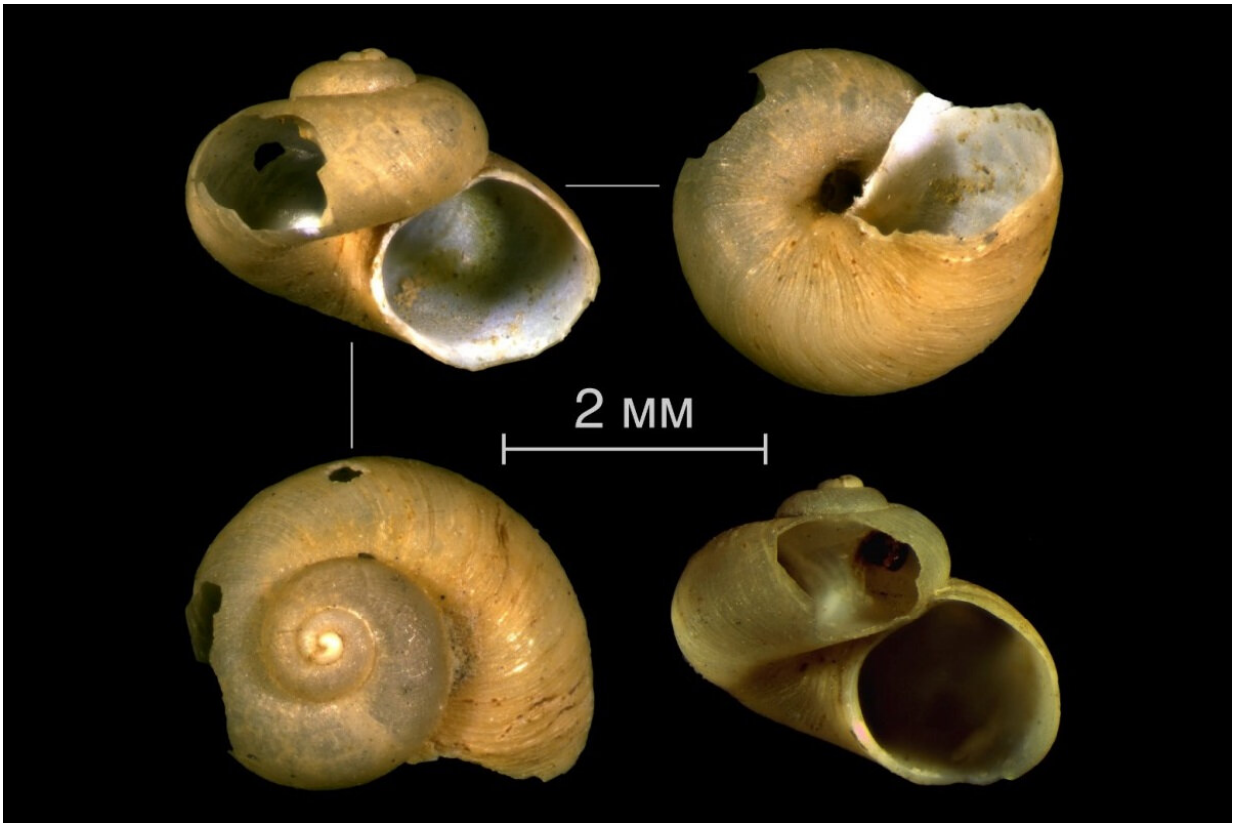


# A rare snail living on driftwood is discovered in the Arctic ocean

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The mollusc *Leptogyra bujnitzkii* appeared in a biological collection in Russia thanks to the legendary Arctic drift that began on 23 October 1937. Credit: SPbU

The mollusk *Leptogyra bujnitzkii* first appeared in a biological

collection in Russia thanks to the legendary Arctic drift that began on 23 October 1937. Three icebreaking steamers—Georgiy Sedov, Malygin and Sadko—were beset and drifting in the ice following the sea current in the area of the New Siberian Islands. The same current transports driftwood from the Siberian rivers toward Greenland. In August 1938, the veteran icebreaker Yermak freed the Sadko and Malygin. However, the Sedov, whose rudder was badly damaged, had to be left in the ice as a drifting high-latitude station. This enforced wintering in the Arctic resulted in many scientific discoveries, included the debunking of the myth about the Sannikov Land.

The discoveries, however, continue today. The latest has been the discovery of sea snails from the subclass Neomphaliones among the exhibits in the collection compiled by the research expedition of the Sadko. The species description was based on only two specimens raised from a depth of about 3800 metres north of the Laptev Sea. Initially, in 1946, the Russian hydrobiologist Grigory Gorbunov assigned it to the [genus](#) Ganesa. Then, in 2003, the mollusk was assigned to the genus Skenea. However, in 2020, the experts' opinion about the rare sea snail unexpectedly changed.

"Last autumn, I wrote a conference paper on small mollusks from the genus Skenea," says Ekaterina Krol. "Our mollusk was reiterated as a representative of this genus as well, which appeared questionable to me from the very beginning. The day before my presentation at the conference, when I was finishing the paper, it became clear to me that the shell sculpture does not belong to the genus Ganesa. I started searching for more information about similar mollusks, and came across representatives of the Leptogyra genus. Our specimens looked very similar. Then we had to prove their kinship."

Both syntypes were initially studied with a stereo microscope. After that, one of specimens was coated with silver and studied using a scanning

electronic microscope at the Interdisciplinary Resource Centre for Nanotechnology at the St Petersburg University Research Park. The research findings confirmed the hypothesis that the mollusk belongs to the genus *Leptogyra*.



Soviet Arctic expeditions of the 1930s Credit: SPbU

"Unfortunately, knowledge gaps are a common problem in biology," notes Ekaterina Krol. "Additionally, we are dealing with extremely small

snails—representatives of micromollusks. Their shells are only about 5 to 6 millimeters in adult size. Previously, such snails were often mistaken for larval shells. Another reason why the error had occurred was insufficient knowledge of the subclass Neomphaliones at the time of its initial description."

Interestingly, representatives of the genus *Leptogyra* inhabit extremely unusual environments. For instance, they live in a type of hydrothermal vents, often referred to as "black smokers," which are found along the mid-ocean ridges. Another habitat of such mollusks is sunken wood. It must have been there that our two specimens were discovered during the expedition.

"The *Leptogyra* mollusks use decomposing wood as an energy source. Notably, the decaying wood habitat is a very aggressive environment. It is unsafe for living organisms that are not adapted to it. It would be interesting to find out how closely the organisms living on sunken wood are related to species associated with 'black smokers,' because these habitats are very different. Getting the specimens from such depths is a challenge. Hence, there are very few of them at the researchers' disposal," says Ekaterina Krol.

According to the researcher, the findings could indicate the presence of sunken wood biocenoses in the Arctic Ocean. In other words, there may exist a previously unknown type of marine community using decaying wood as the main source of energy. The closest communities of this type were previously reported in the northern Atlantic Ocean in the Iceland region.

**More information:** EKATERINA N. KROL et al, Redescription of *Leptogyra bujnitzkii* (Gorbunov, 1946) comb. nov., the first representative of the gastropod subclass Neomphaliones from the high Arctic, *Zootaxa* (2020). [DOI: 10.11646/zootaxa.4759.3.13](https://doi.org/10.11646/zootaxa.4759.3.13)

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