



IOP NEWSLETTER 43

DECEMBER 1990

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PLEASE MAIL NEWS AND CORRESPONDENCE TO
YOUR REGIONAL REPRESENTATIVE OR TO THE
SECRETARY FOR THE NEXT NEWSLETTER 44.

The views expressed in the newsletter are those of its corre-
spondents and do not necessarily reflect the policy of IOP.

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IOP LOGO COMPETITION

In IOP 41 a challenge was issued to identify the fossil plant upon which the new logo is based. No correct answers have been received and so no prizes will be awarded. That's just as well because the proposed IOP T-shirts have not yet been produced even though a special version of the logo has been designed for them. The logo is taken from *Lehrbuch der Paläobotanik* by W. Gothan & H. Weyland 1964 page 276 and illustrates *Odontopteris minor* Rekonstruktion eines Gesamtwedels aus dem Becken von Blanzky (Nach Zeiller).

PROCEEDINGS OF THE 3RD IOP CONFERENCE, MELBOURNE 1988

This 134 page volume has recently been published and contains 23 articles based on presentations at the meeting. Six of these concern the origins of the Austral Flora and others are about different aspects of Gondwanan palaeobotany. Fossil plants from Scotland and Japan are included in this as two additional contributions.

Copies are available from the editors, J.G. Douglas, 42 Sunhill Road, Mount Waverley 3149 and D.C. Christophel, Botany Department, University of Adelaide, GPO Box 498, Adelaide 5001.

NAMES IN CURRENT USE

Many members have been helping to assess lists of genera for this project (the details of which have been outlined in IOP newsletters 37, 40 and 42). We are currently incorporating the assessments into our files ready to be sent back to the Smithsonian Institution in Washington at the end of 1990. I would like to thank all of those who have given time to the project. There will be further news of this and the PFR project in subsequent newsletters.

Phillip Holmes, London, UK.

MEYEN'S CATALOGUE OF PLANT FOSSIL GENERA

This booklet is published as IOP Circular 9 and will soon be available from your Regional Representative. Its author is S.V. Meyen who was a Vice-President of IOP until his death in 1988.

Then the catalogue was nearly complete but more work has been done to add missing names and to make revisions. It is intended to contain all genera introduced up to 1987 for higher plant macrofossils as well as for some lower plants which traditionally are studied together with the higher ones (e.g. *Adelophyton*). The names established for dispersed miospores, megaspores and the majority of lower plants (i.e. bacteria, cyanobacteria, fungi, algae and lichens) are not included. It contains about 5,000 generic names.

The catalogue consists of three parts. The first one is an alphabetic list of generic names. In order to keep the

bibliography as short as possible those names which are contained in the well-known Indices by Andrews (1970), Blazer (1975) and Watt (1982) are referenced only to these Indices (in the form of capital letters: A - Andrews, B - Blazer, W - Watt). For genera not included in these three publications the authors' surnames and date of publication are appended.

Each generic name is annotated with a code corresponding to its position in the natural and formal systems of classification. Codes of the formal system begin with "F", codes of the natural system with "N." The natural system adopted in the catalogue is taken from Meyen's text-book "Fundamentals of Palaeobotany" (1987). The formal system of fossil plants was developed by Meyen specially for this present catalogue. Its taxa are definite morphological types of organs which are not, generally speaking, connected with the position of plants in the natural system of classification.

Keys for deciphering the formal and natural codes are given at the beginning of the Catalogue. Many fossil plants are separate and distinct organs and for these the formal code is not quoted. Conversely the natural codes are not quoted when proof is lacking.

S.V. Meyen (1987) introduced the concept of the satellite genus. This is a genus which is not compulsorily incorporated into a taxon of higher rank but is "added" to it i.e. mentioned constantly together with other genera of this taxon to give extra information. In most cases there are special natural codes for the satellite genera of the higher taxa. In the case of the absence of such a special code the natural code of the corresponding higher taxon is awarded to a satellite genus.

In the first part of the catalogue the natural codes are cited after the formal ones, if they exist. If the natural code cannot be awarded to a genus a dash ("-") is put after its formal code (or codes).

The second and third parts of the catalogue are lists of the same generic names but distributed to the subdivisions of the formal and natural systems respectively, corresponding to the codes ascribed to these names. Inside each subdivision, generic names are listed in alphabetical order, but without any reference as all the necessary information can be obtained from the first part of the catalogue.

NEWS OF FORTHCOMING MEETINGS

ORGANISATION FRANCAISE DE PALÉOBOTANIQUE, PARIS, MAY 30-31 1991

The OFP is holding a palaeobotanical meeting in Paris. A field trip is planned for the afternoon of May 30th and will include a visit to some outcrops to the north west of Paris. The second day will include lectures and posters in the Palaeontology amphitheatre of the Musée d'Histoire Naturelle and may consider any aspect of palaeobotany.

150FF pays for a volume of abstracts and lunch at the museum restaurant. The field trip will cost extra money, depending on the number of participants.

Write to Dr J.C. Koeniguer, Laboratoire de Paléobotanique et Palynologie évolutives, Université de Paris VI, 12 rue Cuvier, 75005 Paris, France.

PAN-EUROPEAN PALAEOBOTANICAL CONFERENCE, VIENNA, SEPTEMBER 19-23 1991

This Conference will give European palaeobotanists a chance to meet for the first time after the big political changes of the last year. The idea of forming a European section of IOP will be considered in detail. The organisation of a European palaeobotanical bibliography will be considered. There will be three days of scientific lectures dealing with vegetational development in Europe through the Palaeozoic, Mesozoic and Cenozoic and the meeting will end with two days of excursions. The second circular will be distributed in December 1990 and will be available from Dr Johanna Eder-Kovar, Naturhistorisches Museum Wien, Geol.-Paläont. Abt., Burggring 7, A-1014 Vienna, Austria.

PALAEOFLORESTIC AND PALAEOCLIMATIC CHANGES IN CRETACEOUS AND TERTIARY TIMES, BRATISLAVA, SEPTEMBER 1 - 7TH 1992.

To avoid clashes of dates with other meetings this conference will now take place from September 1st to 7th, 1992.

8TH INTERNATIONAL PALYNOLOGICAL CONGRESS, AIX-EN-PROVENCE, FRANCE, SEPTEMBER 6 - 12TH 1992.

The First Circular for this Congress was issued earlier this year and outlines the scientific programme and excursions. Write to Jean-Pierre Suc, Laboratoire de Palynologie (case 061), Université de Montpellier II, F-34095 Montpellier cedex 5, France.

XV INTERNATIONAL BOTANICAL CONGRESS, TOKYO, AUGUST 28 - SEPTEMBER 3, 1993.

The First Circular of the XV IBC is now available from International Communications Inc., Kasho Building 2F, 2-14-9 Nihombashi, Chuo-ku, Tokyo 103, Japan.

The scientific programme is to be split into eight Divisions, two of which are relevant to palaeobotany: 1 Systematics & Evolution and 6 Ecology & Environmental Botany. The convenors are Shoichi Kawano and Tadaki Hirose respectively, whilst for palaeobotanists a useful contact is Prof Dr Tatsuaki Kimura, Director of the Institute of Natural History, 24-14-3 Takada, Toshima-ku, Tokyo 171, Japan.

The nomenclature session is from 23 - 27 August and excursions are planned both before and after the

main sessions. As well as these there will be workshops and round-table discussions on a variety of topics yet to be announced. The Congress will be held at the Congress Center of Pacifico, Yokohama.

The first circular estimates that accommodation costs will range from 5,500 - 20,000Y for single rooms and 8,800 - 35,000Y for double, though a few hostel rooms may be available. On November 26th 1990 £1 = 249Y or US\$1.95 - so 500Y are about equal to \$1

REPORTS OF RECENT MEETINGS

TAGUNG DES ARBEITSKREISES FÜR PALAEOBOTANIK UND PALYNOLOGIE, MUNSTER, GERMANY, JUNE 1990

The tumultuous events in eastern Europe last autumn have also brought welcomed changes to the German-speaking Arbeitskreis für Paläobotanik und Palynologie. For the first time in over 40 years, participants of the APP annual meeting included palaeobotanists from eastern Germany and Czechoslovakia. Although little was said, much joy was felt at the reunification of the palaeobotanical community in central Europe.

As it was, this year's meeting took on more of an international flavour. Coupled with the annual meeting of the Arbeitskreis was an International Workshop for Devonian Palaeobotany. Paleobotanists and palynologists, numbering about 45 in all, came from Asia (P.R.China), North America (Canada, USA), as well as from western and eastern Europe (Czechoslovakia, France, Germany, Great Britain, Holland). Many of the participants came directly from the International Symposium in Palaeobotany in Frankfurt held at the Senckenberg Museum which commemorated the 100th birthday of the German palaeobotanist, Richard Kraeusel.

The APP meeting/Devonian Workshop took place in Munster, a university town in Westphalia, northwestern Germany, 1st-3rd June 1990. Although the APP met in Munster only four years ago, the proximity to Frankfurt (so that palaeobotanists could attend both meetings), the retirement of Professor Winfried Remy (possibly the last chance to admire his palaeobotanical bungalow beautifully adorned with fossil plants), and the extensive collection of Devonian plants in Munster led to the choice of this year's site. Most of the presentations were held at the Forschungsstelle für Palaeobotanik ("Research Unit of Palaeobotany"), part of the Geological-Palaeontological Institute of the Westfälische Wilhelms-Universität of Munster. The one day of APP talks, the two days of Devonian workshop, and two field trips were graciously hosted by Winfried Remy, Stephan Schultka, Hagen Hass, and the support staff at the Forschungsstelle.

After a warm welcome from Prof. Remy, the meeting opened with two thought-provoking papers on the cuticular analysis of "enigmatic" Devonian plants from Patricia Gensel and N.J. Johnson and on the first record of a zosterophyll in the Rhynie Chert from A.G. Lyon and Dianne Edwards. The meeting participants were then

given the choice between two concurrent sessions: the APP presentations or the Devonian workshop.

APP Presentations

The session opened with reflections on the physical and structural constraints on the morphology of early land plants (Volker Mosbrugger). The following talk reported on the redating of orogenic phases in the Carboniferous of central Germany using fossil plants (Aribert Kampe). The next two presentations centred on Jurassic plants in Germany, one with mostly leaf megafossils from the Upper Jurassic just north of Munster (Stephan Schultka) and the other with wood from various German localities (Wolfgang R. Mueller-Stoll). The Cretaceous was the subject of the next two talks; Walter Riegel summarised palaeogeographical developments and climates in the Cretaceous, while Volker Wilde presented aspects of floral development. Moving slightly into younger rocks, Norman Frederiksen discussed rates of floral turnover and development in the Late Cretaceous and Tertiary. Our attention was then turned to specific plant groups with papers given on the cladistic analysis and classification of post-Palaeozoic charophytes (Michael Schudack and Carles Martin-Closas), the development of Fagaceae in the Tertiary of central Europe (Harald Walther), and the history of pines in Europe (Dieter Mai).

To avoid overlapping with next year's Pan-European Conference in Vienna, the next official meeting of the APP is tentatively scheduled to be held the year after, in spring 1992, in the university town of Goettingen in central Germany. Those interested in attending the Goettingen meeting or in membership in the newly reorganized APP should contact Prof. Dr Schweitzer, University of Bonn, Institute of Paleontology, Nussallee 8, D-5300 Bonn 1, Germany.

CTG

Workshop on Rhynie Chert gametophytes and sporophytes

Two sessions were held, one on Friday and one on Sunday. Several attendees spent most of these days examining posters and prepared slides of the Rhynie Chert. On Friday, Prof. Remy and Herr Hass made available preparations of several gametophytes and answered questions. Many aspects of three different gametophytes were shown, including sperm exuding from antheridia, probable archegonia, epidermal cell structure (including stomata), possible shoot apices of *Aglaophyton* (one covered with rhizoids), and wall patterns in conducting cells. These preparations all came from one block and their position relative to one another is known. Careful examination of epidermal and conducting cell patterns have led to the suggestion of gametophyte-sporophyte links, such as the distinctive glands in the epidermis of *Langiophyton* resembling those on axes and sporangia of *Homeophyton*. The day ended with a general discussion of the observations, where it was agreed that the evidence certainly supported the existence of several gametophytes with a similar morphologic construction (the *Lyonophyton* type), which seem so far to be unisexual. The possible links to sporophytes are

compelling. We puzzled as to why only unisexual gametophytes have been found, on how the sporophytes were supported, and on how to interpret the wall patterns of conducting cells (artifact of preservational, product of fungal attack, etc). The preparations are exquisite and the detailed evidence impressive, and the workshop was quite a learning experience for all who attended.

On Sunday, preparations of sporophyte remains from the Rhynie Chert were made available for study. New evidence on the epidermal wall structure (cell shape, presence or absence of glands as in *Horneophyton*, stomata) were observed, new information on the sporangial morphology of *Nothia*, changes in size and degree of lobing of the stele of *Asteroxylon*, meristematic regions of *Homeophyton* rhizomes, and many aspects of these plants were illustrated with the original preparations. Thus far, there is no obvious dehiscence structure. Again, how to interpret wall patterns of conducting cells is difficult and seems rather important relative to our understanding of which plants are truly vascular and the question of whether unornamented or differently patterned conducting cells are homologous with "true" tracheids. Publication of this information will improve our understanding of the morphology and structure of the Rhynie Chert plants and greatly alter our concept of the Rhynie flora and of several taxa originally included in the subdivision Rhyniophytina but now best considered as either rhyniophytoid, or of uncertain status in regard to higher taxonomic rank.

Excursion to the continental Lower Devonian of the Rhenish Schiefergebirge

The field trip, conducted by Prof. Remy and Dr Schultka, demonstrated both sedimentary environments and plant fossils, some of the latter being in situ, of Siegenian and Emsian continental-derived sediments. After a wet beginning, we arrived at the first stop just as the rain began to let up, and examined an Emsian sequence near a railroad line which is in part equivalent to the Remscheidschichten. While the latter represents a lagoon, the plant-bearing sequence (the Wiebelsaat Sandstone) is considered terrestrial. It is interspersed with tuffites which are important in the dating of the sediments. In the lower levels of this sequence, numerous slender axes occur, some with circinate tips. Also a region interpreted as representing a rooting horizon was demonstrated. Higher up, we found long axes exceeding a centimetre in diameter and associated sporangia. General size and morphology of these remains is similar to that of *Perica* and *Trimerophyton* from equivalent strata in Canada; collectively these represent some of the largest aerial portions of plants found in the Lower Devonian, although it is known that axes of *Drepanophycus* can exceed 4 cm. It was shown that as one proceeds higher in the sequence, it becomes progressively more marine.

The next stop was at Stone Quarry Kleu near Hoven which exposes upper Siegenian rocks indicative of a low-lying floodplain environment near a sea. Some layers are poorly bedded, some are bioturbated silt or fine sandstone followed by clay layers. Several types of fossils indicative of brackish conditions have been found. The lower part of the sequence was of special interest in

exhibiting a horizon containing abundant *Sciadophyton* in situ. After photographing the carefully prepared exposure, everyone obtained their own specimens of *Sciadophyton* (the rosette region bearing ascending, presumed sporophytic axes which traverse the bedding plane). Higher in the sequence plant remains referable to *Drepanophycus* and *Taeniocrada* were quite abundant, occurring in a fine-grained shale. Some parallel-aligned smooth axes might represent a new genus rather similar to *Stockmansella* described by Fairon-Demaret.

We stopped next for an excellent lunch, provided by our leaders, and then continued on to examine more upper Siegenian sediments. At an impressively large quarry near Odenspiel (Quarry Jaeger), we again examined a sequence of mostly fine-grained, very micaceous sandstones laterally equivalent to the Wahnbach Sandstone. Fish, eurypterids, and plants occur at several levels. Here too are possible root horizons, or alternatively a case of rapid sedimentation, indicated by a 20-30 cm thick sediment in which axes traverse the bedding planes. We also found large fish plates and a surface exposure of a plant consisting of very tiny smooth axes.

The last stop of the day (by now the sun was shining) was at the Westerberger Quarry near Wenden, also of upper Siegenian age, in which a section showed a generally fining-upwards sequence of sandstones and shales of fluvial origin (perhaps a braided river). Again upright axes are found in place in some layers. Mussels and eurypterids are common in some beds. We also located some blocks containing stems and fertile regions of a *Zosterophyllum* (possibly a new species) and happily split rocks to obtain some fine specimens for teaching. We then returned to Münster for a clean-up and a fine dinner at one of the older restaurants in town. Prof. Remy and Dr Schultka are to be complimented on the careful organisation and preparation of the outcrops that contributed to a productive and successful tour of this part of the German Lower Devonian. Many similarities as well as differences were noted between these sequences and the plants they contain, and those of other parts of Europe and North America. For example, sedimentary environments seem similar to other regions, but the sediments apparently underwent greater post-depositional alteration than, for example, many of the sequences in New Brunswick or Gaspé, while the horizons with vertically ascending axes are thicker than those in Wales. Taxa at the generic level are generally similar to those found in other Lower Devonian deposits, but species may differ and some unique types occur in each of the regions mentioned.

PGG

Excursion to Wealden of Northwest Germany

The excursion (12 persons) to the Wealden of Northwest Germany under the guidance of Dr V. Wilde was mainly as an introduction into geology and deposition of the various beds, and not so much as an opportunity to collect Wealden plant material.

The first locality, a road-cut near Bueckeburg, demonstrated a series of clays and slates-- with snails, ostracods and bivalves (Neomiodonts)-- alternating with small coal seams. In some concrete blocks, the Neomiodonts were

preserved in three dimensions. Rhizome material of *Equisetites hyelli* was also found.

The second locality (in reality, several localities close to one another) was near the top of the "Harri", also in the neighbourhood of Bueckeburg. The sequence of the "Hauptsandstein" (main sandstone) and of the "Hauptfloe" (main coal seam) below it, was clearly shown. The coal seam was only about 10 cm thick at the locality, but had been up to 1 m thick in other places and in the past has been mined. At two localities, several specimens of *Baiera* and a few fern fragments (*Matonidium* sp.?) were collected.

After a picnic lunch near the last locality and a cup of coffee in a cafe further on to get dry and warm again, we went to the Rehburg "mountains", where we first had a look at a large number of dinosaur footprints. The next locality showed us a coal layer and several layers with rhizomes (*Equisetites burchardti*) below it. The last locality (on the NW slope of the Deister) was not visited because of the shortage of time.

Despite the rain, it was an interesting excursion during which Dr Wilde demonstrated to us with great enthusiasm the processes of deposition during the Wealden.

JHAvKvC

CAROLE T. GEE, Bonn, West Germany

PATRICIA G. GENSEL, Chapel Hill, North Carolina, USA

JOHANNA H.A. VAN KONIJNENBURGH-VAN CITTERT, Utrecht, The Netherlands

CHINESE NATIONAL SYMPOSIUM ON THE GIGANTOPTERIS FLORA, DALIAN, CHINA, SEPTEMBER 1990

This symposium was sponsored by the Palaeobotanical Society of China and was organised by Xiuhu Zhao, Haomin Li and Ge Sun of the Nanjing Institute of Geology and Palaeontology. 84 people attended from universities, colleges, coal and geology offices and institutes of the Academia Sinica.

After the opening speech by Xingxue Li, the chairman of the society, there were several lectures. Li reported on the palaeobotanical prospects and research topics in China for the future. Zhiyan Zhou reported on the International Symposium of Palaeobotany at Frankfurt on the NCU and PFR projects. He and his colleagues will soon provide the generic names of plant fossils published in China before 1990. Baoling Tian et al spoke on the systematic position of the gigantopterids and Jiarong Mi described Early Carboniferous fossil plants from Liaoning. Tian thinks that gigantopterids are a highly specialised group of advanced pteridosperms though they may be a heterogeneous group including different Classes or even Orders.

Seven lectures were given within the *Gigantopteris* Flora workshop. The next day about 30 lectures were given on anatomy, cuticular morphology, palaeoecology, palaeoclimatology and palaeogeography

of floras from the Palaeozoic to the Quaternary. Geological events at the boundary of the Palaeozoic and Mesozoic were specially considered.

After the lectures several participants explored the coastal topography and marine sedimentology of the Sinian stromatolites in the outskirts of Dalian.

YUSHENG LIU, Nanjing, China.

PALAEOBOTANY ON INDIAN TELEVISION

Manju Banerjee and others in the Department of Botany at the University of Calcutta have recently made some programmes on plant fossils for national television. School and college students have already responded by asking for good cheap books about plant fossils.

The five programmes were organised through the University Grants Commission and last from 15 to 25 minutes. Their titles are: Nature's own Museum; a study of Nature's Museum; the evolution from algae to angiosperms; biosphere of the past; the moving biospheres of the moving continents.

NEWS OF INDIVIDUALS

M.N. BOSE has been working in Oslo, Norway, for the last few years and has had a very fruitful stay. His studies of large samples of sediment from Spitsbergen have revealed several interesting palaeontological discoveries, ranging from conifer leaves to leech cocoons. He has also been elected a member of the Novska Videnskaps Akademi, the Norwegian Academy of Sciences.

His address in India is: B-965 Sector A, Mahanagar, Lucknow 226 006.

OBITUARIES

FREDERICK MAURICE WONNACOTT 1902-1990

Much of what is recorded below is a medley of the life of Maurice Wonnacott and 'paleobotanical life' in general at the British Museum of Natural History in South Kensington during the approximate period of 1917-1970. The two are too closely intertwined to be dealt with separately. Wonnacott's own publications (the quantity of which we all too often use to judge a man's importance) are few in number but his service to paleobotany was enormous. His contributions seem to fall into four categories, somewhat distinct yet interwoven: he helped to build and care for the great collections of fossil plants that are housed in the Museum; he spent a good

deal of time in the field, especially Yorkshire and in Spain; he devoted a great deal of time to editing a large number and wide variety of museum publications, and, I think especially important was his service as a knowledgeable, efficient and cordial host to the many paleobotanists who came to the museum from many countries.

This summary is based largely on my own memory, some 50 years of correspondence with Maurice, a brief bio-sketch of himself that he gave me some years ago, and a few notes on his early life which I received very recently from his wife Constance. His life was a long and productive one and although he retired officially in 1967 he continued for several years with part-time service to the Museum. There is, however, a considerable time lapse to the date of his death - 7th September 1990. Thus many or most of the younger paleobotanists today never met him or may not even know the name. Yet, at least indirectly, all have benefitted from his devotion to our science. And I have taken the liberty to bring myself into this account as an example of the service that he rendered to so many others.

Perhaps, like some other paleobotanists of my own vintage, I never had a formal academic 'course' in the subject. As a graduate student I was shipped off to Cambridge University for the year 1937-38 hopefully to absorb some first-hand knowledge about fossil plants. I am not sure that my mentor at Washington University, Prof. Robert E. Woodson, knew exactly what might come of this venture. I was sent to work with Dr Hamshaw Thomas of Downing College and the Botany School at Cambridge. Dr Thomas helped me with a research project and in other ways, but there was no formal classroom instruction in paleobotany. I arrived there in early September, at that time a favoured vacation month for Cambridge staff members. I was, therefore, sent to the Museum in London for a month - I think with Thomas' best wishes and hopes that Maurice Wonnacott would take me under his wing - which he did. It was a very pleasant start and I spent considerable time there during other Cambridge vacation periods, and in later years. Maurice would come in early in the morning to the study space assigned to me - and others who might also be working there - to suggest collections or specimens that might be pertinent. Although I spent some time at other museums and universities, then and over the years, I have always thought of Maurice Wonnacott as my 'Professor'.

In a recent letter Maurice's wife Constance has supplied a few notes on his early years:

"He was born at Battersea in south London on September 2nd 1902 and attended St. Lukes Primary School in the said district. The family moved to The Lodge at Nat. Hist. where his father was employed (there was living accommodation for two senior warding staff at the BMNH). From then on Maurice attended at the William St. School, Hammersmith. At 15 yrs of age Maurice left school, applied for and obtained a position as a boy attendant at the Natural History Museum where he came under aegis of Mr W.N. Edwards."

Edwards had been appointed four years previously as the first full-time paleobotanist in the Department of

Geology (as the Department of Palaeontology was then called). He became Deputy Keeper in 1931 and Keeper of the Department in 1938. In spite of Wonnacott's start at the age of 15, somewhat in contrast to that of an aspiring student of fossil plants today, it seems clear that his potential to learn and contribute was soon recognized and under Edwards, Wonnacott was responsible for the immense task of organizing and arranging the huge collections of plant fossils - a task which leaves later generations who use those collections much in his debt. Edwards died in December 1956 and Wonnacott nominally took over the running of the paleobotany Section; however it is my impression that Maurice had been responsible for many of the duties involved for some years previously.

Rather than attempting a strict chronological account I will relate something of his contributions to the several 'categories' noted above.

Field Work

His field explorations were extensive but he was especially concerned with the Jurassic of the Yorkshire coast. He made numerous visits to the well known beach locality south of Scarborough. He was concerned about the exact naming of the place and in a letter of 5 May 1959 we wrote: "Regarding the Yorkshire locality query - the correct reference should be to Red Cliff Rocks, Cayton Bay.Gristhorpe Bay is just around the corner (south) from where he worked and does not now yield any further plants."

In his bio-sketch he records "In addition to collections from the London Clay and British Carboniferous localities, Wonnacott, in 1934, in his own time reexplored for the first time in many years, the classic (but supposedly worked out) Jurassic plant locality on the Yorkshire coast, and as a result of this and subsequent visits both private and official he collected for the British Museum many hundreds of beautifully preserved fossil plants containing a number of new genera and species (including Wonnacottia) which later served as the basis for the important series of more than sixty papers on the Jurassic Flora of Yorkshire published in the Annals and Magazine of Natural History by Professor T.M. Harris of Reading University (1940-1953)." It seems appropriate to add a comment that Harris made in a publication of 1961, pertaining especially to the Yorkshire Jurassic: "I am sure that spectacular advance will be made by collectors with fresh ideas, and I am convinced that it is the collector rather than the locality which is exhausted."

It was my good fortune to have been able to accompany Wonnacott to Cayton Bay on two occasions, the first time when I was a student and again in 1950. A photo of him may be seen on page 151 of *The Fossil Hunters* working on the beach on this second visit. He records some of his experience in a letter of August 27 (1948?) "I am here for three weeks ending next Friday when I shall be loath to depart but grateful to know my last cliff climb is over. The total climbs number more than 30 so far and the rocks have taken on a very different appearance as a result of my labours. Parts have been completely worked

out and the mess of loose shale all around is indescribable - almost on a par with the devastation wrought by you during the onslaught for *Anchiopsis*, etc!! If it will give you any pleasure I should like you to know that your efforts are still very much in evidence and must have helped [Chester] Arnoldwhilst he was here!

"I haven't anything startling yet, possibly a new fern or two, but until I go through the material I cannot really say what's what. Anyway I have collected a fair number of *Sagenopteris* leaves and some *Williamsoniella* specimens which you shall have in due course together with some good ferns." And in a letter of 13 September 1950: "I arrived back from Yorkshire a week ago after a most successful trip with five cases of material to my credit or otherwise. I was glad to reach the cliff-top on the last day. At times the elements were against me and the climb most difficult and exhausting. When that pathway is wet it is really slippery. I got two or three soakings but no ill effects after a tub at Gristhorpe Hall."

Wonnacott loved Spain and spent a good deal of time there on vacations and paleobotanical work. A representative 'report' in a letter of March 7th, 1955 reads: "During last summer's vacation I made an interesting trip to the Lithographic Limestone Quarry at Santa Maria de Meya, Lrida, Spain - it is situated at 2-3,000 feet up the Sierra de Montsech and miles from anywhere. A glorious spot with a magnificent view of the Pyrenees (snow capped) in the far distance. I managed to collect a good series of plants (new genera etc.), some fishes and crustaceans all of which were beautifully preserved. I am off again to collect more later this year I spent a week in Yorkshire just to keep my eye and hand in, but the weather was dreadful, wind and rain all and every day."

And the following, relative to his Spanish interests, is taken from the bio-sketch: "Subsequent annual visits, mostly at his own expense, and two officially sponsored Anglo-Spanish Expeditions to the locality which he led in 1956 and again in 1959 yielded exceptionally fine collections containing more than 2000 specimens of rare and remarkably well-preserved Kimeridgian plants, fishes, crustaceans and insects, many new to science"

Museum visitor

From records that I suspect may exist in the Museum a rather sizeable volume could be compiled about the people who visited it during Wonnacott's tenure. A few that I have some first-hand knowledge of seem representative:

In a letter of 13 September 1950 he wrote. "Mrs Sahni called in yesterday and was truly delighted with the samples exhibited. [In reference to some Yorkshire specimens that he had recently collected.] She is so grateful for the help. I feel that my time has not been wasted when I think of the enormous work put in by Prof. Sahni for Palaeobotany in India and how much both he and Mrs Sahni deserved to make a success of their Institute."

In the same letter noted above he writes: "Barghoorn looked in at the end of the week, just two weeks behind his schedule. He is also interested in Yorkshire Jurassic

and our London Clay Flora, but had no time to collect."

A letter of 1 August 1950 notes that "Schopf called in last week. He seems to have had a stormy passage at Stockholm." [I believe that Wonnacott refers to some spirited and controversial discussions over paleobotanical nomenclature that James Schopf and Thore Halle engaged in at the time of the International Congress].

I was fortunate enough myself to meet some of the great paleobotanists of the time at the Museum. Sir Albert Seward was working there on the Mull flora (of Scotland) when I was a student in 1938. He had recently retired from his various posts at Cambridge and was living in London. He was a gracious and kindly man who came in to my quarters and chatted with me occasionally. Henry Holden spent considerable time there and we had several discussions over some of the plants of mutual interest in the Scott slide collection. Holden produced several fine studies and a letter from Wonnacott of 3 May 1963 relates something of Holden's last work and the devotion that Wonnacott showed to his visitor-associates: "I am sending herewith a copy of Holden's paper on *Tubicaulis* with his compliments. I am sorry to say that he is very ill indeed He ceased to come to the B.M. before Xmas although he made an effort and was driven up for a visit several weeks ago he has since deteriorated considerably. I visited him yesterday and found him in very poor shape He is desperately anxious to complete his final review of *Botryopteris* but is physically incapable of anything at the moment." Holden died a few months later.

On another occasion when I was working there, quite some years ago Edna Plumstead arrived. This was at a time when her discoveries and interpretations of the *Glossopteris* plants were stirring up some controversy and I had a chance to hear her interpretations first hand. And it is also pleasant to meet friends from home when one is far away, and a few years ago on a short visit to the Museum I met Lawrence Matten who was in London to be inducted into the Linnean Society.

I think the only serious disagreement that Maurice and I ever had was one relative to Marie Stopes' work. I have described in some detail her various contributions in *The Fossil Hunters*. Briefly, for her studies of Cretaceous plants, the structure and chemistry of coal and her pioneering work with birth-control clinics, I think she stands as one of the great women in British history. She was not a very modest person and spent considerable time in the B.M. where I am afraid her demands on Wonnacott's time were excessive. He would not agree with my opinion of her greatness!

Publications and editing

Wonnacott's own publications are few, being confined chiefly to several volumes of the *Fossilium Catalogus*. Over the years a great deal of his time was devoted to editing B.M. publications. Of special paleobotanical interest were the monumental volumes by Marjorie E.J. Chandler on the Lower Tertiary Floras of Southern England and Prof. T.M. Harris' five volumes on the Yorkshire Jurassic Flora. In a somewhat different vein is

the part he played in preparing some of the British Palaeobotanical Reports. I do not have detailed information on this work, but brief quotes from a couple of letters may suffice: February 24, 1953: "In the absence of Prof. Walton I undertook to prepare the 1952 Committee Report of British Palaeobotanists" and April 10, 1959: "I have today posted to you a copy of the Committee of British Palaeobotanists Report for 1957-58 which was prepared by Miss Chesters and myself as an aid to Prof Walton who I felt ought not to be worried with it this year." And I should add that he gave me considerable help with problems encountered in preparing the first edition of the *Index of Generic Names of Fossil Plants 1820-1950*.

His editorial work was by no means confined to fossil plants - and reveals something of the breadth of his knowledge in paleontology as a whole. The following from the bio-sketch affords a sample: "Included in this [editorial] work have been the current series of seventeen important monographs on the Fossil Mammals of Africa and over thirty separate works contained in the four volumes of the Geological Series of the British Museum, (Natural History) Bulletin ..."

So far as I know Wonnacott came to this side of the Atlantic only once - in the late summer of 1971 on a visit to relatives in Ontario. He planned to do some collecting along the Gaspé but was discouraged by government restrictions. In company with Mrs Wonnacott and two relatives we had the pleasure of an overnight stay at our New Hampshire farm. He was very favourably impressed with the scenery here in the lake district and we took them on a tramway ride to the top of a nearby mountain, overlooking the lakes and White Mountains to the north. It was a fine late summer day and he said "Why to you come to England when you have all of this!." Shortly after returning home he wrote "We certainly enjoyed the remainder of our trip and especially through Vermont where we were as near to the Brandon lignite as we shall ever be. I paid a hurried visit to Craigleith, nr Collingwood [Ontario] and made a worthwhile collection of trilobites, etc. for the B.M. along the beach exposures of Lake Huron."

I have very little information on his WWII service, other than the following notation taken from the bio-sketch: "During the war he served in the Naval Intelligence Department of Admiralty as Officer on Charge of NID 21 attached to the Inter-services Topographical Department. His work, of a secret nature, took him to India and later to Ceylon where he undertook special duties for the Supreme Commander, S.E.A.C."

In her letter of 10th September 1990, in which Connie (Mrs) Wonnacott informed me of the death of Maurice on 7th September, she refers to him as "a great companion with a puckish sense of humour." Combined with his broad knowledge in paleontology, and his willingness and generosity in sharing it, this is a most apt description.

H.N. ANDREWS, New Hampshire, USA

ERIC HOLTUM 1895 - 1990

This is an un-edited extract from an obituary that appeared in *The Independent newspaper*, London, 28th September 1990.

"The First World War interrupted his study of botany, chemistry and physics. He joined the Friends Ambulance Unit and served for two-and-a-half years with the French Army, at times under enemy fire, for which he received the Croix de Guerre in 1919. The first of his almost 500 mostly botanical publications was a short account in 1919 relating to this experience.

"Back in Cambridge, Holtum graduated with class 1 Honours in Botany in 1920. The Professor of Botany, A.C. Seward, a distinguished palaeobotanist, had a keen eye for promising young men, especially if they might become palaeobotanists. From 1920 to 1922 Holtum assisted Seward in palaeobotanical work and went with him in 1921 to West Greenland to collect fossil tropical plants, which Seward probably hoped would become his life's work. Instead, on being appointed in 1922 Assistant Director of the Singapore Botanic Garden, he devoted his life thereafter to the study of living tropical plants, notably to ferns, ginger, bamboos and orchids, and the promotion of gardening in Malaya."

W.T. STEARN, London, UK.

RECENT PUBLICATIONS

EURO-DINO COMMUNICATION

The first edition of this new publication appeared in June 1990 and consists of members' names and addresses as well as short announcements.

Write to Henk Brinkhuis or Martin Wilpshaar, Laboratory of Palaeobotany and Palynology, University of Utrecht, Heidelberglaan 2, 3584 CS Utrecht, Netherlands.

BIBLIOGRAPHY OF AUSTRALASIAN PALYNOLOGY AND PALAEOBOTANY 1988

This 28 page document lists publications alphabetically by surname and includes a subject index and list of names and addresses. It was compiled by Joan Dawson and Jennifer Mason at Monash University, Clayton 3168, Australia.

NEW BOOKS

Occasionally the IOP office receives fliers from publishers advertising new books. The following are details from two such fliers that may be of interest. A review of the second will appear in the next IOP newsletter.

DICTIONARY OF ENVIRONMENTAL SCIENCE AND TECHNOLOGY: BY A. PORTEOUS.

Available in December 1990 from the Open University Press, c.256 pages. Paperback c.£10.00 (0 335

09230 6), hardback c.£25.00 (0 335 09231 4). Contents include: Abbreviations; Table of Elements; Prefixes of SI units; Unit Conversion Tables; Dictionary; Further Reading; List of Useful Addresses.

A GEOLOGIC TIMESCALE 1989: BY HARLAND ET AL.

Available now from Cambridge University Press, 263 pages. Paperback £11.95, US\$19.95 (0 521 38765 5), hardback £25.00, US\$49.50 (0 521 38765 5).

We have also seen advertisements elsewhere for other new books that may be of interest to members, details are given below. I have included details from the press releases but cannot vouch for their accuracy.

VERTEBRATE PALAEOBIOLOGY: BIOLOGY AND EVOLUTION, BY M. BENTON,

Unwin Hyman, London. 390pp. Price: hardback £45.00 (ISBN 0 04 566001 8), paperback £14.95 (ISBN 0 04 566002 6). "This major introductory text provides a readable history treatment of the history of vertebrates - presenting new lines of research in palaeobiology and phylogeny."

PRINCIPLES OF GEOLOGY, BY CHARLES LYELL.

First edition, volume 1. available from the University of Chicago Press. This is a facsimile of the original edition with an introduction by M.J.S. Rudwick. Price: paperback \$17.95, £12.95 (ISBN 0 226 49794 1).

MICROSPORES: EVOLUTION AND ONTOGENY, EDITED BY S. BLACKMORE AND R.B. KNOX.

Academic Press, London. 360pp. Price: £49.50 (ISBN 0 12 103458 5).

THE FLOWERING OF GONDWANA: THE 400 MILLION YEAR STORY OF AUSTRALIA'S PLANTS, BY MARY E. WHITE, PHOTOGRAPHS BY JIM FRAZIER.

Princeton University Press. Price \$49.50 (ISBN 0 691 08592 7). "Illustrated with more than 400 colour photographs and illustrations of fossils and living plants. This book tells the story of Australia's remarkable floral heritage. The author reveals a fascinating world, replete with hidden details and surprising beauty." - This book has been available for some time in Australia and New Zealand, readers should note that this edition is not available in those countries.

EVOLUTIONARY PALAEOBIOLOGY OF BEHAVIOUR AND COEVOLUTION, BY A.J. BOUCOT.

Elsevier Science Publishers. 750pp. Price \$165.75 (ISBN 0 444 88348 8). "This vast compilation of data deals with the known stratigraphic ranges of varied behaviours, chiefly animal with a few plant and fungal coevolved relations."

BOOK REVIEW

ANTARCTIC PALEOBIOLOGY. ITS ROLE IN THE RECONSTRUCTION OF GONDWANA.

T.N. & E.L. TAYLOR (EDS.). SPRINGER-VERLAG, NEW YORK, ETC., 1990. 261 PP.

As it is reported in the preface of this book it appeared as a result of a three-day workshop held on the campus of the Ohio State University in June, 1988. The main aim of the workshop (and the book) was to summarize modern data on the Antarctica biota throughout the geologic time. Palaeobotany and palynology were preferred in selecting the subjects of reports. Although the question is about the collecting of articles it can be considered as an entire book as well owing to the completeness of the elucidation of the main subject: the history of interactions of Antarctica flora with different biological and physical factors. This impression is supplemented by the exhaustive index at the end of the book. However it could be still strengthened by putting the articles (chapters!) in good order which would correspond more to their matter. It seemed to me at least that the actual order of articles is nearly quite accidental.

The series of 12 papers is opened by J.W. Collinson's one of depositional setting of Late Carboniferous to Triassic biota in the Transantarctic basin where stratigraphy and geological history of Transantarctic basin in the Transantarctic and Ellsworth Mountains are considered in a wider chronological range than announced in the title, i.e. from Late Ordovician till Triassic. The next more general article by J.T. Parrish is devoted to the Gondwanan palaeogeography and palaeoclimatology. Predictions of continental glaciation and monsoonal circulations according to models of the position of Gondwana in Late Ordovician to Late Jurassic are compared with actual palaeoclimatic data. All other papers deal by one or another way with vegetation of Antarctica known either by megafossils or by miospores.

The only exception presents the article by W.R. Hammer on Triassic vertebrate faunas. Its significance for the general subject of the book is caused by the unique strength of the ecological connections between plants and terrestrial vertebrates on the one hand and by the exceptional concentration of Antarctic finds of remains of these animals in the Triassic deposits on the other hand.

The proper palaeobotanical articles demonstrate a large spectrum of discussing problems as well as chronological range from Proterozoic till Miocene. General reviews (G. Playford, E.M. Truswell, D. Edwards are represented side by side with considerations of separate taxonomic groups (Cycadophytes by T. Delevoryas and Conifers by R.A. Stockey). Besides two principal modes of preservation - mega-fossils and miospores a special attention must be paid so such a particular mode as permineralization as Antarctica is a single among Gond-

wanan continents keeping permineralized plant remains and hence a single source of information on the anatomical structure of Gondwanan plants. Two papers (by E.L. and T.N. Taylor and by K.B. Pigg and T.N. Taylor) are devoted to permineralized plants of Antarctica. More wide or more particular comparisons of Antarctic floras are the subjects of articles by S. Archangelsky, by M.N. Bose, E.L. and T.N. Taylor, and by R.A. Spicer - with entire Gondwana, with India, and with Arctica respectively.

The book is concluded with the annotated bibliography of Antarctic palaeobotany and palynology. Although the modest editors have no doubts that "there are references to fossil plants that were not included in this bibliography" I think it will be a hard task to supplement it.

In general outline the book seems fully to achieve its ultimate goal declared in the preface - to stimulate interdisciplinary activity on the fossil biotas of Antarctica and rises the hopes that this continent will stop to be a white spot in our knowledge as it is still figured in all existing maps.

A.V. GOMANKOV, Moscow, USSR