

DiatomBase – Principal online catalogue of diatoms

Diatoms are the most ubiquitous and species-rich lineages of siliceous microalgae (phylum: Bacillariophyta) that play an important role in the ecosystem by contributing about 20% of the oxygen we breathe¹. Due to their morphology and various uses, they have attracted the attention of researchers the world over.

Efforts have been made over one and half century to catalogue diatoms. However, most of the catalogues²⁻⁶ have limited impact due to area of distribution covered. The multi-volume set of catalogues of Mills⁵ and Van Landingham⁶ are, however, a widely cited resource due to their coverage. Tempère⁷ also enlisted diatom genera in *Le Diatomiste*.

Some other online resources include (a) *Index Nominum Algarum (INA)* maintained by the University Herbarium, University of California, Berkeley, USA, (b) *Index Nominum Genericorum* published by Smithsonian National Museum of Natural History, USA and (c) 'New Species File', maintained by the Diatom Herbarium at the Academy of Natural Sciences of Drexel University, Philadelphia, USA.

The online catalogue resources of Van Landingham⁶, *INA* and New Species File were collaboratively combined into a single database and presented as online 'Catalogue of Diatom Names' by the California Academy of Sciences, USA in 2005. It contains 64,000+ diatom taxa and has not been updated regularly. AlgaeBase⁸ maintains the catalogue as a global species database of information on algae evolved from Michael Guiry's seaweed website. It covers only 14,843 diatom taxa, which is far from complete. Also, AlgaeBase uses raw data from various sources throughout the world without checking their proper systematic alignment. The World Register of Marine Species (WoRMS), a portal developed by Flanders Marine Institute (VLIZ), is another portal related to marine organisms.

In July 2017, it contained 606,204 taxa, including diatoms. The source of diatoms for WoRMS, however, is AlgaeBase.

In view of the volume of diatom taxa, the dire need of a new and reliable resource was felt that could be updated regularly. Keeping this fact in mind, a new collaborative effort was made by the editors of the Catalogue of Diatom Names and VLIZ, with inputs from diatom experts worldwide. They decided to compile data from the Catalogue of Diatom Names, AlgaeBase and the European Register of Marine Species (ERMS) to integrate into the VLIZ Aphia database structure as a new standalone resource called DiatomBase⁹. It will support WoRMS. As an official start, a group of 19 scientists from 12 countries came together for the first time before the 11th Central European Diatom Meeting hosted by the Czech Academy of Science during a LifeWatch-WoRMS sponsored workshop held in March 2017 at Prague. John Patrick Kociolek (University of Colorado Museum of Natural History and Department of Ecology and Evolutionary Biology, University of Colorado, USA) is the chief taxonomic editor of DiatomBase. Karthick Balasubramanian (Agharkar Research Institute, Pune) is the only participant from India. After the general introduction on VLIZ, Aphia and WoRMS, there was a session on WoRMS online editing by Leen Vandepitte (member of the WoRMS data management team). The website (www.diatombase.org) has been officially launched during the 11th International Phycological Congress in August 2017 at Szczecin, Poland.

DiatomBase is a free online resource aimed to give valid names with supportive information. The database also has information on the distribution of each species. After some time this information will help to build a distributional map for each species of diatoms.

Additionally, this resource is online and dynamic which will get updated to the recent taxonomical and nomenclatural changes. This resource will be highly useful to the Indian Ph D scholars who have limited taxonomic literature. We recommend all the students to use this resource to check the recent and correct name of diatom before publication.

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