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vol. 99, March 2019

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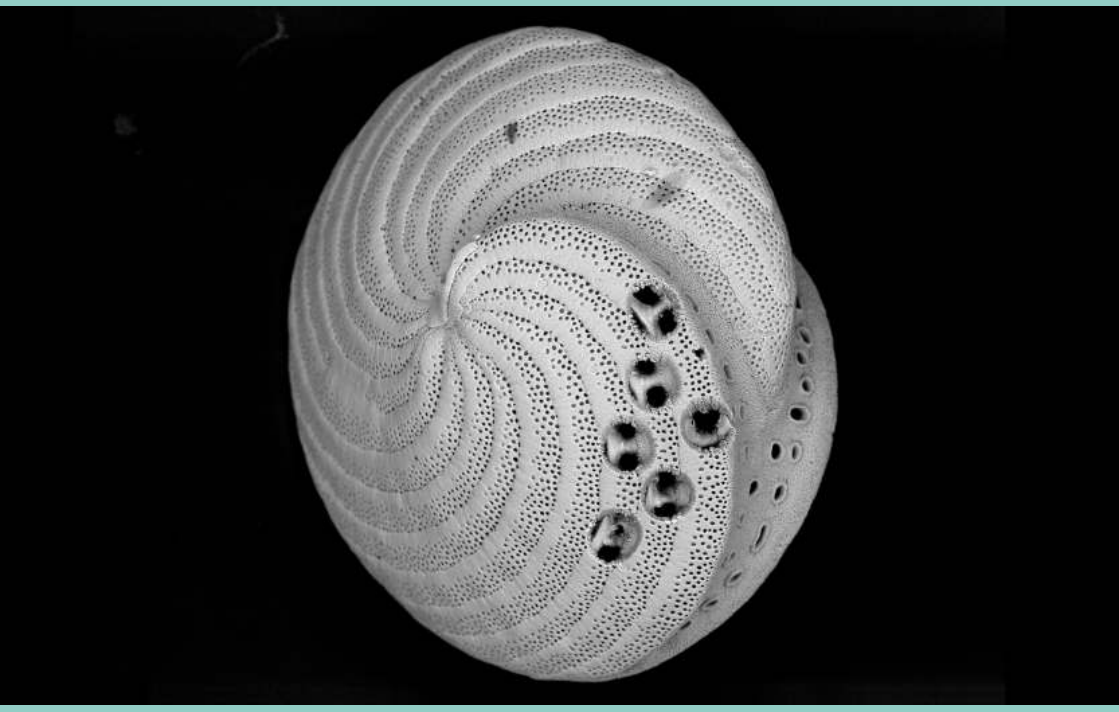

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'Journal of Micropalaeontology article highlights' header: Copernicus Publications
'Micropalaeontology in the news' header: FlatIcon
'Trends in micropalaeontology and biostratigraphy' header: Interesting Runner Evolution Sports Silhouette
'Methods in micropalaeontology' header: Simple Gear Drawing

Typeset in LaTeX with Stix, Carlito, and TXTT

Selected Extracts!

this file ionly contains the parts of the TMS Newsletter dealing with coccolithophores - you can download the rest from the TMS website

Jeremy

Contributions from

The Micropalaeontological Society

The Grzybowski Foundation

The International Nannoplankton Association

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Contents

The Micropalaeontological Society
Foram - Nanno meeting 2019

http://www.tmsoc.org

Monday 1 st July - Thursday 4th July 2019

Auditoire Joseph Deiss

We are delighted to announce that the annual TMS meeting will be hosted by the University of Fribourg, Switzerland.

The first day is dedicated to workshops, and propositions are still welcome.

On the second and third day of the conference the theme is "From normal marine to extreme environments: A Micropaleontological Perspective". However, it is open to all aspects of foraminiferal and nannofossil research, providing delegates the opportunity to give either oral or poster presentations on their research.

During day 3 participants will experience a taste of the Swiss Pre-Alps geological landscape and a unique chocolate experience.

Further details regarding the conference schedule, keynote speakers and logistics can be found on the website at https://www.tmsoc.org/groups/foraminifera/

For further information and possibility of funding please contact: silvia.spezzaferri@unifr.ch

We look forward to seeing you in July!

UNI FR

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The Micropalaeontological Society

- Important radiolarian faunal turnover starts in the late Tithonian and ends in the earliest Berriasian, as currently defined.

Nanno News—updates from the TMS Nannofossil Group and the INA

***Jeremy Young[1] and Sarah Alvarez[2]*; [1]University College London (UK), [2]University of Bristol (UK)**

First, we would like to note a change of office in the TMS Nannofossil Group, as Mike McKnight steps down as Group Secretary. We would like to thank Mike for all of his hard work as Group representative and committee member, after signing up as Secretary in 2017. Amy Jones has now taken over the role of Secretary, joining Sarah Alvarez, who is continuing as Group Chair.

Recent meetings

TMS Nanno Group workshop, Birmingham—2 October 2018

The Nannofossil group held a very productive open-themed workshop at the University of Birmingham on 2 October. The half-day event was very well-attended with 16 participants, including industrial, academic, and student representatives. Attendees enjoyed an opportunity to catch-up over lunch before settling in to hear a diverse collection of talks, delivered by Zainab Al Rawahi, Tom Dunkley Jones, Samantha Gibbs, Hanno Kinkel, Ros Rickaby, and Jeremy Young. Many thanks to all of the speakers for helping to make this day such a success. The meeting provided a fantastic overview of the current work and progress being made by Nannofossil Group members, and highlighted key areas of mutual interest and potential for collaboration. Feedback was very positive, and we would like to run these workshops, or 'Cocco Catch-Up' days, as a regular feature, with the aim of providing members with an informal opportunity to discuss current interests, issues, and advances within the Nannofossil community. Watch this space and your

Figure 1: Lots to talk about at the TMS Nanno Group's 'Cocco Catch-Up' day at the University of Birmingham's Lapworth Museum.

email for further updates!

TMS Annual Conference, Leeds—14–15 November 2018

The TMS Annual Meeting was a highly successful event organized by Tracey Aze and held at the University of Leeds on 14–15 November. The theme for the first day was 'Microfossil Insights into Greenhouse Worlds', which included a talk delivered by the Nanno Group Chair Sarah Alvarez, on expanding the nannofossil toolkit to explore the Palaeogene greenhouse. The second day of the conference was held as an open-session, with presentations and posters welcomed from all aspects of micropalaeontology. Talks by Nannofossil Group members included insights into the recent developments of Mikrotax, delivered by Jeremy Young (also see our Nannotax update, below). We also had some excellent poster presentations, which together made for a highly informative event. Attendance by Nannofossil Group members was good, again reflecting the diversity of backgrounds within our group, including representatives from academia and industry, including early career scientists and students.

AGU Fall Meeting, Washington D.C.—10–14 December 2018

Thanks to Barbara Balestra, Jose-Abel Flores, Richard Jordan, and Jean Self-Trail for organizing a much-needed nannofossil-focussed session at the AGU Fall Meeting held in Washington D.C. during December. The session, titled 'Advances in Understanding Calcareous Nannofossil Response to Climate Change in Modern and Ancient Oceans' brought together a large number of nannofossil workers, including many members of TMS and INA, for a constructive poster session walk-through, followed by dinner at The Unconventional Diner. As always, it was very encouraging to see the large number of posters and talks delivered by Group members at such a well-attended conference, and the session itself provided a great opportunity for conversation and collaboration between attendees.

Upcoming meetings

Registration and abstract submissions are now open.

TMS Foram and Nanno Group Spring Meeting, Université de Fribourg, Switzerland—1–4 July 2019

Registration is now open for the next TMS joint Foraminiferal and Nannofossil Group Meeting, which will be held at the Université de Fribourg, Switzerland between 1 and 4 July 2019. Many thanks to the local organising committee—Silvia Spezzaferri, Stephanie Hayman, and Valentina Beccari—for putting together a promising programme under the theme 'From Normal Marine to Extreme Environments: A Micropalaeontological Perspective'. Invited speakers include Francesca Lozar talking about nannofossil response to the Messinian salinity crisis. The conference and workshops will take place on 1–3 July, and a fieldtrip (to the Jurassic to Eocene pelagic sequence at Jaun Pass and Swiss landscape in Gruyère, plus a visit to the the Cailler Chocolate Factory!), is scheduled for 4 July. Details on the event, and how to register, are available on the TMS website at https://www.tmsoc.org/foram-nanno-2019/.

INASSET—INA Summer School, Lyon, France—13–17 July 2019

The first INA Summer School was held last July in Lyon and it proved both very enjoyable and very educational. So, it is being repeated this summer but this time focussing on the Mesozoic. This will be a one week course taught by experts in the field and with a strong focus on practical microscopy. The course fees are 500 € to cover all tuition course materials, lunches, etc. Course details are available on the INA website. The course proved popular last year so early registration is probably a good idea.

INA 17, Santos, Brazil—15–20 September 2019

Registration is now open for the 17th International Nannoplankton Association Meeting, which will take place in Santos, a resort town on the coast of São Paulo State, Brazil, from 15–20 September 2019. Preliminary themes for the scientific sessions include: Evolution, systematics, and biostratigraphy; ecology and biology of living coccolithophores; palaeoecology, palaeoceanography, and palaeoclimate; and biogeochemistry of coccolithophores: past and present. Details of the conference, how to register and the associated fieldtrips are available at https://www.ina17brasil.com/.

Nannotax update

The most significant development for Nannotax in the last few months has been the release of a set of new tools for investigating occurrence data from the Neptune database. Neptune is a large database of occurrence data from deep sea drilling (i.e. the DSDP, ODP, and IODP programs), compiled by Dave Lazarus (Museum für Naturkunde Berlin) and colleagues. The data has been used on Nannotax (and on the pforams@mikrotax website) for some time, to show the occurrence frequency of taxa through time. This occurrence frequency is the percentage of samples for a given time interval in which the taxon occurs and it acts as a reasonably good proxy for the relative abundance of the taxon. The data is shown at the bottom of each species page. There is also a page where the data can be used to produce customized range charts.

In order to investigate anomalies

in the data, I have made various other tools to investigate it and these have now been incorporated properly into the Nannotax website and are available to everyone. They can be accessed from the 'Tools' menu on the website.

Space–time plots: This tool plots the data for a species (or genus) by age and palaeolatitude. As shown the display is a grid of boxes with the box size indicating the number of samples per age/latitude interval and the colour indicating the occurrence frequency of the taxon in the box (Fig. 2). This provides a rapid overview of the taxon distribution and an indication of whether it shows varying abundance at different latitudes.

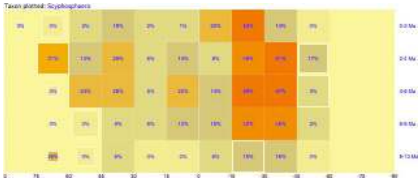
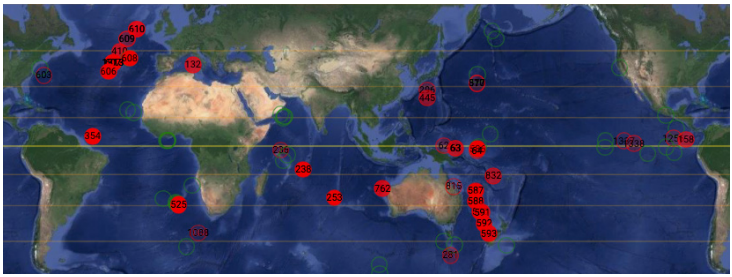


Figure 2: Space–time plot of *Scyphosphaera* occurrence frequency for the last 10 Myrs, with 2 Myr-time bins and 15° latitude bins.

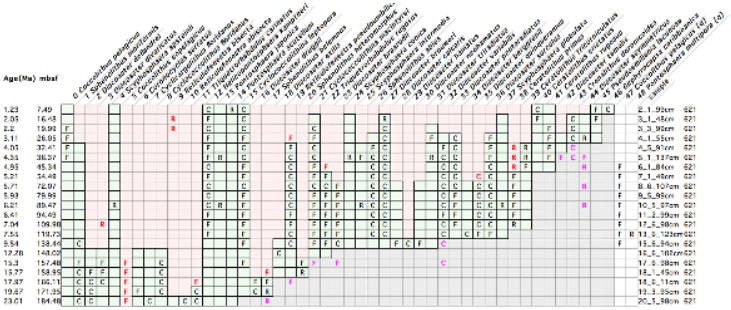
Biogeographic plotting of data: This pages allows you to select a taxon and a time interval (Fig. 3a). All sites which contain data from that time interval are then plotted on the map and colour coded according to the proportion of the sites which contain the taxon. The easiest way to use this tool is in conjunction with the space–time plot—as each row in the space time plot ends with a link which will generate a biogeographic plot for that time interval.

Species occurrence tables: With the biogeographic plots data, the total amount of data is limited, and it is possible to table the actual occurrence data, i.e. which individual samples contain records of the taxa. These data tables occur below the maps.

Site distribution tables: The data for Neptune comes primarily from the occurrence tables published in chapters in the DSDP and ODP Scientific Results volumes. To check data in Neptune against those tables, I have now written a script to reconstruct the tables from the database data. Basically you can go to the relevant page, select a site from a dropdown list, and generate a distribution chart (Fig. 3b). The main



(a) *Biogeographic map of Scyphosphaera occurrences for the 4–6 Ma time slice.*



(b) *Distribuiton chart for nannofossils from* DSDP *Site 236. The green shading indicates species which might be expected to occur in the sample given the age assigned to it by the age model (left hand column).*

Figure 3: The new tools in Nannotax.

purpose of creating this facility was to check for errors of data input, i.e. to enable comparison between the data in Neptune and that in the publications. However, the new charts have a few extra advantages. First, the data can easily be cut and pasted if you want to export it for use in some other way. Second, the taxon name can be displayed either using the names in the original publication or using the modern names. Third, range anomalies can be highlighted, for most sites there is an age model in Neptune which assigns an age in Ma to each sample. So each species occurrence can be compared against the age model and the standardized species range (from Mikrotax) to determine if the taxon is occurring

within its assigned age range or outside it. This is then shown by colour shading.

Mesozoic updates: In preparation for the INASSET summer school, I have started revising the Mesozoic content. In particular, I have edited the images from various publications which were added early in the evolution of the Nannotax system, notably those from Burnett et al. (1998), Lees (2007), Thibault (2010), and the Calcite Palace (Ralph Salomon's website). This should mean the pages are looking a bit better but if you have suggestions for sources of extra images for these pages do let us know.

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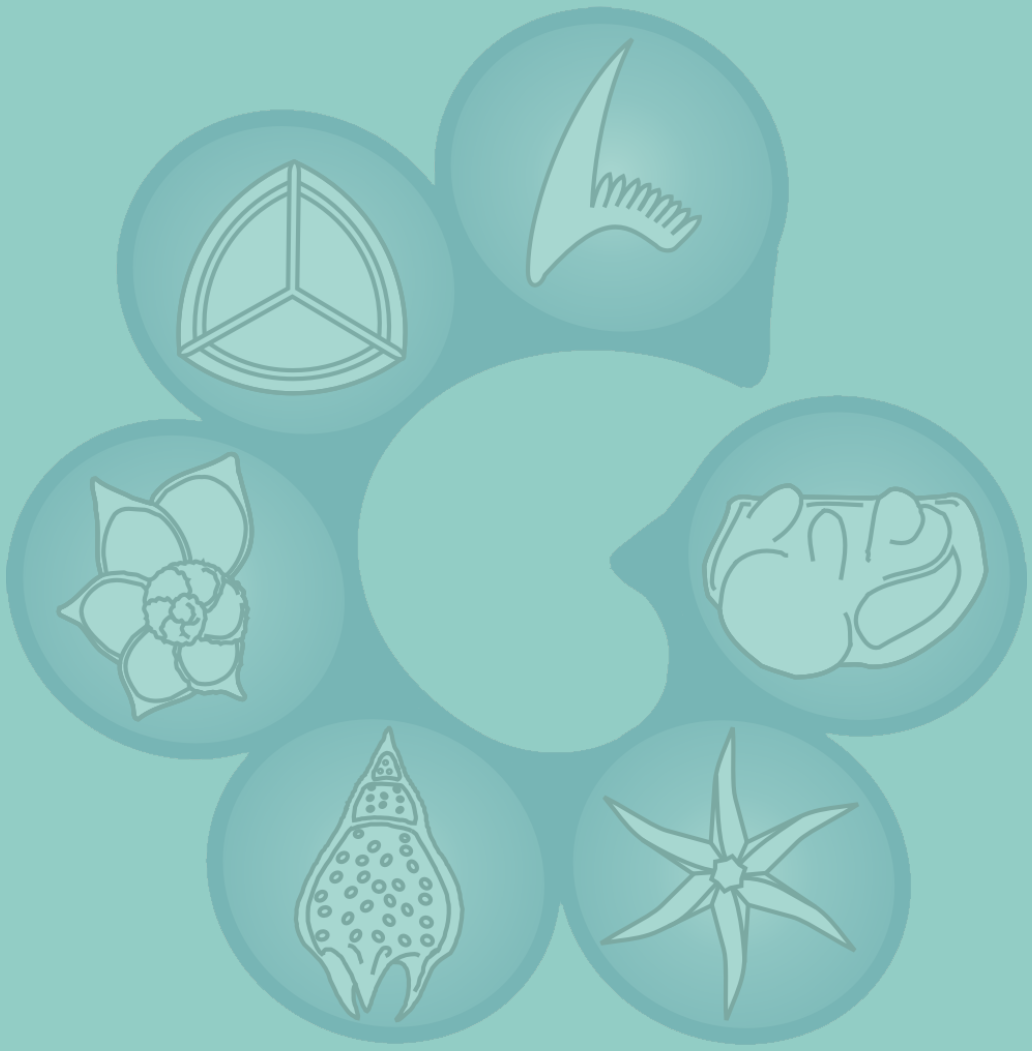
Lees JA (2007) New and rarely reported calcareous nannofossils from the Late Cretaceous of coastal Tanzania: Outcrop samples and Tanzania Drilling Project Sites 5, 9 and 15. *Journal of Nannoplankton Research* 29 (1): 39–65.

Thibault N (2010) Calcareous nannofossils from the boreal Upper Campanian–Maastrichtian chalk of Denmark. *Journal of Nannoplankton Research* 31 (1): 39–56.

Grzybowski Foundation news (gf.tmsoc.org)

***Mike Kaminski*, King Fahd University of Petroleum & Minerals (Saudi Arabia)**

The autumn of 2018 has been a busy time for the Grzybowski Foundation. At the at the 'European Micropalaeontological Reference Center' at the Akademia Górniczo-Hutnicza im. Stanisława Staszica (AGH) we took possession of some additional book shelves and micropaleontological collections. The D. G. Jenkins collection of DSDP samples has been neatly archived. Brent Wilson deposited picked slides from the Nariva formation in Trinidad, and Hanna Rósa Hjálmarsdóttir deposited type specimens of new foraminiferal species described from Upper Jurassic to Lower Cretaceous hydrocarbon seep carbonates from Spitsber-



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