Newsletter of Micropaleontology

Number 92, August 2015

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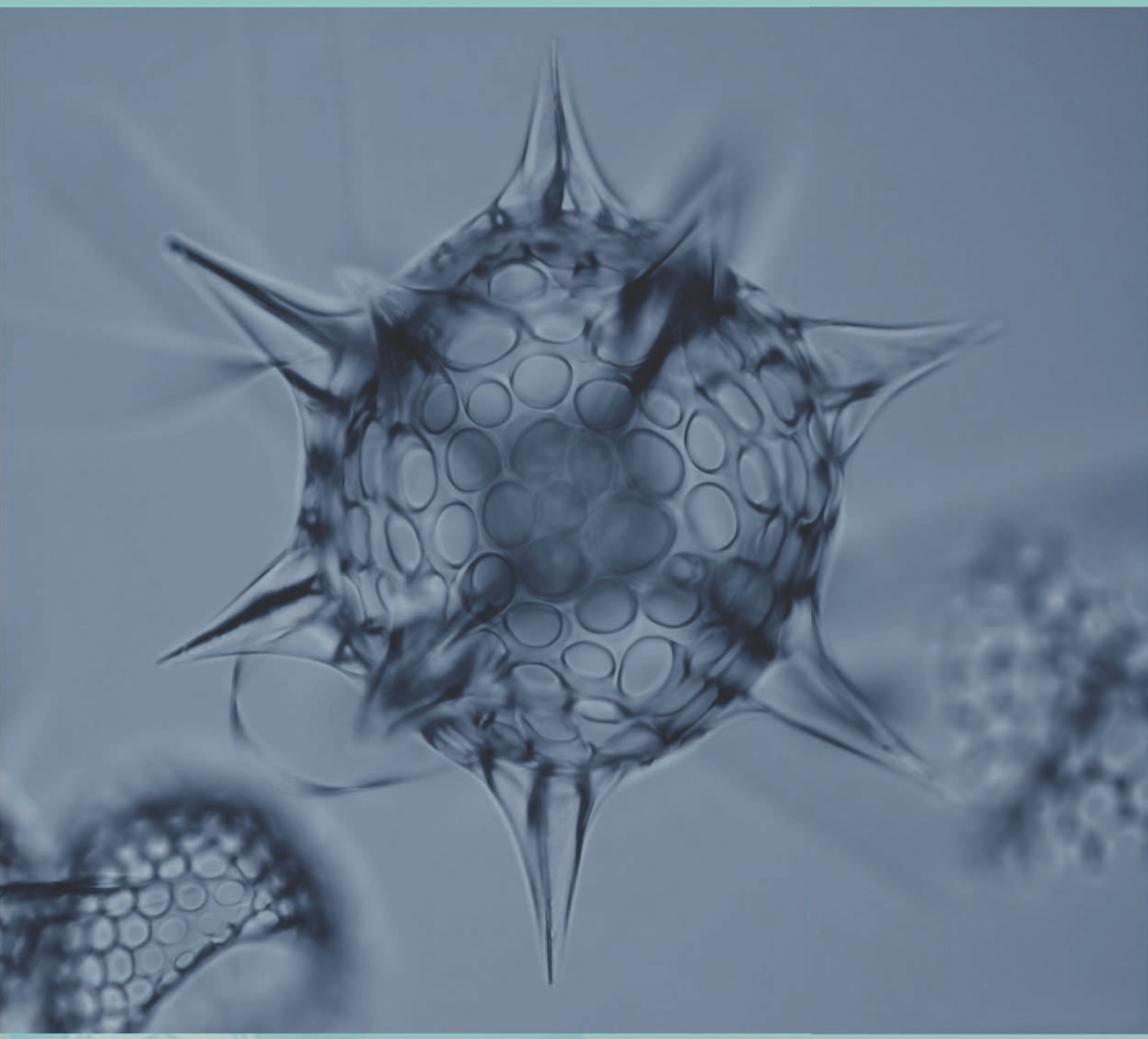


The Micropalaeontological Society

ISSN 0140-6730
Registered Charity No. 284013

Meeting Reports

TMSoc 2015 Foraminifera and Nannofossil Group Joint Meeting, Plymouth, UK

Cherry **N**ewsam, **UCL**, **U**K

The Foraminifera and Nannofossil Groups held their twelfth joint meeting at Plymouth University hosted by Malcolm Hart and colleagues (Chris Smart and Deborah Wall-Palmer) on the 14-18th June this year. The conference got off to a great start with an icebreaker held on the 6th floor of the Rolle Building looking across brilliant views to the Plymouth Hoe and Plymouth Sound to the south and across to Bodmin Moor, which owing to bright clear blue skies we were able to appreciate whilst enjoying a wine reception with a delicious selection of canapés.

The first day of the conference had a full schedule with the focus for the first three sessions on modern benthic foraminifera and biomineralisation and the last session concentrating on planktonic foraminifera. Keynote talks were given by Bill Austin on 'The glacial climate pump: a new model to explain elphidiid biogeography in the Northeast Atlantic', Steve Widdicombe from the Plymouth Marine Laboratory discussing their research assessing the impacts of high CO_2 on organisms and ecosystems and from Takashi Toyofuku, who despite being delayed, managed to arrive within his session and present an animated talk entitled 'Microscopic imaging approach of foraminiferal calcification environment'. Lunch and coffee breaks were filled with time to look at the range of posters, with a wide variety of topics across the 28 displayed. After a successful first day we all headed towards the lighthouse on the Hoe where the conference dinner was held at Rhodes @ the Dome, celebrity chef Gary Rhodes' restaurant, with a wall of long glass windows looking out across the harbour. An

Group photo

exquisite three course dinner was enjoyed by all and it was a great social occasion.

The second day of talks started with Mike Simmons kicking off the first session with a keynote talk on 'Larger benthic foraminifera from the Mesozoic of the Arabian Plate: stratigraphical distribution and palaeoenvironments' followed by a selection of palaeontological talks focusing on the Eocene, Cretaceous Paleogene boundary and Devonian. Magali Schweizer gave the next keynote speech focusing on *Ammonia tepida*, the Eurasian invasion of an Asian phylotype. The afternoon began with a move in to nannofossils, with Marie-Pierre Aubry giving the keynote talk on Discoasterales, setting the scene for the Wednesday workshop, followed by nannofossils talks from the Paleocene Eocene thermal maximum, the Campanian/ Maastrichtian boundary event and creating a new biostratigraphic framework from the Lower Jurassic using nannofossils. Two talks in the afternoon on benthic foraminifera ended the conference oral sessions.

The conference was closed by a presentation from Frans Jorissen showing us the plans and opportunities for next year's conference, which will be held Angers, France. There were a lot of new ideas for the conference, such as a day of talks for students and early career researchers and

Workshop

giving a larger focus to posters presented. The conference attendees were also won over by the suggestion of a wine tour! Malcolm Hart then presented the student poster prizes which were sponsored by the Geological Society of London and which was won by Amy Waterson from the University of Bristol for her poster 'Modelling environmental constraints on the biogeography of planktic foraminifera during the Late Holocene and Last Glacial Maximum' where she has been using ecological niche models to constrain key modern species distributions. A traditionally British dinner was held following the close of the conference of fish and chip with some sticky toffee pudding or strawberries and clotted cream for dessert.

On the Wednesday we split into groups as there were three scheduled workshops being held; a Discoaster workshop for those interested in calcareous nannofossils, a workshop specializing on modern benthic foraminifera and an eVolutus workshop: Crossing Scales in Modelling of Foraminifera. These were all highly successful, with workshop reports to be found in each 'Group' section of the newsletter.

The following day, many conference participants headed off on the local fieldtrip to see mid Triassic continental sandstones at Budleigh Salterton and marine successions from the mid Cretaceous at Beer and the Lower Jurassic at Lyme Regis. The trip was fortunate to have gorgeous weather and the highlight was all the fossil hunting to be done, in particular the Echinodermata and of course the spectacular ammonites at Lyme Regis. Excellent septarian nodules were also to be seen. The fieldtrip rounded off a wonderful four days down in Plymouth.

We would like to thank the sponsors, session chairs, poster judges and the organisers, Deborah Wall Palmer and Christ Smart, but particularly Malcolm Hart for his meticulous organization of the conference and a wonderful time in Plymouth.

Fieldtrip

Plymouth Hoe

The 15th International Nannoplankton Association conference in Bohol, Philippines

Nursufiah **S**ulaiman**, U**niversity of **B**irmingham, **U**K

The International Nannoplankton Association conference is held every two years since 1985. And this year, the 15th International Nannoplankton Association conference (INA15) was held in Panglao, Bohol Island, Philippines on 7-16 March 2015. It was a very successful event where gathered most of nannoplankton workers, from academic and industry worldwide.

The conference started with two enjoyable pre-conference fieldtrips, the countryside tour and snorkeling trip, and ended with post-conference fieldtrip to Palawan Island. Philippines is located in Southeast Asia, and lies in western Pacific Ocean, with abundant natural resources and great biodiversity. Thus it gave a really pleasant experience and exposure of geology and nature for those who joined the fieldtrips.

The INA15 technical sessions took place for 4 days, in South Palms Resort through oral and poster presentations by academic researchers and industry scientists. Together with presentations, 3 workshops which basically discussed about the biogeography, ecology, taxonomy and biostratigraphy of the current issues in this

The INA15's group photo

The first pre-conference fieldtrip, countryside tour

field were held as well.

The INA business meeting summed up the last day of technical session. During this meeting they announced the next location of 2017's INA conference in Athens and the changes of committee members.

This conference definitely gave a great opportunity for young nannoplankton workers to get involve in global networking and get a sense of further research idea from fellow specialist whilst they exchanged their experience and expertise.

The post-conference fieldtrip to Palawan Island

The second pre-conference fieldtrip, Balicasag snorkeling trip

Specialist Group News

Nanno News - updates from the TMS Nannofossil Group and the International Nannoplankton Association

Cherry **N**ewsam & **S**imon **C**ole & **J**eremy **Y**oung

INA15 - Bohol The Philippines

Since the last newsletter the International Nannoplankton Association has held its 15th conference in Bohol, Philippines. We would like to thank the host Alyssa Peleo-Alampay and Allan Fernando and their vast network of dedicated students who put in so much effort and details into arranging an unforgettable trip for us all.

The conference itself was four days long, consisting of 40 talks and 40 posters with five keynote talks. There were 86 people in attendance from 23 countries. There were a wide variety of student presentations and posters with Blanca Ausín and Emilia Belia winning the student presentation and poster prizes, respectively. A highlight of the keynotes was a pair of presentations on the major new Cenozoic nannofossil zonation schemes developed by Isabella Raffi, Claudia Agnini, Jan Backman and colleagues. There was a general feeling that these schemes are a significant advance and should be widely adopted. Discussion on the schemes and plotting of new collaborative projects continued in the workshop sessions - where we had parallel sets of discussions on - Cenozoic biostratigraphy, Mesozoic biostratigraphy and Extant Coccolithophore Biogeography.

There were also a vast number of social activities for us all to enjoy. There were two pre-conference day field trips the first to visit the island of Bohol's chocolate hills and tarsiers and the second a snorkeling trip - departing from the beach outside our hotel in a fleet of outrigger banca boats. The snorkeling trip was immediately followed by a spectacular icebreaker party on the beach. Following this a few days later the conference dinner on the beach was an even bigger success - including traditional dancers performing for us and with the opportunity for everyone to join in. Finally there was a post conference trip to the island of Palawan where we got a good overview of the geology of this allochthonous terrane, visited the famous underwater river caves and did some more snorkeling. If this all sounds a bit too much like a party it is worth remembering that the nannofossil community is scattered around the globe and a lot of the value of the conferences is the networking and informal discussions - and fieldtrips and beach hotels

INA 15 Group photo

are actually very good for this.

Finally, the INA society business took place as the conference came to a close including reshuffling of various posts - with Matt Hampton taking the position of treasurer, Sebastian Meier the position of membership secretary, and Juan Pablo Perez Panera has taken over as the emailing list coordinator. Also, Jamie Shamrock took up the post of editor of the Journal of Nannoplankton Research supported by an editorial committee of Jackie Lees, Richard Howe and Jeremy Young.

Discoaster workshop and the TMS Foram and Nanno Group Meeting

The TMS Spring Foraminifera and Nannofossil Joint Meeting has just been held in Plymouth organised by Malcolm Hart. This was a two day conference with a detailed summary of the conference to be found in this newsletter. We were still lacking in numbers of nannofossil attendees at the conference, with only four talks including a key note talk and three posters, despite the attraction of the workshop (see below) at the end of the conference. We are constantly looking for new ideas to attract more nannofossil workers to this conference and an email to this effect was sent out to the Nannofossil Group on 23 September. If anyone has any ideas then please get in contact with us. Please click here if you didn't receive the email and let Simon or Cherry know if you would like to be added to the 'Nanno Group' email (this group was compiled from those who expressed a 'nanno' interest when joining the TMS).

Following the success of the reticulofenestrid workshop held by TMS/INA in January 2014, we organized a discoaster workshop which ran attached to the TMS Foraminifera and Nannofossil joint meeting. This was supported by financial sponsorship from TMS, INA, PetroStrat, Network Stratigraphic and CGG Robertson, for which we are sincerely grateful. It was well attended with 24 nanno specialists making the trip to Plymouth, including academics, many industrial workers, and students.

To open the meeting we had five international guest speakers, Marie-Pierre Aubry, Claudia Agnini, Jean Self Trail, Mike Styzen and Jeremy Young. They gave talks in the morning giving a range of perspectives on discoaster taxonomy, including some thought provoking new interpretations by Marie-Pierre based on her new catalog, which she also showed us. The powerpoint presentations given by our guest speakers, are available on a webpage on the INA website: http://ina.tmsoc.org/announce/discoasters2015/. Following this, in the afternoon we broke into two groups to review Paleogene and Neogene discoaster taxonomy.

The Palaeogene group (comprising Claudia Agnini, Marie-Pierre Aubry, Jennifer Clayton, Simon Cole, Angela Fraguas, Victor Giraldo Gómez, Matt Hampton, Christian Joachim, Kayleigh Mills, Cherry Newsam, Lea Rausch, Jean Self-Trail and Peter Stassen) went through the list of Palaeogene discoasters on Nannotax in turn, discussing the important criteria for identification, associated images and notes on ranges. Although we had a good representation of the nannofossil community, we obviously would like to hear from anyone who has an interest and experience in discoaster taxonomy before going ahead with any suggested amendments from the working group. Therefore the notes resulting from the discussions in Plymouth will be added to the 'Comments' section for each species in question for open discussion to the community – these will be from 'Discoaster Workshop Palaeogene'. If you are interested, please take some time to look through the species and give us your opinions! NB To check for what comments have been made you can go to the recent comments page - http://ina.tmsoc.org/

Diascoaster Workshop

Nannotax3/ntax-recent_comments.php.

The Neogene group (comprising Babette Böckel, Jennie Bull, Marina Ciummelli, Kevin Cooper, Madalina Kallanxhi, Laura Pea, David Rutledge, Mike Styzen, David Winder and Jeremy Young) similarly discussed the Neogene taxa. In general our discussions were somewhat shorter than those of the Palaeogene group and we finished earlier - possibly because Neogene Discoaster taxonomy is better worked out, or the nature of the problems are better understood. Predictably the *D. quinqueramus* lineage was a major source of debate, but reasonable consensus emerged on the taxa which can usefully be recognized although there was continued debate on nomenclature and especially the use of the name *quintatus*. Again comments have been added to Nannotax and Mike Styzen's presentation covers the group, but some formal changes are also needed, so we are planning a short paper in the JNR.

Future Meetings

Geological Society of America (GSA)
For the first time ever, the International Nannoplankton Association will have a booth at the Geological Society of America's National Meeting in Baltimore, Maryland (USA) from November 1-4, 2015. The booth will be located on "Paleo Alley" in the Exhibition Hall. Please feel free to stop by to see the new INA promotional video, a demonstration of Nannotax, copies of the Journal of Nannoplankton Research, and to talk to INA members about the organization. We hope to see you there!

Jurassic Workshop
During the INA Bohol conference there was a short workshop on Jurassic nannofossils and it was decided that it would be useful to have a proper workshop on them to synthesise recent developments of knowledge on Jurassic nannofossils and work toward revision of the Jurassic zonation. Emanuela Mattioli agreed to organise this and it is now timetabled for Lyon (Université Lyon 1) on Thursday and Friday 12 and 13 of May, with a fieldtrip on the Lagerstätte of La Voulte-sur-Rhône (Callovian) on Saturday 14 May. Please contact Emanuela by email (emanuela.mattioli@univ-lyon1.fr) if you wish to be kept informed about this meeting.

TMS Joint Foraminifera and Nannofossil meeting
As mentioned above, we're always looking to attract more nannofossils workers to these events to address the imbalance of foram to nanno workers (sometimes up to 10:1). Simon and Cherry sent an email out to this effect on 23 September (link above and here). The next joint Foraminifera and Nannofossil meeting is scheduled to be held at the University of Angers by Frans Jorissen in June next year. However, based on the feedback that we get, instead of joining the foram workers in Angers, we could potentially join the Jurassic meeting in Lyon in May. Please see the email for more details and send your thoughts to Simon and Cherry.

INA16, 2017
Following the conference in Bohol, a trip to Europe will be in store for the next INA meeting with INA 16 to be held in the September of 2017 in Athens, Greece, hosted by Maria Triantaphyllou. This was the only offer put forward but we were happy to accept as she has organized excellent extant coccolithophore workshops in the past.

Nannotax update
The Nannotax website has continued to develop over the past six months and is becoming an ever more widely used reference source. This was demonstrated during the discoaster workshop when it provided a useful framework for the discussions and in turn the workshop provided a range of suggestions both for correcting details of discoaster taxonomy and ideas on how the site should be developed. There have been two major areas where the site has been enhanced - improvement of the Farinacci catalog and incorporation of occurrence frequency data from the Neptune database.

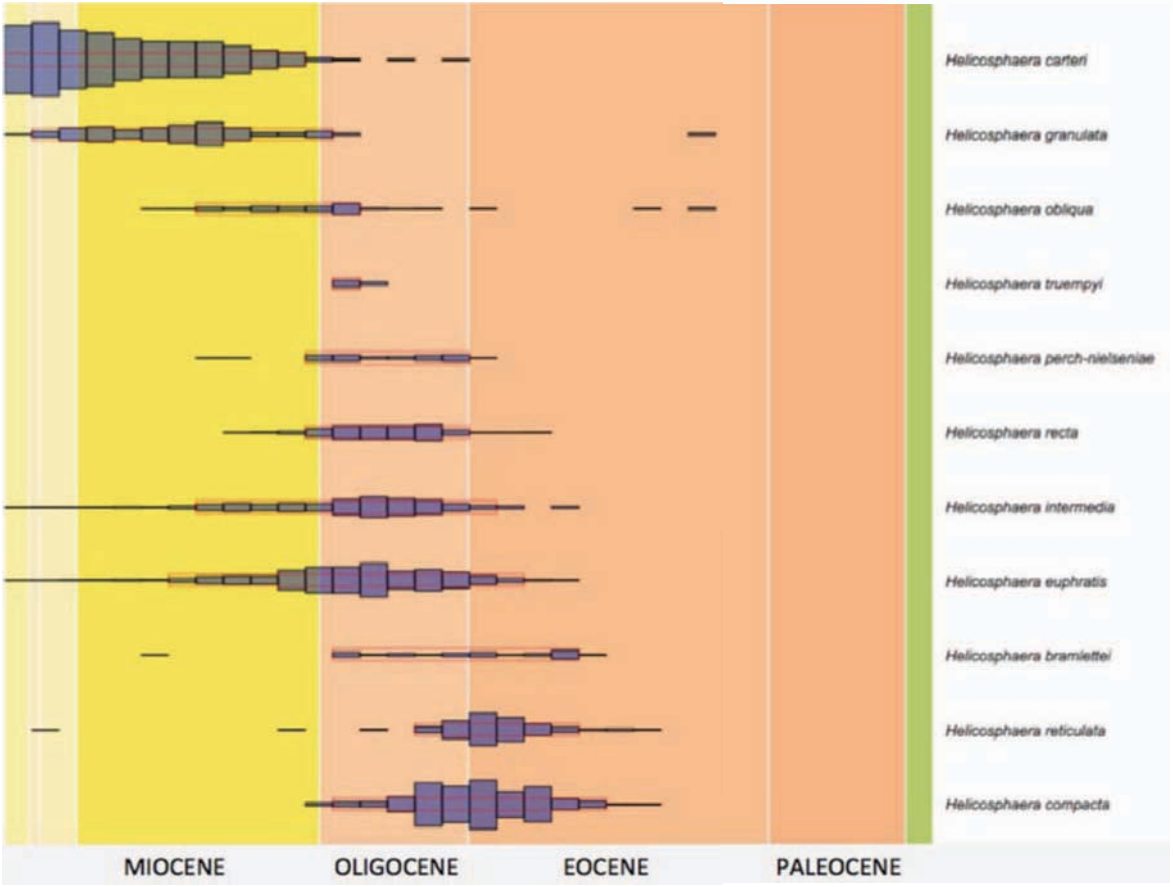
Farinacci Catalog

Sadly, Anna Farinacci of Roma University, one of the pioneers of nannofossil research, died on 23 February this year, at the age of 92. She was a fine nannofossil worker and teacher and also was responsible from 1969 to 1989 for compiling, at immense personal effort, a catalog of original descriptions of calcareous nannofossils (similar to the Ellis and Messina catalog of foraminifera). The printed catalogs have long been a mainstay of nannofossil research and recently Anna transferred copyright of the catalogs to the INA so we could distribute them on CD and use them online. They are now fully incorporated in the Nannotax system, as mentioned in the last newsletter. Through the work of another nannofossil specialist (who prefers to be anonymous) the catalog has now been extended with the addition of another 1200 taxa described since 1989. In addition the original catalog has been rescanned and run through optical character recognition software, so that the pages are

now presented on the website as PDFs with selectable text. Finally, we have made a major effort to increase links between the Farinacci and main catalogs with the objective of providing a modern interpretation for all described species in the catalog.

Neptune Database

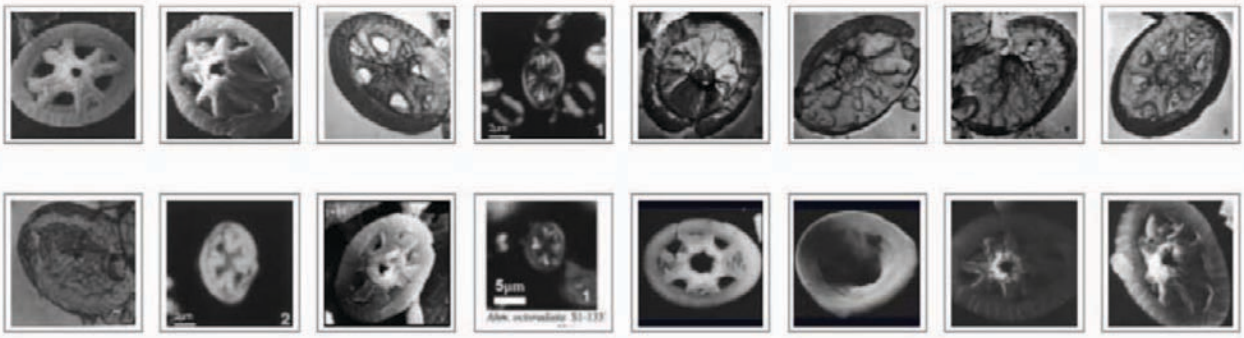
The Neptune database is a relational database of microfossil occurrence records from DSDP and ODP publications. It was produced by Hans Thierstein, David Lazarus, Cinzia Spencer-Cervato and colleagues at ETH-Zurich and has subsequently been implemented in various projects (Spencer-Cervato et al. 1999). It is currently being developed by David Lazarus, Haiko Paalike and colleagues, who have made a version available to us.
The database includes over 42,000 nannofossil samples and over 202,000 nannofossil occurrence records. So it is a very large data source, and there has been significant effort to enhance its utility through production of uniform age models for each site and careful synonymising of taxa (for nannofossils this was done initially by Katharina von Salis with updating subsequently by ourselves - Jeremy Young, Paul Bown, Jackie Lees). For use in Nannotax we have derived a table of taxon occurrence frequencies at 2Ma intervals (i.e. for each taxon and time bin the proportion of samples in the database in which that taxon was recorded has been calculated). There are obvious limitations to this data, as discussed on the website, but it does provide remarkably informative overviews of the distribution of taxa - essential the occurrence frequency appears to be a rather good proxy of abundance. We have added plots of taxon abundance to individual species pages and there are also a couple of pages where you can make more interactive plots of groups of taxa.



Example of a plot of multiple species ranges (generated from http://ina.tmsoc.org/Nannotax3/ranges-neptune.php)

Ahmuellerella octoradiata

Ancestry: Mesozoic -> Eiffellithales -> Chiastozygaceae -> Ahmuellerella -> Ahmuellerella octoradiata
Sister taxa: A. alboradiata A. octoradiata A. regularis A. sp.
Diagnosis: Muroliths with narrow rim and central area plate-like structure incorporating 8 near-axial bars.



Nomenclature:
Citation: Ahmuellerella octoradiata (Górka, 1957) Reinhardt & Górka, 1967 [Species]
Basionym: Discolithus octoradiatus Górka, 1957
Synonyms:

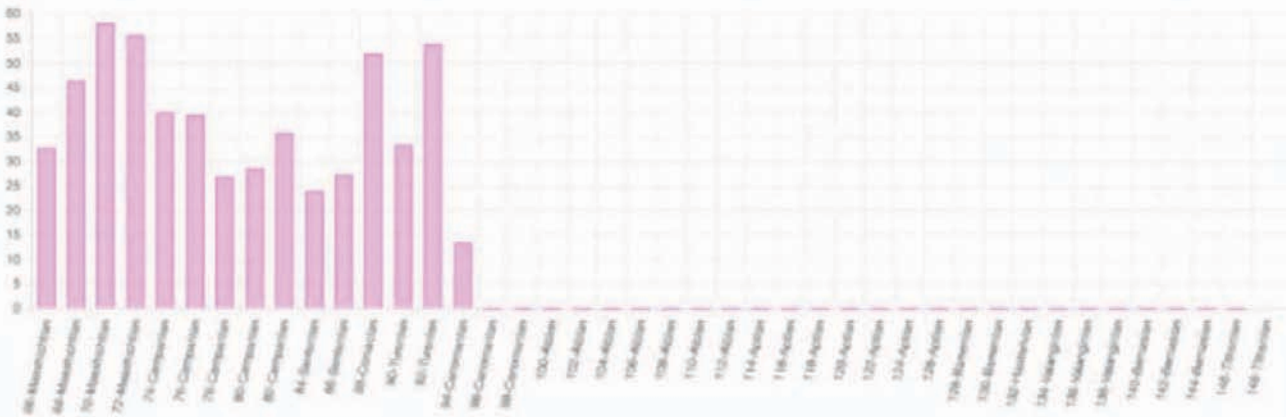
- *Zygolithus octoradiatus* (Gorka) Stradner, 1963
- *Ahmuellerella limbitenuis* Reinhardt, 1964 (according to Verbeek 1977)
- *Eiffellithus octoradiatus* (Gorka) Reinhardt, 1968
- *Vagalapilla octoradiata* (Gorka 1957) Bukry 1969

*Farinacci catalog pages: D. octoradiatus * A. limbitenus **

Diagnosis: Muroliths with narrow rim and central area plate-like structure incorporating 8 near-axial bars.

Geological Range:
Last occurrence (top): UC20a (69.00Ma). Data source: Burnett 1998
First occurrence (base): UC5b (94.20Ma). Data source: Burnett 1998

Neptune occurrence frequency data
Vertical axis percentage of Neptune database samples in the time bin which contain the taxon: *Ahmuellerella octoradiata*, synonyms included - *Vagalapilla octoradiata; Eiffellithus octoradiatus;*



References:

Górka, H., (1957). Les Coccolithophoridés du Maestrichtien supérieur de Pologne. *Acta Palaeontologica Polonica*, **2**: 239-284.

Reinhardt, P. & Górka, H., (1967). Revision of some Upper Cretaceous Coccoliths from Poland and Germany. *Neues Jahrbuch für Geologie und Paläontologie Abhandlungen*, **129**: 240-256.

Example of a Nannotax page with an occurrence frequency plot using Neptune data


Biostratigraphy
in context
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Lyell Meeting 2016

Paleoinformatics: Synthesising data from the past to illuminate the future

9 March 2016

The Geological Society, Burlington House

Synthesising palaeontological occurrence data and taxonomy into useable databases and web-systems will be one of the major challenges for palaeontology over the next couple of decades. On the one hand compiling palaeontological data and integrating it with other databases has immense research potential in fields from palaeoceanography and climate change through to palaeobiology. On the other hand there is an ever increasing expectation that information, on virtually everything, should be available electronically via the web. In both areas palaeontology is nowhere near as advanced as we might hope and there are major challenges for the future – not least since there are particular information technology problems in handling and standardising taxonomic and stratigraphic data.

The purpose of this meeting will be to bring together researchers who are playing lead roles in significant current initiatives and/or who have carried out particularly interesting individual work, with the objective of sharing experience and show-casing good practice for the large numbers of other workers who are interested to develop or improve palaeoinformatics within their own work.

Convenors:

Ken Johnson (Natural History Museum)

Jeremy Young (University College London)

Further information:

For further information about the conference please contact:

Jess Aries, Conference Office, The Geological Society, Burlington House, Piccadilly, London W1J 0BG

T: 020 7432 0983

E: jess.aries@geolsoc.org.uk

Web: www.geolsoc.org.uk/lyell16

Follow this event on Twitter: @geolsoc #lyell16

Call for Abstracts:

We welcome oral and poster abstract contributions for this meeting.

If you would like to be considered for a slot in the programme or a poster presentation, please send an abstract of no more than 400 words to Jess Aries (jess.aries@geolsoc.org.uk), no later than Friday, 16 October 2015.

Visit our website **www.tmsoc.org**

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ISSN 0140-6730
Registered Charity No. 284013