CANADIAN ASSOCIATION OF PALYNOLOGISTS
ASSOCIATION CANADIENNE DES PALYNOLOGISTES

NEWSLETTER

Volume 5 Number 2 WINTER 1982

1982 EXECUTIVE COMMITTEE

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Geoff Norris, President-Elect
Jocelyne Legault, Secretary-Treasurer
Bert van Helden, Newsletter Editor
c/o Chevron Canada Resources Limited
500 - 5th Avenue S.W.
Calgary, Alberta
T2P 0L7

FROM THE EDITOR

It gives me a great deal of pleasure to thank those CAP members who submitted news items and other material for publication. These items constitute one of the most significant functions of the newsletter: COMMUNICATION OF SCIENTIFIC DATA! Anyone wishing to contribute such news items is encouraged to submit them for publication in the 1983 summer edition of the Newsletter.

On behalf of the CAP Executive Committee I take this opportunity to wish you all a successful 1983. "May your path throughout the year be covered with palynomorphs!" (well preserved, I hope)

NOTE: CHANGE OF EDITOR'S EMPLOYER:

As of January 1, 1983 your editor is no longer employed at Chevron Standard Limited but at CHEVRON CANADA RESOURCES LIMITED. (Same address!)

The Editor

MEMBERSHIP DUES

The following CAP Members have paid up their dues to 1980:

J. Bourgeois
J. Elson
L. Gill
C. Labelle
D. McIntyre
G. Millar
G. Norris
J. Richard
R. Stockey
J. Terasmae

These members will be automatically suspended if their dues have not been received by the end of March 1983.

Dues paid up to 1981:

A. Achab
J. Bassett
P. Beckett
A. Bujak
B. Criley
A. Crowder
W. Fitzgerald
J. Jansonius
D. Jarzen
B. Klein
R. Matthewes
D. McLennan
F. Staplin
A. Sweet

Dues paid up to 1982:

S. Barss
M. Camfield
P. Dobell
A. Dreimanis
L. Hills
C. Manville
M. Melchin
L. Savoie
C. Singh
J. Utting
G. Williams

Membership dues are $2.00 per annum. Cheque payable to CAP Secretary/Treasurer, J. Legault, Department of Earth Sciences, University of Waterloo, Waterloo, Ontario, N2L 3G1

SOCIETIES

GEOLOGICAL ASSOCIATION OF CANADA

The 1982-83 Executive of the Paleontology Division is:

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Department of Geology
University of Alberta
EDMONTON, Alberta
T6G 2E3

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Department of Geology
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FREDERICTON, New Brunswick
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Department of Geology and Geophysics
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CALGARY, Alberta
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Ontario Ministry of Natural Resources
77 Grenville Street
TORONTO, Ontario
M5S 1B3

AND

Wilbert Danner
Department of Geological Sciences
University of British Columbia
VANCOUVER, British Columbia
V6T 2B4

(GAC Paleontology Division. Newsletter November 1982)

INTERNATIONAL COMMISSION FOR PALYNOLOGY

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(Paris, France)

(ICP Newsletter December 1981)

COMMISSION INTERNATIONALE DU MICROFLORE PALAEOZOIQUE

CHITINOZOAN NEWSLETTER

No. 3 of the Chitinozoan Newsletter appeared in October, 1981. This is produced by the CIMP Subcommission on Chitinozoa. If you would like copies of past Newsletters or have news items, write the editors: Florentin Paris, Institut de Geologie, Universite de Rennes, 35042 Rennes Cedex, France; and Yngve Grahn, Geological Survey of Sweden, Box 670, S-751 28 Uppsala, Sweden.

SCOLECODONT NEWSLETTER

Newsletter no. 1 of the CIMP Subcommission on Scolecodonts appeared in September 1981. In this issue is a list of the members of the CIMP Scolecodont Working Group and a Bibliography of Scolecodonts for 1978-1980. For a copy, or to send in news items, write the editor: A. W. Van Erve, Institut fuer Palaeontologie der Freien Universitaet Berlin, Schwendenerstrasse 8, 1000 Berlin, West Germany.

(AASP Newsletter 15/3. July 1982)

ASSOCIATION DES PALYNOLOGUES DE LANGUE FRANCAISE

A French working group on Dinoflagellates was established after a desperate cry for help in the study of Dinocysts. (see CAP Newsletter Vol. 5 #1, July 1982)

The first meeting was held in Paris from March 9-11, 1982 with about fifty French, Belgian, Italian and Swiss Palynologists attending. This meeting was reserved to a rapid review of the biostratigraphy and morphology of the dinos from the Jurassic to the recent.

The working group defined its objectives for the near future:

- The publication of the palynological associations of the French stratotypes.
- The development of a collection of photographic slides of French holotypes.
- The organization of a French palynological slide collection of "paratypes" and their associations in a reference collection at the:

Laboratoire de Micropaleontologie
Departement de Geologie Sedimentaire
Att. Edwige Masure, Secretary
4, Place Jussieu
75230 PARIS CEDEX 05

A detailed report of the meeting is available through the secretary.

The members of the working group decided to work jointly on a revision of the genera Florentinia and Silicisphaera of which the type species are in French collections.

Anyone wishing to join a working group on the genus Gonyaulacysta is to contact J. Taugourdeau.

(APLF Newsletter April 1982)

PALYNOLOGICAL AND PALEOBOTANICAL ASSOCIATION OF AUSTRALASIA

Exchange of Palynomorph Slides

David M. Jarzen is eager to hear from palynologists associated with PPAA who are willing to establish an exchange program of pollen and spore slides of extant plants, especially those of the Southern Hemisphere and Australasian affinities. Anyone able to help David can contact him at the National Museum of Canada, Paeobiology Division, 1767 Woodward Drive, Ottawa, Ontario, Canada K1A 0M8.

(PPAA Newsletter #5 July 1982)

PALYNOLOGICAL SOCIETY OF JAPAN

Paleopalynology and its History in Japan
Shigemoto Tokunaga

The history of paleopalynology in Japan, in comparison with the development of this field of science in the world, is summarized in four stages, introduction, accumulation of material, analysis and new technology.

The introductory stage dates from 1935 when the technique of pollen analysis was introduced into Japan, to be followed by practice of pollen analysis, particularly on pollen from peat beds. Since paleobotany in Japan had been initiated by foreign researchers (G. NATHORST, R. FLORIN, A. N. KRISHTOFOVICH, etc.) and the subject of study was mainly fossil leaves, the start of analytical researches using microfossils (such as diatoms, pollen and spore) was made much later.

The succeeding stage, from 1950 on, is marked by concentration of pollen analysis for the specimens obtained mostly from high moor peat in Honshu. As a result, pollen zones in and after the final glacial stage were established on the basis of the changes in pollen assemblages, then, the last glacial substage was denoted by L and the postglacial stage was divided into RI, RII and RIII (Jun NAKAMURA and Matsuo TSKADA, 1952-1974). There was another opinion in which the whole Quaternary system is divided into different pollen zones, A to F (Norio FUJI, 1970). Both the divisions were based on the transition of paleovegetation that reflects changes in the paleoenvironment. Therefore, it may be defined that the Japanese paleopalynology entered the period of material accumulation.

In the wake of pollen analysis of the Quaternary deposits, analysis of the Tertiary deposits, especially lignite and coal, was commenced. Its initial object was correlation of coal seams. The fine correlation of Paleozoic coal seams by means of fossil spore and the success of palynological investigations of lignite or brown coal fields in western countries gave a strong stimulus to Japanese palynologists, and the palynological characteristics of coal seams in the principal coal fields of Japan were disclosed (Kiyoshi TAKAHASHI, Yoshio OKAZAKI, Seiji SATO, Shigemoto TOKUNAGA, and others). And yet, the material available for setting up representative pollen indices for the respective coal seams was insufficient. In the meantime, there developed two trends of research work, one was intended for correlation, by means of morphological discrimination and description of fossils, from a purely practical standpoint and the other conformed to the nomenclature of botanical classification. In either way, regional pollen diagrams of Japan were compiled, but the arrangement of all available data is not complete yet for general correlation on a more extensive scale.

It was in 1964 that the presence of fossil spore in Mesozoic deposits of Japan was reported for the first time. Pollen assemblages in the Omine area where the Triassic system is distributed and in the Tetori area of the Jurassic terrain are too poor to deserve description. Up to now, occurrence of well-preserved Cretaceous specimens is limited to the Hokkaido and northern areas of the Tohoku district. Lately, good assemblages have been found in the lower Cretaceous system of Iwate Prefecture (T. TAKAHASHI, 1974). The oldest fossils are the ones reported from the Permian system of Kyoto Prefecture, but they are meager for stratigraphic use (K. TAKAHASHI, 1969).

The scarcity of Mesozoic specimens in Japan may be ascribed to tectonic movements that could have affected the strata and destroyed fossils or perhaps the plants that produce pollen and spore were few.

Through the analysis of pollen and spore assemblages the changes in regional flora of early Tertiary and younger ages are being clarified. In pollen analysis the knowledge of the East Asian floral region is especially important. In Asia, differing from Europe where Tertiary pollen assemblages that indicate significant changes, a weighty clue would be found in the changes of pollen of plants that grew in temperate climate.

Stratigraphic horizon of the LIQUIDAMBAR-NYSSA-CARYA pollen assemblage in the Tertiary system of Japan tends to move upward as the latitude of localities becomes lower, which brings about a new interpretation of correlation by means of fossil plants.

In the Mesozoic pollen and spore, however, many common genera are found including AQUILAPOLLENITES which is characteristic to northern regions such as Alaska and Siberia. Therefore, the Mesozoic specimens must be studied from a global standpoint.

For higher precision of analysis, paleontologists' interest in microstructure of fossils is deepening and the use of phase microscope, electron microscope and scanning electron microscope is becoming popular.

In recent years, the degree and nature of alteration of pollen, spore and other parts of plant have come to attract attention of researchers because they are useful as the elements of measurement of geothermal temperature. Thus, a new area of study is being developed.

From the standpoint of oil prospecting in Japan, dating by the color of fossil pollen and spore is under investigation. No conclusive result has been produced as yet, because of the fact that the age of subject beds is limited to Tertiary and Mesozoic. At any rate, very precise analysis is required to attain the object.

Future development of paleopalynology in Japan will be many-sided, for it comprises various areas of study, namely, microstructure of specimens, their physical and chemical properties, as well as elucidation of paleoclimate and paleoenvironment. In comparison with western countries, the research work in Japan is concerned mainly with relatively younger formations and so the paleopalynology in Japan and Southeast Asia is expected to make a unique development.

BRITISH MICROPALAEONTOLOGICAL SOCIETY

Journal of Micropalaeontology

The Journal of Micropalaeontology is a new journal of the British Micropalaeontological Society specializing in short articles covering the entire field of micropalaeontological research. New taxonomic studies, systematic reviews, ecological and environmental studies, techniques and concepts are all catered for and in particular biostratigraphic correlations based on microfossils.

The Journal will be an invaluable addition to any library with a palaeontological bias and will form a much-needed companion to the currently existing micropalaeontological journals. The standard of illustration of all articles is of exceptional quality, thus assuring the reader of a reliable reference volume.

Contents for Vol. 1 1982

1. The Rockalliidae, a new Family of Cainozoic Ostracoda
   R. Whatley, H. Uffenorde, C. Harlow, S. Downing and K. Kesler

2. Jurassic dinocysts from the Warboys Borehole, Cambridgeshire, England
   J. B. Riding

3. A new megaspore genus from the Lower Carboniferous (Asbian) of northern England
   E. Spinner

4. Rotaliine Foraminiferida from the type section of the Atherfield "Group" (Lower Aptian), Isle of Wight, UK
   S. Crittenden

5. Speciation in a Late Cretaceous lineage of Veenia (Ostracoda)
   R. A. Reyment

6. Observations on the Jurassic dinocyst genera Energlynia and Wanaea
R. Woollam

7. A note on the nomenclature of some Upper Jurassic dinoflagellate cyst taxa
M. J. Fisher and L. A. Riley

8. A revision of Mid-Cretaceous textularian foraminifers from Texas
A. R. Loeblich and H. Tappan

9. The vertical distribution of phytal ostracods in the intertidal zone at Gore Point, Bristol Channel, UK
D. J. Horne

10. Joseph B. Reade (1801-1870) and the earliest studies of fossil dinoflagellate cysts in England
W.A.S. Sarjeant

11. Foraminiferid architectural history; a review using the Min LCC and PI methods.
M. D. Brasier

12. Palynofacies, palaeoenvironments and petroleum
D. J. Batten

13. Marine and Brackish-water Cretaceous Ostracoda from wells in central and southern Florida
F. M. Swain

14. Arenaceous foraminifera from the Llandovery/Wenlock Boundary Beds of the Wenlock Edge area, Shropshire
J. E. Mabillard and R. J. Aldridge

15. Benthic Foraminifera: the validity of living, dead or total assemblages for the interpretation of palaeoecology
J. W. Murray

16. Lincolnshire borehole proves greater extent of the Scarbourough Formation (Jurassic: Bajocian)
M. J. Bradshaw and R. H. Bate

17. Lower Sinemurian foraminifera and Ostracoda from two fissure deposits in the eastern Mendips (Somerset, England)
P. Copestake

The Journal is free to members of the BMS.
Membership fees: £ 5.00 per year
Individual volumes: £ 15.00
payable to the Treasurer of the BMS, Dr. R. H. Bate Department Palaeontology, British Museum of Natural History, Cromwell Road, London SW75BD

CANADIAN SOCIETY OF PETROLEUM GEOLOGISTS, PALEONTOLOGY DIVISION

W. W. (Wayne) Brideaux was unanimously elected Chairman of the CSPG Paleontology Division for the years 1983 and onward, succeeding John Utting in this capacity.

Being fully aware of the onerous task that lies ahead of him and of the possible consequences of becoming CAP editor at some time in the future, Wayne is wished good luck by all his Calgary colleagues. (ED)

NEW PUBLICATIONS

ATLAS OF AIRBORNE FUNGAL SPORES IN EUROPE

An atlas of airborne fungal spores from different taxonomic groups, Myxomycota, Eumycota (Zygomycotina, Ascomycotina, Basidiomycotina and Deuteromycotina) is under preparation. The atlas will contain descriptions and illustrations (light micrographs, electron micrographs) of more than 80 European taxa. The most important terms will be listed and illustrated in schemes of life-cycles. Fungal diaspores reported from some working environments are tabulated in a special chapter. The authors are well-known mycologists from France (J. Perreau, O. Reisinger, E. Kiffer), Sweden (A. Kaarik) and Switzerland (J. Keller). The atlas is being edited by S. Nilsson (Sweden) and produced by Springer Verlag (West Germany).

Siwert Nilsson

(IAA Newsletter, July 1982)

MESOZOIC AND CAINOZOIC DINOFLAGELLATE CYSTS

The demand for copies of a reprinted "Davey, R. J., Downie, C., Sarjeant, W.A.S. and Williams, G. L., 1966. Studies on Mesozoic and Cainozoic dinoflagellate cysts" has been sufficient to convince the British Museum to reprint. Confirmation received from the British Museum contained the following details:

". . . a reprint of our Geol. Supplement 3 should appear towards the end of this year. We intend to incorporate the appendix with the main copy in one cover and this will be a straight reprint of the original, faults and all. We might be able to do better with the plates this time, the collotypes in the original were barely satisfactory. The price will be a realistic one commensurate with a reasonable standard of reproduction of text and plates . . ."

When final details of publication date and price are available, they will be published in this Newsletter. Our thanks to all who have made this reprinting possible.

Chris Denison. Robertson Research (US) Inc.
Jim Fenton. Robertson Research International, UK

(ICP Newsletter, Vol. 6/1, July 1982)

SPORE COLOUR CHART

Sukla Sengupta's Spore Colour Chart is available for distribution. This is a scale of thermal maturation for use in oil and gas exploration. Ten spores are figured, one fresh and nine subjected to temperatures between 100° and 300°C in steps of 25°C. An annotated handy colour picture postcard or a colour diapositive is available at $10 each from Paul Grant, Department of Geology, Royal School of Mines, Prince Consort Road, London SW7 2BP. Please send money with order. Make cheque payable to "Spore Chart."

(AASP Newsletter 15/4. October 1982)

"ORGANIC-WALLED MICROPHYTOPLANKTON OF THE MIDDLE DEVONIAN SILICA FORMATION OF OHIO, USA"

Bob Clarke, Trustee and Treasurer of the AASP Foundation, reported to the Board that Volume 8 of the AASP Contributions Series, "Organic-Walled Microphytoplankton of the Middle Devonian Silica Formation of Ohio, USA," by Reed Wicander, was published in December, 1981. Six other manuscripts intended for submittal to the Foundation for possible publication in the Contributions Series are in various stages of completion.

(AASP Newsletter Vol. 15/3. July 1982)

ETUDES PALYNOLOGIQUES DANS LE BASSIN DU TCHAD ET PALEOCLIMATOLOGIE DE L'AFRIQUE NORD TROPICALE DE 3000 A LE'EPOQUE ACTUELLE par J. MALEY
586 p fig. et tabl.
French Francs F150 - plus postage

Available at: "Editions de L'ORSOM" 70 Route d'Aulnay, 93140 Bondy, Paris, France

IAP WORKSHOP ON CENOZOIC STRATIGRAPHY AND PALYNOLOGY IN INDIA

Proceedings

Proceedings of the IAP Workshop on Cenozoic Stratigraphy and Palynology in India are being published by the Palaeontological Society of India as a Special Publication. The volume, dedicated to the memory of the Late Professor Suresh Narain Singh, will be released in June 1982.

(IAP Newsletter #4. May 1982)

RUSSIAN PUBLICATIONS

BIOSTRATIGRAPHIC ASPECTS IN PALYNOLOGY (Methods of Interpretation) is a volume of Abstracts to IV All-union Palynological Conference that was held in Tyumen-city, March 23-27, 1981. Materials on biostratigraphy and correlation of Paleozoic, Mesozoic and Cenozoic deposits are considered. Progress of Soviet palynology in solving many practical problems are mentioned. Methods and principles of correlation for sediments of various genesis are given on the basis of spore and pollen analyses. Methods to determine the level of katagenesis of organic matter and study of plant fossils in oils are elucidated. Results to reconstruct the past vegetation and climate, mathematical working of palynological data and some other aspects are considered.

INDEX OF PALYNOLOGICAL BIBLIOGRAPHY (1976-1980), Moscow, 1981 contains the list of published palynological papers and monographs on main problems considered by the Soviet palynologists during 1976-1980.

Questions about these two publications have to be sent to A. Chlonova or L. V. Rovnina.

(ICP Newsletter 6/1 June 1982)

ENGLISH TRANSLATIONS

A list of thirty-two references of articles translated from the Russian, German or Chinese for the GSC was submitted by Colin McGregor, GSC, Ottawa.

Space does not permit the printing of the entire author list in this newsletter.

Costs: $0.20 per translation page, plus handling and postal charges.

For further information contact Colin McGregor, Geological Survey of Canada, 601 Booth Street, Ottawa, Ontario, K1A 0E8 (ED)

REPORT ON BRITISH PALAEOBOTANY AND PALYNOLOGY 1980-1981

The latest edition of this work is compiled by W. G. Chaloner and G. T. Creber and was printed in May 1982. The 41 pages have the references arranged in the usual stratigraphic order. Send 2 British Pounds, negotiable at a London bank and payable to "Bedford College," to Botany Department, Bedford College, Regent's Park, London NW1.

(ICP Newsletter 18. September 1982)

MID-CARBONIFEROUS BOUNDARY

The Subcommission on Carboniferous Stratigraphy of CIMP will publish in early June 1982 a book entitled Biostratigraphic Data for a Mid-Carboniferous Boundary (edited by W.H.C. Ramsbottom, W. B. Saunders and B. Owens). This volume contains 24 papers which were presented at the Subcommission's meeting held in Leeds in August 1981. Only a limited number of copies (about 250) will be printed and if you are interested you are advised to order your copy as soon as possible.

If you are interested in ordering a copy of this volume you may do so by writing to Dr. B. Owens, Institute of Geological Sciences, Ring Road Halton, Leeds LS15 8TQ. The cost will be 5 pounds (including postage). Your order should be accompanied by a cheque made payable to "Subcommission on Carboniferous Stratigraphy."

(CIMP Newsletter 28. May 1982)

GENERA FILE OF FOSSIL SPORES (1976-1981)

After an initial flurry of publicity, a large number of sets were sold; subsequently, sales have been slower, but steady, with a definite increase in interest in the last 12-18 months.

Supplements have been produced in 1977, 1978, 1979, 1980, 1981; they were sent to each of the purchaser-subscribers of the initial set. However, some 10% of the last issue have been returned, as "addressee not known at this address." Obviously, many subscribers have moved, without directly informing the University of Calgary of the change in their address.

This note intends to alert those owners of the Genera File who have not received all current. The 1981 supplement (cards 3801-3932) contains alphabetic listings of all supplements issued through 1981, as well as descriptions for 52 new (+4 amended) angiosperms, 7 (+1) gymnosperms, 13 (+1) fungal spores, 15 (+10) spores, 1 megaspore, as well as a number of incertae sedis, Tetraporina. The new name Incrotonipollis Baksi is proposed for Crotonipollis Baksi, Deb and Siddhanta (non Crotonipollis di Lima). The descriptions include a number of translations from Chinese and Russian literature.

An evaluation of the Genera File was published in Review of Paleobotany and Palynology, v. 30, pp 159-164.

Enquiries should be directed to:

Genera File of Fossils Spores
c/o Dr. L. V. Hills (Attention: Lena Sunaby)
Department Geology - University
Calgary, Alberta
T2N 1N4 CANADA

Jan Jansonius

(ICP Newsletter 6/1. June 1982)

CHITINOZOA

W.A.M. (Tony) Jenkins sent the following communication:

When "Chitinozoa" (Geoscience and Man 1, 1-21) was published in 1970, only twenty-five offprints were printed for the author to distribute to colleagues. Additional offprints are now available, however, thanks to the American Association of Stratigraphic Palynologists which acquired them and to Petro-Canada which generously agreed to pay for them. These are being sent to those who might be interested in having copies. Requests for copies should be

sent to the author at Petro-Canada, Box 2844, Calgary, Alberta, Canada.

(AASP Newsletter 15/3. July 1982)

PALEOBOTANY. AN INTRODUCTION TO FOSSIL PLANT BIOLOGY by Thomas N. Taylor. McGraw-Hill, New York, 1981. 590 p. $29.95

(AASP Newsletter 15/4. October 1982)

HOW TO ASSESS MATURATION AND PALEOTEMPERATURES

SEPM Short Course Number 7, 1982, 289 p. $7.00. Available from Society of Economic Paleontologists and Mineralogists, P.O. Box 4756, Tulsa, OK 74104.

(AASP Newsletter 15/4. October 1982)

CALENDAR OF EVENTS

1983

February 8-9 - XV PACIFIC SCIENCE CONGRESS - PPAA SCIENTIFIC SESSIONS

The PPAA will be holding a two day meeting at Dunedin (see last Newsletter on February 8 and 9, 1983. Arrangements made so far are that Neogene palynology and palaeobotany will be held on Tuesday morning jointly with the 3rd International Meeting of Pacific Neogene Stratigraphy while Tuesday afternoon and Wednesday morning will be devoted to post- and pre-Neogene papers respectively. Wednesday afternoon is devoted to local field trips and sightseeing. The one day field trip examining Oligocene-Miocene lignites will be held prior to our meeting on either February 5 or 6. Enrollment for this tour is to be made at the congress upon registration.

April 17-22 - Beginning in 1968 there has been an annual meeting which had as its basic theme scanning electron microscopy. Many of you are aware that initially these meetings were sponsored by IIT Research Institute in Chicago; in recent years, and with the modification of the organization, the meetings have been held at various sites around the country. This year the meetings will be in Dearborn, Michigan, April 17-22, 1983. For further details contact: Thomas N. Taylor
Paleobotany/Palynology Section
Department of Botany
Ohio State University
1735 Neil Avenue
Columbus, Ohio 43210 USA

April 18-22 - Montpellier Interim Colloquium on "Mediterranean Neogene, continental paleoenvironments and Paleoclimatic evolution." Organized by local APLI Members.

May 16-20 - Stockholm Second nordic symposium on climatic changes and related problems. Information: Dr. W. Karlen, Department of Physical Geography, Stockholm University, Box 1801, S113865 Stockholm Suede.

August (end) - Symposium on living and fossil diatoms. For further information: Dr. C. W. Reiner. Academy of Natural Sciences 19th and Parkway, Philadelphia, PA 19103 USA.

August - Third International Congress on Mycology Kyoto, Japan.

August 28 - September 2 - An international symposium and workshop on "Late Cainozoic Palaeoclimates in the Southern Hemisphere" will be held in Swaziland (Southern Africa) from August 28 to September 2, 1983, including pre- and post-symposium excursions. This symposium will be held under the auspices of SASQUA, the affiliated society of INQUA. Eminent international scientists are giving keynote addresses.

Enquiries: Dr. David Price-Williams, S.A.R.A., Swaziland National Trust Commission, P.O. Box 100 Lobamba, Swaziland, Southern Africa.

October 25-29 - The Sixteenth Annual Meeting of AASP will take place from October 25-29, 1983, at the San Francisco Airport Hilton Hotel where 250 rooms have been reserved for what is expected to be an exceptionally well-attended gathering of palynologists who will be attracted by the combination of technical sessions and the Bay Area's well-known beauty and tourist charms. Information:
Virgil Wiggins
Chevron USA Inc.
P.O. Box 3862
San Francisco, California 94119
USA

1984

August 18-24 - 2ND INTERNATIONAL PALEOBOTANICAL CONFERENCE EDMONTON, ALBERTA, CANADA

The University of Alberta, Edmonton, Alberta, Canada will be the site of the 2nd International Paleobotanical Conference that is tentatively scheduled for August 18-24, 1984. These meetings, which were so successful in Reading, England in 1980, will be conducted under the auspices of the International Organization of Paleobotany, and will take place immediately before the Sixth International Palynological Conference that is being planned for August 24-30, 1984 in Calgary, Canada. It is hoped that the scheduling of both meetings together will provide the opportunity for paleobotanists and palynologists to attend both conferences.

Plans at this stage call for approximately four days of field excursions that will depart from Calgary and then return to Edmonton for two days of contributed papers and poster sessions. An evening workshop on cladistics in paleobotany is tentatively being planned. The field excursion will include collecting at an Upper Cretaceous site, a visit to the Dinosaur National Park, collecting at a Paleocene locality famous for not only plant remains, but insects, fish and tetrapods as well, visit to the Columbia Ice Fields and the Jasper National Park and an additional Paleocene locality before returning to Edmonton.

The scientific program will include contributed papers and concurrent poster sessions. It is anticipated that travel will be provided for the participants to Calgary for the Palynological Conference. Accommodations will include both hotel and University of Alberta Dormitory facilities.

For further information contact: Dr. Ruth A. Stockey, Department of Botany, The University of Alberta, Edmonton, Alberta, Canada, T6G 2E9. A second circular will be mailed to all respondents early in 1983.

August 26 - Sept. 1 - SIXTH INTERNATIONAL PALYNOLOGICAL CONFERENCE, Calgary 1984. Sponsored by: International Commission of Palynology, The University of Calgary, Canadian Association of Palynologists, Canadian Society of Petroleum Geologists, Arctic Institute of North America.

The Sixth International Palynological Conference will be held on the Campus of the University of Calgary, Calgary, Alberta Canada under the auspices of the International Commission for Palynology, which is affiliated to the International Union of Biological Sciences and the International Union of Geological Sciences.

All inquiries and requests for specific information should be addressed to our Conference Coordinator:

Sixth International Palynological Conference
c/o Lois Kokoski, Conference Office
Faculty of Continuing Education
Education Tower, Room 102
University of Calgary
Calgary, Alberta
T2N 1N4 CANADA

The second Circular is now in press. If you did not receive or returned the first circular and still wish further information please contact the Conference Coordinator.

October 17-20 - AASP Annual Meeting
Norm Frederiksen reported that a contract has been signed with the Hyatt Regency Crystal City Hotel, Arlington, Virginia. This is a brand-new hotel, very close to National Airport and downtown Washington, and the contract guarantees a single room price in 1984 of not more than $60. Dates of the meeting are October 17-20, 1984.

1985

October 16-19 - AASP Annual Meeting
Bill Cornell formally proposed holding the 1985 Annual Meeting in El Paso, Texas. Dates of the meeting would be October 16-19, with the field trip on the 20th. Theme of the meeting would be Palynology on the Border. This proposal was accepted enthusiastically by the Board.

1986

AASP Annual Meeting - Sarah Damassa reported that she is investigating the possibility of having the 1986 Annual Meeting in Boston, Mass.

1988

IPC Brisbane - Noel deJersey, convenor of a group representing PPAA members, has supplied the following details on the committee's progress towards holding the 7th International Palynological Conference in Brisbane in 1988. See last newsletter for

additional information.

The most significant development is that the conference will have the support of the Brisbane Visitors' and Convention Bureau which provides a free service designed to attract conventions to Brisbane. It will help prepare a brochure to be presented to the 6th IPC (Calgary, 1984) as a bid to have the next International Conference in Australia. Since 1988 is Australia's Bicentennial Year, PPAA has applied for the 7th IPC to be listed as part of the Australian National Program by the Bicentennial Authority. Thus it is likely that support shall also be gained from the Bicentennial Authority for the Brisbane Conference. As this newsletter goes to press a further meeting of the planning committee is being held in Brisbane.

PALYNOSCENE

CALGARY, SHELL CANADA
Submitted by A. Audretsch

Both Frank Poeltl and Tony Audretsch are currently working on the Eastcoast Offshore. Recently a publication on "Stratigraphy and Microfossils of the Jurassic Bug Creek Group of Northern Richardson Mountains, Northern Yukon and Adjacent Northwest Territories" by T. P. Poulton, K. Leskiw and A. Audretsch, G.S.C. Bulletin 325, 1982 came out.

CALGARY, ESSO RESOURCES

Dr. Jan Jansonius was kind enough to submit a few results of his systematic approach to the world of fossil Dinocysts, with some careful observations on all the published species of the genus Muderongia.

His line drawings and descriptions are published in this newsletter on separate pages, with sincere acknowledgements from the editor. It is the intention of the author to attack more fossil Dinocyst genera in a similar manner and possibly to submit more results in future CAP newsletters. (ED)

UNIVERSITY OF QUEBEC
Institut national de la recherche scientifique.

Submitted by Aicha Achab.

My activities in the field of palynology are mainly concerned with chitinozoa. The following topics are those that presently retain my main interest.

Definition of the Ordovician Silurian boundary
Re: ACHAB, A., DUFFIELD, S., 1982. Palynological changes at the Ordovician Silurian boundary on Anticosti Island, Quebec. Paleont. Contr. Univ. Oslo. 280 p. 3.

Lower Silurian on Anticosti Island
Preliminary study has been made of chitinozoan assemblages derived from the exposed Silurian succession of Anticosti Island. Although very few data have been published on chitinozoans of well dated rocks of Lower Silurian age, it seems possible to recognize a succession of several distinct assemblages through the Silurian sequence of Anticosti.

Re: ACHAB, A., 1981. Biostratigraphie par les chitinozoaires de l'Ordovicien superieur. Silurien inferieur de l'ile Anticosti. Resultats preliminaires. Subcommission on Silurian Stratigraphy, Ordovician Silurian Boundary working group. Field Meeting Anticosti Gaspe, Quebec 1981. Vo. II Stratigraphy and Paleontology p. 143157. P. J. Lesperance, editor.

Lower Ordovician Levis Formations
Re: ACHAB, A. 1982. Chitinozoaires de l'Arenig superieur (zone D) de la Formation de Levis, Quebec, Canada. Can. J. Earth Sci. 19 p. 1295-1307.

Middle Ordovician Chtinozoa (Current research)
- Llanvirn Chitinozoa from the Table Head Formation (Western Newfoundland)
- Chitinozoan assemblages from the N. gracilis zone of Quebec.

UNIVERSITY OF SASKATCHEWAN

Submitted by W.A.S. Sarjeant.

PALYNOLOGY AT THE UNIVERSITY OF SASKATCHEWAN

James W. Wheeler recently has obtained his MSc for a study of palynofloras from the central Alborz Mountains of northern Iran. He made observation on "relict textures" imposed on organic-walled microfossils by the growth of included pyrite crystals and during the diagenetic process of sediment compaction, recorded scolecodonts from this region for the first time and noted a hitherto unreported structure in the shell linings of foraminifera. He demonstrated that the Jurassic and Cretaceous carbonates of that region were deposited in shallow water and that the microflora indicated an affinity with the Laurasian landmass.

Robert A. Fensome is in the concluding stages of preparing a PhD thesis on pollen and spores from the Jurassic-Cretaceous boundary beds in the eastern Richardson Mountains, Northwest Territories. On the basis of a searching review of the published literature, he is formulating revisions to a number of major pollen and spore taxa, many existing names being considered to be merely junior synonyms. His ideas on evolution in the Energlynia-Wanaea dinoflagellate cyst lineage have been published recently.

Duncan Wall is examining the distribution of dinoflagellate cysts and skeletal elements in the Recent varved sediments of the Gulf of Santa Barbara and in the sediments of the Gulf of California. He hopes to gain a picture of dinoflagellate biogeography in relation to the California Current and to add to our understanding of the ecology and palaeoecology of dinoflagellate cysts. Duncan is engaged also in revising for publication the thesis by Martin Bradford on dinoflagellate cyst ecology and palaeoecology in the Persian Gulf and Arabian Sea.

Brent Wilson is commencing a study of the stratigraphy and palaeoecology of dinoflagellate cysts in the Late Jurassic sediments encountered at subsurface in Saskatchewan and at outcrop in Montana.

William A. S. Sarjeant continues to be engaged in the restudy of the type material of early European writers on fossil dinoflagellate cysts. Following the publication of results of the reexamination of the Jurassic type material of Walter Wetzel and the Eocene material of Klumpp, together with joint reexaminations of Riegel's Spanish Late Cretaceous assemblages and Benedek's German Oligocene assemblages (see list of papers, below), work on Maier's Oligocene-Miocene assemblage is in press and studies of Otto and Walter Wetzel's Late Cretaceous and Pastiels' Eocene assemblages are in progress. A major restudy of the taxonomy of the Gonyaulacysta group and shorter joint studies of the genera Sarjeantia and Raphidodinium have been completed. New ideas on the morphological terminology of dinoflagellate cysts have been published. The environmental controls on the morphology of dinoflagellate cysts and skeletal elements, at present and in the past, has been examined jointly with two workers on modern marine plankton (Thurston Lacalli and Gregory Morey-Gaines), the resultant ideas being set forth in a paper currently in press.

PUBLICATIONS

BENEDEK, P. N. von, GOCHT, H., SARJEANT, W.A.S., 1982: The Dinoflagellate Cyst Genus Pentadinium Gerlach: A Reexamination. Neues Jb. Geol. Palaont. Abh., 162, No. 3, pp 265-285.

BENEDEK, P. N. von and SARJEANT, W.A.S., 1981: Dinoflagellate Cysts from the Middle and Upper Cretaceous of Tonisberg (Niederrheingebiet): a Morphological and Taxonomic Restudy. Nova Hedwigia, 35, pp 313-356.

FENSOME, R. A., 1981: The Jurassic dinoflagellate genera Wanaea and Energlynia: their Morphology and Evolution. Neues Jb. Geol. Palaont. Abh., 161, No. 1, pp 47-61.

_____ and SARJEANT, W.A.S., 1982: The Dinoflagellate Cyst Genus Sarjeantia Horowitz and its Associated Microfossils. Grana, 21, No. 1, pp 51-58.

LEJEUNE-CARPENTIER, M. and SARJEANT, W.A.S., 1981: Restudy of Some Larger Dinoflagellate Cysts and an Acritarch from the Upper Cretaceous of Belgium and Germany. Annls Soc. Geol. Belg., 104, pp 1-39.

RIEGEL, W. and SARJEANT, W.A.S., 1982: Dinoflagellate Cysts from the Upper Cretaceous of Southern Spain: New Morphological and Taxonomic Observations. Neues Jb. Geol. Palaont. Abh., 162, No. 3, pp 286-303.

SARJEANT, W.A.S., 1980: A Restudy of Some Dinoflagellate Cyst Holotypes in the University of Kiel Collections. I. The Jurassic Holotypes of Walter Wetzel (1966a, b). Meyniana, 32, pp 113-128.

_____, 1980: Restudy of a 19th Century Dinoflagellate Cyst Holotype from the Polish Upper Jurassic. Acta palaeont. pol., 25, No. 2, pp 279-285.

_____, 1981: A Restudy of Some Dinoflagellate Cyst Holotypes in the University of Kiel Collections. II. The Eocene Holotypes of Barbara Klumpp (1953); with a Revision of the Genus Cordosphaeridium Eisenack, 1963. Meyniana, 33, pp 97-132.

_____, 1982: Dinoflagellate Cyst Terminology: A Discussion and Proposals Can. J. Bot., 60, pp 922-945.

_____, 1982: The Dinoflagellate cysts of the Gonyaulacysta Group: a morphological and taxonomic restudy. AASP Contr. Series, Nov. 1982, pp i-ii + 1-81.

_____, 1982: A restudy of Some Dinoflagellate Cyst Holotypes in the University of Kiel Collections. III. The Taxonomic Proposals of J.P.G. Fenton (1981) Concerning Walter Wetzel's Jurassic Holotypes. Meyniana (in press).

_____, 1983: A Restudy of Some Dinoflagellate Cyst Holotypes in the University of Kiel Collections. IV. The Oligocene and Miocene Holotypes of Dorothea Maier (1959). Meyniana, (in press).

_____ and DOWNIE, C. 1982: The Upper Cretaceous Dinoflagellate Cyst Raphidodinium Deflandre: A Restudy. Grana (in press).

_____, LACALLI, T. and MOREY-GAINES, G., 1982: The Cysts and Skeletal Elements of Dinoflagellates: Speculations on the Causes for their Development and Morphology. AASP Contr. Series, (in press).

WHEELER, J. W., 1982: Occurrence of Obturacula in microforaminifera Rev. Pal & Pal 38 (in press).

NATIONAL MUSEUM OF CANADA

Submitted by David Jarzen

Research-Collections - Programs: National Museums of Canada

Research in palynology at the Paleobiology Division, National Museums of Canada is often closely linked with collections development and public programs. Recently considerable emphasis has been placed on investigations of palynofloral changes across the Cretaceous/Tertiary transition in terrestrial sediments from the Western Interior of North America. Localities studied recently include the Ravenscrag Formation (Paleocene) in southern Saskatchewan (Pollen et Spores 24(1):119-155) where 57 taxa of angiosperm pollen indicate a transitional floristic change from a more tropical flora typical of latest Maastrichtian deposits to a warm temperate flora characteristic of lower Paleocene deposits within the Western Interior basin. Preliminary examinations of closely spaced samples across the K-T boundary at the Bug creek Anthills locality in Montana suggest a zone of poor recovery at or near the "Z" coal. This poor recovery does not allow for a clear-precise placement of a palynological boundary but does indicate a transition in the flora beginning about three metres below the "Z" coal and continuing through the lithologic K-T boundary.

Periferal to these studies, work was recently completed on the palynoflora from Dinosaur Provincial Park (Campanian) Alberta. (Syllogeus No. 38:1-69). The described flora constitutes the first detailed investigation of the pollen and spores within the Park boundaries. Of the 85 identified taxa, the angiosperms are the most abundant and diverse and indicate a subtropical to tropical climate similar to present-day neotropical regions.

Numerical analysis of the palynomorphs does not reveal significant correlations and/or species groups across an east-west axis of the Park. In this respect the flora does not indicate floristic regions, geographical or stratigraphical variation which can be correlated with the vertebrate data presented by Beland and Russell (1978, Can. J. Earth Sci. 15(6):1012-1024).

In August David Jarzen presented an invited paper in the symposium "Palynology - State of the Art" presented at the Third North American Paleontological Convention, McGill University, Montreal, Quebec August 5-7, 1982. The overview, and current trends in angiosperm palynology were discussed in his talk "Angiosperm pollen: keys to the understanding of Cretaceous and Tertiary flowering plants." The paper (and others in the symposium) is published in the "Proceedings Vol. I, Third North American Paleontological Convention 1982."

Work is also in progress (with Bill Elsik) on subrecent fungal palynomorphs from the Luangwa River sediments in central Zambia. The variety of fungal forms recovered from this subtropical savannah environment and their ability to be preserved and withstand palynological preparations could provide insight on the paleoecological conditions of fossil fungal floras.

The growth of the modern pollen and spore reference collection continues at a steady pace. The collection now houses 11 500 pollen slides of vouchered plant taxa with emphasis on tropical floras. Through the courtesy of Dr. Peter Raven and staff members at the Missouri Botanical Garden (St. Louis, Missouri) specimens of the New Caledonian flora collected be Gordon McPherson are being received at the National Museum's Palynology Laboratory. Batches of 300-400 plants at one time are

received and sampled for their pollen. This long term exchange program, when completed will provide the first systematically collected pollen reference collection of this unique and "endangered" flora. (See also CAP Newsletter Vol. 3 No. 1:4-5, 1980).

Recent visits to Herbaria to collect polliniferous material has also greatly enhanced the size and taxonomic coverage of the reference collection. A trip to the Missouri Botanical Garden in February increased the collection of monocotyledons by 592 taxa; and a collection program at the Chicago Field Museum in October added another 400 neotropical angiosperm species. Palynologists are invited to use the collection in Ottawa. Microscope facilities and a significant reference library of papers on pollen morphology are available.

Over the past two years, the Palynology Laboratory at the National Museums of Canada has been receiving as a gift/donation the John F. Grayson Palynology Library and Personal Effects Collection. Dr. Grayson has graciously agreed to deposit his reprint collection, books, documents, pollen slides (fossil localities and modern reference slides); colour transparencies, notes, correspondence and other miscellaneous items as an entire contained collection with the NMC. Special library facilities have been set aside to house the enormous amount of material collected by Dr. Grayson over his lifetime as a palynologist/geologist/botanist. Eventually, the entire collection will be catalogued and available on microfilm.

It is the intention of the National Museums of Canada to make the Grayson Library Collection available for use in Ottawa and to further provide, at minimal cost, microfilm/microfiche of desired items. As it appears now, this cataloguing and microfilming process may take several years and will need to be geared around available funds.

David Jarzen acted as the National Museums of Canada representative at a meeting held at External Affairs (Ottawa) on Canada's possible accession to the Antarctic Treaty. The meeting of several scientists from various Federal Departments was called for the purpose of learning about possible research endeavours relating to the Antarctic continent. (A requisite to accession to the Treaty stipulates an active research program.) In these times of reduced budgets and little real hope of a "turn-over" very soon, it is doubtful that any one department could provide the money necessary for even a short term research program. However, it is very desirable to have ideas/proposals ready from several departments when and if Canada joins the Treaty as a voting member. David would like to hear from CAP members who could provide suggestions of research projects which might benefit the science of palynology. These can be long or short term endeavours and may involve the collaboration of several departments or institutes within Canada or in fact may involve other Treaty Nations. The following countries are presently parties to the Antarctic Treaty: Argentina, Australia, Belgium, Chile, France, Japan, New Zealand, Norway, South Africa, USSR, UK, USA, Czechoslovakia, Denmark, Netherlands, Poland, Romania, GDR, Brazil, Uraguay, Bulgaria and FRG. For a review of USA Antarctic Research see Antarctic Journal of the United States Vol. 16(3):1-23. This issue includes an announcement of a proposed study by Rosemary A. Askin, Colorado School of Mines, to examine the spores, pollen and dinoflagellates recovered from samples of middle Cretaceous to middle Tertiary shallow marine and nonmarine sedimentary rocks collected in the James Ross Island area.

Current popular articles written by D. M. Jarzen and intended for use in schools and for the general public include "The Ginkgo Tree"/"LeGinkgo" Neotoma Series No. 11; "Pollination"/"La pollinisation" Neotoma Series No. 12; and "Canada's Oldest Fossils"/"Les plus anciens fossiles du Canada" Neotoma Series No. 13.

David Jarzen was asked by Claude Caratini (President, International Commission for Palynology) to represent ICP at the XXI General Assembly of the International Union of Biological Sciences which were held in Ottawa, Ontario, August 22-27, 1982.

In association with mycologists at the University of Toronto and the University of Waterloo, the National Museum of Natural Sciences (Paleobiology Division) is involved in the compilation of an Atlas of Fungal Spores. The project is a coordinated study with Dr. Kris Pirozynski and Adrian Carter working on the Ascomicetes and Drs. D. Malloch and B. Kendrick handling the Basidiomycetes and Hyphomycetes respectively.

Our work on the Ascomycetes involves the photography of ascospores from representatives of numerous groups including the Discomycetes, Pyrenomycetes and lichens. This is a tall order and by the time we are finished the number of ascomycete species alone will probably exceed one thousand.

Accompanying each photograph of the spores will be a short discussion of the distribution, habitat, host preference as well as other salient features of the fungus. The material used for photography will be selected from both herbarium material and freshly collected field specimens, all of which have been identified by specialists. The scope of this book is very broad and hopefully will be of interest to people in various disciplines including stratigraphers, allergists, plant pathologists as well as palynologists.

Although it is somewhat difficult to speculate on the completion date we expect to have a large part of the project finished by the end of 1983.

GEOLOGICAL SURVEY OF CANADA, OTTAWA

Submitted by D. C. McGregor

1. Paleopalynology Laboratory: Colin McGregor is continuing his research on Silurian and Devonian spores. He recently completed a paper, to be published in the Boletin de la Academia de Ciencias (Cordoba, Argentina), on the global stratigraphic applications of Silurian and Devonian spores from Bolivia. This work is based on a project done in 1973 while he was in Bolivia with the United Nations Development Program. Colin's paper with John Richardson of the British Museum and Walter Riegel of the University of Gottingen, on Silurian and Devonian miospore zones of the Old Red Sandstone region, is in the last stages of preparation. He is also continuing work on the paleogeography of Devonian spores.

   Colin McGregor and Martha Camfield are preparing a manuscript on Upper Devonian spores of the Hecla Bay, Beverley Inlet and Parry Islands Formations of Melville Island. This study is a stratigraphic continuation of the work reported in GSC Bulletin 348 (see below).

   In August Colin attended the Devonian Subcommission field conference in the Ardennes and the Eifel, during which attention was directed toward possible stratotypes and criteria for definition of the boundaries of intra-Devonian stages and series. The most significant action of this meeting was the unanimous recommendation that the boundary between the Middle and Upper Devonian be defined internationally as at the base of the conodont Lower asymmetricus Zone.

Recent publications:

McGregor, D. C., 1981: Spores and the Middle-Upper Devonian boundary. Review of Palaeobotany and Palynology, 34: 25-47.

_____ and Camfield, M., 1982: Middle Devonian miospores from the Cape De Bray, Weatherall and Hecla Bay formations of northeastern Melville Island, Canadian Arctic. Geological Survey of Canada, Bulletin 348, 105 p.

_____, 1982: Biogeography of Upper Devonian spores. Abstracts, "Palynology of the North Atlantic Margins, AASP/CIMP Annual Meeting, Dublin: 9-10.

_____, 1982: Spores in the Lower-Middle devonian beds of the Eifelian Hills. Courier Forschungsinstitut Senckenberg, 55: 293-296.

2. Quaternary Paleoecology Laboratory: R. J. Mott is continuing his study of the late-glacial and Holocene palynology of lake sediment sites in New Brunswick. Cores from nine sites have been obtained and the basal sediments have been radiocarbon-dated. Palynology of the basal parts of several cores have been completed revealing interesting fluctuations in the late-glacial vegetational and climatic history.

   Work has also begun on several buried organic sediment horizons in Nova Scotia with radiocarbon dates of about 11 000 years BP. These organic sediments are overlain by a diamicton or other inorganic sediment. Pollen analysis of these sediments will add to the knowledge of late-glacial paleoenvironments of the maritimes.

   Palynological analysis of several buried non-glacial deposits from Nova Scotia that have produced infinite radiocarbon dates is continuing. Work has also begun on similar deposits from Iles-de-la-Madeleine, Quebec. Palynological results indicate that both interglacial and interstadial intervals are represented.

   T. W. Anderson is currently studying lake and bog sites in eastern Ontario, southern Quebec and adjacent New York State in an effort to determine the age and environment of the late-Quaternary, Champlain Sea incursion up the St. Lawrence and Ottawa River valleys and its relationship with events in the eastern Great Lakes. Analyses are being carried out using

pollen and plant macrofossil stratigraphy, fossil faunal remains, geochemistry and sedimentology on cores from embayment sites along the southwestern extremity of Champlain Sea and in Lake Ontario. Other objectives of the study concern late-Quaternary forest succession, climatic history and forest migration into the eastern Great Lakes region following the retreat of Laurentide Ice. Anderson also collected several cores in summer 1982 from the southwest and southern coastal regions of Newfoundland in support of terrain mapping projects being carried out there. Paleoecological and radiocarbon data on these cores may help determine whether or not these regions were unglaciated during the late-Quaternary as implied from the extent of glaciation and sequence of weathering zones.

Recent publications:

Anderson, T. W., 1980: Holocene vegetation and climatic history of Prince Edward Island, Canada. Can. J. Earth Sci., v. 17, pp 1152-1165.

_____, 1982: Pollen and plant macrofossil analyses on late Quaternary sediments at Kitchener, Ontario: In Current Research, Part A, Geol. Surv. Can., Paper 82-1A, pp 131-136.

Mott, R. J., Anderson, T. W. and Matthews, J. V., Jr., 1981: Late-glacial paleoenvironments of sites bordering the Champlain Sea based on pollen and macrofossil evidence; In Quaternary Paleoclimate, W. C. Mahaney Editor, Geo Abstracts, pp 129-171.

_____, _____ and _____, 1982: Pollen and macrofossil study of an interglacial deposit in Nova Scotia. Geographie physique et Quaternaire, vol. XXXVI, Nos. 1-2, pp 197-208.

_____ and Jackson, L. E., Jr., 1982: An 18 000 year palynological record from the southern Alberta segment of the classical Wisconsinan "Ice-free Corridor." Canadian Journal of Earth Sciences, vol. 19, pp 504-513.

BERT'S NEWS AND JOKES

WHAT WAS THAT AGAIN?

The increased rigor of scientific investigation is resulting in a tougher look at the imprecise or dissembling phrases often found in research papers. Someone who had come across one too many of them compiled this list of research definitions, copied from the Natural Hazards Observer, a newsletter published by the University of Colorado.

It has long been known - I have not bothered to look up the reference.

Of great theoretical and practical importance - Interesting to me.

Though it has not been possible to provide definite answers - The experiment didn't work out, but I need the publicity.

Typical results are shown - The best results are shown.

Presumably over longer times - I did not take the time to find out.

The most reliable results are Smith's - He was a student of mine.

It is believed that - I think.

It is generally believed that - A couple of other folks think so too.

Thanks are due to Joe Glotz for help with the experiments and to Jane Jones for valuable discussions - Glotz did the work and Jones explained to me what it meant.

From: TODAY Magazine July 24, 1982
Submitted by J. P. Bujak

SIXTH INTERNATIONAL PALYNOLOGICAL CONFERENCE

Calgary, Alberta, Canada
August 26 to September 1, 1984

COMMERCIAL EXHIBITS

During the Sixth International Palynological Conference opportunities will be provided for Commercial Organizations to exhibit their newest equipment and/or techniques before a worldwide group of professionals in the field of palynology and related sciences.

Interested exhibitors should direct their enquiries to: B.G.T. van Helden, Chairman Commercial Exhibits
c/o Chevron Canada Resources Limited
500 - 5th Avenue S.W.
Calgary, Alberta
T2P 0L7 CANADA
Telephone: (403) 234-5459

MUDERONGIA
(J. Jansonius)

M. asymmetrica: 70-120 u; two well-separated, unequal antapical horns, asymmetrically paired with unequal arms: long left antapical and right lateral, short right antapical and left lateral; length of arms, horns may vary; vesicle broadly pyriform. Aptian (-Albian).

M. crucis: 250-325 u; 4 processes of equal length (= L of body); antapical horn ± on long axis; lateral arms cylindrical, at 1/3 of their length **abruptly** thinner, swept backward, tapering, not notched; wall perforated, especially on processes. Hauterivian.

M. extensiva: ca 230 u; single antapical horn offset from long axis; lateral arms long, distally notched, with short anterior spine, long posterior spine directed backward, curved, tapered to sharp point. Valanginian-Hauterivian.

M. imparilis: 225-280 u; long apical and antapical horn; single lateral arm recurved, tapered; other lateral arm **rudimentary** (short rounded projection); cingulum expressed; possibly intermediary to Odontochitina. Barremian.

M. *macwhaei: 140-170 u; long antapical horn offset, generally with short-rudimentary second anatapical protrusion; apical horn long; lateral arms broad, short, notched, with short anterior spine, long posterior spine angled downward, Aptian. *Type species.

M. "nicholsii" (n. sp.): "M". sp. A in Nichols and Jacobson 1982. Cyst not cavate, or only very tips of horns cavate; lateral arms have prominent anterior and posterior spines. Cingulum many be ± distinct. Albian.

M. pannosa: ca 100 u; two antapical horns of unequal length, separated by concave antapical side; two short, ± equal lateral arms, notched; cingulum central plate smooth, but fine spines on extremities and outline; acavate. Barremian.

M. perforata: 125-165 u; long apical horn; two antapical horns of which one strongly reduced; two lateral arms notched, not always of equal length; distal part of all processes with coarse perforations. Valanginian.

M. simplex: 70-175 u; vesicle ± rhombic; apical horn long, ± cylindrical; two antipical horns of strongly unequal length, their bases touching; lateral arms rather short, of unequal length, **notched**, generally not extended by spines. Valanginian-Hauterivian (-Early Barremian).

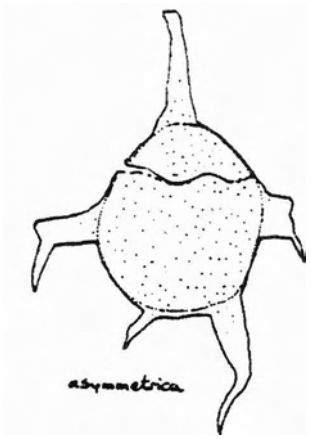
M. staurota: 150-170 u; vesicle ± oval; base of single tapering antapical horn involves whole antapical part; apical horn stout, often more densely pitted than rest of vesicle; **lateral arms shorter**, ± unequal, at 1/3 of their length the anterior margin angles toward posterior causing a **tapered** end, no lateral notches. (Early) Barremian.

M. testudinaria: 150-160 u; vesicle pentagonal; apical horn slender; two antapical horns essentially equal, conical, well separated; lateral arms broad, notched, with ± short posterior spine bent backward. Hauterivian-Barremian.

M. tetracantha: 180-260 u; vesicle elongate rhombic; apical horn long; single antapical horn ± near long axis, its base merging with vesicle outline; lateral arms with short cylindrical part, shallow notch, and with long posterior spine swept back. Valanginian-Hauterivian (-Early Barremian).

M. tomaszowensis: 135-175 u; vesicle rhombic; firm apical horn; single antapical horn offset from long axis; lateral arms ± broad, generally of unequal length, notched, not extended by spines; surface may have scattered spine (1-1.5 u). Valanginian.

MUDERONGIA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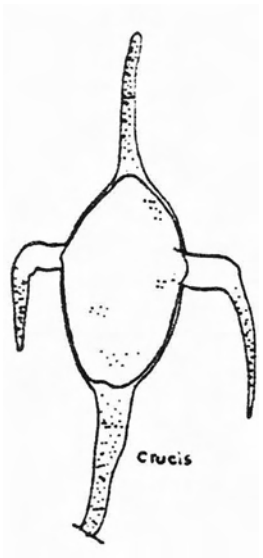
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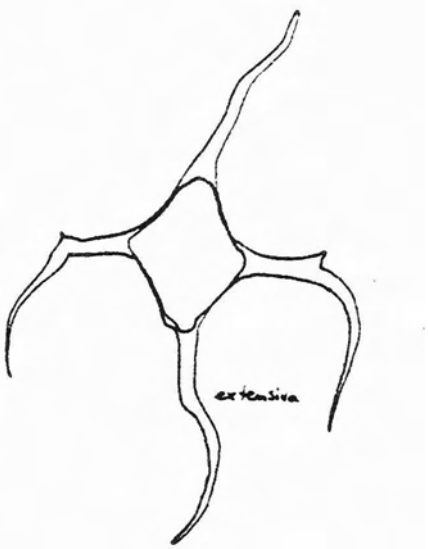
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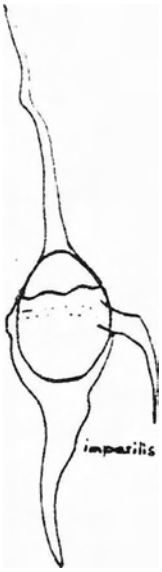
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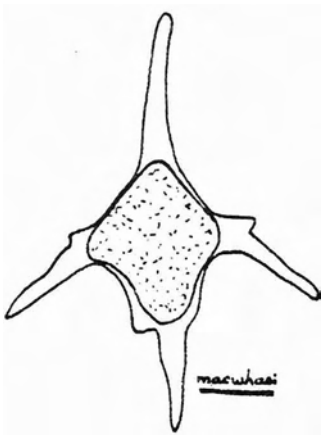
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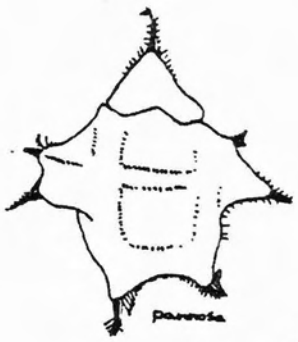
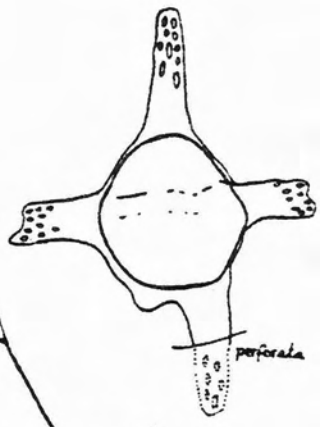
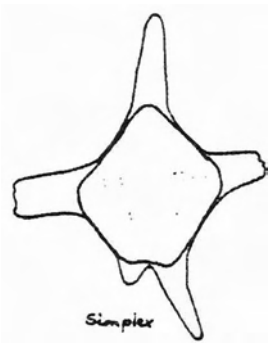
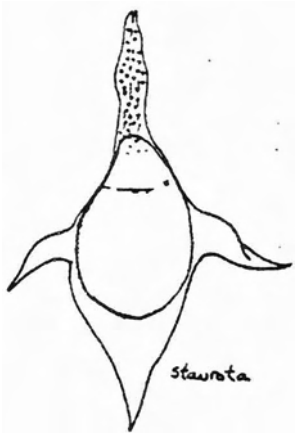

parvula


perforata


Simplex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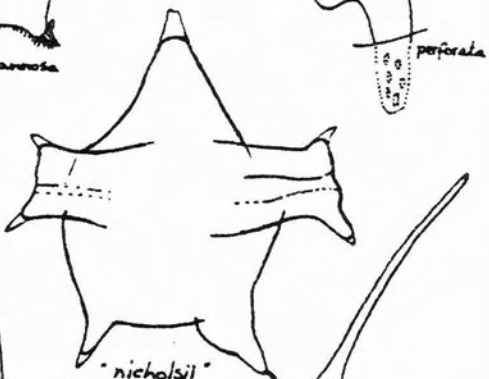
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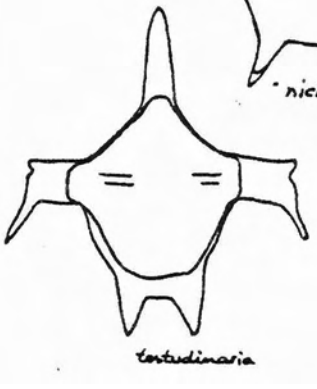
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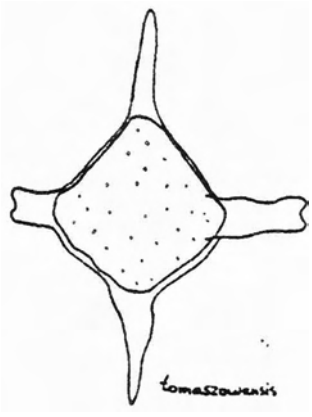
tomaszowensis