CANADIAN ASSOC. OF PALYNOLOGISTS
ASSOC. CANADIENNE DES PALYNOLOGUES

NEWSLETTER
Vol. 9 No. 2 Winter 1986

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C.A.P. MEMBERSHIP

Full Members:	
Paid up beyond 1988	3
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Paid up to 1985 inclusive	3
Total	73
(70 eligible for I.F.P.S. fees)	
Associate Members: (Paid up to 1986 or beyond)	15
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C.A.P. FINANCIAL STATEMENT
(as at 24 October 1986)

Balance forward 31-8-1985	$ 219.21
Other credits:	
Dues and subscriptions	312.36
Interest	16.55
Refunded fee for incorporation	5.00
Total Credits	$ 553.12
Debits:	
I.F.P.S. dues	$ 93.75
Postage for Newsletter:	
February 1986	73.49
June 1986	131.94
Total Debits	$ -299.18
BALANCE	$ 253.94

MULTIVARIAT STATS FOR THE IBM-PC

MVSP is an easy-to-use menu driven program which performs PCA, RA, cluster analysis, and diversity indicies. MVSP is available for only the cost of distribution. Send $5.00 (US) to cover the cost of disk, mailer and postage to: Warren L. Kovach, Dept. of Biology, Indiana University, Bloomington, Indiana, 47405 U.S.A.

Joint Meeting, U.S. Geological Survey & Geological Survey of Canada Palynologists, November 3-4, 1986

Following the AASP/CIMP meeting in New York, palynologists from the Geological Survey of Canada and the U.S. Geological Survey met in Reston to discuss current research projects and research areas of mutual interest. The fifteen participants included eight from the USGS from Reston, Denver, and Menlo Park, and seven from the GSC from Dartmouth, Ottawa, and Calgary. This was the second such joint meeting; USGS and GSC palynologists met similarly, but on a smaller scale, in 1978.

The two-day meeting consisted of 1-plus day of short summary presentations of work-in-progress from each palynologist. Mid- morning on the second day, we broke up into smaller groups to examine videotapes, view specimens under microscopes, and run through computer programs. Stratigraphic interests at this meeting ranged from Devonian to Pleistocene; fossil groups discussed included spores, pollen, chlorophytes, and, of course, dinoflagellates.

Dinoflagellate workers present were: Nairn Albert and Lucy Edwards (USGS) and Rob Fensome, Dave McIntyre, and Graham Williams (GSC). In addition, Greg Gaines, a recently returned prodigal son now working for the State Department, joined the group for evenings of eating and drinking.

Nairn Albert, a grad student at Stanford as well as a USGS'er, is working on Mesozoic and Cenozoic dinocysts, mostly from Alaska. He is also working on *Palaeoperidinium*, on "incidental" paraplates, and on the chemical composition of dinoflagellate cysts. His SEM's of beautifully preserved dinocysts, radiolarians, spores, and pollen reminded us all of the benefits of collecting and processing concretions. His paper on *Lacrymodinium* should be coming out soon.

Lucy Edwards is working on Paleocene and Eocene dinocysts from the Atlantic and Gulf Coast of the U.S. She discussed using dino-defined surfaces and zones to produce structure-contour and isopach maps. She has dabbled in the Neogene and now is working with colleagues Ager and Frederiksen on Alaskan Upper Cretaceous and Lower Tertiary material. She also presented the latest of what she is doing with graphic correlation techniques.

Rob Fensome discussed his work on the Mesozoic and Cenozoic biostratigraphy of Atlantic and relevant areas. This includes current research on the Labrador Shelf, offshore Newfoundland, and the Scotian Shelf, as well as joint work with John Riding on British type sections. Work is also in progress on a supragneric classification of dinoflagellate taxa. He and Graham Williams are presently involved in a number of joint efforts, including revising the Eisenack catalog (with Lew Stover) and DSDP/ODP studies (with Sarah Damassa).

Dave McIntyre emphasized his pollen and spore work, but included a few pictures of dinoflagellate cysts from Cenozoic and Late Cretaceous deposits in northern and western Canada. He showed some Aphidiademas and Chatangiellas from the Eagle Plain, central Yukon.

Graham Williams and Lew Stover have nearly finished "Analyses of Mesozoic - Cenozoic organic-walled dinoflagellates, 1977-1985" to complement Stover and Evitt's 1978 classic. Graham has also worked on calcareous dinocysts with Judi Lentin, on paleoprovincialism in Cretaceous dinos, and on shipboard sampling in Baffin Bay.

Rumor has it that Graham got short-sheeted during this meeting, but because he grew up with older sisters who also knew of this practice (or because he had too many Moosehead beers), he hardly noticed.

Dino-people and spore-pollen folks found out a lot about the ongoing research projects of their close and far colleagues. Spirited discussions ensued, both during the day and between off- color jokes at dinner. Reprints, preprints, and reference materials were exchanged. All agreed it was a very productive meeting and plans are being made to do it again more often.

Lucy E. Edwards
U.S. Geological Survey

NEW HOME FOR TYPE MATERIAL

A recent enquiry from Dr. J.K. Lentin of the whereabouts of a *Dinogymnium* species figured by me in Harland (1973) prompts this short note.

All the materials illustrated in Harland & Sarjeant (1970), and Harland (1971 and 1973), are now housed in the MPK series of the Palynological Collections of the British Geological Survey in Keyworth, Nottingham NG12 5GG, and therefore are no longer to be found at the University of Alberta in Edmonton, Canada. Specimens in Harland and Sarjeant (1970) are registered as MPK 968-973, in Harland (1971) as MPK 974-981 and in Harland (1973) as MPK 852- 916.

In addition all the holotype and illustrated material previously held with the Institute of Geological Sciences (now British Geological Survey) in Leeds has been transferred to the new headquarters office at Keyworth, Nottingham, following the closure of the Leeds office. All enquiries concerning palynological material held by BGS should be addressed to the Biostratigraphy Research Group Manager, British Geological Survey, Keyworth, Nottingham NG12 5GG, U.K.

REFERENCES:

HARLAND, R. and SARJEANT, W.A.S. Fossil freshwater microplankton Dinoflagellates and acritarchs) from Flandrian (Holocene) sediments of Victoria and Western Australia. Proc. Roy. Soc. Victoria, 83, 211-234.

HARLAND, R. 1971. Dinoflagellate cysts and acritarchs from the Bearpaw Formation (Upper Campanian) of southern Alberta, Canada. Palaeontology, 16, 665-706.

Rex Harland
British Geological Survey

ALPHABETICAL LISTING OF FOSSIL DINOCYST SPECIES. M.S. Barss and G.L. Williams Can. Tech. Rep. Hydrogr. Ocean Sci., no. 23: vii + 41 p.

Each of us, one day or another, probably had to face what I see as the most arduous task for a palynologist, compared to which telling a ventral view from a dorsal view, image reversed is mere child's play: I mean finding a name for a new dinoflagellate cyst (or acritarch, or spore) species. If you are like me, gripped by anguish when it comes to turning this new species xyz into a latin name, if you are

left helpless in front of your blank sheet, the "Alphabetical Listing of Fossil Dinocyst Species" which is based on the Lentin and Williams INDEX, compiled by Sedley Barss and Graham Williams (1983) is definitely what you need.

A survey of its 1695 specific names and their corresponding genera will tell you that two procedures are overwhelmingly favored: 1) to coin a name referring to a (usually simple) morphological character or, 2) to dedicate the new taxa to a palynologist you wish to honour in the process, the first procedure being by far the most popular.

The analysis of these morphology-related species names shows that dinocysts are usually well ornamented little creatures: not less than 25 species names are coined from the latin root granulatus, a, um. Dinocysts are also, in descending order, reticulate (latin reticulatus, a, um, 18 species names), spinose (spinosus, a, um, 15 species names), verrucose (verrucosus, a, um, 11 species names) or simply ornate (ornatus, a, um, 11 species names).

A lesser amount are smooth (glabrus, a, um and laevigatus, a, um, 9 species names each) or simple (simplex, 10 species names), some show negative ornamentation (perforatus, a, um, 8 species names). Things are more balanced if one considers their structure, with 8 delicate (delicatus, a, um) species matching an equal number of robust (robustus, a, um) taxa.

Compared to these figures, the number of species dedicated to palynologists appears relatively low. The palynologists top-ten list is the following: All times winner is Georges Deflandre with 10 species, ranging from *Aldorfia to Thoracosphaera,* who would have ranked 6th in an overall standing. He is followed closely by Hans Gocht (9 species) and Isabel Cookson (8 species), the only female palynologist in the top-ten. Shortly behind comes Gerhard Alberti with 6 species. Tied in 5th place are Bill Evitt and Bill Sarjeant, with 5 species each. With 4 species comes a group of 3 names for 4 individuals, Charles Downie, Alfred Eisenack and Otto and Walter Wetzel combined. In 10th place is Warren Drugg with 3 species.

The guide also offers some less explored avenues, such as stratigraphic references (jurassica, eocenica, cretaceum) or names with a geographical connotation (alaskaense, australis) and, being distributed free of charge by the Bedford Institute of Oceonography, is specially good value for money.

Daniel Michoux,
Quebec City

EDITORS NOTE: The new alphabetical listing of species has now been assembled by Sedley Barss and his trusty computer - based on the 1985 edition of the Lentin and Williams INDEX. It will appear early in 1987, FREE from the Bedford Institute of Oceanography.

DINOCYST TECTONISM

INTRODUCTION:

During a study of dinocysts found in the water content of certain brewery products, the similarity between recent cyst plate development models and the theory of plate tectonics was noticed. On further sampling it was realized that plate tectonics can be used as an alternative framework for the understanding of dinoflagellate cyst evolution.

PLANETARY PLATES AND DINOCYST PLATES:

Modern papers describing dinocyst morphology invariably label the distinct areas marked by sutures as plates. Lentin and Williams (1976, p. 174) define a plate as "One of the constituent and separate units of the theca". Dennis and Atwater (1974, p. 1031) define plate tectonics as "a theory .... in which the lithosphere is divided into a number of plates ...". Both definitions deal with discrete areas covering a three dimensional body. Other similarities would be expected to be evident and examples that come to mind include:

1. Both dinocyst and planetary plates have edges which contact other plates.

2. The edges often overlap.

3. Both types of plate can be part of triple junctions, e.g. the earth's crust at Kakuru, East Africa and *Thecadinium kofoidi*.

4. Workers in both fields have postulated the movement of plates through time, e.g. Africa (Hoffman et al., 1974) and the evolution of gonyaulacoid dinocysts (Taylor 1980).

5. Plates have also been shown to split and amalgamate (see Eaton 1980 p. 685 and School et al., 1980 p. 565).

Another similarity relates to the troughs found on dinocysts and planets. Plate tectonicists have labelled some troughs on Gaia as spreading centers. An analogy can be found on dinocysts in the form of the cingulum. The cingulum/spreading center would infer subduction at the apical and antapical edges of the dinocysts cingulum. This is shown by the raised areas at the edges of the cingulum. To extend the idea, the sulcus could be thought of as being analogous to a transform fault. Gocht (1979) presented evidence of plate development which could be interprted as the result of "hot spots" under dinocyst plates. This is analogous to the Yellowstone area of the North American tectonic plate. The location of "hot spots" under the cingulum however has not yet been recorded.

APPLICATION TO DINOCYST EVOLUTION.

An area of application of the theory outlined above is the perennial problem of acritarch development and their relationship to dinocyst evolution. Acritarchs are currently thought of as primitive organisms and this is borne out by their lack of a cingulum and sulcus. However some advanced forms, e.g. *Cymatiogalea,* do have a primitive tabulation, which could indicate the development of primordial dinocyst plate tectonics. The development of a spreading center/cingulum and the more advanced transform fault/sulcus is here defined as the prerequisite for the definition of a dinocyst. An example of a primitive form of cyst is to be found in the living genus *Protoperidinium.*

To develop a cingulum, the most primitive dinocysts would evolve to create a triple junction, possibly forming an analogy to a "hot spot". From the triple junction a dominant pair of spreading center troughs would emerge, forming the circum-cyst cingulum. However, stability is obviously not a characteristic of cinocysts, any more than it is of planets, and a transform fault analogy is formed and termed the sulcus. Movement along the sulcus would cause the displacement of the cingulum to form a laevorotatory cingulum.

The steps in evolution outlined above would then be concluded by the joining of

plates, which is analogous to the continents colliding on a crustal type planetary body. The final two stages are illustrated by the primitive genus *Rhaetogonyaulax*, with its many plates, evolving into a more advanced form with fewer plates, e.g. *Gonyaylacysta*.

CONCLUSIONS AND FUTURE WORK:

Similarities exist between plate tectonics on Gaia and dinocyst plate development and movement. An evolutionary sequence developed from these ideas shows a relationship between acritarchs and dinocysts. However, the use of a hypothetical model as the basis for an evolutionary sequence requires a certain amount of caution. Future work should be directed to finding the spreading center in the cingulum and the driving mechanism for plate movements on dinocysts. The latter could be tied in with the diurnal dinoflagellate migration through the water column, perhaps in search of heat. The lack of a cryptic terrane analogy is anomalous and further studies around the regions of the sulcus and apical horn could reveal small areas containing relict plates.

ACKNOWLEDGEMENTS:

The author is not indebted to the breweries of Labatts and Molsons since he paid for all his brain food. However he would like to thank the inn 'Food for Thought' for providing the beer mats on which the first draft of this paper was written.

Stan Stancliffe,
University of Saskatchewan

REFERENCES:

DENNIS, J.G., and ATWATER, T. M., 1980; Terminology of geodynamics. American Association of Petroleum Geologists, bulletin, vol. 58, 1030-1036.

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GOCHT, H., 1979; Correlation of overlapping system and growth in fossil dinoflagellates, (Gonyaulax Group). Neues Jahrbuch fur Geologie und Palaontologie, Abt. 157, 344-365.

HOFFMAN, P., DEWEY, J.F., and BURKE, K., 1974; Aulacogens and their genetic relation to geosynclines, with a Proterozoic example from their Great Slave lake, Canada. In Dott, R.H., and Shaver, R.H., (eds.) Modern and ancient geosynclinal sedimentation. Soc. Econ. Paleont. Mineral. Spec. Pub. no. 19, 38-55.

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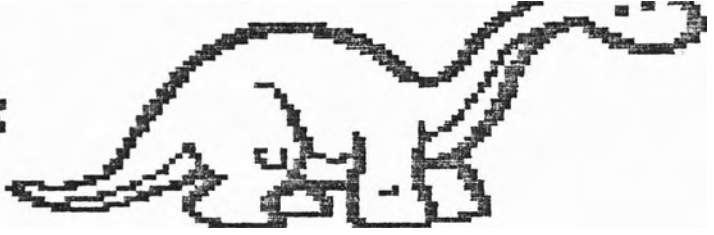
SCHOLL, D.W., von HUENE, R., VALLIER, T.L., and HOWELL, D.G., 1980; Sedimentary masses and concepts about tectonic processes at underthrust ocean margins. Geology. vol. 8, 564-568.

TAYLOR, F.J.R., 1980; On dinoflagellate evolution. Biosystems vol. 13, 65-108.

DINOSAUR FOOTPRINTS



The following ramble is in response to sly pressure placed upon the correspondent by J. Lentin. The latter requested something esoteric. I thought it would be useful to describe the Tyrrell Museum in terms of facilities which may be of potential use to scientists outside of the museum.

The specimen collections are gradually accumulating into a representative collection of fossils from western Canada as well as other areas of the world. The specimens are housed in storage areas where there is plenty of room for future expansion in both volumes and numbers. All of the documents pertaining to the collections are currently being put into a computer record and it will be possible to do rapid search on a wide variety of subjects. The collections area has a vault-like area set aside for type material that is supposedly fire-proof although, as yet, this claim is untested.

The museum has a wide variety of lab space either currently in use or allotted for future use. Seven labs are attached to scientists offices, large and small preparation labs, casting shop, acid lab, thin-sectioning lab, microfossil washing lab, sandblasting room, palynology lab, SEM lab, and an x-ray lab are available although not all are fully equipped at present. Space, amounting to four times the space of office and labs of individual curators, is available for visiting scientists either on short term visits or longer term stays and for graduate students working at the museum.

The museum runs a permanent summer field camp in Dinosaur Provincial Park which acts as a base for studies within the park and areas adjacent to it. This facility will be improved with the opening of a field station in 1987 holding preparation labs, offices, storage areas, auditorium and exhibit hall.

The public displays at the Tyrrell includes a palaeoconservatory or plant house. This area exhibits over 100 species of living plants selected because they are extant relatives of fossil plants living in the Mesozoic and early Cenozoic of Western Canada. It is interesting to look at the living plants as a change of pace from the fossil spores and pollen many of us commonly gaze at. More importantly, the collection may serve as an interesting research resource for some.

Another area of the museum, which may be of use to outside researchers, is our library. Currently, the holdings are about 15000 volumes with an emphasis on palaeontology although we have a lot of material on geology and biology as well. The library collections are a rapidly expanding resource at the present time.

The final facility at the museum that I will mention is our auditorium. It seats 200 people and has stepped-seating. A self- contained projection booth and sound system are built in and currently it is used for public lectures and films. Its suitability for conferences has yet to be tested but the first will be held in July of this year (the initial one is on the tacky subject of dinosaur systematics). Larger conferences are being planned for subsequent years.

The PALAEOCONSERVATORY at THE TYRRELL MUSEUM

* One of the unique features of the new Tyrrell Museum is a special area devoted to plants. In a museum devoted to the study of ancient life through fossils, the palaeoconservatory is the only truly living section. This indoor garden contains one of the largest collections of living primitive plants in Canada. * Plants were selected from over 118 different species known to have lived many millions of years ago. Fossilized trunks, leaves, seed pods and spores can be found in rocks. Some species have changed very little in the last 180 million years. Others have ancestors that date back 350 million years to the Devonian Period. * Many of the plants for the new museum were shipped from Florida, California, Malaysia, Singapore, Australia and New Zealand. Similar plants lived in this region millions of years

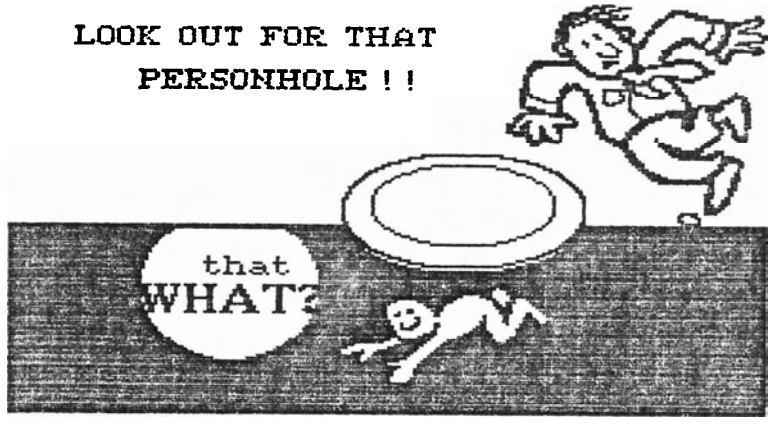
ago, the environment here was similar to that of the southeastern United States today. Much of the North American interior was covered by a shallow inland sea. Alberta was on the western border of this sea. Lush swamps, deltas and open lands supported an abundance of vegetation and animal life, including the dinosaurs. * The palaeoconservatory has an area of approximately 345 m2 (3,713 ft2) and constitutes approximately 8% of the total area available for displays at the Tyrrell Museum. The area is separated from the main gallery and has glass walls on two sides and a glass ceiling. Temperatures range between 17 C and 25 C and the relative humidity is 70%. * Among the plants are examples of the dawn redwood (Metasequoia) which was known from fossil evidence to have lived in Alberta 65-70 million years ago. It was not known as a living species until 1941, when a modern relative was discovered in China. * The Maidenhair tree (Ginkgo biloba) is also commonly known from Alberta fossils. It is now native only to China. Similarly, the Umbrella Pine, once an abundant species were, now grows only in the Orient. The Sycamore (Platanus), another common tree during ancient times, now grows naturally only in the southeastern United States. * The palaeoconservatory contains one of the best collection of cycads in Canada. This contributes to the importance of the palaeoconservatory as a research facility.

Dennis Braman
Tyrell Museum of Palaeontology
Drumheller, Alberta

NO PERSONDATE FOR CHANGE

I thought that the silly extreme of feminist word-changing had been reached with the arrival of "personhole-cover," but no - recently, I heard of a suggested word-change that quite puts the others in the shade. Imagine, if you will, that a manual should become a "personual".

Unpersonacled by the persondates of the actual meaning of words, what personoeuvres the personiacal personager could personipulate, perhaps by means of personuscripts written by his own personicured hand!



Well now, perhaps the individual who suggested "personual" did not know that the Latin root man, which occurs in so many English words, means "hand." But if (s)he (have they invented a word for that yet?) really wants to get into foreign language derivations, we could have a persontuoso musician, perhaps feperson, wearing a persontilla and playing a persondolin. Or you might see a personatee and a persondrill at the Zoo eating persongos or personna.

Or, to go from Latin and other languages to Greek, can you imagine the personphagous personoids whom a personlogist might meet in some personomorphic world?

Speaking as a woperson, I'd like to add that I see nothing wrong with the sequence of letters m-a-n - nor with the members of the huperson race whom those letters represent, whether specifically masculine in gender or, like me, representatives of the species Homo sapiens.

Dr. C.C. Chinnappa, Associate Professor and Director of the Herbarium, The University of Calgary, has informed us that he has been successful in getting some of the papers presented in the VI IPC published in Vol. 64 of the Canadian Journal of Botany.

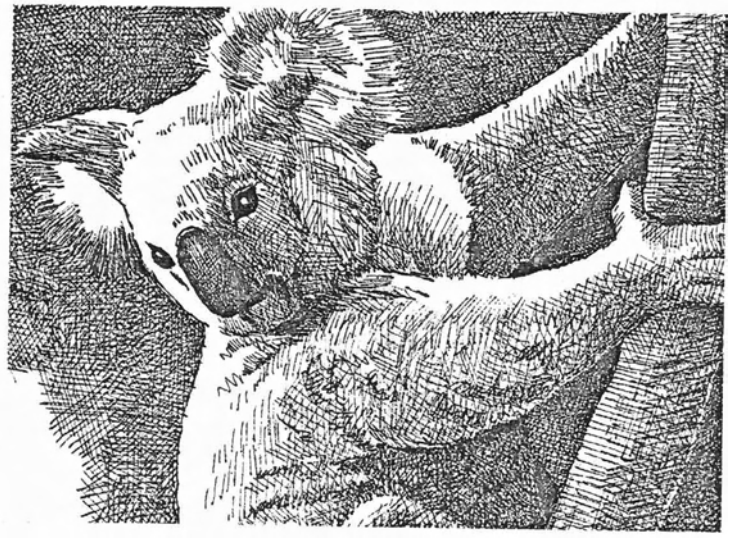
SPECIAL PAPERS ON POLLEN CHARACTERS AND EVOLUTIONARY TRENDS

C.C. Chinnappa	Introduction
G. Vasanthy and S.A.J. Pocock	Pollen symmetry: radial and rotated
J.R. Rowley and S.K. Srvastava	Fine structure of *Classopollis* exines
N. Sahashi and J. Ueno	Pollen morphology of *Ginkgo biloba and Cycas revoluta*
I.K. Ferguson	Observations of the variation in pollen morphology of *Palmae* and its significance
M.M. Harley	Distinguishing pollen characters for the Sapotaceae
S. Blackmore	The identification and taxonomic significance of lophate pollen in the Compositae
B.G. Warner and C.C. Chinnappa	Taxonomic implications and evolutionary trends in pollen of Canadian Ericales
W. Punt	Convergencies in some interesting pollen types of *Phyllanthus* (Euphorbiaceae)
G. Thanikaimoni	Evolution of Menispermaceae
C.R. Kumar and P.K.K. Nair	Inheritance of exine ornamentation features and pollen shape morphoforms in the interspecific tetraploid hybrids of *Gloriosa* L.
G. El-Ghazaly and W.A. Jensen	Ontogeny of pollen aperture of *Triticum aestivum*
J.A. Seoane-Camba and M. Suarez-Cervera	On the ontogeny of the oncus in the pollen grain of *Parietaria officinalis L. ssp. judaica* Beg.(Urticaceae)

INFORMATION ABOUT AUSTRALIA

Worth noting: If you are planning a trip to Australia for the International Palynological Congress (7-IPC) write away for the 1986-87 edition of DESTINATION AUSTRALIA, a free 120-page magazine published by the Australian Tourist Commission.

Destination Australia explores the country's culture and customs, how to get around, as well as what to see. Copies may be obtained from the Australian Tourist Commission, Suite 220, 120 Eglinton Ave. E., Toronto, Ont. M4P 1E2.



THE PHILADELPHIA STORY AND OTHER THOUGHTS FROM OTTAWA

There are at least three reasons to visit Philadelphia during the month of December. Firstly, this historic city is a treat at anytime of the year; but December in Philadelphia also boasts the annual Army-Navy game and Christmas concerts at Wanamaker's Department store. For at least two weeks this December (1986), I will be working at the Philadelphia Academy of Natural Sciences with Dr. Benjamin Stone (Chairman, Department of Botany) on two projects which Ben and I have been developing over the past few years.

I have been invited through the courtesies of Dr. Stone and the Harrison Rigg and Nellie Erisman Funds to complete a study of the floral and pollen morphology of a species of *Clymenia* (Rutaceae) which may represent a new species within the tribe Aurantioideae (the tribe whih contains the economically important genus Citrus).

Additionally while in Philadelphia, Ben and I will be expanding on the occurrence of *Pandanus* (screw-pines) in the western interior of North America, and its bearing on the biogeography of recent species. In this respect, I will present a lecture to the Academy and the Philadelphia Botanical Club on "Turtles and Pandans".

The year 1987 may prove to be an important year for palynology and paleobotany at the National Museums of Canada. Dr. Len V. Hills (University of Calgary) has been awarded a sabbatical from January through July to study, lecture and develop a temporary exhibit with the Paleobiology Division, NMNS. Len has been on contract with our Division for three years (Part of a five-year project) to expand the plant macrofossil collections at the NMNS.

Collections of plant macrofossils already received, identified and curated (via the CHIN/PARIS) computer programme) include: (1) the Eocene, McAbee Beds, British Columbia which contain among others excellent, display-quality specimens of *Ginkgo, Castanea, Rosaceae, Carpinus, Alnus and Betula;* (2) Cretaceous, Paleocene and Eocene angiosperms, gymnosperms, ferns and charophytes from Alberta and British Columbia; (3) remarkably well preserved specimens of fruits of *Juglans* (walnut) and cones of *Pinus* from Miocene deposits on Banks Island, NWT. To date a total of 1287 specimens representing 25 families of plants have been added to the NMNS Paleobotany collections. The 1986 summer field season will concentrate on plant macrofossils from the classic Tertiary localities in British Columbia (Kamloops, Princeton Coal Field and

Williams Lake area).

Next year will also witness the beginning of my sabbatical with Dr. Mary Dettman, to study the palynomorphs recovered from latest Cretaceous (Campanian - Maastrichtian) sections from the Perth Basin (Western Australia) and the offshore portion of the Otway Basin (Victoria and South Australia). My leave from Ottawa will commence in late July 1987 and will end after the 7th International Palynological Congress in Brisbane, early in September 1988. My mailing address during this period will be: Dr. D.M. Jarzen, c/o Dr. M.E. Dettmann, Department of Geology and Mineralogy, University of Queensland, St. Lucia, QLD 4067 Australia.

One final bit of news. In August I will have attended the International Union of Biological Sciences (IUBS) Executive Committee meeting in Syracuse, New York (August 8-9). I will represent the International Federation of Palynological Societies (CAP being one of the 21 members societies) in the absence of Mme Annick Le Thomas the IFPS representative to IUBS. Two items on the IUBS agenda are of particular importance to IFPS and CAP, and cover the questions of cooperation between IUBS members, and IUBS cooperation with international organizations. The results of my involvement with the meeting, especially as it concerns IFPS will be printed in a future issue of Palynos (the IFPS Newsletter).

The future looks encouraging for Palynology and Paleobotany at the National Museums of Canada. The Paleobiology Division has recently (June 1986) moved to new quarters. The office, laboratory and collections space are greatly improved. I extend a warm invitation to CAP readers to visit Ottawa and see firsthand, a new, fully equipped laboratory, decent office facilities and the recently acquired plant macrofossils. The coffee and doughnuts are on me.

Forthcoming papers include:

Jarzen, D.M. (in press). "Older than Methuselah". Biome, vol. 6(3):1. National Museum of Natural Sciences (Popular).

Jarzen, D.M. and W.C. Elsik. (in press). Fungal palynomorphs recovered from recent river deposits, Luangwa Valley, Zambia. Palynology 10.

Coe, M., D.L. Dilcher, J. Farlow, D.M. Jarzen and D.A. Russell. (in press). Dinosaurs and land plants. In: Friis, E.M., W.G. Chaloner and P.R. Crane, (eds.), The Origins of Angiosperms and Their Biological Consequences. Cambridge Univ. Press; Cambridge.

D.M. Jarzen
Ottawa

THE CHRISTMAS FLOWER

Other than the Christmas tree and holly, no other plant seems more symbolic of the Christmas season than the beautiful deep green and brilliant red poinsettia.

The botanist Carl Ludwig von Wildenow provided the Latin binomial of poinsettia, Euphorbia pulcherrima. The species name is derived from the Latin pulcher meaning beautiful.

The poinsettia is a member of the large cosmopolitan family Euphorbiaceae, which consists of mostly poisonous large trees or shrubs. The common name poinsettia was given in honour of Dr. Joel Poinsett who, as the United States Minister to Mexico, introduced the plant into cultivation in 1828. The native habitat of the poinsettia is in shady damp environments of Mexico and Central America. Today it can be found in most warmer climates as a hardy shrub sometimes growing in dense clumps and considered a bothersome weed. It is widely cultivated as an ornamental, particularly in California, where many varieties have originated. In temperate climates we usually see this beautiful plant as a potted house plant, often only during the Christmas season.

The brilliant red "petals" of the poinsettia are not actually petals at all, but are modified leaves or bracts, which surround the much smaller yellow clusters of flowers (see drawing) and serve to attract pollinating birds. Bracts of the cultivated varieties may be deep red, pink, light green or white. A feature common to the poinsettia and other members of the euphorb family is the presence of a milky sap or latex within the stem and leaf petiole tissues. This latex may help the plant in the healing of wounds or as a deterrent to browsing herivores.

Most members of the Euphorbiaceae are poisonous and for years poinsettias were considered dangerous to have around the house, especially in homes with young children or pets. However, Dr. Trevor Cole, Curator at the Dominion Arboretum, has noted that the myth of their fatal poisonous nature has not been substantiated. Dr. Cole reported that "Poinsettias, if ingested, can be irritating to the mouth and stomach, and can lead to nausea and vomiting. Other than that, they produce no ill effects."

Much has been written or passed on by word of mouth on the needs and care of potted poinsettias in order to ensure their continued flowering. Some factors that may help include bright light so they can hold their colour, and adequate humidity to prevent bottom leaf drop. Daily watering and good drainage with humnidity of 30 per cent or more should keep a Christmas poinsettia attractive until Easter.

One suggested technique for carrying the plant over for another year is burying the pot outdoors in a sunny garden location after the last frost danger has passed. Prune the stems severely and water and fertilize regularly until cool nights arrive

(late September). Then bring the pot indoors again to cool, sunny window, ensure it receives 12 to 14 hours a night of absolute darkness, and you might receive the reward of another season of bloom.
David M. Jarzen
Reprinted from BIOME : 4:2

Book Reviews

LATE CENOZOIC HISTORY OF THE PACIFIC NORTHWEST Charles J. Smiley (Ed.). Allen Press for the American Association for the Advancement of Science, 1985, 417 pp., $28.95 + p. & p. (hardback), Library of Congress Catalogue Card No. 85 72591, ISBN O 9343394 06 7.

The majority of the papers in this volume deal with the sedimentology, palaeobiology and palaeoecology of the early Neogene lake deposits in the area of Clarkia, Northern Idaho. Miocene Clarkia lake presents a unique opportunity for an integrated palaoecological treatment. Rapid burial of a wide range of biota in abundance, combined with little disturbance to the sediments or physical setting of the area since that time, provide an exceptionally high level of information on this ancient ecosystem. The lake itself was probably originally created by the damming of a river valley in hilly terrain by volcanic activity. Five sites have been studied in the Clarkia basin but the majority of the data in the volume are derived from one of these. Here, lacustrine clays interbedded with volcanic ash, overlying sandy clays and valley alluvium, were all probably deposited in as little as 760 years (on the basis of fish taphonomy). Papers cover a wide range of biota including chrysophyte cysts, diatoms, pollen, spores, macrofloras, fungi, thecamoebian scales, insects, fish and molluscs. Two K/Ar dates give ages of 22 and 15 m.y. B.P. for the deposits.

Interdisciplinary research on Clarkia lake began in 1972. Since that time progress has varied greatly on the different groups. Many aspects are still in the preliminary determination stage, for example insects and chrysophyte cysts and to a lesser extent diatoms and fish. Other areas have progressed further, especially the macroflora work, which has already resulted in several publications elsewhere and

has reached a level of understanding of the serial succession of lake margin vegetation. The consideration already given to taphonomic bias by macrofloras by Smiley and Rember is expanded by Gray in her treatment of co- occurrence between macro and microfloras. In this paper a useful summary is provided of the literature (to 1981) concerning all aspects of bias in the representation of ancient plant communities in sediments and their subsequent value in reconstructuring the original community.

Evidence from leaf ultrastructure and chemistry (again an area already with several publications), phytoliths and epiphyllous fungi all contribute additional data to that normally observed on compression fossils. Furthermore some plant macrofossils reveal organic connection between the different parts of the ancient plants. The value of this wealth of data ia partially reduced by determination of the plant fossils to modern genera or species when, in many cases, critical comparative studies to justify these attributions have not yet been undertaken. However, the original communities have been reconstructed via a quantitative analysis of the plant fossils in their sedimentological context, taking due account of the bias mentioned above. This has been combined with the habit and ecological tolerances of their nearest living relatives, and information, available from ultrastructural work, on the decomposition stage reached at the time of burial. Thus, a well founded reconstruction indicates a succession from riparian/floodplain woodland through shoreline forest (previously characteristic of the hill slopes) followed by final invasion of a swamp association dominated by Taxodium and Nyssa. Regional vegetation remained more or less stable through this period. Pollen and spore data fail to achieve their usual contribution of revealing vegetation not reflected in macrofossil assemblages. This is probably due to a combination of limited taxonomic resolution of these fossils and the unusual excellence of the macrofloras.

Fossils representing open water, aquatic, vascular plants are largely absent and those whose nearest living relatives are marginal aquatics are always subordinate to the woody swamp elements. Diatoms are, however, abundant and diverse, as are chrysophycean cysts. Fish faunas are of low diversity although moderately abundant. Interpretation of fish burial conditions indicates a cold, anoxic hypolimnion, in water depth of 8-12 metres, with infrequent mixing and deposition of annually cyclic couplets over about 760 years leading to lake infilling. Thecamoebian scales are also diverse as are insect faunas which include both aquatic (caddisflies) and numerous terrestrial) forms. Evidence of insect-plant interaction, including leaf mining and falling, is also present. Molluscs are very poorly represented as is often the case where sediments are plant-rich.

The various approaches might have provided an integrated account of the Clarkia lake ecosystem. The opportunity was also available to compare inferences based upon nearest living relative ecology from a diverse range of biota. Evidence from fungal studies (p. 208), molluscan studies (p. 94) and plant palaeochemotaxonomy can be combined to support inference from macrofloras indicating a wooded regional vegetation existing under a humid, warm temperate to tropical climate and showing affinities with elements now segregated in the New and Old Worlds. However, the general synthesis provided in the two page final summary falls far short of what might have been hoped for. The reader is required to create an overall scenario from a wide variety of grades of data, many of which still require critical evaluation by the specialists before they can be correctly interpreted.

Four papers in the volume diverge from the Clarkia lake them. Two of these cover other Neogene deposits in Idaho and two are of much broader general application. Of the former, one deals with sponge spicules from a slightly younger Miocene lake, the other infers a Plio/Pleistocene origin for extensive grasslands in the area based upon pollen studies. This is in contrast to previous interpretations of Miocene grasslands based upon grazing mammals. Of the latter, the first deals with evolution of drainage patterns over much of western North America, based upon comparative studies of modern and fresh water molluscs. Comparisons are made with worldwide modern faunas and coverage is given to some aspects of the Mesozoic as

well as the Palaeogene and Neogene periods. The second deals with Recent climatic variations as expressed in such features as flacial retreat and advance. Implications from studies of modern weather phenomena are discussed and the influences of the greenhouse effect and atmospheric pollution are considered. Both of these papers are clearly of wide application and significant contributions in their respective fields. However, little attempt has been made to discuss their implications for the Clarkia lake ecosysystems or the contributions of the Clarkia ecosystems to general syntheses such as these.

The grapevine tells me that this volume has been in press for several years, a feature also suggested by the lack of post 1982 references. This delay may partially account for some of the disappointing aspects of the volume. Furthermore, these contributions were presented at meetings in 1979 (p. 10, 415) and therefore represent the state of the art a mere 7 years after commencement of the Clarkia research programme rather than 14 as is the case now. This having been said one would hope to see, in the future, a fully integrated palaeoecological study of Clarkia lake which should take its rightful place as a classic example of interpretation of an ancient ecosystem. For this to have full worth each biotic element should be subjected to rigorous analysis in a sedimentological context using advanced palaeoecological techniques.

Meanwhile this text should find its way onto the library shelves of all departments whose students encounter paleoecology. For those who normally ignore the Neogene here is the opportunity to redress that balance. Access to this volume is required for those interested in reconstruction of ancient ecosystems, in Neogene palaeobilogy, in evolution of drainage patterns, in freshwater molluscs and in Recent climatic variations. This diverse subject coverage, and the very reasonable price for a high quality hardback production should place this volume in the personal libraries of many palaeontologists.

Margaret Collinson
University of London

Reprinted from the PALAEONTOLOGICAL ASSOCIATION
CIRCULAR 125.

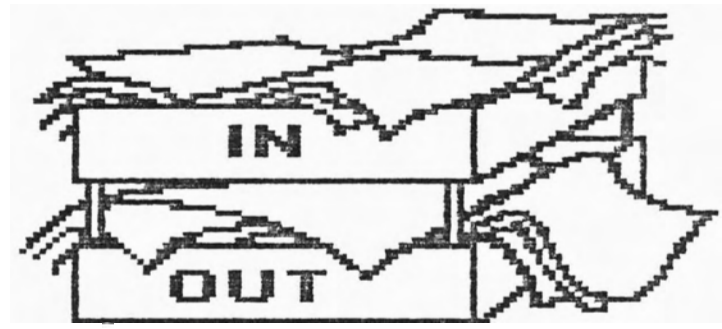
MEETING ANNOUNCEMENTS

MICROPALAEONTOLOGY, PALYNOLOGY AND PETROLEUM EXPLORATION, ON-AND OFFSHORE EUROPE, April 2-3, 1987, Aberdeen, Scotland. Information: Mrs. J. Lister or Dr. D.J. Batten, Department of Geology and Mineralogy, Marischal College, Aberdeen University, Aberdeen, Scotland AB9 1AS

THE FOURTH SYMPOSIUM ON MESOZOIC TERRESTRIAL ECOSYSTEMS will be held at the Tyrrell Museum of Palaeontology in Drumheller, 130 km northeast of Calgary, (Alberta, Canada), August 10-14, 1987. Previous symposia in this series were held in Paris (1978), Jadwisin (1981) and Tubingen (1984). The symposium will deal with all aspects of Mesozoic terrestrial floras and faunas, including problems of taxonomy, anatomy, morphology, evolution, physiology, behaviour and ecology, and associated taphonomic, sedimentologic, and stratigraphic studies. The first circular is available from: Conference Co-ordinator, Tyrrell Museum of Palaeontology, Box 7500, Drumheller, Alberta, Canada, TOJ OYO.

PALEOENVIRONMENTAL INTERPRETATIONS OF PALEOSOLS, Sept. 11-17, 1987, Warm Springs, Indian Reservation, Central Oregon. Information: Greg R. Retallack, Dept. of Geology, University of Oregon, Eugene, Oregon 97430-1271 U.S.A. (503)686-4573.

FROM THE BUREAUCRATS DESK



REQUIEM FOR A PENCIL - PUSHER

Admittedly with some regret, I've decided to hang up my pencil and leave the control of C.A.P.'s books and treasures to a member of the next generation of bureaucrats. During my three year term as secretary-treasurer I've had the pleasure of working with Sedly Barss, Jaan Terasmae and Rolf Mathewes (presidents), Wayne Brideaux (president-elect) and Bert van Helden and Judi Lentin (editors). I've enjoyed collaborating with these able folks very much and I hope C.A.P. will be guided by equally capable hands in the future.

On behalf of C.A.P. I would like to welcome the following new members: C.C. Chinnappa (Calgary), Anne de Vernal (Montreal), Armando Fascola (Caracas, Venezuela) and Pierre Zippi (Toronto). We also welcome a new correspondent - Genevieve Cambon (Montpellier, France).

The following members and correspondents please note that their membership fees/ subscriptions become due at the end of 1986: T.W. Anderson, B. Awai-Thorne, P. Binda, M. Boyko Daikonow, C. Coyne, M.-J. Feller-Demalsy, J. Ford, R. Heise, H. Kutluk, J. MacPherson, G. McCourt, C. McGregor, S. Piasecki, H. Sullivan, A. Sweet, J. Terasmae, D. Wall, and V.D. Wiggins. After 1986 they will be $5.00 per year, payable for a maximum of three years in advance. Dues, payable in Canadian funds, should be sent to:

Rob Fensome
290 Willett Street, #212
Halifax, Novo Scotia B3M 3R7

After December 31st, I will forward the dues to the new secretary-treasurer.

Canadian citizens living outside Canada should note that, according to the new By-Laws, they are eligible for full membership in C.A.P. Anyone so eligible should inform the secretary-treasurer. All Canadian residents, citizens or not, are, of course, still eligible for full membership.

You will see from the minutes of the annual meeting and from the paragraphs above that as of January 1, 1987, C.A.P. dues are to be raised to $5.00 per annum, payable for up to 3 years in advance. The fee increase was "spontaneously" proposed at the annual meeting in response to my deep concerns about the ability of C.A.P. to survive under the current fee structure. These concerns resulted from three principal factors.

Firstly, postal expenses: from the financial report tabled at the annual meeting, it can be seen that the last Newsletter cost almost twice as much to post as previous Newsletters. This is due to the fact that Chevron's new-fangled postal machinery found that our Newsletter is in a higher "postal bracket" than we thought. Since we are a law-abiding society, we must pay our full postal dues!

Secondly, the printing of our Newsletter is currently fully sponsored. There is no saying how long this will continue, especially in the prevailing economic climate. C.A.P. should be on a sound financial footing in order to meet the possibility of future printing costs.

Thirdly, we pay (in my opinion, the not unreasonable fee of) $1 US per year per member as dues to I.F.P.S. This fee was established in the days when the Canadian dollar was much closer to par with its U.S. counterpart. The tumbling dollar now means that between one quarter and half of our annual revenue goes in I.F.P.F. dues.

To answer these concerns, it was resolved at the C.A.P. annual meeting to raise the dues to $5/year. Under the circumstances, it would perhaps be pertinent for me to review what C.A.P. members get for their dues. Each C.A.P. member receives two copies of the C.A.P. NEWSLETTER per year (acclaimed by many as one of the best newsletters in the business), two copies of PALYNOS (the I.F.P.S. Newsletter), Canadian representation of I.F.P.S. council, and (provided that incorporation goes through without a hitch - se below) a national palynological body which is eligible to drum-up funds and assistance for meetings, travel, etc. I think that at $5 per year, C.A.P. is good value for money.

The last modifications to the By-Laws (which were in response to the postal ballot) were approved. So my ultimate act as secretary-treasurer will be tosubmit the By-Laws and a Memorandum of Association (reprinted below) to the Nova Scota Department of Joint Stock Companies. If all goes well, by January C.A.P. will be officially incorporated as a non-profit organization.

MEMORANDUM OF ASSOCIATION
OF
CANADIAN ASSOCIATION OF PALYNOLOGISTS

1. The name of the Society is "Canadian Association of Palynologists"

2. The objects of the Society are:

   (a) To advance and encourage all aspects of palynology in Canada.
   (b) To promote co-operation between palynologists and those engaged in related fields of study.
   (c) To acquire by way of grant, gift, purchase, bequest, devise, or otherwise, real and personal property and to use and apply such property to the realization of the objects of the Society.
   (d) To buy, own, hold, lease, mortgage, sell and convey such real and personal property as may be required or desirable in carrying out the objectives of the Society.

PROVIDED that nothing herein contained shall permit the Society to carry on any traid, industry, or business and the Society shall be carried on without purpose of gain to any of the members and that any surplus or any accretions of the Society shall be used solely for the purposes of the Society and the promotion of its objects.

PROVIDED, further, that if for any reason the operations of the Society are terminated or are wound up, or are dissolved and there remains, at that time, after satisfaction of all its debts and liabilities, any property whatsoever, the same shall be paid to some other charitable organization in Canada, having objects similar to those of the Society.

3. The activities of the society are to be carried on at the Atlantic Geoscience Centre (Bedford Institute of Oceanography), Dartmouth, Nova Scotia, Canada or at such other locations as the Board of Directors may, from time to time, determine.

4. The registered office of the Society is at the Atlantic Geoscience Centre (Bedford Institute of Oceanography), Dartmouth Nova Scotia, Canada or at such other locations as the Board of Directors may, from time to time, determine.

We the several persons whose names, addresses, and occupations are subscribed, desire to be formed into a Society, in the pursuance of this Memorandum of Association. (Signatories: M.S. Barss, W.W. Brideaux, R.A. Fensome, R.W. Mathewes, G.L. Williams).

CANADIAN ASSOCIATION OF PALYNOLOGISTS
GENERAL MEETING
10-30-1986
University of New York, Graduate Center, New York
Prepared by B.G. van Helden (recording secretary)
and R.A. Fensome (CAP Secretary-Treasurer)

ATTENDANCE:

R.W. Mathewes (President)
R.A. Fensome (Secretary-Treasurer)
J.K. Lentin (Newsletter Editor)
S. Barss, J. Ford, D. Jarzen, S. Jarzen, J. Legault, C. McGregor, D. McIntyre, G. Norris, B. van Heldon, G. Williams,

OPENING:

President Mathewes opened the meeting at 1:40 p.m. in Room 1401, Graduate center of the University of New York. (In conjunction with the 19th AASP Meeting).

AGENDA:

1. President's report (R.W. Mathewes)
The President welcomed all CAP members and reported briefly on his year as chief CAP officer.

2. Financial report (R.A. Fensome):
The Secretary-Treasurer presented the financial report for the period 08-31-1985 to 10-24-1986 (copy attached). He expressed concern over the substantial increase in the June 1986 Newsletter postal charges.

3. Membership report (R.A. Fensome):
The Secretary-Treasurer presented the membership report as per October 1986 (copy attached).

4. Newsletter report (J.K. Lentin):
The Newsletter Editor noted that the November Newsletter will be relatively short, and made a strong plea for contributions ("What's new, Judi?!" B.v.H.)

5. Proposed By-Laws:
The Secretary-Treasurer reported that ballots attached to the winter 1985 Newsletter were received from 20% of the membership. The response was overwhelmingly favourable. And some comments added attached to the ballots were helpful in clarifying the By-Laws. Fensom pointed out that as a result of the comments, he had modified the By-Laws so that Canadian citizens residing outside of Canada would qualify for full membership in CAP; previously only Canadian residents had been eligible. He also indicated that a volunteer is required to translate the By-Laws into French.

It was noted that the fees were stipulated in the By-Laws. A free discussion followed regarding the advisability of this and also whether, in light of the Society's current financial plight, the fees should be raised. It was concluded that:

a.] the fees should be raised to $5.00 per year, payable up to three years in advance.

b.] stipulation of the membership fees should be excluded from the By-Laws.

c.] it should be part of the ajenda of each annual meeting to review the financial status of the Society and revise the dues structure if deemed necessary and By-Law 18 should be revised accordingly.

d.] the secretary-treasurer, after making these revisions and making a final careful check that there are no inconsistencies in the By-Laws, was directed to finalize the incorporation procedure to make CAP a registered non-profit organization.

Norris moved, and Williams seconded the motion that this package of resolutions be accepted in their entirety. The motion carried unanimously.

6. Nominating Committee:
Williams and Jarzen accepted the responsibility to act on a nominating committee for the 1987 executive. Van Helden volunteered to act as Auditor for 1987 by accidentally raising his hand.

7. Other business:
The possibility of some CAP involvement at the 1987 Halifax AASP meeting was discussed; we could perhaps sponsor a social event. The membership at large felt that no action should be taken at this time.

8. Closing:
Moved by Legault, seconded by Lentin, the meeting was adjourned at 2:20 p.m.

IT HAS LONG BEEN KNOWN . . .

. . . that it makes sense to scrutinize every clause of scientific declarations, whether written or spoken, which in at facts that generally can be understood only by people in the know.

"It has long been known..."	-	I didn't look up the original reference
"A definite trend is evident..."	-	These data are practically meaningless
"While it has not been possible to provide definite answers to these questions..."	-	An unsuccessful experiment, but I still hope to get it published
"Three of the samples were chosen for detailed study..."	-	The results of the others didn't make any sense.
"Typical results are shown..."	-	The best results are shown.
"These results will be shown in a subsequent report..."	-	I might get around to this sometime if I'm pushed.
"The most reliable results are those obtained by Jones..."	-	He was my graduate assistant.
"It is believed that..."	-	I think.
"It is clear that much additional work will be required before a complete understanding of the phenomenon occurs..."	-	I don't understand it.
"Correct within an order of magnitude..."	-	Wrong!
"It is hoped that this study will stimulate further investigation in this..."	-	This is a lousy paper, but so are all the others on this miserable topic.
"Thanks are due to Joe Blotz for assistance with the experiment and to George Fink for valuable discussions..."	-	Blotz did the work and Fink explained to me what it to me what it meant.
"A statistically oriented projection of the significance of these findings..."	-	A wild guess.
"A highly significant area for exploratory study..."	-	A totally useless topic selected by my committee.

A MEMORIAL

The well known palynologist G. Thanikaimoni was on his way to do some research in the U.S. The airplane in which he was flying was hijacked. During the gun battle which followed at Karachi Airport, he was shot to death.

G. THANIKAIMONI

Since my first meeting with him in 1976, I became a close friend and developed a deep respect for Dr. Thanikaimoni, who proved to be an outstanding palynologist as well as a person who would spare no effort to help others and promote friendship and cooperation among scientists throughout the world. It is particularly sad that he, who harbored no animosity towards anyone, should become a victim of racial hatred in Karachi on September 6, 1986.

I shall always remember Thani for the great kindness and hospitality that he and his family extended to my wife and me during our visit to India, when he assisted me in my research and introduced me to others who shared similar interests. As I became familiar with his palynological achievements, I came to regard him as possibly the most able Indian palynologist in his field. Unfortunately, his most significant work had only just begun.

Thani's initiative in starting and supporting the joint project compiling palynological information on the Tertiary of India and developing comparisons with previously described floras of Africa was an enormous achievement, both in palynology and public relations. He hoped that this would be the beginning of a major international cooperative effort. Thus it is gratifying to be able to report that the French Institute in Pondicherry plans to continue this project which was so dear to his heart.

S.A.J. Pocock

FROM THE WINTER EDITOR'S DESK

LAST BUT NOT LEAST

In the last issue of this Newsletter I attempted to move my old friends Dolby and Utting into some sort of contribution to the cause. I thought that if I ran a puzzle, with a mysterious prize, I might get some answers from others as well. Unfortunately, my friends, your apathy is hanging out. Only one individual (not a palynologist) answered the puzzle and sent in the correct correct entry. ....and the winner is....Mike Hamilton "Assistant Chief Palynologist" at Chevron in Calgary. Actually Mike was Bert van Helden's summer student for 1986. He is working on a BSc in Zoology at the University of Calgary. So much for that sort of thing!

Three days after I wrote (as a footnote to Daniel Michoux's contribution) that Sedly Barss and his trusty computer were compiling the new alphabetical list of species names, the darn thing turned up in my mail box for critical reading. I can't begin to tell you how unpleasant such a task is - to check the spelling of 2,536 species. Since Sedly and his computer are very nearly perfect, one must read each name and compare it with L. & W. I dreaded the job so much that I actually cooked dinner, cleaned the kitchen, did the dishes, took out the garbage and did the laundry before I could bring myself to sit down at the table and begin. I listened to Pachebel's CANON at least 6 times to soothe my spirit...and got through the first 106 pages before I gave up in exhaustion at midnight. That means I have only three more nights... by the time the list is completely finished I will have procrastinated myself into one of the cleanest houses in all of Canada. Sedly, my husband thanks you!

When I produced my first newsletter for C.A.P. in May I carefully cut - and pasted everything together so we had a spiffy double column format complete with nifty cartoons. This time I have a little less time to devote to the fancy stuff and hope that you can live with the straight dope.

I would really like to hear from you apathetic folks out there in C.A.P. land. I'll publish just about anything that might interest or amuse our members. Richard Hebda - where are you? Everyone was looking forward to the article which you PROMISED for this issue. Next issue is put together in April.

Judith Lentin

Seasons Greetings