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in addition : photographs from the Moscow meetings !

n° 11 novembre 1976

novembre 1975 -

Contribution No 8

A. Gedinnian to Givetian spore sequence from the Moose River Basin, Canada.

by D.C. McGregor

Sixty-one taxa of microspores including eleven new species and two new varieties have been recovered from Gedinnian (or possibly Upper Silurian) to Middle Devonian core from three wells in the Moose River Basin, northern Ontario, Canada (see map). All of the strata are marine carbonates except the Sextant Formation, which is non-marine and is correlated by microspores with the upper part of the Stopping River Formation of mid to upper Emsian age.

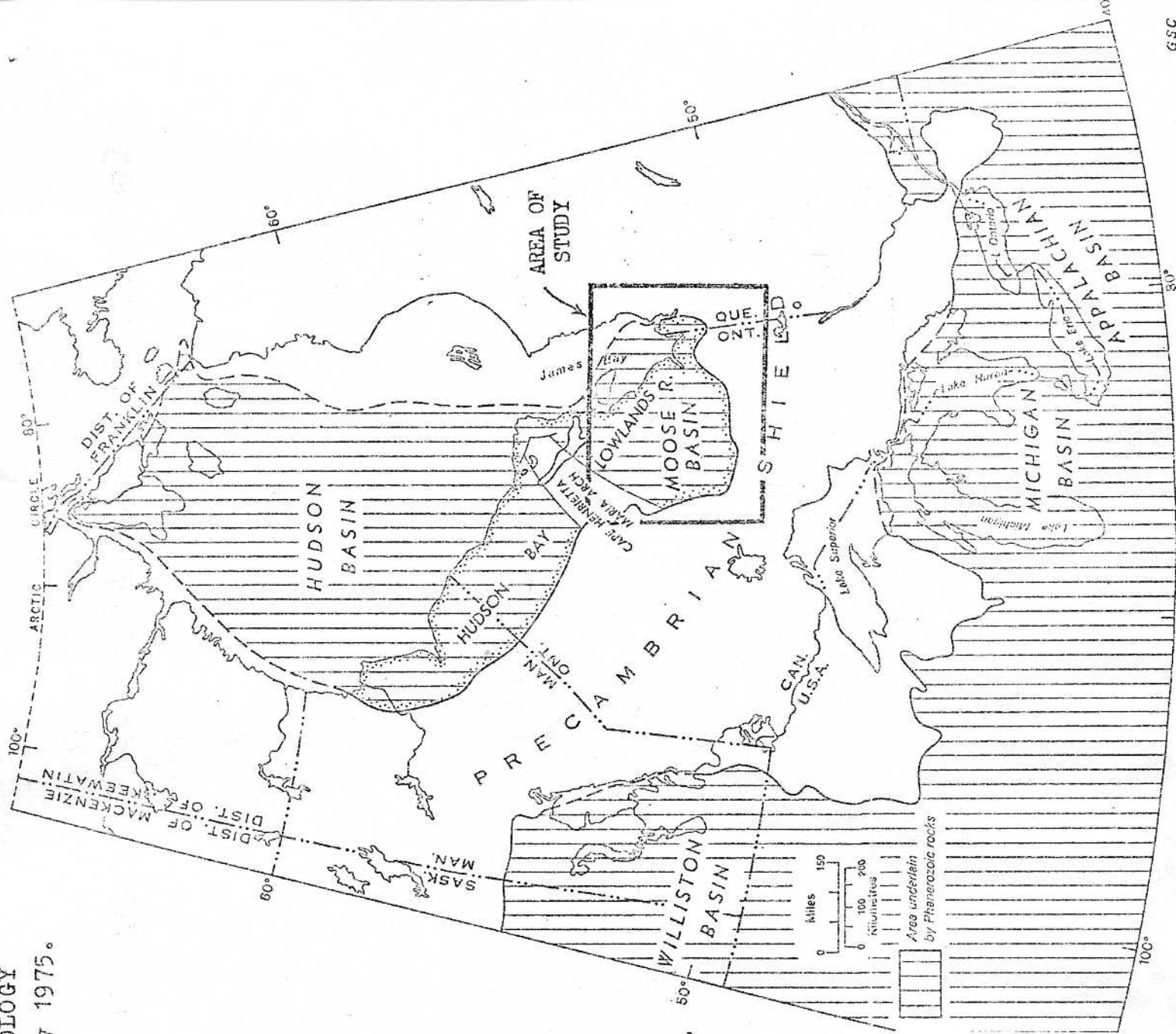
Spores are rare in the Eifelian part of the sequence but are abundant in the rest of the section. Several of the species that occur in the Moose River Basin (see charts) have similar stratigraphic ranges in the Welsh Borderland and South Wales, the Eifel region of Germany, and eastern Gaspé, Canada.

Palynological changes of zonal significance, reflected in the ranges of these species and others, occurred at about the Silurian-Devonian boundary, in the mid-Siegenian, in the mid-Emsian, in the mid-upper Emsian, at about the Emsian-Eifelian boundary, and (?) in the upper Eifelian.

New taxa include varieties of *Acinosporites lindlarensis* Riegel and *Clavospora verrucata* McGregor, new species of *Anaplanisporites*, *Brochotriletes*, *Camarozonotriletes*, *Dibolisporites*, *Diclyotriletes*, *Emphanisporites*, *Retusotriletes*, and three new species of *Cymbosporites*.

(This paper will be published as a Geological Survey of Canada Bulletin.)

Contributions n° 6 has been partially published by G. CLAYTON and J. R. GRAHAM in *Pollen & Spores*, vol. XVI, n° 4 (1974), and by G. CLAYTON, K. HIGGS et al. in *Proceedings of the Royal Irish Academy*, vol. 74, sect. B, N° 10 (1974).
Contribution N° 7 will be published (in English) by the Institute of geology in Bucharest.



**JAAB LAKE
NO. 1 WELL**

STAGE FORMATION

Givetian	/ / / / /
	Williams Island
Eifelian	Murray Island
	Moose River
Emsian	Kwataboahagan
	Stooping River
Siegenian	
Gedinnian	Kenogami River
Downtonian	

- Chelinospora ?vermiculata
- Tholisporites chulus var. chulus
- Tholisporites chulus var. nanus
- Emphanisporites micromnatus
- Emphanisporites decoratus
- Emphanisporites rotatus
- Emphanisporites annulatus
- Emphanisporites schultzei
- Dictyotriletes emsiensis
- Dictyotriletes subgranifer
- Verrucosporites polygonalis
- Dibolisporites eifeliensis
- Dibolisporites echinaceus
- Apiculatisporis microconus
- Acinosporites lindlarensis
- Grandispora ?macro tuberculata
- Grandispora douglastownense
- Grandispora mammillata
- Grandispora velata
- Grandispora megaliformis
- Grandispora ?haunovii
- Densosporites orcadensis
- Raistrickia arutra
- Ancyrospora loganii
- Acinosporites acanthomammillatus
- Rhabdosporites laneti

**PUSKWUCHE POINT
NO. 1 WELL**

STAGE FORMATION

Siegenian	Stooping River
Gedinnian	Kenogami River
Downtonian	

- Chelinospora ?vermiculata
- Tholisporites chulus var. chulus
- Emphanisporites micromnatus
- Emphanisporites decoratus
- Emphanisporites rotatus
- Dictyotriletes emsiensis
- Verrucosporites polygonalis

**KIASKO RIVER
NO. 2 WELL**

STAGE FORMATION

Givetian	/ / / / /
Eifelian	/ / / / /
Emsian	Stooping River
	Sextant
Siegenian	/ / / / /
Gedinnian	/ / / / /
Downtonian	/ / / / /

- Tholisporites chulus var. chulus
- Emphanisporites rotatus
- Emphanisporites annulatus
- Dictyotriletes subgranifer
- Dibolisporites echinaceus
- Apiculatisporis microconus
- Acinosporites lindlarensis
- Grandispora ?macro tuberculata
- Grandispora douglastownense

SUBCOMMISSION ON CHITINOZOA

On May 17, 1975, three papers on Chitinozoa have been presented at the North Central Section Meeting of the Geological Society of America (and the Geological Association of Canada) at Waterloo, Ontario, Canada. Abstracts below have been published in the G.S.A., Abstracts with Programs, volume 7, no 6, 1975.

PALEOECOLOGY OF SILURIAN POLYCHAETES AND CHITINOZOANS IN A REEF-CONTROLLED SEDIMENTARY REGIME

Laufeld, Sven/Department of Geology and Mineralogy, Ohio State University, Columbus, Ohio 43210

The exposed Silurian of the island of Gotland, Sweden, consists of a 500 m thick, late Llandoveryan through Ludlovian succession of sedimentary rocks. The variety of marine facies types of various bathymetric settings makes this succession suitable as a model in paleoecological studies of most groups of Silurian fossils. A semi-quantitative study of the abundance of scolecodonts and chitinozoans in about 800 rock samples from 475 localities on Gotland shows that the distribution of both groups is bathymetrically controlled. The graphs of abundance of individuals of the two groups reflect in a remarkably similar way the major cycles of regression and transgression of the Silurian sea.

Chitinozoans were very abundant at water depths of 75-200 m (benthic marine life zones 4-5), whereas polychaetes, although also present in that biotope, did not have optimum living conditions in it. In the shallower waters, representatives of both groups were most common in muddy environments, but the scolecodonts, contrary to the chitinozoans, occur in abundance also in the detrital limestones closely adjacent to the reefs. Hence, it can be concluded that the two groups reacted in a similar way to several ecological parameters. The species diversity of the chitinozoans increases from shallow to deeper water strata, but the diversity of polychaetes remains to be tested.

CHITINOZOA FROM UPPER ORDOVICIAN MAYSVILLIAN AGE STRATA, MAYSVILLE, KENTUCKY

Miller, Merrell A./Department of Geology and Mineralogy, The Ohio State University, Columbus, Ohio 43210

Forty-five samples from a 350 ft. section through Maysvillian (Upper Ordovician) rocks exposed along U.S. Route 62, 68, one mile south of Maysville, Ky., have yielded abundant and well preserved chitinozoans. The abundance ranges from a low of 0.05 specimen/g to 30 specimens/g, averaging approximately 8/g.

The lower third of the sampled interval (upper part of the Kope Formation) is characterized by a faunule allied to upper Caradoc and lower Ashgill Baltic and especially upper Caradoc Welsh Borderland faunas. The most diagnostic species of this interval is *Acanthochitina barbata*; more cosmopolitan taxa present are *Conochitina robusta*, *Hercochitina* aff. *downi*, *Conochitina minnesotensis*, *Cyathochitina kuckersiana*, *Desmochitina lata*, *D. minor*, and a species of possibly a new genus resembling *Glathrochitina*.

Chitinozoan species diversity diminishes upwards in the section. The faunal assemblages of the Fairview Formation and Grant Lake Limestone are less diverse than those of the Kope Formation and are generally dominated by one or two species. Most common taxa in the Fairview Formation are *Conochitina* aff. *micracantha*, *Glathrochitina?* sp., and *Desmochitina lata*. The last occurrence of *Glathrochitina?* sp. in the section studied is near the base of the Grant Lake Limestone. *Cyathochitina hyalophrys* and *Angochitina capillata* distinguish the Grant Lake Limestone from older Maysvillian strata. *Cyathochitina kuckersiana* and *Conochitina* aff. *micracantha* reappear in the Upper Member of the Grant Lake Limestone. *Ancyrochitinid* forms have been noted in most studied samples.

MIDDLE DEVONIAN CHITINOZOA FROM THE SILICA FORMATION, NORTH-EASTERN, OHIO: PALEOENVIRONMENTAL INTERPRETATIONS

Wood, Gordon D./Department of Geology, Michigan State University, East Lansing, Michigan 48824

A chitinozoan assemblage consisting of six genera and 19 species was recovered from the 29 units of the Silica Formation (Middle Devonian, Erian), of northeastern Ohio. Analysis of the Chitinozoa indicates some specificity of these fossils to particular lithologic types or facies identified by megascopic faunas. Some seem to possess a great degree of environmental tolerance while others are seemingly restricted. With the exception of the Angochitininids, *Ancyrochitina silicensis*, and *A. doylei*, no Chitinozoan is confined to a single unit. The calcareous shales of the Silica Formation contain the largest number of Chitinozoan taxa, and certain forms, notably *Ancyrochitina kutasi*, *A. hamiltonensis*, *A. cf. A. tumida*, *A. silicensis*, *A. doylei*, *Desmochitina bursa*, *D. spinosa*, and *Eisenackitina ruthi* are restricted to this type of lithology. Relatively ubiquitous occurrences of *Ancyrochitina* cf. *A. langei*, *A. cf. A. ancyrea*, *Hoegisphaera Elabra*, *Desmochitina aranea*, *Eisenackitina castor*, *E. canadensis*, *E. sylvanensis*, *Conochitina edjeleensis*, and *C. inflata* imply a distribution independent of sedimentary facies. Comparisons of these results with published data indicate that certain Devonian Chitinozoa (e.g., the Angochitininids) may have developed environmental preferences not noticeable in antecedent forms of this group during Ordovician and Silurian time.

MEGASPORES WORKING GROUP

Le Groupe "Mégaspores" de la Commission Internationale de Microflore du Paléozoïque (C.I.M.P.) s'est réuni du 9 au 20 juin 1975 successivement à Paris, Lille (France), Mons et Bruxelles (Belgique).

- A l'Université de P. et M. Curie, Paris VI, au Laboratoire de Micropaléontologie, il a été procédé à l'étude des mégaspores du type Lagenicula, contenues dans les sédiments Paléozoïques de France (Lorraine), d'Espagne (Camocha) et d'Afrique Centrale (Niger) en microscopie optique et au Microscope Electronique à Balayage (M.E.B.).

- A l'Université des Sciences et Techniques de Lille, Laboratoire de Paléobotanique, a été effectué un inventaire bibliographique des diverses espèces de Lagenicula, ainsi qu'une étude des espèces du Bassin Houiller du Nord et du Pas-de-Calais.

- A l'Université de l'Etat à Mons et à l'Institut Royal des Sciences Naturelles à Bruxelles, le groupe a défini les principaux caractères morphologiques devant servir à la détermination des espèces. Il a, en outre, examiné du matériel en provenance de différents bassins européens et africains.

Bruxelles, le 20 juin 1975

Prof. P. PIERART

Responsable du groupe mégaspores
de la C.I.M.P.

NAMURIAN-WESTPHALIAN WORKING GROUP

Prof. Dr. A. JACHOWICZ has kindly inform us that his Institution wants to invite the following CIMP working groups to have sessions from the 1st to 10th September 1976 at Sosnowiec, Poland.

1) Megaspore working group : meetings on taxonomic revision of Lagenicula genus, with Prof. Dr. P. PIERART, Belgium; Dr. G. IACHKAR and Dr. S. LOBUZIAK, France; Doc. dr. S. JACHOWICZ, Dr. K. KARCZEWSKA and Dr. Z. Z. ZOYDANI, Poland.

2) Namurian/Westphalian working group : meetings on correlations from Western Europe, through Poland to Donets basin in USSR; with Dr. B. OWENS, Great Britain; Dr. S. LOBUZIAK and Dr. R. COQUEL, France; Dr. W.K. TETERUK, USSR and prof. dr. A. JACHOWICZ, Poland.

AASP/CIMP Joint-Meeting, Halifax,
Nova Scotia, Canada, OCTOBER 1976

TENTATIVE PROGRAM (Revised September 10, 1975)

Monday, 11th October
Arrivals (for Tuesday program).

Tuesday, 12th October
9 a.m. - 12 noon; Acrirarch Forum, Convenors: Charles Downie & Paul Hill.
1:30 p.m. - 5 p.m.; "Dino Update", Convenor: Bill Evitt.

Wednesday, 13th October
9:30 a.m. - 3 p.m.; "Continental Drift and Floral Provincialism", Chairmans: H.J. Sullivan & G. Hart.

Thursday, 14th October
9 a.m. - 12 noon; "Paleozoic Palynology", Chairman: B. Owens.
2 p.m. - 5 p.m.; "General Palynology", Chairman: Al. Traverso.

Friday, 15th October
9 a.m. - 12 noon; "Paleozoic Palynology", Chairman: M. Streel.
2 p.m. - 5 p.m.; "Offshore Palynology", Chairman: S. Jardine.

Saturday, 16th October
8:30 a.m. - 5 p.m. Field Trip.

Program would include 5 invited speakers and 38 twenty-minute presentations.

CIMP executive Committee asks for contributions to the above sessions, particularly in the Paleozoic area.

Proposals should directly reach:

for Acrirarch Forum, P. Hill, CIMP Acrirarch Subcom. convenor,
Derby College of Art & Technology, Kedleston road,
DERBY DER 1 (GB).

for Paleozoic Palynology

Taxonomic papers: W. RIEGEL, CIMP Taxonomic Subcom. convenor, Geol.-Paleontol. Inst. Berniner Str., 28, GOTTINGEN 34 (West Germany)

Stratigraphic papers: B. OWENS, CIMP Stratigraphy Subcom. convenor, Institute of Geol. Sciences, Ring Road Halton, LEEDS 15 (GB).

Papers on stratigraphic topics related to those involved during the last Moscow meeting would particularly be welcomed.

However, all papers related to Paleozoic Palynology can be presented. If any doubt, please write B. OWENS, who is in charge of the CIMP organisation in Halifax.

CIMP - 12th General Assembly
LEÓN, September 1977

We are pleased to announce that the next general assembly of CIMP will be held in the Instituto de Investigaciones Palinológicas in León, Spain, during a week of the second half of September 1977.

Topic will be "Applications of Paleozoic Palynology".

Two post-symposium excursions are being planned: one to cover Spanish palynomorphous Paleozoic and Mesozoic sections; the other will sample the architectural, cultural and culinary heritage of Spain.

A tentative program in a next Newsletter.

A message from Frederico CRÁMER y DIEZ

Instituto de Investigaciones Palinológicas
Caja de Ahorros y Monte de Piedad
Plaza de San Marcelo, 5; Apartado 244
LEÓN (Spain)

The scientific staff of our "Instituto de Investigaciones Palinológicas" (A Foundation of the Caja de Ahorros y Monte de Piedad of León, Spain) consists at this moment of four persons: Maria del Carmen R. Diez R., Rosa M.P. Rodriguez Gz., MA Amor Pombella Blanco, F.H. Cramer Diez. A fifth position is vacant but will be filled soon.

The Institute has begun to function early this summer and will operate on full capacity - as far as palynology is concerned - late 1976.

Initially, the Institute will be dedicated to applied and pure palynology of problems that are of interest to León and Spain. We will work on the establishment of a functional palynostratigraphic succession of the Cambrian through Lower Devonian (1976) the Carboniferous (1978) and the Mesozoic (1980) of Spain, its continental shelves and its areas of interest.

As soon as the palynology part of the Institute is operational and routinized, we will begin to acquire personnel and instrumentation for work on organic maturity and maturation, in situ fuel usage and similar aspects of applied geology/palynology.

We are interested in exchanging publications with palynologists who work in all aspects of palynology.

Secretary General Report

CIMP met on 9th to 12th September, 1975 at Moscow (USSR) during the VIII International Congress on Carboniferous Stratigraphy and Geology.

On the 8th September, 6.00 p.m., the co-convenors from western countries were allowed to meet their Russian colleagues and a timetable was settled for the next days. We had access to three rooms on the 8th floor of the Lomonosov University main building, two of which having microscopes facilities, so that lectures and discussions have been possible concurrently. Owing to the fact that the University activities were not interrupted during the Congress and that, therefore, other sections than CIMP have had to move from room to room, we are very grateful to the General Secretary of the Congress, Dr. S. MEYEN for having made the CIMP facilities very large.

37 soviet palynologists, 5 from Central Europe and 11 from Western Europe attended most of the different working sessions including the Devonian ones despite the fact that the main Congress was concerned with the Carboniferous.

All CIMP lectures and discussions were immediately translated from Russian into English and vice versa, with the help of two translators MM. ARSANOV and KRUTSCHOV, and also Dr. MEYEN' assistant, Mr. GOMANKOV who was, in addition, responsible of the technical supply. It is true that most of the success of the meetings is due to their patient, four days long, efforts to make all things easier and allow participants to cross the language barrier.

Detailed compte-rendus on these meetings are provided here on pages 9 to 18. Some are still uncompleted. When completed and also translated in Russian, these reports will be published in the Congress compte-rendus,

aside most of the 36 listed contributions. CIMP is not considering the present comptes-rendus as validly published; our Newsletter main purpose being just to inform members as quickly as possible.

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x x

The 11th CIMP General Assembly was held on Friday 12th, afternoon. Amongst the soviet palynologists, the co-conveners only attended with the result that, exceptionally participation was geographically more equilibrated. (See first photograph, enclosed).

This assembly was chaired for the last time by our President Dr. B. ALPERN, founding member and first General Secretary of the CIMP from 1958 to 1967. Dr. B. ALPERN is now completely oriented towards Coal Petrology and therefore wants to retire from CIMP Presidency. Dr. B. ALPERN has, nevertheless, accepted to continue helping CIMP relations with the French CNRS, Editor of the CIMP "Atlas".

Participants have allowed the Executive Committee to vary with our rather long accepted usage to elect CIMP officers during General Assembly. Despite the fact that CIMP has no Constitution, we feel now more democratic to organise a postal ballot through our Newsletter organisation. (See page 20).

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x x

Our next activities are scheduled as follow : February 1976 : Executive Committee meeting at (?) LILLE, France.
September 1976 : Megaspores and Namurian-Westphalian working groups at SOSNOWIEC, Poland. (See page 5).

October 12-16, 1976 : AASP/CIMP joint meeting at HALIFAX, Canada. (See page 6).

September, 1977 : 12th CIMP General Assembly at LEON, Spain. (See page 6).

M. STREEL

EMSIAN/EIFEELIAN (Incoming of Middle Devonian spores).

Co-conveners: CHIBRIKOVA, RIEGEL (non attending).

GIVETIAN/FRASNIAN. Co-conveners: RICHARDSON, SERGEEVA.

Tuesday 9th September 1975 (Working session on Wednesday 10th to Friday 12th).

Attendance: ARCHANGELSKAYA, Moscow; AVCHIMOVITCH, Minsk; BYVSHEVA, Moscow; CHIBRIKOVA, Ufa; DUBROVSKAYA, Moscow; HENKINA, Moscow; KEDO, Minsk; KHOLMOVA, Voronezh; NADLER, Novokuznetsk; NAZARENKO, Volgograd; OWENS, Leeds; PASHKEVITCH, Yakutsk; PETERSON, Krasnojarsk; RASKATOVA, Voronezh; RICHARDSON, London; SENNOVA, Uchta; STREEL, Liège; TETERIUK, Dniepropetrovsk; ZHILIN, Leningrad.

There was considerable interest in these two sections despite the fact that the main conference was concerned with the Carboniferous.

Session EMSIAN/EIFEELIAN: Five reports were read to some 20 participants.

1. CHIBRIKOVA, E.V. (U.S.S.R.), Palynological characteristics of the lower Devonian and Eifelian deposits from the east of the Russian Platform and the western slope of the south Urals.

2. NADLER, U.S. (U.S.S.R.), Spores from lower Devonian and Eifelian deposits of Kuzbass.

3. UMNNOVA, V.T. (U.S.S.R.), The discovery of lower Devonian and lower Eifelian spores in the central parts of the Russian Platform.

4. RIEGEL, W. (West Germany), Palynological sequence from lower Emsian to Givetian of the Eifel region.

5. RICHARDSON, J.B. (Great Britain), New spore sequences from the Old Red Sandstone of Scotland and their relevance to a new tentative microspore zonation for the Devonian*.

In this discussion and studies of palynological preparations and colour transparencies from Eifel and Scotland the beginnings of a taxonomic support on some species was established. Studies by the working group centred on the material from western Germany (Eifel region) and the ranges of spores from this region compared with these in the U.S.S.R. (Mainly Russian Platform, and western slopes

* See also RICHARDSON, J.B., The stratigraphic utilization of some Silurian and Devonian microspore species in the northern hemisphere: an attempt at a synthesis - in *Public. of Int. Symp. Belg. micropal. limits, hamur.* 1974, n° 9, pp. 1-13, a report prepared for the Moscow Congress.

of the South Urals). Between the two regions (Eifel and western U.S.S.R.) there was clearly a close correspondence between some important species and the presence of some Russian species was recognized for the first time in western material. Although there are differences between assemblages from parts of the Russian Platform and those from the Eifel region and Scotland, there are nevertheless some important similarities. The first appearance of some elements of the middle Devonian flora begin to appear in the uppermost Emsian (uppermost Wetteldorf-Heisdorf) of the Eifel region. Some key species begin to appear in the Lauch Beds and several of these are geographically widespread eg. *Calyptosporites velatus* (Eisenack) and *Rhabdosporites langi* (Eisenack) and are found in Arctic and eastern Canada through western Europe, the Russian Platform, the Urals, and into asiatic parts of the U.S.S.R. Although in the latter they tend to appear later in the sequence.

There was considerable discussion and diversity of opinion regarding the placement of the Emsian/Eifelian boundary especially in the sequences of the Russian Platform and, although there was considerable agreement in the correlation of formations, there was little unanimity on the placement of the major stage boundaries (i.e. Emsian/Eifelian and Eifelian/Givetian). Part of the difficulty of exact correlation between the Eifel region and parts of the Russian Platform and Urals may be due to the incomplete nature of the sequences in the Russian Platform, and to the similarly incomplete sections and the development of limestones (without spores) in the Urals.

An encouraging start has, I think, been made and I would like to heartily thank our Russian colleagues for their considerable patience and hard work.

Session GIVETIAN/FRASNIAN.

Six reports were read to some 20 participants.

6. NAZARENKO, A.M. (U.S.S.R.), The boundary between the Givetian/Frasnian in the Volgograd and Fovolzhje regions.

7. ARCHANGELSKAYA, A.L. (U.S.S.R.), Megaspores from the Givetian/Frasnian stages of the central and eastern parts of the Russian Platform.

8. PASHKEVITCH, N.G. (U.S.S.R.), A new informational retrieval system for the Palynologist (for bibliography, taxonomy and stratigraphy).

9. SERGEEVA, L.A. (U.S.S.R.), Palynological investigations of the irasnian of the Ukraine.

10. OWENS, B. (Great Britain), Spores and other stratigraphically significant microfossils from the Steeple Aston borehole, southern England (the full account of this report will appear in an Institute of Geological Sciences publication, in press).

11. RICHARDSON, J.B. (Great Britain), Some stratigraphically significant spore species in the uppermost Givetian and Frasnian.

A great diversity of approach to solving problems of stratigraphical correlation was discussed from studies of microspores (NAZARENKO), megaspores (ARCHANGELSKAYA), and cuticle and woody tissue (SERGEEVA) to discussion of a new palynological data retrieval system by PASHKEVITCH. From outside the U.S.S.R. there were two contributions. OWENS (Great Britain) talked on diverse microfossils and their stratigraphical significance from a borehole in southern England. RICHARDSON (Great Britain) discussed the stratigraphical significance of three spore taxa in Givetian/Frasnian deposits: *Samarisporites triangulatus* Allen 1965, *Contagisporites optivus* (Chibrikova) Owens 1971, and *Verrucosisporites bullatus* Taugourdeau-Lantz 1967.

The Russian palynologists recognized the first species *S. triangulatus* as present but geographically restricted, the second species as geographically and stratigraphically important in the Lower Frasnian. They did not know *V. bullatus* but this may merely be a problem of nomenclature.

Because of the intensity of interest in Dr. Riegel's material and the nomenclature, protologue and parameters of *lepidophytus*, *pusillites*, *radiatus* (*flexuosus*)* there was no time to study Givetian/Frasnian. Perhaps this is a reflexion of the tremendous interest and effect in trying to first common ground between palynologists of the Soviet Union and the few from outside.

I would personally like to add my most sincere thanks to all our Russian colleagues and, in particular, Dr. Chibrikova and Dr. Sergeeva without whose help such a successful meeting would not have been possible.

J.B. RICHARDSON

FAMENNIAN/TOURNAISIAN

Co-conveners : CHIBRIKOVA, KEDO, STREEL.

WEDNESDAY 10th September 1975, morning (Working sessions Thursday 11th morning and Friday 12th, morning).

Attendance : AVCHIMOVITCH, Minsk; BRYLOVA, Perm; BYVSHEVA, Moscow; CHIBRIKOVA, Ufa; COQUEL, Lille; GOLUBZOV, Minsk; JACHOWICZ, Sosnowiec; KAISER, Bonn; KEDO, Minsk; KHOLMOVAYA, Voronezh; LOBOZIAK, Lille; MEDVEDEVA, Moscow; NAZARENKO, Volgograd; OWENS, Leeds; POPONINA, Aktjubinsk; RASKATOVA, Voronezh; RICHARDSON, London; SAKHAROVA, Minsk; SCHIRINA, Minsk; SENNOVA, Uchta; SERGEEVA, Kiev; SIVERTSEVA, Leningrad; STREEL, Liège; TETRIUK, Dniepopetrovsk; UENOVA, Moscow;

After a short introduction by Dr. CHIBRIKOVA on the palynological basis for the Devonian/Carboniferous boundary in the different regions of the Soviet Union, six reports were given.

12. KEDO, G.I. (U.S.S.R.), Palynological characteristics of Tournaisian Stage and the designation of his lower boundary.
13. RASKATOVA, I.I., UENOVA, V.T., KHOLMOVAYA, R.S. (U.S.S.R.), On the Devonian/Carboniferous boundary in the Central region of the Russian platform on the basis of palynological data.
14. BYVSHEVA, T.V. (U.S.S.R.), Main steps in evolution of microflora (spores) in the transitional beds of Devonian and Carboniferous in the Volga-Ural area.
15. SENNOVA, V. (U.S.S.R.), On the age of the transitional Devonian/Carboniferous formations of the Timan-Fetchora provinces.
16. CHIBRIKOVA, E.V. (U.S.S.R.), The Devonian/Carboniferous boundary in the different structural facies zones of the South Ural and Pre Ural on the basis of Palynological data.
17. STREEL, M. (Belgium), Present state of spore zonation in the Devonian/Carboniferous transitional beds in western countries.

- A
- a. Hymenozonotriletes lepidophytus Kedo 1957, tab. II, fig. 19-21.
See also Kedo & Golubcov 1971 for further comments and plate, tab. I. (Other generic statement: Spelaeotriletes lepidophytus (Kedo) Streel in B.B.S.T. 1974).
- b. Hymenotriletes lepidophytus Kedo var. major V. Umnova 1971, fig. 3, 67.
Hymenozonotriletes lepidophytus Kedo var. cassis V. Umnova 1971, fig. 3, 66.
Hymenozonotriletes lepidophytus Kedo var. grandis Kedo 1974, plate, tab. I, fig. 3. (See also Kedo & Golubcov 1971, plate, tab. II, fig. 4).
- c. Hymenozonotriletes lepidophytus Kedo var. tener Kedo 1963, tab. V, fig. 110.
Hymenozonotriletes lepidophytus Kedo var. minor Kedo 1971.
- B
- Hymenozonotriletes lepidophytus Kedo var. suborbiculatus Kedo 1974, plate, tab. I, fig. 1.
- C
- Hymenozonotriletes lepidophytus Kedo var. macroreticulatus Kedo 1974, plate, tab. I, figs. 4, 5 (Holotype is fig. 4).
See also Kedo & Golubcov 1971, plate, tab. II, figs. 1, 2, 3.
Probable synonymous species (or var.):
Hym. aff. archaeolepidophytus Kedo 1955 in Paproth & Streel 1971, pl. 25, figs. 2, 3 (later named Spelaeotriletes sp. A. Streel in B.B.S.T. 1974, pl. 20, figs. 5, 6, 7).
Hymenozonotriletes cassiculus Higgs, in press (Micro-paleontology) (later named Spelaeotriletes cassiculus (Higgs) Higgs, in his Ph.D. unpublished (See list of synonyms and comments)).
- D
- Hymenozonotriletes lepidophytus Kedo var. admirandus Kedo 1974, plate, tab. I, fig. 2.
Probable synonymous species and other generic statement:
Endosporites ? sp. in Balme & Hassell 1962, plate 5, fig. 5.
Endosporites admirandus (Kedo) Streel in Streel 1975 (Lower Tournaisian in Belgium) in press (see list of synonyms and comments).

Participants agree that the subdivision A, B, C and D form four distinct taxonomic group but disagree on the level (species or varieties) of these taxa - A range chart of taxa Aa, Ac, C and D is tentatively made in the different western and Eastern regions and will be presented in the final report.

* G. BECKER, M.J.M. BLESS, M. STREEL & J. THOREZ in Mededeelingen Rijks Geologische Dienst, vol. 25, 2, 1974.

Most of the Russian data which were presented were coordinated in a very important joint paper by KEDO, NAZARENKO, NAUMOVA, SENNOVA, UMNova and CHIBRIKOVA: Stratigraphy of the Devonian-Carboniferous boundary deposits of the Russian Platform according to spores and other plant microfossils (in Stratigraphy and Paleontology of Precambrian and Paleozoic of the South and Pre-Ural Regions, published in 1972 by the Academy of Sciences USSR, Bashkir filial, n° 16, Ufa) as a result of Colloquium of Palynologists held in Kuybishev.

With the additional new data provided by BYVSHEVA, it is clear that two main complex of spores are widespread throughout the Russian Platform near the Devonian/Carboniferous boundary: a lower one with H. lepidophytus which is locally dated with the foram. Quasiendothyra kobeltusana and an upper one with Archaeozonotriletes malevkenensis (zone M12 KEDO) which is locally dated (?) with the forams Bisphaera. In some rather local place, there is an intermediate assemblage with abundant H. pusillites (zone M11 KEDO). Perhaps the most important new data is the recent discovery by BYVSHEVA of a zone M10 where H. explanatus, H. pusillites, H. lepidophytus, H. flexuosus, Archaeoz. famennensis coexist, a situation which is matched in Western Germany (Stockum) very near the base of the goniatite Gattendorfia zone. See ALBERTI, GROOS-UFFENORDE, STREEL, UFFENORDE, WALLISER: The stratigraphical significance of the Protognathodus fauna from Stockum (Devonian/Carboniferous boundary, Rhenish Schiefergebirge). Newsl. Stratigr. 3, 4, pp. 263-276, 1974, and also STREEL 1975 (?): Top of Pusillites-Lepidophytus zone in three sections dated with Conodonts from Western Germany, in Public. of Int. Symp. Belg. micropal. limits, Namur (1974), still in press.

All participants agree for a Devonian/Carboniferous limit to be placed near the base of the Gattendorfia zone and therefore we have preferred to focus on the identification and discussion of a few key species for joint delineation of spore concurrent range zones.

During the working sessions have been discussed the several varieties of H. lepidophytus Kedo, erected by KEDO and by UMNova, as well as the concept of H. pusillites Kedo and T. flexuosus Jusch.

We have tried to neglect the generic status of these spores focusing on the specific (or variety) level.

A more comprehensive report will be completed which separates several entities inside the lepidophytus group of forms:

TOURNAISIAN/ VISEAN.

Cc-conveners : BYVSHEVA, GUEINN (non attending), OWENS.

Wednesday 10th September 1975, afternoon (working session on Thursday 11th, afternoon).

Attendance : BURILLOVA, Perm; BUTTERWORTH, Birmingham; BYVSHEVA, Moscow; COQUEL, Lille; JACHOWICZ, Sosnowiec; KEDO, Minsk; KHOLMOVAYA, Voronezh; KRACZYNSKA-GROCHOLSKA, Poznan; LOBOZIAK, Lille; OWENS, Leeds; PETERSON, Krasnoyarsk; POFONINA, Aktjubinsk; RICHARDSON, London; SAKHAROVA, Minsk; SERGEEVA, Kiev; SILVERTSEVA, Leningrad; STREEL, Liège; TERPRIUK, Dniepopetrovsk.

Six reports were presented (18 : comments below by B. OWENS; 19, 20, 21, 22 : comments below by T.V. BYVSHEVA, translated from Russian to French; 23 : comments by B. OWENS in Namurian/Westphalian/Stephanian section).

18. GUEINN, K.G. (Great Britain), A review of the Dinantian palynology of Great Britain, published in Public. Int. Symp. Belg. Micropal. Limits. Namur, 1974, n° 10, pp. 1-13.

The report on the Dinantian palynology of Great Britain presented by Gueinn outlined the succession of concurrent microspore assemblage zones which had been established by Neves, Gueinn, Clayton et al. in Britain. It was explained that the assemblage zones spanning the Devonian/Carboniferous boundary and the lower Tournaisian were established in south-west England and South Wales whilst those for the rest of the Dinantian were established in Central Scotland. No one area is yet known to exist where the complete succession of microspore zones can be recognised. The composition of the assemblages from each zone was described and the possibilities of an overlap in the stratigraphic age of the zones from both the southern and northern areas was discussed bearing in mind the paucity of reliable stratigraphic controls in the northern area.

B. Owens commented that the absence of strict faunal controls on the sections examined by Gueinn and his colleagues now necessitated a revision of the correlation of these palynological zones with the standard sequence of corals and brachiopods. Recent evidence from work on the foraminifera has suggested a younger age for the base of the P. tessellata - S. campyloptera zones than was suggested by Neves et al. and evidence from conodonts has suggested a probably older age for the S. clavifer - A. macra zone. These changes if substantiated will imply that part of the Middle and Upper Tournaisian and much of the Viséan are occupied by beds of the L. pusilla zone. It is hoped that new borehole material will allow this proposal to be confirmed and for the Lycospora pusilla zone to be subdivided.

Hymenozonotriletes pusillites Kedo : holotype or para-types were not available for examination in Moscow but we have seen material from ml 1 in Bielorrussia, believed by KEDO to be identical to the type material. It is quite clear that most, if not all, of the specimens, belong to what we are calling Vallatisporites vallatus Hacq. and that, unlike the plate VI of KEDO 1963, figs. 130-142 could let believe, there is few, if any, trends to the "splendens group" or to the "verrucosus group". As H. pusillites Kedo has been published in the first monthly issue of the 1957 USSR Academy of Sciences Doklady, it probably has priority on V. vallatus Haquebard 1957. On another hand, Vallatisporites pusillites (Kedo) Dolby & Neves 1969 is a rather different species, unknown from most of the Russian palynologists and which has probably to be renamed. These data are transferred to the CIMP Vallatisporites working group.

Trachytriletes flexuosus Jusch. in Kedo & Golubcov 1971, tab. V, fig. 1 on New York State (Richardson) material. (Other generic statement : Rugospora flexuosa (Jusch.) Streel in B.B.S.F. 1974, plate 21, figs. 8, 9, 10, 11). Probable synonyms are Hymenozonotriletes famennensis Kedo in Neves & Dolby 1967, pl. 11, fig. 3; in Paproth & Streel 1971; in Traverse & Warg 1973, plate 1, fig. 4, etc... This species is now believed by KEDO to be better named Trachytriletes (ex. Campotriletes) radiatus (Jusch.) Kedo 1974 in a recent, important publication on the Upper Devonian spores of Bielorrussia (in "Spores of Paleozoic of Bielorrussia", Minsk, 1974). Despite the fact that it was not possible to see type material of Tr. flexuosus nor Tr. radiatus, it is evident that Russian palynologists are here considering the same taxon known as Hymenozonotriletes famennensis Kedo in many recent western papers.

I would personally like to thank our Russian colleagues for their interest and patience in particular when discussing during working sessions.

M. STREEL

19. BYVSHEVA, T.V. (U.S.S.R.), Caractéristique palynologique des dépôts tournaisiens et viséens inférieurs et moyens de la plate-forme russe.

Le schéma zonal de subdivision des couches dans la région Volga-Oural (BYVSHEVA 1971, 1974) a été, du point de vue spores, brièvement considéré. La coupe du sondage Glubovskaya (partie sud du synclinalium de Moscou) qui a été montrée à l'excursion près de Moscou, est caractérisée par des spores. Dans cette coupe, des zones palynologiques ont été observées, qui avaient été identifiées par l'auteur pour la région Volga-Oural. L'appartenance de la zone Lophozonotriletes Malevkensis au calcaire à Bisphaera et aux argiles du terrain stratotype de l'horizon de Malevski a été précisée. On a remarqué, dans cette coupe, l'absence de dépôts de Hymenozonotriletes pusillites. Le superhorizon de Malinowski du Viséen inférieur se décompose en deux zones palynologiques dans l'horizon de Radayewski. Dans l'horizon de Bobrikowski du Viséen moyen, on a remarqué l'absence, dans cette coupe, de sa zone inférieure à Euryzonotriletes literatus et E. macrodiscus.

20. BURYLOVA . . . (U.S.S.R.), Complexes de spores des étages tournaisien et viséen de l'Oural moyen.

On a analysé les complexes de dépôts tournaisiens, viséens inférieurs et moyens des pentes orientales et occidentales de l'Oural Moyen. Sur la pente occidentale, on distingue des complexes d'aspects zonaux de spores, identifiés pour la région Volga-Oural par Byvsheva T.V. Les dépôts de couches du Viséen se caractérisent par l'apparition de spores Trematozonotriletes. Les spores Trilobozonotriletes, Simozonotriletes, Euryzonotriletes se développent dans le Tournaisien supérieur. Sur le versant Est de l'Oural Moyen dominent des spores à tubercules et épines. A l'aide d'espèces-guides rencontrées en nombre limité, on a établi une corrélation approximative avec le versant ouest de l'Oural (voir travaux de Chtcherbakov et de Ananiev, Burylova, e.a.).

21. KEDO, G.I. (U.S.S.R.), Les spores des dépôts tournaisien et viséen de Biélorussie.

On a détaillé la subdivision du superhorizon de Lichvinski de la couche tournaisienne de Biélorussie :

- 1.) Les dépôts correspondant à la zone Hymenozonotriletes pusillites ont été séparés en suite de Kalinowski (ml₁).
- 2.) On a établi un horizon de Upinski correspondant à la zone Archaeozonotriletes upensis.
- 3.) Dans le Tournaisien supérieur, se dégagent sur les spores, des horizons Tcherepetski et Kizelowski. Dans les couches viséennes les dépôts depuis l'horizon de Bobrikowski jusqu'à l'horizon de Mihaïlowski inclus, se caractérisent par des spores (voir travaux de Kedo, Golubtsov & Kedo, e.a.).

22. SIVERTSEVA, . . . (U.S.S.R.), Complexe sporo-pollinique (Carbonifère) de la région plissée du Kamtchatka-Koriaks (voir travaux de Sivertseva).

En raison de la prédominance dans le complexe de spores de Verrucosiosporites, Raistrickia, de la présence de Turrisporites, Baculisporites, Nigrisporites et du pollen Florinites, l'âge des dépôts étudiés est daté comme la partie supérieure de la partie inférieure du Carbonifère moyen.

La discussion qui a suivi les exposés a montré la nécessité d'effectuer des travaux sur la corrélation des zones palynologiques du Dinantien de l'Europe Orientale et Occidentale. Une place spéciale dans ces travaux devra être réservée à la limite des couches tournaisiennes et viséennes, comme cela s'est produit au cours des dernières années pour les couches limitrophes du Dévonien et du Carbonifère.

OWENS, BYVSHEVA, BURYLOVA et COQUEL ont participé particulièrement à l'examen des préparations de GUEINN des zones palynologiques du Dinantien de Grande Bretagne.

Ils ont aussi considéré la signification stratigraphique et la morphologie de certaines spores de la Libye du Nord (COQUEL), de la plate-forme russe (BYVSHEVA) et de l'Oural (BURYLOVA).

T.V. BYVSHEVA

NAMURIAN/WESTPHALIAN/STEPHANIAN.

Co-conveners: LOBOZIAK, OWENS, TETTERIUK.

Thursday 11th September 1975.

Attendance: BUTTERWORTH, Birmingham; DIUPINA, Sverdlovs; INOSSOVA, Artemovsk; JACHOWICZ, Sosnowiec; KRAWCZYNSKA-GROCHOLSKA, Posnan; LOBOZIAK, Lille; OSCHURKOVA, Leningrad; OWENS, Leeds; PAVLA-VALLEROVA, Praha; PETERSON, Krasnojarsk; POPONINA, Adjubinsk; SHWARTSMAN, Artemovsk; TETTERIUK, Dniepopetrovsk.

Eleven reports were presented. (23 to 33: comments below by OWENS; 31: see also report by LOBOZIAK on the Westphalian working Group; 32, 33: see comments in STEPHANIAN/FERMIAN session).

23. TETTERIUK, V.K. (U.S.S.R.), Stratigraphy and palynology of Upper Visean, Namurian, Westphalian and lower Stephanian deposits of the Donetz Basin.
24. OWENS, B., NEVES, R., GUEINN, K.J., WILLIAMS, J.E. (England), and SABRY, H. (Canada), Interim report on the palynological subdivision of the Namurian deposits of Northern England and Scotland.
25. WHITAKER, M.F. & BUTTERWORTH, M.A. (England), Palynology of Arnsbergian strata in County Leitrim, Ireland.
26. KRAWCZYNSKA-GROCHOLSKA, H. (Poland), Stratigraphic and palynological investigations of Carboniferous deposits in north-western Poland.
27. OSCHURKOVA, M.V. (U.S.S.R.), Palynological characteristics of the coal bearing Carboniferous of Kazakhstan.
28. PETERSON, L.N. (U.S.S.R.), Stratigraphy and palynology of the western part of the Tunguskian Basin.
29. OWENS, B., MISHALL, D.R.F. & MARSHALL, J. (England), Krauselisporites from the Namurian deposits of Northern England.
30. OWENS, B. (England), Progress report on the C.I.M.P. working Group on Dictyotriletes.
31. JACHOWICZ, A. (Pologne); COQUEL, R. & LOBOZIAK, S. (France), Apport de la Palynologie à la Stratigraphie du Westphalien d'Europe occidentale et de Pologne.

23: The comprehensive report presented by TETTERIUK on the palynological examination of the Tournaisian-Permian succession of the Donetz Basin, represented one of the most significant reports presented. This study which was initiated in 1954 with Ischenko, has succeeded in establishing a palynological subdivision for the entire Carboniferous into 17 assemblages zones (1 in the Tournaisian, 3 in the Visean, 4 in the Namurian, 5 in the Westphalian, 3 in the Stephanian and 1 in the Permian). The proposals embodied in this scheme can be directly equated with the similar zonal schemes established elsewhere in Western Europe since the author has utilised the Potonié & Kremp system of nomenclature. This has enabled the recognition of comparable changes in the composition of microspore assemblages to be distinguished all the way across Europe as far as the Urals. Minor local differences do of course exist and these probably reflect differences in local sedimentological history and composition of parent floras. Tetteriuk has for example been able, unlike Gueinn & Owens, to recognise a change at the Visean/Namurian boundary. The Visean assemblages are characterised by forms such as Knoxisporites hageni, Grandispora spinosa, Raistrickia nigra, Crassispora maculosa, Fotoniespores delicatus and Tetraporina whilst the Namurian is characterised by the appearance of Crassispora kosankei, Cirratridites saturni, Florinites, Propriisporites laevigatus, Knoxisporites dissidius and K. carnosus. Some forms such as Rctaspora knoxi and R. fracta are known from both Visean and Namurian but occur with considerably greater frequency in the Visean.

24: In his Dinantian report, GUEINN drew attention to the lack of significant changes in the composition of the assemblages across the Visean-Namurian boundary and thereby justified the need for a transitional assemblage zone at this horizon. This point was agreed by OWENS in the report presented by Owens, Neves, Gueinn, Williams, Mishell and Sabry from sections through Namurian deposits in various parts of Northern England and Central Scotland. The overlap zone proposed by Gueinn was accepted and a series of four additional assemblage zones were proposed based on both qualitative and quantitative characteristics to span the rest of the Namurian sequence. Changes recognised at the Gastrioceras subcrenatum horizon appeared to permit a modification to the zonal scheme proposed by Smith & Butterworth (1967) for the Westphalian. A new zone was proposed for the lowermost Westphalian deposits (lenisulcata zone). GUEINN and OWENS et al. reports offered a formal scheme of palynological zonation for the Dinantian and Namurian deposits of Britain, thus complimenting the zonal scheme already recognised for the Westphalian (Smith & Butter-

- 25 : WHITTAKER & BUTTERWORTH presented a short report on the spore assemblages from coals and argillaceous deposits of Arnsbergian (E2a) age in County Leitrim, Ireland. The assemblages compare closely with those recorded by Owens 1965 from deposits of similar age in north-west England and to a lesser extent with those recorded from coals by Smith & Butterworth (1967) from West Rife, Scotland. The authors also suggested the possibilities, despite minor taxonomic difficulties, of possible correlations with the upper part of Ostrauer Beds in Silesia based on palynological data recorded by Horst (1955) and Dybova & Jachowicz (1957).
- 26 : Limited assemblages of Namurian A spores from north-west Poland were described by KRAWCZYNSKA-GROCHOLSKA. The poor quality of the assemblages and the difficulty of extraction of the spores was due to local metamorphic conditions. This investigation has enabled the differentiation of the Carboniferous deposits into a number of clearly recognisable stages. The limited evidence available allows correlations to be suggested with other regions of Poland where palynological data is more abundant.
- 27,28 : The report presented by OSCHURKOVA on the palynological characteristics of the coal bearing Carboniferous of Kazakhstan was, like the paper presented by PETERSON on the stratigraphy and palynology of the Tungusian Basin, of particular interest since they represented the only descriptions of comparable material from the Euroasian Province. Both papers demonstrated that although some similarities existed at both generic and specific levels, the composition of these assemblages with their numerous endemic species would not facilitate easy correlations with the known distribution of species in Western Europe.
- 29,30 : Two further short contributions were presented by OWENS, MISHALL & MARSHALL on the occurrence of a large zonate spore assigned to *Kraeuselisporites* from the Namurian of northern England. It is of interest to note that this group of spores appear to have a closely comparable distribution in the Donetz Basin according to data kindly supplied by Teteriuk. Finally OWENS introduced a progress report on the C.I.M.P. working group dealing with *Dictyotriletes* and other reticulate spores. Anyone wishing to participate in this work is welcome to join the working group.
- 31 : LCOBZIAK'S report on the Westphalian of Western Europe was a synthesis of data from all the published accounts of the Westphalian deposits in the region. This report highlighted the significance of a relatively small number of spore groups, some generic, some specific, whose quantitative and qualitative distribution characteristics allow for the subdivision of the Westphalian succession into a series of 7 zones. The important feature of this scheme is that it is based on spore types which occur commonly in assemblages and is not therefore dependent on the recognition of taxa which occur only infrequently as accessory spores.
- 32 : The results of a palynological investigation of the upper Westphalian, Stephanian and Autunian deposits in the Donetz Basin was presented by INOSSOVA & SHWARTSMAN. This report gave details of the distribution of over 60 spore types throughout the succession together with a quantitative assessment of their frequency. This work permits the establishment of a series of zones which appear to fit within the broad framework of the scheme proposed by Teteriuk and may also allow for finer subdivision at the local level.
- 33 : DIUPIWA presented a short report on the stratigraphy and palynology of the upper Westphalian and Stephanian deposits of the western part of the Urals. The study documented the palynological assemblages from each of the four spore-pollen complexes into which the succession can be subdivided.
- Those people fortunate enough to take part in this session agreed on the progress that had been achieved. The independently proposed zonal schemes which had been presented clearly suggest that there is considerable likelihood that a uniform zonal scheme could be developed which would be applicable to the whole of Europe.

B. OWENS

31 : Lors du Gême séminaire de la stratigraphie du Paléozoïque de la C.I.M.F. (Boussens, septembre 1973) Loboziak a présenté un projet d'étude du Westphalien d'Europe occidentale qui est publié dans la Review of Palaeobotany and Palynology, t. 18, 1974, sous le titre "Considérations palynologiques sur le Westphalien d'Europe occidentale".

Après avoir dressé un bilan des travaux palynologiques de synthèse acquis dans les principaux bassins de cette partie de l'Europe et effectué une sélection des microspores les plus significatives, l'auteur distingue, dans le Westphalien, 7 zones distinctes délimitées par des axes qui correspondent aux variations palynologiques les plus notables.

Une discussion des limites et des subdivisions du Westphalien est faite, compte tenu des données apportées. Depuis l'année dernière, aux travaux de ce Groupe de travail, se sont joints les palynologistes de Pologne et en particulier le Dr. A. Jachowicz.

Une réunion commune de travail s'est tenue en septembre 1974 à l'Institut de Géologie de Sosnowiec au cours de laquelle a été élaborée une publication à paraître dans les C.R. du Congrès de Moscou sous le titre 31.

Quatre zones palynologiques d'association sont définies dans le Westphalien entre les bassins houillers d'Europe occidentale d'une part et ceux de Pologne (Haute Silésie et Dublin) d'autre part. Des zones de transition, qui sont confrontées aux limites des étages et de subdivisions de la classification de Heerlen, constituent les termes de passage entre les zones principales.

Ce dernier travail constitue un second apport au programme proposé par le groupe de la stratigraphie du Carbonifère.

La prochaine étape sera la confrontation de ces résultats avec ceux obtenus par le Dr. Teteriuk en URSS. Les premiers contacts pour sa réalisation ont été pris au Congrès présent.

S. LOBOZIAK

STEPHANIAN/LOWER PERMIAN*

Co-conveners : DOUBINGER, FADDEVA, YAROSHENKO.

Tuesday 5th September 1975 : (Working session on Wednesday 10th and Thursday 11th).

Attendance : DOUBINGER, Strasbourg; DIBNER, Leningrad; DIUPINA, Sverdlovsk; EFREMOVA, Moscow; FADDEVA, Leningrad; GORMANKOV, Moscow; GREBE, Krefeld; KALIBOVA-KAISEROVA, Praha; KUINTZEL, Moscow; LUBER, Leningrad; FLANDEROVA, Bratislava; POSEMOVA, Moscow; SHWARTSMAN, Artemovsk; YAROSHENKO, Moscow.

Cinq exposés ont été entendus :

32. INOSSOVA, K.I. & SHWARTSMAN, E.G. (U.S.S.R.),

Particularités des variations des complexes spore-polliniques à la limite du Carbonifère supérieur et du Permien inférieur dans le bassin du Donetz.

33. DIUPINA, I.V. (U.S.S.R.), Les variations des complexes de microspores dans les dépôts du Carbonifère supérieur et du Permien inférieur de l'Oural moyen.

34. FADDEVA, I.Z. (U.S.S.R.), Les principales limites dans les variations des complexes permien de microspores dans les stratotypes de l'Oural.

35. DOUBINGER, J. (France), Zonations palynologiques dans l'Autunien.

36. DIBNER, A.K. (U.S.S.R.), Les Palynozones des flores du Permien récent dans la région de la montagne Prince Charles de l'Antarctique oriental.

A la suite des discussions des exposés et de l'examen des diapositives, des préparations microscopiques et des graphiques annexes, les propositions suivantes ont été retenues :

1.- Dans les terrains à stratotypes de l'Oural, plusieurs limites sont proposées sur la base de la variation des complexes successifs de microphytofossiles :

a) A la base de l'étage assélien (zone inférieure de l'horizon à Schwagerina), a lieu la substitution des complexes contenant une grande quantité de spores d'âge carbonifère (Convolutispora sp., Knovisporites sp., Verrucosisporites sp., Cadiospora sp. et autres) par des complexes à prédominance de grains de pollen du type Kotonieisporites, Florinites, Cordaitina, Disaccites spp., Striatosaccites spp., Vittatina.

* Par suite de l'absence de spécialistes occidentaux, la session prévue sur le thème Permio-Trias n'a pu avoir lieu.

b) Plus haut dans la coupe du Permien, des changements importants sont observés en haut de l'étage d'Artinsk dans l'Oural et dans les terrains de la région de Kazan.

2.- La comparaison des complexes de microspores provenant de régions géographiques différentes montre les faits suivants :

- a) Des affinités nettes entre les complexes de microspores du "Stéphanien D" de France et ceux du Bassin du Donetz (couches P5-Q7) et ceux de la partie supérieure de l'étage de GZHEL dans l'Oural.
- b) La limite correspondant à des changements importants des complexes de microspores dans les terrains de l'étage assélien de l'Oural (zone inférieure de l'horizon à Schwagerina) peut être observée dans le haut de la suite de Kartamysh (couches Q7-Q8) du Bassin du Donetz et à la base de l'assise de Muse, dans l'Autunien de France. Parmi les principaux types de microspores de cette partie de la coupe il faut citer : Potoniesporites spp., Potoniesporites novicus BHARWAJ, Vittatina costabilis Wilson, Striatopodocarpites spp., S. emendatus Inosova, Spinosisporites spinosus Naumova, Complexites sp., Gardenasporites sp., Florinites spp., Wilsonites sp., Protobaploxylinus sp., Cordaitina sp., etc.

3.- La composition des complexes du Permien tardif montre certaines similitudes avec ceux des stratotypes de l'Oural.

4.- L'analyse des associations très riches provenant des dépôts de la formation d'Eimeri (Prince Charles) a permis de déterminer avec précision les différentes espèces. Leur étude a montré la diversité de la palynoflore des suites de REDOK, BAIMEJAR et LEGSTROM. Ces complexes ont été comparés avec ceux des dépôts de la formation EMERI de l'Antarctique oriental et du Permien supérieur de l'Inde, de l'Afrique et de l'Australie.

5.- La définition d'espèces guides de microspores pour le Permien, très souhaitable pour permettre des corrélations précises, n'a pas encore pu être réalisée. Elle peut cependant être envisagée sur la base d'échanges de photographies et de matériel. Les comparaisons actuelles ont été basées surtout sur les variations de la fréquence relative de groupes plus larges : Monosaccates, Striatosaccites, Disaccites, Vittatina.

Mais d'une région à l'autre on enregistre des variations de détail dans ces fréquences relatives, variations qui sont peut-être liées aux faciès.

J. DOUBINGER, I.Z. FADDEVA

THE C.I.M.P. AND PERMIAN - TRIASSIC STRATIGRAPHY, a report prepared for the Moscow Congress but not delivered.

At present Permian and Triassic stratigraphy is in a period of unrest - a very healthy unrest as we feel - and as a result of recent trends in biostratigraphical work traditional stratigraphical concepts are undergoing almost revolutionary changes. However, current concepts of regional correlation and classification are still frequently a mixture of the traditional, essentially lithostratigraphically founded concepts and more advanced biostratigraphical approaches. Moreover, current concepts are highly controversial. Even for a relatively small and well-studied area such as western Europe, no system of correlation and classification can be proposed that will fit all regions and satisfy all authorities.

In the last decade palynology has become an indispensable method to obtain a wealth of biostratigraphical information with regard to the many otherwise unfossiliferous Permian and Triassic sequences throughout the world. Thus palynology could well be regarded as one of the most interesting and rewarding methods of research in fundamentally re-evaluating the existing stratigraphical concepts.

However, with regard to the vast range of regional problems within the Permian and Triassic, palynology cannot yet be regarded as operational on a routine basis. At present no two long-range correlation charts drawn up by any two authorities on Permian or Triassic palynology would agree in all respects as to palynological taxonomy, biostratigraphical zonation and chronostratigraphical interpretation. Permian and Triassic palynology is still in a phase of development and will need continuous cooperative efforts to reach the required degree of reliability and accuracy.

The fundamental importance of Permian and Triassic palynology was recognized by the C.I.M.P. and at an Executive Committee meeting during the 1971 Carboniferous Congress at Krefeld it was decided that this organization should actively promote collective palynological research in the Permian and also - despite the Palaeozoic association of the C.I.M.P. - in the Triassic.

A symposium was therefore planned, in order to assess the general state of progress in Permian and Triassic palynology as well as to identify areas of investigation which might benefit from cooperative investigations of the sort which C.I.M.P. working groups have been able to contribute to the stratigraphy of other systems. This meeting was held in 1973 at Bousens, France. The papers presented have been assembled in a special issue of the Review of Palaeobotany and Palynology (vol. 17, 1/2, 1974).

The Permian - Triassic symposium was successful in that it clearly demonstrated the present impact of palynology on Permian and Triassic stratigraphy in western and central Europe. It also showed, however, that there exist as many different chronostratigraphical interpretations of palynological data as there are individuals or local teams working independently at the various centres of Permian and Triassic research.

An analysis of the controversies clearly showed the existence of four major stratigraphical problem areas taxing the abilities of the palynologists. These are:

1. The regional evaluation of the Lower Permian of western and central Europe, including an analysis of its position relative to the Upper Carboniferous as well as to the "type"-Permian in the U.S.S.R.
2. The regional evaluation of the Upper Permian of western and central Europe, including an analysis of its relative position to the Lower Triassic as well as to the "type"-Permian in the U.S.S.R.
3. The regional evaluation of the Permian and Triassic in the Alpine-Mediterranean part of Europe, including an analysis of the classic Alpine "standard" units of Triassic chronostratigraphy.
4. An extension of the research in the Germanic Triassic, with a concomitant re-evaluation of the presently available data in terms of a regional "standard" zonation.

It was decided during the Bousens symposium to consider the creation of C.I.M.P. working groups covering these areas of investigation. Although formal working groups have not yet been established, exchange of thoughts as well as material between individual workers has considerably increased after the symposium. Because of the traditional importance of sequences in the U.S.S.R. with regard to regional Permian chronostratigraphy it is hoped that the present meeting in Moscow may provide the basis for full cooperation and participation of Soviet palynologists in the C.I.M.P. working groups.

Next to the active promotion of purely palynological investigations, the C.I.M.P. strongly believes in international multidisciplinary approaches to stratigraphical problems rather than in unidisciplinary attempts. Palynology constitutes a relatively new tool in Permian and Triassic chronostratigraphy which certainly cannot fully replace the more conventional stratigraphical methods. Therefore, whatever the aspirations of palynologists in rationalizing Permian and Triassic stratigraphy, it is not enough to focus their attention to spores and pollen grains alone when they need information on regional problems of correlation and classification.

On the other hand, the importance of the development and promotion of palynology ought to be duly recognized not only in the world of exploration geology. In

this respect it is encouraging to note the positive attitude to palynology of the newly established I.U.G.S. Subcommissions on Permian and Triassic Stratigraphy, enabling the development of international correlation and classification projects in which the work of C.I.M.P. members may become integrated.

We believe that the first fundamental task of these subcommissions is to formulate the problems of correlation and classification rather than to immediately initiate an undoubtedly violent and endless discussion about the establishment of a world-wide applicable series of well-defined "standard" stages.

Since the first meeting of the Subcommission on Permian Stratigraphy is held during the present Congress, the initial discussions will be mainly restricted to the Lower Permian as well as the Carboniferous - Permian boundary problem. It is anticipated that the work of Soviet and West-European palynologists will be of primary importance with regard to a clear formulation of the problems related to the regional recognition of Late Carboniferous and Early Permian successions in Europe.

The Subcommission on Triassic Stratigraphy will meet in October, 1975 in Vienna. The discussion will be mainly restricted to formulating the problems related to the recognition of Middle- and late Triassic chronostratigraphical units in the Alpine realm. A number of C.I.M.P. members are presently engaged in the study of Alpine sequences and it is known that non-palynologists are looking forward to hearing the palynologist's view on the possibilities and limitations with regard to the establishment of a realistic chronostratigraphical subdivision of the Middle- and Upper Triassic.

In general, it can be concluded that after the 1971 Carboniferous Congress at Krefeld, the collaboration between Permian and Triassic palynologists representing academic, government or commercial interests has considerably increased. In addition, there now seems to be a firm basis for a coordination of palynological work with any similar studies employing other stratigraphical groups.

It is hoped that the present meetings of the C.I.M.P. and the Subcommission on Permian Stratigraphy will substantially contribute towards a modern and carefully devised concept of practical classification and correlation of Permian and Triassic rocks.

INTERNATIONAL COMMISSION FOR PALYNOLOGY

From the I C P General Circular No 7 we have selected in the points 3,4,5 and 8 the following data which could concern C I M P activities.

Members interested in obtaining a copy of the I C P General Circular No 7 should write to the C I M P Secretary.

3. Reports of Working Group Activities.

A2. 'Phylogenetic significance of exine ultra-structure of ferns, gymnosperms, and angiosperms'.

In view of the evidence of the diversity of ultrastructure - alveolar and granular for gymnosperms, and granular, columellar etc. for angiosperms, Mme van Campo considers that a Group working on the ontogeny of these structures should lead the work of Group A2, and she therefore has proposed that Professor J. Rowley should take responsibility for Group A2, which would become 'Ontogeny of sporoderm ultra-structures and their phylogenetic significance'.

A4. 'Terminology of pollen grains and spores'.

The Working Group on Terminology now has about 40 members from 22 countries. Two circulars have so far been distributed among the various members. A set of terms with their definitions have been considered for general approval. The basic terms selected for discussion concern apertures, pollen and spore wall, and shape, polarity, symmetry etc. Electron micrographs have been circulated. Members are required to send photographs suggestions of terms, etc., from their special fields of research for further discussion within the Group.

A third circular is being prepared for distribution later this Spring. The terms and definitions earlier included will then be compiled for final approval and reconsidered when there is diversity of opinion. New terms will be presented. Terms that are eventually unanimously agreed upon will be recommended at the next Palynological Conference in Lucknow. Working Group meetings will be recommended at arranged in connexion with the Botanical Congress in Leningrad (3 - 10 July 1975) and the assembly of the APLP in Paris, (6 - 10 October 1975).

S. Nilsson,
Convener

P1. 'Diagenesis of Miospores and Methods of Palynological Preparation'.

A steering committee which was set up at the Cambridge meeting met on 23 December 1974 at the BP Research Centre, Sunbury, and agreed upon a provisional study programme using a variety of techniques on drill cores material from the Steeple Ashton Bore, supplied by the Institute of Geological Sciences. This will permit comparison of various techniques for measuring carbonization of spores and pollen from identical material.

J. Brooks, S. Sengupta,
Convener Secretary.

4. Constitution. A final draft Constitution is now being prepared, based on the replies to questionnaires returned by Regional/National Societies.

5. Fourth International Palynological Conference. Dr. D.C. Bharadway (Chairman of the Organising Committee) tells us that preparations are going well and that the Second Circular (with excursion and other information with costs) will be issued in September 1975.

C.I.M.P.PROPOSALS OF OFFICERS 1975

to be returned to B. OWENS
Institute of Geological Sciences
Ring Road Halton, LEEDS 15 (G.B.)
before Christmas 1975

Replacement of CIMP officers,

a call for candidates

Retirement of Dr. B. ALPERN from his position of CIMP President is the opportunity for the Executive Committee to organise a new procedure for a periodic replacement of President and Secretary General.

Both jobs would run four (4) years with only one possibility to be reelected. To ensure continuity in the administration, a Deputy Secretary General should be appointed, two years before the take-over of office takes place.

Postal ballot will be organised amongst CIMP members, in good standing, that is member, who have received this Newsletter.

Please comment on this procedure by writing to Dr. B. OWENS.

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As President and Secretary General were elected in the Krefeld General Assembly in 1971, both jobs are now available and a call for candidates is made here. The executive Committee recommends that Candidates should have experience of the CIMP affairs and should be able to attend most of the planned meetings. (See page 8).

Candidate has to be proposed by 3 members from different institutions using the following form.

C.I.M.P.

PROPOSALS OF OFFICERS 1975.

I propose
for President

I propose
for Secretary General

NAME :

ADDRESS :

to be returned to B. OWENS,
before Christmas 1975.