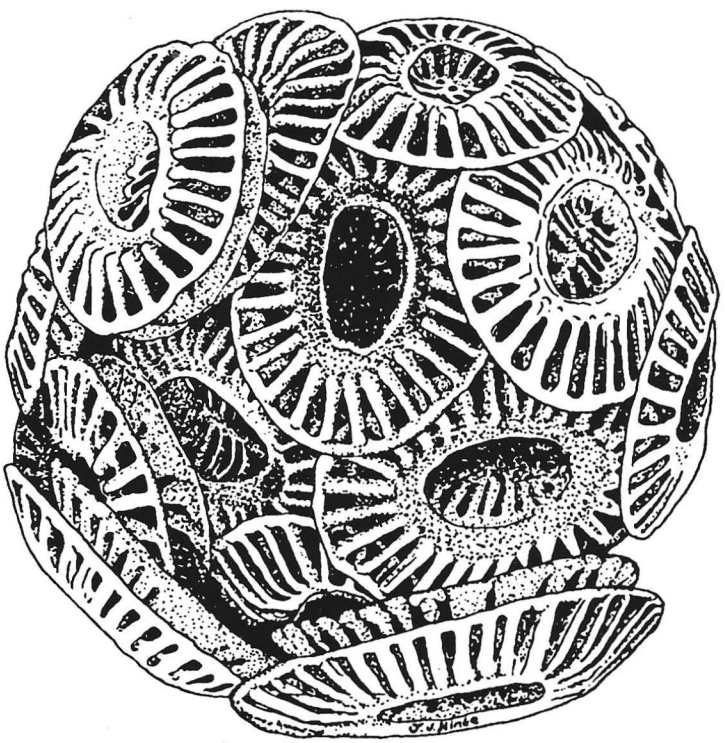
Journal of Nannoplankton Research



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NEWS & GOSSIP

Compiled by Jackie Burnett on behalf of the INA Committee

INA DUES INFORMATION

With this issue of the *JNR*, we have instituted a new method to help you identify your dues responsibility. **Please note the year after your name on your mailing label**. This date tells you the year through which your dues are paid:
1999 or later - Dues are paid up.
1998 - Dues are paid up (please consider paying for 1999 **NOW**).
1997 - Please pay $25/£15 for 1998.
1996 - Please pay $25/£15 for 1997, and $25/£15 for 1998.
This is your final notice!!! If payment is not received by January 31st, 1999 then your name will be deleted from the membership list.

If you unwrapped your *JNR* without looking at the date on the label, or realising what it represented, **PLEASE DO NOT HESITATE TO CONTACT ME** via e-mail (*jrice@ludl.tds.net*). I will be more than happy to provide you with your dues expiration date.

Your assistance in keeping your dues paid is greatly appreciated. In the past, too much time and money has been spent in an effort to collect unpaid dues. We hope that the new mailing label will help to eliminate some of these problems.

Stacia A. Spaulding, Treasurer/Secretary
jrice@ludl.tds.net

POST-DOCTORAL POSITION IN NANNOPLANKTON RESEARCH, UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL
Available July 1st, 1999

The appointment will initially be for two years with the potential for renewal. The position also comes with potential for teaching. Salary and research projects are negotiable. If interested, please contact Tim Bralower, Dept. of Geology, University of North Carolina, Chapel Hill, NC 27599-3315.

Tim Bralower
bralower@email.unc.edu

INA TAXONOMIC COMMITTEE - SHORT REPORT

The list of all calcareous nannofossil taxa currently used is near completion. It will be available on the Micropaleontology Press website: **http://nimidi.amnh.org/micropress.html** by the end of January, 1999. Although everyone is welcome to consult and comment on the list, only members of the Taxonomic Committee will be contacted by e-mail as soon as the list is available for consultation. Procedures and time-tables will be suggested at the same time.

As a reminder, the list has been compiled from the calcareous nannofossil database, *NannoStrat*, using the data-manager *CompuStrat*. Both are available from Micropaleontology Press (for information contact Dr. J.A. van Couvering: *vanc@amnh.org*).

We look forward to a productive year in 1999!

Marie-Pierre Aubry & Monique Bonnemaison
on behalf of the INA Taxonomic Committee
aubryi@isem.univ-montp2.fr &
m_bonnemaison@onenet.com.ar

PRESIDENTIAL ELECTIONS UPDATE

Due to a misunderstanding (Jackie doesn't know what year it is!), the deadline published in the last issue of the *JNR* for submission of candidates for the election of a new president of the INA was erroneous. **You can still submit candidates (to Shirley van Heck) until June, 1999.** Remember, candidates should fulfil three criteria: 1. they should be a member of INA; 2. they should have e-mail; 3. they should be supported by at least one other person.

Shirley van Heck
shirley.s.e.vanheck@openmail.xgl2.bspser.simis.com

FORTHCOMING EVENTS

EUG10 (European Union of Geosciences), Strasbourg, France,
28th March-1st April, 1999
Details at: http://cost.u-strasbg.fr/EUG

The program for EUG10 is now available and they are open for abstracts - all details appear on their website. This is a BIG meeting, with some 86 symposia grouped into 12 themes. Two of the themes have high palaeontological content: **Theme B** Climate - past and present and **Theme C** Life on Earth - origin and evolution. So I have listed the Symposium topics from these, below. In particular, I would like to draw attention to Symposium ‚C6 PALAEOCOLOGICAL PERSPECTIVES ON FORM AND FUNCTION', which is being organised by Richard Fortey (*raf@nhm.ac.uk*) and myself. We have several good speakers arranged for this, spanning vertebrate, invertebrate and micropalaeontology, but are still certainly open to more submissions.

EUG10 deadlines: abstract submission: **15th November**, 1998; travel grant application: **15th November**, 1998; registration payment (reduced rate): **31st January**, 1999; hotel reservation: **28th February**, 1999. The EUG10 second circular will have been sent out in early October 1998. The EUG10 detailed programme will be finalised at the beginning of 1999.

The most relevant themes and symposia to palaeontologists are:

Theme C: Life on Earth - origin and evolution:
C1 Geophysical and geochemical constraints on molecular evolution. Convenors: Steven J. Mojzsis (Los Angeles) *sjm@argon.ess.ucla.edu*, M.J. Whitehouse (Stockholm); **C2** Vendian and Cambrian biotic evolution. Convenors: Malgorzata Moczydlowska-Vidal (Uppsala) *malgo.vidal@pal.uu.se*, G.E. Budd (Uppsala), E. Linan (Zaragoza); **C3** Impacts, cratering and mass extinction. Convenors: Birger Schmitz (Göteborg) *BIRGER@gvc.gu.se*, C. Koeberl (Wien); **C4** Global change - the fate of life on Earth. Convenors: Bjorn Malmgren (Göteborg) *bjorn.malmgren@marine-geology.gu.se*, H. Thierstein (Zürich); **C5** The deep biosphere. Convenors: Nils Holm (Stockholm) *nilsholm@geo.su.se*, J. Parkes (Bristol); **C6** Palaeoecological perspectives on form and function. Convenors: Jeremy R. Young (London) *j.young@nhm.ac.uk*, R. Fortey (London)

Theme B Climate - past and present:
B1: Holocene and Pleistocene decadal to millennial scale climate variability: the terrestrial record; **B2**: Holocene and Pleistocene decadal to millennial scale climate variability: the marine record; **B3**: Linkages and feedbacks between marine and terrestrial systems; **B4**: Glacial carbon cycle changes; **B5**: Lake Drilling Projects - monitoring climate change; **B6**: New approaches in estimating marine and continental palaeotemperatures for the Cenozoic; **B7**: Reconstruction of palaeoenvironmental conditions from geochemistry and microfossil records; **B8**: Biological, sedimentary and geochemical responses to mid-Cretaceous tectonic/volcanic events; **B10**: Erosion, uplift, climate and the biosphere; **B11**: Astronomical cycles and the Earth system; **B12**: Marine fluxes and early diagenesis as related to global biogeochemical cycles; **B13**: Methane hydrates and the deep sub-seafloor biosphere.

Jeremy Young
jy@nhm.ac.uk

27th Annual Meeting of the German Working Group of Palaeobotany & Palynology (APP) May 12th-15th, 1999, Tübingen, Germany

All colleagues and friends of palaeobotany are kindly invited to attend this meeting. Sessions are planned for the following topics: **Morphology of Land Plants** (invited speaker: K. J. Niklas, Ithaca, USA); **Mesozoic & Palaeozoic Terrestrial Ecosystems** (invited speaker: H. Kerp, Münster, Germany); **Vegetation & Climate of the Cenozoic** (invited speaker: T. Litt, Bonn, Germany); **Phytoplankton/ Aquatic Primary Productivity** (invited speaker: H. Brinkhuis, Utrecht, Netherlands); **Databases in Palaeobotany**. Other papers are also welcome and may be presented in an open session.

Schedule: May 12th: registration and informal meeting; May 13th: presentation of oral and poster contributions, general meeting of APP members; May 14th: presentation of oral and poster contributions; in the evening, a reception at Hohentübingen Castle will be held; May 15th: excursion (Jurassic, Neogene and Quaternary of SW Germany).

Meeting locality: Situated on the banks of the River Neckar, Tübingen is located between the Swabian Alb and the Black Forest (State of Baden-Württemberg, Germany). Founded in 1477, the Eberhard-Karls University has shaped the old university town with flair. With approximately 80 000 inhabitants and 20 000 students, Tübingen is a small but lively town, in which traditional and student life melt with each other. The picturesque town centre, characterised by well-preserved, half-timbered buildings and street cafés invite a longer stay. In the evening the romantic market place is a favourite meeting point for young and old. The wide spectrum of cultural events includes regular concerts, theatre performances and internationally acclaimed art exhibitions. Tübingen is an important centre for service industries, technological research and business in the Neckar region.

All information (including registration form) is available on our website: **http://www.uni-tuebingen.de/geo/gpi/palaeo/app/app.html**

Conference address: APP 1999, c/o Angela Bruch, Institute and Museum of Geology and Palaeontology, Sigwartstr. 10, D-72076 Tübingen, Germany; Tel.: +49-7071/ 2977547 or 2972489; fax: +49-7071/295727; e-mail: *angela.bruch@uni-tuebingen.de*

Geological Association - Mineralogical Association of Canada (GAC-MAC) Annual Meeting, Sudbury, 1999 Sudbury, Ontario, Canada, May 26th-28th, 1999 Symposium - Impact Events and Extinctions: a special session in honour of Glen Caldwell

Organisers: P. Copper (Laurentian University), O.A. Dixon (University of Ottawa), Jin Jisuo (University of Western Ontario). Sponsored by the Paleontology Division of the Geological Association of Canada.

Sudbury, the site of a double extraterrestrial impact, the 1.8Ba Sudbury Basin, and the 37Ma Wanapitei Crater, indenting the NE margins of the older structure, is an appropriate host to a special symposium on the controversial relationship between meteorite impacts, mass extinctions, and the evolution of life. Did impacts alter the course of the history of life on planet Earth? Are impacts a regular and periodic feature and component of planetary surface processes, like others? Or are impacts extraordinary processes which dramatically change the global biota and reset the evolutionary clock? Contributors to this symposium, whether they be for or against impact origins of some or all mass extinctions, should reflect not only on the timing and chemical-stratigraphic signature of impacts, but also on any atmospheric and oceanic events which may or may not have changed life, particularly as recorded in the five best-known mass extinctions: the Late Ordovician, Late Devonian, end-Permian, end-Triassic and end-Cretaceous.

Those wishing to contribute a paper to a special Festschrift commemorating this symposium must submit their papers by **May 28th**, 1999 for publication (contributors need not present an oral paper or poster at the sessions).

Contact: Dr. Paul Copper, Dept. of Earth Sciences, Laurentian University, Sudbury, Ontario, Canada, P3E 2C6. Tel.: (705) 675-1151; fax: (705) 673-6508; e-mail: *pcopper@nickel.laurentian.ca*; or Dr. Jisuo Jin, Dept. of Earth Sciences, University of Western Ontario, London, Ontario, Canada, N6A 5B7. Tel.: (519) 661-4061; fax: (519) 661-3198; e-mail: *jjin@julian.uwo.ca*.

Deadline for abstract submission: **January 15th**, 1999. Details for electronic submission at: **http:// www.laurentian.ca/www/geology/gacmac99.htm**

W. Douglas Boyce
wdb@zeppo.geosurv.gov.nf.ca

Mary Anning and her Times: The Discovery of British Palaeontology, 1820-1850 June 2nd-4th, 1999, Lyme Regis, UK

This symposium will celebrate the bicentenary of the birth of Mary Anning (1799-1847), bringing together palaeontologists, historians and social scientists to create a picture of Mary Anning's life, work and times. The fee is a mere £80, to include all sessions, a reception in the Philpot Museum, the dinner, a geological walk and the Strawberry Tea! Application forms from: Roger Clarke, Lyme Regis Museum, Lyme Regis, Dorset, DT7 3QA, UK.

This conference was brought to the Editor's attention by Katharina von Salis, who has written two reviews for the latest nanno book (P.R. Bown, Ed., 1998) in this issue. The first is a straightforward scientific review, the second is given from the perspective of gender (which is a topic that Katharina has been investigating for some years now).

I. Second International Symposium on Biological and Environmental Chemistry of DMS(P) and Related Compounds
University of Groningen, The Netherlands, 25-28th August, 1999

II. The Role of *Phaeocystis* in Marine Biogeochemical Cycles and Fluxes
University of Groningen, The Netherlands, 28-29th August, 1999

During the last two decades, there has been growing interest in the production of the volatile sulphur compound, dimethyl sulphide (DMS) in marine ecosystems, and its possible role in the biological regulation of global climate. DMS makes up 50-60% of the total natural sulphur emissions to the atmosphere, and about 90% of this DMS flux originates in marine environments. Whereas the first studies were mainly done by marine and atmospheric chemists, interdisciplinary approaches have proved increasingly worthwhile. It is now well established that fluxes of DMS may vary by orders of magnitude in time and space, but we are only beginning to understand the biological processes that underlie this variation. In this respect, research on dimethylsulphoniopropionate (DMSP), the major precursor of DMS, is of utmost importance. In addition to their important roles in biogeochemistry, DMSP and related compounds have many other interesting functions in organismal physiology, as osmolytes, cryoprotectants, energy substrates, methyl donors, and chemosensory cues.

A first, and very successful, interdisciplinary symposium on DMSP, organised by R.P. Kiene, P.T. Visscher, M.D. Keller and G.O. Kirst, was held in Alabama in 1995. Since then, new insights into the production and regulation of DMS and DMSP have emerged, and now is the time to organise a second symposium.

We wish to build on the interdisciplinary research theme by combining the DMSP symposium with a second meeting focusing on the microalgal genus, *Phaeocystis*. This genus has a worldwide distribution and is known to dominate entire ecosystems during its blooms. It is well known as a notorious DMS producer and blooms may act as sinks for atmospheric CO2. An important portion of the global carbon and sulphur cycles is thus intimately linked in this genus. A first symposium on this genus, entitled ‚The Ecology of *Phaeocystis*-dominated Ecosystems', was held under the auspices of the Commission of the European Communities in Brussels, in January, 1991. Since this symposium, new knowledge has accumulated. Therefore, a second symposium will now be organised.

Tentative programmes for both symposia are given below. The close connection between the two consecutive symposia has been made manifest by including one overlapping session, which will focus on the role of *Phaeocystis* in the marine sulphur cycle. We recommend participation in both of these related symposia, but attendance at just one symposium will be possible too.

The purpose of this preliminary announcement is to assess the level of interest in the proposed meetings. Please reply by e-mail as soon as possible, stating clearly whether you wish to register your interest in attending the DMSP symposium, the *Phaeocystis* symposium, or both symposia. A first official announcement, which will include registration information, will be sent to all those who are interested in participation.

Finally, we would like to locate everyone who might be interested so please provide us with names of colleagues, especially those who are newcomers to the DMS(P) and *Phaeocystis* research fields since the last two meetings. Feel free to pass this announcement along to any colleagues who you think might be interested in these symposia.

The local organising committee comprises: L. Dijkhuizen, T.A. Hansen, J. Stefels, M. van Rijssel and W.W.C. Gieskes, all at the University of Groningen, The Netherlands.

Tentative programmes:
Symposium I (26-28th August, 1999, arrival on 25th) Second International Symposium on Biological and Environmental Chemistry of DMS(P) and Related Compounds. **Session 1**: DMSP biosynthesis, regulation and physiological functions; **Session 2**: Uptake, metabolism and biodegradation of DMS(P) and related compounds; **Session 3**: Dynamics of DMS(P) and related compounds in marine ecosystems; **Session 4**: DMS(P), global climate and biogeochemistry; **Session 5**: DMS(P) in the marine environment: The case of *Phaeocystis*; **Poster session.**

Symposium II (28-29th August, 1999) The Role of *Phaeocystis* in Marine Biogeochemical Cycles and Fluxes. **Session 1**: DMS(P) in the marine environment: The case of *Phaeocystis*; **Session 2**: *Phaeocystis* and the marine C-cycle; **Session 3**: *Phaeocystis*, competitiveness and its interactions with other trophic levels; **Poster session**.

Winfried W.C. Gieskes
University of Groningen, Dept. of Marine Biology
PO Box 14, 9750 AA Haren, The Netherlands
Tel.: 31-50-3632259; e-mail:
W.W.C.Gieskes@biol.rug.nl

8th INA Conference (INA8)
Bremen, 11th-15th September, 2000

As already announced in the last issue of the *JNR*, the INA8 conference will be held in Bremen on the 11th-15th September, 2000. The organising committee of the Historic Geology/Palaeontology Group, within the Department of Geosciences of Bremen University, is busily taking the necessary actions to prepare for the conference. The year 2000 in the north of Germany will be dominated by the World Exposition - EXPO 2000 - (June to October) in Hannover, which is only 100km from Bremen. The hotel situation will thus be very tense, and we need to organise an early (pre-)registration, so we can book rooms.

Accommodation: Hotel accommodation will most likely be in one hotel for all, which is situated downtown. A youth hostel is within walking distance of this hotel. The price for a hotel room will probably be ~US$70 per night (*i.e.* sharing a double room halves the cost). Breakfast in the hotel will be ~US$10 each. A limited number of colleagues may be privately accommodated, in case they need it and are content with a sleeping-bag.

Agenda: In addition to talks and poster presentations, the Bremen group will offer a workshop on calcareous dinoflagellates. A fieldtrip will take us to the North Sea coast, a 'type locality' of siliciclastic tidal flats. We warmly welcome any suggestion regarding further workshops, *etc.*

Publications: Abstracts will be published in our institute's series, *Berichte aus dem Fachbereich Geowissenschaften der Universität Bremen*. A special volume of the *Courier Forschungsinstitut Senckenberg* has been chosen for the Conference Proceedings.

Registration: (Pre-)Registration forms can be found on our website: **http:/www.uni-bremen.de/~micropal/ina8.html**. For those who need a hardcopy, we will send one immediately if you let us know.

Organising team: Universität Bremen, Fachbereich 5 - Geowissenschaften, Historische Geologie-Paläontologie, Klagenfurter Straße, D-28359 Bremen, Germany. Fax for all: +49-421-2184451. **Professor Dr. Helmut Willems**: tel.: +49-421-2182198; e-mail: HYPERLINK mailto:willems@micropal.uni-bremen.de, *willems@micropal.uni-bremen.de*; **Erna Friedel**: tel.: +49-421-2182236; e-mail: HYPERLINK mailto:erna@uni-bremen.de, *erna@micropal.uni-bremen.de*; **Tania Hildebrand-Habel**: tel.: +49-421-2183826; e-mail: HYPERLINK mailto:hi-ha@micropal.uni-bremen.de, *hiha@micropal.uni-bremen.de*; **Dr. Christine Höll**: tel.: +49-421-2184313; e-mail: HYPERLINK mailto:hoel@micropal.uni-bremen.de, *hoell@micropal.uni-bremen.de*.

We look forward to meeting you all at Bremen in 2000!

7th International Conference on Paleoceanography (ICP7), Sapporo, Japan, September, 2001

The 7th International Conference on Paleoceanography (ICP7) will be held in Sapporo, Japan in middle to late September, 2001. The co-convenors for ICP7 are Hisatake Okada (nanno person), Itaru Koizumi (diatom person), and Tadamichi Oba (isotope guy). Ric Jordan and several Japanese nanno-specialists will help run this meeting. The meeting will be held at a very modern convention facility in the downtown area that is walking distance from all major hotels, all major shopping districts, and from Hokkaido University Campus. We will try to organise an efficient and not too expensive meeting. Although I don't think I have time and energy to organise a nanno-meeting in conjunction with the ICP7, meeting rooms are available for some nannoplankton-related meeting prior to, or after, the ICP7. So try to attend this meeting. Up-to-date information will be announced via *coccolith.list*.

Hisatake Okada
oka@cosmos.sci.hokudai.ac.jp

LOGO COMPETITION - ANOTHER REMINDER!!!

I have so far received two logos and the promise of a further one! So, if you were planning to be immortalised as *the* INA logo-master, may I remind you that there is a **new deadline** for contributions: **March 1st**, 1999, and that the prize is **£100** cash.

The logo should be submitted to the Editor as either a computer file, generated by one of the commonly-used drawing or photo packages, or as a clean paper copy if it is hand-produced (I can scan this), or both. It can be either monochromatic or colour, although colour logos should be reproducible in monochrome (if you want to produce both a colour and monochrome image of the same logo, that will be ideal). It should incorporate the words ‚International Nannoplankton Association', reflect a diversity of interests, convey some idea/hope of a strong future for the subject, or reflect the fact that we are moving into a new century. Keep it reasonably simple - less is more, as they say. Bear in mind that it will be reproduced for a variety of situations, from headed letter paper to advertising our organisation at conferences. Before you start, however, be aware that the copyright will belong to the INA, and no discussion will be entered into about this with the winning entrant.

COMPUTER NEWS

Just to remind you, the INA now has an official website, located on the Natural History Museum server with a mirror at the University of California San Diego Geoscience server, thanks to both Jeremy Young and Wuchang Wei. Why don't you visit it?
NHM server at the address
http://www.nhm.ac.uk/hosted_sites/ina/ina.htm
UCSD server at the address
http://gs.ucsd.edu/ina/ina.htm

ODP NEWS

New ODP Nannofossil Reference Centres

As many people will know, there has been some reorganisation of the ODP Microfossil Reference Centres (MRCs) and, as a result, three additional nannofossil collections became available and bids were formally invited for hosts for them. Not surprisingly, many centres of nannofossil research did apply for these but the end result was that the collections were assigned to the Florida State University, Tallahassee, Universitá di Parma and The Natural History Museum, London.

What is the ODP MRC program?

The concept of the MRC program is that representative sets of microfossil slides should be prepared and made available at centres around the world. They are intended for reference study, for example to: allow shipboard scientists to familiarise themselves with material from the region they will visit before ODP cruises; to allow reconnaissance studies before selection of samples for research; to provide access to samples for industrial workers, students *etc.* without the need for a research commitment; to allow verification/updating of published taxonomic assignments; to allow research projects which require examination of large numbers of samples. For the

MRC program, representative sets of samples are identified for each site and multiple preparations are made for foraminifera, radiolaria, diatoms and calcareous nannofossils. For more information see:
http://www-odp.tamu.edu/mrc/mrcpage.HTML

Which are the full MRC sites?
The following five sites have collections of both nannofossils and the other three microfossil groups.
US East Coast - Smithsonian Institute. Contact Dr. Brian Huber (*huber.brian@nmnh.si.edu*)
US Gulf Coast - ODP. Contact Dr. John Firth (*john_firth@odp.tamu.edu*)
Western Europe - Natural History Museum, Basel. Contact Dr. Michael Knappertsbusch (*knappertsbus@ubaclu.unibas.ch*)
Japan - National Science Museum, Tokyo. Contact Dr. Yoshihiro Tanimura (*tanimura@kahaku.go.jp*)
New Zealand - Institute of Geological & Nuclear Sciences, Ltd., Lower Hutt. Contact Dr. Percy Strong (*p.strong@gns.cri.nz*)

Which are the satellite MRCs with nannofossil collections?
The nannofossil MRCs will only have nannofossil collections and will play roles in developing the nannofossil collection. This is intended to include: preparation of further sample sets (both FSU and Parma have made commitments in this area); enhancement of database information on the MRC sample-sets (in particular adding information on the nannofossil assemblages in the slides); identifying and preparing additional sample sets of special value for nannofossil research (*e.g.* topotype samples and samples with exceptional nannofossil preservation); promotion of use of the nannofossil MRCs. The Nebraska and FSU sites both have diatom MRC collections as well as the nannofossils.
University of Nebraska, USA - contact Dr. David Watkins (*dwatkins@unl.edu*)
Universitá degli Studi di Parma, Italy - contact Dr. Giuliana Villa (*geol01@ipruniv.cce.unipr.it*)
Florida State University, Tallahassee, USA - contact Dr. Sherwood W. Wise or Dr. Thomas Janacek (*wise@gly.fsu.edu*)
The Natural History Museum, London - contact Dr. Jeremy Young (*jy@nhm.ac.uk*)

Who can use the collections?
Anyone. A basic condition of ODP providing MRC collections is that they should be freely available to the scientific community. Obviously, though, the relevant host scientists should be contacted before visiting the centres. Also, note that the collections cannot be loaned, only studied at the host institutes. For the MRC at the NHM, financial support for visits by European workers can currently be applied for via the EU Large Scale Facility (LSF) scheme (see **http://www.nhm.ac.uk/science/science_marketing/bioresource/**).

What material is in the nannofossil MRCs?
The following sets of slides:
1. 3000 slides from DSDP Legs 1-36, Sites 1-329. This sample set has been entirely prepared, and is held in all nannofossil MRCs. A listing of samples is available on the WWW.
2. ~600 nannofossil preparations from ODP Legs 132 to 138 - not at all nannofossil MRCs, but nearly completed.

Jeremy Young
jy@nhm.ac.uk

STILL AVAILABLE

Duplicate copies of some reprints from the Loeblich & Tappan collection are still available, while supplies last. A list of available reprints is posted on the UCMP website at:
http://www.ucmp.berkeley.edu/collections/micreps.html

Subjects covered include foraminifera, calcareous nannoplankton, acritarchs and tintinnids. For more information see the website or contact me.

Karen L. Wetmore, Museum of Paleontology,
1101 VLSB #4780,
University of California, Berkeley, CA 94720-4780
karenw@ucmp1.berkeley.edu

NEW BOOK NEWS

As you may be aware, there have been a few problems associated with getting hold of copies of *Calcareous Nannofossil Biostratigraphy* (Ed. P.R. Bown), a review of which appears in this issue. This situation arose because Chapman & Hall were taken over by Kluwer Academic around the time the book went to press. If you want a copy, then the following information may help. The book is part of the British Micropalaeontology Society Series and is published by Kluwer Academic Publishers, Dordrecht who have a website giving more information at:
http://www.wkap.nl/book.htm/0-412-78970-1

Ordering can be done via the Web, or through the following:

The Americas: Kluwer Academic Publishers, Order Dept., PO Box 358, Accord Station, Hingham, MA 02018-0358, USA. Tel.: (781) 871-6600; fax: (781) 871-6528; e-mail: *kluwer@wkap.com*

Rest of the World: Kluwer Academic Publishers, Book Dept., PO Box 322, 3300 AH Dordrecht, The Netherlands. Tel.: (+31) 78 639 23 92; fax: (+31) 78 654 64 74; e-mail: *services@wkap.nl*

BOOK REVIEW #1

Calcareous Nannofossil Biostratigraphy
Edited by Paul R. Bown (1998)
Published by Chapman & Hall/Kluwer Academic Publishers
British Micropalaeontological Society Publication Series: 328pp.
Printed by Cambridge University Press
Hardbound ISBN 0-412-78970-1
NLG 235.00 / GBP £79.00 / USD $127.00

Reviewed by Katharina von Salis, Geological Institute, ETH-Z, CH-8092 Zürich, Switzerland

The successor to A.R. Lord's (Ed., 1982) *A Stratigraphical Index of Calcareous Nannofossils* has appeared in 1998 under the new title, *Calcareous Nannofossil Biostratigraphy*, as part of the publication series of the British Micropalaeontological Society, from Chapman &

Hall (recently taken over by Kluwer Academic Publishers), with Paul R. Bown as the new editor. Where the old book was blue, the new is black, the new being only slightly larger but considerably thicker. What was included on 192 pages in 1982, now takes up 316 pages.

The book is clearly structured and starts, after **CONTENTS, PREFACE, ACKNOWLEDGEMENTS** and a **TECHNICAL NOTE AND ABBREVIATIONS**, with an **INTRODUCTION** by Bown & Young. We here learn about what calcareous nannofossils are and read about haptophyte algae cytology, scales as diagnostic features, coccolith morphology and formation, life cycles, coccolith function, as well as coccolithophore ecology and distribution. The outline of calcareous nannofossil taxonomy and classification is illustrated on an ordinal level, and a phylogenetic model (families) based on the two authors' recent publications on the theme is given. Not surprisingly, the authors here come to the conclusion (p.15), that "the integration of the order-level classification between living and fossil material is a problem which needs to be addressed". This first chapter is rounded off with a short outline of the geological history of calcareous nannofossils and half a page on their use in biostratigraphy with the conclusion than "the large volume of subsequent work [to Lord, 1982; Haq, 1983; Perch-Nielsen, 1985a, b; Siesser, 1993] means that the comprehensive reviews and new data presented here should be of great value, for both nannofossil specialists and end users of nannofossil data". How right they are.

The second chapter is entitled **TECHNIQUES** and also was written by Bown & Young. Here they give sound and very useful advice for sample collection, preparation techniques, means of observation, data collection and presentation.

Both chapters are very helpful for all who want to update their outdated knowledge about coccolithophorids and their significance, treatment and applications.

Bown wrote the short chapter about the **TRIASSIC**, giving a comprehensive overview, including a threefold subdivision, and the necessary illustrations both as drawings, LM and SEM photomicrographs. This chapter, and most of the following ones, are built up along the same pattern with an introduction, important references, nannofossil succession, biostratigraphy, biogeography and an atlas of species with the plates. Some chapters have additional sections on global correlation, magnetobiochronology, or notes on taxonomic problems and conclusions.

The **JURASSIC** chapter was written by Bown & Cooper and features mainly the description of the boreal zones and subzones following mainly Bown (1987) and Bown *et al.* (1988; NJ1-NJ18) and those from Italy/S France and Portugal. These descriptions are accompanied by zonal schemes that show the correlation between the areas, and with the boreal ammonite zones and the Jurassic stages. For the tethyan Upper Jurassic, the zones NJ19(T), NJ20(T) and NJK are discussed and correlated to the magnetostratigraphy in the Tithonian and Jurassic/ Cretaceous boundary interval. Here I have to make a note as to the statement on p.35: "...latest Jurassic (Tithonian) by which time nannoplankton were producing biogenic carbonate in rock-forming proportions". According to Noël *et al.* (1994, and papers cited therein), already the limestones of the Lias consisted mainly of calcareous nannofossils, namely *Schizosphaerella,* and small coccoliths were rock-building during the Middle Jurassic.

The range of nearly 80 species is given in a figure and correlated with the stages and the boreal ammonite zones.

A short paper on ‚Calcareous nannofossils from the Upper Kimmeridgian-Volgian of Gorodische, Russia' by Bown is included as an appendix in this chapter. It features distribution charts and a discussion on the stratigraphic problems of the uppermost Jurassic, as well as the discussion about *Stephanolithion* species and the description of a new species, *Staurolithites lumina.*

The atlas of species features SEM and LM photomicrographs, most of them of excellent quality, and the ranges of the species where illustrated by SEM.

The **LOWER CRETACEOUS** chapter was composed by Bown, Rutledge, Crux & Gallagher. Also this chapter concentrates on the zonal subdivision, using a BC system (after Rutledge & Bown, in prep.: for comments, see below). The correlation of calcareous nannofossil events with both stages, CC and NK/NC coccolith zones, boreal and tethyan ammonite zones and magnetostratigraphy are given in two very useful figures including also Indian Ocean nannofossil events. For the Barremian-Aptian interval, a high-resolution subdivision of the BC zones is given for the northern North Sea. The stratigraphic ranges of nearly 70 selected species, both general, endemic boreal and predominantly tethyan forms , are correlated to stages and boreal ammonite zones in a figure. The atlas of species consists of high quality SEM and LM pictures - a joy to study - and gives the ranges of the species where illustrated by SEM.

Burnett wrote the **UPPER CRETACEOUS** chapter with contributions from Gallagher & Hampton. Since she is very much involved in the work for new definitions of the Cretaceous stage boundaries, the historical part of the chapter is longer than in the previous chapters. The Cretaceous nannofossil succession is described and the changes in dominance of genera/families through the Late Cretaceous and across the Cretaceous/Tertiary boundary is illustrated. Five nannofloral palaeobiogeographic provinces are distinguished: boreal, intermediate N, tethyan, intermediate S and austral. For the description of the zonal system, the author discontinues the use of "taxonomic epithets" for the „formally-described alphanumeric biozones ", and uses a new system of UC (Upper Cretaceous) zones extending from UC0 starting in the Upper Albian and ending with UC20 at the top of the Maastrichtian. Some subzones and marker events are additionally given a combination of two letters for the province in which they are valid. The thus assembled figures will be very useful in stratigraphic work worldwide. Equally useful are the remarks about diachronous occurrences in the different provinces of many of the markers generally used. In ten often very fully packed pages with figures, the marker events are shown for the different

provinces and correlated to stages, ammonite/macrofaunal zones as well as the traditional CC and NC zones, among others. The correlation to the planktonic foraminiferal marker events is given together with the magnetostratigraphy by including the integrated zonation of Bralower *et al.* (1995). The summary figure of the Upper Cretaceous nannofossil biozonation acts as an anchor for us oldies to the ‚good old times' when we hoped that one set of coccolith zones - unlike planktonic foraminifera zones - would be applicable worldwide.

The K/T boundary is discussed at the end of the Cretaceous chapter which, thus, also includes illustrations of Tertiary species in its atlas of species, not counted in the count below.

The claim by the author, that "Most of the Upper Cretaceous calcareous nannofossils are listed and illustrated in Plates 6.1 to 6.15" is no exaggeration. I counted some 400 species names, of which 65 were indicated not to be figured. Most of the mainly LM photographs are of very good quality, the fossils often shown at different angles to the polarisers. The ranges of the figured species are given in terms of stages.

After all of the data and illustrations presented in this chapter, one wonders and rejoices about the author's statement on p.134: "...further biostratigraphic refinement is still possible". I am sure we will, eventually, ‚beat the ammonites', and not only in the Upper Cretaceous.

Varol assembled the chapter on the **PALAEOGENE**, concentrating on the economically important North Sea area, and sharing with the readers the impressive results of his findings from this region. The correlation schemes between the various existing zonations and the old stage stratotypes do not contain the zonal definitions. On the other hand, the three figures with the nannofossil zones and events for the North Sea area show a sequence of events and the 36 partly new NNTp/e/o-zones based on them, correlated with the timescale, the NPs and the stages. This overview lacks, for the obvious reason that this part of the section is not developed in a suitable facies in the North Sea area, the calcareous nannofossil biostratigraphy for most of the Upper Paleocene and the presently much-debated Paleocene/Eocene boundary interval. It will, however, be very helpful for all those having the privilege of working in the North Sea area.

The specimens illustrated in the atlas of species by excellent LM photographs all stem from North Sea well-sections, but no ranges are given.

Young wrote the **NEOGENE** chapter with the objective to "provide an up-to-date guide to Neogene nannofossil taxonomy and biostratigraphy in a succinct [I had to look up this word in the dictionary...] and useful format". For the discussion he "subdivided [the Neogene] into eight intervals (A-H) of 1-5Ma duration, based on the most important events". These intervals, which should be recognisable also in poorly fossiliferous materials, are then correlated to the classical NN and CN zonations and the magnetostratigraphy, age and stages (but not the planktonic foraminifera zonation(s)) in a very useful summary figure which will entice a few older colleagues to invest in new and stronger glasses.

Instead of a simple range-chart, Young presents us with figures including both ranges and simple line-drawings of the species of the Helicosphaeraceae, Syracosphaeraceae, Pontosphaeraceae, Calcidiscaceae, Coccolithaceae, Noelaerhabdaceae, Discoasteraceae, Sphenolithaceae, Triquetrorhabdulaceae, and some other forms. All ranges are correlated to the zonal schemes and his A-H intervals. The need for new glasses becomes even more urgent here.

In the notes on taxonomic problems, we learn that Wallich's original slides (1877!) have been relocated at the Natural History Museum in London and that we now use *Helicosphaera carteri* (instead of the younger *H. kamptneri*), that the genus ‚*Pyrocyclus*' represents specimens of abraded *Reticulofenestra* species, and several additional interesting and important observations.

The atlas of species includes not only a wealth of LM photographs - including many showing different levels of focus of the same specimen - but also very welcome notes for the identification/differentiation of the shown genera and species and their ranges in terms of NN-zones. An appendix gives the origin of the specimens illustrated in a novel and space-saving manner. The quality of the illustrations is partly very good but many pictures seem to lack contrast and appear rather grey. Most of us will definitely need the new glasses (see above) to read the names under the photographs.

Hine & Weaver illustrate the **QUATERNARY** biostratigraphy with reports on DSDP Site 610 in the Rockall Trough and three piston-cores from the flank of Kings Trough, from where a sequence of seven acme-intervals (QAZ7 to 1 - here the numbering starts at the top) is described. They stress the possibility of high-resolution stratigraphy through a combination of isotope- and magnetostratigraphy and semi-quantitative analysis of nannofossil assemblages, leading to the recognition of acme intervals. In two figures, the ranges of selected species are given and correlated to the Gartner, NN and CN zonal schemes, time and magnetostratigraphy. The authors conclude that high-resolution stratigraphy can be accomplished up to ~65°N, while it is hampered by barren intervals reflecting ice-cover or suppressed productivity during deglaciation at higher latitudes.

Selected species (20) are well illustrated both by LM and SEM on the two plates, their ranges being given in a figure in the text and with the SEM pictures. I have some doubts, however, about the correctness of some magnifications, though. *P. lacunosa* larger than *C. leptoporus* and nearly as large as *C. pelagicus* (Pl.9.1) make me wonder just as much as an *E. huxleyi* of the same size as *G. caribbeanica* (Pl.9.2).

Hine & Weaver report that "apart from the Noelaerhabdaceae, more than 30 accessory taxa are regularly recorded in standard smear slides". We can only regret the fact that so few of the over 200 described living species fossilise at all!

The **REFERENCES** are many and I have not checked if they are all referred to in the text. I did, however, notice that at least one reference in the text of a chapter did not occur here (de Kaenel, in press: p.35). Also, I missed a

reference or two to the work by van Niel (1992a, b, 1994), who studied the nannoconids in the North Sea area and contributed much to our understanding of this genus and its wider than previously/usually advertised distribution in the North Sea area.

The **TAXONOMIC INDEX** is a very useful feature. The genera are listed in alphabetical order and with the species they contain, indicating also the author(s) of both. Family names are arranged in between, and references are made to the chapters, pages and plates where the units are treated/illustrated. Personally, I would have liked also to have an index where all species are arranged in alphabetical order - the brain of a long-time nannofossil specialist does not always remember the actual genus assignment of a species that has changed its genus-assignment several times over the past 30 years. Also, the taxonomic index is not completely reliable. *Calcicalathina alta*, for example, is indexed as shown on Plate 6.3, while it is printed on 6.4.

Also, the one-page **SUBJECT INDEX** is a nice service to the reader looking for certain themes and gives a quick overview of all the themes treated in this splendid volume other than what it promises, the calcareous nannofossil biostratigraphy. We here find reference to, for example, image-capture, the use of the gypsum plate, or to organic scales in Haptophyte algae and the Ypresian Stage. But why not to the Aptian, Barremian or all other stages? Actually, also an index of abbreviations would have been appreciated - it sometimes takes much imagination and time to find the various abbreviations somewhere in the text of the chapter where they are used. (*Editor's note - most abbreviations appear at the front of the book*).

The book features three empty, white pages and two grey ones at the end. What a nice service for the readers to have space to add their own observations right there and to communicate them to the authors or the editor in order to be included into the next edition of the 'black book'. Since there is no indication as to the magnitude of this first edition, it is only my guess that there will be further editions and that some of such remarks will be included in them.

Further remarks:

Mostly it was a pleasure to review this book, but there were some frustrations, too. The most important is the fact, that only in one chapter did an author write the names of the fossils right under the illustration. This practical feature, which was pioneered in the calcareous nannofossil and some other chapters in Bolli *et al.* (1985), has since only been taken up by very few brave colleagues who could convince their editor(s), that, yes, it was possible to print such plates.

For many of us, the title of the book suggests its content to cover the whole biostratigraphy of calcareous nannofossils, from the Triassic to the Recent and for the whole world. Those of us who remember the title and content of its predecessor by Lord (1982) are cautious and positively surprised that the new book does, in fact, include more about the worldwide calcareous nannofossil biostratigraphy than the old one. Some bias on northern Europe is, however, still present but this differs from one chapter to the other.

Range-charts of the most important species, but also of any other species, are a very practical feature - some chapters contain one, others not. After having read, on p.27: "given a good distribution chart there is no need for detailed text description of assemblages, instead this part of a report can concentrate on outlining general results, problems and areas of uncertainty", I had expected many comprehensive range-charts with indications for the ranges of the marker species instead of the 'classical' definition and description of zones. I would have wished for all chapters to include range-charts but realise that, given the different ranges in different regions and environments, the book probably would not have appeared still in this century.

The possibility to compose figures by computer are wonderful and have been used to good avail in the present book. The relatively small format of the printed pages led, however, to strong reductions , especially to figures with a lot of information, which rendered the letters so small that they cannot be read without a magnifying glass or after mechanical magnification by a copy-machine. I have no solution for this problem, since I want all the information given and also appreciate to have it in one figure.

There are some things that could have been standardised in all chapters. Imagine that all the signs used in figures to mark a FO or LO were the same? Dream that the authors had met and decided to invent a new 'standard' zonal system with a logical combination of letters and numbers, small or large letters for the subdivisions? Many will wish that more authors would have added taxonomic remarks to their illustrations, so that one would not need another source in order to learn about the differences between the different species of a genus. Others will long for consistent mention of the known range of each illustrated species. Colleagues working for the oil industry will miss an 'upside-down' zonal system based on LOs, as it had been proposed by previous authors for the Cretaceous over a decade ago. Others again will not always understand the numbering system applied on some plates - once they have found out which plate they are actually looking at. Obviously, some technical editing process missed the lack of numbers on each plate.

In publications such as this, where most authors include personal, not yet published results into their chapter(s), or use not yet published information from colleagues, it is always a problem to know whether a planned paper (in prep.) will be published in time or not. Strategies for how to deal with this vary, but it certainly is a no-no in any reviewed journal. Too many authors here used an 'in prep.' reference (Bergen in the Jurassic; Rutledge & Bown in the Lower Cretaceous; Burnett *et al.* in the Upper Cretaceous ; Varol & Young in the Cenozoic chapter - sorry if I missed any...). Since there is no guarantee that 'in prep.' papers will ever materialise, I assume we should consider Bown *et al.* (Chapter 5) as authors for the many new BC zones and subzones, and not the 'pre-cited' Rutledge & Bown.

Small irritations occurred when reading *Reticulofenestra umbilica* instead of *R. umbilicus* (the

Latin word means navel and does not follow the gender of the genus; many of us have made this mistake for decades). Or when the FO of *Scapholithus fossilis* is given as Hauterivian on p.104 but with an illustrated specimen shown from the Valanginian on p.118. Or when the ranges are only indicated for those species which are illustrated with the SEM, but not next to their LM equivalents. Since most people are doing stratigraphy work with the LM, this may be an educational trick that forces stratigraphers also to look at the splendid SEM-pictures of the species they use? Or when several authors followed after the template that read 'author'. And when, on p.47, Hallam (1975) should be more recent than Hallam (1975). I take the latter as British humour, which non-British people have little chance of understanding. William Smith may have been the father of Historical Geology (p.34 - who was William Smith, and when did he live? Not all of us know our history of geology). But some of us learned that Nikolaus Steno from Denmark was the father of the law of superposition in the 17th century.

After these minor negative points, I would like to continue with some of the many very positive items. The electronically-produced plates in the Neogene chapter are a revelation and will, I assume, serve as models in many future publications - hopefully with somewhat larger letters used for the fossil names. The use of the same magnification for LM illustrations at 2300x must be considered a major break-through for the UCL-school of calcareous nannofossil specialists. They have resisted for many years to give up unequal magnifications for LM photographs as used in Lord (1982) and other papers by the UCL school. The high quality of most illustrations is partly due to the well-preserved material the authors had at hand - I would like to join my thanks to those the authors already bestowed on the providers of such material. It seems not fair that the positive points fill much less space than the negative ones. Yet it is a sign that there is still work out there to do and be presented as papers, books and, I predict, on the WWW. The list of WWW-addresses given on p.28 will be longer next time and hopefully also include the INA-site at **http://gs.ucsd.edu/ina/** and the possibility of publishing in *Paleontologia Electronica* (**http://www-odp.tamu.edu/paleo/**).

Some statistics...

In the **PREFACE**, there is a statement that I wanted to check: "...including over 2000 individual photographs, and as such we believe this to be the most comprehensive atlas of calcareous nannofossils ever produced". In fact, the different chapters dealing with actual calcareous nannofossils are all well illustrated. Some more than others, some including only LM or only SEM illustrations, most including a fair number of both. I have counted them (sorry if I made a small mistake here or there) in order to know how many there are. Then I divided this number with the million years of the geological interval they represent in order to choose the king or queen of illustrations/m.y. Out of curiosity, I did the same for Lord (1982) and for the nanno-chapters in Bolli *et al.* (1985). Here are the results:

In conclusion, Jeremy Young, the author of the Neogene chapter, has presented the most views of calcareous nannofossils per m.y. He used only LM pictures and „the plates were produced using NIH-Image, an image analysis program written by Wayne Rasband of the National Institute of Health". This program allowed Young to get around the physical cutting and pasting and also motivated him to follow Perch-Nielsen (1985) by putting the name of the fossil directly below its illustration. Congratulations and THANK YOU!

		LORD (1982)				BOLLI *et al.* (1985)		BOWN (1998)			
CHAPTER	m.y.*	LM	SEM	TOTAL	ILLUST./m.y.	TOTAL	ILLUST./m.y.	LM	SEM	TOTAL	ILLUST./m.y.
Introduction									12	12	
Triassic	20**					28	1.4	12	11	23	1.1
Jurassic	68	30	60	90†	1.0			234	159	393	5.8
Lr. Cretaceous	39	60	120	180	4.6	1039	7.5	265	120	385	9.9
Up. Cretaceous	31	90	140	230	7.4			646	38	684	22.1
Palaeogene	41							159		159	3.9
Neogene	22							660		660	**30.0**
Quaternary	2							29	9	38	19.0
Cenozoic	65	60	60	120	**1.8**	1456	**22.4**			857	**13.2**
TOTAL	**230**	**240**	**380**	**620**	**2.7**	**2523**	**11.0**	**2005**	**349**	**2354**	**10.2**

Table 1: Number of illustrations in Lord (1982), Bolli *et al.* (1985) and this book. *Duration according to International Stratigraphic Chart, IUGS, preliminary edition, 1998. **For the Triassic, an estimate of 20m.y. was assumed for the time of existence of calcareous nannofossils. † = including also illustrations of Triassic forms.

As for "the most comprehensive atlas of calcareous nannofossils ever produced", this statement does not hold, since Perch-Nielsen (*in* Bolli *et al.*, 1985) produced ~180 photographs more than are included in the 'black book' (Table 1). There are other differences, too. While Bolli *et al.* (1985) mixed LM, TEM and SEM in the same 'plate/figure', and spread them throughout the text between the relevant words, all plates are arranged at the end of the various chapters in Bown (1998), a trait taken over from Lord (1982).

A look at the text shows major differences in the way the various time-intervals were treated. An overview is given in Table 2.

The printed pages are of different surface area, especially between Lord and Bown on one side and Bolli *et al.* on the other: 286.16cm^2 and 291.56cm^2 , against 365.50cm^2 in the latter. We thus have to correct the Bolli pages with a factor of 1.26 to get an equivalent page/m.y. value.

It is surprising how similar the values are when comparing the number of pages/m.y. for the different time-intervals for the Mesozoic. It increased from 0.7p/m.y. in 1982, to 0.8p/m.y. in 1985, to 1.1p/m.y. in 1998. The increase happened both for the various parts of the Mesozoic and for the Mesozoic as a whole, and represents the increase in knowledge that has occurred over the years. This is most pronounced for the Triassic/Jurassic, where progress was most conspicuous. For the Cenozoic the changes were dramatic, leading from 0.5p/m.y. to 2.5p/m.y. in 1985 and back to 1.3p/m.y. in 1998. This is understandable when one considers that the title of the 1982 chapter read: "Cenozoic calcareous nannofossils - a reconnaissance". This was due to the fact that pre-Quaternary Cenozoic sediments are less well-represented in Great Britain and by

		LORD (1982)		BOLLI *et al.* * (1985)			BOWN (1998)	
CHAPTER	m.y.	PAGES	P/m.y.	PAGES	Px1.26	P/m.y.	PAGES	P/m.y.
INTRO./TECH.		**10**					**28**	
Triassic	20#						5	0.25
Jurassic	68						52	0.76
TRIASSIC+JURASSIC	88	13	0.15				57	0.65
Lr. Cretaceous	39	41	1.05				46	1.18
Up. Cretaceous	31	55	1.77				68	2.19
MESOZOIC#	**158**	**109**	**0.70**	**98**	**123†**	**0.8**	**171**	**1.10**
Palaeogene	41						25	0.61
Neogene	22						41	1.86
Quaternary	2						18	9.00
CENOZOIC	**65**	**31**	**0.50**	**127**	**160†**	**2.5**	**84**	**1.30**
REFERENCES		**8**					**19**	
INDEXES		**9**		**17**	**21†**		**13**	
TOTAL	**223**	**167**		**242**		**305.0**	**315**	

Table 2: Comparison of number of pages and pages per million years represented in the three works discussed. *Only the pages of the calcareous nannofossil chapters. #Only that part of the Triassic/ Mesozoic containing calcareous nannofossils. †Number of pages when the size of the pages is taken into consideration.

the fact that very few British nannopalaeontologists at the time were involved in consulting for oil exploration firms or engaged in the Deep Sea Drilling Project. The many pages on the Cenozoic in 1985 were due to the personal experience and preference of its author.

The total number of pages has nearly doubled from 1982 to 1998, but is only a little higher than in the Bolli *et al.* (1985) volume.

In conclusion:

Bown's (1998) 'black book' is an absolute 'must' for all who perform biostratigraphy with calcareous nannofossils. It replaces completely its predecessor (Lord, 1982) and to a very large extent the nanno-chapters in Bolli *et al.* (1985). The editor and authors are to be congratulated to have undertaken the task of giving us again an overview of the 'state of the art'.

THANK YOU.

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BOOK REVIEW #2

Calcareous Nannofossil Biostratigraphy - a book review with a gender perspective and a retrospection on who was running INA

Reviewed by Katharina von Salis, Geological Institute, ETH-Z, CH-8092 Zürich, Switzerland

For the past seven years I have, besides my work as a geologist/nannopalaeontologist, been involved in work for equal opportunities for men and women at the Swiss Federal Institute of Technology in Zürich (ETH-Z). Here, of the ~12 000 students, some 25% are female while ~10% of the lecturers and 5% of the professors are female. The fact that the number of women has increased in many fields of natural sciences over the past decades also in Switzerland, is a positive development from the times, in the early ‚sixties, when I was the only female student in the Geology Department of the University of Berne. Unfortunately, however, over the past 35 years, women often have not been able to get permanent positions in their profession and they only rarely became professors.

Also, for some time now, I have tried to find the gender aspect, the women's view, in earth sciences and have not found much. I have, however, lived in this environment with open eyes through the past nearly 40 years and have experienced discrimination and encouragement as a woman that men did not experience in the same way. On the occasion of the ‚*International Conference on the History of Geology*' being held in Switzerland in September, 1998, I boldly prepared an abstract and presented, together with a female colleague who had studied in the early 1960s in Zürich, a poster with the title ‚*Women in Earth Sciences in Zürich/Switzerland: why women did not contribute much to earth sciences until recently*' (von Salis & Franks-Dollfus, 1998). I decided to give this aspect some consideration as soon as I had read the acknowledgements in Paul Bown's (Ed., 1998) ‚*Calcareous Nannofossil Biostratigraphy*', the ‚black book', when reviewing it. I eventually decided to do this in two contributions - a normal review (von Salis, this volume) and in the present essay. Since this would have been very short had I restricted my comments to the ‚black book', I decided to add some remarks about women and men in INA and present some preliminary conclusions.

A look at the acknowledgements:

Maybe I have found myself a new sport: ‚acknowledgement-scrutinising with a gender perspective'. The idea is to find out who thanks whom, and why, and if the work of women thereby is hidden in acknowledgements instead of paying credit by including them as co-authors. There are very famous precedents for such cases. Albert Einstein's wife, herself a mathematician, contributed much of the mathematics to his papers - later,

only *he* got the Nobel Prize. Alfred Wegener maybe was not alone to figure out continental drift - rumour has it that it was his wife who wrote the book. One edition, in any case, does not include any first name for the author, but just Wegener (pers. comm., 1998, from a German PhD student). I am not an historian and will usually leave historical cases to those women and men that recently have started to engage themselves in finding out the hidden contributions of women to science. But since I have lived through much of the development of calcareous nannofossil research, it seemed timely to have a first look at ourselves from such a perspective, before it needs historians to do so.

I found the following ‚kicking words' in the acknowledgements of Bown (Ed., 1998): „Finally, I'd like to dedicate the book to Jackie, who 'lived through this' and contributed far more than just her chapter, and to" ... Jackie who? Jackie Burnett, obviously, since she is the only woman who contributed a whole chapter to the book. Why is she, as the only person of the many others listed, only mentioned by first name in a scientific publication? Why did she contribute so much that the book gets dedicated to her, but is not a co-editor? We have to assume that she shares Paul Bown's life, and therefore works ‚for free'. This, of course, has a long tradition. Why was her cooperation taken for granted and highly appreciated, but not considered a contribution worth a co-editorship? We do not know; maybe Jackie did not want to be a co-editor, maybe the publisher insisted that there be only one editor? Such explanations do not appear in acknowledgements. Well, presumably, the family life of the couple was heavily affected by the various tasks that had to be performed over the years in preparation of the ‚black book'. And certainly the dedication was well-earned. It was, too, in an old tradition of how the work of female earth scientists get acknowledged and hidden, as shown below:

„Again with this work, my dear wife has co-operated; her help went far beyond the technical". These words were written by Prof. Dr. H. Brockmann-Jerosch from Zürich in the foreword to his book on the Swiss farmhouse (1933). This dear wife, whose name he did not even mention, was Marie Jerosch, the first women to get a diploma in geology in Switzerland in 1901. She graduated with distinction and she got her PhD in the same field in 1904. Whatever her contribution to science later, it is hidden in the work of her husband, who was a geographer. Maybe the relatively long chapter on building materials in the above book was mainly her contribution, maybe not. In 1998, at least the first name is mentioned and Jackie has her own chapter, so progress there is. I wish it was greater, though.

What else than the ‚kicking words' can one find in the acknowledgements of Bown (Ed., 1998)? He thanks Alan Lord, the editor of the predecessor book, „for giving most of the authors included here our start in life" and Don Jacobsen for his teaching „all those years ago in Liverpool". Then the photographic support by two men is acknowledged, and material and the financial support provided by nameless individuals and four institutions, respectively. A look at the acknowledgements in predecessors to Bown (Ed., 1998), Lord (Ed., 1982) and the calcareous nannofossil chapters in Bolli *et al.* (Eds, 1985) shows the following. In 1982, some of the acknowledgements went to the financial aid from companies that had sponsored both the PhD students and further research. The other persons mentioned are those having contributed material, advice and help - they are 12 males. For technical and clerical assistance, the two women and three men that were acknowledged „redrew all diagrams and tables". A women (Denise Noël, who never became a professor, as far as I know) read the first manuscript, and a man (Prof. Tom Barnard) was thanked for having started it all.

Perch-Nielsen (*in* Bolli *et al.*, 1985) thanked nine men and two women for having discussed various aspects of her chapters and/or read early versions of them. One of the women, Milena Pika-Biolzi, had helped her with the arrangement of many plates and, a fact not mentioned, with the alphabetic list of taxa and the index chapter, since she had access to, and could handle, a computer, which the author did not at the time. No thanks for clerical and technical assistance, since there was no clerical assistance and the author had been denied technical assistance to such a great extent by her boss and co-editor, that she did not feel in the mood to acknowledge what she actually had gotten. Perch-Nielsen also thanked her family „for the patience and support they showed while I struggled to complete the task". No names, no details - just the way it is usually written. What she meant was that her husband, Jørgen, had taken over much of the management (not the running of the household, though) of the family which, at the time, included three small children and a nanny, and a move from The Netherlands to Austria in 1983, while she kept working at her 50%-job in Zürich and ‚commuted', usually for weeks at a time, held a 20% job at the Free University in Amsterdam from 1980-83, and consulted mainly for Robertson Research in Singapore to pay for it all.

From personal experience, I realise that we hide much when we write acknowledgements (see above). I must assume that also in other acknowledgements, much is hidden that would be of interest to those trying to analyse how a major work has been accomplished, and what the contributions of men and women were in this process. From the above, it would seem that the two male editors thanked their ‚scientific fathers', while I did not. Not as a co-editor in Bolli *et al.* and not as the author of the two nanno-chapters. Looking back, I should have thanked not any ‚scientific father' but a ‚scientific mother', Prof. Tove Birkelund of the Institute for Historical Geology and Palaeontology at the University of Copenhagen. She was my first boss in 1965, when I got my first job as a post-doc., a term not used at the time. It was she who insisted that I find a theme in palaeontology for my research, despite the fact that I had arrived with a PhD in sedimentology. She then supported my learning years with coccoliths, both in Copenhagen and Paris, had the patience to thoroughly review my first papers - written in German, since I had not mastered the English language at the time - and bestowed responsibilities on me that no man in Switzerland would ever have thought to give to a women at the time.

Why did I not thank her? I do not know. Maybe because I had moved on to Zürich already ten years before and the years in Copenhagen seemed far away? Maybe because the chapter was too long already and I had to save space? Maybe I was simply too exhausted by the time I arrived at the composition of the acknowledgements to think of more than the immediate cooperators? If I cannot reconstruct this omission, who will, in 50 or 100 years, when maybe somebody writes up the history of micropalaeontology?

In conclusion, I suggest we give more thought to the writing of acknowledgements and, especially, don't forget the real contributions of all the women and men that were at your side, when ‚the going was tough'.

Some statistics:

We can analyse the contributions of women and those of men to the ‚black book' and compare it to previous, similar, multiauthored books in micropalaeontology. Both in the present book and in its predecessor (Lord, 1982), this can only be found out by somebody who knows the authors or has the possibility to inquire about the sex of the persons involved, since first names are not given. For further comparison, I also analysed *Plankton Stratigraphy* by Bolli *et al.* (1985), where the two chapters on Mesozoic and Cenozoic calcareous nannofossils were written by a woman. The results of this analysis are shown in Table 1.

Interestingly, while the number of authors doubled from Lord (1982) to Bown (1998), the number of women involved decreased. We can thus see a ‚masculinisation' of the book-writing. One explanation may be the fact that the first book - despite its somewhat misleading title *A Stratigraphical Index of Calcareous Nannofossils* - was essentially an edited collection of rewritten theses created at the Micropalaeontology Unit of University College London (UCL). The ‚black book', instead, is a collection of chapters written mainly by more-or-less established, experienced calcareous nannofossil specialists.

	Lord (1982)			Bolli *et al.* (1985)			Bown (1998)		
GENDER	EDITOR	AUTHORS	CHAPTERS	EDITOR	AUTHORS	CHAPTERS	EDITOR	AUTHORS	CHAPTERS
MEN	1	2	3	2	10	7.3	1	9	7.5
WOMEN		4 (67%)	5 (62%)	1	8 (44%)	8.6 (53%)		3 (25%)	1.5 (17%)
TOTAL	1	6	8	3	18	16	1	12	9

Table 1: Men and women as editors and authors and the number of chapters they wrote in three biostratigraphic overview books.

It is thus of interest to look into the ‚fate' of the young authors of the first book. Who, of these authors of 1982, also contributed to the new volume (1998)? We find only one of the two male persons, Jason Crux, who used to work for BP in Surrey and whose address is now at the Earth Science Department of the University of Caracas in Venezuela. The other, Alan Lord, was the head of the Micropalaeontology Unit at UCL and is now a professor and Dean of the Faculty of Mathematical and Physical Sciences at UCL. Personally I know nothing about the whereabouts of the three women - none of them kept publishing on calcareous nannofossils (*Editor's note - Rosanna Taylor and Gillian Hamilton almost immediately entered the realms of ‚homemaking'; Minoo (Hojjatzadeh) Lord worked as an exploration geologist for a few years, was made redundant, retrained, and is now a database manager in the industry*). In conclusion, it apparently did not further their career in science to publish in a text-book. The two men continued their academic/industrial careers.

From the three female authors of the ‚black book', Jackie Burnett furnished not only the longest chapter but also the one with most illustrations (*Editor's note - Paul actually made my plates!*). She has been on ‚soft money' until recently (now consulting part-time), and features on the WWW as a post-doctoral research assistant at UCL. Nicky Hine, who co-authored the short chapter on the Quaternary, according to the information available on the WWW, is now a nannofossil research worker in the Palynology Unit at Sheffield (*Editor's note - funded until recently, now also consulting part-time*). Dorothea Janofske, who contributed to the short Triassic chapter of P.R. Bown is an assistant professor at the University of Bremen. As for the men, they either have permanent positions (at UCL (Bown), The Natural History Museum (Young), and the Southampton Oceanography Centre (Weaver)), or have their own consulting/service companies (Cooper, Gallagher, Varol) or work for one of these (Hampton, Rutledge).

As a preliminary conclusion, one could formulate that many women in the field of calcareous nannofossils in general did not succeed in finding permanent employment in their field, while many men did. It would be interesting to see a complete statistical breakdown of the UCL-output of calcareous nannofossil PhDs and their next ten years. In the case that it confirms the presented preliminary conclusion, action seems to be needed both by universities and by the women themselves. Universities either have to stop supporting women PhDs, since they cannot find jobs anyway, or they have to work for a better climate amongst the future employers of micropalaeontologists to meet the needs of female professionals, too. The women also have to work for equal opportunities - they do not happen ‚just like that', as the past 30 years have shown.

We can start with looking at ourselves, the INA, and whether men and women contribute and share responsibility equally.

Who did and does what in INA: the gender perspective:

The sciences, and especially the natural sciences, are a man's world. Accordingly, scientific associations are usually led by men, and most of their officers, board members *etc.*, if not all, are male. In contrast to this general trend, INA, the International Nannoplankton Association has, through its first 20 years of existence since 1977, been an unusual scientific association in that it has so far had two female presidents and many female officers and organisers of conferences. A look at the statistics reveals, however, that women are slowly on the way out.

INA was founded in 1977 in The Hague in The Netherlands and has since grown to be an international association with 279 members in 45 countries. Amongst the members we count 28 libraries/companies that are

interested in our *Journal of Nannoplankton Research*, a publication (ISSN 1210-8049) now in its 20th year and having undergone a name-change from *INA Newsletter* to the present title, and two facelifts. Already before INA was officially founded, meetings were organised by various persons under different ‚umbrellas' on calcareous nannoplankton. After the foundation of INA, the organisation of topical and regional meetings was encouraged and they have been held in addition to the general, worldwide conferences, INA1-7. During the present decade, the European Community has started to support scientific projects on calcareous nannoplankton financially. Who were the organisers?

The 17 events were organised by eight female and nine male persons (where two persons cooperated, they were counted as 1/2 each). Note that, while women started out as organisers, more men have taken over in recent years. The coming INA8, and the three EU/EC-projects, GEM, EHUX and the presently-running CODENET project, were/are managed by men.

Generally, more people active at universities or other scientific institutions organised meetings than those working for oil companies - Shell and BP are represented - or geological surveys.

INA has many voluntary jobs and, luckily, both men and women keep being active. From a, at times, very small committee of three (two women and one man), the committee now includes five women and nine men.

YEAR	CONFERENCE	ORGANISER	UNIV./IND.
1970 round table	Rome, Italy	Anna Farinacci	U
1974 consult. group	Kiel, Germany	Denise Noël, Kath. Perch-Nielsen	U
1977 L-M Cret.	Rijswijk, NL	Ben Prins, Shirley van Heck	I
1979 Cret. strat.	Orléans, France	Hélène Manivit	GS
1983 mar. pal'env.	Utrecht, NL	Ton Romein (for RCMNS)	U
1985 INA1	Vienna, Austria	Katharina Perch-Nielsen	U
1986 workshop	Woods Hole, USA	Marie-Pierre Aubry	U
1987 INA2	London, UK	Shirley van Heck, Jason Crux	I
1988 1. Asian	Shanghai, China	Wang Pinxian	U
1989 INA3	Firenze, Italy	Simonetta Monechi	U
1990 Jur. workshop	London, UK	Paul Bown	U
1991 INA4	Prague, Czech Republic	Bohumil Hamrsmid	I
1992 2. Asian	Yamagata, Japan	Hisatake Okada	U
1993 INA5	Salamanca, Spain	José-Abel Flores	U
1994 3. Asian, Neog.	Kuala Lumpur, Malaysia	Shirley van Heck	I
1995 INA6	Copenhagen, Denmark	David Jutson	GS
1998 INA7	La Parguera, Puerto Rico	Amos Winter	U
2000 INA8	Bremen, Germany	Helmut Willems	U
199?-199?	GEM-Project	Peter Westbroek	EC
199?-199?	EHUX	Jeremy Young?	EC
1997-200?	CODENET	Jeremy Young	EU

Table 2: Pre-INA conferences/meetings on calcareous nannoplankton and INA conferences, including regional or topical workshops organised by INA, and their organisers. Calcareous nannoplankton EC/EU projects without direct INA involvement but with the participation - also in leading positions (all male) - of many INA members. U = university based, I = industry based, GS = National Geological Survey based, GEM = Global *Emiliania* Modelling Initiative, EHUX = MAST (Marine Science & Technology) II, EC/EU = European Community/Union-funded

The trend thus is the same as for the organisers of conferences - the women become a minority, although a large one, after having set out with vigour at the start.

The preliminary conclusions from the above statistics would support findings in other fields, that women are present and active in new scientific fields in the beginning and that their numbers then decrease, as the field becomes established. This has happened in Great Britain parallel to the development and establishment of the oil industry in the North Sea, where calcareous nannofossils can be used - and the export of such know-how by the companies and consultants involved to other parts of the world.

OFFICE	OFFICER, past & present	FEMALE	MALE
President	Katharina Perch-Nielsen, **Shirley van Heck**	2	
Vice-President	David Reimers		1
Past President	**Katharina von Salis**	(1)	
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ODP Correspond.	**John Firth**		1
Nomenclat. Secr.	Shirley van Heck	(1)	
E-mail list org.	**Helen Gillespie**	1	
TOTAL		**6 & (2)**	**17 & (1)**

Table 3: Female and male INA officers through time. Those having performed different tasks at different times are counted only once and indicated as () the other times.

Women become more common in fields that men do not find promising any more, where they follow the well-known proverb of the rats leaving the sinking ship. While the women try to save it? We don't know, since at the time when the proverb probably originated, women did not work and live on big ships... Just as they were not allowed to work on oil-rigs more recently and thus could not get jobs for which they were well-qualified. The latter was brought to the attention of the members of the above mentioned *International Conference on the History of Geology* in Neuchatel on a late-planned poster by Lou Donovan, a geologist and the wife of a Prof. Emeritus at UCL, Desmond Donovan. There are many untold stories around - let's tell them so that, tomorrow rather than in due time, women get a fairer share of the work out there.

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INA MEMBERS' E-MAIL ADDRESSES

INA MEMBERS' E-MAIL ADDRESSES

compiled by Jackie Burnett, December 1998 (new/emended addresses this issue in bold)
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