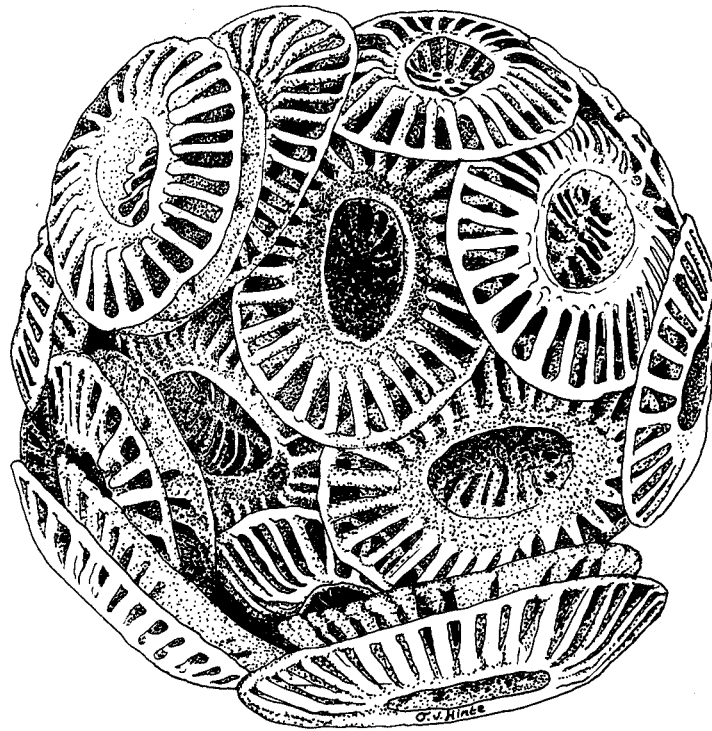


INA

NEWSLETTER



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VOLUME 13

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NEWSLETTER MATTERS: Send all contributions, suggestions etc. to the editor. *Deadline for next issue 15th Oct 1990.* For advice to contributors see inside back cover.

INA NEWSLETTER

Proceedings of the International Nannoplankton Association

Volume 13

Number 1

June 1991

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EDITORIAL AND ANNOUNCEMENTS

This issue is late I am afraid - partly a result of my being distracted by other matters, and partly a result of my waiting for a couple of contributions which never materialised (all the actual contributors to this issue gave me their copy well on time). I have included for the first time an article (as opposed to review) of my own - on Quaternary Nannofossil Zonation - as an example of one type of article which I regard as being useful for the Newsletter, and unlikely to be publishable elsewhere. I would be grateful for any similar contributions. Also any comments or corrections on the range chart will be received in good spirit and published if appropriate.

PRAGUE 1991 INA CONFERENCE

The planning for this meeting is well advanced, details will be given in the Third Circular and the Abstract volume. All submitted talks were accepted.

INA BUSINESS & OFFICERS

There will be an INA business meeting at Prague to organise ourselves for the next two years. Magdy Girgis will be quitting as Secretary / Treasurer and so a replacement needs to be elected. In addition. The main posts available are Secretary/Treasurer and President - Magdy Girgis definitely intends quitting owing to pressure of other commitments, and Katharina feels that having been President since the inception of INA it is time for a change. I am willing to continue as editor, but would be happy to let anyone else do it instead.

Anybody who is interested either in doing a specific job for INA or in generally offering their services should contact the President or another officer.

Our finances are currently healthy (see accounts at the end of this issue) so we probably will not need to raise the fees.

FLORENCE 1989 INA MEETING PROCEEDINGS - update from Domenico Rio

The publication of this volume is proceeding well, albeit slower than had been hoped. All the articles are now at proof stage and actual publication should be some time this winter.

The contents list is given below [N.B. I have retyped the list so don't worry if there are minor mistakes in your title, *JRY*].

1. *Bown, Burnett, & Gallagher* - Calcareous nannoplankton evolution.
2. *Cobianchi, Erba & Pirini* - Evolutionary trends of calcareous nannofossil genera *Lotharingius* and *Watznaueria* during the Early and Middle Jurassic.
3. *Erba, Castradori & Pirini* - Compilation of Upper Triassic calcareous nannofossil ranges.
4. *Reale, Baldanza, Monechi & Mattioli* - Calcareous nannofossil biostratigraphy events from the Early - Middle Jurassic sequences of the Umbria - Marche area (Central Italy).
5. *Bown & Ozkan* - Review of calcareous nannofossil biostratigraphy and correlation across the Jurassic - Cretaceous boundary.
6. *Kale & Pashalkar* - Nannofossil biostratigraphy of the Utatur Group, Trichinopoly District, South India.
7. *Kilasonia* - Calcareous nannofossil biostratigraphy of the Upper Cretaceous of Georgia
8. *Toker & Sagular* - Relation between calcium carbonate concentration and nannofossils abundance in the Maastrichtian Gokdere Formation, Central Anatolia, Turkey.
9. *Pospichal, Wei & Wise* - Probing the limits of nannofossil stratigraphical resolution in the Southern high Latitudes.
10. *Pospichal, & Wise* - Southern high latitudes calcareous nannofossils.
11. *Lamolda & Gorostidi* - Nannofossil stratigraphy record in upper Maastrichtian - lowermost Danian at Zumaya (Northern Spain)
12. *Gavtatze* - Palaeogene nannoplankton stratigraphy of Georgia.

13. *Janin* - The Discoaster ray number evolution: stratigraphy application.
14. *Wei & Wise* - latitudinal biogeographic gradients of Late palaeogene calcareous nannoplankton in the south Atlantic Ocean.
15. *Wei* - Biometric application of *Discoaster multiradiatus* and its biochronological utility.
16. *Firth* - Analysis of the taxonomic, biostratigraphy and evolutionary relationship of species of the calcareous nannofossil genus *Cyclicargolithus* (Bukry 1971) from the upper Eocene and Oligocene of the North Atlantic.
17. *Olafsson & Villa* - Reliability of sphenoliths as zonal markers in Oligocene sediments from the Atlantic and Indian Oceans.
18. *Minashvili* - Calcareous nannofossil biostratigraphy and correlation of oligocene and Miocene deposits of Georgia.
19. *Olafsson* - Oligocene / miocene morphometric variability of the *Cyclicargolithus* group from the equatorial Atlantic and Indian Oceans.
20. *Patacca, Scandone, Bellatella Perilli & Santini* - The Numidian sand event in the Southern apennines.
21. *Beaufort* - Size variation in Late Miocene *Reticulofenestra*: palaeoclimatic interpretation.
22. *Bonci-Pirini* - Presence of small *Gephyrocapsa* in late Miocene diatomaceous levels (S. Agata Fossil Formation, Serravalle scivia, Allessandria, Italy).
23. *Chepstow-Lusty, Shackleton & Backman* - Upper Pliocene *Discoaster* abundance variations from the Atlantic, Pacific and Indian Oceans: the significance of productivity pressure at low latitudes.
24. *Girardeau* - Coccolith palaeotemperature and palaeosalinity estimates in the Caribbean Sea for Late - Middle Pleistocene (DSDP Leg 68 - Hole 502B)
25. *Spaulding & Oba* - Association of Late Pleistocene calcareous nannofossil assemblages and $\delta^{18}\text{O}$ and $\delta^{13}\text{C}$ isotopic exchanges, ODP Leg 117, Oman Margin, arabian Sea.
26. *Pujos* - Calcareous nannofossils and the $<25\mu\text{m}$ fraction in Quaternary sediments of the subtropical N.E. atlantic Ocean.
27. *Okada* - Biogeographic control on modern nannofossil assemblages in surface sediments of Ise Bay, Mikawa Bay and Kumano-Nada, off the coast of central Japan.

2nd ASIAN/PACIFIC INA CONFERENCE

YAMAGATA, JAPAN

1-3 September 1992

FIRST CIRCULAR

The 2nd Asian/Pacific INA Conference will be held at Yamagata University in Yamagata, Japan. The conference coincide with the last phase of the 29th International Geological Congress (IGC) which will be held in Kyoto from 24 August through 3 September, 1992. The INA Conference is not a part of the IGC and there is no need to register for IGC if you want to participate only in the INA Conference.

Sessions are rather informal and no publication of the conference other than abstracts is planned. All aspects of calcareous nannofossils as well as living nanoplanktons can be presented by oral or poster presentations. A couple of special lectures by Japanese biologists who specialize the physiology and calcification of calcareous nanoplankton as well as the classification and formation of organic scales of other goldern-brown algae will be presented. A workshop to standardize the quantitative measurement of nanno-assemblage is also planned. A post-conference field excursion (leader: Dr. T. Takayama) in the Boso Peninsula to study Middle Miocene to Upper Pleistocene marine sequence is also under consideration.

Yamagata is about 3 hours from Tokyo by train and under 1 hour by plane. In addition to the new express train service just started between Narita Airport and Tokyo Station, the planned direct bullet train service between Tokyo Station and Yamagata will make a train trip to Yamagata very attractive. There are also 3 flights daily from Kyoto (Osaka Airport) to Yamagata so IGC participants will have no difficulty to join the INA Conference.

To assure receiving the second circular, please complete the following questionnaire and return it to:

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Faculty of Science
Yamagata University
Yamagata, 990 Japan
Tel: (0236) 31-1421 Ext. 2588
Fax: (0236) 24-7550

Before 30 August

Forename _____ Surname _____

Title _____ Mailing Address _____

Telephone _____ Fax _____

(please Circle the right answer)

I plan to attend the Conference	yes	maybe	
I paln to give an oral presentation	yes	maybe	no
I plan to give a poster presentation	yes	maybe	no
I plan to take part in the excursions	yes	maybe	no

**BOOK REVIEW - CALCAREOUS NANNOPLANKTON BIOCOENOSIS:
SEDIMENT TRAP STUDIES
IN THE EQUATORIAL ATLANTIC, CENTRAL PACIFIC, AND PANAMA BASIN**

J.C. Steinmetz, ed. S. Honjo,

Ocean Biocoenosis Series No.1, W.H.O.I., USA, pp.85, 21 plates, 1991. Price \$10.

This nicely produced volume compares the calcite fluxes and species assemblages at three sites using material from a vertical array of sediment traps, as part of the Particulate Flux Experiment (PARFLUX). There are two principal parts, first a documentation of methods, and results including quantification of coccolith carbonate fluxes, second a taxonomic section documenting the nanoplankton observed. The methods section describes how coccospheres were counted using an inverted microscope and a settling chamber, but notes that "the estimates of the numbers of coccospheres per millilitre represent a minimum; coccospheres less than about 10 μ m were not recognizable using a x40 objective lens" and "therefore, all small coccospheres, especially *Emiliania huxleyi*, were not accounted for in the estimates". The coccoliths were counted using a similar method but with no apparent recognition problems. Species identification, relative abundance and state of preservation were all determined using an electron microscope. From the results of the relative abundance counts small species like *E. huxleyi*, *Crenolithus sessilis* and *Gephyrocapsa oceanica* were reported as frequent to abundant at most sites and depths. The minimum coccosphere count may therefore be a gross underestimate of the true value. Perhaps the author should have conducted both the coccolith and coccosphere counts using the SEM where magnification is less of a problem. By passing a known quantity of sediment trap material through a Nucleopore filter, quantitative measurements could have been made, and many of the difficulties could have been avoided.

The taxonomy section is unfortunately based upon the classification system of Tappan (1980), rather than Okada & McIntyre (1977) and subsequent papers by other authors. The Tappan system inferred too many unsubstantiated evolutionary relationships resulting in dubious family and order associations. In addition several invalid synonymies were introduced, e.g. the proposal that *Florisphaera* is synonymous with *Deutschlandia*! Steinmetz has avoided some of these errors, but there are still some howlers, for instance the inclusion of *Thoracosphaera* in the coccolithophorids, it has been shown from life-cycle studies that *T. heimii* is a calcareous dinoflagellate (Inouye & Pienaar, 1983). There are also a number of invalid names. For instance, Haptophyta, Haptophyceae = Prymnesiophyta, Prymnesiophyceae (Hibberd, 1976); *Cyclococcolithus* = *Calcidiscus* (Loeblich & Tappan, 1978); Gephyrocapsaceae = Noelaerhabdaceae (Jerkovic, 1970). Nonetheless, the actual species identifications are reliable, although the taxonomy is outdated (there is a noticeable shortage of post 1980 references in the bibliography). For instance *Gliscolithus amitakarenae* (Norris 1985) is illustrated as unid. sp. 1. Also *Scapholithus fossilis* is illustrated from shallow water sediment traps - and so presumably the modern nanoflora (reworked nanofossils occur in some deeper traps). I think these specimens, and probably those reported in the literature from surface sediments, should be assigned to *Calciosolenia murrayi* which incidently would take priority over *Scapholithus*. Despite this, the author must be complemented for the high quality of his accompanying plates, especially those at high magnification. Micropalaeontologists will doubtless welcome the emphasis on ultrastructural details of individual coccoliths.

If this document had been published ten years ago many of my criticisms would have been unjustified. However, this is a 1991 publication and whilst I am unaware of the events leading to its obvious delay, it is difficult to understand why it was published without bringing it up to date. The inclusion of a reference to Samtleben and Bickert (1990) implies that there was the opportunity to do so prior to publication. The fact that this was not done means the introduction into the literature of erroneous and misleading information, which in the wrong hands may perpetuate the confusion. However, knowing that these problems exist, the article is worth purchasing just for the beautiful micrographs and new species descriptions, and at \$10 is very good value.

Ric Jordan, British Antarctic Survey, Cambridge

OCEAN DRILLING PROGRAM UPDATE

John Firth, Ocean Drilling Program

ODP Leg 134 drilled the Vanuatu arc-ridge collision zone. Two ridges, one nearly continuous and the second composed of seamounts and guyots, are being subducted below the New Hebrides Arc. sediments and crustal rocks of the continuous ridge have been offscraped and accreted onto the forearc during subduction, whereas the chain of guyots has produced much less deformation as it is subducted. Geochemical anomalies indicate possible channelized fluid flow along thrust faults within the accretionary prism. The nannofossil worker was Scott Staeker (FSU, Tallahassee Florida).

ODP Leg 153 drilled the Lau Basin, an actively spreading back-arc basin. The basin is older than expected (>5.6Ma) with seafloor-type spreading only occurring in the last 1Ma. Prior to this, extension occurred by repeated extensional rifting & associated local volcanism. A large variety of igneous basement rocks indicate complex heterogeneity of the mantle source. A surprising recovery of Eocene or older rhyolitic tuffs in this ocean has raised many questions as to their source. Nannofossil workers were Paula Quintero (U.S.G.S., Menlo Park, California) & Michael Styzen (Shell Offshore, New Orleans, Louisiana).

ODP Leg 136 drilled the Hawaiian Arc, south of Honolulu. Hole 843B was cored 70m into basement to provide a test site for emplacement of an Ocean Seismic Network broadband seismometer. Nannofossils recovered immediately above basement indicate an age of late Albian to early Cenomanian. This is the first direct age date of ocean crust in Hawaiian region. John Firth was the nannofossil worker.

ODP Leg 137 re-entered hole 504B, the deepest hole drilled into oceanic basement, & cleared the hole of debris to prepare for future drilling & downhole tool experiments. No palaeontologists sailed on this cruise.

ODP Leg 138 (May 6 - July 5 1991) will drill in the eastern Pacific Ocean to study Neogene high resolution palaeoceanography. The nannofossil palaeontologists will be Jose Abel Flores (Salamanca University, Spain) & Isabella Raffi (Parma University, Italy).

ODP Leg 139 (July 10 - Sept 11 1991) will drill in the sediment covered spreading centres of the Juan de Fuca ridge and the Gorda Ridge in the north east Pacific Ocean to study submarine hydrothermal systems & hydrothermal deposits. The nannofossil palaeontologist will be Shaozi Mao (FSU Tallahassee, Florida).

ODP Leg 140 (Sept 16 - Nov. 12, 1991) will either drill in Hole 504B through the sheeted dike complex in hopes of reaching layer 3 of the ocean crust or drill a complete section of ocean crust generated at a fast spreading centre with a subduction zone. No palaeontologists will sail on this cruise.

ODP Leg 141 (Nov. 17 1991 - Jan. 13 1992) will drill the Chile Triple Junction in order to provide a history of processes during the collision of a spreading centre with a subduction zone. **** Leg 141 is being staffed at this time ****.

ODP Leg 142 (Jan. 18 - Mar. 19, 1992) will drill the East Pacific Rise. Mostly engineering operations will happen, such as setting a hard rock guide base on the East Pacific Rise. No palaeontologists will sail on this cruise.

ODP Leg 143 (Mar. 24 - May 19, 1992) will drill atolls & guyots to determine the Cretaceous and early Cenozoic history of the Marshall Islands region. **** Staffing for this leg will begin this summer ****.

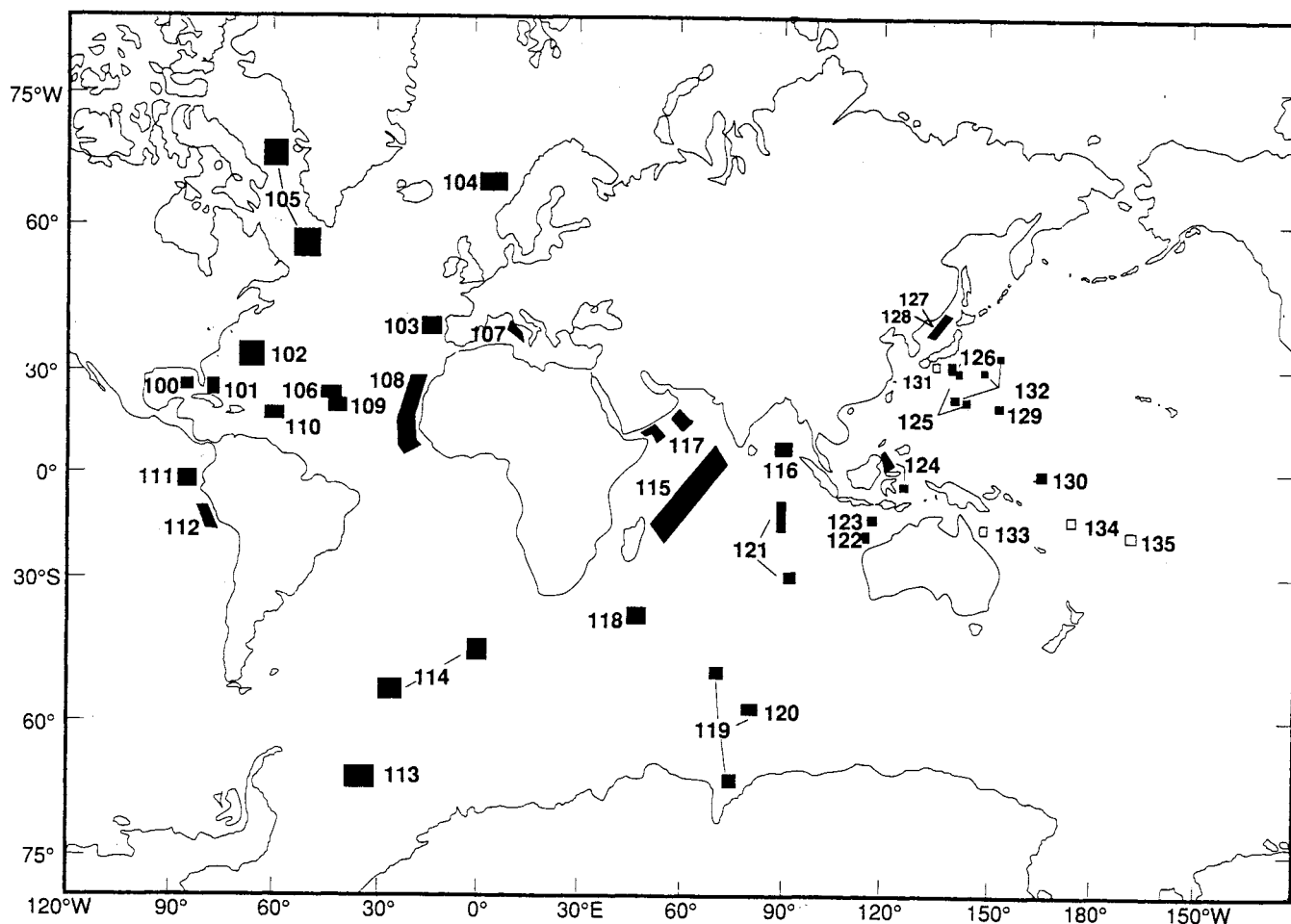
ODP Leg 144 (May. 24 - July 19, 1992) will be the second atolls & guyots leg and will study the Cretaceous history of simultaneous drowning of guyots of the northwest Pacific. **** Staffing for this leg will begin this summer ****.

ODP Leg 145 (July. 24 - Sept 21, 1992) will drill a North Pacific transect to study the palaeoceanography and plate reconstruction of northern high latitude Neogene and older sediments. **** Staffing for this leg will begin this summer ****.

ODP Leg 146 (Sept. 26 - Nov.21, 1992) will drill the Cascadia accretionary prism, in order to determine the nature of channelled and unchannelled flow of fluids escaping from the Cascadia margin. **** Staffing for this leg will begin this summer****.

ODP Leg 147 (Nov.26 1992 - Jan 21, 1993) will either continue operations on the East Pacific Rise (hard rock drilling) or core a complete section of oceanic crust generated at a fast spreading ridge (again hard rock drilling, this time in the Hess Deep). No palaeontologists will sail on this cruise.

To apply for participation as a shipboard scientist on an ODP cruise, send a letter of request and a resumé (curriculum vitae) to the manager of Science Operations, Ocean Drilling Program, Texas A & M University, Research Park, College Station, Texas, 77845. You will receive an application form to fill out and return to ODP.



INDEX MAP - Location of ODP Legs 100 - 135.

THE ICBN: THINGS YOU NEED TO KNOW - 4

Shirley E. van Heck, NAM, Assen, The Netherlands

In this issue we shall discuss the names of genera and subdivisions of genera, as dealt with in section 3 of chapter 3 of the ICBN, Articles 20 to 22.

ARTICLE 20

20.1: *The name of a genus is a substantive in the singular number, or a word treated as such, and is written with a capital initial letter (see Art. 73.2). It may be taken from any source whatever, and may even be composed in an absolutely arbitrary manner.*

20.2: *The name of a genus may not coincide with a technical term currently used in morphology unless it was published before 1 Jan. 1912 and accompanied by a specific name published in accordance with the binary system of Linnaeus.*

20.3: *The name of a genus may not consist of two words, unless these words are joined by a hyphen.*

20.4: *The following are not to be regarded as generic names:*

- (a) *Words not intended as names*
- (b) *Unitary designation of species*

This article does not seem to cause any problems. At least, I can't recall any contravention of it. The third paragraph, however, warrants some discussion. Contrary to its equivalent for specific epithets, that states that "*an epithet not so joined is not to be rejected but, when used, is to be united or hyphenated*", the discussion and examples accompanying this rule for generic names actually state that such a name is to be rejected. Theoretically this could be a problem, since such a name is not defined as invalid nor illegitimate in Art. 6: it appears to be an omission in the ICBN. Fortunately it is not a real problem, as the only examples I can think of (*Eu-discoaster*, *Helio-discoaster*) were published with a hyphen.

More controversial, perhaps, are some of the recommendations. Again I must stress that recommendations are not to be ignored, as they often evolve into rules.

Recommendation 20A

20A.1. *Authors forming generic names should comply with the following suggestions:*

- a) *To use Latin terminations insofar as possible*
- b) *To avoid names not readily adaptable to the Latin language*
- c) *Not to make names which are very long or difficult to pronounce in Latin*
- d) *Not to make names by combining words from different languages*
- e) *To indicate, if possible, by the formation or ending of the name the affinities or analogies of the genus*
- f) *To avoid adjectives used as nouns*
- g) *Not to use a name similar to or derived from the epithet of one of the species of the genus*
- h) *Not to dedicate genera to persons quite unconnected with botany or at least with natural science*
- i) *To give a feminine form to all personal generic names, whether they commemorate a man or a woman (see Rec. 73B).*
- j) *Not to form generic names by combining parts of two existing generic names because such names are likely to be confused with nothogeneric names. [in hybrids].*

Only a few of these stand out as necessary to keep in mind. The most common contravention of a) are generic names with Greek terminations, such as *Corollithion*, *Rhombolithion*, *Stephanolithion*. c) may be considered subjective, but I would vote for *Pseudotriquetrorhabdulus* as an example. h) implies that although it is perfectly

alright to name a species after your girlfriend or your father, you should not do that with a genus. But perhaps the one least known and most important is point i), which is further discussed in Art. 73 and Rec. 73B.

I would like to refer to INA Newsletter 12(2) where I discussed the relevant part of Art.73. The recommendation is as follows:

Recommendation 73B

73B.1. When a new name for a genus, subgenus, or section is taken from the name of a person, it should be formed as follows:

a)When the name of the person ends in a vowel, the letter -a is added, except when the name ends in -a, when -ea is added, or in -ea, when no letter is added.

*(thus *Emiliana* after Emiliani, *Hondaea* after Honda)*

b)When the name of the person ends in a consonant, the letters -ia are added; when the name ends in -er, the terminations -ia and -a are both in use.

*(e.g. not *Prinsius* but *Prinsia* after Prins, not *Haqius* but *Haqia* after Haq, and *Stradneria* after Stradner, not *Kamptnerius* but *Kamptneria* after Kamptner).*

c)In latinized personal names ending in -us this termination is dropped before applying the procedure described under a) and b).

Unlike the equivalent recommendation for specific epithets, there is no rule that states that the use of a termination contrary to the recommendation is to be treated as an error to be corrected. So *Kamptnerius*, *Haqius* and *Prinsius* are the correct forms, even though *Kamptneria*, *Haqia* and *Prinsia* would have been preferable.

In Chapter IV on orthography, where Art. 73 is found, there are a few more rules referring to generic names. Most are not very relevant to nanoplankton (art. 75, 76.1,2), but some are helpful:

76.3: Arbitrarily formed generic names or vernacular names or adjectives used as generic names, whose gender is not apparent, take the gender assigned to them by their authors. If the original author failed to indicate the gender, the next subsequent author may choose a gender, and his choice, if effectively published (...), is to be accepted.

76.4: Generic names ending in -oides or -odes are treated as feminine and those ending in -ites as masculine, irrespective of the gender assigned to them by the original author.

*e.g.: *Flabellites oblongus*, *Ceratolithoides arcuata*, but *Ceratolithoides aculeus*, since the latter is a noun!*

I shall skip the rules dealing with the names of subdivisions of genera, since these are not normally used in nanoplankton literature. That then only leaves the supra-generic taxa to be discussed next time.

REFERENCES:

Greuter, W., 1988: International Code of Botanical Nomenclature. Koeltz Scientific Books, 328 pp.

Heck, S. E. van, 1990: The ICBN: things you need to know - 2. *INA Newsl.* 12/2, 8-10

WRITING AND TALKING - IN ENGLISH AS YOUR SECOND OR THIRD LANGUAGE

Katharina von Salis Perch-Nielsen

Geological Institute ETH-Z, CH-8092 Zürich, Switzerland

In the following I will mix the hints from two short papers on publishing and giving talks by H.J. Oertli (Pau; personal communication) with my own experience from much reading and from many meetings and conferences.

Remember the "what, why, when, how, where and who" that served Rudyard Kipling as "six honest serving-men" that "taught me all I knew".

What you want to write/talk about will depend on what you have been working on lately - new observations?, new ideas?, new aspects in an old debate?, a long due overview? Avoid an exact repetition of something you have talked or written about before - unless you expect a quite different audience and/or readership. Think of the prospective audience: what aspects of your research will interest them most? An INA audience will be interested in more details about the distribution of coccoliths, the presence or absence of marker species etc. than your country's Geological Society (and less interested in the regional geology).

Why you want to give a talk or publish a paper may differ from occasion to occasion. These days very few people get travel funds to attend a conference unless they contribute at least an abstract and a talk or poster. You may need a certain number of publications to advance your career. Most important, and often the background for the best talks or publications: you have exciting new results and you want to share them with your colleagues. You might hope to inspire others, to start a debate. Experience tells that very rarely will you get much response from your peers: little or no discussion after your talk - especially if you used up all your allocated time! Little or no response either to your written statements, even if you send reprints to all those that should be interested. So keep within the time allowed and, if possible, structure your talk so that an intelligent audience will have questions. As for publications: do initiate a correspondence on topics you are interested in after reading a paper. And keep hoping your colleagues will do the same.

When you talk and/or publish will not depend solely on when you have something to talk or write about or when you think you know all about a certain topic that there is to know. You may be working in a team that has finished its study and wants/has to publish its results. Good teamwork is stimulating and there will be colleagues to read your part critically - also in their own interest! You may want to publish or talk about a partial result of a thesis or other voluminous study. Do so, by all means. So many theses are never published and preparations for an early talk or publication may make you realise that important aspects of the study have not yet been addressed. If you realise that a colleague is working on the same topic as you there are several choices: you hurry and publish first, you give up and assume that he/she will do a better job or you contact your colleague and propose a co-operation. I suggest the latter: you may win a friend. The first possibility is more likely to leave you if not with an enemy at least with a rather unhappy colleague.

When you want to attend a meeting or are invited to give a talk or write a paper about a topic you are known/assumed to master better than other colleagues available, you might not really have something new and decide to adapt an old theme to the different audience/readership. You also may decline the invitation .

How? Many scientists find it useful to start a new investigation with a kind of table of contents and, in so doing, roughly follow the editor's **IMRaD**: Introduction, Materials/Methods, Results and Discussion. The same is useful when preparing a talk.

But, do not forget the **title!** The title is the first thing any prospective listener or reader will encounter of your efforts. Often he/she will decide from the title alone whether or not to attend your lecture or read your paper. Thus it should contain most of the key-words you want your talk/paper to be registered by. In our case, state the kind and the age of the flora you discuss (Miocene calcareous nannofossils), what your main interest

is (biostratigraphic study of; taxonomy of; biogeography of; etc) and, if relevant, where your material came from (North Atlantic; Georgia; South China Sea etc.).

The **introduction** will include the state of the art before you started your research. There should be a definition of the gap in our knowledge you want to fill and how you intend to do this.

What type of **materials and methods** have you carried out your investigations with ? Describe new techniques used, discuss possible errors and explain how you arrived at your results.

The chapter on **results** should only include the results of **YOUR** studies, not a mixture of known and new. Discuss also your problems and results that do not correspond to an initial hypothesis that you might have had.

In the **discussion/conclusion** part of your talk/paper point out the significance of your results. You can make comparisons between previous and your studies. Also, you may find that your results can be interpreted in different ways.

Finally, you will have to prepare a **reference-list, acknowledgments, an abstract and illustrations**. For the **reference list** you will be grateful for your discipline in updating a list on your wordprocessor or on cards with the complete entries of the references that you consulted during the study. You are likely to have received the help of colleagues and friends in the course of your investigation: **acknowledge** it. Or, if their scientific contribution was significant, invite them as co-author(s).

After an **informative title, an informative abstract** is very important. A prospective reader or listener can turn to the abstract first before deciding to attend your lecture or to read your paper. Thus it should include enough of your results to make a reader curious to go on reading or to attend your talk.

The **illustrations** are an important part of many papers and almost all talks. In an illustration for a publication you can include many details. If at all possible, do not use the same illustrations for a talk, however, since such details will not be readable behind the first two rows of the audience, be it as a slide or as a transparency. With the latter you can improve matters and you may save the situation by highlighting, with a feltpen and in large letters, the information that you want to get through to your audience. Do not try to include more than about ten lines of text on a slide.

I support the inclusion of the names of fossils under their illustration on a plate. This makes it easier for the reader to compare forms without having to refer to a legend which may be several pages away. Also, one can compare a figure with the name directly with a microscopic view instead of having to follow a triangle with the eye for the same purpose of correlating picture, name and microscope view. If Cambridge University Press could produce such plates back in 1985 in *Plankton Stratigraphy* (Bolli et al.), this should be possible in many publications now - but one has to insist with the editor(s). The author then has to place the nicely written/printed name directly under the illustration. If you do not have a laser printer, ask a colleague with access to such a magic machine to do this for you. If you send a typewritten list of the names you need, this will not take much more time than an extended coffee break or two.

While you write your first draft, do not stop for stylistic, orthographic or other uncertainties but leave blanks to be filled in later. Compose provisional drafts for figures. Once completed you will have to continue with a first, second, third etc. revision of your manuscript. Once you feel reasonably happy with the results of your efforts, submit it to colleagues and friends. The former will comment on the scientific content, the latter may pick up passages difficult or impossible to understand. Both may improve your English. [and whenever possible get a native English speaker to read it - ed.]. Do not despair if your masterpiece comes back heavily annotated - this is a hard experience but perfectly normal. Rewrite the paper and, if necessary, repeat the submitting process.

Where you publish will depend on the content and the length of your MS. A major journal is a guarantee for a wide distribution of your paper. A specialist journal is advisable, when your results are likely to be of interest only for other specialists. Be sure to follow exactly the guidelines for authors.

Where you talk - well, these words have been written specially for those who intend to give a talk or talks at the forthcoming INA conference in Prague. You may find them useful also on other occasions.

DO'S AND DONT'S IN TALKS

Do imagine what would happen to our english/american colleagues if they gave their talks in your language....They will appreciate your efforts to do it in english, even if you make mistakes or cannot find one or the other word during your talk.

Do not give a talk by reading aloud a manuscript intended for print. You are likely to read too fast for a non-english/american audience to follow. Also, sentences constructed for reading are often too complicated to be grasped when listening. By the time one understands, the talker is already several sentences further and one has lost the connection. From this follows:

Do prepare a special text to read if you are one of those persons who feel happier with a complete text than with notecards containing only keywords or no written notes at all. The structure can be the same, following the above mentioned IMRaD schedule, but the text should contain less detail and simpler sentences.

Do illustrate your talk with informative and readable transparencies and/or slides (see above). This allows your colleagues whose english is very rudimentary to grasp at least some of the content of your investigation. Make up readable illustrations with the main conclusions (not more than 10 lines on a slide or transparency).

Do limit your illustrations to 1/minute. Imagine how many slides/ transparencies pass before the eyes of an audience during a day. How many of them are you able to recall the next day?

Do prepare yourself for the talk. Get an idea how much you can say in 10, 15, 20 or however many minutes you have. Make sure you reach the conclusions in time. If you always run out of time at the end and thus are likely not to reach the conclusions, bring them at the very start of your talk. This takes away any suspense as to what your conclusions might be but it is better than leaving your listeners uninformed and in suspense at the end of your talk.

Do talk loudly to your audience rather than mumbling into a manuscript. Try to make eye-contact with friends or other attentive listeners in the audience from time to time.

Do face your audience, even while showing slides. If you have many slides you are likely to show your back to the public most of the time while explaining the slide. One way of avoiding this is to make the slides self-explanatory: include the name of the fossil you want to show on the illustration; write out an explanation or figure-text (in big letters!) and include it in the illustration before you prepare the slide.

Do face your audience when showing transparencies. This is easier than when showing slides, since you can point with a transparent arrow or with a pointed pencil to the part of the illustration you are talking about on the transparency itself. You do not need to turn around to the projected picture of the transparency. So please don't.

Do keep within the time allowed for your talk or stop early, if otherwise there is no time for discussion.

And finally, **do** remember that most of the listeners and other speakers are not perfect presenters either nor do they master the english language perfectly. By keeping to most of the do's and don't's listed here you can be

certain that your talk will be better than most talks I have listened to in the past 30 years. I am looking forward to that.

SOME ADDITIONAL SUGGESTIONS OF THE EDITOR

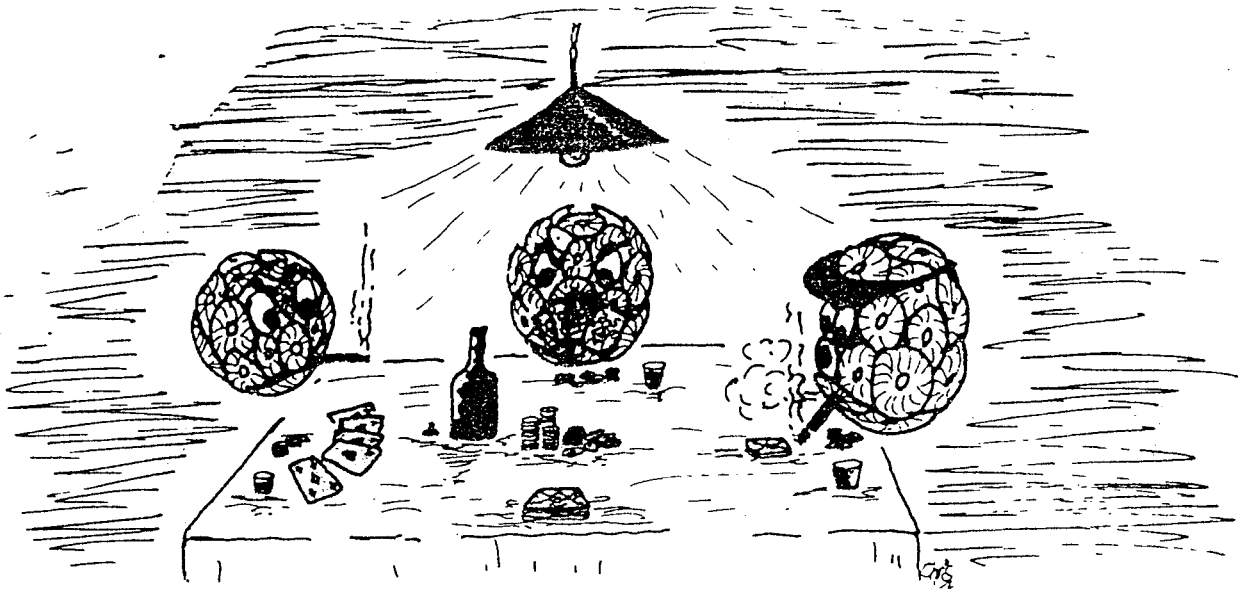
- For most nannoplankton work the bulk of the data can be summarised on distribution charts and text discussion can be limited to points of particular interest.

- Information on preservation and abundance of the flora and on the relative abundance of individual taxa should always be given.

- Be very careful when quoting ages in Ma to also give the relevant zonal information this is based on - some papers by well known workers are virtually useless because all results are related solely to an "absolute" time scale.

- In talks transparencies made by photographing plates of black and white light micrographs do not work, rephotographing the specimens with colour film is far more effective.

- For INA audiences include plenty of pictures of coccoliths.



A QUATERNARY NANNOFOSSIL RANGE CHART

Jeremy R. Young, *The Natural History Museum, London*

Quaternary nannofossils have been carefully and intensively studied over the past twenty years (references below) resulting in a zonation scheme which is remarkable in at least three ways. First, it has very fine resolution, around 200,000 years. Second, the zonation appears to be very reliable throughout low latitudes. This is indicated both by consistency of sequence of events (compare e.g. Matsuoka and Okada 1989 and Rio et al 1990) and by correlations with oxygen isotopes and magnetostratigraphy (e.g. Backman & Shackleton 1983, Thierstein et al 1977). Third, it is based on rather subtle events, there is no great change in nannofloras during the Pleistocene.

The range chart (Figure 1) summarises the development of quaternary nannofossil assemblages and the zonation based on this development. The diagram is almost entirely based on published work with limited input from my own experience.

DISTRIBUTION NOTES

Reticulofenestra spp. - this includes all reticulofenestrid coccoliths without slits or bridge (common names *R.minutula*, *Crenalithus doronicoides*, *Dictyococcites productus*, etc.). Range of large (56.5-9 μ m) variety from Pujos (1985 = *G.doronicoides* var.3), Takayama & Sato (1986 = *Reticulofenestra* sp. A), Matsuoka & Okada (1989 = *Reticulofenestra* sp. A).

Pseudoemiliania lacunosa - during the Pleistocene the larger circular forms of this species become more abundant relative to smaller elliptical forms e.g. Gartner (1977), Matsuoka & Okada (1989). A detailed study of this trend is in preparation (Negri et al in press).

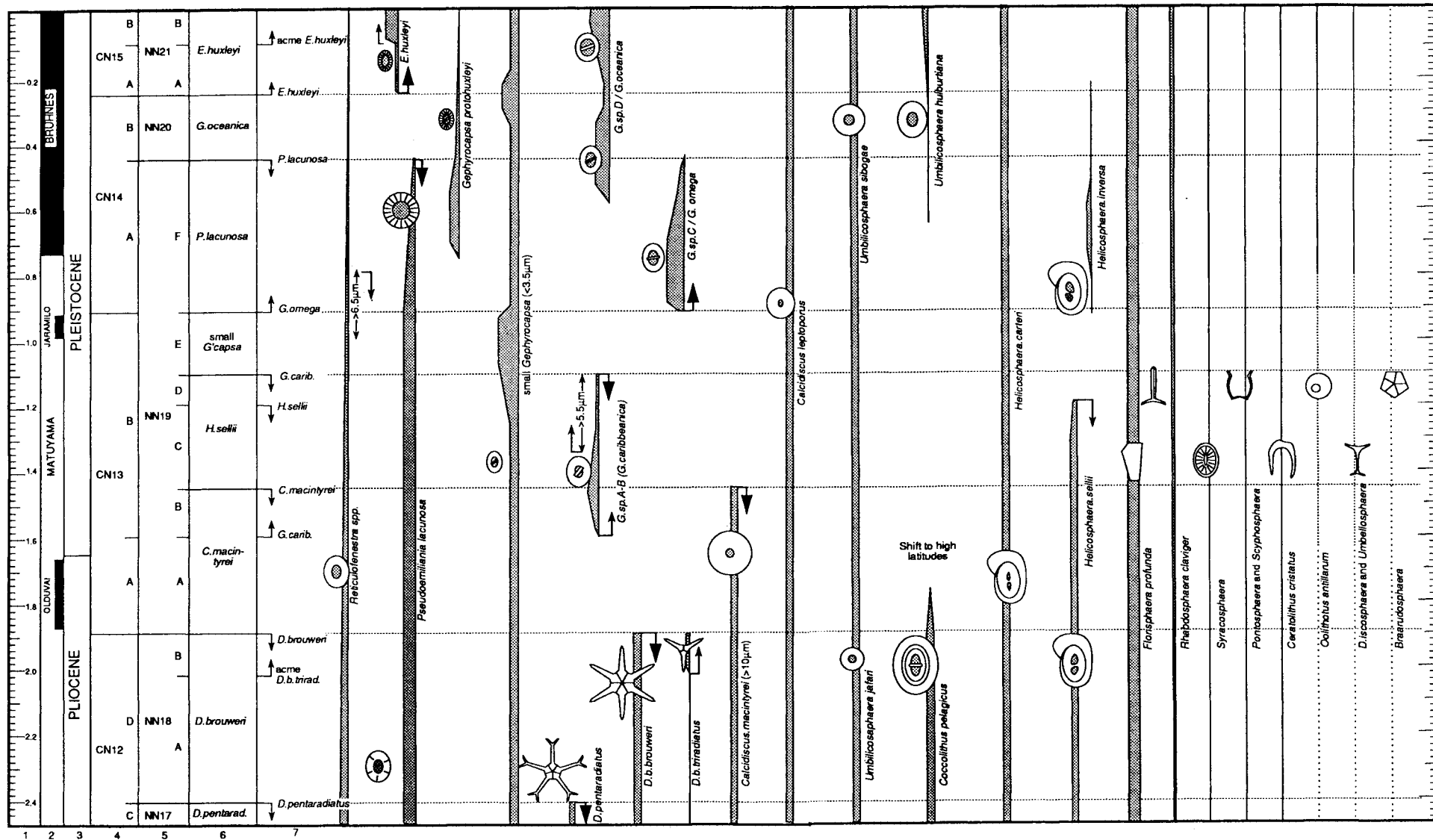
G.protohuxleyi - different authors give rather varying distribution patterns for this taxon so acmes of it may not be stratigraphically useful.

Small *Gephyrocapsa*- general grouping of *Gephyrocapsa* species <3.5 μ m, such as *G.aperta*, *G.ericsonii*, and *G.sinuosa*, can include *G.protohuxleyi* (N.B. More sophisticated definitions of the group are possible, see Matsuoka & Okada 1990). The acme around the NN20/21 boundary is based Verbeek (1990), with support from Pujos-Lamy (1977), Breheret (1978) and Matsuoka & Okada (1990). It is now well established that the group occurs down to the mid-Pliocene (e.g. Driever 1989).

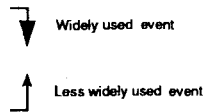
Larger *Gephyrocapsa* species - Matsuoka and Okada (1990) suggested that three evolutionary cycles of development of larger *Gephyrocapsa* could be recognised in the Pleistocene, and there is abundant confirmatory evidence for the pattern they describe in other studies (Samtleben 1980, Rio 1982, Bergen 1984, Takayama & Sato 1986, Rio et al 1990). It is thus possible to use phylogenetic definitions of the species (cf. Young 1990 fig. 7/C). In any given larger *Gephyrocapsa* assemblage a range of morphotypes occurs but the presence of characteristic end member morphotypes enables most assemblages to be rapidly assigned to one of the evolutionary cycles/species. On the chart I have used the designations of Matsuoka & Okada (*Gephyrocapsa* spp. A-D) and the species names which seem most appropriate/valid, short synonymies are given below for them and outlines of their characteristics.

Calcidiscus macintyreii - Various criteria have been proposed for subdividing the genus *Calcidiscus*, for the purpose of Quaternary stratigraphy separation of specimens >10 μ m across, as *C.macintyreii*, has proven most successful (e.g. Rio et al 1990).

Umbilicosphaera - The medium sized (4-8 μ m) species *U.sibogae* (syn *U.mirabilis*) is rather characteristic of the Pleistocene but appears to evolve gradually from the small (2-4 μ m) Neogene specie *U.jafari*. (my. obs.).



- 1 - Time in million years - correlations mainly after Matsuoka & Okada 1990, Rio et al (1990).
- 2 - Magnetostratigraphy
- 3 - Chronostratigraphy
- 4 - Zonation of Okada & Bukry (1980).
- 5 - Zonation of Martini (1971), with Mediterranean sub-zones of Rio et al (1990), and Driever (1988).
- 6 - Zonation of Gartner (1977)
- 7 - Biostratigraphic events used in zonation schemes.



Quaternary Nannofossil Biostratigraphy
J.R. Young 1991

The elliptical species *U.hulburtiana* has only occasionally been recorded (e.g. Biekart 1989, Matsuoka & Okada 1989), so its range is uncertain.

Coccolithus pelagicus - the shift to higher latitudes (>35° cf. Nishida 1980) of this species has been widely noted, e.g., McIntyre & Be (1967), Raffi & Rio (1979), Nishida (1980). Pujos (in press) discusses possible interpretations of occasional lower latitude occurrences.

Helicosphaera inversa - This species was described by Gartner (1977), the restricted range in the late Pleistocene is confirmed by e.g. Takayama & Sato (1986), and Matsuoka & Okada (1989). It is distinguished from *H.sellii* by having a bar which points toward the wing.

TAXONOMIC NOTES - LARGER *GEPHYROCAPSA* SPECIES

N.B. Taxonomic references for the other species can be found in Perch-Nielsen (1985).

G. spp. A & B / Gephyrocapsa caribbeanica Boudreaux & Hay 1967

Gephyrocapsa caribbeanica Boudreaux & Hay, in Hay et al 1967, p.447, pls.12-13/1-4; Samtleben 1980, p.110, pl.14/9-14, Takayama & Sato 1986, p.691.

Gephyrocapsa lumina Bukry 1973 p.678, pl.3/1-4.

Gephyrocapsa spp. A & B Matsuoka and Okada 1990, p.260, pl.1/17-18, 2/1-11

Gephyrocapsa spp. 1 & 2 Rio 1982, p.329, pl.2/1-12.

Characteristic morphotype; Bridge steeply inclined (40-60°) to the transverse axis, central opening narrow to nearly closed. Coccolith length up to 7µm. The group is often divided into *G.caribbeanica* and *G.oceanica* on the basis of central opening size.

G. sp. D / Gephyrocapsa oceanica Kamptner 1943

Gephyrocapsa oceanica Kamptner 1943 p.45, figs.4-5; Samtleben 1980, p.111, pl.15/5-8.

Gephyrocapsa margerelii Breheret 1978, p.447, pl.2/1-2.

Gephyrocapsa sp.D Matsuoka & Okada 1990, p.260, pl.3/1-11.

Characteristic morphotype; Bridge at moderate angle (20-40°) to transverse axis, lower angle in later forms. Central opening wide. Coccolith length up to 6µm.

G. sp. C / Gephyrocapsa omega Bukry 1973

Gephyrocapsa omega Bukry 1973, p.679, pl.3/5-11; Bergen 1984, p.432, pl.7/17.

Gephyrocapsa oceanica ssp *rodela* Samtleben 1980, p.112, pl.15/9-11.

Gephyrocapsa parallela Hay & Beaudry 1973, p.672, pl.1/10-12.; Takayama & Sato 1986, p.691, pl.3/8.

Gephyrocapsa sp. 3 Rio 1982, p.330, pl.3/1-10, Rio et al 1990, p.526.

Gephyrocapsa sp. C Okada & Matsuoka 1990, p.206, pl.4/1-10.

Characteristic morphotype; Bridge at low angle (15-30°) to transverse axis. Central opening moderately wide. Coccolith length up to 5µm.

REFERENCES

- Backman J. & Shackleton N.J., 1983: Quantitative biochronology of Pliocene and early Pleistocene calcareous nannofossils from the Atlantic, Indian and Pacific Oceans. *Mar. Micropaleont.*, 8, 141-170.
- Bergen J.A., 1984: Calcareous nannoplankton from DSDP leg 78A: Evidence for imbricate thrusting at the lesser Antilles active margin. *IRDSDP, 78A*, 411-447.
- Biekart J.W., 1989: The distribution of calcareous nannofossils in Late Quaternary sediments collected by the Snellius II expedition in some southeast Indonesian basins. *Procs. k. ned. Akad. Wet.*, B92, 77-141.
- Breheret J.G., 1978a: Formes nouvelles quaternaires et actuelles de la famille des Gephyrocapsaceae (Coccolithophorides). *C.r. Acad. Sci., Paris*, D287, 447-449.
- Breheret J.G., 1978b: Biostratigraphie du Pleistocene superieur et de l'Holocene de deux carottes de l'Atlantique Nord a l'aide des coccolithes. *C.r. Acad. Sci., Paris*, D287, 599-601.

- Bukry D. 1973: Coccolith stratigraphy, East Equatorial Pacific, Leg 16 DSDP. *IRDSDP*, 16, 653-711.
- Driever B.W.M., 1980: Calcareous nannofossil biostratigraphy and paleoenvironmental interpretation of the Mediterranean Pliocene. *Utrecht Micropalaeont. Bull.*, 36, 1-245
- Gartner S., 1977: Calcareous nannofossil biostratigraphy' and revised zonation of the Pleistocene. *Mar. Micropalaeont.*, 2, 1-25.
- Hay W.W. & Beaudry F.M., 1973: Calcareous nannofossils: Leg 15 DSDP. *IRDSDP*, 15, 625-684.
- Hay W.W., Mohler H.P., Roth P.H., Schmidt R.R., & Boudreaux J.J., 1967: Calcareous nannoplankton zonation of the Cenozoic of the Gulf Coast and Caribbean - Antillean area and trans-oceanic correlation. *Trans. Gulf Coast Ass. geol. Socs.*, 17, 428-480.
- McIntyre A., Be A.W.H. & Preiksitas R., 1967: Coccoliths and the Pliocene - Pleistocene boundary. *Progr. Oceanogr.*, 4, 3-25.
- Martini E., 1971: Standard Tertiary and Quaternary calcareous nannoplankton zonation . In, Farinacci A. (ed.) *Procs. II Planktonic Conf., Roma 1970*, 2, 739-786.
- Matsuoka H. & Okada H., 1989: Quantitative analysis of quaternary nannoplankton in the sub-tropical North West Pacific Ocean. *Mar. Micropaleont.*, 14, 97-114.
- Matsuoka H. & Okada H., 1990: Time-progressive morphometric changes of the genus *Gephyrocapsa* in the quaternary sequence of the tropical Indian Ocean, Site 709. *Procs. ODP Sci. Res.*, 115, 255-270.
- Negri A., Villa G., & Wei W., in press: Morphometric study of *Pseudoemiliana lacunosa* and its biochronological consequences. Abstract INA Prague Conf., *INA Newsl.*, 13/2.
- Nishida S., 1982: Was *Coccolithus pelagicus* (Wallich) Schiller a cold water species? *Bull. Nara Univ. educ.*, 31, 63-77.
- Okada H. & Bukry D., 1980: Supplementary modification and introduction of code numbers to the low latitude coccolith biostratigraphic zonation . *Mar. Micropaleont.*, 5, 321-325.
- Perch-Nielsen K., 1985: Cenozoic calcareous nannofossils. In, Bollii H.M. et al (eds.) "Plankton Stratigraphy", Cambridge University Press, p.329-426.
- Pujos-Lamy A., 1977: *Emiliana* et *Gephyrocapsa* (nannoplankton calcaire): biometrie et interet biostratigraphique dans le Pleistocene superieur marin des Acores. *Revta. esp. Micropalaeont.*, 9, 69-84.
- Pujos A., 1984: Quaternary nannofossils from the Goban Spur, eastern North Atlantic Ocean, DSDP Holes 548-549A. *IRDSDP*, 80/2, 767-792.
- Pujos A., 1985: Nannofossils from Quaternary deposits in the high productivity area of the central equatorial Pacific, DSDP Leg 85. *IRDSDP*, 85, 553-579.
- Raffi I & Rio D., 1979: Calcareous nannofossil zonation of DSDP Site 132 (Tyrrhenian Sea - Western Mediterranean). *Riv. ital. Paleont. Stratigr.*, 85, 127-172.
- Rio D., 1982: The fossil distribution of coccolithophore genus *Gephyrocapsa* Kamptner and related Plio-Pleistocene chronostratigraphic problems. *IRDSDP*, 68., 325-346.
- Rio D., Raffi I. & Villa G., 1990: Plio-Pleistocene calcareous nannofossil distribution patterns in the western Mediterranean. *Proc ODP Sci. Res.*, 107, 5613-553.
- Samleben C., 1980: Die evolution der Coccolithophoriden Gattung *Gephyrocapsa*. Nach befunden im Atlantik. *Palaont. Z.*, 54, 91-127.
- Takayama T. & Sato T., 1986: Coccolith biostratigraphy of the North Atlantic Ocean, DSDP leg 94. *IRDSDP*, 94, 651-702.
- Verbeek J.W., 1990: Late Quaternary calcareous nannoplankton biostratigraphy for the northern Atlantic Ocean. *Meded. rijks geol. dienst*, 44, 13-33.
- Young J.R., 1990: Size variation of Neogene *Reticulofenestra* coccoliths from Indian Ocean DSDP cores. *J. Micropalaeont.*, 9, 71-86.

BIBLIOGRAPHY AND TAXA OF CALCAREOUS NANNOPLANKTON - 17

Compiled by William G. Siesser

A435 1	ALCALA-HERRERA, J., GARTNER, S., & GROSSMAN, E. 1990 Single or multiple extinctions at the Cretaceous/Tertiary boundary: the South Atlantic carbon record. Geol. Soc. Amer. Abst. with Programs, Dallas, p. A279.	Abst. Isot;Ecol. K/T BDY Atlantic S
2	Aubry, M.-P. 1990 Calcareous nannoplankton evolution across the Cretaceous/Paleogene boundary. Geol. Soc. Amer. Abst. with Programs, Dallas, p. A107.	Abst. Evol. K/T BDY
3	BACKMAN, J., SCHNEIDER, D. A., RIO, E. & OKADA, H. 1990 Neogene low-latitude magnetostratigraphy from Site 170 and revised age estimates of Miocene nannofossil datum events. In: Duncan, R.A., Backman, J., Peterson, L. C. et al., Proc. ODP, Sci. Results, 115: 271-276, 2 figs., 1 tbl.	Strat. (Strat.) TERT.U. Indian
4	BALCH, W. M., EPPLEY, R.W., ABBOTT, M.R., & REID, F.M.H. 1989 Bias in satellite-derived pigment measurements due to coccolithophores and dinoflagellates. J. Plankton Res., 11(3): 575-581.	Living; Ecol. Atlantic N
5	BURNETT, J. 1990 Non-correlation of nannofloral composition with isotopic variation in Cenomanian chalk-marl rhythms, south-eastern England. INA Newsl., 12(3): 65-66, 1 fig.	Strat;Isot CRET.U. Europe W.
6	BURNETT, J. 1990 A new nannofossil zonation scheme for the Boreal Campanian. INA Newsl., 12(3): 67-70, 2 figs.	<u>Strat.</u> CRET. U. Europe W.
7	CHAVEZ, F. P., BUCK, K. R., & BARBER, R. T. 1990 Phytoplankton taxa in relation to primary production in the equatorial Pacific. Deep-Sea Res., 37(11): 1733-1752.	Living; Ecol. Pacific C.
8	DMITRENKO, O. B. 1989 Biological zonation of the Atlantic and Indian Oceans in the Paleogene as indicated by calcareous nannoplankton. Okeanologia, 29(3): 348-352.	Ecol. TERT.L. Atlantic; Indian
9	DMITRENKO, O. B. 1990 Peculiarities of biostratigraphic dismembering of Quarternary <sic> sections in the Indian Ocean tropical zone according to calcareous nannoplankton. Okeanologia, 30(5): 797-803.	Strat. QUAT. Indian

- | | | | |
|---|---|------|---|
| 1 | DUAN, W. & HUANG, Y.
Middle and late Tertiary palaeogeography and palaeo-
environments on the northern continental margin of the
South China Sea.
Acta Geol. Sin., 63(4): 361-372. | 1989 | Strat;Ecol
TERT.L-U.
Asia E. |
| 2 | FORNACIARI, E., RAFFI, I., RIO, D., VILLA, G.,
BACKMAN, J. & OLAFSSON, G.
Quantitative distribution patterns of Oligocene and
Miocene calcareous nannofossils from the western
equatorial Indian Ocean.
In: Duncan, R. A., Backman, J., Peterson, L. C.
et al., Proc. ODP, Sci. Results, 115: 237-2543,
13 figs., 1 tbl., 3 pls. | 1990 | Strat.;
(Syst.)
TERT.L-U.
Indian |
| 3 | FRYDAS, D.
Plankton stratigraphy of the Pliocene and lower
Pleistocene of the SW-Peloponnes, Greece.
Newsl. Strat., 23(2): 91-108, 3 figs., 1 tbl.
(In German with English abstract) | 1990 | Strat.;
(Syst.)
TERT.U;
QUAT.
Europe W. |
| 4 | FRYER, P., PEARCE, J. A., & SHIPBOARD SCIENTIFIC PARTY
Proc. ODP, Init. Repts., vol. 125 (Bonin/Marianna
region; Sites 778-786). 1092 pp.
[Nannofossils by Y. Xu] | 1990 | Tech.;
(Strat.)
TERT.U.;
QUAT.
Pacific N. |
| 5 | GARTNER, S.
Neogene calcareous nannofossil biostratigraphy, Leg 116
(Central Indian Ocean).
In: Cochran, J. R., Stow, D. A. V. et al., Proc.
ODP, Sci. Results, 116: 165-187, 9 figs., 2 tbls. | 1990 | Strat.
TERT.U.;
QUAT.
Indian |
| 6 | GIRAUDEAU, J. & PUJOS, A.
Calcareous nannofossils based Transfer Function in
Caribbean Pleistocene sediments.
Oceanol. Acta, 13(4): 453-469, 10 figs., 7 tbls.
(In French with English abstract) | 1990 | Ecol.
QUAT.
Atlantic C |
| 7 | GREEN, J. C., PERCH-NIELSEN, K., & WESTBROEK, P.
Phylum Prymnesiophyta.
In: Margulis, L., Corliss, J. O., Melkonian, M. &
Chapman, D. J. (Eds.), Handbook of Protoctista. Jones
& Bartlett, Boston, pp. 293-317, 13 figs., 1 tbl. | 1990 | Overview |
| 8 | GRIFFIS, K. & CHAPMAN, D. J.
Modeling Cretaceous-Tertiary boundary events with extant
photosynthetic plankton: effects of impact-related acid
rain.
Lethaia, 23(4); 379-383, 3 tbls. | 1990 | Living;
Ecol. |
| 9 | HECK, S. E. VAN
The ICBN: things you need to know - 3.
INA Newsl., 12(3): 59-61. | 1990 | Syst. |

- | | | | |
|----|--|------|--|
| 1 | HERBERT, T. D. & D'HONDT, S. L.
Precessional climate cyclicity in late Cretaceous-early Tertiary marine sediments: a high resolution chronometer of Cretaceous-Tertiary boundary events.
Earth Planet. Sci. Lett., 99: 263-275, 6 figs., 1 tbl. | 1990 | Strat.
K/T BDY
Atlantic S |
| 2 | HOLLIGAN, P. M., AARUP, T. & GROOM, S. B.
The North Sea: satellite colour atlas.
Cont. Shelf. Res., 9(8): 667-765. | 1989 | Living;
Ecol.
Atlantic N |
| 3 | HOUGHTON, S. D.
Calcareous nannofossils.
In: Riding, R. (Ed.), Calcareous Algae and Stromatolites. Springer-Verlag, Berlin, pp. 217-266, 19 figs., 2 tbls. | 1991 | Overview |
| 4 | HUDSON, R. J. M. & MOREL, F. M. M.
Iron transport in marine phytoplankton: kinetics of cellular and medium coordination reactions.
Limnol. Oceanogr., 35(5): 1002-1020, 12 figs., 6 tbls. | 1990 | Living;
Biol;Ecol. |
| 5 | HULBERT, E. M.
Description of phytoplankton and nutrients in spring in the western North Atlantic Ocean.
J. Plankton Res., 12(1): 1-28. | 1990 | Living;
Ecol.
Atlantic N |
| 6 | INGLE, J. C., SUYEHIRO, K. & SHIPBOARD SCIENTIFIC PARTY
Proc. ODP, Init. Repts., vol. 128 (Japan Sea: Sites 794, 798-799). 652 pp.
[Nannofossils by J. P. Muza] | 1990 | Tech;
(Strat.)
TERT.U.;
QUAT.
Pacific N |
| 7 | JASPER, J. P. & HAYES, J. M.
A carbon isotope record of CO ₂ levels during the late Quaternary.
Nature, 347: 462-464, 2 figs. | 1990 | Isot;Ecol.
QUAT.
Atlantic C |
| 8 | JOHANSEN, J. R., DOUCETTE, G. J., BARCLAY, W. R. & BULL, J. D.
The morphology and ecology of <i>Pleurochrysis carterae</i> var. <i>dentata</i> var. nov. (Prymnesiophyceae), a new coccolithophorid from an inland saline pond in New Mexico, USA.
Phycologia, 27(1): 78-88, 17 figs., 1 tbl. | 1988 | Living;
Syst;Biol.
America N. |
| 9 | KAISER-WEIDICH, B. & SCHAIRER, G.
Stratigraphic correlation of ammonites, calpionellids and nannoconids of the Upper Jurassic and Lower Cretaceous of the northern Calcareous Alps.
Eclogae Geol. Helv., 83(2): 353-387, 2 figs., 2 tbls., 5 pls.
(In German with English abstract) | 1990 | Strat.;
Syst.
JURA.U.-
CRET.L.
Europe W. |
| 10 | KAMP, P. J. J., WAGHORN, D. B. & NELSON, C. S.
Late Eocene-early Oligocene integrated isotope stratigraphy and biostratigraphy for paleoshelf sequences in southern Australia: paleoceanographic implications.
Palaeogeogr., Palaeoclimatol., Palaeoecol., 80: 311-323, 5 figs. | 1990 | Strat.;
Ecol;Isot.
TERT.L.
Australia |

- 1 **KLEIJNE, A.** 1990 Living;
Ecol.;
(Syst.)
Pacific C.
Distribution and malformation of extant calcareous
nannoplankton in the Indonesian Seas.
Marine Micropaleontol., 16: 293-316, 4 figs.,
6 tbls., 4 pls.
- 2 **MARLOWE, I. T., KAUR, R., SMITH, A. J., & ROGERS, L. J.** 1989 Abst.
Biol.
Extracellular organic excretion by marine phytoplankton.
In: Rogers, L. T., Gallon, J. R. (Eds.), Biochemistry
of the Algae and Cyanobacteria. Proc. Phytochem.
Soc. Europe, 28: 311.
- 3 **MARLOWE, I. T., ROGERS, L. J., & SMITH, A. J.** 1989 Biol.
Extent and nature of extracellular organic production
by the marine coccolithophoroid *Hymenomonas carterae*.
Mar. Biol., 100(3): 381-391.
- 4 **MATSUOKA, H.** 1990 Diag.
QUAT.
Pacific C
A new method to evaluate dissolution of CaCO₃ in the
deep-sea sediments.
Trans. Proc. Palaeontol. Soc. Japan, 157: 430-434,
3 figs.
- 5 **MATSUOKA, H. & OKADA, H.** 1990 Strat.;
(Syst.)
QUAT.
Indian
Time-progressive morphometric changes of the Genus
Gephyrocapsa in the Quaternary sequence of the
tropical Indian Ocean, Site 709.
In: Duncan, R. A., Backman, J., Peterson, L. C.
et al., Proc. ODP, Sci. Results, 115: 255-270,
10 figs., 10 figs., 1 tbl., 4 pls.
- 6 **MÜTTERLOSE, J. & WISE, S. W. Jr.** 1990 Strat.;
Syst.
CRET.L.
Atlantic S
Lower Cretaceous nannofossil biostratigraphy of ODP Leg
113 Holes 692B and 693A, continental slope off east
Antarctica, Weddell Sea.
In: Barker, P. F., Kennett, J. P. et al., Proc. ODP,
Sci. Results, 113: 325-351, 12 figs., 4 tbls., 6 pls.
- 7 **NELSON, B. K.** 1990 Abst.
Isot.
K/T BDY
Europe W.
Time evolution of seawater Sr isotopic composition about
3 My prior to the Cretaceous-Tertiary boundary, Bidart,
S. W. France.
Geol. Soc. Amer. Abst. with Programs, Dallas, p. A50.
- 8 **OBERHANSLI, H. & VON SALIS PERCH-NIELSEN, K.** 1990 Isot;Ecol.
TERT.L.
Worldwide
The Paleocene ¹³C-event: Was it due to changes in the
storage rate of terrestrial biomass?
Veroff. Ubersee-Mus., 10: 99-112, 212-219, 8 figs.
- 9 **OKADA, H.** 1990 Strat.;
(Syst.)
TERT.L.;
QUAT.
Indian
Quaternary and Paleogene calcareous nannofossils, Leg 115.
In: Duncan, R. A., Backman, J., Peterson, L. C.
et al., Proc. ODP, Sci. Results, 115: 129-174,
3 figs., 20 tbls., 3 pls.
- 10 **PENTECOST, A.** 1991 Biol.
Calcification processes in algae and cyanobacteria.
In: Riding, R. (Ed.), Calcareous algae and Stromato-
lites. Springer-Verlag, Berlin, pp. 3-20, 4 figs.

- | | | | |
|---|--|-------|---|
| 1 | POPPE, L. J., HALL, R. E., COUSMINER, H. L., STANTON, R. W., & STEINKRAUS, W. E.
Biostratigraphy, lithofacies and paleoenvironments of the Gulf 718-1 well, U. S. Mid-Atlantic outer continental shelf.
Mar. Geol., 92:27-50, 7 figs., 4 tbls. | 1990 | Strat.
TERT.;
CRET.
America N |
| 2 | POSPICHAL, J. J. & WISE, S. W. Jr.
Maestrichtian calcareous nannofossil biostratigraphy of Maud Rise ODP Leg 113 Sites 689 and 690, Weddell Sea.
In: Barker, P. F., Kennett, J. P. et al., Proc. ODP, Sci. Results, 113: 465-487, 9 figs., 3 tbls., 9 pls. | 1990a | Strat.;
Syst.
CRET.U.;
TERT.L.
Atlantic S |
| 3 | POSPICHAL, J. J. & WISE, S. W. Jr.
Calcareous nannofossils across the K/T boundary, ODP Hole 690C, Maud Rise, Weddell Sea.
In: Barker, P. F., Kennett, J. P. et al., Proc. ODP, Sci. Results, 113: 515-532, 8 figs., 5 pls. | 1990b | Strat.;
(Syst.)
K/T BDY
Atlantic S |
| 4 | POSPICHAL, J. J. & WISE, S. W. Jr.
Paleocene to middle Eocene calcareous nannofossils of ODP Sites 689 and 690, Maud Rise, Weddell Sea.
In: Barker, P. F., Kennett, J. P. et al., Proc. ODP, Sci. Results 113: 613-638, 4 figs., 5 tbls., 6 pls. | 1990c | Strat.;
Syst;Ecol.
TERT.L
Atlantic S |
| 5 | RAHMANN, A. & ROTH, P. H.
Late Neogene paleoceanography and paleoclimatology of the Gulf of Aden region based on calcareous nannofossils.
Paleoceanogr., 5(1): 91-107, 7 figs., 1 tbl. | 1990 | Ecol.
TERT.U.
Indian |
| 6 | RANGIN, C., SILVER, E. A., & SHIPBOARD SCIENTIFIC PARTY
Proc. ODP, Init. Repts., vol. 124 (Celebes and Sulu Seas; Sites 767-771). 916 pp.
[Nannofossils by C. Müller & J.-P. Shyu] | 1990 | Tech.;
(Strat.)
TERT.U.;
QUAT.
Pacific C. |
| 7 | RIO, D., FORNACIARE, E. & RAFFI, I.
Late Oligocene through early Pleistocene calcareous nannofossils from western equatorial Indian Ocean (Leg 115).
In: Duncan, R. A., Backman, J., Peterson, L. C. et al., Proc. ODP, Sci Results, 115: 175-235, 24 figs., 30 tbls., 14 pls. | 1990 | Strat.;
(Syst.)
TERT.L-U.
Indian |
| 8 | RIO, D., RAFFI, I. & VILLA, G.
Pliocene-Pleistocene calcareous nannofossil distribution patterns in the western Mediterranean.
In: Kastens, K. A., Mascle, J. et al., Proc. ODP, Sci. Results, 107: 513-533, 10 figs., 1 tbl. | 1990 | Strat.
TERT.U.;
QUAT.
Mediterr. |
| 9 | SATSUKI, M., FUKUSHIMA, H., & SUGIMORI, Y.
Remotely sensed phytoplankton pigment concentrations around Japan using the coastal zone color scanner.
In: Okaichi, T., Anderson, D. M., & Nemoto, T. (Eds.), Red Tides: Biology, Environmental Science and Toxicology, pp. 185-188. | 1989 | Living;
Ecol.
Pacific N. |

- | | | | |
|----|---|------|---|
| 1 | SCOTT, R. W.
Chronostratigraphy of Plio-Pleistocene sequences,
offshore Louisiana.
AAPG Bull., 75(3): 669. | 1991 | Abst.
Strat.
TERT.U.;
America N. |
| 2 | SHAFFER, B. L., PACTH, J. A. & BOWEN, B. E.
The biostratigraphic basis for Gulf Coast Miocene
sequence stratigraphy.
AAPG Bull., 75(3): 670-671. | 1991 | Abst.
Strat.;
(Strat.)
TERT.U.
America N. |
| 3 | SHAFIK, S.
The Maastrichtian and early Tertiary record of the Great
Australian Bight Basin and its onshore equivalents on the
Australian southern margin: a nannofossil study.
BMR J. Aust. Geol. Geophys., 11: 473-497, 9 figs.,
3 tbls. | 1990 | Strat.;
<u>Syst</u> ;Ecol.
TERT.L.
Australia |
| 4 | SIESSER, W. G.
Bibliography and taxa of calcareous nannoplankton - 16.
INA Newsl., 12(3): 71-81. | 1990 | Bibl. |
| 5 | SIESSER, W. G., BRALOWER, T. J. & DE CARLO, E. H.
<i>Braarudosphaera</i> -rich sediments on the Exmouth Plateau,
eastern Indian Ocean.
AAPG Bull., 75(3): 672. | 1991 | Abst.
Ecol.
TERT.L-U.
Indian |
| 6 | TAMAKI, K, PISCIOTTO, K. A. & SHIPBOARD SCIENTIFIC PARTY
Proc. ODP, Init. Repts., vol 127 (Japan Sea; Sites
794-797). 844 pp.
[Nannofossils by A. Rahman] | 1990 | Tech.;
(Strat).
TERT.U.;
QUAT.
Pacific N. |
| 7 | TAYLOR, B., FUJIOKA, K. & SHIPBOARD SCIENTIFIC PARTY
Proc. ODP, Init. Repts., vol. 126 (Bonin Arc-
Trench; Sites 787-793). 1002 pp.
[Nannofossils by J. V. Firth & M. Isiminger-
Kelso] | 1990 | Tech.;
(Strat.)
TERT.U.;
QUAT.
Pacific N. |
| 8 | THOMPSON, L. B., PERCIVAL, S. F. Jr., SELZNICK, M. R.,
& HEINE, C. J.
Stratigraphy and micropaleontology of the Campanian
shelf of Texas.
Micropaleontol. Spec. Pub. 5, Micropaleontol. Press,
New York, 144 pp., 66 figs., 24 pls. | 1990 | (Strat.);
(Syst.)
CRET.U.
America N. |
| 9 | THOMPSON, P. R. & BAUM, G. R.
Biostratigraphic, chronostratigraphic and stratigraphic
sequence analysis of lower Tertiary marine sediments of
Alabama for indicators of sea-level change.
AAPG Bull., 75(3): 681. | 1991 | Abst.
Strat.
TERT.L.
America N. |
| 10 | WANG, H. & McCAVE, I. N.
Distinguishing climatic and current effects in mid-
Pleistocene sediments of Hatton and Gardar drifts,
NE Atlantic.
Geol. Soc. Lond., 147(2): 373-383. | 1990 | Ecol.
QUAT.
Atlantic N |

- | | | | |
|--------------|---|-------|--|
| 1 | WEI, W.
Reevaluation of the Eocene ice-rafting record from subantarctic cores.
Antarctic J., 3: 108-110, 3 figs. | 1989a | Strat.
TERT.L.
Pacific S. |
| 2 | WEI, W.
Latitudinal thermal gradient of the middle Eocene/Oligocene South Atlantic Ocean: calcareous nannoplankton evidence.
Antarctic J., 3: 110-112, 2 figs., 1 tbl. | 1989b | Ecol.
TERT.L.
Atlantic S |
| 3 | WEI, W.
A new technique for constructing camera-ready range charts using a Macintosh computer.
INA Newsl., 12(3): 62-64, 1 fig. | 1990 | Tech. |
| 4 | WEI, W. & WISE, S. W. Jr.
Middle Eocene to Pleistocene calcareous nannofossils recovered by Ocean Drilling Program Leg 113 in the Weddell Sea.
In: Barker, P. F., Kennett, J. P. et al., Proc. ODP, Sci. Results, 113: 639-666, 17 figs., 5 tbls., 6 pls. | 1990a | Strat.;
Syst.
TERT.L-U.
Atlantic S |
| 5 | WEI, W. & WISE, S. W. Jr.
Chemo-magneto-biochronology of Cenozoic calcareous nannofossils in the Southern Ocean.
Geol. Soc. Amer. Abst with Programs, Dallas, p. A200. | 1990b | Abst.
(Strat.)
TERT.L.
Atlantic S
Indian |
| 6 | WESTBROEK, P., EMBURG, P. R. VAN, DE VRIND-DE JONG, E. W. 1989
<i>Emiliana huxleyi</i> and atmospheric CO ₂ .
First Int. Mar. Biotech. Conf. (IMBC '89), p. 6. | | Abst.
Biol;Ecol. |
| 7 | WINKLER, W., HURFORD, A. J., VON SALIS PERCH-NIELSEN, K. & ODIN, G. S. 1990
Fission track and nannofossil ages from a Paleocene bentonite in the Schlieren Flysch (Central Alps, Switzerland).
Schweiz. Mineral. Petrogr. Mitt. 70: 389-396, 3 figs., 2 tbls. | | Strat.
TERT.L.
Europe W. |
| 8 | WYATT, T. 1990
Do algal blooms play homeostatic roles?
In: Graneli, E., Sunstroem, B, Edler, L. & Anderson, D. M. (Eds.), Toxic Marine Phytoplankton, pp. 249-252. | | Biol;Ecol. |
| +++++ | | | |
| Calcispheres | | | |
| 9 | AKSELMAN, R. & KEUPP, H. 1990
Recent obliquipithonelloid calcareous cysts of <i>Scrippsiella patagnoica</i> sp. nov. (Peridiniaceae, Dinophyceae) from plankton of the Golfo San Jorge (Patagonia, Argentina).
Mar. Micropaleontol., 16: 169-179, 2 figs., 1 pl. | | Living;
Syst.
QUAT.
America S. |

- | | | | |
|--------------|---|-------|--|
| 1 | JANOFKSKE, D.
A new "Calcisphere" <i>Carnicalyx tabellata</i> n.g. n.sp.
from the Cassian Beds (Cordevol, lower Carnian) of the
Dolomites.
Berliner Geowiss. Abh.(A),124: 259-269, 2 figs.,
2 pls.
(In German with English abstract) | 1990 | <u>Syst.</u> ;
Tech.
TRIAS.U.
Europe W. |
| 2 | KEUPP, H.
Fossil calcareous dinoflagellate cysts.
In: Riding, R. (Ed.), <i>Calcareous Algae and Stromato-</i>
<i>lites</i> . Springer-Verlag, Berlin, pp. 267-286,
17 figs., 1 tbl. | 1990a | Overview
<u>Syst.</u>
TRIAS.-
QUAT. |
| 3 | KEUPP, H.
A new pithonelloid calcareous dinoflagellate cyst from
the Upper Cretaceous of South Dakota/USA.
Facies, 22: 47-58, 2 figs., 2 pls.
(In German with English summary) | 1990b | Strat.;
<u>Syst.</u>
CRET.U.
America N. |
| +++++ | | | |
| OTHER TITLES | | | |
| 4 | HUBER, B. T.
Micropaleontology.
Geotimes, 36(2): 34-35, 1 fig. | 1991 | Review |
| 5 | LEWIN, R. A.
Book Review - Handbook of Protoctista.
Nature, 344: 717-718. | 1990 | Review |
| 6 | MILLS, E. L.
Biological Oceanography. An Early History, 1870-1960.
Cornell University Press, Ithaca, 378 pp. | 1989 | Overview |
| 7 | VAROL, O.
Book Review - Handbook of Cenozoic Calcareous Nannoplank-
ton. Book 4: Heliolithae (Helicoliths, Cribriliths,
Lopadoliths and others).
INA Newsl., 12(3): 56-58. | 1990 | Review |
| 8 | YOUNG, J.
Meeting Report - <i>huxleyi</i> system workshop, Blagnac
Sept. 1990.
INA Newsl., 12(3): 50. | 1990a | Rept. |
| 9 | YOUNG, J.
Book Review - Handbook of Protoctista
INA Newsl., 12(3): 53. | 1990b | Review |
| 10 | YOUNG, J.
Book Review - The Chromophyte Algae - problems and
perspectives.
INA Newsl., 12(3): 54. | 1990c | Review |
| 11 | YOUNG, J.
Book Review - Atlas du Phytoplancton Marin - volume 3.
INA Newsl., 12(3): 54-55. | 1990d | Review |

TAXA

- Amithalithina* POSPICHAL & WISE 1990c, p. 626. Type species: *Amithalithina sigmundii* POSPICHAL & WISE 1990c. A439-4
- Amithalithina sigmundii* POSPICHAL & WISE 1990c, pp. 626-627, pl. 5, fig. 3. Maud Rise; early to middle Eocene. A439-4
- Bicolumnus* WEI & WISE 1990a, p. 657. Type species: *Bicolumnus ovatus* WEI & WISE 1990a. A441-4
- Bicolumnus ovatus* WEI & WISE 1990a, p. 658, pl. 1, figs. 1-10. Maud Rise; upper Eocene and Oligocene. A441-4
- Biscutum?* *neocoronum* POSPICHAL & WISE 1990c, pp. 627-629, fig. 1. Maud Rise, Weddell Sea; upper Paleocene to lower Eocene. A439-4
- Corollithion covingtonii* MÜTTERLOSE & WISE 1990, p. 338, pl. 4, figs. 5-6. Weddell Sea; Valanginian. A438-6
- Cyclicargolithus gammation* (BRAMLETTE & SULLIVAN) SHAFIK 1990, p. 483; (ex *Coccolithus*). A440-3
- Nephrolithus frequens miniporus* (REINHARDT & GORKA 1967) POSPICHAL & WISE 1990a, p. 474; (ex *N. frequens frequens*). A439-2
- Neocrepidolithus watkinsii* POSPICHAL & WISE 1990a, p. 474, pl. 7, fig. 1. Indian Ocean; Maestrichtian. A439-2
- Pleurochrysis carterae* var. *dentata* JOHANSEN & DOUCETTE, in JOHANSEN, DOUCETTE, BARCLAY & BULL 1988, p. 80, figs. 1-15. New Mexico, USA; Holocene. A437-8
- Psyktosphaera* POSPICHAL & WISE 1990a,; p. 474. Type species: *Psyktosphaera firthii* POSPICHAL & WISE 1990a. A439-2
- Psyktosphaera firthii* POSPICHAL & WISE 1990a, pp. 474-476, pl. 5, figs. 1a-1d. Maud Rise, Weddell Sea; lower Maestrichtian. A439-2
- Reticulofenestra orangensis* (BUKRY) SHAFIK 1990, p. 486; (ex *Coccolithus?*). A440-3

+++++

Calcispheres

- Carnicalyxia* JANOFKSKE 1990, p. 262. Type species: *Carnicalyxia tabellata* JANOFKSKE 1990. A442-1
- Carnicalyxia tabellata* JANOFKSKE 1990, pp. 262-263. Italy; lower Carnian. A442-1
- Obliquipithonella irregularis* AKSELMAN & KEUPP 1990, pp. 172-178, pl. I, 1-19. San Jorge Gulf, Argentina; Holocene. A441-9

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|--|--------|
| <i>Pentadinellum</i> KEUPP 1990a, pp. 283-284. Type species:
<i>Pentadinellum oblatum</i> KEUPP 1990a. | A442-2 |
| <i>Pentadinellum oblatum</i> KEUPP 1990a, pp. 283-284; Bermuda;
Holocene. | A442-2 |
| <i>Scrippsiella patagnoica</i> AKSELMAN & KEUPP 1990; pp. 170-172,
fig. 1a-1g. San Jorge Gulf, Argentina; Holocene. | A441-9 |
| <i>Wallia</i> KEUPP 1990b, p. 49. Type species: <i>Wallia melloi</i>
KEUPP 1990b. | A442-3 |
| <i>Wallia melloi</i> KEUPP 1990b, pp. 49-50. South Dakota, USA;
middle Campanian to Maastrichtian. | A442-3 |
| <i>Wallidinellum</i> KEUPP 1990a, pp. 280-284. Type species:
<i>Wallidinellum dalei</i> KEUPP 1990a. | A442-2 |
| <i>Wallidinellum dalei</i> KEUPP 1990a, pp. 283-284. Western
Arabia; Holocene. | A442-2 |

NEW TAXA

Calcareous Nannoplankton Genera

Amithalithina
Bicolumnus
Psyktosphaera

Calcareous Nannoplankton Species

carterae var. *dentata*, *Pleurochrysis*
covingtonii, *Corollithion*
firthii, *Psyktosphaera*
neocoronum, *Biscutum*?
ovatus, *Bicolumnus*
sigmundii, *Amithalithina*
watkinsii, *Neocrepidolithus*

Calcisphere Genera

Carnicalyxia
Pentadinellum
Wallia
Wallidinellum

Calcisphere Species

dalei, *Wallidinellum*
irregularis, *Obliquipithonella*
melloi, *Wallia*
oblatum, *Pentadinellum*
patagnoica, *Scrippsiella*

INTERNATIONAL NANNOPLANKTON ASSOCIATION ACCOUNT FOR APRIL 1990 - APRIL 1991

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NEWSLETTER - ADVICE TO CONTRIBUTORS

TYPES OF CONTRIBUTION

The newsletter is essentially informal and contributions of any type submitted in any form will be considered, if not necessarily accepted. The following notes are a guide to possibilities rather than a set of directions.

A. BIBLIOGRAPHIES: These are produced by the bibliographers. Any suggestions, reprints of articles, and details of omissions should be sent to them directly.

B. ARTICLES: Short articles on any aspect of nannoplankton work are welcomed. Discussion, review, synthesis, and methodology articles are particularly welcome. Any articles with scientific content may be reviewed and should be submitted at least two months before the final copy deadline. The newsletter is a valid publication for taxonomic articles.

C. REVIEWS: Reviews of books, equipment items, or computer software and conference reports are welcome. To avoid duplication the idea may be suggested to the editor in advance of submission.

D. NEWS, & NOTES: Any news items, on forthcoming conferences, research projects, new appointments are welcome.

SUBMISSION PROCEDURE

Two copies should be sent of all submissions. Include Fax number if available, for proof checking. News items and initial drafts of articles can be sent in draft form. Other items should be sent *either* as proof ready copy *or* on computer disc.

PROOF READY COPY: Submit on A4 paper (210x297mm) with 2.5cm left, right and top margins, 3.5cm bottom margin. Single spacing, 15point (elite) text. If possible use a laser printer.

SUBMISSION ON DISC: Include print-out and details of system used. I can easily handle the following. *IBM/MS-DOS*, any format, 5.25" or 3.5", discs (ideal 5.25", 1.2 Mb). Text as WordPerfect, WordStar, Smart, DCA-RFT, Navy DIF, MultiMate, or ASCII files (ideal WordPerfect 5.0 or DCA-RFT). *MacIntosh*, 3.5" discs, Ms-Word, MacWrite or ASCII files. *Amstrad*, 3" discs, Locoscript, Wordstar, Tasword or ASCII files. Any alterations to the text, other than for spelling or very minor mistakes, will be checked with the author.

DIAGRAMS: Should be submitted as very clean computer printouts, photographs or photocopies of final size, do not send large or delicate originals.

REFERENCES: Use standard (World List) abbreviations, and *format of examples below*. ODP & DSDP volumes should be treated as periodicals using the following abbreviations: IRDSDP; Proc. ODP Init. Rep.; Proc ODP Sci. Res.

Spencer S. & Dobb A. 1988: New observations on Upper Cretaceous vombatidae. *J. Wom. Res.*, **25**, 35-67.

McCarthy J.J. 1980: Nitrogen. In, Morris I. (ed.) "The Physiological Ecology of Phytoplankton", Blackwell, p.191-234.