

# Researchers find a new fish species in the deep sea off Ireland

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*Microichthys grandis* n. sp., SMNS 27380, holotype, 54.5 mm SL, Northeastern Atlantic Ocean, continental slope off southwest coast of Ireland, 324 km west of Dingle. Fresh colouration. Lateral view. Credit: Bram Couperus

It is five centimeters long, but larger than all its relatives: *Microichthys grandis*, literally "big little fish."

Researchers from the State Museum of Natural History Stuttgart in Germany and Wageningen Marine Research (WMR) in the Netherlands discovered this new fish species during a survey off the Irish coast last year. This finding in the Northeast Atlantic is something special for the scientists and has now been published in the journal *Ichthyological Research*.

Researcher Bram Couperus of WMR is pleasantly surprised by the spontaneous discovery: "Discovering a new fish species in the Northeast Atlantic is a rare event. It has not occurred before in the history of our institute, founded in the 1950s. This fish was caught in an area where there is a lot of fishing, especially by Dutch fishers. One would therefore expect the species to have been caught before. If this is the case, at least it escaped attention—until last year."

The new [fish species](#) was noticed last year in the catch during the blue whiting survey, a survey conducted annually to assess blue whiting stocks in European waters. Couperus says, "Blue whiting lives in the so-called meso-pelagic or twilight zone. At that depth you will find striking species, such as lanternfish and [deep-sea](#) angler fishes. Among those, there was suddenly an unknown fish."

## **A scientist from Stuttgart studied the fish**

For the Wageningen researchers, the search for the fish's identity led via a Russian taxonomist to the State Museum of Natural History Stuttgart in Germany, where the fish taxonomist Ronald Fricke already had experience with this group of fish, the deepwater cardinalfishes (Epigonidae).

Fricke notes, "Deepwater cardinalfishes of the genus *Microichthys* are known from three other species that live in the Mediterranean Sea and eastern Atlantic. They are free-swimming in deep water and only a

handful of specimens is known to science. The discovery of the new species off Ireland is very exciting, as it seems closer related to a Mediterranean species from Sicily, than to the other Atlantic species from the Azores."



*Microichthys grandis* n. sp., SMNS 27380, holotype, 54.5 mm SL, Northeastern Atlantic Ocean, continental slope off southwest coast of Ireland, 324 km west of Dingle. Coloration of preserved specimen. Credit: *Ichthyological Research* (2023). DOI: 10.1007/s10228-023-00909-1

Fricke further suggests a theory on the zoogeography of the species: "There are currently two pairs of species, one in the Atlantic, the other in the Mediterranean. During the Mediterranean salinity crisis about 6 million years ago, the Mediterranean was dry and could not be inhabited by fish, so a species pair survived in the Atlantic. When the Strait of Gibraltar opened up again, they immigrated into the Mediterranean, but due to much warmer deep sea water in the Mediterranean, they adapted to these conditions and evolved into separate species."

## **New fish, new name**

One reason the fish had not been noticed before is that it measures only 5.5cm, making it easy to slip through the meshes of a net or be overlooked when caught. The previously known species of this group of fish are even smaller than the specimen caught. The Latin name of this genus is therefore *Microichthys*, meaning "little fish." The new species gets the addition "grandis." That makes its full name *Microichthys grandis*, literally "big little fish."

The location where the big little fish was caught is the Porcupine Bank Canyon, an underwater canyon with cold water coral along the western edge of the Porcupine Bank. The fishing technique used by the researchers did not involve bottom trawling. This is because blue whiting is a so-called pelagic species that swims in schools in the water column and is not bound to the seafloor. Fishing vessels targeting blue whiting in the area also fish with a pelagic net. The researchers suspect that the newly discovered species is naturally very rare, and also so small that it usually passes through the meshes of the net, making the chances of catching it very low.

**More information:** Ronald Fricke et al, *Microichthys grandis*, a new species of deepwater cardinalfish from off Ireland, northeastern Atlantic Ocean (Teleostei: Epigonidae), *Ichthyological Research* (2023). [DOI: 10.1007/s10228-023-00909-1](https://doi.org/10.1007/s10228-023-00909-1)

Provided by State Museum of Natural History Stuttgart

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