

INA NEWSLETTER

proceedings of the
INTERNATIONAL NANNOPLANKTON ASSOCIATION

volume 5

number 1

May 1983

Editorial Committee

S.E. van Heck
Dierenselaan 10
2573 KH Den Haag
The Netherlands

Secretary / Treasurer

A.J.T. Romein
Instituut voor Aardwetenschappen
Budapestlaan 4
Postbus 80.021
3508 TA Utrecht, The Netherlands

Bank account:
55.53.90.101 Algemene Bank Nederland
Postal account (post giro): 4198913

+ + + + +

CONTENTS

General information	p.2
Editorial	p.3
INA meetings; (p)review	p.3
Bibliography and taxa of calcareous nannoplankton J.C. Steinmetz	p.4-13
Abstract: Real crystals in coccolithophorids skeletons (Golubev, S.N., 1981)	p.14
On the legitimacy of the generic name <u>Discoaster</u> Tan, 1927 ex Tan, 1931 S.A. Theodoridis	p.15-21
New members, changes of address	p.22-23

NOTE!!!

SALES OFFICE

Separate issues of the INA Newsletter can be obtained from the Secretary/
Treasurer. Price per issue is: - for non-members Dfl. 25,-
- for members Dfl. 17,50

+++++

MAILING POLICY

Recent issues shall be mailed by surface mail for countries inside Europe,
by airmail or SAL for countries outside Europe. Back-issues shall be mailed
by surface mail, unless the extra costs for airmail are paid to the
Treasurer.

+++++

MEMBERSHIP

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

+++++

NEXT ISSUE

Contributions for the next issue of the INA Newsletter should be received
before October 1983. Please send your contributions to: The editor of the
INA Newsletter, S.E. van Heck (Address: see front page).

+++++

COPY RIGHT

All parts of the INA Newsletter are allowed to be reproduced for scientific
purposes. The source and authors should be clearly mentioned in case of
non-private use.

+++++

INFORMATION FOR CONTRIBUTORS:

Manuscripts should not exceed four pages. They are being reproduced in the
INA Newsletter without being re-typed. Hence the authors are entirely
responsible for the contents and quality of their contributions. Manuscripts
of poor quality can be refused by the Editor.

Format: Manuscripts should be typed on A4 (this format); a blank margin of
at least 2,5 cm (1 inch) should border the upper, the left, and the right
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!

EDITORIAL

This spring issue of the INA Newsletter is thinner than usual, and appeared much later than usual. The last is a result of our reorganization, which caused some delay. The first can be explained by the fact that we have filled the gap between the 'Loeblich & Tappan Index' and our bibliography, with the result that the number of pages with references and new taxa is strongly reduced.

The 'Handbook of Cenozoic Calcareous Nannoplankton' by Marie-Pierre Aubry is now for sale. INA members can obtain the full set for the pre-publication special price of \$ 300 until December 31, 1983. A brochure has been included. In our fall issue we plan to include an extensive review of the volumes that have appeared by then.

Dr. Brian J. O'Neill of the Gulf Coast Section of the S.E.P.M. sent the following notice:

On sale: Calcareous nannofossil symposium volume

In an attempt to reduce their inventory the Gulf Coast Section - SEPM is offering the publication 'Proceedings of Symposium on calcareous nannofossils 1973' at the special sale price of only \$3.00 (regular price \$6.00). Copies may be ordered from: Earth Enterprises, Inc.

P.O. Box 672
Austin, TX 78767 , USA
(512) 345-3007

Texas Residents: Include 5% Sales tax. Foreign orders: add \$2.00 per volume.

A similar notice has appeared in INA Newsletter vol.3(1), but it seems this time the mailing costs are higher, and the address has changed.

S.v.H.

INA MEETINGS; (P)REVIEW

The combined R.C.M.N.S./INA meeting at Utrecht, the Netherlands, March 21-25 on "Reconstruction of marine paleoenvironments; Principles and Methods" was attended by about 120 scientists from all over the world. In addition to 4 larger contributions dealing with calcareous nannoplankton in the plenary sessions, 11 small communications were presented in the two INA roundtable sessions. About 30 nannoplankton workers were present at these roundtables.

A substantial part of the papers presented in Utrecht will be included in the Proceedings of the meeting, which will appear as volume 30 of the Utrecht Micropaleontological Bulletins before the end of this year.

The bringing together of specialists in various fields (micro- and macro-paleontologists, sedimentologists, geochemists) in a secluded conference centre appeared to be a successful formula; it led to, sometimes heated discussions during and after the sessions, and boozes in the small hours.

The next INA meeting will be held during the First International Conference on Paleoceanography, Zürich, Switzerland, July 19 - 21, 1983; I hope to see you there,

The secretary

BIBLIOGRAPHY AND TAXA OF CALCAREOUS NANNOPLANKTON

Compiled by John C. Steinmetz*

New Developments

Since the inception of the INA Newsletter in 1979, approximately 1600 references have been listed. As this number continues to grow with succeeding issues, it will become increasingly more cumbersome to locate that one reference you have in mind or to scan the list of codes (listed on the right margin) for a desired topic. We hope we have found a convenient way to manage this problem. Presently, all references in the INA Newsletter are being entered onto magnetic tape at Marathon Oil's Denver Research Center. It will soon be possible to access all references with a search routine on a computer. Depending on your facility with programming, it will be possible to sort through the references for any desired title, author, topic (code), or citation. The cost of the references on tape will be nominal; details are currently being worked out and will be announced in the next edition of the Newsletter.

New Code Word

A new code word has been added to the list for cross-referencing:
Arctic = Arctic Ocean; area generally north of 70° N. latitude.

Incomplete References

The following references are incomplete in our files or reprint collection; if you have a spare copy (or xerox) please send it to John Steinmetz so that it can be referenced and coded for the next Newsletter.

THRONDSSEN, J., 1973 : Phytoplankton occurrence and distribution on stations sampled during the SCOR WG 15 cruise to the Caribbean Sea, Pacific Ocean, and Sargasso Sea in May 1970, based on cell counts. - Data Rep. SCOR Discoverer Exped., May 1970, D.1 - D.28, 20 figs., 4 tbs.

PUCHER-PETKOVIC, T., 1973 : Recherches préliminaires sur la photosynthèse du nanoplankton et du microplankton dans les eaux de l'Adriatique moyenne. - Rapp. Proc. V Réunion. Comm. Int. Expl. Sc. Mer Médit., Monaco, vol.21, pp.445-448.

MÜLLER, C., 1975 : Calcareous nannoplankton from the type Serravallian. - Proc. IV Congr. Med. Neog. Strat., vol.1, pp.49-52, 3 figs.

MAEDA, S., SAWANO, H. & KAWABE, T., 1979 : (On the study of calcareous nannoplankton from the Anno Formation in Chiba Prefecture). - J. Geogr. (Tokyo), vol.88(1), (829), pp.20-28 (In Japanese).

UCHIO, T., 1975 : ("Pliocene" calcareous nannoplankton biostratigraphy of the Japanese oilfields of the Japan Sea side. Pt.1 . Niigata oilfields). - J. Jap. Ass. Petrol. Technol., vol.40(4), pp.1-11 (In Japanese.)

New References

To keep the Newsletter up to date and informative, we need your contributions. Please send reprints to John Steinmetz.

* Address: Dr. John C. Steinmetz, Denver Research Center, Marathon Oil Company, P.O. Box 269, Littleton, Colorado 80160, USA.

A161

- | | | |
|---|--|--|
| 1 | <p>ABDELMALIK, W.M. 1982
 Calcareous nannoplankton from the sequence between Dakhla and Esna shale formations (Upper Cretaceous - Lower Eocene) in Qusseir area, Egypt.
 -Revista Esp. Micropal., vol.14, pp.73 - 84, 1 pl., 3 figs.</p> | <p>strat.(syst)
 CRET.U.
 TERT.L.
 Africa.N.</p> |
| 2 | <p>ABDELMALIK, W.M. 1982
 Upper Cretaceous - Lower Tertiary calcareous nannoplankton from Um Rifam area, South Jordan.
 -Revista Esp. Micropal., vol.14, pp.85-98, 2 pls., 3 figs.</p> | <p>strat.(syst)
 CRET.U.
 TERT.L.
 Asia.SW.</p> |
| 3 | <p>ANDERSON, T.F. & STEINMETZ, J.C. 1981
 The oxygen isotope record and biostratigraphy of calcareous nannoplankton from a Caribbean core of Upper Pleistocene age.
 -Transa. Amer. Geophys. Union, vol.62, no.17, p.306.</p> | <p>abstr.
 strat.
 QUAT.
 Atlantic.C.</p> |
| 4 | <p>ARMENTROUT, J.M. 1983
 Eocene-Oligocene boundary problems, West Coast, North America.
 -Amer. Assoc. Petrol. Geol., vol.67(3), p.413.</p> | <p>abstr.
 strat.
 TERT.L.
 America.N.</p> |
| 5 | <p>AUBRY, M.-P. 1983
 Late Eocene to Early Oligocene calcareous nannoplankton biostratigraphy and biogeography.
 -Amer. Assoc. Petrol. Geol., vol.67(3), p.415, 1 tb.</p> | <p>abstr.
 strat.
 TERT.L.
 Worldwide.</p> |
| 6 | <p>BÁLDI-BEKE, M. 1982
 Új nannoplankton faj a Dunántúli Eocén köszénfedő képződményekből. (A new nannoplankton species from sediments overlying the Eocene coal seams in Transdanubia).
 -M. Áll. Földtani intézet évi Jelentese 1980-ról. Inst. Geol. Publ. Hung., pp.297-308, 1 fig., 3 pls.
 (In Hungarian and English).</p> | <p>strat.syst.
 TERT.L.
 Europe.E.</p> |
| 7 | <p>BÁLDI-BEKE, M. 1982
 <u>Helicosphaera mediterranea</u> MÜLLER 1981, and its stratigraphical importance in the Lower Miocene.
 -INA Newsl. vol.4(2), pp.104-106, 1 fig.</p> | <p>strat.syst.
 TERT.
 Mediterr.
 Pacific</p> |
| 8 | <p>BÁLDI-BEKE, M. 1983
 Dunántúli Eocén nannoplankton és biosztratiográfiája. (Nannoplankton flora and biostratigraphy of the Transdanubian Eocene).
 -Öslénytani Vitak, Discussiones Palaeontologicae, vol.29, pp.25-43, 5 figs. (In Hungarian and English).</p> | <p>strat.
 TERT.L.
 Europe.E.</p> |
| 9 | <p>BÁLDI-BEKE, M. & KECSKEMÉTI, T. 1983
 Eltérő életterű mikrofossziliák (nannoplankton és nagyforaminifera) értékelési eredményei Eocén képződményekben. (Results of studies on microfossils of different habitats (nannoplankton and larger foraminifers) in Eocene formations.)
 -Öslénytani Vitak, Discussiones Palaeontologicae, vol.29, pp.177-188, 4 figs. (In Hungarian with English abstract)

 INA Newsletter vol.5 - 1983</p> | <p>strat.
 TERT.L.
 Europe.E.</p> |

- | | | | |
|----|--|------|---|
| 1 | BENDA, L., MEULENKAMP, J.E. & SCHMIDT, R.
Biostratigraphic correlations in the Eastern Mediterranean Neogene. 6. Correlations between sporomorph, marine microfossil and mammal associations from some Miocene sections of the Ionian islands and Crete (Greece).
-Newsl. Strat., vol.11(2), pp.83-93, 1 fig., 1 tb. | 1982 | strat.
TERT.U.
Europe.E. |
| 2 | BERGEN, J.A.
Coccoliths from Deep Sea Drilling Project Leg 78A, Barbados Ridge.
-Geol. Soc. Amer., Abstr. w. Progr., vol.15(2), p.60. | 1983 | abstr.
strat.
TERT.U;QUAT.
Atlantic.N. |
| 3 | BERGGREN, W.A.
The age of the Eocene/Oligocene boundary is...
-Amer. Assoc. Petrol. Geol., vol.67(3), p.423. | 1983 | abstr.
strat.
TERT.L. |
| 4 | BERTOZZI, G., RAFFI, I. & RIO, D.
Osservazioni stratigrafiche sul "Complesso delle Marne Rosate" in Media val Parma.
-Paleontol. stratigr. ed evol., Quaderno N.2, pp.55-56. | 1982 | strat.
CRET.U.
TERT.L.
Europe.W. |
| 5 | BIGG, P.J.
Eocene planktonic foraminifera and calcareous nannoplankton from the southern Aquitaine Basin, France.
-Revista Esp. Micropal., vol.14, pp.367-400, 3 pls., 9 figs. | 1982 | strat.(syst)
TERT.L.
Europe.W. |
| 6 | BLACKWELDER, P.L.
Coccolithophore community structure and calcification in a Gulf Stream warm core ring.
-Transa., Amer. Geophys. Union, vol.63(3), p.52 | 1982 | abstr.
RECENT
ECOL.
Atlantic.C.N. |
| 7 | BYBELL, L.M.
Late Eocene to Early Oligocene calcareous nannofossils in Alabama and Mississippi.
-Transa., Gulf Coast Assoc. Geol. Soc., vol.32, pp.295-302, 1 pl., 7 figs. | 1982 | strat(syst)
TERT.L.
America.N. |
| 8 | BYBELL, L.M.
Validation of <u>Blackites trochos</u> .
-INA Newsl. vol.4(2), p.101. | 1982 | <u>syst.</u>
TERT.L.
America.N. |
| 9 | BYBELL, L.M. & GIBSON, T.G.
Calcareous nannofossil and foraminiferal biostratigraphy of the Tallahatta Formation (Eocene) in the Eastern Gulf Coastal Plain.
-Geol. Soc. Amer., Abstr. w. Progr., vol.15(2), p.59. | 1983 | abstr.
strat.
TERT.L.
America.N. |
| 10 | BYSTRICKÁ, H.
Findings of Oligocene beds near Banská Bystrica.
-Geol. Zborn. -Geol. Carpath., vol.33(4), pp.509-529, 12 pls. | 1982 | strat(syst)
TERT.L.
Europe.E. |

A163

- | | | | |
|----|--|------|---|
| 1 | CHEN, M.P. & SHIEH, K.S.
Recent nannofossil assemblages in sediments from Sunda Shelf to abyssal plain, South China Sea.
-Proc. National Science Council, Taipei, Part A: Applied Sciences, vol.6(4), pp.250-285, 17 pls., 7 figs., 2 tbs. | 1982 | <u>syst.</u>
QUAT.
Asia.E. |
| 2 | COLOM, G.
Nota sobre la posicion sistematica de los <u>Nannoconus</u> .
-Revista Esp. Micropal., vol.14, pp.323-334, 4 figs. | 1982 | strat. <u>syst.</u>
CRET.
Mediterr. |
| 3 | CRUX, J.A., HAMILTON, G.B., LORD, A.R. & TAYLOR, R.J.
<u>Tortolithus</u> gen. nov. CRUX and new combinations of Mesozoic calcareous nannofossil from England.
-INA Newsl., vol.4(2), pp.98-101. | 1982 | <u>syst.</u>
JURA.CRET.
Europe.W. |
| 4 | DUDLEY, W.C., BRAND, L., BLACKWELDER, P. et al.
A reevaluation of calcareous nannofossil oxygen isotope data.
-Geol. Soc. America, Abstr. w. Progr., vol.14(7), p.478. | 1982 | abstr.
RECENT
ECOL. |
| 5 | EDWARDS, L.E.
Quantitative biostratigraphy: Review and predictions.
-Jour. Paleontol., vol.56, suppl. to no. 2, (No. Amer. Paleontol. Conv. III, abstrs.), pp.8-9. | 1982 | abstr.
TECHN. |
| 6 | EDWARDS, L.E.
Numerical and semi-quantitative biostratigraphy: review and predictions.
-Third No. Amer. Paleont. Conv., Proc. vol.1, pp.147-152, 5 figs., 1 tb. | 1982 | TECHN. |
| 7 | EDWARDS, L.E.
Quantitative biostratigraphy: the methods should suit the data.
-In: Cubitt, J.M. & R.A. Reymont (eds.), Quantitative Stratigraphic Correlation. John Wiley & Sons Ltd., pp. 45-60, 2 figs., 3 tbs. | 1982 | TECHN. |
| 8 | EHRlich, A. & MOSHKOVITZ, S.
Paleogene calcareous nannofossil zonation in Israel.
-Geol. Surv. Israel, Current Research 1981, pp.35-41, 1 fig., 1 tb. | 1982 | strat.
TERT.L.
Asia.SW. |
| 9 | EMILIANI, C., KRAUS, E.B. & SHOEMAKER, E.M.
Sudden death at the end of the Mesozoic.
-Earth Planet. Sci. Lett., vol.55, pp.317-334, 4 tbs. | 1981 | Overview
CRET.U;TERT.L.
worldwide. |
| 10 | FREDERIKSEN, N.O., BYBELL, L.M., CHRISTOPHER, R.A. et al.
Biostratigraphy and paleoecology of Lower Tertiary rocks in U.S. Geological Survey New Madrid test wells, south eastern Missouri.
-Tulane Stud. Geol. Paleont., vol.17(2), pp.23-45, 4 figs., 8 tbs. | 1982 | (strat)
TERT.L.
America.N. |

- | | | | |
|----|--|------|--|
| 1 | FREDERIKSEN, N.O., GIBSON, T.G. & BYBELL, L.M.
Paleocene-Eocene boundary in the eastern Gulf Coast.
-Transa., Gulf Coast Assoc. Geol. Soc., vol.32, pp.289-294,
2 figs. | 1982 | (strat)
TERT.L.
America.N. |
| 2 | GIBSON, T.G., MANCINI, E.A. & BYBELL, L.M.
Paleocene to Middle Eocene stratigraphy of Alabama.
-Transa. Gulf Coast Assoc. Geol. Soc., vol.32, pp.449-458,
2 figs. | 1982 | strat.
TERT.L.
America.N. |
| 3 | GILBERT, M.W. & CLARK, D.L.
Central Arctic Ocean paleoceanographic interpretations
based on Late Cenozoic calcareous dinoflagellates.
-Mar. Micropal., vol.7(5), pp.385-401, 16 figs., 1 pl. | 1983 | strat. <u>syst.</u>
TERT.U;QUAT.
Arctic. |
| 4 | GOLUBEV, S.N.
Real'i'ie kristall'i v skeletach kokkolitoforid. (Real
crystals in coccolithophorid skeletons.)
-Edit. Nauka, Moscow, 161 pp., 32 pls., 17 figs.
(In Russian) | 1981 | MORPHOL.
BIOL.

*C-1 |
| 5 | HAQ, B.U. & MALMGREN, B.A.
Potential of calcareous nannoplankton in paleoenvironmental
interpretations - a case study of the Miocene of the
Atlantic Ocean.
-Acta Univ. Stockh., Stockh. Contr. Geol., vol.37(7),
pp.79-98, 2 figs., 4 tbs. | 1982 | TECHN.
TERT.
Atlantic
ECOL. |
| 6 | HAQ, B.U. & WORSLEY, T.R.
Biochronology - Biological events in time resolution,
their potential and limitations.
-In: Odin, G.S., Numerical dating in stratigraphy., John
Wiley & Sons, pp.19-35, 9 figs. | 1982 | OVERVIEW
strat.
TERT.U;QUAT. |
| 7 | HECK, S.E. van
Bibliography and taxa of calcareous nannoplankton.
-INA Newsl., vol.4(2), pp.65-96. | 1982 | BIBL.
syst. |
| 8 | JAFAR, S.A.
Nannoplankton evidence of Turonian transgression along
Narmada Valley, India, and Turonian-Coniacian boundary
problem.
-J. Palaeont. Soc. India, vol.27, pp.17-30, 1 pl., 1 fig.,
1 tb. | 1982 | strat(syst)
CRET.M.U.
Asia.E. |
| 9 | LANG, T.H., WATKINS, D.K. & BOWDLER, J.L.
Cenozoic calcareous nannofossil assemblages from DSDP Leg
77, southeastern Gulf of Mexico.
-Geol. Soc. Amer., Abstr. w. Progr., vol.15(2), pp.48-49. | 1983 | abstr.
strat.
TERT;QUAT.
Atlantic.C. |
| 10 | LESHNER, O.
Calcareous nannofossil biostratigraphy of the Austin Chalk
(Upper Cretaceous) in the type area, central Texas.
-Geol. Soc. Amer., Abstr. w. Progr., vol.15(2), p.48. | 1983 | abstr.
CRET.
America.N. |

A165

- | | | | |
|---|---|------|--|
| 1 | LOUTIT, T.S., BAUM, G.R. & WRIGHT, R.C.
Eocene-Oligocene sea level changes as reflected in Alabama outcrop sections.
-Amer. Assoc. Petrol. Geol., vol.67(3), p.506. | 1983 | abstr.
strat.
TERT.L.
America.N. |
| 2 | MANIVIT, H.
Les nannofossiles du Crétacé Moyen Européen.
-Cret. Res., 1981(2), pp.361-369, 1 pl., 1 tb. | 1981 | strat(syst)
CRET.L.M.
Europe.W.
ECOL. |
| 3 | MEDD, A.W.
The Maurice Black collection of coccolith material in the Sedgwick Museum, Cambridge, England.
-INA Newsl., vol.4(2), pp.102-103. | 1982 | |
| 4 | MOSHKOVITZ, S.
On the findings of a new calcareous nannofossil (<u>Conusphaera zlabachensis</u>) and other calcareous organisms in the upper Triassic sediments of Austria.
-Eclogae Geol. Helv., vol.75(3), pp.611-619, 2 pls. | 1982 | syst.
PREJURA
Europe.W. |
| 5 | MOSHKOVITZ, S. & EHRLICH, A.
Biostratigraphical problems of the Middle Miocene calcareous nannofossils and the paleoecological significance of the Braarudosphaerids in the coastal plain and offshore Israel.
-Geol. Surv. Israel, Current Research 1981, pp.43-47, 1 fig. | 1982 | strat.
TERT.U.
Asia SW
Mediterr. |
| 6 | PARRISH, J.T.
Upwelling deposits: nature of association of organic-rich rock, chert, phosphorite, and glauconite.
-Amer. Assoc. Petrol. Geol., vol.67(3), p.529. | 1983 | abstr.
ECOL.
worldwide |
| 7 | PERCH-NIELSEN, K., MCKENZIE, J. & HE, Q.
Biostratigraphy and isotope stratigraphy and the 'catastrophic' extinction of calcareous nannoplankton at the Cretaceous/Tertiary boundary.
-Geol. Soc. Amer., Spec. Pap. 190, pp.353-371, 13 figs., 1 app. | 1982 | strat(syst)
CRET.U.
TERT.L.
worldwide |
| 8 | RIO, D.
The fossil distribution of coccolithophore genus <u>Gephyrocapsa</u> Kamptner and related Plio-Pleistocene chronostratigraphic problems.
-In: Prell, W.L., Gardner, J.V. et al., Init. Rep. DSDP, vol. 68, pp.325-343, 4 pls., 8 figs., 1 tb. | 1982 | strat(syst)
TERT.U.; QUAT.
worldwide |
| 9 | RIO, D., PALMIERI, G., RAFFI, I. & VILLA, G.
Classificazione biostratigrafica dei sedimenti marini plio-pleistocenici del Bacino Padano basata sul nannoplankton calcareo. Correlazione con le biozone a foraminiferi e con la chronostratigrafia.
-In: Cremonini, G. & Ricci Lucchi, F. (eds.), Guida alla geologia del margine Appenninico-Padano. Guida Geol.Reg. S.G.I., Bologna, pp.123-129, 2 figs. | 1982 | strat.
TERT.U.; QUAT.
Europe.W. |

- 1 RIO, D., SPROVIERI, R., DI STEFANO, E. & RAFFI, I. 1982 strat.
La comparsa di Globorotalia truncatulinoides
truncatulinoides (d'Orb.) nel Mediterraneo.
-Paleontol. Stratigr. Evol., Quaderno, N.2, pp.145-146. TERT.U.; QUAT.
Mediterr.
- 2 RIO, D., SPROVIERI, R. & RAFFI, I. 1982 strat.
Il passaggio Trubi - Formazione di Monte Narbone nell'
area di Capo Rossello.
-Paleontol. Stratigr. Evol., Quaderno N.2, pp.141-143,
2 figs. TERT.U.
Europe.W.
- 3 RIO, D. & VILLA, G. 1982 strat.
Biostratigrafia a nannofossili ed eta' del Flysch di
Solignano (Appennino Settentrionale - Prov. di Parma).
-Paleontol. Stratigr. Evol., Quaderno N.2, pp.139-140. CRET.U.
Europe.W.
- 4 SALMON, R. & RUSSELL, E.E. 1983 abstr.
Biostratigraphic ranges of nannofossils in the Tupelo
Tongue.
-Geol. Soc. Amer., Abstr. w. Progr., vol.15(2), p.48 strat.
CRET.L.
America.N.
- 5 SMITH, C.C. & MANCINI, E.A. 1982 strat.(syst)
Biostratigraphy.
-In: Russell, E.E., Keady, D.M., Mancini, E.A. et al.,
Upper Cretaceous in the Lower Mississippi Embayment of
Tennessee and Mississippi: Lithostratigraphy and
biostratigraphy. Geol. Soc. Amer., Field Trip Guidebook,
pp.15-26, 1 pl., 1 fig. CRET.U.
America.N.
- 6 STEINMETZ, J.C. 1981 abstr.
The origin of the Oligocene Braarudosphaera chalks in the
South Atlantic Ocean.
-Transa., Amer. Geophys. Union, vol.62(17), p.297. strat.
TERT.L.
Atlantic.S.
- 7 STEINMETZ, J.C. 1982 abstr.
Evolutionary and biogeographic trends of Neogene
discoasters.
-Jour. Paleontol., vol.56, suppl. to no. 2, (No. Amer.
Paleontol. Conv. III, abstrs.), p.27. strat.
TERT.U.
worldwide
- 8 STEINMETZ, J.C. 1982 abstr.
Sediment trap measurement of calcareous nanoplankton
fluxes in the open ocean.
-Transa., Amer. Geophys. Union, vol.63(3), p.81. RECENT
SEDIM.
Atlantic.C.
Pacific.C.
- 9 WATKINS, D.K. & BOWDLER, J.L. 1983 abstr.
Cretaceous calcareous nannofossils from DSDP Leg 77,
southeastern Gulf of Mexico.
-Geol. Soc. Amer., Abstr. w. Progr., vol.15(2), p.48. CRET.
Atlantic.N.
- 10 WIND, F.H. 1983 syst.
The genus Nephrolithus Gorka, 1957 (Coccolithophoridae).
-Jour. Paleont., vol.57(1), pp.157-161, 3 figs. CRET.U.

- A167
- | | | | |
|---|---|------|---|
| 1 | WINTER, A.
Paleoenvironmental interpretation of Quaternary coccolith assemblages from the Gulf of Aqaba (Elat), Red Sea.
-Rev. Esp. Micropal., vol.14, pp.291-314, 1 pl., 8 figs., 3 tbs. | 1982 | (syst)
QUAT.
Africa.N.
ECOL. |
| 2 | WISE, S.W.
Calcareous nannofossils: an update.
-Third No. Amer. Paleontol. Conv., Proc., vol.2, pp.588a - 588j, 2 pls., 1 fig. | 1982 | strat.
OVERVIEW |
| 3 | WISE, S.W.
Calcareous nannofossils: stratigraphic utility and use with other microfossil groups.
-Jour. Paleont., vol.56, suppl. to no. 2, (No. Amer. Paleontol. Conv. III, abstrs.), p.31. | 1982 | abstr.
OVERVIEW |
| 4 | WORSLEY, T.R. & KUPKA, V.J.
Cenozoic calcareous nannofossils from Klamath, southern Oregon.
-Amer. Assoc. Petrol. Geol., Annual Conv., Book of Abstrs., p.125.
-Amer. Assoc. Petrol. Geol., Bull., vol.66(5), p.644. | 1982 | abstr.
strat.
TERT.
America.N. |
| 5 | ZYGOJANNIS, N. & MÜLLER, C.
Nannoplankton-Biostratigraphie der tertiären Mesohellenischen Molasse (Nordwest-Griechenland).
-Z. dt. geol. Ges., vol.133, pp.445-455, 1 fig., 1 tb. | 1982 | strat.
TERT.
Europe.E. |

- Bipodorhabdus brooksii (BUKRY 1969) CRUX 1982; p.98
(ex Amphizygnus). A163-3
- Blackites trochos BYBELL 1975 ex BYBELL 1982; p.101.
holotype: BYBELL 1975, pl.6, fig.3; Alabama (USA), Eocene. A162-8
- Conusphaera zlabachensis MOSHKOVITZ 1982; pp.612-613, pl.1,
figs.1-3. Austria, Rhaetian (U. Triassic). A165-4
- Cyclococcolithus nitescens (KAMPTNER 1963) CHEN & SHIEH
1982; p.263 (ex Umbilicosphaera). A163-1
- Discolithina discopora (SCHILLER 1925) CHEN & SHIEH 1982;
p.264 (ex Pontosphaera). A163-1
- Discolithina scutellum (KAMPTNER 1950) CHEN & SHIEH 1982;
p.265 (ex Discolithus). A163-1
- Flabellites oblonga (BUKRY 1969) CRUX 1982; p.98
(ex Watznaueria). A163-3
- Helicolithus bifarius (BUKRY 1969) CRUX 1982; p.98
(ex Chiastozygnus). A163-3
- Heteromarginatus bugensis (GORKA 1963) CRUX 1982; p.98
(ex Discolithus). A163-3
- Lithastrinus orbicularis (FORCHHEIMER 1972) CRUX 1982; p.99
(ex Polycyclololithus). A163-3
- Nannosphaeroidina COLOM 1982; p.326. A163-2
~~Invalid I.C.B.N. Art.37.~~ *C-2
- Nephrolithus corystus WIND 1982; p.160, fig.3 C,E. A166-10
DSDP Site 511 (S.Atlantic), U. Campanian - Maastrichtian. *C-3
- Parhabdolithus plebeius (PERCH-NIELSEN 1973) CRUX 1982;
p.98 (ex Rhagodiscus). A163-3
- Parhabdolithus reniformis (PERCH-NIELSEN 1973) CRUX 1982;
p.98 (ex Rhagodiscus). A163-3
- Reticulofenestra tokodensis BALDI-BEKE 1982; pp.299-301,
pl.3, fig.8 A,B. Hungary, M. Eocene (NP 16). A161-6
- Staurolithites coroniformis (FORCHHEIMER 1972) TAYLOR 1982;
p.98 (ex Vagalapilla). A163-3
- Stradnerlithus minutus (ROOD, HAY & BARNARD 1971) HAMILTON
1982; p.99 (ex Diadorhombus). A163-3
- Thoracosphaera arctica GILBERT & CLARK 1983; p.400, pl.1,
fig.1. Arctic, L. Pleistocene. A164-3
- Tortololithus CRUX 1982; p.100. Type species: Tortololithus
caistorensis CRUX 1982. A163-3

B106	<u>Tortolithus caistorensis</u> CRUX 1982; p.100. Holotype: CRUX 1982, pl.5,4, fig.17. England, Campanian. Type species of <u>Tortolithus</u> .	A163-3
	<u>Tortolithus furlongii</u> (BUKRY 1969) CRUX 1982; p.100 (ex <u>Discolithina</u> ?).	A163-3
	<u>Tortolithus hallii</u> (BUKRY 1969) CRUX 1982; p.100 (ex <u>Discolithina</u> ?).	A163-3
	<u>Tortolithus pagei</u> (BUKRY 1969) CRUX 1982; p.100 (ex <u>Discolithina</u> ?).	A163-3
	<u>Zygodiscus noelae</u> (ROOD, HAY & BARNARD 1971) TAYLOR 1982; p.99 (ex <u>Zeugrhabdotus</u>).	A163-3

+++++

Species names in alphabethical order.

arctica, Thoracosphaera	nitescens, Cyclococcolithus
bifarius, Helicolithus	noelae, Zygodiscus
brooksii, Bipodorhabdus	oblonga, Flabellites
bugensis, Heteromarginatus	orbicularis, Lithastrinus
caistorensis, Tortolithus	pagei, Tortolithus
coroniformis, Staurolithites	plebeius, Parhabdolithus
corystus, Nephrolithus	reniformis, Parhabdolithus
discopora, Discolithina	scutellum, Discolithina
furlongii, Tortolithus	tokodensis, Reticulofenestra
hallii, Tortolithus	trochos, Blackites
minutus, Stradnerlithus	zlambachensis, Conusphaera

New genus names:

Tortolithus, Nannosphaeroidina (invalid).

+++++

COMMENTS
=====

- 1 - A164-4 : An English summary of this publication has kindly been provided by Prof. S. Shumenko, and will be reproduced on p. 14.
- 2 - B105 : The genus Nannosphaeroidina is introduced to accomodate all organisms containing nannoconids. As such it is a junior synonym of the genus Nannoconus. A definition of the new genus is given (p.326), but no named species are included, no new combinations introduced, and no type species selected.
- 3 - B105 : The type level of this species is sample 511-24-3, 15-17 cm, for which no age is given. It can be obtained from DSDP vol.71, when published.

GOLUBEV,S.N., 1981 : 'Real crystals in coccolithophorids skeletons'.

English abstract, provided by Prof. S. Shumenko

The specificity of the real defect construction of biological skeleton crystals is considered. By detailed electronmicroscopic studies of coccoliths, it is shown that the collagen matrix has predetermined the 100 Angstrom periodicity of the defect concentration of the crystalline lattice, and the parameters of the principal screw dislocation of the crystal. The duplication of biological crystals and the structure specificity at the micron block level are considered. All-biological ideas about the regulation skeleton crystallization mechanism are stated.

On the legitimacy of the generic name *Discoaster* Tan, 1927 ex Tan, 1931.

by S.A.Theodoridis

Institute of Earth Sciences, Utrecht, the Netherlands.

Introduction.

In all literature (except Prins, 1971) the asteroliths are classified in the genus *Discoaster* Tan, 1927 with type species *Discoaster pentaradiatus* Tan, 1927. A careful study of the relevant publications revealed:

- a) The generic name *Discoaster* was first validly published in Tan Sin Hok, 1931 and was typified by *Discoaster brouweri* Tan, 1927 ex Tan, 1931.
- b) Although valid, the name is illegitimate as nomenclaturally superfluous at the time of publication. As such it must be rejected.

Eu-Discoaster Tan, 1927 versus *Discoaster* Tan, 1927 ex Tan, 1931.

Tan Sin Hok firstly published about "asterisks" or "Disco-asters" in 1926. This early reference, however, is of no nomenclatural significance because the names were mentioned incidentally and in anticipation of a future taxonomic treatment.

In 1927, Tan Sin Hok introduced formally the genera *Helio-Discoaster*, *Eu-Discoaster* and *Hemi-Discoaster*. All genera were validly published with sufficient descriptions, clear indication of rank and type species (*Discoaster Barbadiensis* typ. spec. of *Helio-Discoaster*; "*Discoaster Brouweri*" typ. spec. of *Eu-Discoaster*; and "*Discoaster Molengraaffi*" typ. spec. of *Hemi-Discoaster*). At the same time the name *Discoaster* appears both as a morphologic term as well as in combination with specific epithets, but lacks a formal description.

The lack of description invalidates the name *Discoaster* Tan, 1927 (I.C.B.N. article 32) and consequently all species names associated with it are also invalid (I.C.B.N. article 43.1.). The fact that among the invalid species are included also the type species of *Helio-Discoaster*, *Eu-Discoaster* and *Hemi-Discoaster* does not affect the validity of these genera, since descriptions and figures of the holotypes are given (a).

In Tan Sin Hok, 1931 (p.93, remark 1) the valid generic name *Eu-Discoaster* is cited as a synonym of *Discoaster*. Thus, *Discoaster* is validated by an indirect reference to the description of *Eu-Discoaster* (I.C.B.N. article 41.1.b.). Had the opposite been mentioned (i.e. *Discoaster* synonym of *Eu-Discoaster*) the name *Discoaster* would have remained invalid (I.C.B.N. article 34.1.d.). The validation of the name is automatically followed by typification by *D.brouweri* (I.C.B.N. article 7.11.). Moreover, all *Discoaster* species earlier introduced by Tan (1927) are validated at the same time, as references are given to their original descriptions (I.C.B.N. article 43.).

The generic name *Discoaster* Tan, 1927 ex Tan, 1931, although valid, was nomenclaturally superfluous at the time of validation since it was meant to substitute the earlier validly published *Eu-Discoaster* Tan, 1927. As such it is illegitimate and must be rejected (I.C.B.N. article 63.1.).

Selected references.

Bramlette and Riedel (1954) noticed the insufficiency of the diagnoses of the genera introduced by Tan. Because it was impossible to distinguish *Helio-Discoaster* from *Eu-Discoaster* on the basis of the original diagnoses they lumped all asteroliths into one genus. In naming this genus they chose *Discoaster* Tan, 1927, instead of the correct *Eu-Discoaster* Tan, 1927. They justified this choice by stating that Tan intended *Eu-Discoaster* (and *Helio-Discoaster*) to be subgenera of *Discoaster*.

Unfortunately nowhere in Tan's publications this is clearly mentioned. On the contrary, all other names except *Discoaster* bear the clear indication "nov.gen.". Thus the association of the name *Discoaster* with the specific epithets is either a mistake, or - in the case he meant it to be a genus name - an incorrect introduction of a genus.

Loeblich and Tappan (1963) validated *Discoaster* and typified it with *D. pentaradiatus*. Both the validation as well as the typification was superfluous as the name was validated (in 1931) and automatically typified. Furthermore, for the validation of the name, the authors referred to "Tan Sin Hok, 1927, p.412" instead of the correct pp.414-418 which is the taxonomic part of Tan's publication. Had the name been invalid, the validation by Loeblich and Tappan would have been ineffective.

Farinacci (1969, 1/59) implied that the substitution of *Eu-Discoaster* by *Discoaster* was a correction by Tan Sin Hok. Unfortunately such a correction of an earlier validly published name by a latter one is not recognized by the International Code of Botanical Nomenclature (I.C.B.N. article 62.1).

Prins (1971) questioned the validity of *Discoaster* and suggested the rejection of this name in favour of *Eu-Discoaster*. Furthermore he recombined all *Discoaster* species names with the latter, as well as with other generic and subgeneric names introduced by him.

However, all the new combinations of Prins (1971) lack direct references to the original publications and are, therefore, invalid (I.C.B.N. article 33.2.).

New combinations of species earlier assigned to the illegitimate genus *Discoaster*.

From the three genera introduced by Tan Sin Hok only *Eu-Discoaster* and *Helio-Discoaster* have taxonomic significance, because the type species assigned to them show essentially different construction. The discussion about the distinction of the two genera and the emendation of their diagnoses are reserved for a thorough taxonomic treatment of the discoasters (Theodoridis, 1983, in prep.). *Hemi-Discoaster*, on the other hand, is considered to be a preservational state of either one of them.

The name *Discoaster* is replaced here by *Eu-discoaster* and *Helio-discoaster* (^b). In the following list of new combinations, names which are considered to be synonyms are omitted. The species of each genus are arranged in alphabetic order.

Family EUDISCOASTERACEAE Prins, 1971.

Genus *Eu-discoaster* Tan Sin Hok, 1927.

Eu-discoaster altus (Müller) n. comb.

Basionym: *Discoaster altus* Müller, 1974: In. Repts. D.S.D.P., vol. 25, p. 592, pl. 9, figs. 1-3.

Eu-discoaster asymmetricus (Gartner) n. comb.

Basionym: *Discoaster asymmetricus* Gartner, 1969: Trans. Gulf Coast Assoc. Geol. Soc., vol. 19, p. 598, pl. 1, figs. 1-3.

Eu-discoaster bellus (Bukry and Percival) n. comb.

Basionym: *Discoaster bellus* Bukry and Percival, 1971: Tul. Stud. Geol. Paleont., vol. 8, n. 3, p. 128, pl. 3, figs. 1, 2.

Eu-discoaster berggrenii (Bukry) n. comb.

Basionym: *Discoaster berggrenii* Bukry, 1971: Micropal., vol. 17, n. 1, p. 45, pl. 2, figs. 4-6.

Eu-discoaster browseri (Tan, 1927 ex Tan, 1931) n. comb.

Basionym: *Discoaster browseri* Tan, 1927: Kon. Akad. Wet. Proc., vol. 30, n. 3, p. 415, figs. 5-8a, b, 13.

Eu-discoaster bollii (Martini and Bramlette) n. comb.

Basionym: *Discoaster bollii* Martini and Bramlette, 1963: J. Paleont., vol. 37, n. 4, p. 851, pl. 105, figs. 1-4, 7.

Eu-discoaster calcaris (Gartner) n. comb.

Basionym: *Discoaster calcaris* Gartner, 1967: Paleont. Contr. Univ. Kansas, paper 29, p. 2, pl. 2, figs. 1, 2a, b, 3a, b.

Eu-discoaster decorus (Bukry) n. comb.

Basionym: *Discoaster variabilis decorus* Bukry, 1971: Micropal., vol. 17, n. 1, p. 48, pl. 3, figs. 5, 6.

Eu-discoaster deflandrei (Bramlette and Riedel) n. comb.

Basionym: *Discoaster deflandrei* Bramlette and Riedel, 1954: J. Paleont., vol. 28, n. 4, p. 399, pl. 39, fig. 6, text-figs. 1a, b, c.

Eu-discoaster distinctus (Martini) n. comb.

Basionym: *Discoaster distinctus* Martini, 1958: Senck. Leth., vol. 39, n. 5/6, p. 363, pl. 4, figs. 17a, b.

Eu-discoaster druggii (Bramlette and Wilcoxon) n. comb.

Basionym: *Discoaster druggii* Bramlette and Wilcoxon 1967: Tul. Stud. Geol. Paleont., vol. 5, p. 220 ; nomen subst. pro *Discoaster extensus* Bramlette and Wilcoxon 1967 : Tul. Stud. Geol. Paleont., vol. 5, n. 3, p. 110, pl. 8, figs. 2-8.

Eu-discoaster exilis (Martini and Bramlette) n. comb.

Basionym: *Discoaster exilis* Martini and Bramlette, 1963: J. Paleont., vol. 37, n. 4, p. 852, pl. 104, figs. 1-3.

Eu-discoaster hamatus (Martini and Bramlette) n. comb.

Basionym: *Discoaster hamatus* Martini and Bramlette, 1963: J. Paleont., vol. 37, n. 4, p. 852, pl. 105, figs. 8, 10, 11.

Eu-discoaster kugleri (Martini and Bramlette) n. comb.

Basionym: *Discoaster kugleri* Martini and Bramlette, 1963: J. Paleont., vol. 37, n. 4, p. 853, pl. 102, figs. 11-13.

Eu-discoaster loeblichii (Bukry) n. comb.

- Basionym: *Discoaster loeblichii* Bukry, 1971: Trans. San Diego Soc. Nat. Hist., vol. 16, n. 14, p. 315, pl. 4, figs. 3-5.
- Eu-discoaster mendomombensis* (Wise) n. comb.
Basionym: *Discoaster mendomombensis* Wise, 1973: In. Repts. D.S.D.P., vol. 18, n. 15, p. 594, pl. 7, figs. 1-8.
- Eu-discoaster musicus* (Stradner) n. comb.
Basionym: *Discoaster musicus* Stradner, 1959: Proc. Fifth World Petr. Congr., sect. 1, p. 1088, text-fig. 28.
- Eu-discoaster moorei* (Bukry) n. comb.
Basionym: *Discoaster moorei* Bukry, 1971: Micropal., vol. 17, n. 1, p. 46, pl. 2, figs. 11, 12, pl. 3, figs. 1, 2.
- Eu-discoaster neohamatus* (Bukry and Bramlette) n. comb.
Basionym: *Discoaster neohamatus* Bukry and Bramlette, 1969: Tul. Stud. Geol. Paleont., vol. 7, n. 3, p. 133, pl. 1, figs. 4-5.
- Eu-discoaster neorectus* (Bukry) n. comb.
Basionym: *Discoaster neorectus* Bukry, 1971: Trans. San Diego Soc. Nat. Hist., vol. 16, n. 14, p. 316, pl. 4, figs. 6, 7.
- Eu-discoaster nonaradiatus* (Klumpp) n. comb.
Basionym: *Discoaster nonaradiatus* Klumpp, 1953: Paleontographica, Abt. A, vol. 103, n. 5-6, p. 383, text-fig. 3, n. 5.
- Eu-discoaster pansus* (Bukry and Percival) n. comb.
Basionym: *Discoaster variabilis pansus* Bukry and Percival, 1971: Tul. Stud. Geol. Paleont., vol. 8, n. 3, p. 129, pl. 3, figs. 8, 9.
- Eu-discoaster pentaradiatus* (Tan, 1927 ex Tan, 1931) n. comb.
Basionym: *Discoaster pentaradiatus* Tan, 1927: Kon. Akad. Wet. Proc., vol. 30, n. 3, p. 416, fig. 14.
- Eu-discoaster prepentaradiatus* (Bukry and Percival) n. comb.
Basionym: *Discoaster prepentaradiatus* Bukry and Percival, 1971: Tul. Stud. Geol. Paleont., vol. 8, n. 3, p. 129, pl. 3, figs. 6, 7.
- Eu-discoaster pseudovariabilis* (Martini and Worsley) n. comb.
Basionym: *Discoaster pseudovariabilis* Martini and Worsley, 1971: In. Repts. D.S.D.P., vol. 7, part. 2, p. 1500, pl. 3, figs. 2-8.
- Eu-discoaster quinquerramus* (Gartner) n. comb.
Basionym: *Discoaster quinquerramus* Gartner, 1969: Trans. Gulf Coast Assoc. Geol. Soc., vol. 19, p. 598, pl. 1, figs. 1-3.
- Eu-discoaster signus* (Bukry) n. comb.
Basionym: *Discoaster signus* Bukry, 1971: Micropal., vol. 17, n. 1, p. 48, pl. 3, figs. 3, 4.
- Eu-discoaster subsurculus* (Gartner) n. comb.
Basionym: *Discoaster subsurculus* Gartner, 1967: Paleont. Contr. Univ. Kansas, paper 29, p. 3, pl. 5, figs. 1a, b, 2a, b.
- Eu-discoaster surculus* (Martini and Bramlette) n. comb.
Basionym: *Discoaster surculus* Martini and Bramlette, 1963: J. Paleont., vol. 37, n. 4, p. 854, pl. 104, figs. 10-12.
- Eu-discoaster tamalis* (Kamptner) n. comb.
Basionym: *Discoaster tamalis* Kamptner, 1967: Ann. Naturhist. Mus. Wien, vol. 71, p. 166, text-fig. 29.
- Eu-discoaster tristellifer* (Bukry) n. comb.
Basionym: *Discoaster tristellifer* Bukry, 1976: In. Repts. D.S.D.P., vol. 33,

p.499,pl.1,figs.1-17.

Eu-discoaster variabilis (Martini and Bramlette) n.comb.

Basionym: *Discoaster variabilis* Martini and Bramlette,1963: J.Paleont., vol.37,n.4,p.854,pl.104,figs.4-8.

Genus *Helio-discoaster* Tan,1927.

Helio-discoaster barbadiensis (Tan,1927 ex Tan,1931) n.comb.

Basionym: *Discoaster barbadiensis* Tan,1927: Kon.Akad.Wet.Proc.,vol.30, n.3,p.415,fig.4.

Helio-discoaster bifax (Bukry) n.comb.

Basionym: *Discoaster bifax* Bukry,1971: Trans.San Diego Soc.Nat.Hist., vol.16,n.14,p.313,pl.3,figs.6-11.

Helio-discoaster binodosus (Martini) n.comb.

Basionym: *Discoaster binodosus* Martini,1958: Senck.Leth.,vol.39,n.5/6, p.361,pl.4,figs.18a,b,19a,b.

Helio-discoaster colletii (Parejas) n.comb.

Basionym: *Discoaster colletii* (Parejas) Bersier,1939:p.237,figs.18,21.

Helio-discoaster diastypus (Bramlette and Sullivan) n.comb.

Basionym: *Discoaster diastypus* Bramlette and Sullivan,1961: Micropal., vol.7,n.2,p.159,pl.11,figs.6-8.

Helio-discoaster elegans (Bramlette and Sullivan) n.comb.

Basionym: *Discoaster elegans* Bramlette and Sullivan,1961: Micropal., vol.7,n.2,p.159,pl.11,figs.16a,b.

Helio-discoaster gemmeus (Stradner) n.comb.

Basionym: *Discoaster gemmeus* Stradner,1959: Proc.Fifth World Petr.Congr., sect.1,p.1086,text-fig.21.

Helio-discoaster kuepperi (Stradner) n.comb.

Basionym: *Discoaster kuepperi* Stradner,1959: Erdoel Z.,vol.75,n.12, p.478,figs.17,21.

Helio-discoaster lenticularis (Bramlette and Sullivan)n.comb.

Basionym: *Discoaster lenticularis* Bramlette and Sullivan,1961: Micropal., vol.7,n.2,p.160,pl.12,figs.1a,b,2.

Helio-discoaster lodoensis (Bramlette and Riedel) n.comb.

Basionym: *Discoaster lodoensis* Bramlette and Riedel,1954: J.Paleont., vol.28,n.4,p.398,pl.39,figs.3a,b.

Helio-discoaster mediosus (Bramlette and Sullivan) n.comb.

Basionym: *Discoaster mediosus* Bramlette and Sullivan,1961: Micropal., vol.7,n.2,p.161,pl.12,figs.7a,b,8.

Helio-discoaster mirus (Deflandre,1952 ex Deflandre,1954) n.comb.

Basionym: *Discoaster mirus* Deflandre,1952 ex Deflandre in Deflandre and Fert,1954: Ann.Paléont.,vol.40,p.168,text-fig.118.

Helio-discoaster mohleri (Bukry and Percival) n.comb.

Basionym: *Discoaster mohleri* Bukry and Percival,1971: Tul.Stud.Geol. Paleont.,vol.8,n.3,p.128,pl.3,figs.3-5.

Helio-discoaster multiradiatus (Bramlette and Riedel) n.comb.

Basionym: *Discoaster multiradiatus* Bramlette and Riedel,1954: J.Paleont.,vol.28,n.4,p.396,pl.38,fig.10.

Helio-discoaster nobilis (Martini) n.comb.

Basionym: *Discoaster nobilis* Martini, 1961: Senck.Leth., vol.42, n.1/2, p.11, pl.2, fig.23, pl.5, fig.51.

Helio-discoaster nodifer (Bramlette and Riedel) n.comb.

Basionym: *Discoaster tani nodifer* Bramlette and Riedel, 1954: J.Paleont., vol.28, n.4, p.394, pl.39, fig.2.

Helio-discoaster ornatus (Stradner) n.comb.

Basionym: *Discoaster ornatus* Stradner, 1958: Erdoel Z., vol.74, p.188, fig.38.

Helio-discoaster pacificus (Haq) n.comb.

Basionym: *Discoaster pacificus* Haq, 1969: Stock.Contr.Geol., vol.21, n.1, p.11, pl.4, figs.4-7, text-fig.3.

Helio-discoaster perpolitus (Martini) n.comb.

Basionym: *Discoaster perpolitus* Martini, 1961: Senck.Leth., vol.42., n.1/2, p.9, pl.2, fig.20, pl.5, fig.50.

Helio-discoaster saipanensis (Bramlette and Riedel) n.comb.

Basionym: *Discoaster saipanensis* Bramlette and Riedel, 1954: J.Paleont., vol.28, n.4, p.398, pl.39, fig.4.

Helio-discoaster splendidus (Martini) n.comb.

Basionym: *Discoaster splendidus* Martini, 1960: Notizbl.hess.L.-Amt. Bodenforsch., vol.88, p.80, pl.10, figs.25, 26, 29.

Helio-discoaster sublodoensis (Bramlette and Sullivan) n.comb.

Basionym: *Discoaster sublodoensis* Bramlette and Sullivan, 1961: Micro-pal., vol.7, n.2, p.162, pl.12, figs.6a, b.

Helio-discoaster tani (Bramlette and Riedel) n.comb.

Basionym: *Discoaster tani* Bramlette and Riedel, 1954: J.Paleont., vol.28, n.4, p.397, pl.39, fig.1.

Helio-discoaster wemmelensis (Achuthan and Stradner) n.comb.

Basionym: *Discoaster wemmelensis* Achuthan and Stradner, 1969: Proc. First Int. Conf. Plankt. Micr. Geneva, p.5, pl.4, figs.3, 4, text-fig.2.

Remarks.

The letters accompanying the remarks refer to indications in the text.

(^c) In the new International Code of Botanical Nomenclature a provision has been added according to which a genus is typified by a specimen and not a valid species name.

(b) The generic names have been simplified here by substituting the capital letters by small ones. Such an alteration is recognized by the I.C.B.N. (article 73.2). A further alteration of the original spelling, however, to delete the hyphen is not admissible (I.C.B.N. article 20.3.).

Literature.

- Achuthan, M.V. and Stradner, E. (1969). Calcareous nannoplankton from the Wemmelian stratotype. In Brönnimann, P. and Renz, H.H. (ed.). Proc. First Int. Conf. Plankt. Micr., Geneva, E.J. Brill, Leiden, vol. 1, pp. 1-13.
- Bersier, A. (1939). Discoastéridées et Coccolithophoridées des marns oligocènes vaudoises. Bull. Soc. Vaud. Sc. Nat., vol. 60, pp. 229-248.
- Bramlette, M.N. and Riedel, W.R. (1954). Stratigraphic value of discoasters and some other microfossils related to recent coccolithophores. J. Paleont., vol. 28, n. 4, pp. 385-403.
- and Sullivan, F.R. (1961). Coccolithophorids and related Nannoplankton of the early Tertiary in California. Micropal., vol. 7, n. 2, pp. 129-188.
- and Wilcoxon, J.A. (1967). Middle Tertiary calcareous nannoplankton of the Cipero section, Trinidad. Tulane Stud. Geol., vol. 5, n. 3, pp. 93-131.
- (1967). *Discoaster druggii* nom. nov. pro *Discoaster extensus* Bramlette and Wilcoxon 1967, non Hay, 1967. Tulane Stud. Geol., vol. 5, p. 220.
- Bukry, D. (1971). Cenozoic Calcareous Nannofossils from the Pacific Ocean. San Diego Soc. Nat. Hist. Trans., vol. 16, pp. 303-327.
- and Bramlette, M.N. (1967). Some new and biostratigraphically useful calcareous nannofossils of Cenozoic. Tulane Stud. Geol. Paleont., vol. 7, n. 3, pp. 131-142.
- and Percival, S.F. (1971). New Tertiary calcareous nannofossils. Tulane Stud. Geol. Paleont., vol. 8, n. 3, pp. 123-146.
- Deflandre, G. In Grassé (1952). Traité de Zoologie, Masson, Paris, vol. 1, n. 1, Classe des Coccolithophoridées, pp. 439-470.
- In Deflandre, G. et Fert, Ch. (1954). Observations sur les Coccolithophoridées actuel et fossiles en microscopie ordinaire et électronique. Ann. Paleont., vol. 40, pp. 115-176.
- Farinacci, A. (1969). Catalogue of calcareous nannofossils. Ed. Tecnoscienza, Roma, vol. 1, p. 59.
- Gartner, S. (1967). Calcareous nannofossils from the Neogene of Trinidad, Jamaica, and Gulf of Mexico. Paleont. Contr. Univ. Kansas, paper 29, pp. 1-7.
- (1969). Correlation of Neogene planktonic foraminifer and calcareous nannofossil Zones. Trans. Gulf Coast Assoc. Geol. Soc., vol. 19, pp. 585-599.
- Haq, B.U. (1969). The structure of coccoliths and discoasters from the Tertiary deep-sea core in the Central Pacific. Stockholm Contr. Geol., vol. 21, n. 1, pp. 1-19.
- International Code of Botanical Nomenclature (1978). Bohn, Scheltema and Hokema, Utrecht, pp. 1-457.
- Kamptner, E. (1967). Kalkflagellaten-Skelettreste aus Tiefseeschlamm des Südatlantischen Ozeans. Ann. Naturhist. Mus. Wien, vol. 71, pp. 117-198.
- Klump, B. (1953). Beitrag zur Kenntnis der Mikrofossilien des mittleren und oberen Eozän. Paleontographica Abt. A, vol. 103, n. 5-6, pp. 377-406.
- Loeblich, A.R. and Tappan, H. (1963). Type fixation and validation of certain calcareous nannoplankton genera. Proc. Biol. Soc. Washington, vol. 76, pp. 191-196.
- Martini, E. (1958). Discoasteriden und verwandte Formen im NW-deutschen Eozän (Coccolithophorida). Senck. Leth., vol. 39, n. 5/6, pp. 353-388.
- (1960). Braarudosphaeriden, Discoasteriden und verwandte Formen aus dem Rupelton des Mainzer Beckens. Notizbl. hess. L.-Amt. Bodenforsch., vol. 88, pp. 65-87.
- (1961). Nannoplankton aus dem Tertiär und der obersten Kreide von SW Frankreich. Senck. Leth., vol. 42, n. 1/2, pp. 1-41.
- and Bramlette, M.N. (1963). Calcareous nannoplankton from the experimental Mohole Drilling. J. Paleont., vol. 37, n. 4, pp. 845-856.
- and Worsley, T. (1971). Tertiary calcareous nannoplankton from the Western Equatorial Pacific. In Repts. D.S.D.P. vol. 7, part. 2, pp. 1471-1507.
- Müller, C. (1974). Calcareous nannoplankton, Leg. 25 (western Indian Ocean). In Repts. D.S.D.P., vol. 25, pp. 579-633.
- Parejas, E. (1934). Sur quelques *Actiniscus* du Crétacé supérieur des Brasses (Préalpes médianes) et de l'île d'Elbe. C.R. Soc. Phys. et Hist. Nat. Genève, vol. 51, pp. 100-107.
- Prins, B. (1971). Speculations on relations, evolution and stratigraphic distribution of Discoasters. Proc. Second Plankt. Conf., Rome, 1970, vol. 2, pp. 1017-1039.
- Stradner, E. (1958). Die fossilen Discoasteriden Österreichs. I Teil, Die in den Bohrkernen der Tiefbohrung Korneuburg enthaltenen Discoasteriden. Erdoel Z., vol. 74, pp. 178-188.
- (1959). First report on the discoasters on the Tertiary of Austria and their stratigraphic use. Proc. Fifth Petrol. Congr., sect. 1, pp. 1081-1095.
- (1959). Die fossilen Discoasteriden Österreichs, II Teil. Erdoel Z., vol. 75, n. 12, pp. 472-488.
- Tan Sin Hok (1926). On a Young-Tertiary Limestone of the Isle of Roti with Coccoliths, Calci- and Manganese-peroxide Spherulites. Proc. Kon. Akad. Wet., Afd. Natuurk., vol. 29, n. 8, pp. 1095-1105 (or pp. 1-11).
- (1927). Discoasteridae Incertae Sedis. Proc. Kon. Akad. Wet., Afd. Natuurk., vol. 30, n. 3, pp. 411-419 (or pp. 1-9).
- (1931). Discoasteridae, Coccolithinae and Radiolaria. Leidsche Geol. Mededeel., Leiden, vol. 5, pp. 92-114.
- Wise, S.W. (1973). Calcareous nannofossils from cores recovered during Leg. 18, D.S.D.P.: Biostratigraphy and observations of diagenesis. In Repts. D.S.D.P., vol. 18, n. 15, pp. 561-619.

NEW MEMBERS

Dr. Steven M. Conley
Unocal Corporation
Locked bog Service N3
Killiney Road Post Office
Singapore 9123
Singapore

China Nat. Publ. Imp. Corp.
Per. Dept.
P.O. Box 50
Peking
China

Science Reference Library
25 Southampton Buildings
Chancery Lane
London WC 2A IAW
England

Mr. Seyve
S.N.E.A.P.
Centre Micoulau
Avenue du president Angot
64018 Pau Cedex France
France

Enrico Di Stefano
Istituto di Geologia
Corso Tukory 131
90134 Palermo
Italy

Giuliana Ville
Istituto di Geologia
Via J.F. Kennedy 4
43100 Parma
Italy

T.C.
Maden Tetkik Ve Arama
Enstitüsü
Ankara
Türkiye

Offilib
48, Rue Gay-Lussac
75240 Paris Cedex 05
France

CHANGES OF ADDRESSES:

L.D. Alblas
Pens. Oil Ned. Co.
Mauritskade 35
Postbus 13410
2501 EK Den Haag
The Netherlands

Dr. D. Fütterer
Alfred Wegener Institute
for Polar Research
Columbus Center
2850 Bremerhaven
B.R.D.

Dr. P.J. Bigg
46 Tagore Lane
Sindo Industrial Estate
Singapore 2678
Singapore

Dr. Camilla Pirini Radrizzani
Via Europa 28
20097 San Donata Milaneze
Milana
Italy

A.D. Warren
8913 Complex Drive
Suite C
San Diego, CA 92123
U.S.A.

J. Backman
Dept. of Geology
Stockholm University
S - 10691 Stockholm
Sweden

O. Varol
Robertson Research (Singapore)
55 Ayer Rajah Crescent
06-16
Ayer Rajah Industrial Estate
Singapore 0513
Singapore

J. Clark Hanna
Esso Resources Canada Ltd.
Expl. Department
Esso Plaza 237
Fourth Avenue South West
Calgary Canada T 2P 0H6
Canada

Edward Marks
Unocal Corporation
Locked Bag Service No. 3
Killiney Road Post Office
Singapore 9123
Singapore

