



PRESS RELEASE

Wageningen Marine Research, Netherlands (WMR) State Museum of Natural History Stuttgart, Germany (SMNS)

Unique discovery: the 'big little fish'

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

Wageningen/Stuttgart, 13.04.2023. It is five centimetres 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 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 scientific journal "Ichthyological Research".

A very rare event

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."

Search for unknown fish

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: "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: "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."

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 'small fish'. The new species gets the addition '*grandis*'. That makes its full name *Microichthys grandis*, literally 'big little fish'.

Habitat

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.

For the editors/Further Information

Original publication:

Fricke, R., Couperus, B. *Microichthys grandis*, a new species of deepwater cardinalfish from off Ireland, northeastern Atlantic Ocean (Teleostei: Epigonidae). *Ichthyol Res* (2023).

DOI: <https://doi.org/10.1007/s10228-023-00909-1>

Published: 13.04.2023

Contact:

Bram Couperus
Wageningen Marine Research, Netherlands
Phone: +31317487074
E-mail: bram.couperus@wur.nl

Dr. Ronald Fricke, Curator Ichthyology
State Museum of Natural History Stuttgart, Germany
Phone: ++49/(0)711/8936/268
E-mail: ronald.fricke@smns-bw.de

Bram Couperus and Dr. Ronald Fricke are available for further information and interviews.

Press contact:

Vera Hendriks
Wageningen Marine Research, Netherlands
Phone: +31317480072
E-mail: vera.hendriks@wur.nl

Meike Rech
State Museum of Natural History Stuttgart, Germany
Phone: ++49/(0)711/8936/107
E-mail: meike.rech@smns-bw.de



Wageningen Marine Research:

With knowledge, independent scientific research and advice, Wageningen Marine Research substantially contributes to more sustainable and more careful management, use and protection of natural resources in marine, coastal and freshwater areas.

<https://www.wur.eu/marine-research>

State Museum of Natural History Stuttgart:

The State Museum of Natural History Stuttgart is the largest natural history museum in the state of Baden-Württemberg, Germany. Scientists at the Stuttgart Museum of Natural History work with one of the largest natural history collections in Europe to explore, describe, understand and make accessible to the public the biological diversity of the world. This research is essential as a basis for the protection of biodiversity, which is one of the crucial resources for humanity.

With its collections of nearly 12 million objects (botany, zoology and paleontology) and its scientific expertise and research achievements, it is one of the most important natural history research museums in Europe. One of the museum's hallmarks is the close connection between natural history research and broad-based knowledge transfer through a wide range of exhibition, educational and public relations activities. It is one of the most visited museums in the state of Baden-Württemberg and is striving to become a member of the Leibniz Association.

www.naturkundemuseum-bw.de

Image material:

Image1_Dutch_Research_Ship_Tridens_Copyright_Bram_Couperus.jpg:

Description: Dutch fisheries research vessel Tridens with which the researchers around Bram Couperus are conducting the "Blue whiting survey". In the process, the new fish species *Microichthys grandis* was discovered.

Copyright notice: Bram Couperus

Image2_New_Species_Microichthys grandis_Copyright_Bram_Couperus.jpg:

Description: The newly discovered fish species *Microichthys grandis*, 'big little fish'.

Copyright notice: Bram Couperus

Image3_Scientist_Bram_Couperus_WMR_Copyright_Ton_Meijer.jpg:

Description: WMR scientist Bram Couperus preparing for the 2022 "Blue whiting survey". St. Michael's Mount near Penzance in Cornwall in the background.

Copyright notice: Ton Meijer

Please note that use of the images is only permitted with copyright notice. Thank you very much.