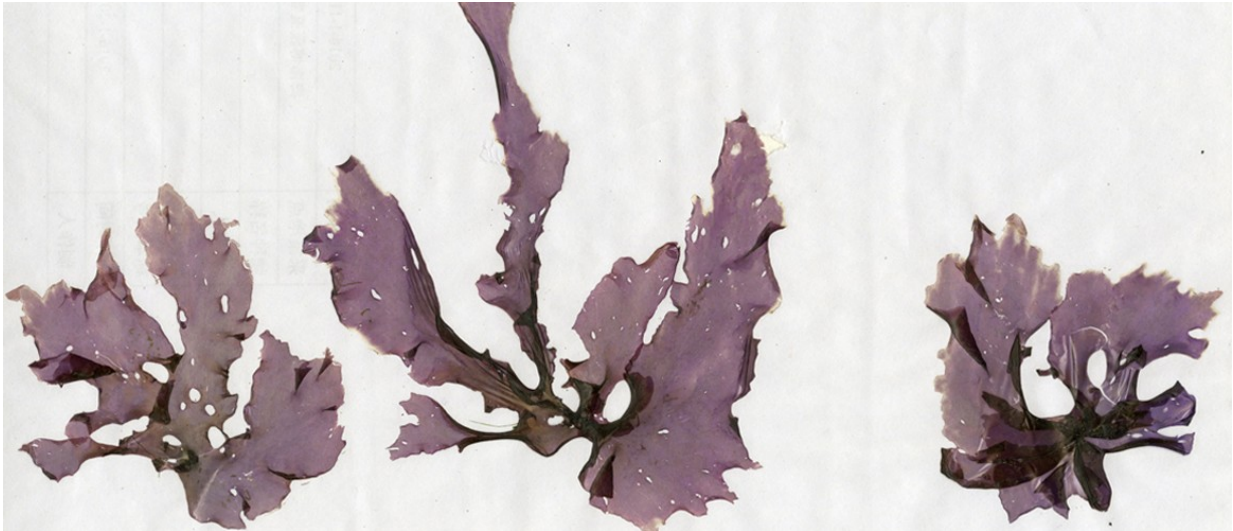


New species of seaweed and algae discovered

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Calidia pseudolobata. Credit: Dr. Li-En Yang

Researchers, including those at the Natural History Museum in London, have discovered a new species of seaweed *Calidia pseudolobata* as well as four new genera of red algae from the warm waters of China. The research suggests there are many new species yet to be discovered—with potential implications for marine biodiversity and food security.

The world faces multiple challenges from population growth to threats to agricultural production. Due to a lack of land, the impact of environmental and anthropogenic change on coastlines, and [shallow seas](#) around the world, there is an increasing need for seaweed [species](#) and

strains which could be brought into aquaculture—the farming of fish, crustaceans, molluscs, [aquatic plants](#), algae, and other organisms.

The red algal [genus](#) *Pyropia* sensu lato includes several species of economic importance to China, Japan and Korea where they are farmed for nori, an aquaculture crop that when processed is the black wrapping used in sushi.

The research features in a new paper published in the *Journal of Phycology*. Co-author and Merit Researcher at the Natural History Museum Prof. Juliet Brodie said: "Pyropia is a cosmopolitan, large group of organisms but extremely hard or impossible to identify in the field based on what they look like [morphological features]. This raises questions as to where and how to go about the search for potential crop candidates. It's exciting to find a [new species](#) from our research, we should never underestimate the value of biodiversity discovery and understanding species relationships. Such fundamental knowledge is the basis of our existence, survival and well-being."

Researchers in this study revised the taxonomy of the genus *Pyropia* using a combined molecular and morphological approach, providing definitive evidence that *Pyropia* is made up of several genera whose distribution is indicative of their underlying evolutionary history. By using these techniques,

researchers revised the concept of *Pyropia* (subpolar to cold temperate), described four new genera, *Calidia* (tropical/subtropical), *Neoporphyra* (warm temperate), *Neopyropia* (cold temperate) and *Uedaea*, and resurrected an old genus, *Porphyrella*. The study described 33 new name combinations.

Professor Brodie continues: "The results of this study have big implications for the nori industry. Traditionally, the economically

important species *Pyropia tenera*, *P. yezoensis* and *P. haitanensis* used in aquaculture in Asia went under the genus *Porphyra* until this genus was split a few years ago and they were transferred to *Pyropia*. As a result of our work, *Pyropia tenera* and *P. yezoensis* move to the genus *Neopyropia*, and *Pyropia haitanensis* is moved to *Neoporphyra*."

The new research demonstrates the importance of fundamental biodiversity discovery underpinned by a robust taxonomy in order to apply such knowledge. Redefining *Pyropia*, coupled with an understanding of the distribution of the new genera, provides a potentially powerful tool for the discovery of new seaweed species/strains for aquaculture.

More information: Li-En Yang et al. Redefining *Pyropia* (Bangiales, Rhodophyta): Four New Genera, Resurrection of *Porphyrella* and Description of *Calidia pseudolobata* sp. nov. From China 1, *Journal of Phycology* (2020). [DOI: 10.1111/jpy.12992](https://doi.org/10.1111/jpy.12992)

Provided by Natural History Museum

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