Nannotax and mikrotax, an evolving system for paleoinformatics

Jeremy R. Young, Paul R. Bown

University College London (UCL), Department of Earth Sciences, London WC1E 6BT, UK; jeremy.young@ucl.ac.uk, p.bown@ucl.ac.uk

Richard W. Howe

Ellington Geological Services, 1414 Lumpkin Road, Houston, TX 77043, USA; richard.howe@yahoo.com

Brian T. Huber

Smithsonian Institution, National Museum of Natural History, Department of Paleobiology, Washington, DC 20560, USA; Huber@si.edu

David B. Lazarus

Natural History Museum, 10115 Berlin, Germany; david.lazarus@mfn.berlin

Jackie A. Lees, Brian E. Pedder, Bridget S. Wade

UCL, as above; j.lees@ucl.ac.uk, brian.pedder@gmail.com, b.wade@ucl.ac.uk

The Nannotax project has been running since 2007, with the objective of providing high-quality online data on nannoplankton taxonomy and biodiversity. The current version was launched in 2013 at the INA13 conference in Reston VA, USA. Since then, the system has been continuously maintained, expanded and updated, and is now a prime resource for anyone interested in extant or fossil nannoplankton. It currently holds original descriptions and illustrations of >4000 taxa, descriptions and range data on >3000 currently-recognised taxa, 25,000 images and, via the Neptune database (MFN Berlin), access to >250,000 occurrence records of nannofossils.

Recent improvements, which have included developing new tools to access the Neptune database, make it possible to investigate the palaeobiogeographical distributions of species and to reconstruct occurrence tables for DSDP and ODP sites held in the database. Mesozoic and Cenozoic nannofossil information has been continuously updated. Notably, the new synthesis of Neogene taxonomy from the BP group, as published in the JNR (e.g. Bergen et al., 2017; Browning et al., 2017) has been reviewed and incorporated. However, this type of taxonomic revision does present some problems for the system, as will be discussed.

Equally important, the system underlying Nannotax is now a demonstrably robust solution to providing a database of online microfossil taxonomy and for integrating taxon-related data. We have used the system to provide a similar level of coverage of planktonic foraminifera (Huber et al., 2017), and we are now actively developing applications for acritarchs and radiolarians. This expansion of coverage has necessitated the development of new capabilities, such as plotting evolutionary trees and improving the underlying software and web-editing tools. It has also led to the system being recognised as a prime example of effective modern palaeoinformatics.

References

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