

New miniature fish discovered

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The miniature fish *Priocharax nanus*. Credit: Ralf Britz.

A newly discovered fish species measuring up to 15.4mm long has added to the global diversity of 'miniature' fish.

The new [species](#), *Priocharax nanus*, was discovered in the Rio Negro in Brazil by an international team led by Prof Monica Toledo-Piza and including Museum fish researcher Dr Ralf Britz.

The Rio Negro contains an abundance of miniature [fish species](#), defined as those that do not grow beyond 26mm.

Record breakers

The water of the Rio Negro looks like dark tea and is more acidic than rainwater, with a pH of 4.5-5.

It's a similar habitat to the peat swamps of Indonesia, where the world's smallest fish was discovered in 2006. *Paedocypris progenetica* grows to only 7.9mm long and is a contender for title of 'world's smallest vertebrate'.

Commenting on *P. progenetica*, Dr Britz, who analysed its skeleton, said: 'This is one of the strangest fish that I've seen in my whole career.'

How small can you go?

The new *P. nanus* is only the third species in its

genus, but marks a rise in the number of named miniature fish in the Neotropics, the tropical regions of Central and South America.



The world's smallest fish, *P. progenetica* Credit: Maurice Kottelat, Cornol /Raffles Museum

The first count of miniature fish in 1988 named only 85 Neotropical species, whereas an updated list names 213 species. About 80 miniature species exist elsewhere in the world.

'More miniatures are now being discovered as people start to look for them,' said Dr Britz. However, he thought it was unlikely we'll find something smaller than *P. progenetica*.

'It's approaching the lower limit of how small a vertebrate can be. You have to fit into that tiny body eyes, muscles, internal organs, and the females have to produce eggs,' he said.

The UK does not have any miniature freshwater fishes, but the smallest marine fish is Guillet's goby, *Lebetus guilleti*, reaching 24mm in length.

Tiny mysteries

The newly discovered *P. nanus*, and two other species of the *Priocharax* genus, are unique in that the skeleton of one set of fins, the paired pectoral fins, is made entirely out of cartilage.

Normally, only fish larvae have cartilaginous fin skeletons, whereas adults have bones and fin rays that can move independently. Despite their condition, *P. nanus*' fins are still fully functional for swimming.

P. nanus is also see-through, a trait shared by many miniature fish. This can make them hard to spot for predators and collectors alike. Dr Britz and colleagues had to sift them from the water using fine nets.

Provided by Natural History Museum

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