

New deep sea mushroom-shaped organisms discovered

September 3 2014



Photo of the new deep sea mushroom-shaped organism. Credit: Just et al.

Scientists discovered two new species of sea-dwelling, mushroom-shaped organisms, according to a study published September 3, 2014 in the open-access journal *PLOS ONE* by Jean Just from University of Copenhagen, Denmark, and colleagues.

Scientists classify [organisms](#) based on shared characteristics using a taxonomic rank, including kingdom, phylum, and [species](#). In 1986, the authors of this study collected organisms at 400 and 1000 meters deep on the south-east Australian continental slope and only just recently isolated two types of mushroom-shaped organisms that they couldn't classify into an existing phylum.

The new organisms are multicellular and mostly non-symmetrical, with a dense layer of gelatinous material between the outer skin cell and inner stomach cell layers. The organisms were classified as two [new species](#) in a [new genus](#), *Dendrogramma enigmatica* and *Dendrogramma discoides*, in the new family, Dendrogrammatidae. Scientists found similarities between the organisms and members of Ctenophora and Cnidaria and suggest that they may be related to one of these phyla. Scientists also found similarities to 600 million year-old Pre-Cambrian extinct life forms, suggested by some to be early but failed attempts at multi-cellular life.

The authors originally preserved the specimens in neutral formaldehyde and stored them in 80% ethanol, which makes them unsuitable for molecular analysis. However, they suggest attempting to secure new samples for further study, which may provide further insight into their relationship to other organisms.

Jørgen Olesen added: "New mushroom-shaped animals from the deep sea discovered which could not be placed in any recognized group of animals. Two species are recognized and current evidence suggest that they represent an early branch on the tree of life, with similarities to the

600 mill old extinct Ediacara fauna."

More information: Just J, Kristensen RM, Olesen J (2014) Dendrogramma, New Genus, with Two New Non-Bilaterian Species from the Marine Bathyal of Southeastern Australia (Animalia, Metazoa incertae sedis) – with Similarities to Some Medusoids from the Precambrian Ediacara. *PLoS ONE* 9(9): e102976. [DOI: 10.1371/journal.pone.0102976](https://doi.org/10.1371/journal.pone.0102976)

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