COMMISSION INTERNATIONALE
DE MICROFLORE DU PALEOZOIQUE

NEWSLETTER 19

CONTENTS

1. Editorial

During the last four months I am pleased to announce that a number of contacts have been established between C.I.M.P. and palynologists in the Republic of China. These contacts were established through the Secretary of the Geological Society of China, through Chinese palaeontologists who attended the Devonian Symposium in Bristol and through the visits of the late Dr J.M. Schopf (USA) as part of a delegation of American botanists and Dr F. Martin (Belgium) who has recently returned from a visit with the Subcommission on Silurian Stratigraphy (see separate item later in Newsletter). We are particularly grateful to these people as it now enables us to send this Newsletter to more than 25 Chinese palynologists. A full list of these new members and their research interests will be circulated to members in the Directory of C.I.M.P. members which is currently being produced. (It is hoped this will be despatched to members before the end of 1978.)

We welcome all the new Chinese members to C.I.M.P. and look forward in the future to meeting them at our meetings.

It is with deep regret that we must inform members of the deaths of Dr J.M. Schopf (Columbus, Ohio) on 15th September and Prof R. Kozlowski (Warsaw) on 2nd May. We extend our sympathy to their families and colleagues.

This is the final newsletter for 1978. I would like to thank all those who have contributed items during the year for their cooperation. Three newsletters are planned for next year and I would like to encourage all our members to submit notes or items of interest for inclusion. I would particularly like to draw your attention to the Directory of Chitinozoan Workers compiled by Sven Laufeld. If you are aware of any other chitinozoan workers who are not included please get them to write to Sven. It is planned to include the Chitinozoan Newsletter with the C.I.M.P. Newsletters next year.

Thank you

Bernard Owens

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2. Abstracts of Palaeobotanical and Palynological Papers presented at the International Devonian Symposium; Bristol, September 1978

Formal publication of papers presented at the Symposium will be restricted to the keynote lectures which will appear in "Special Papers in Palaeontology" in 1979. C.I.M.P. have made separate arrangements with Elsevier for the publication of the remaining palaeobotanical and palynological papers in a special issue of the Revue of Palaeobotany and Palynology in 1979.

ALLEN, K.C. Devonian Spores in situ - a review

In situ Devonian spores have now been recorded in the literature from over thirty macroplant species. A study of these spores, together with a detailed investigation of similar dispersed spore genera and species, shows interesting patterns of construction and sculpture which demonstrate affinities within certain classes. This can be well illustrated in the class Progymnospermopsida.

ALVAREZ RAMIS, C. Note on a Devonian flora from Badajoz (Spain).

The interest of this note relies in the discovery, for the first time in Spain, of numerous specimens of vascular plants, which can be dated to belong to the Devonian age. We have been able to identify more than 20 different species.

We do not know of any previous collection of vascular plants in Spain belonging to this level, except for a record of J. Gomez de Llarena, about the Devonian flora in Quinta Real (Navarra), but this reference is reduced to quote the appearance of "scarce and incomplete fragments of Psilophyton and Aliserites? in gray-shales, which due to the position of the beds we assign to the Middle Devonian".

The plants appear very fragmented in general. Most of the specimens are axial fragments, some of them present dichotomic branching and in a lot of them can be seen spines, trichomes, leaves or the shallow depressions left by them. All these characteristics allow us a clear identification of the specimens. We should mention also the existence of numerous types of grouped or free sporangious as well as of reproductive bodies.

BANKS, H.P. The role of Psilophyton in the evolution of vascular plants

Psilophyton Dawson 1859 has played a key role in the interpretation by morphologists of the evolution of early land plants. The term "psilophyte" was used almost synonymously with early land plants until 1968. Yet Psilophyton had long consisted of two distinct taxa now segregated as Psilophyton and Sawdonia Hueber, 1971. P. dawsonii Banks, Hueber and Leclercq, 1975 has provided critical evidence of a group of leafless plants (trimerophytes) morphologically and anatomically

advanced over the taxa Rhynia and Cooksonia (rhyniophytes). It has a main axis that branches dichotomously and then bears lateral branch systems that are alternately vegetative and fertile. Large clusters of sporangia terminate the dichotomized fertile systems and small, recurved branchlets occur at the apices of the vegetative systems. These characters suggest evolution toward megaphyllous leaves. The primary xylem strand of Psilophyton dawsonii is massive and centrarch giving off traces to vegetative branches in a close spiral and to fertile branches in an alternate, distichous manner. The trace to a fertile branch resembles a leaf trace. Psilophyton has achieved a role worthy of the attention the name has always received. It is an intermediate between the simplest, oldest land plants and those whose leaves may have evolved from branches, e.g. progymnosperms, ferns.

CHALONER, W.G. and SHEERIN, A. Devonian macrofloras.

The evolution of vascular land plants, from the Downtonian to the close of the Devonian, represents a phase of evolutionary diversification unmatched in land floras until the Cretaceous radiation of angiosperms. A biostratigraphy based on land plants, apparently of more or less world-wide application, can be seen both in the form of generic ranges, and in terms of successive morphological levels of complexity. Work of the last decade has greatly strengthened our picture of inter-relationships among early Devonian plants, and the divergence of lycopsids, psilopsids, trimerophytes and progymnosperms. The phenopsids have a less secure representation than hitherto believed, prior to the Upper Devonian. Recent reports of a Ludlovian age for part of the Baragwanathia flora, and of an Archaeosigillaria flora in Lower Devonian rocks in Libya present serious challenges to a plant-based biostratigraphy and particularly to our picture of Devonian lycopod evolution. The latter may need drastic revision: alternatively, the faunal basis for dating these floras, and their field relationships, may need reinvestigating.

CHLUPAC, I., LAUFELD, S. and PARIS, F. Les Chitinozoaires des coupes-types de la limite Silurien-Devonien, en Bohème.

35 échantillons de calcaires et de mudstones prelevés dans les coupes de Klonk et de Karlstejn (Tchecoslovaquie), ont été analyses afin de preciser la zonation des Chitinosoaires au niveau de la limite Silurien-Devonien. Les sediments carbonatés livrent des Chitinozoaires abondants et bien conservés: les mudstones ne renferment par contre que des spécimens rares et aplatis.

Certaines des espèces reconnues peuvent servir pour caracteriser la limite Silurian-Dévonien, telle qu'elle a été fixée dans ces 2 coupes. Ainsi à Klonk, Desmochitina urna Eisenack très abondante dès le banc 5, disparaît brusquement dans le banc 21. A Karlstejn cette même espèce, également prédominante dans la partie superieure du Pridolien, diminue brutalement dans le banc 43. Linochitina klonckensis n. sp., quoique rare, presente la même répartition que D. urna.

D'une maniere plus generale, des les premiers bancs du Lochkovien, les représentants des genres Ancyrochitina et Angochitina supplantent totalement les espèces à test épais appartenant aux genres Eisenackitina et Desmochitina.

CLAYTON, G., GRAHAM, J.R., HIGGS, K., HOLLAND, C.H. and NAYLOR, D. The Devonian and Old Red Sandstone of Ireland

The Old Red Sandstone of Ireland varies in age from Silurian to Lower Carboniferous. Marine Devonian rocks are restricted to the extreme south of the island. Overall facies and thickness patterns are outlined, and representative sections presented for different regions. The opportunity is taken to review palaeontological and biostratigraphic information. Problems regarding the recognition of the Devonian-Carboniferous boundary are discussed. An attempt is made to elucidate Devonian palaeogeography.

EDWARDS, David S. Observations on Rhynia Gwynne-Vaughanii Kidston and Lang.

Studies of sporangia of Rhynia gwynne-vaughanii Kidston and Lang attached to lengths of axis indicate that the plant was a sphorphyte. Suggestions that it was gametophytic (wholly or partly) are discussed in the light of this evidence and a new reconstruction of the plant is put forward, taking into account the frequency of branching and the positioning of the sporangia.

EDWARDS, Dianne Xylem petrifactions from the Lower Devonian of Britain.

Tracheids preserved by iron sulphide and iron oxide have been investigated using incident light and stereoscan electron microscopy. The commonest type of thickening is close set annular: it occurs in all the exarch zosterophyll xylem from Wales and in some centrarch strands believed to be of trimerophyte affinity. In contrast petrifactions associated with Sawdonia ornata from Scotland consist of annular or scalariform tracheids with numerous fine vertical strands connecting the horizontal bars. The Welsh petrifactions also include unidentifiable axes with terete centrarch xylem composed entirely of spiral tracheids. Attempts will be made to interpret the various structures present in terms of the petrifaction process.

FAIRON-DEMARET, M. A propos des spécimens déterminés Protolepidodendron scharianum Krejci, par Kräusel et Weyland, 1932.

Kräusel et Weyland (1932) ont déterminé Protolepidodendron scharianum Krejci, des spécimens provenant des "Honseler Schichten" (Dévonien Moyen) d'Elberfeld (Allemagne). Les restes de la collection originale, rassemblant axes végétatifs et fertiles avec parfois de la structure minéralisée par des sels de fer, ont été reétudies.

Les caractères mis en évidence à la suite de leur dégagement, ne concordent pas avec leur attribution au genre Protolepidodendron. Il est également démentré que ces axes possèdent une protostèle cylindrique à développement exarche et non pas un cordon ligneus de forme triangulaire en section transversale.

Les conclusions qui s'imposent concernant la définition de l'espèce P. scharianum sont tirées.

GARRETT Michael. New evidence for a Silurian age of the earliest Baragwanathia flora central Victoria, Australia.

In the Silurian-Devonian marine clastic strata of the Yea district, central Victoria, two distinct floral and faunal assemblages containing elements of the Baragwanathia flora occur, separated stratigraphically by 1700 m of siltstone.

The upper assemblage is Early Devonian (Pragian) in age, whilst the lower assemblage is Late Silurian (Ludlovian).

HUEBER, Francis M. A Devonian megaflora of Northern Queensland, Australia: its place in world distribution.

A Givetian-Frasnian flora, rich in herbaceous as well as arborescent plants, is described from the Burdekin Basin, of Northern Queensland, Australia. The flora contains such genera as Prototaxites, zosterophylloid forms, Leclercqia, Drepanophycus, cladozylaleans, and Astralocaulis, all of which are common to the Northern Hemisphere during the same time interval. Australia appears to be unique in this characteristic as compared to other known Southern Hemisphere occurrences where lycopods dominate the floras. Unfortunately there are few described floras of Frasnian age on which to base comparisons. Arborescent progymnosperms, lycopods and a wide variety of fern-like plants characterise most of the floras. Ecological factors seem to modify their overall uniformity in the Northern Hemisphere. While the Australian assemblage retains its unique character in the Southern Hemisphere. More search for African and South American sources of Devonian floras is greatly needed.

HUTTER, T.J. Alpenachitina crameri, a distinctive chitinozoan from the Middle Devonian of Egypt.

While routinely examining the chitinozoan fauna of the lower portion of General Petroleum Company's Egyptian well, El Desouqy No. 1, a new species of Alpenachitina was noted. The new species, Alpenachitina crameri, is restricted to a three-meter interval within the Middle Devonian. Lithology is a light grey to tannish grey, soft to medium hard shale. A single example of dimorphism within the new species, in addition to a possible morphological variation of A. crameri, was also observed. All samples were ditch samples.

IURINA, A., LEMOIGNE, Y. and ZDEBSKA, D. Données complémentaires sur la flore du Dévonien supérieur.

Dans les cherts du gisement dévonien de Rhynie ont été observés des axes de structure protostèlique avec trachéides dont toutes les faces sont ornées de ponctuations aréolées araucarioides pluri-sérices-alternes. Ces axes semblent pouvoir être referés au Rhynia gwynne-vaughanii forme Rh. major K. et L.

Par ailleurs, au Kazakhstan (URSS), dans des niveaux d'âge Dévonien supérieur ont été découverts de nombreux échantillons de bois silicifiés référés, les uns à l'espèce nord-américaine Callixylon newberryi, les autres au genre Cladoxylon également connu aux USA. Dans le bassin du Donetz (URSS) de nouveaux échantillons de Callixylon trifilieve ont été découverts. Tous les échantillons de Callixylon, du Kazakhstan et d'Ukraine, sont zonés.

Il est à noter qu'au Dévonien supérieur beaucoup d'éléments étaient communs à l'Amérique du nord, à l'Europe et au Kazakhstan. Contrairement à ce que certains auteurs ont dit, il n'y avait pas distinction d'une province occidentale (Amérique du nord) et d'une province orientale: la distinction d'une province particulière en Kazakhstan parait, aussi, douteuse.

LEE Hsing-hsüh and TSAI Chung yang Devonian Floras of China.

In the present paper, the stratigraphic ranges and geographic distribution of the Devonian floras in China have first been summarized. The three distinct floras, i.e. the Zosterophyllum flora, the Protolepidodendron scharyanum flora and Leptophloeum rhombicum flora, including several plant assemblages can be recognized as the early, middle and late Devonian ones respectively. Palaeobotanically, they have shed additional light on the stratigraphical subdivisions, correlations as well as the understanding of palaeoecology and palaeobiogeography. Finally, the characteristics and correlations of Devonian floras of China with those of other countries have chiefly been made.

LEJAL-NICOL, A. Sur des végétaux du Dévonien inférieur de Libye.

La paléoflora étudiée provient des Formations Tadrart et Ouan Kasa, datées respectivement du Siegénien moyen à supérieur et de l'Emsien, du Dor el Goussa, à l'Est du Bassin de Mourzouk en Libye.

Ce sont essentiellement des Lycophytes très comparables à celles qui ont déjà été décrites dans d'autres gisement de la bordure orientale du Bassin de Mourzouk, dans la zone de transition entre les Formations Tadrart et Ouen Kasa. Il s'y ajoute des axes striés ou lisses à ramification pusudomonopodiale dépourvus de feuilles.

Les caractères de cette végétation confirment l'existence de plantes vasculaires tres differenciées des le Dévonien inferieur en Libye.

LOBOZIAK, S. and STREEL, M. Miospores from Givetian to Lower Frasnian sediments dated with conodont in the Boulonnais (France).

The "Calcaire de Blacourt" and the lower part of the "schistes de Beaulieu" exposed in the new trench of Ferques and the Griset Quarry (Boulonnais, France) carry

well preserved miospore assemblahes which have been previously described from continental beds in Scotland, Spitzbergen and Canadian Arctic Islands.

Their distribution is given compared to a conodont zonation ranging from the Icriodus obliquimarginatus zone to the lower Polygnathus asymmetricus zone and allows accurate correlations with the type Givet and Frasnes sections in Belgium where several optimal horizons could be selected to fix the Givetian/Frasnian (Middle-Upper Devonian) boundary.

MARSHALL, J.E.A. A method for the successful oxidation and subsequent stabilisation of high rank, poorly preserved spore assemblages.

Spore assemblages of Devonian age from the Orcadian Basin deposits of Shetland and Fair Isle were used in experiments with different oxidation systems. The most satisfactory one being a ternary mixture of Potassium Chlorate, water and fuming Nitric Acid. After oxidation, stability problems were encountered involving a redarkening of the exine and/or reaction with the mounting modium. These were eventually countered using a rapid drying technique and an inert plastic mounting medium.

MATTEN, L.C., MAY, B.I., LACEY, W.S. and LUCAS, R.C. A megafossil flora from the Upper Devonian/Lower Carboniferous transition zone of southern Ireland.

Reports of plant megafossils from Upper Devonian/Lower Carboniferous transition beds in Ireland occur occasionally in the literature. An intensive study of the flora from this stratigraphic and geographic level has been underway since 1973. The two most rewarding localities occur at Ballyheige by Kerry Head and at Hook Head near Waterford. The plant horizon at Ballyheige is about 2 m below a red bed layer. The plant horizon at Hook Head is near the mapped Devonian/Carboniferous boundary. The plant remains include: 1. a stem bearing petioles that appears to be referable to Buteoxylon: 2. a stem that resembles Triradioxylon in its mesarch, three armed (in cross section) protostele but bearing petioles referable to Lyginorachis, the plant being a new genus: 3. a triarch root: 4. masses of secondary xylem: 5. capulate seeds containing pollen grains (spores) assignable to Hydrasperma: and 6. a possible synangiate pollen organ. The flora is comparable to the Cementstone flora of Berwickshire (Tournaisian) and the cupules of Hydrasperma are comparable to Moresnetia (Fammenian).

McGREGOR, D.C. Spores in Devonian stratigraphic correlation.

Devonian spores are abundant and diverse in marine and continental rocks associated with the Old Red Sandstone landmass (Euramerica). Isochronous assemblages are generally similar throughout this region but include some forms that are restricted geographically (eg. Archaeoperisaccus). Assemblages from Asia and Gondwana, not as well defined, differ from those of Euramerica but do contain some Euramerican elements. Judging from the number of publications and species, Emsian, Givetian, Frasnian, and late Famennian-"Strunian" spores are best documented.

Local assemblage zones, defined and keyed to invertebrates with varied precision, have been proposed independently for parts of the Devonian of the British Islos, Canada, western Europe, the Russian Platform, Spitsbergen, and Australia. However no comprehensive, internationally accepted zonal standards referred to stratotype have been established. Some progress has been achieved in reconciling the independently-developed taxonomic and zonal schemes of the USSR and the rest of the world.

PETROSYAN, N.M. Correlation of the Lower Devonian Deposits in the USSR and England on the Basis of Plant Complexes.

In the course of studies on the Devonian floras of the USSR three major stages in the evolution of the flora of the Early Devonian and the beginning of the Middle Devonian are singled out.

Plant complexes characteristic of the first two stages can be easily compared with those typical for the Dittonian and Breconian in the England-Wales region. On the USSR territory the Dittonian plant complex characterizes the Borshchov and the Ivane horizons in Podolia and the Tomchumysh horizon in Salair. A plant complex, analogous to the Breconian was studied in the Dnestr formation of Podolia and B'ertdag formation of Tuva.

The plant complex characteristic of the third major stage was studied on the basis of the materials gathered in the Sayany-Altai region. It comprised both Early and Middle Devonian forms.

The establishment of the third transitional stage in the flora evolution which is represented well enough in the USSR will help to solve the problem of the Lower/Middle Devonian boundary in the lagoon-continental and continental deposits of the Old Red Sandstone type.

RICHARDSON, John B. and McGREGOR, D.C. Silurian-Devonian miospore zonation.

Twelve miospore zones are proposed covering the interval from the uppermost Silurian (Downtenian) to the base of the Carboniferous. Some of these are more widely applicable than others but each zone is considered to represent a 'major event' in miospore "evolution" and in some cases, e.g. '"pusillites" lepidophyta' zone, appear to represent worldwide floral events, although some caution is necessary in their interpretation in view of the large areas of the present-day land surface either, from which no Devonian spore floras have so far been recorded, or from which spore assemblages have not been described in detail. Consequently the proposed scheme must be regarded as a tentative one.

SERGEEV, L... Devonian microflora of the Carpathian-Balkan region.

The author presents the results of her research on the microflora in the non-fossiliferous metamorphic rocks occurring in the Ukrainian part of the Carpathians and Balkanids.

Miospores, acritarchs, tissues, chitinozoans and problematics have permitted to recognize among these deposits the sediments of Lower, Middle and Upper Devonian.

Miospores species are represented by genera: Leiotriletes, Trachytriletes, Retusotriletes, Acanthotriletes, Emphanisporites, Ancyrospora, Dictyotriletes, Archaeozonotriletes, Camarozonotriletes, Brochotriletes.

The acritarchs are represented by subgroups: Acanthomorphitae, Polygonomorphitae, Sphaeromorphitae, Netromorphitae, Herkomorphitae.

Palynological material is compared to the Devonian microflora of the Western Carpathians.

STREEL, M., FAIRON-DEMARET, M., VANGUESTAINE, M. and OTAZO, N. Miospores and acritarcha from the Siegenian beds of the Dinant Basin (Belgium).

Miospores and acritarcha are described throughout Siegenian strata from the late Gedinnian "Oignies beds" with a Pteraspid fauna to the early Emsian "Pesche beds" with Euryspirifer paradoxus, from the southern margin of the Dinant Basin. They are compared with miospores and acritarcha of Siegenian-early Emsian beds from the northern margin of the same basin.

THOMAS, R.G. The stratigraphy and palynology of the fluviatile Lower Old Red Sandstone Cosheston Group, S.W. Dyfed, Wales.

Using a combination of litho- and biostratigraphic criteria the Cosheston Group succession is subdivided into five new Formations - (in ascending order) the Llanstadwell, Burton Cliff, Mill Bay, Lawrenny Cliff and New Shipping Formations.

The Group's total thickness is estimated as 1,505 - 1,800 m, i.e. about half Strahan et al.'s estimated of 10,000 ft. (3,048 m).

Eighty-eight taxa of dispersed miospores representing thirty genera belonging to eight Infraturmae are identified within the Cosheston. Seven species, two combinations and three varieties are new. Earlier and later microflora types of miospore assemblage are recognised. These microfloras are partially compositionally intergradational, and although dominated by structurally simple (Laevigate and Apiculate) spores, also contain more complex (e.g. Cingulicavate and Monopseudosaccate) forms. Earlier microflora assemblages are restricted to the Llanstadwell Formation whilst those of later microflora type occur in the Burton Cliff and Mill Bay Formations and the lowermost portion of the Lawrenny Cliff Formation.

Based upon its dispersed miospore assemblages the palyniferous part of the Cosheston Group is upper Lower Siegenian to mid Upper Siegenian in age. The non-palyniferous remainder of the succession is thought to be mid to upper Siegenian in age. There is an excellent miospore assemblage and lithostratigraphic correlation between the Breconshire Senni Beds and the lower and middle portions of the Mill Bay Formation. A mid Middle Siegenian - lower Upper Siegenian age is proposed for the Senni Beds whilst the overlying Brownstones are believed to be lower Upper Siegenian to Lower Emsian in age.

TIMS, J.D. A Lower Devonian Vascular Flora from Victoria.

Collections of fossil land plants from a new site in the Lower Plant-Graptolite horizon near Yea will be discussed. These represent the oldest known land plants from Victoria: they come from the Siluro-Devonian boundary and are possibly as old as the Ludlow stage, but confirmation of this must await further evidence (see Garrett, M., this conference). The flora contains morphologically, more complex species than are known for similar aged strata elsewhere. The plants include Baragwanathia longifolia and other members of the Lycophytina, Rhyniophytina and Zosterophyllophytina. Plants with leaves and axes of unknown affinities are also present.

VAN DER ZWAN, C.J., VISSCHER, H. and HORNE, R.R. A Devonian palynological assemblage from the Dingle Group of south-western Ireland.

From the enigmatic Dingle Group, formerly presumed to be of latest Silurian or earliest Devonian age, a palynological assemblage is described, suggestive of a considerably younger age, perhaps even Emsian. The implications of this age for the regional geology are discussed.

VAN VEEN, P.M. Aspects of Upper Devonian palynology of southwestern Ireland.

Miospores have proved to be an excellent tool to unravel the complex sedimentation history of the Upper Devonian of southwestern Ireland. Late Devonian assemblages from Kerry Head (Co. Kerry) and Ballycrovane Harbour (Co. Cork) will be discussed.

Current investigations suggest, that the base of the range of Retispora lepidophyta has been reached and the lowest of the assemblages might represent the oldest Upper Famennian assemblage of this area.

The succession and existence of two dominant spore associations, the former characterised by Diducites spp. (D. mucronatus, D. versabilis, D. poljessicus and D. plicabilis), the latter by Retispora lepidophyta and the effect of sorting and "environment" on the composition of these assemblages will be shown.

WHITELEY, M.J. Frasnian and Givetian miospores from the Key Point will, Parry Islands, Arctic Canada.

Well preserved miospores recovered from the upper third of the Key Point well

are comparable with assemblages previously described from the Canadian Arctic. On the basis of concurrent ranges of taxa a provisional zonation is proposed, and in particular the Frasnian-Givetian boundary is recognisable by a prominent qualitative and quantitative change in the microfloral assemblages.

The presence of Ancyrospora, Archaeoperisaccus and Hystricosporites in the Lower and Middle Frasnian appears to be a feature of regional significance and the youngest occurrences of typically Middle Devonian taxa such as Calyptosporites velatus, Grandispora mammilata and Samarisporites concinnus characterise the Upper Givetian.

3a. Report of Chitinozoa Subcommission Activities

At our Chitinozoa Subcommission meeting in Léon, 1977 we decided to meet again at the Palaeontological Association International Symposium on the Devonian System 1978 in Bristol-PADS 78. Ken Dorning volunteered to arrange a field excursion to classical Ordovician-Silurian sections in Wales as our third step to visit important sections to collect topotype chitinozoan material. Earlier we collected on Gotland and in the Cantabrian Mountains in Spain.

A. PADS 78, 9th-12th September, 1978. Only two paper on Chitinozoa were presented (see abstract of papers by HUTTER and CHLUPAC, LAUFELD & PARIS in report of Devonian Symposium (Item 2a).

B. Chitinosoa Field Excursion, Wales, 13th-16h September, 1978

Participants:

Aldridge, Dick	Molyneux, Stuart
Bockelie, Tove	Ormiston, Alan
Dorning, Ken	Paris, Florentin
Hutter, Terry	Poumot, Claude
Laufeld, Sven	Reaugh, Ann
Mabillard, John	Turner, Bon
Millepied, Pierre & Mme	

Ken Dorning had organized the excursion for us and acted as our guide. He was assisted by Dick Aldridge (Silurian conodonts) Bob Turner (Ordovician acritarchs), Stuart Molineux (palynomorphs), and John Mabillard (Chitinozoans, acritarchs).

13th September

Departure by bus from Bristol - Severn Road Bridge - Chepstow - Monmouth - Mitcheldean. Stop May Hill: Wenlock Limestone - Clifford's Mesne Sandstone (Wenlock - Lower Downton). Stop Pryers Fraome: Upper Perton Beds - Ludlow Bone Bed (U. Ludlow - Downton). Stop Perton Lane (Woolhope Inlier): Upper Sleaves Oak Beds - Rushall Beds (L. Ludlow - Downton). We stayed all nights in Church Stretton.

14th September

Church Stretton - Leintwardine - Pitch Cottage (Mortimer Forest). Stops according to Jim Lawson: Mortimer Forest Geological Trail. Stop Pitch Cottage: Wenlock Shale. Locality 1: Wenlock Limestone. Locality 3: Wenlock Limestone - Lower Elton Beds (type section for Wenlock - Ludlow boundary). Locality 5: Upper Elton Beds (L. Ludlow). Locality 6: Lower Bringewood Beds (L. Ludlow). Locality 7: Upper Bringewood Beds (L. Ludlow). Locality 8: Lower Leintwardine Beds (U. Ludlow). Locality 10: Upper Leintwardine Beds (U. Ludlow). Locality 12: Lower Whitecliffe Beds (U. Ludlow). Stop Whitcliffe: Upper Leintwardine Beds - Lower Whitcliff Beds. Stop Whitcliffe Quarry: Lower Whitcliffe - Upper Whitcliff Beds. Locality 13: Ludlow Bonebed (type locality).

15th September

Church Stretton - Onny Valley (Caradoc type area). Stops according to Geol. Assoc. Guide No. 24. See also Jenkins, W.A.M. 1967: Ordovician Chitinozoa from Shropshire.

Stop 22: Hoar Edge Grit. Stop 21: Harnage Shales. Stop 18: Chatwall Sandstone. Stop 12: alternate Limestone. Stop 10: Cheney Longville Flags. Stop 8: Top of same. Stop 6: Acton Scott Beds. Stop 5: Same. Stop 2: Onny Shales - Hughley Shales (Caradoc - Llandovery boundary). Stop in the brand new road section: Chatwall Sandstone. Stop Lea Quarry: Much Menlock Limestone. Stop Coat's Quarry: Same.

16th September

Stop Eaton Lane: Colebrookdale Fm (Wenlock Shale). Stop Domas section: Llandovery - Wenlock boundary section.

After lunch at Harley your chairman conveyed our heartfelt thanks to Ken, Dick, Bob, John, and Stuart for organizing and leading a superb excursion.

C. Chitinozoa Subcommission Meeting in Church Stretton, 14th September 1978.

An informal business meeting (3 hours) chaired by Sven was held on Thursday night at Sandford Hotel. It was attended by all participants in the field excursion and every participant reviewed briefly his/her ongoing research on Chitinozoa. A great number of topics were brought up and discussed of which the following are outlined as being of more general interest.

It was decided that Sven Laufeld should issue a "Chitinozoa Newsletter" as a complement to the CIMP Newsletter. The first Chitinozoa Newsletter should be issued in early Spring, 1979. The Chitinozoa Newsletter should be issued twive in 1979 - late Spring and Autumn - but later only once a year. The Newsletter should contain the name and address of workers on Chitinozoa and their special (geographical, stratigraphical, systematical, etc) interest. It was further decided that the Newsletter should contain a list of new publications on Chitinozoa each year and the editor was asked to call for correspondents to provide the necessary information.

It was also agreed that the Newsletter should include (preferably) English translations of publications on Chitinozoa in Russian, Chinese, etc. Hence, the editor was asked to call for translations already made.

D. The 1978 Directory of Workers on Chitinozoa has now (October, 1978) been distributed to all persons known to work with chitinozoans at the present time. Attached to the Directory is a Questionnaire calling for information to be included in Chitinozoa Newsletter 1. If you are working with Chitinozoa but have not received the Directory and Questionnaire, please write to Sven Laufeld, SGU, S-104 05 Stockholm, Sweden, and you will get these items airmailed to you immediately.

E. Due to financial constraints very few workers on Chitinozoa expect to be able to attend both the I.C.P. Cambridge meeting in 1980 and the I.G.C. Paris meeting in 1980. A questionnaire on the most convenient time and place for our next meeting has been attached to the 1978 Directory.

Sven Laufeld

3b. Report of the C.I.M.P. Working Group on Hystricospores

After some preliminaries (see Newsletter No. 17, Jan. 78) a new working group of CIMP dealing with the taxonomic revision of all genera bearing bi- or multifurcate appendages, the Hystricospore Working Group, has constituted itself by convening a first meeting during the International Symposium on the Devonian System at Bristol, England, Sept. 12, 1978. It was attended by 13 palynologists:

K. Higgs	B. Owens	M. Streel	W. Riegal, Convenor
S. Loboziak	A. Reaugh	P. van Veen	
D.C. McGregor	J.B. Richardson	L. van der Zwan	
R.S.W. Neville	A.C. Scott	H.S. Walton	

Membership, however, will be open to everyone interested and will eventually result from continued participation and active contribution. Everyone willing to cooperate is cordially invited to join.

There seemed to be a general consensus within the group that the first phase of work should be one of collecting information, material and comments and circulating it among members. The CIMP Newsletter should initially be used as a vehicle for such circulation at least until a better defined working group has been formed. An inventory of spore taxa bearing furcate spines has already been prepared by D.C. McGregor. This will be complemented by an annotated list of references, comments on the generic diagnosis of Lycopodiumsporites and Hystricosporites by the original authors and other pertinent information, as well as a questionnaire requesting material, comments and opinions regarding relative importance of morphologic features. All this will be circulated with the next issue of the Newsletter. The scope of work, guidelines for the description and procedures for actual revision will then be determined from the outcome of the questionnaire.

It has been agreed at Bristol that all information and material should be gathered by the convenor of the group and then circulated by him. A further working group meeting will definitely be held at the 5th International Palynological Conference, Cambridge, July 1980. Meanwhile, as much exchange as possible should be made by correspondence or by means of the Newsletter. But if it should appear profitable and possible an additional working group meeting can be arranged prior to Cambridge at Göttingen, Lille, London or another suitable place sometime during the summer or fall of next year.

Walter Riegel, Convenor
Geol.-Paläontolog. Institut
Goldschmidtstr. 3
3400 Göttingen Germany

3c. Report of the C.I.M.P. Working Group on Scolecodonts

The first Newsletter this year (Newsletter No. 17 - January) gave me the opportunity to propose a C.I.M.P. Working Group on Scolecodonts. The broad objective of the proposed working-group being to increase the interest and communication, as well as the understanding between the scientists in this field, whose contacts and exchanges have been severely limited by contrasting affiliations, techniques and goals.

In the second Newsletter of 1978 (Newsletter No. 18 - May) the C.I.M.P. Scolecodont Working Group was proudly presented; a list of eighteen founding members was produced, showing the following composition per country (in alphabetical order): Canada 2, German Democratic Republic 1, Great Britain 7, France 1, Poland 3, Sweden 1, The Netherlands 1, and USA 2.

In this very May 1978 Newsletter, for the last time, any member of C.I.M.P. who wished to actively join in the work of this group, was kindly invited to make contact. This appeal did not lead to a further extension of the number of research-workers who wanted to be directly involved; however, a substantial number of scientists (including many non-C.I.M.P. members) made clear to me that they were very much interested in the prospective activities and results of the working-group.

This year, various workers who are contributing to the working-group published articles on scolecodonts; a list of publications will be given on a later date. Especially an article by Dr Ph. Taugourdeau needs to be mentioned here (Les Scolécodontes dispersés. Cahiers de Micropaléontologie. 2 - 1978, pp. 1-104); this work, a study of isolated Polychaete jaws excluding jaw apparatuses, is the first "mise au point générale" about those microfossils in French. From the ABSTRACT of Taugourdeau's publication the following two paragraphs are quoted:

"The author gives a brief historic of the previous researches, followed by a glimpse of modern Annelids bearing Scolecodonts, and then by an important chapter on the morphology and terminology of fossil pieces. The methods of preparation and studies being stated, the classification problems are raised. The most important part of this work is the revision of all fossil genera; their diagnosis, translated into French, is given with a discussion to state on the validity or no of every genus.

Some remarks of their stratigraphical distribution and geographical extension conclude the analytical part, followed by a complete commented bibliography. Plates show reproductions of all type species of genera considered as valid."

Since the number of research-workers participating in the working-group (18) is rather high and its composition diverse, it is considered to be very sensible in forwarding, as soon as possible, a (second) questionnaire to its members. This questionnaire will be dealing with questions regarding specific fields of interest; about how to provide material, information and comments amongst its members, etc.

With regard to option 3) of the C.I.M.P. Working Group on Scolecodonts, that is to say, the annoted bibliography, the following can be reported:
Dr J. Jansonius and Dr Ph. Taugourdeau kindly provided us with bibliographical material which may serve as a basis for such a venture; more fully detailed information regarding this matter will be first distributed amongst the working-group members.

I finish this report stating that constructive comments and/or suggestions are welcomed and that when you want some further specific information please feel free to address a letter to me.

Dr Anton W. van Erve
Laboratory of Paleobotany and Palynology
Heidelberglaan 2 - De Uithof
UTRECHT - The Netherlands

3d. International Working Group on "Diagenesis of Sedimentary Organic Matter"

During the last ten years palynologists and geochemists have become increasingly "interested" and involved in studies on diagenesis of sedimentary organic matter (including pollen, spores, cuticles, kerogen) and their applications to geological and petroleum exploration problems.

The Working Group was set-up at the 3rd ICP Conference, Novosibirsk USSR in 1971. Other Conferences and Symposia and Discussion Groups have been held including University of Cambridge (1973), 4th International ICP Conference in Lucknow, India (1977) and CIMP Conference at Leon, Spain (1977).

It is intended to hold future meetings in Europe (Spring 1979), North America (Autumn 1979), England (Autumn 1979) and within the 5th ICP Conference at Cambridge in July 1980.

There are over 100 members of the Working Group, whose interests are spread within palynology, geochemistry, geology, botany and chemistry with the common interest in organic diagenesis.

The main aims of the Group are to improve and standardise (hopefully!) the terminology, methods of study, to examine current and future applications leading to better understanding of diagenesis and its applications.

For further details please contact:- Dr Jim Brooks (Chairman and Convenor of the Group), THE BRITISH NATIONAL OIL CORPORATION, Exploration Dept 150 St Vincent Street, Glasgow G2 5LJ, UK.

3e. Short report on visit of Subcommission on Silurian Stratigraphy to the Republic of China

From the 12 to the 28 September 1978, the Geological Society of China had invited a delegation of the Subcommission on Silurian Stratigraphy (SSS) constituted by Prof C.H. HOLL.ND (chairman), Dr R.B. RICK.RDS (chairman of the Ordovician-Silurian boundary working group) and Dr F. M.RTIN (secretary). During its stay, the SSS delegation was very warmly received by representatives of the State Bureau of Geology. Lecture-sessions mainly devoted to the Silurian System were held at Peking, with the Geological Institute of the Chinese .cademy of Geological Sciences, at Chungking, with the Chengtu Research Institute of Geology, and at Kunming, with the Yunnan Provincial Geological Bureau. During these sessions, discussions were detailed and openminded. The palynologists, as the other scientists in China, are very much looking forward to exchange informations with western colleagues. .ccording to your field of interest, it is here suggested that you send your own reprints to palynologists listed in the Membership Directory* and ask for exchanges. Generally speaking, it appears that their researches on pollens and spores have been carried on since longer than on acritarchs or chitinozoa. Two references areas of the Chinese Silurian were visited in the Yangtze geological province, one in the Szechuan Province and the other one in the Yunnan Province. They are well exposed and are still being studied by palaeontologists of different specialities, including those using palynological techniques.

F. M.RTIN

*To be issued at the end of 1978

3f. Publication from the International Palynological Symposium, Leon, Spain. September 1977

Dr Frederico Cramer has informed C.I.M.P. that the publication of the volume of P.LINOLOGI. which will contain many of the papers presented at the symposium will take place in December 1978.

The volume which will contain 420 pages of text and 70 plates contains papers by the following authors: .. .chab; M.C. .dloff & J. Doubinger; J. Doubinger, M.C. .dloff, .. Ramos, .. Sopena & S. Hernando; B. .lpern; G. Lachkar; S. Lobozick & B. .lpern; T. Bjaerke; J. Brooks; L.J. Cachan; P. Candau; M.S. Chaiffetz; G. Clayton, K. Higgs, J.B. Keegan & G.D. Sevastopulo; F.H. Cramer & M.d.C.R. Diez; M.d.C.R. Diez & F.H. Cramer; J. De Coninck; C.J. Felex & P.P. Burbridge; J.P.G. Fenton & M.J. Fisher; M.. Fombella; C. Fournier-Vinas; G.F.W. Herngreen; G.F.W. Herngreen & K.F. De Boer; S.R. Jacobson; R. Kalvacheva; R... Kyle & .. Fasola; .. lejal-Nicol & .. Moreau-Benoit; S. Mebradu; J. Medus; S.J. Morbey; F. Paris; P. Pierart; K. Rahmani; J.F. Raynaud; R.M. Rodriguez; N. Sole; P. Tasch & T. Hutter; P. Tasch & J. Lammons; M.F. Valle & J. Civis; C.J. Van der Zwan & P.M. Van Veen; M. Vanquestaine; B.S. Venkatachala; R.P. Wright.

.ll registered participants at the Symposium will receive the volume free by surface mail. .nyone who wishes to buy a copy should write to Dr F.H. Cramer, Instituto de Investigaciones Palinologicas, .partado 244, Leon, Spain. The cost will be 2000 pesetas plus 120 pesetas for surface mail. (If payment is in a currency other than pesetas it will be necessary to add an extra 150 pesetas to your bill to cover the bank charges.)

3g. Carboniferous miospores of Western Europe; illustration and zonation and slide collection.

. small number of copies of this recent publication are still available for sale. .nyone wishing to obtain a copy should write to Prof M Streel, Laboratoire de Paleobotanique, Universite de Liege, 7 Place du Vingt .out, Liege B.4000, Belgium. The cost of the publication is 150 Belgian Francs or 4 U.S. Dollars.

Following requests from some of our members, a slide collection complementary to the above publication has been prepared. It will consist of at least one assemblage slide for each of the twenty five assemblage zones, and will probably consist of about 30-35 slides in total. Cost of the collection will be approximately 20 U.S. Dollars (£10) for individual members and 40 U.S. Dollars (£20) for institutional or company orders. A small number of sets are still available on a first to apply, first to be supplied basis. It is hoped to start despatching the slides during December. If you are interested in this collection you should contact Dr B. Owens, Institute of Geological Sciences, Ring Road Halton, Leeds LS15 8TQ, England.

NEWS & MEETINGS OF OTHER ORGANISATIONS

4a. International Commission for Palynology

I.C.P. issued its first Newsletter earlier this year. At the moment the method by which members of C.I.M.P. will receive this is being formalised. The I.C.P. editor sent copies to all national palynological societies such as A.P.L.F., A.A.S.P., and KRING so it is not therefore necessary for C.I.M.P. to send copies to members who are already likely to receive copies from these societies. The limited number of copies we will normally have available will therefore be sent to those people who may not receive copies from national societies. Undoubtedly until we get its distribution properly organised there will be some mistakes and some people will not receive a personal copy. Please circulate your copy amongst your colleagues and ensure that everyone sees it.

4b. 9th International Congress of Carboniferous Stratigraphy & Geology, Washington D.C. and Urbana, Illinois. May 1979

The third and final circular for the Comgress is enclosed with this Newsletter.

This is the first time the Carboniferous Congress has been held in North America and it may be several years before it is held there again. The extensive range of pre and post congress excursions together with the broad outline programme of the various specialist symposia are all included in the circular.

Please note that special arrangements have been made to offer dormitory accommodation and meals at a combined price of approximately 15 dollars per day. This rate should allow those attending to do so at a cost well below that which would normally have to be paid in N. America.

If you intend to participate in the Congress you are urged to register as soon as possible and to remember that the deadlines for abstracts of papers to be presented is 1st January 1979.

4c. I.U.G.S. Working Group on the Devonian-Carboniferous Boundary at the IXth International Congress of Carboniferous Stratigraphy & Geology, Urbana, May 1979

As you may have noted, the afternoon sessions of the IX-ICC will be devoted to "specialized symposia and organized papers".

The IUGS working group on the Devonian-Carboniferous boundary which is currently examining the best available geographical areas and stratigraphic positions of this boundary, considers these sessions to be a good place to present information that you may have on these matters.

Two related topics have already been approved by the organizing committee:

"Stratigraphy at the Devonian-Carboniferous boundary", and

"Biotic changes at the Devonian-Carboniferous boundary".

Please consider this an invitation to present a paper and to participate in these meetings.

Original abstracts prepared according to the abstract form provided in the IX-ICC 2nd circular, should be sent to the Secretary-General of the Congress (Ellis L. Yochelson, IX-ICC, 1979, Museum of Natural History, Washington DC. 20560, USA.) before January 1, 1979.

Please send a copy of your abstract to one of us as soon as possible and not later than the above deadline so that we can plan the session(s).

Thanking you in advance for your cooperation, we remain.

Sincerely yours,

E. PAPROTH
M. STREEL

Dr. E. Paproth
Geologisches Landesamt
Nordrhein-Westfalen
de-Greiff-Str. 195
Postfach 1080
D-415 KREFELD
Federal Republic of Germany

Prof. Dr. M. Streel
Paleontologie
Universite de Liege
place du 20 Aout, 7
B-4000 LIEGE
Belgium

4d. 5th International Palynological Conference
Cambridge, England. June-July 1980

Replies to the questionnaire on the 1st Circular are now being analysed in order to provide for the requirements of those who will attend and to guide the Organising Committee in the formulation of the scientific programme. If you have not returned this form and you are interested in attending the Cambridge Conference, you are urged to do so as soon as possible.

If you did not receive a copy please write to Mrs G. Drewry, Dept of Geology, Sedgwick Museum, Downing Street, Cambridge CB2 3EQ, England.

The second circular which will be distributed to all C.I.M.P. members is expected in the Spring of 1979.

4e. American Association of Stratigraphic Palynologists (A.A.S.P.)

12th Annual Reunion will be held from 31st October - 3rd November 1979 at Dallas, Texas and will include a symposium entitled "Kerogen analysis - Visual and Geochemical relationships".

Further details of this meeting can be obtained from

Dr H.M. Simpson (Local Committee Co-Chairman)
Atlantic Richfield Company
P.O. Box 2819
Dallas
Texas 75221
U.S.A.

(Abstracts of Palaeozoic papers presented at the 11th Annual Reunion in Phoenix, Arizona will be included in the next Newsletter.)

4f. Association des Palynologues de Langue Francais (A.P.L.F.)
IVth Symposium "Palynologie et Climates". Paris, France; 9-11 October 1979

The initial purpose of this symposium will be to explain the present palynological methods documenting the relationships of pollen and climate (climate and pollen morphology; climate and sedimentation of pollen). The second objective will be to determine the climatic events of the past (local or widespread). Furthermore, they plan to emphasize the possible relationships with phytosociological events (origins, speciation, migration of large groups of plants), paleontological considerations (evolution of floras and terrestrial faunas), or sedimentary events (continental erosion, geochemical degradation resulting in marine sedimentation).

The Symposium will be held at Laboratoire de Geologie du Museum National d'Histoire Naturelle de Paris.

The Proceedings of the Symposium will be published in the series "Entretiens du Museum" and will cost 100 FF.

Registration fee for the Symposium: 50 FF.

Further details from Dr. Y. Reyre
Laboratoire de Geologie
Museum National d'Histoire naturelle
43 rue Buffon
75005 Paris
France

4g. Symposium: Riccards Assereto and Giulio Pisa Field Symposium on Triassic Stratigraphy in the Southern Alps, June 1979

PURPOSE

In the last ten years, Riccardo Assereto and Giulio Pisa in cooperation with several investigators arrived at a new and outstanding interpretation of the Triassic Stratigraphy of the Southern Alps. They planned to hold an international spymposium on the subject before the end of 1978.

After their premature and tragic death, we assumed the responsibility to organize this meeting, continuing the work they inspired.

The Symposium will be essentially worked out in the field.

PROGRAMME

The programme will consist of:

1. approximately 7-8 days of excursions in the most characteristic and classical localities of the Lombardian-Venetian Prealps and of the Dolomites.

2. 2 days of presentations and discussions on: a) scientific contributions, b) workshop meeting on IGCP-Project n. 4 topics, c) special meeting on specific topics.

PROCEEDING VOLUME AND ABSTRACTS

A special volume, including presented papers, will be issued by the Rivista Italiana di Paleontologia. Abstracts for presentation have to be received before March 30, 1979.

REGISTRATION

The total cost of the Symposium will be about 350 US $ and includes complete lodging at local hotels, transportation and field guide-book.

A preliminary registration form is enclosed. Please return it by May 30, 1978. The second circular will be sent only to those replying to this first circular.

All correspondence should be addressed to:

The Secretary of the "Riccardo Assereto and Giulio Pisa Field-Symposium"
Department of Geology and Paleontology P.le Gorini 15 - 20133 MILANO - ITALY.

4h. Symposium on Permian of West Carpathians, Bratislava, Czechoslovakia, 26th August - 2nd September 1979

The Symposium will deal with the general problems of the Permian and its relationships with the Upper Carboniferous and Lower Triassic. Attention will be paid to the following themes: stratigraphy, lithology and palaeogeography, volcanism, geochemisIry and mineralisation.

The Symposium will include a four day field excursion to the mountain ranges of the West Carpathians to examine characteristic sections of the Permian. The symposium will finish with 2 days of technical sessions.

Registration fee includes field guides and bulletin of reports.

Further details from: Geologicky ustav D. Stura
Dr. Jozef Vozar
Mlynska dolina 1
809 40 Bratislava
Czechoslovakia

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5. Translations of Palynological Publications

If you are interested in purchasing copies of any of the translations listed below you are advised to write to the Librarian, Geological Survey of Canada, 601 Booth St. OTTAWA, Canada K1A OE8. The request will be forwarded to an agency who will send you an invoice and carry out the work when you return the order together with your payment. (See Newsletter 17 for further details.)

SOROKIN, N.L. 1966. New species of spores from Upper Devonian deposits of the Dnieper-Donetz Basin (Translation from "Geologichniy Zhurnal" Vol. 26, No. 6, pp. 49-63). G.C.S. Translation Series No. 55.

SERGEEV, L... 1974. Micropaleophytological characterisation of Devonian deposits from the Dnieper-Donetz Basin (in "Stratygrafiya U.R.S.R." Kiev. vol. 4, pt.2, pp. 162-174). G.S.C. Translation Series 900.

ZAKLINSKAYA, E. 1963. The pollen of angiosperms and its significance in providing a basis for the stratigraphy of the Upper Cretaceous and Paleogene. (G.S.C. Translation Series No. 58 (805 pp. in 2 vols.)

ANDREYEVA, E.M. et al. 1967. Palaeobotanical characterisation of the Givetian Beds of Northern Timan. (Translation from Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut. Trudy 129. Biostratigraficheskii Sbornik no.3. Leningrad pp. 43-47). G.S.C. Translation Series No. 52.

NADLER, Y. 1973. Phytoplankton and spores from Devonian deposits of Salair (Translated from "Stratigrafiya nizhnego i srednego Devona, Mexhdunarodnyy simpozium po granitse Silura i Devona i stratigrafii nizhnego i srednego Devona. 3rd. 1968 Trudy, tom 2. pp. 168-169, 290-291). G.S.C. Translation Series 843.

MARCINKIEWICZ, T. 1971. The stratigraphy of the Rhaetian and Lias in Poland based on megaspore investigations. (Translated from "Instytut Prace Vol. 65, pp. 1-41) G.S.C. Translation No. 887.

BRATTSEV., G.M. 1965. Pollen and spores of the Maestrichtian deposits of the Far East (Translation of "Pyl'tsa i spory Maastrikhtskikh oklozheniy Dal'nego Vostoka. Akademiya nauk S.S.S.R. Geologicheskiy institut. Trudy vyp 129, 87 pp.) G.S.C. Translation Series No. 150.

6. INTERNATIONAL ORGANIZATION OF PALAEOBOTANY

INTERNATIONAL UNION OF BIOLOGICAL SCIENCES
SECTION FOR PALAEOBOTANY

Vice President: Prof. E. BOUREAU, FRANCE

Secretary: Dr M.C. BOULTER
N.E. London Polytechnic
Romford Road
London, E15 4LZ, England

IOP PROMOTES INTERNATIONAL COOPERATION IN THE STUDY OF PALAEOBOTANY AND PALAEOPALYNOLOGY

Membership is open to any palaeobotanist who subscribes to this aim and enables communication through a newsletter which is distributed at least three times a year. This gives details of international and national meetings of interest to palaeobotanists, reports on their proceedings, describes regional bibliographies and gives news of individuals and institutions. In addition there are regular book reviews and other items of current debate.

IOP plays a substantial role at each International Botanical Congress and cooperates with other international organizations having interests allied to palaeobotany. Its constitution as adopted in August 1977 sets out a frame-work for many possible initiatives. Address lists, bibliographies and other devices to help with the exchange of information within the subject are of central concern to its development.

New members are urgently required to help with the work of this new organization.

NAME .....

DEPARTMENT .....

INSTITUTION .....

STREET .....

TOWN ..... CODE .....

COUNTRY ..... CODE .....

I ENCLOSE CHEQUE VALUE ..... FOR PAYMENT OF DUES OVER 1978/1979/1980 at a rate equivalent to US $ 4.00 a year.

Please return this slip with your money to your regional representative whose address is listed overleaf, or directly to the secretary: Dr M.C. Boulter, N.E. London Polytechnic, Romford Road, London E15 4LZ, England.

IOP REGIONAL REPRESENTATIVES

NORTH AMERICA: Prof D. Dilcher, Department of Plant Sciences, Indiana University, Bloomington, Indiana 47401, USA.

FRANCE, BELGIUM & SWITZERLAND: Prof E. Boureau, Universite de Paris VI, 12 rue Cuvier, 75005 Paris, France.

OTHER WEST EUROPEAN COUNTRIES (including Scandanavia): Dr B. Thomas, Biology Department, Goldsmith's College, Lewisham Way, London SE14, England.

EAST EUROPEAN COUNTRIES: Dr Z. Kvacek, Geologicky Ustav, Spalena 49, Praha 1, Czechoslovakia.

USSR: Dr. S.V. Meyen, Geological Institute of the Academy of Sciences of the USSR, 109017 Moscow, Pyzhevsky per. 7, USSR.

AUSTRALASIA: Dr J.G. Douglas, Mines Department, East Tower, Princes Gate, 151 Flinders Street, Melbourne, Victoria 3000, Australia.

SOUTHERN AFRICA: Dr H. Anderson, Botanical Research Institute, Private Bag X101, Pretoria 0001, South Africa.

SOUTH AMERICA: Dr S. Archangelsky, Av. Sante Fe 3344, P12 Dto 27, Buenos Aires, Argentina.

INDIA: Prof B.F. Irivedi, Botany Department, Lucknow University, Lucknow, India.

JAPAN: Prof T. Tanai, Department of Geology, Hokkaido University, Sapporo, Japan.

PEOPLE'S REPUBLIC OF CHINA: Prof Chao King-koo, Nanking Institute of Geology and Palaeontology, Academia Sinica, Chi-Ming-Scu, Nanking, China.

ALL OTHER COUNTRIES: Dr M.C. Boulter, N.E. London Polytechnic, Romford Road, London E15 4LZ, England.

APRIL 1978

7. 1978 DIRECTORY OF WORKERS ON CHITINOZOA

In order to make it possible to produce an up-to-date Directory, please keep me informed about changes of address and about news you may have regarding new Chitinozoa workers. I will be most grateful if omissions, misspellings, etc., are pointed out to me. Further copies of this Directory may be obtained upon request.

Stockholm 23 October, 1978

Sven Laufeld
Geological Survey of Sweden
S-104 05 Stockholm 50
Sweden

Please note that the next Directory will be included in a Chitinozoa Newsletter to be issued in early Spring, 1979. Hence, omissions, misspellings, etc. should be pointed out as soon as possible. Thank you.

AL-AMERI, Thamer K.: Geology Dept., King's College, London WC2R 2LS, U.K.

ACHAB, Aicha: Universite du Québec, INRS Pétrole, C.P. 7500, Quebec 10, Canada

ANAN-YORKE, Rowland: Dept. of Geology, University of Alberta, Edmonton, Alberta, Canada.

ATKINSON, Keith: Dept. of Geology, School of Mines, Trevenson, Pool, Redruth, Cornwall TR15 3SE, U.K.

ATKINSON, R. Lesley: Museum, School of Mines, Trevenson, Pool, Redruth, Cornwall TR15 3SE, U.K.

BEJU, Dan: Amoco Production Company, P.O. Box 591, Tulsa, Oklahoma 74102, U.S.A.

BERGSTROM, Stig M.: Dept. of Geology & Mineralogy, 125 South Oval Mall, Columbus, Ohio 43210, U.S.A.

BOCKELIE, Tove G.: Paleontologisk Museum, Sars gate 1, Oslo 5, Norway.

BONEHAM, Roger F.: Dept. of Geology, Kokomo Regional Campus, Indiana University, Kokomo, Indiana 46901, U.S.A.

BOOTH, Graham Arthur: Dept. of Geology, Mappin Street, St. George's Square, S1 3JD Sheffield, U.K.

CHAIFFETZ, Michael S.: 81 Camille Street, Apt. 14, El Paso, Texas 79912, U.S.A.

CHARPENTIER, Ronald M.: Dept. of Geology and Geophysics, University of Wisconsin, Madison, Wisconsin 53706, U.S.A.

COMBAZ, André: C.F.P., 39-43 Quai Andre Citroen, F-75739 Paris Cedex 15, France.

CORNÁ, Olga: Ul. Janačkova 4A, Bratislava, Czechoslovakia.

COSTA, Norma Maria Da: CPRM, Av. Pasteur 404, Praia Vermelha, 20 000 Rio de Janerio, Brazil.

CRAMER, Fritz H.: Instituto Palinologico, Plaza de San Marcelo 5, Léon, Spain.

DEUNFF, Jean: Laboratoire de Paléontologie, Université de Bretagne Occidentale, Av. Le Gorgeu, F-29 Brest, France.

DICEVIČIUS, Jeronimas Kazio: Geological Survey Institute, Ševečenkos 13, Vilnius, Lithuanian SSR, U.S.S.R.

DIEZ, Maria del Carmen R.: Instituto Palinologico, Plaza de San Marcelo 5, Léon, Spain.

DORNING, Kenneth J.: Dept. of Geology, University of Sheffield, Mappin Street, S1 3JD Sheffield, U.K.

DOWNIE, Charles: Dept. of Geology, Mappin Street, S1 3JD Sheffield, U.K.

ECHOLS, Dorothy Jung: Dept. of Earth Sciences, Washington University, St. Louis, Missouri 63130, U.S.A.

EISENACK, Alfred: Sickenhäuser Str. 103/72, D-741 Reutlingen, Federal Republic of Germany.

FINNEY, Stan: Dept. of Geology, Memorial University, St. Johns, Newfoundland, Canada.

GISHLER, Claudia: Dept. of Geology, University of Western Ontario, London 72, Ontario, Canada.

GRAHN, Yngve: Geological Survey of Sweden, S-104 05 Stockholm, Sweden.

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