NEWSLETTER

Volume 3 Number 3 WINTER 1980

CAP MEMBERSHIP

Due to the inconvenience of repeatedly sending $2.00 each year for annual membership in C.A.P., you may send $4.00 for two years (1981-82) or even $6.00 for a three year's membership (1981-83). In each case, memberships are for calendar years. The list below shows members paid up to the end of 1980 or 1981. All other memberships are paid up to the end of 1980. Please send your cash, cheques or food parcels to Jocelyn Legault, Univeristy of Waterloo, Department of Earth Sciences, Waterloo, Ontario, N2L 3G1.

ACHAB, Aicha (1981)
ANDERSON, Thane W. (1981)
AUDRETSCH, Anton P. (1980)
AWAI THORNE, Beatrice (1981)
BASSETT, I. John (1981)
BARSS, M. Sedley (1980)
BOURGEOIS, Jocelyne (1980)
BOYKO-DIAKONOW, Maria (1981)
BRAMAN, Dennis R. (1981)
BUJAK, C. Anne (1981)
BUJAK, Jonathan P. (1980)
CAMFIELD, Martha (1981)
CRILLEY, Bernard J. (1981)
CROWDER, A.A. (1981)
DAVIES, Edward H. (1980)
DREIMANIS, Aleksis (1982)
DUFFIELD, S.L. (1980)
ELSON, John A. (1980)
FENSOME, Robert A. (1981)
FITZGERALD, W. (1980)
FORD, Jancis (1980)
GEURTS, Marie Anne (1981)
GILL, Leanne D. (1980)
GUNTHER, Paul R. (1981)
HEBDA, Richard J. (1981)
HICOCK, Stephen R. (1981)
HILLS, Len V. (1982)
IOANNIDES, Nicos S. (1981)
JANSONIUS, Jan (1981)
JARZEN, David M. (1981)
JENKINS, W.A.M. (1981)
KEARNEY, Michael S. (1981)
KLEIN, Elizabeth (1981)
LABELLE, Claude (1980)
LAROUCHE, Alayn (1980)
LEGAULT, Jocelyne A. (1981)
MACMILLAN, W.R. (1980)
MACPHERSON, Joyce B. (1981)
MATTHEWES, Rolf W. (1981)
MCANDREWS, John H. (1980)
MCGREGOR, D. Colin (1980)
MCINTYRE, David J. (1980)
MCLENNAN, Donald S. (1981)
MELLAR, Gillian (1980)
MOTT, Robert J. (1981)
NORRIS, Geoffrey (1980)
OUIMET, Denis R. (1980)
PERRAS, Josée (1980)
PIROZYNSKI, K.A. (1981)
POCOCK, S.A.J. (1980)
POELTL, Franz (1981)
RICHARD, Pierre J.H. (1980)
SAVOIE, Louise (1980)
SINGH, Chaitanya (1980)
STAPLIN, Frank L. (1981)
STOCKEY, Ruth A. (1980)
SULLIVAN, Herbert J. (1981)
SUNEBY, L.B. (1981)
SWEET, Arthur R. (1981)
TAN, J.T. (1980)
TERASMAE, Jan (1980)
THOMPSON, Renée D. (1981)
VAN HELDEN, Bert G.T. (1980)
WALTON, Huon S. (1980)
WARNER, Barry G. (1981)
WILLIAMS, Graham L. (1980)
WILSON, Malcolm A. (1981)

Corresponding Members

ARTZNER, Darrah G. (1981)
LEBLANC, Art (1980)
KREMP, G.O.W. (1981)
NAMBUDIRI, E.M.V. (1981)
TRAVERSE, A. (1980)

PALYNOSCENE

PALYNOLOGY GOES WEST (OF THE ROCKIES)
(received from Richard Hebda, Archaeology Division, British Columbia Provincial Museum, Victoria)

Palynological research on the west coast is centred at three institutions: (1) University of British Columbia, Vancouver, (2) Simon Fraser University, Burnaby, and (3) British Columbia Provincial Museum, Victoria.

At the Univeristy of British Columbia, Glen Rouse (Botany and Geology Departments) has three major project areas: (1) Continuing studies of the stratigraphy, chronology and paleofloras of Fraser River Tertiary deposits in south-central British Columbia; (2) A continuing, detailed palynological survey of the Hat Creek Coal Field, south-central British Columbia;

and (3) Reconstruction of paleoenvironments from a subalpine core, Garibaldi Park Region, southwestern British Columbia.

Graduate students in geology with palynologically oriented projects include:

Charles Henderson - Permian and Early Triassic from Ellesmere Island; palynomorphs, conodonts and other microfossil remains.

Rick Linds - Detailed stratigraphy, sedimentology and palynology of the Bowron River Coal Field, east-central British Columbia.

Jane Shepperd - Sedimentology and palynology of modern and fossil saltmarsh deposits in Boundary Bay, southwest British Columbia.

Eileen Williams - Completing a detailed study of Labrador Shelf wells, specifically plotting reworked palynomorphs in Cretaceous and Tertiary zones.

Research at Simon Fraser University was summarized by Rolf Mathewes in C.A.P. Newsletter, volume 2, number 2.

At the British Columbia Provincial Museum, Richard Hebda (Archaeology) has embarked on a number of new projects in addition to those listed in the C.A.P. newsletter, volume 2, number 1. These are: (1) Completing analysis of a postglacial sequence from Port Hardy, northern Vancouver Island; (2) Analysis of a core obtained near Canal Flats, southeastern British Columbia, spanning the record since deglaciation. The vegetation sequence should provide an environmental framework for a large archaeological site on Columbia Lake; and (3) In conjunction with John Clague (G.S.C. Vancouver) and John Luternauer (G.S.C., Pacific Geoscience Centre), Richard Hebda is continuing to use palynomorph assemblages to determine the sea level history and delta development of the Fraser River Delta.

Of note are two additional projects in British Columbia: (1) Allen Banner (Ministry of Forests, Province of British Columbia, Smithers, B.C.) is doing pollen analysis of Holocene peat sections in the Prince Rupert district; and (2) Mike Kearney (now of the Department of Geography, University of Maryland, College Park) has almost completed his doctoral study of postglacial vegetation in the alpine and subalpine of Jasper Park area, B.C.

CALGARY NEWS
(received from W.W. Brideaux, Amoco Canada, Calgary)

PETRO-CANADA EXPLORATION

Petro-Canada palynologists have moved to the new "House on the Hill", Petro-Canada's new research centre. The proximity to the Institute of Sedimentary and Petroleum Geology and the University of Calgary should prove fruitful in shared expertise and library facilities.

New phone numbers: Area Code 403

Paul Gunther	- 270-2461
W.A.M. Jenkins	- 270-2469
John Utting	- 270-2436
D.J. McIntyre	- 270-2468
Switchboard	- 270-2400

Address: 40 Research Place, Calgary, Alberta.

SHELL CANADA RESOURCES

Tony Audretsch and Frank Poetl are now working full time on east coast offshore wells. They are still in the Shell Centre but have new phone numbers:

Tony Audretsch	- 232-3586
Frank Poetl	- 232-3588

INSTITUTE OF SEDIMENTARY AND PETROLEUM GEOLOGY

The new head of the I.S.P.G. is Walter Nassichuk, a Permian ammonite specialist and the second paleontologist to head the Institute (the other having been Digby McLaren). Dr. Nassichuk succeeds Don Stott.

Nicos Ioannides has several recently published papers on Beaufort Basin palynology (see G.S.C. Current Research papers) and is currently working on the Reindeer Formation of the Caribou Hills, northeast of Inuvik, with Art Sweet of the I.S.P.G. Nicos also has a paper ready for publication on the Dome Gulf *et al.* Ukalerk C-50 well with other I.S.P.G. staff. Art Sweet is working on the palynology of the Bonnet Plume Basin with Daryll Long, a sedimentologist.

CHEVRON STANDARD

Huon Walton is studying Paleozoic to Triassic spores, pollen, acritarchs and chitinozoa from the Northwest Territories, the Canadian east coast, Alberta and British Columbia. His other activities include visual studies on organic metamorphism, disco-dancing and field-hockey.

Bert van Helden studies Jurassic to Recent dinocysts, pollen, spores and fungi from the Canadian east coast offshore, Alberta and the Northwest Territories. Other activities include studies on oganic metamorphism using palynological preparations, and fishing. He is also chairman of the highly successful meetings held on the 6th Floor of Guiness House where paleontologists come to hear informal lunchtime talks given at the Canadian Society of Petroleum Geologists Paleontology Section meetings.

MORE ON PETRO-CANADA

John Utting attended the recent meetings of the I.C.P. at Cambridge. Dave McIntyre and Wayne Brideaux proudly announce the birth of a new paper (see under Amoco Canada). Pat Doebell has returned to her studies at the University of Toronto after a successful summer working on east coast palynology for Petro-Canada.

AMOCO CANADA PETROLEUM COMPANY LIMITED

Two palynologists now grace the Amoco paleo staff: Bob Turner, a Lower Paleozoic acritarch specialist; and Wayne Brideaux, Mesozoic-Tertiary miospore/dinocyst specialist and lapsed piano player. The regional geological divisions also hide Tony Tan and Dave Mishell who are currently working as geologists, and the Geological Technical Group is supervised by Herb Sullivan. Bob Turner joined Amoco in mid-April, 1980, having been employed previously with the Institute of Geological Sciences, Leeds, England. His phone number at Amoco is 233-1287.

D.J. McIntyre and W.W. Brideaux (known in some circles as the Cookson and Eisenack of the north) have recently published:

> "Valanginian miospores and microplankton assemblages from the northern Richardson Mountains, District of Mackenzie, Canada". Geological Survey Bulletin 320. (Distribution date for purposes of priority is on or about 1980-09-15).

The authors are especially proud of their succinct title!

LENTIN INTERNATIONAL BIOSTRATIGRAPHERS

Annoûnce an address change to: No. 1503 Charter Towers, 614 Fifth Avenue, S.W., Calgary, Alberta. Phone (403)264-0173. Judi Lentin recently attended the I.C.P. in Cambridge but succumbed to a bout of viral meningitis and had to be hospitalized. She is now well on the way to recovery and invites parties interested in palynological consulting work to contact her.

UNIVERSITY OF CALGARY

Current student projects:

Dennis Braman: Ph.D. on Upper Devonian miospores, Imperial Formation, District of Mackenzie.

Elliott Burden: Ph.D. on palynology and sedimentology of the Lower Cretaceous McMurray Formation, northeastern Alberta.

Lena Suneby: M.Sc. on the Upper Triassic-Lower Jurassic of the eastern Sverdrup Basin; emphasis on the Triassic-Jurassic contact with promising Upper Triassic recovery.

Patricia Mann: Upper Cretaceous paleoecological study of the Bearpaw-Edmonton Formation transition at Horseshoe Canyon near Drumheller, Alberta (Campanian-Maastrichtian).

Current Projects of L.V. Hills:

"Genera Card File (Miospores)", the fourth update has been mailed ($15.00). The fifth update is in preparation.

"Chitinozoan Card File", now in preparation. 550-600 projected entries, with 52 generic and 488 specific names, not all valid, entered so far. The file and an accompanying comprehensive bibliography should be available by late 1981.

"Scolecodont Card File", very useful for Silurian-Devonian workers. It is in the early stages of preparation and will also include a comprehensive bibliography.

Len Hills is interested in finding collaborators for a projected acritarch card file. Interest has been expressed in such a file by many workers. Anyone interested please write to Len Hills. Len is currently working on miospores of the Miocene-Pliocene Beaufort Formation (Mackenzie Delta region) for a planned publication. He also calls attention to the following recently published paper:

Hills, L.V. and Sangster, E.V., 1980. Review of paleobotanical studies dealing with the last 20,000 years, Alaska, Canada and Greenland. Syllogeus, No. 26: 73-224. *In:* Climatic Change in Canada, edited by C.R. Harrington (National Museums of Canada). The paper lists all Quaternary papers for the stated areas with C-14 dates and is current to 1978).

I.C.P. CALGARY, 1984 UPDATE

Jan Jansonius and Len Hills are co-chairman for this ambitious undertaking which will be held on the University of Calgary campus. The meetings will be sponsored in part by the Canadian Association of Palynologists, University of Calgary, Canadian Society of Petroleum Geologists and the Arctic Institute of North America. Solicitations for program formats and field excursions are requested from C.A.P. members and camp followers.

SOCIETIES

AMERICAN ASSOCIATION OF STRATIGRAPHIC PALYNOLOGISTS, INC. (A.A.S.P.)

Volume 13, number 3 of the A.A.S.P. newsletter was circulated in July, 1980. This included a column "Focus" on the palynological work undertaken at the Department of Anthropology, Arizona State University, and the Paleoenvironmental Laboratory, University of Arizona. Also included was and extensive book review by James Schoenwetter on "The Quaternary of Israel", 1979, by A. Horowitz.

ASSOCIATION DES PALYNOLOGUES DE LANGUE FRANCAISE (A.P.L.F.)

The June, 1980, issue of the A.P.L.F. newsletter was recently circulated and included details of forthcoming meetings, four recently completed palynological theses in France, and a review of the recent publication of Jean-Jacques Chateauneuf (see recent publications in this C.A.P. newsletter).

A special article on laboratories in France featured palynological work undertaken and facilities at the Muséum de Paris (by A. Le Thomas) and the Laboratoire de Géologie du Quaternaire de Marseille-Luminy (by R. Bonnefille).

INTERNATIONAL ASSOCIATION FOR AEROBIOLOGY (I.A.A.)

International Aerobiology Newsletter number 12 was circulated in May, 1980, and included information on aerobiological research in New Zealand, Bulgaria, India, Italy and Yugoslavia.

INTERNATIONAL COMMISSION FOR PALYNOLOGY (I.C.P.)

Volume 3, number 1 of the I.C.P. newsletter, circulated in June, 1980, included the valediction of the outgoing I.C.P. President, Alfred Traverse, and a message of welcome to the incoming President, Claude Caratini. Roger Jan du Chêne will succeed Geoff Norris in the position of Secretary-Treasurer and will also succeed Jim Canright as the Newsletter-Editor.

PALAEONTOLOGICAL ASSOCIATION

Palaeontological Association Circular 101 was recently sent out and included details of forthcoming Palaeontological Association meetings and reports on two recently held Symposia: "Life in the Precambrian", April, 1980, Leicester, England and "Problems of Phylogenetic Reconstruction", April, 1980, Cambridge, England.

As usual, the Circular printed a variety of in depth book reviews, including:

"Macroevolution: Pattern and Process", 1979, by S.M. Stanley, reviewed by C. Patterson (and reprinted in this volume of the C.A.P. newsletter).

"Historical Biogeography, Plate Tectonics and the Changing Environment", 1979, edited by J. Gray and A.J. Boucot, reviewed by M.R. House.

"Microfossils", 1980, by M.D. Brasier, reviewed by R.J. Aldridge.

"Plant Fossils of West Virginia", 1978, by W.H. Gillespie and J.A. Clendening, reviewed by B.A. Thomas.

CALENDAR OF EVENTS

1981

May: Symposium on Concepts and Methods in Palaeontology, University of Barcelona. Details from Dr. J. Martinell, Departmento de Paleontologia, Universidad de Barcelona, Gran Via de les Corts Catalanes, 585 Barcelona 7, Spain.

May 28-31: Workshop on Care and Maintenance of Natural History Collections. Details from G.R. Fitzgerald, National Museum of Natural Sciences, Ottawa, Ontario, K1A 0M8, phone (603) 996-4518.

August 21-28: XIII International Botanical Congress, University of Sydney, Australia. Details from Dr. W.J. Cram, 13th International Botanical Congress, University of Sydney, N.S.W. 2006, Australia.

September: Hexrose Conference on Modern and Fossil dinoflagellates, Tübingen, Germany. This conference will follow similar themes to those of the Penrose Conference on dinoflagellates held in Colorado Springs in April 1978. These will include dinoflagellate morphology, biology, morphogenesis, ecology/paleoecology, classification, evolution, and methods and techniques. Details from Dr. Hans Gocht, Institut und Museum für Geologie und Paläontologie, Sigwartstrasse 10, D-7400 Tübingen 1 or Dr. Harald Netzel, Institut für Biologie III der Universität Tübingen, Auf der Morgenstelle 28, D-7400 T Tübingen 1.

September 28-October 1: Congrès of the Association des Palynologues de Langue Francaise. Theme: Palynology and Botany. Details from Jean Charollais or Christian Reynaud, Laboratories de Géologie, 13, Rue des Maraîchers, 1211 Genève 4, Suisse.

October 7-10: American Association of Stratigraphic Palynologists (A.A.S.P.) 14th Annual Meeting, Monteleone Hotel, New Orleans, La. Details from Don Benson, Amoco Production Company, P.O. Box 50879, New Orleans, La., 70150.

1982

July 21-26: Fourth Colloquium on Paleobotany and Palynology, Mexico City. Details from Eloy Salas, Inst. Mexicano del Petroleo, Av. Cien Metros #152, Apartado Postal 14-805, Mexico 14, D.F.

August 5-11: Third North American Paleontological Convention (NAPC-III), Montreal. Details from Colin Stearn, Department of Geological Sciences, McGill University, 3450 University Street, Montreal, H3A 2A7.

August: Second International Conference on Aerobiology, Seattle. Details from Dr. R.L. Edmonds, College of Forest Resources, University of Washington, Seattle, Washington 98195, U.S.A.

September: Meeting on the "Palynology of the North Atlantic Margin", at Trinity College, Dublin. This meeting, which will be jointly organized by the American Association of Stratigraphic Palynologists and the Commission Internationale de Microflore du Paléozoique, will include three days of technical meetings followed by one to two days of excursions to the Paleozoic rocks of Eire. Details from either Geoff Clayton or Ken Higgs, Trinity College, Dublin, Eire.

1983

October 26-28: American Association of Stratigraphic Palynologists (A.A.S.P.) Annual Meeting, Airport Hilton, San Francisco. Details from Virgil Wiggins, Chevron U.S.A. Inc., P.O. Box 3862, San Francisco, California, 94119, U.S.A.

1984

Summer: Sixth International Palynological Conference (VI IPC), Calgary, Alberta. Details from Len Hills, Department of Geology, University of Calgary, Calgary, Alberta, T2N 1N4, or Jan Jansonius, Esso Resources Canada, 339-50th Avenue S.E., Calgary, Alberta, T2G 2B3.

MEETINGS

WORKSHOP ON CARE AND MAINTENANCE OF NATURAL HISTORY COLLECTIONS
(received from D.M. Jarzen)

An informal workshop which will be sponsored by the National Museum of Natural Sciences, entitled "Care and Maintenance of Natural History Collections", is being planned for two days during the period 28-31 May, 1981 in Ottawa, on the campus of the University of Ottawa. With this announcement we are attempting to locate those persons who work with or are responsible for care and maintenance of natural history collections (botanical, geological, mineralogical, paleontological or zoological specimens). Collections may be with museums, universities, other federal or provincial agencies, or consulting or industrial firms.

Plans for this workshop include oral and visual presentations during mornings and visits to local Ottawa collections during afternoons. The morning agendas will include descriptions of a few important Canadian natural history collections along with the possibility of five other topics; (1) Collection of specimens, (2) Preservation of specimens, (3) Preparation of specimens, (4) Documentation of specimens and, (5) Storage of specimens. Which of the five topics are discussed at the workshop will depend upon the interests of those who are in attendance. Plans are also being made to have wall space available for Poster Papers so that persons may contribute information even though they are unable to attend. Oral presentations (10 to 15 minutes only) are to be mainly visual. **Bottles, labels, and specimens, etc., should** be brought and shown at the workshop.

For further details, please contact G.R. Fitzgerald, National Museum of Natural Sciences, Ottawa, Ontario, K1A 0M8, phone (603) 996-4518.

GAC-MAC HALF-DAY SYMPOSIUM
(received from Wayne Brideaux, Amoco Canada)

The date is yet to be determined but the symposium will go on, somewhere between May 11-13th, 1981 at the University of Calgary campus. The topic will be: "Recognition of sedimentary paleoenvironments using palynology". **The convenor for the symposium is** Wayne W. Brideaux, Amoco Canada Petroleum Company, 444-7th Avenue S.W., Calgary, Alberta, Canada, T2P 0Y2.

The emphasis of the symposium is the review, reassessment of previous and existing hypotheses, introduction of new ideas, and perhaps illustrations of new concepts through current research. **Several** invited papers dealing with Meso-Tertiary dinocysts, Meso-Tertiary continental miospores, Lower Paleozoic chitinozoans and Upper Paleozoic miospores are scheduled. These will be of 30-45 minutes duration. Several other shorter papers (20 mins) are also promised on Cretaceous dinocysts and the use of megaspores in defining sedimentary environments. **There** is room for perhaps two, at the most three, short papers dealing with this topic at present. **The convenor** reserves the right to refuse papers if they do not address the symposium theme.

No definite plans for publication of any of these papers have been made, although those choosing to do so might consider submitting their manuscripts to one journal and have them published as a unit. However, the convenor will not act as editor for any special collection.

NORTH AMERICAN PALEONTOLOGICAL CONVENTION MONTREAL, AUGUST 5, 6, 7, 1982

Although many of the papers presented at the Convention will be contributions by speakers invited to participate in symposia, paleontologists will also be able to present their research results to open sessions of the Convention. **Those wishing to submit** a paper to the Convention should write for an abstract form to: **NAPC-III, 3450 University Street, Montreal,** H3A 2A7, Canada.

Abstracts of accepted papers will be published before the meetings. The Proceedings of the Convention will contain papers approximately six pages in length printed from camera-ready copy and will be available at the meetings. **Abstracts must reach the** committee by September 15th, 1981. Manuscripts for the proceedings will not be accepted after January 15th, 1982.

Groups and individuals intending to propose symposia should make a submission to the Organizing Committee at the above address as soon as possible and no later than January 1st, 1981.

SIXTH INTERNATIONAL PALYNOLOGICAL CONFERENCE, CALGARY, 1984

In October 1979 the Canadian Association of Palynologists asked Len Hills (Department of Geology, University of Calgary) and Jan Jansonius (Esso Resources Canada) if they would determine the feasibility **of hosting IPC VI in the Calgary area. They sub**sequently shared chairmanship of a committee that prepared and presented an invitation to the Council of the International Commission for Palynology during IPC V in Cambridge. The proposal was unanimously accepted by the ICP Council and IPC VI will be held at the **University of Calgary from August 26-31, 1984. The** Conference Office of the University of Calgary will handle all administrative and logistical details. Hills and Jansonius will soon convene a meeting of the Calgary palynologists to assemble an organizing committee for IPC VI. Also early in 1981 a questionnaire will be sent to all C.A.P. members for suggestions, comments on proposals and other information. Field trips in particular need considerable preparation time; present ideas lean toward a series of field trips organized by local committees, allowing delegates to see much of Canada on their way to or from the meeting, to get rid of their jet lag before the technical sessions, and also to give local groups of palynologists an opportunity to organize and present something in their own area. **C.A.P. members who wish** to assist in organizing IPC VI are now invited to contact Len Hills or Jan Jansonius. **Lack of experience** in organizing conferences is no problem.

FOSSIL DINOFLAGELLATES: INDEX TO GENERA AND SPECIES, 1981 EDITION

Judi Lentin and Graham Williams have now completed compilation of the latest dinoflagellate index. This features a listing of 414 valid genera, including nine modern ones, and 71 genera no longer considered legitimate. The explosive increase in fossil dinoflagellate taxa since publication of the 1977 Index is demonstrated by an increase of 72 in the number of valid genera. The number of species has also risen dramatically to about 2175 from 1700. Listed below are the validly published genera that were not included in Lentin and Williams, 1977. If there are any you would like more information on, please contact Graham Williams who will supply the author plus reference for any or all of them.

The Index should be published in early 1981. Anyone requiring a complimentary copy is asked to write to Graham c/o Bedford Institue of Oceanography, P.O. Box 1006, Dartmouth, N.S., B2Y 4A2.

Alaskadinium
Aldorfia
Alisocysta
Abonosphaera
Amiculosphaera
Atopodinium
Australisphaera
Bacchidinium
Balteocysta
Bipolaribucina
Bohaidina
Boreocysta
Breedoxella
Brigantedinium
Caddasphaera
Carpatella
Carpathodinium
Cerebrocysta
Conicoidium
Conneximura
Corrudinium
Dapsilidinium
Dimidiadinium
Diphasiosphaera
Dissiliodinium
Dodekovia
Dubridinium
Eatonicysta
Elytrocysta
Escharisphaeridia
Eucladinium
Eurydinium
Evittosphaerula
Exiguisphaera
Eyachia
Facetodinium
Fibrocysta
Gerdiocysta
Glabridinium
Glaphyrocysta
Gochteodinia
Gochtodinium
Gonylodinium
Hafniasphaera
Hapsocysta
Hemisphaeridium
Impagidinium
Isthmocystis
Kiokansium
Kylindrocysta
Labyrinthodinium
Lagenorhytis
Leberidocysta
Lejeunecysta
Lentinia
Liasidium
Lophocysta
Melitasphaeridium
Mikrocysta
Millioudodinium
Neodiacrodium
Nexosispinum
Ochetodinium
Ovalicysta
Parabohaidina
Paralecaniella
Parvocysta
Paucibucina
Paucisphaeridium
Phallocysta
Phelodinium
Pontiadinium
Prominangularia
Pseudokomewuia
Quadrina
Quinquecuspis
Reutlingia
Riculacysta
Sentusidinium
Sicyoidium
Sirmiodiniopsis
Susadinium
Taleisphaera
Trabeculidium
Trinovantedinium
Tubulifera
Vectidinium
Votadinium
Xandarodinium
Xylochoarion

BOOK REVIEW

The following review appeared in the Palaeontological Association Circular and is reproduced here courtesy of the Association.

Macroevolution: Pattern and Process
Steven M. Stanley. W.H. Freeman, 1979. 332pp., £10.80.

Sylvester-Bradley (1971, p.2) quoted, with approval, a remark which he attributed to Halstead: "Evolution always occurs somewhere else". There are two ways of interpreting that distillation of the palaeontologist's experience, and Sylvester-Bradley used both. In his first breath, he regarded it as a confirmation of allopatric speciation in peripheral populations; and in his second, with tongue in cheek for all I know, as a recommendation that palaeontologists should travel. Travel they do, yet still they have to offer the same excuse as Darwin (gaps in the record) for their failure to demonstrate evolution. This is fair enough, for it gives palaeontology a splendid programme for full employment - let's just keep splitting rocks until we find the place where evolution is going on. Stanley's book, a text 'designed to be used in advanced courses and seminars' rejects this answer, and adopts Sylvester-Bradley's first interpretation. Stanley argues that the fossil record is much less imperfect than Darwin and his gradualist disciples want it to be. He points out that so far the only evolution found by palaeontologists is a few classics like Micraster, the odd foram, and perhaps some microchange in mammals. He shows that these examples simply won't do: the rate of change, if change it is, is too low to accomplish anything worthwhile, and too low to be accounted for by natural selection. To Stanley, the 'somewhere else' of evolution is populations too small to show in the record, and quantum changes which are instantaneous in geological time.

Stanley's book, then, is the first full-length presentaiton of the punctuational paradigm. The original authors of that view are thinking along the same lines as Stanley (Eldredge 1979, Gould 1980), and others are turning that way (e.g. Cracraft 1979). Stanley's book is subtle, sophisticated and technical, and you should all read it. It is also fairly heavy going, which you may take as an admission that your reviewer is not at home with mathematics. Rather than review it in detail, I will comment on some of the reactions, most of them disquieting, it raised in me.

Darwin's gradualism, the tradition we were raised in, was built upon Lyell's actualism, itself the reaction to Cuvier's revolutions. Gradualism has failed; Stanley has equations to prove it. So Løvtrup, Grassé, Goldschmidt, de Vries, T.H. Huxley, to name a few in the alternative saltatory tradition, may be right. The saltationism of Stanley and Gould is stylishly dressed with talk of regulatory genes, heterochrony, population flushes, chromosomal rearrangements, ecospace and so on. At the level of macroevolution, Stanley proposes that micro- and macroevolution are 'decoupled', the latter governed by species selection, a process analogous to natural selection which operates not on individual variations, but on species within clades, and is driven not by differential reproductive success, but by rate of speciation.

Yet all these things - regulatory genes, chromosomal rearrangements, rates of speciation - remain mysteries, and all hinge on Darwin's 'mystery of mysteries', the origin of species. Stanley accepts Lyell's actualism, and uses 'Lyellian curves', a clever demographic technique to estimate the rate of change of species within groups. But he has to admit that we do not see speciation going on around us. The examples Stanley finds to flesh out his arguments on speciation include African cichlid fishes, Hawaiian insects, and a few other anecdotal instances of which my favourite is the flightless Stephen Island wren, 'discovered by the lighthouse keeper's cat, which systematically captured the total population'. These examples have to bear a heavy burden of theory, but Stanley's discussion of them is peppered with 'it seems evident', 'apparently', etc., and they will not convince the sceptic. Even if they do, the mystery of mysteries remains: how the inferred rapid morphological change occurred. Somehow, one has to get individuals homozygous for whatever it is that does the trick (since mutant regulatory genes, macromutations of structural genes, and all other such black boxes presumably have non-mutant alleles), and the only mechanism available is inbreeding. Indeed, as Stanley puts it, paraphrasing M.J.D. White on chromosomal speciation, 'it is required that we consider the possibility of the origin of the new species from a single individual'. Yes, but that is what the creationists have been saying all along. Eve was fashioned from Adam's rib.

Stanley argues that it is a legitimate inference from the fossil record that the origin of major taxa was sudden. The same argument was common to Darwin's critics and to pre-Darwinians. Lyell's original insistence on gaps in the record was a specific counter to such proposals by catastrophists. In Stanley's case, the inference is underpinned by unquestioned acceptance of the truth of evolution, but what if that assumption is questioned? In my view, Stanley's inference rests on an imperfect understanding of systematics, in particular, misapprehensions about monophyly, as his Fig. 4.2 makes plain. These misapprehensions may make little difference to his calculations, but those calculations rest, ultimately, on systematics. What if that systematics is, like Stanley's book, fully committed to evolution? He has (Table 5.1) some calculations on the effect of 'pseudoextinction' (phyletic transformation, evolutionary palaeontologists' interpretations of morphology) on estimates of rates of speciation. He considers incidences of pseudoextinction ranging from zero to 70%. If one adds pseudoextinction of 100% to the Table, the animals concerned, mammals and bivalves, still have respectable rates of speciation. Yet if all is pseudoextinction, there has been no speciation. In short, if one makes calculations based on the assumption of evolution, with systematics based on the assumption of evolution, one will come up with numerical estimates of evolution which may be true, damned lies, or statistics.

If Stanley is right about evolution (I see no way of testing whether he is right or wrong, nor does he suggest one), what sort of a programme is offered for palaeontology? It is likely to be some time before one will have much luck with grant proposals to travel in order to collect fossils to show that they do not demonstrate evolution. If you don't fancy that programme, read Stanley's book to find out if and where you disagree with him. As usual with W.H. Freeman, the book is well produced and not overpriced.

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WORLD LIST OF PALYNOLOGISTS

The International Commission for Palynology is compiling a World List of Palynologists. The questionnaire included at the end of this newsletter is being used to compile the List and was circulated to all C.A.P. members. Those shown below have returned their questionnaires and these have been forwarded to the I.C.P. World List compiler. If you wish to be included in the World List of Palynologists, but have not yet returned a questionnaire, please complete the enclosed one and return it to Jonathan Bujak, Editor, C.A.P. Newsletter, c/o Bedford Institute of Oceanography, P.O. Box 1006, Dartmouth, N.S., B2Y 4A2.

Anderson, T.W.
Audretsch, A.P.
Barss, M.S.
Bassett, I.J.
Beckett, P.J.
Berti, A.A.
Bourgeois, J.
Braman, D.
Bujak, C.A.
Bujak, J.P.
Cossette, M.
Crowder, A.
Davies, E.H.
Duffield, S.L.
Fensome, R.A.
Fitzgerald, W.D.
Geurts, M.-A.
Gill, L.D.
Gunther, P.R.
Hebda, R.J.
Hicock, S.R.
Hofmann, H.J.
Jarzen, D.M.
Kroker, S.
Labelle, C.
Larouche, A.
La Salle, P.
Legault, J.
Mathewes, R.W.
McAndrews, J.H.
McGregor, D.C.
McIntyre, D.J.
Mellars, C.
Mott, R.J.
Norris, G.
Ouimet, M.D.
Perras, J.
Pirozynski, K.A.
Pocock, S.
Poulin, P.
Richard, P.J.H.
Sarjeant, W.A.S.
Savoie, L.
Singh, C.
Sullivan, H.J.
Suneby, L.B.
Terasmae, J.
Thompson, R.
Utting, J.
Varma, C.P.
Vincent, J.-S.
Webb III, T.

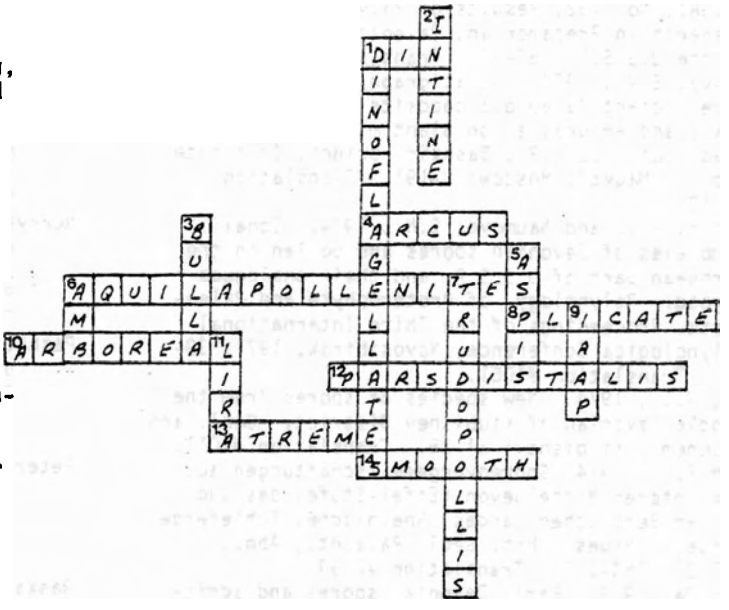
PALYPUZZLE

The answers to the puzzles in the last newsletter are:

"To be or not to be, that was the time"...MESOZOIC

Palynological Jumble: CORED, CHIPS, BOGS, STRATA.
Final word = SPORES.

The solution to the crossword puzzle is shown below.



A BRAIN TEASER: Can you solve the following?

SAND 1	MAN BOARD 2	STAND I 3	R/E/A/D/I/N/G 4
WEAR LONG 5	R O ROADS D S 6	T O W N 7	CYCLE CYCLE CYCLE 8
LEVEL 9	O M.D. Ph.D. B.Sc. 10	KNEE LIGHTS 11	I I I I O O 12
CHAIR 13	DICE DICE 14	T O U C H 15	MIND MATTER 16

1. Sandbox; 2. Man overboard; 3. I understand; 4. Reading between the lines; 5. Long underwear; 6. Crossroads; 7. Downtown; 8. Tricycle; 9. Split level; 10. 3° below zero; 11. Neon lights; 12. Circles under the eyes; 13. Highchair; 14. Paradise; 15. Touchdown; 16. Mind over matter.