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INA NEWSLETTER

proceedings of the
INTERNATIONAL NANNOPLANKTON ASSOCIATION
volume 6 number 1 May 1984

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NOTE ! ! ! !

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MEMBERSHIP

Applications for membership of the International Nannoplankton Association
should be directed to the Secretary/Treasurer. Annual dues: Dfl. 35,-

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NEXT ISSUE

Contributions for the next issue of the INA Newsletter should be received
before October 1984. Please send your contributions to: The editor of the
INA Newsletter, S.E. van Heck (Address: see front page).

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side of each page, and the margin along the lower side should be 3.5 cm
(1.5 inch). DO NOT USE DOUBLE SPACING, as this takes up too much space!

ATTENTION !

From July 1, 1984, the editorial address will have changed.
The new address will be:

- ▶ The editor of the INA Newsletter ◀
- ▶ S.E. van Heck ◀
- ▶ Shell UK Expl. & Prod., UEE/311 ◀
- ▶ Shell - Mex House, Strand ◀
- ▶ LONDON WC2 ODX ◀
- ▶ Great Britain ◀



INDEX & BIBLIOGRAPHY OF SILICOFLAGELLATES

In the INA Questionnaires 1981 we asked our members whether they would be interested to have an index and bibliography of siliceous nannofossils - mainly silicoflagellates - added to our Newsletter. To this, 50 answered YES, 26 answered NO - a surprisingly high interest for silicos from a coccolith-fan association! We have now found a student willing to perform the task and hope to begin this service shortly. We therefore ask you to send reprints dealing with silicoflagellates to

RENÉ ALMEKINDERS
Instituut voor Aardwetenschappen, Budapestlaan 4,
postbus 80.021, 3508 TA Utrecht, The Netherlands

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REPRINTS ASKED

We have received a letter from a colleague in Iran who is working on Neogene ostracods. He is having difficulty obtaining relevant literature in his country and requests assistance from those who have worked on Neogene nannofossils. Please send appropriate reprints to:

Dr. F. Hadavi-Samadian
Geological Survey of Iran
P.O. Box 1964
Tehran, Iran

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HANDBOOK OF CENOZOIC CALCAREOUS NANNOPLANKTON

Marie-Pierre Aubry informed us that the publication of the HANDBOOK is going slower than planned. For once it is not due to the postal system that you have not received them yet. She is also very happy for the samples she received for the REFERENCE COLLECTION FOR CENOZOIC CALCAREOUS NANNOFOSSIL TAXA (see INA Newsletter 5(2) : 48,49) - so keep sending them to her at:

Oceanographic Institution, Woods Hole, Mass. 02543, USA

FARINACCI CATALOGUE

Vol. 11 of the "CATALOGUE OF CALCAREOUS NANNOFOSSILS" has just come out and can be ordered at the publisher:

Edizioni Tecnoscienza, Casella Postale 7072, Roma-Nomentano, Italy

It costs US \$150.-- (postage included). Previous volumes are still available at the same place and at the same price as Vol. 11.

Anna Farinacci asked us to inform our members that she plans to publish a list of "Errata" for the 10 volumes. For this she would like your cooperation in sending her all the mistakes you have found in those volumes. Moreover she promises that there will be shorter intervals from now on inbetween the publication of the forthcoming volumes. She would appreciate your sending her your reprints, where you describe new species or genera and, if possible, the original illustrations, which she will send back.

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BENCHMARK PAPERS IN GEOLOGY

Two volumes of the series of Benchmark Papers heve been dedicated to nannoplankton:

- vol.78 : Nannofossil biostratigraphy; 1983
ed. B.U. Haq; 400 pp.; US \$54.50
- vol.79 : Calareous nannoplankton; 1984
ed. B.U. Haq; 368 pp.; US \$45.--

Both volumes can be ordered from:
Van Nostrand Reinhold Co. Inc.
135 West 50th Street
New York, N.Y. 10020, USA

We hope to be able to give some information on the contents in the next issue.

+ + + + +

NEW BOTANICAL CODE

The New "International Code of Botanical Nomenclature" has appeared. For information and review, see p.38.

INA MEETING 1985 in VIENNA ?

INA has not been very active in arranging or sponsoring meetings lately. Members and coccolith-fans met formally and informally at various meetings arranged by different societies and associations. A meeting has been repeatedly discussed, but nobody volunteered to organize it, except within other meetings. When I moved to Vienna a year ago I asked H. Stradner at the Geologische Bundesanstalt and W. Grün at the Oesterreichische Mineralöl Verwaltung about the possibilities of organising a meeting in Vienna. They both agreed to help and F. Steiniger of the Paleontological Institute of the University of Vienna promised us facilities for talks as well as for the work at microscopes. The collections of E. Kamptner are stored at the "Naturhistorisches Museum" in Vienna and F. Rögl will make sure that they will be accessible to those who intend to study them. As you can see, Vienna is a "classical locality" for the study of calcareous nannofossils and certainly also worth a visit for a variety of other reasons - the Opera, the Lippizzaner, the Vienna Sängerknaben, the Heurigen (places that serve the new wine) etc.

The PROGRAM will be up to you. We imagine short talks, poster sessions and workshops with and without the microscope. We would like to hear about PROBLEMS, IDEAS, VISIONS (?), NEW METHODS etc. rather than about the "distribution of coccoliths along the left bank of the river Ilu in Tobago". We are also interested in talks venturing into neighbouring and/or complementing fields as stable isotopes, correlations with other fossil groups, stratotypes of Mesozoic and Cenozoic stages. Maybe, in 1985, it will be time for a first overview and discussion of the first hand correlations between paleomagnetic reversals and calcareous nannofossil events. How synchronous are they? What do we have to say about the "origin of species" in calcareous nannoplankton?

The TIME OF THE MEETING: the exact days are still open for discussion. There is a RCMNS meeting in Budapest with excursions before and after the congress, which is planned from the 15th - 21st Sept. 1985. Since the time from 19-22.9 includes mainly talks on "raw materials geology", we suggest the INA meeting to take place during these days. There are possibilities of travelling by train, boat or plane from Budapest to Vienna. Another possibility would be to have the meeting at the same time as the meeting on agglutinating foraminifera (Sept. 10-13, 1985 in Vienna). This would, however, coincide with the pre-congress excursion of the RCMNS meeting to the Caucasus (?).

Please fill in the enclosed questionnaire stating the dates you prefer and the topics you want to discuss - IT IS YOUR MEETING, after all.

KPN

BIBLIOGRAPHY AND TAXA OF CALCAREOUS NANNOPLANKTON-III*

Compiled by John C. Steinmetz

A Caution about New Combinations

Several taxa listed in this issue involve new combinations, i.e., new names formed from previously published, legitimate names. New combinations result from the reassignment of a species to a different genus or when the rank of a genus or infrageneric taxon is changed. Problems arise in establishing a new combination when the rules of the International Code of Botanical Nomenclature are not strictly followed. According to the Code, and particularly Article 33, the author of a new combination must:

- definitely indicate the epithet or epithets (genus and species) that are to be used in that particular combination;
- clearly indicate the basionym or the replaced synonym;
- give a full and direct reference to the original author and original publication with page or plate reference and date.

Reference to the bibliographic indices of Loeblich and Tappan, van Heck, or Steinmetz does not constitute a full and direct reference to the original publication of a name. Wind and Wise (1983)[A199-5] noted that previously published new combinations in Wise and Wind (1977)[A1-1] and Hattner and Wise (1980)[A104-1] were invalid because of their reference to bibliographic indices instead of the original publications. Wind and Wise (1983) validated the new combinations in Appendix B of their article. An example of a proper recombination would appear as follows:

Axopodorhabdus dietzmanni (Reinhardt) Wind and Wise, n. comb.

Basionym: Ahmuellereella dietzmanni Reinhardt, 1965, p. 30, pl. 1, fig. 1, text-fig. 1.

Reference: Reinhardt, P., 1965. Neue Familien für fossile Kalkflagellaten (Coccolithophoriden, Coccolithineen).

Monatsber. Akad. der Wiss. Berlin, 7: 30-40.

*This is the third article bearing this title by John C. Steinmetz, hence the III. Previous unnumbered articles appeared in INA Newsl. vol. 5, no. 1 and vol. 5, no. 2. Any future articles with this title will be followed by successive Roman numerals.

CORRECTIONS

- A3-4; B-12 Prediscosphaera quadripunctata (GORKA 1957) VERBEEK 1977 was cited as a new combination by VERBEEK 1977. This combination had already been introduced by REINHARDT 1970. By reason of priority, the proper citation should be: Prediscosphaera quadripunctata (GORKA 1957) REINHARDT 1970.
- A5-8 OKADA, H. & McINTYRE, A.
should be: vol. 23, no. 1 instead of vol. 2(3).
- A99-4,A161-3 ANDERSON, T.F., & STEINMETZ, J.C.
This abstract was inadvertently referenced twice. EOS and Transactions of the American Geophysical Union are the same publication. All future citations will employ the latter name.
- A159-8,A177-4 ZEIGHAMPOUR, M.R.: Duplicate citations of the same paper.
- A171-4 GARTNER, S., CHEN, M.P., & STANTON, R.J.
add: syst.
- B-7 Tetrapodorhabdus decorus (DEFLANDRE & FERT 1954) WIND & WISE 1976; should be (DEFLANDRE in DEFLANDRE & FERT 1954) WIND & WISE ~~1976~~ 1977
- B25 Gephyrorhabdus decorus (DEFLANDRE & FERT 1954) HILL 1976; should be (DEFLANDRE in DEFLANDRE & FERT 1954) HILL 1976.
- B36 All names with A25-8 PERCH-NIELSEN 1978
add: in PERCH-NIELSEN et al. 1978.
- B108 Eu-discoaster prepentaradiatus (BUKRY & PERCIVAL)
should be: (BUKRY & PERCIVAL 1971).
- B109 Eu-discoaster variabilis: p. 19 instead of p. 18.
- B109 Helicosphaera moorkensii: A176-3 instead of A172-3.
- B111 Prinsiosphaera triassica: fig. 9/8 instead of fig. 9/89.
- B111 Transversopontis fibula: GHETA instead of GHETE.

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 Biozonation du Miocène d'Europe occidentale à l'aide des
 Rongeurs et corrélations avec l'échelle stratigraphique
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 (A new biozonation of the Miocene of Western Europe based
 on specific lineages of Rodents. Correlation with the
 marine biochronological scale.) Europe.W.
 -C.R. Acad. Sc. Paris, ser. II, 294(1): 49-54, 2 tbs.
 (In French with English abstract.)
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 The end of the Cretaceous: sharp boundary or gradual
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 Impact theory of mass extinctions and the invertebrate
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 Qualitative biochronology of Pliocene and early Pleistocene
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 [nannofossils by P. Čepek]

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[nannofossils by P. Čepek] Atlantic.S.
- 2 BARKER, P.F., CARLSON, R.L., JOHNSON, D.A., et al. 1983 strat.
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-In: Barker, P.F., Carlson, R.L., Johnson, D.A., et al., TERT.U.
Init. Rep. DSDP, vol. 72, pp. 339-356, 7 figs., 1 tb. Atlantic.S.
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Optical efficiency factors of some phytoplankters.
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the southeastern United States.
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Early to early-middle Paleocene diatom zonation.
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America.N. |

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	<u>Axopodorhabdus dietzmanni</u> (REINHARDT 1965) WIND & WISE 1983; p. 557 (ex <u>Ahmuellerella</u>).	A199-5 *C-1
	<u>Axopodorhabdus gorkae</u> (REINHARDT 1969) WIND & WISE 1983; p. 558 (ex <u>Podorhabdus</u>).	A199-5 *C-1
	<u>Biscutum hattneri</u> WISE 1983; p. 506, pl. 17, fig. 7, pl. 20, figs. 1-3; South Atlantic, Falkland Plateau, DSDP Hole 511, Santonian-Coniacian undifferentiated.	A199-8
o	<u>Broinsonia parca expansa</u> WISE & WATKINS 1983 in WISE 1983; p. 506, pls. 9-11; South Atlantic, Falkland Plateau, DSDP Hole 511, Santonian to lower Campanian.	A199-8
	<u>Chiasmolithus solitus</u> (BRAMLETTE & SULLIVAN 1961) LOCKER var. <u>inversus</u> WISE & WIEGAND 1983 in WISE 1983; pp. 504, 505, pl. 8, figs. 1-3; South Atlantic, Falkland Plateau, DSDP Hole 512, Middle Eocene.	A199-8
	<u>Chiastozygus angustus</u> (STOVER 1966) WISE 1983; pp. 506, 507 (ex <u>Zygoolithus</u>).	A199-8
	<u>Coccolithus tenuiforatus</u> (CLOCCHIATTI & JERKOVIĆ 1970) WISE 1983; p. 505 (ex <u>Cruciplacolithus</u>).	A199-8
	<u>Corollithion delftensis</u> (STRADNER & ADAMIKER 1966) WISE 1983; p. 507 (ex <u>Zygoolithus</u>).	A199-8
	<u>Corollithion escovillensis</u> (ROOD & BARNARD 1972) WISE 1983; p. 507 (ex <u>Diadozygus</u>).	A199-8
	<u>Corollithion pauciramosus</u> (BLACK 1973) WISE 1983; p. 507 (ex <u>Stradnerlithus</u>).	A199-8
	<u>Corollithion virgatum</u> (MEDD 1979) ROTH 1983; p. 613 (ex <u>Millbrookia</u>).	A194-5
	<u>Cretarhabdella bergenii</u> WISE & WIEGAND 1983 in WISE 1983; p. 507, pl. 27, fig. 2; South Atlantic, Falkland Plateau, DSDP Holes 330 and 511, Aptian.	A199-8
	<u>Crucicribrum striatum</u> (STRADNER 1963) ssp. <u>constansii</u> WISE & PARKER 1983 in WISE 1983; p. 507, pl. 23, figs. 1-4, pl. 24, figs. 1-6; South Atlantic, Falkland Plateau, DSDP Hole 511, late Aptian to middle Albian.	A199-8
	<u>Crucicribrum striatum striatum</u> (STRADNER 1963) WISE 1983; p. 507 (ex <u>Arkhangelskiella</u>).	A199-8

- B113 Cruciplacolithus furtivus ROTH 1983; p. 609, pl. 6, figs. 1-4; Central Atlantic, Blake-Bahama Basin, DSDP Site 534, upper Hauterivian-Barremian and middle Albian. A194-5
- Discoaster toralus ELLIS, LOHMAN, & WRAY 1972; pp. 53, 54, pl. 16, figs. 2-6; Gulf of Mexico, DSDP Site 3, upper Miocene-lower Pliocene. A182-5
- Grantarhabdus camaratus (BUKRY 1969) WISE 1983; p. 508 (ex Ethmorhabdus). A199-8
- X Homozygosphaera halldalii GAARDER 1983; p. 50. Type species: Homozygosphaera wettsteinii HALLDAL & MARKALI 1955, pl. 5, fig. 2; Capri, Mediterranean, Recent. A183-8
- Papposphaera thomsenii NORRIS 1983, p. 166-168, figs. 2-3; Indian Ocean, Recent. A192-5
- Percivalia fenestrata (WORSLEY 1971) WISE 1983; p. 508 (ex Arkhangelskiella?). A199-8
- Petrarhabdus WIND & WISE 1983 in WISE 1983; p. 508. Type species: Petrarhabdus copulatus (DEFLANDRE 1959) WIND & WISE 1983 in WISE 1983. A199-8
- Petrarhabdus copulatus (DEFLANDRE 1959) WIND & WISE 1983 in WISE 1983; p. 508 (ex Tetralithus). Type species of Petrarhabdus WIND & WISE 1983 in WISE 1983. A199-8
- Polypodorhabdus harrisonii MEDD in ROTH 1983; p. 610, pl. 3, figs. 7-9; Switzerland, Liesberg, Oxfordian; Central Atlantic, Blake-Bahama Basin, DSDP Site 534, Oxfordian-Tithonian; England, Oxfordian. A194-5
- Prediscosphaera cantabrigensis (BLACK 1967) NORRIS 1983; p. 164 (ex Deflandrius). A192-5
- Pseudotriquetrorhabdulus inversus (BUKRY & BRAMLETTE 1969) WISE & CONSTANS 1983 in WISE 1983; p. 505 (ex Triquetrorhabdulus). A199-8
- Reinhardtites elegans (GARTNER 1968) WISE 1983; p. 508 (ex Zygodiscus). A199-8
- Reticulofenestra bisecta (HAY, MOHLER, & WADE 1966) ROTH 1970 ssp. filiewiczii WISE & WIEGAND 1983 in WISE 1983; p. 505, pl. 5, fig. 3, pl. 6, figs. 1-2; South Atlantic, Falkland Plateau, Holes 511 and 513A, upper Eocene and Oligocene. A199-8
- Reticulofenestra onusta (PERCH-NIELSEN 1971) WISE 1983; p. 505 (ex Dictyococcites). A199-8

B114	<u>Reticulofenestra perplexa</u> (BURNS 1975) WISE 1983; pp. 505, 506 (ex <u>Dictyococcites</u>).	A199-8
	<u>Reticulofenestra pseudoumbilica</u> (GARTNER 1967) GARTNER 1969 ssp. <u>gelida</u> (GEITZENAUER in GEITZENAUER & HUDDLESTUN 1972) WISE 1983; p. 506 (ex <u>Coccolithus gelidus</u> GEITZENAUER 1972).	A199-8
	<u>Seribiscutum pinnatum</u> (BLACK 1971) WISE 1983; p. 509 (ex <u>Cruciplacolithus</u>).	A199-8
	<u>Seribiscutum primitivum</u> (THIERSTEIN 1974) FILEWICZ, WIND, & WISE in WIND & WISE 1983; p. 558 (ex <u>Cribrosphaerella</u>).	A199-5 *C-2
	<u>Seribiscutum salebrosum</u> (BLACK 1971) WISE 1983; p. 508 (ex <u>Cruciplacolithus</u>).	A199-8
	<u>Tetrapodorhabdus decorus</u> (DEFLANDRE & FERT 1954) WIND & WISE 1983; p. 558 (ex <u>Rhadbolithus</u>).	A199-5 *C-1, C-3
	<u>Thiersteinia</u> WISE & WATKINS 1983 in WISE 1983; p. 509. Type species: <u>Thiersteinia ecclesiastica</u> WISE & WATKINS 1983 in WISE 1983.	A199-8
	<u>Thiersteinia ecclesiastica</u> WISE & WATKINS 1983 in WISE 1983; p. 509, pls. 14-16, pl. 17, figs. 1-4; South Atlantic, Falkland Plateau, DSDP Hole 511, Turonian to Coniacian-Santonian undifferentiated. Type species of <u>Thiersteinia</u> WISE & WATKINS 1983 in WISE 1983.	A199-8
	<u>Uniplanarius gothicus</u> (DEFLANDRE 1959) HATTNER & WISE in WIND & WISE 1983; p. 558 (ex <u>Tetralithus</u>).	A199-5 *C-4
	<u>Uniplanarius trifidus</u> (STRADNER in STRADNER & PAPP 1961) HATTNER & WISE in WIND & WISE 1983; p. 558 (ex <u>Tetralithus gothicus trifidis</u>).	A199-5 *C-4
	<u>Vagalapilla quadriarcula</u> (NOËL 1965) ROTH 1983; p. 612 (ex <u>Discolithus</u>).	A194-5
	<u>Zygodiscus fissus</u> (GRÜN & ZWEILI 1980) ROTH 1983; p. 609 (ex <u>Zygrhabdotus?</u>).	A194-5
	<u>Zycolithites</u> BLACK 1972; p. 21. Type species: <u>Zycolithites parallelus</u> BLACK 1972.	A143-1
	<u>Zycolithites parallelus</u> BLACK 1972; p. 21, fig. 27; England, Albian.	A143-1

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COMMENTS

- 1 - B112, B114: New combinations originally made by WIND & WISE in WISE & WIND (1977) [A1-1; B-1, B-2] were invalid (ICBN Art. 33.2).
- 2 - B114: New combinations originally made by FILEWICZ, WIND & WISE in WISE & WIND (1977) [A1-1; B-8] were invalid (ICBN Art. 33.2).
- 3 - B114: (ex Rhabdolithus): err. cit. pro (ex Rhabdolithus).
- 4 - B114: New combinations originally made by HATTNER & WISE (1980) [A104-1; B81] were invalid (ICBN Art. 33.2).

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A Continuing Reminder

In order to keep the Newsletter informative and current, we need your contributions. Please send reprints to John C. Steinmetz, Denver Research Center, Marathon Oil Company, P.O. Box 269, Littleton, Colorado 80160 USA.

Species names in alphabetical order.

albians, Axopodorhabdus
angustus, Chiastozygus
bergenii, Cretarhabdella
bisecta filewiczii, Reticulofenestra
camaratus, Grantarhabdella
cantabrigensis, Prediscosphaera
caucasica, Chiastozygus (C)
copulatus, Petrarhabdus
cribrata, Arkhangelskiella
decorus, Tetrapodorhabdus
delftensis, Corollithion
dietzmanni, Axopodorhabdus
ecclesiastica, Thiersteinia
elegans, Reinhardtites
escovillensis, Corollithion
fenestrata, Percivalia
fissus, Zygodiscus
furtivus, Cruciplacolithus
gorkae, Axopodorhabdus
gothicus, Uniplanarius
harrisonii, Polypodorhabdus
hattneri, Biscutum
inversus, Pseudotriquetrorhabdulus
loricata, Pithonella (C)
maastrichtensis, Inocardion (C)
miniaperta, Pithonella (C)
neumannae, Inocardion (C)
onusta, Reticulofenestra
orbularia, Inocardion (C)
parallelus, Zygoolithites
parca expansa, Broinsonia
pauciramosus, Corollithion
pentagonalis, Sliteria (C)
perplexa, Reticulofenestra
pinnatum, Seribiscutum
primitivum, Seribiscutum
pseudoconoideum, Inocardion (C)
pseudoumbilica gelida, Reticulofenestra
quadriarcula, Vagalapilla
salebrosum, Seribiscutum
solitus var. inversus, Chiasmolithus
squalida, Pithonella (C)
squamosa, Pithonella (C)
striatum constansii, Crucicribrum
striatum striatum, Crucicribrum
tenuiforatus, Coccolithus
thomsenii, Papposphaera
toralus, Discoaster
transitoria, Pithonella (C)
trifidus, Uniplanarius
usherii, Pithonella (C)
virgatum, Corollithion

New genus names.

Inocardion (C)
Petrarhabdus
Sliteria (C)

Thiersteinia
Zygoolithites

(C) = Calcisphere.

REVIEW

Regnum vegetabile vol.111, 1983 :
International Code of Botanical Nomenclature, Sydney 1981
Editor: F.A. Stafleu; 472 pp., Dfl. 110.--

can be ordered from:

The International Bureau for Plant Taxonomy and Nomenclature,
Transitorium II, Heidelberglaan 2, De Uithof, 3584 CS Utrecht
The Netherlands

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In this new version of the ICBN most of the articles have changed somewhat. However, it seems that most changes are just a different way of saying the same thing. I say deliberately 'it seems', for the implications of some of these changes are not always apparent. There are also some fundamental changes, but not all of them apply to nannoplankton. A thorough study will be required to find out exactly which of the innovations have implications for us, but some of the possibly important changes are cited below.

The first thing that should be cited is one of the rules that has not changed, but with which I found most people are not familiar:
-Principle VI : The Rules of nomenclature are retroactive unless expressly limited.
This means that only this Code is valid. Any name valid under the previous code that now is contrary to one of the new rules, suddenly has become invalid. Therefore, the argument "it was valid at the time of publication" cannot be used. In fact, if we want to be precise, we are more or less obliged to buy a new Code every four years

So, here are some of the additions and changes:

-Art. 6.4 : add: A name which according to this Code was illegitimate when published cannot become legitimate later unless it is conserved.

-Art. 10.1 : The type of a name of a genus or of any subdivision of a genus is the type of a name of a species. For purposes of designation or citation of a type, the species name alone suffices, i.e. it is considered as the full equivalent of its type.

-Art. 32.2 : A name validly published by reference to a previously and effectively published description or diagnosis is to be typified by an

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element selected from the context of the validating description or diagnosis.

-Art. 32.6 : Autonyms are accepted as validly published names, dating from the publication in which they were established whether or not they appear in print in that publication.

-Art. 41.1 : In order to be validly published, a name of a family must be accompanied (a) by a description or diagnosis of the family or (b) by a reference (direct or indirect) to a previously and effectively published description or diagnosis of a family or subdivision of a family.

-Art. 42.1 : The names of a genus and a species may be simultaneously validated by provision of a single description (descriptio generico - specifica) or diagnosis, even though this may have been intended as only generic or specific, if all of the following conditions obtain: (a) the genus is at that time monotypic; (b) no other names (at any rank) have previously been validly published based on the same type; and (c) the names of the genus and species otherwise fulfill the requirements for valid publication. Reference to an earlier description or diagnosis is not accepted as provision of such a description or diagnosis.

-Art. 42.2 : Prior to 1 Jan. 1908 an illustration with analysis, or for non-vascular plants a single figure showing details aiding identification, is acceptable, for the purpose of this Article, in place of a written description or diagnosis.

-Art. 45.1 : The date of a name is that of its valid publication. When the various conditions for valid publication are not simultaneously fulfilled, the date is that on which the last is fulfilled. However, the name must always be explicitly accepted in the place of its validation. A name published on or after 1 Jan. 1973 for which the various conditions for valid publication are not simultaneously fulfilled is not validly published unless a full and direct reference is given to the places where these requirements were previously fulfilled.

-Art. 64.2 : When two or more generic, specific or infraspecific names based on different types are so similar that they are likely to be confused, because they are applied to related taxa or for any other reason, they are to be treated as homonyms.

It is really impossible to cite all the changes, and also quite a number of articles has been added, thereby changing the number-indication of other articles. Therefore, if you want to refer to any of the rules, you will either have to find a library that has a copy of the new code, ask your company/institute to buy one, or order it yourself.

As I said, not all the implications of the changes are clear. I may have overlooked some of them that turn out to be important. Only experience will show what the results will be.

SEvH

STANDARD ZONES and "STANDARD ZONES"

Katharina Perch-Nielsen, Geol. Inst. ETH-Z, Sonneggstr. 5, CH-8092 Zürich

The use of standard zones of calcareous nannofossils has become "second nature to us now" when we subdivide Cretaceous or Cenozoic sediments. The introduction of letters and numbers instead of fossil names obviously has lifted our efforts up to a level where geophysicists, geochemists and geomagnetists not only recognize our input but actually accept it, crave for it, need it and work with it. It is easier to say or write: the base of NP 15 falls within Chron C-20, than: the base of the Chiphragmalithus alatus Zone, which for some authors is the Nannotetrina alata Zone or the Nannotetrina fulgens Zone, falls within Chron C-20. Moreover, the numbers take less room in illustrations, so more information can be correlated in one figure. So, in a general way, all is well and we should be happy. The problem starts when we use a "standard zone" instead of THE standard zone by changing one or both of its limits by substituting one or both defining species. To use NP 15 again, I can use the first occurrence (FO) of the genus Nannotetrina instead of the FO of N. alata (or N. fulgens) to define the base of the zone and the FO of Reticulofenestra umbilica instead of the last occurrence (LO) of Rhabdosphaera gladius for the definition of the top. These changes are necessary in sections, where the preservation of the nannofossils is poor. They probably are reasonable changes that do not basically alter the content of NP 15 much. But I am not using the real STANDARD ZONE NP 15. At the "Round table on calcareous nannoplankton" during the 1st International Conference on Paleoceanography, held in Zürich in 1983, I suggested to use small stars, points, lines or other signs behind, above and/or below the zonal number to indicate in a figure, which definition had been changed. The above "NP 15" with changed base and top could then be expressed:

NP 15_{*}^{*} or NP 15 -+ (- for lower boundary changed, + upper boundary changed)
NP 15[.] or NP 15[.] etc. Personally I prefer NP 15_{*}^{*}.

Such a combination can easily be used in texts and figures, does not take much room, but would convey the fact that we are using a different definition from the original one. We can then explain in the text or show in another figure exactly which definition we used. Our communication with

geophysicists will continue in the by now well established manner in providing them with letters and numbers, but we could keep honest about what we are actually doing. Percival (1984, DSDP Leg 73) has recently made a start in this direction stating: "At times the marker species used by Martini (1971) to define a particular zone are absent. Under these circumstances the author used secondary species to mark a zone, although the range of a secondary species may not be exactly the same as that of the primary species. Zones defined by secondary species are indicated by an asterisk." He used these in the text, but not in the tables.

A discussion of these suggestions is welcome, also from foram-specialists who face the same problems.

V A L I D A T I O N O F N E W C O M B I N A T I O N S

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During the compilation of two chapters on Mesozoic and Cenozoic calcareous nannofossils for a text-book on PLANKTON STRATIGRAPHY edited by Bolli, Saunders & Perch-Nielsen (in press), I have used new combinations as validated below.

CENOZOIC

NEW COMBINATION

Bomolithus conicus
Calcidiscus leptoporus centrovalis
Catinaster altus
Cruciplacolithus brotzenii
Cyclicargolithus marismontium
Discoaster megastypus
Lithostromation deflandrei
Neocrepidolithus cohenii
Pontosphaera desueta
Pontosphaera enormis
Pontosphaera inconspicua
Pontosphaera latielliptica
Pontosphaera latoculata
Pontosphaera ocellata
Pontosphaera punctosa
Prinsius tenuiculum
Rhombaster spineus
Toweius africanus
Toweius? crassus
Transversopontis pygmaea
Triquetrorhabdulus farnsworthii

BASIONYM

Heliolithus? conicus Perch-Nielsen(1971, pl.56, pl.1, fig.2)
Cyclococcolithus leptoporus centrovalis Stradner&Fuchs (1980, p.255,256, pl.6, figs.4,5)
Discoaster altus Müller(1974, p.592, pl.9, fig.1)
Ericsonia? brotzenii Perch-Nielsen(1969, p.60,61,pl.2,fig.4)
Coccolithus marismontium Black(1964, p.309, pl.51, fig.3)
Discoasteroides megastypus Bramlette&Sullivan(1961, p.163, pl.13, fig.14)
Polycladolithus deflandrei Stradner(1959b, p.18, fig.76)
see above
Discolithina desueta Müller(1970, p.113, pl.3, figs.4,5)
Discolithina enormis Locker(1967,p.759,pl.1,fig.4,pl.2,fig.5)
Discolithus inconspicuus Sullivan(1964, p.182, pl.4, fig.6 in B.8.5.1961)
Discolithina latielliptica Baldi-Beke&Baldi(1974, p.72, pl.3, fig.10)
Discolithina latoculata Bukry&Percival(1971, p.130, pl.4, figs.1-3)
Discolithus ocellatus Bramlette&Sullivan(1961, p.142, pl.3, fig.2)
Discolithus punctosus Bramlette&Sullivan(1961, p.143, pl.3, fig.11)
Bisculum? tenuiculum Okada&Thierstein(1979, p.521,522, pl.9, fig.5)
Marthasterites spineus Shafik&Stradner(1971,p.93, fig.7)
Prinsius africanus Perch-Nielsen(1980,p.842,843,pl.3,fig.3)
Coccolithus crassus Bramlette&Sullivan(1961,p.139,pl.1,fig.4)
Discolithina pygmaea Locker(1967, p.761, pl.2, fig.2)
Ceratolithus? farnsworthii Gartner(1967,p.5,pl.9,fig.2)

MESOZOIC

- Aspidolithus bevieri
Aspidolithus furtivus
Aspidolithus parvus constrictus
Aspidolithus parvus expansus
Biscutum salebrosum
Biscutum veterum
Calculites additus
Chiasmolithus parvus
Chlastozygus? acutus
Cretarhabdus lateralis
Cribrosphaerella? hauteriviana
Ellipsagelosphaera fasciata
Eprolithus septentrionalis
Gartnerago stenostaurion
Glaukolithus compactus
Micula quadrata
Neocrepidolithus cohenii
Nodosella perch-nielseniae
Nodosella silvaradion
Podorhabdus biperforatus
Prediscosphaera arkhangelskyj
Prediscosphaera avitus
Prediscosphaera columnata
Prediscosphaera implumis
Prediscosphaera ponticula
Rhombolithion duodecostatum
Rhombolithion horellii
Rhombolithion octocostatum
Rotelapillus caravacaensis
Rotelapillus crenulatus
Rotelapillus munitus
Broinsonia bevieri Bukry(1969, p.21, pl.1, fig.8)
Broinsonia furtiva Bukry(1969, p.22, pl.2, fig.1)
Broinsonia parca constricta Haltner et al.(1980, p.23, pl.2, fig.1)
Broinsonia parca expansa Wise&Watkins in Wise(1983, p.506, pl.9, figs.1-4)
Cruciplacolithus salebrosus Black(1971,p.397,pl.30,fig.4)
Paleopontosphaera veterna Prins, 1969 ex Rood et al. (1973, p.378, pl.III, fig.2)
Phanulithus additus Wind&Wise in Wise&Wind(1977, p.304, pl.30, fig.2)
Chiasmolithus parvus Barrier (1977,p.27,pl.XIII,fig.1)
Corollithion acutum Thierstein in Roth&Thierstein (1972, pl.2, figs.1,2)
Cretarhabdus lateralis Black(1971,p.400, pl.21, fig.5)
Cribrosphaera hauteriviana Black(1971, p.421,pl.33,fig.8)
Watznaueria fasciata Wind&Čepek(1979, p.7, fig.5)
Lithastrinus septentrionalis Stradner(1963, p.11, pl.2, fig.7)
Broinsonia stenostaurion Hill(1976, p.127,128, pl.3, figs.21-24)
Zygodiscus compactus Bukry(1969, p.59, pl.34, fig.2)
Tetralithus quadratus Stradner(1961, p.86, fig.92)
Crepidolithus cohenii Perch-Nielsen(1968,p.37,pl.2,fig.7)
Corollithion perch-nielseniae Filewicz et al. in Wise & Wind(1977, p.310, pl.61, fig.3)
Corollithion silvaradion Filewicz et al. in Wise&Wind (1977, p.310, pl.62, fig.6)
Discorhabdus biperforatus Rood et al.(1973, p.381, pl.III, fig.7)
Eiffelithus cretaceus arkhangelskyj Reinhardt (1965,p.35 pl.2, fig.1)
Deflandrius avitus Black(1973, p.84, pl.27, fig.11)
Deflandrius columnatus Stover(1966, p.141, pl.6, fig.8)
Deflandrius implumis Black(1973, p.86, pl.27,fig.2)
Prediscosphaera cretacea ponticula Bukry(1969, p.39, pl.17, fig.11)
Diadorhombus duodecostatus Goy in Goy et al.(1979, p.41, pl.3, fig.5)
Diadorhombus horrellii Rood&Barnard(1972, p.337,338, pl.II, fig.12)
Diadorhombus octocostata Rood&Barnard(1972, p.337, pl.II, fig.11)
Stephanolithion caravacaensis Grün in Grün&Allemann (1975, p.188,189, pl.VII, figs.1,2)
Stephanolithion crenulatum Stover(1966, p.16,pl.7,fig.26)
Stephanolithion munitum Perch-Nielsen(1973, p.326, pl.2, fig.7)

<u>Rotelapillus octoradiatus</u>	<u>Corollithion octoradiatum</u> Gartner(1968, p.35,36, pl.10, fig.14)
<u>Sollasites hayj</u>	<u>Cruciplacolithus hayj</u> Black(1973, p.66,67, pl.23, fig.9)
<u>Sollasites pinnatus</u>	<u>Cruciplacolithus pinnatus</u> Black(1971, p.397, pl.30, fig.5)
<u>Stephanolithion elongatum</u>	<u>Stephanolithion speciosum elongatum</u> Medd(1979, p.52, pl.4, fig.9)
<u>Stephanolithion octum</u>	<u>Stephanolithion speciosum octum</u> Rood&Barnard(1972, p.330, pl.1, fig.2)
<u>Stradnerlithus callomonii</u>	<u>Diadozygus callomonii</u> Rood et al.(1971, p.256, pl.1, fig.8)
<u>Stradnerlithus ellipticus</u>	<u>Corollithion ellipticum</u> Bukry(1969, p.40, pl.18, fig.10)
<u>Stradnerlithus fractus</u>	<u>Corollithion fractum</u> Black(1973, p.94, pl.29, fig.14)
<u>Stradnerlithus fragilis</u>	<u>Actinozygus fragilis</u> Rood&Barnard(1972,p.334,pl.II, fig.9)
<u>Stradnerlithus langii</u>	<u>Diadozygus langii</u> Rood&Barnard(1972, p.334, pl.II, fig.1)
<u>Stradnerlithus sexiramatus</u>	<u>Zygoolithus sexiramatus</u> Pienaar(1969, p.116, pl.10, fig.9)
<u>Tranolithus macleodidae</u>	<u>Zygodiscus macleodidae</u> Bukry(1969, p.60, pl.35, fig.2)
<u>Tranolithus minimus</u>	<u>Zygodiscus minimus</u> Bukry(1969, p.61, pl.35, fig.10)
<u>Truncatoscapus pauciramatus</u>	<u>Stradnerlithus pauciramatus</u> Black(1973, p.98,99, fig.47)
<u>Truncatoscapus senarius</u>	<u>Corollithion senarius</u> Wind&Wise in Wise&Wind(1977, p.300, pl.78, fig.3)
<u>Zeugrhabdotus embergeri</u>	<u>Discolithus embergeri</u> Noël(1959, p.164, pl.1, figs.5-8)
<u>Zeugrhabdotus pseudanthophorus</u>	<u>Zygodiscus? pseudanthophorus</u> Bramlette&Martini(1964,p.303, pl.4, figs.17,18)

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