay drainage according to the available scientific literature. Herein the geographic range of the species in the Brazilian territory is extended to tributaries of the rio Madeira basin in the States of Rondônia and Amazonas.

Engraulisoma taeniatum Castro, 1981 (Figure 1) is small freshwater fish that can reach 42 mm SL in size. The placement of the species within the order Characiformes has been unstable although it was assessed in several studies. It had been considered an *Incertae Sedis* member of the family Characidae (Lima *et al.* 2003), however in the morphological phylogeny of the family *E. taeniatum* was found to be closely related to the members of the family Gasteropelecidae (Mirande, 2010). A different hypothesis of relationship was found with molecular tools, where the species was found to be close to *Agoniates*, *Clupeacharax*, *Lignobrycon* and *Triportheus* in the family Triportheidae (Oliveira *et al.* 2011). Despite the uncertainty concerning its relationships, *Engraulisoma taeniatum* is a valid species characterized by the presence of a prominent upper jaw; origin of dorsal fin posterior to the middle of the body; long anal-fin base; lateral line curved, low on sides of the body, and ending on the caudal peduncle; two rows of teeth on the premaxilla with four teeth in the inner row; and a wide silvery lateral band (Castro 1981). *Engraulisoma taeniatum* was described based on the holotype and ten paratypes, collected in 1977 from the rio Cuiabá, municipality of Poconé, Mato Grosso State, Brazil. Although the type locality is in the rio Cuiabá, one of the

paratypes was collected in the rio Taquari, municipality of Coxim, Mato Grosso do Sul.

The geographic distribution of the monotypic genus *Engraulisoma* was known only for the upper rio Paraguay system. Ortega and Vari (1986) and Ortega *et al.* (2001) extended its distribution to Peru. Carvalho *et al.* (2009) recorded the species to the upper río Yuruá in Peru, however the picture of the voucher specimen of *Engraulisoma taeniatum* in that work is a specimen of *Clupeacharax anchoveoides*. Ibarra and Stewart (1989) recorded its presence in the río Napo basin in Ecuador, Braga (1998) and López *et al.* (2003) for drainages in Argentina and Chernoff *et al.* (2000) for Bolivia. Notwithstanding, the only known records of *E. taeniatum* in Brazil are the type localities (Castro, 1981) and rio Manso, a tributary to rio Cuiabá (Veríssimo *et al.* 2005).

During the development of the project Monitoramento e Conservação da Ictiofauna do rio Madeira (Assessment and Conservation of the ichthyofauna of the Madeira River) from 2009 to 2011, a total of 239 specimens of *E. taeniatum* were collected in seven tributaries of the rio Madeira in Rondônia and Amazonas States. The specimens were captured mostly with seine and were deposited in the Coleção Ictiológica da Universidade Federal de Rondônia



FIGURE 1. Lateral view of *Engraulisoma taeniatum*, UFRO-I 12233, 38.6 mm SL, collected at the mouth of the igarapé Belmont, Porto Velho, Rondônia, Brazil.

(UFRO-I 269, 1404 8410, 8411, 8412, 8594, 8601 9201, 9208, 9209, 12233 and 12942).

In the rio Madeira basin the specimens were found inhabiting clear water, usually in sandy beaches in small igarapés such as Belmont, São Lourenço, Karipuna and Jatuarana, but also in large rivers as the Aripuanã, Manicoré and Jaciparaná (Figure 2). The majority of the specimens of *Engraulisoma* were captured from the igarapé Jatuarana. Specimens from the lot UFRO-I 9209 (81) were collected in water at 30.2°C temperature, 0.53m deep and pH = 6.54. Other species sampled syntopically with *E. taeniatum* were: *Aphyocharacidium bolivianum* Géry 1973, *Knodus smithi* (Fowler 1913), *Triportheus albus* Cope 1872, *Vandellia cirrhosa* Valenciennes 1846 and *Rhaphiodon vulpinus* Agassiz 1829. The analysis of the stomach contents of five specimens (UFRO-I 9209) revealed the presence of autochthonous Diptera (*Bezzia*

spp.) and allochthonous Homoptera, Coleoptera and Lepidoptera.

These new records extend the geographical range of *Engraulisoma taeniatum* inside Brazil, in a region ca. 1.200 to 1.300 km distant from the type locality. Absence of previous records of *Engraulisoma taeniatum* in Rondônia and Amazonas may be due to the scarcity of inventories on those states and the low abundance of this species in the wild. Although the species is known by the scientific community for over 30 years, records in Brazilian collections are rare and information about its ecology and biology are scarce. Natural populations of *Engraulisoma taeniatum* in the Rondônia State can be considered endangered with risk of local extinction by the extreme alteration of its natural habitat, due to construction of hydroelectric plants in the region.

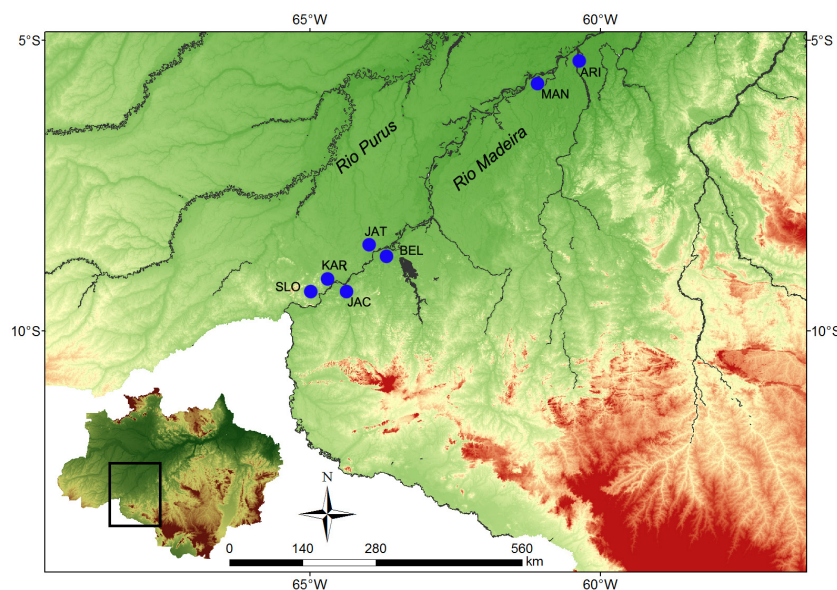


FIGURE 2. Geographical distribution of *Engraulisoma taeniatum* in the rio Madeira basin. Each symbol may represent more than one collection or locality. ARI= rio Aripuanã, MAN = rio Manicoré, BEL = igarapé Belmont, JAT = igarapé Jatuarana, JAC = rio Jaciparaná, KAR = igarapé Karipunas, SLO = igarapé São Lourenço.

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LITERATURE CITED

- Barriga, R. 1991. Peces de agua dulce del Ecuador. Revista de Información técnico-científica, Quito, Ecuador, *Politécnica* 16(3): 7-88.
- Braga, L. 1998. Registro de *Engraulisoma taeniatum* Castro, en el Paraná medio, Argentina (Osteichthyes, Characidae). *Physis* (Buenos Aires) Sección B 56: 29-30.
- Britski, H. A., K. S. Silimon and B. S. Lopes. 1999. *Peixes do Pantanal: Manual de identificação*. Brasília: Embrapa. 184 p.
- Carvalho, T. P., S. J. Tang, J. I. Fredieu, R. Quispe, I. Corahua, H. Ortega, and J. S. Albert. 2009. Fishes from the upper Yuruá river, Amazon basin, Peru. *Check List* 5(3): 673-691.
- Castro, R. M. C. 1981. *Engraulisoma taeniatum*, um novo gênero e espécie de Characidae da bacia do Rio Paraguai (Pisces, Ostariophysi). *Papéis Avulsos do Departamento de Zoologia* (São Paulo) 34(11): 135-139.
- Chernoff, B., A. Machado-Allison, P. Willink, J. Sarmiento, S. Barrera, N. Menezes, and H. Ortega. 2000. Fishes of three Bolivian rivers: diversity, distribution and conservation. *Interciencia* 25(6): 273-283.
- Lima, F.C.T, L.R. Malabarba, P.A. Buckup, J.F.P. da Silva, R.P. Vari, A. Harold, R. Benine, O.T. Oyakawa, C.S. Pavanelli, N.A. Menezes, C.A.S. Lucena, M.C.S.L. Malabarba, Z.M.S. Lucena, R.E. Reis, F. Langeani, L. Cassati, V.A. Bertaco, C. Moreira, and P.H.F. Lucinda, 2003. Genera incertae sedis in Characidae; p. 106-169. In R.E. Reis, S.E. Kullander, C.J. Ferraris Jr. (ed.). *Check List of the Freshwater Fishes of South and Central America*. Porto Alegre: Edipucrs.
- López, H.L., A.M. Miquelarena and R.C. Menni 2003. Lista comentada de los peces continentales de la Argentina. *ProBiotA - Serie Técnica y Didáctica* 5: 1-85.
- Mirande J.M. 2010. Phylogeny of the family Characidae (Teleostei: Characiformes): from characters to taxonomy. *Neotropical Ichthyology*, 8: 385-56.
- Oliveira, C., G. S. Avelino, K.T. Abe, T.C. Mariguella, R.C. Benine, G. Ortíz, R. P. Vari and R.M.C. Castro. 2011. Phylogenetic relationships within the speciose family Characidae (Teleostei: Ostariophysi: Characiformes) based on multilocus analysis and extensive ingroup sampling. *Evolutionary Biology* 11: 1-275
- Ortega, H. and R.P. Vari. 1986. Annotated checklist of the freshwater fishes of Peru. *Smithsonian Contributions to Zoology* 437: 1-25.
- Verfissimo, S., C.S. Pavanelli, H.A. Britski and M.M.M. Moreira. 2005. Fish, Manso Reservoir region of influence, Rio Paraguai basin, Mato Grosso State, Brazil. *CheckList* 1(1): 1-9.

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