

# **IOP NEWSLETTER 71**

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The views expressed in the newsletter are those of its correspondents, and do not necessarily reflect the policy of IOP.

This Newsletter is available on the web at: <http://oak.cats.ohiou.edu/~rothwell/IOP-Newsletters/index.htm>

President: Else Marie Friis (Sweden)  
Vice Presidents: Muriel Fairon-Demaret (Belgium), Zlatko Kavzek (Czech Republic), Sun Ge (China)  
Secretary: Gar Rothwell (USA)

## NEWS OF THE INTERNATIONAL PALAEOLOGICAL ASSOCIATION

The International Palaeontological Association would like to announce a new web site. The new IPA site (<<http://ipa.geo.ukans.edu/>>) features general information about the IPA, its officers, rules and by-laws, links to the publishers of *Lethaia*, and symposia information. Two on-line databases, "Directory of Paleontologists of the World" and "Directory of Fossil Collections of the World", are now a part of the IPA site. Thanks to the nearly 1,500 of you who have already entered your data. Please pass the word and tell your colleagues about both the Directory of Paleontologists and the Directory of Fossil Collections and encourage them to enter their records as well. Greater participation in the IPA directories will make both directories more beneficial for everyone. Please stop by and take a look at the new site. As always, comments (and friendly criticism) are welcome.

Michael Cormack  
Webmaster, IPA

29 - September 2, 2002. The conference is organised by the Department of Historical Geology and Palaeontology, University of Athens. The organising committee is headed by Professor E. Velitzelos as President and assisted by a scientific committee. The programme promises an exciting meeting with a mixture of scientific presentations and workshops, and social events. The President has promised that there will be plenty of time for more informal discussions during coffee breaks and social events and that facilities will be available for smaller groups to gather around a microscope or computer to discuss urgent problems and new ideas. Several exciting excursions are planned in connection with the Conference that will give us the opportunity to visit Cainozoic localities on the mainland and some of the beautiful Greek islands. Although not said in the programme we probably do not need to bring raincoats and warm sweaters. Information is available at the conference web site (<http://www.geol.uoa.gr/conference/>). For additional information about the meeting, or to request a copy of the second circular, contact Professor Velitzelos ([velitzel@geol.uoa.gr](mailto:velitzel@geol.uoa.gr)).

## UPCOMMING MEETINGS

### International Palaeontological Congress

The IPC 2002 Organising Committee has made available the second circular for the International Palaeontological Congress to be held in Sydney, Australia, July 6-10, 2002. Further information can be found on the IPC 2002 home page (<http://www.es.mq.edu.au/mucep/ipc2002/index.htm>) or on the IPA web site (<http://ipa.geo.ukans.edu/convention.html>).

### 6<sup>th</sup> European Paleobotany - Palynology Conference

The 6th European Paleobotany Palynology Conference will be held in Athens, Greece, August

## INFORMAL IOP MEETING

There will be an informal meeting of all interested IOP members during the 6<sup>th</sup> European Paleobotany – Palynology Conference in Greece this summer. Topics of discussion will include: ongoing efforts to make the IOP-Newsletter available on the net, membership, changes in regional representations, and any other topics that are of importance to individual members. We encourage people think of initiatives that will help vitalize IOP and make IOP an important platform for discussions and contact between the membership and other organizations. Information about the next IOP-Conference in Argentina also will be presented.

## REPORTS OF MEETINGS

### Sino-German Cooperation Symposium

The “Sino-German Cooperation Symposium on Prehistory Life and Geology of Junggar Basin, Xinjiang” was held at Urumqi, Xinjiang, China from August 25 to September 2, 2001. About 50 geologists, paleontologists and the related experts from Germany, United States and China attended two-days of the lecture sessions in Urumqi followed by five-days of field excursions around the Junggar Basin. The symposium was organized by the Nanjing Institute of Geology and Palaeontology, Chinese Academy of Sciences (CAS), the Jinlin University, the Regional Geological Survey No.1 of Xinjiang, China and Tuebingen University, Germany.

Eleven key lectures and oral presentations focused on paleobotany, palynology, paleoclimatology, paleogeography, vertebrate palaeontology and sedimentology. Highlights of the symposium include reports of a remarkable Late Triassic flora from the Huangshanjie and Haojiagou Formations in southwestern Urumqi (Ge Sun *et al.*), anatomical investigations of Late Jurassic conifer wood from the Shishugou Group of the Junggar Basin (Y.D. Wang *et al.*), a new synthesis for angiosperm phylogeny (D.L. Dilcher), detailed palynological studies from the Triassic-Jurassic transition in Houjiagou section southwest of Urumqi, Xinjiang (R. Ashraf *et al.*), evolution of Palaeoclimates in Eurasia through the Mesozoic and Cenozoic (V. Mosbrugger), and Permian-Triassic climates and paleoenvironments of the Junggar Basin (S. Z. Wu). A series of post symposium field trips examined typical geological sections and famous fossil localities along the margins of the Junggar Basin. These included: 1). The Triassic-Jurassic and Lower Cretaceous in Haojiagou Section in western part of Urumqi; 2). The typical Lower to Middle Jurassic Sangonghe Section in Fukang City; 3). The Jurassic Petrified Forest Park and dinosaur localities in northern Qitai County, and 4). The Triassic-Cretaceous Sections in northern Karamay District. These trips covered most of the typical geological exposures and fossiliferous beds of plants around

the southern, northeastern and western margins of the Junggar Basin. Symposium proceedings are published under the title “New advanced studies on the Prehistory Life and Geology of Junggar Basin, Xinjiang”. A limited number of copies of this volume are available from Prof. Ge Sun (email: [sunge@jlu.edu.cn](mailto:sunge@jlu.edu.cn)).

Yongdong WANG

(Nanjing Institute of Geology & Palaeontology, Chinese Academy of Sciences, Nanjing 210008, P. R.CHINA. Current address: Paleobotany Laboratory, Florida Museum of Natural History, University of Florida, Gainesville, FL 32611-7800, U.S.A. E-mail: [ydwang@flmnh.ufl.edu](mailto:ydwang@flmnh.ufl.edu))

## PALEONTOLOGICAL RESOURCES

### Useful Directories

Two useful directories are now available at the University of Kansas. These are the **Directory of Paleontologists** and the **Directory of Fossil Collections**. Both directories already contain much useful information, but the more information they contain, the more useful they become. If you know of colleagues who have not yet entered their data into the Directory, please urge them to do so. Both directories can be found on the IPA web site at <http://ipa.geo.ukans.edu/>

Michael Cormack  
IPA Webmaster

### Automated Multilingual Text Translation

Automated multilingual text translation has now reached a level of sophistication that makes it a very useful tool for paleobotanists. Portable computers and scanning equipment, combined with the latest optical character recognition and translation programs, make it relatively easy to read texts from

other languages. After years of feeling handicapped when confronted with texts in Russian and other languages that I failed to learn properly myself, I have found considerable comfort in being able to glean the main content of texts by the use of “augmentary intelligence”. As these programs work in multiple directions (e.g. Russian to English, English to Russian, German to Spanish, etc.), it can be an important tool for all of us. This technology has been available for some years, but has not yet received much attention from paleobotanists. Dr. Kaz Uemura brought the possibilities to my attention five years ago, when he was already translating Russian text to English with the aid of a scanner and laptop computer. With the expanded memory and speed of modern personal computers, machine translation has become a viable method, much preferable to plodding through a text with a printed dictionary.

Following some trial and error in selecting appropriate software and equipment, I now have a properly functioning system for computerized translation. Scanning, recognition, and translation of Russian, French or German to English requires approximately one minute per page. I offer the following information about what has worked best for me. This not meant as product endorsement of specific computer or scanner equipment, but to give an example setup that works quickly and efficiently.

Software. OmniPage, the scanning software that has enjoyed large market share in the US and other countries, works well for optical character recognition (OCR) of Germanic and Romance languages, eg. English, French, Spanish, Portuguese, German. However, the versions that I’ve seen marketed in the US, do not handle slavic, arabic, or japanese. The gold star goes to Finereader Pro (US \$100) which is a wonderful OCR program for those wanting to convert between slavic and western languages. Once the text has been machine scanned, optically recognized and saved in a text editor such as MS Word or WordPerfect, it can be copied and pasted into the translation window on the worldwide web (for example, <http://babelfish.altavista.com> or

<http://www.systranet.com/systran/net>). Each page of translated text usually appears within 10 seconds, and the service is free of charge. The quality of grammar is variable and in some cases amusing, but usually the intended meaning is clear. These web-based translators include for example, English, French, German, Italian, Japanese, Korean, Portuguese, Spanish, Portuguese, Russian with additional languages being added rapidly. In addition to the online translation services, software dictionaries can be purchased and loaded directly on your computer for translation that does not require access to the internet. I have not tried these programs, but assume they would be helpful as well.

Platform. At this time, I’m sorry to report that the MacIntosh system does not work well for translating Slavic alphabet languages to English (although it is excellent for Spanish, French, German, etc.) . Late in 2001, Finereader introduced a version of their program for the MacIntosh that matches the quality of their Windows product. However, Slavic fonts are not included in standard US Macintosh system software(Word and Word Perfect), and the online translation programs currently available do not recognize the Macintosh-encoded slavic characters when cut and pasted from the text editor. Presumably these problems will be solved, but my frustrations in getting my cherished Mac to translate Russian to English eventually led me to accept a Microsoft Windows-based solution. A Sony FX270 laptop (US \$1600) has turned out to be a good choice. Running with a Pentium III chip, 256 mb ram, and 20 gb memory, it zips through the OCR and translation operations. Using Finereader Pro, it optically recognizes a full page of scanned Russian text in 11 seconds, saves the text to MS word in 5 more seconds.

Scanner. The prices of flatbed scanners have lowered over the past several years. The scanner needs only 300 dpi resolution to perform high quality OCR. The lightweight Canon model Canoscan N670U (US \$100) performs very well in conjunction with Finereader Pro, and the Pentium

III computer mentioned above, taking about 30 seconds to scan a standard letter-size page.

Accuracy. As I have some training in the German language, it was easiest for me to evaluate the translation quality of German to English. The translations were especially helpful for taxonomic descriptions and discussions, and discussions of stratigraphy. Frequently, the more technical words not comprehended by the translation software remain untranslated and are easily understood because of familiar latin or greek roots. It is sometimes amusing that the names of authors and places are translated according to their original etymology. For example, our colleagues, Dieter Mai, Volker Wilde and Herman Pfefferkorn become "Dieter May, Volker Savage, and Herman Pepper Grain," respectively (and respectfully).

Judge for yourself. Following is an excerpt of text that was machine-translated in about one minute from a Russian language article by M.A. Akhmetiev, N.I. Zaporozhets, and LA. Panova, from the book, Late Eocene-Early Oligocene Geological and Biotical Events on the Territory of the Former Soviet Union, Part II, Publishing office GEOS, Mosow, 1998, p. 97. The text appears as produced by Systran Web site, to show minor errors that may be expected, but I have placed in brackets { } some corrections that were necessary for clarity. Note that isolated words not in the Systran dictionary were auto-transliterated, but not translated to English.

Title: "Ground-based Flora and the Vegetation (sheet/leaf flora, disputes, pollen) of Late Eocene - the Early Oligocene" {Terrestrial Flora and Vegetation (Leaf flora, *spores*, pollen) of the late Eocene-early Oligocene }

"Passage from Eocene to the Oligocene was noticeable frontier in a change in the ground-based flora and vegetation of entire extratropical Eurasia. First of all, this was connected/bonded with the temperature drop of the climate beginning even in late Eocene, whose global scales were strengthened by local reasons - withdrawal of epicontinental sea

from the extensive spaces of Western Siberia, Kazakhstan and Central Asia and partly Russian platform. The dried regions began to play the role of migratory circuits, on which, in proportion to the intensification of temperature drop, occurred the advance of the more moderate Asian flora to the West and the southwest. It gradually occupied the freed/released areas, from which stepped back {receded} subtropical flora."

"Upper Eocene. The fitogeograficheskoye [phytogeographic] division into districts [provinces] in second half of Eocene, at the beginning of the regression of epicontinental seas from Western Siberia and North Kazakhstan, entire land territory of center and south of European Russia, Ukraine, Kazakhstan, South Urals, south of Western Siberia and Central Asia was occupied with subtropical ("Poltava", on {of} A.N. Krishtofovichu [1936]) by the flora, which belonged to the teticheskeye region of Golarktisa. The "sleeve" of this flora, judging according to the data of the palynologists [ of Lyubomirova, 1971; *Prakticheskaya* of palinostratigrafiya, 1990], at the end of the average - beginning of late Eocene went far to the north of Western Siberia along the coast of Tavdinskogo Sea, since by dominants Palinokompleksov {pollen complexes}, even contemporary *priarktiy* of S.G. Zhilin [of 1984, 1986] for this flora it proposed to restore/reduce the name of "Volyn", taking into account younger - Oligocene or even *rannemiotenovyy* age of Poltava sands of the southwestern and western slopes of Voronezh anteklise [*anticlinorium*]."

Steven Manchester, Florida Museum of Natural History, Gainesville, FL, USA

## BOOK REVIEWS

Plant fossils: the history of land vegetation  
By C. J. Cleal and B. A Thomas  
Boydell Press, 1999, 188 pp, 128 plates.

This is the third volume in a series entitled “Fossils Illustrated”, which is published by Boydell Press. Geologists are the target readership, and the aim of the series is to produce high quality illustrated accounts of groups with a fossil record. Volumes on graptolites edited by D. Palmer and B. Rickards and on trilobites authored by H. B. Whittington have already been published. In this new volume, Cleal and Thomas have produced a commendable account of the fossil record of plants.

In a memorable introductory paragraph to Whittington’s book, Stephen J. Gould extolled trilobites as the flag bearers of palaeontology, calling them “shining symbols of age and beauty”. Although well known and widely collected by both professionals and amateurs, the humble trilobite remains enough of a mystery to most of us to warrant a detailed exposition. Whittington’s book does just this. It is a comprehensive overview of the biology and palaeontology of these extinct arthropods, and the “Fossils Illustrated” format is well suited to this approach. Similarly, with graptolites – a group that most geologists have a nodding acquaintance with – Palmer, Rickards and co-authors explain everything from stratigraphy to sex. Plants, however, are more familiar. We can assume more background knowledge, and there are already abundant textbooks out there to fill in the gaps. Plants are also vastly more diverse than graptolites and trilobites. So, the whole approach to producing an illustrated account of the plant fossil record is necessarily rather different, and it is an ambitious task in a volume of this size.

What strategy should one adopt in choosing the illustrations for a book of this sort? There is of course no single right answer. There is also something of the conservationist’s dilemma here, because any choice inevitably entails leaving things out and leaving oneself open to criticism. Palaeobotanical readers will have very different views on those aspects of the fossil record that they would choose to emphasise. Cleal and Thomas’ stated aim is to reflect the relative abundance of different types of fossil plant. To this end their choice of illustrations reflects higher level

taxonomic diversity. Many of the groups illustrated are therefore extinct and most (75%) are Palaeozoic.

Fossil plants are very often colourful objects, and colour has been used to great effect in books such as Mary White’s “Greening of Gondwana” as well as others, in particular those dealing with petrified wood. The dust cover of this new volume depicts a polished section through the petrified trunk of *Palaeosmunda williamsii* preserved in colourful chalcedony. This beautiful piece was well chosen for its pale blue and white quartz infilling contrasting with the dark outlines of wood and petioles. As a cover illustration it is unquestionably a winner, but after the lure of colour the use of black and white inside is a disappointment. Monochrome is acceptable for graptolites and for trilobites that have been enhanced with ammonium chloride, but it is a missed opportunity for fossil plants.

Despite my misgivings concerning the exclusive use of black and white illustrations, this book contains some fine images of fossils from all major groups of vascular plants. As one might expect from the pedigree of the authors, it is particularly strong on the Carboniferous, with great illustrations of the parts of arborescent lycopsids and horsetails, several spectacular sections of plant remains in coal balls, and models of organs and organ systems, and a photograph of the famous tree lycopsid root systems from Victoria Park in Glasgow, Scotland. There is also much well illustrated fern and pteridosperm foliage. Although many illustrations are based on material in British collections, the authors have sought out photographs from colleagues around the world. There are conifers from the Permian of Germany, *Glossopteris* and *Dicroidium* from South Africa, a spectacular image of *Florissantia* from the Eocene of N America, and fusainised flowers from the Cretaceous of Sweden and Portugal, to highlight a few examples. Some illustrations work better than others. The Chinese gigantopterid leaf on plate 95 is difficult to make out, and one or two photographs could be sharper. This volume makes a handy reference collection that can be called upon to show a colleague,

student, or interested amateur a nicely illustrated specimen.

In the accompanying text, Cleal and Thomas adopt a familiar strategy by providing outlines of the major groups in chapters headed clubmosses, horsetails, ferns, early seed plants, modern seed plants, and flowering plants. In this respect the book is structured like many palaeobotanical textbooks, although the authors are careful to say that it is neither a textbook nor a key. These taxonomic chapters are sandwiched between two thematic chapters: one on early land plants and a second on vegetation through time. These two sections will be the most widely read by students and others interested in an overview of the development of plant life on earth. The chapter entitled the history of land vegetation is an excellent summary of the main events concisely presented by geological period. The final chapter is a brief history of palaeobotany that highlights some events and people who have influenced the development of the subject. There is a full bibliography and a useful classification of plants giving the geological ranges of various groups, including families of flowering plants.

For me the thematic chapters worked well, and perhaps this approach should have been adopted throughout. Geologists might find the taxonomic chapters rather too long on descriptive morphology: "Tell us about the plants, but spare us the details!" They will also find some of the botanical terminology difficult, and the book would have benefited from a glossary. Some subjects of interest to geologists are hardly treated at all. For example, there is little here on the uses of fossil plants in reconstructing climates and environments of the past. This book is a morphologists view of the plant fossil record with a Palaeozoic slant, but one which none the less is an excellent collection of illustrations for your bookshelf.

Paul Kenrick  
The Natural History Museum, London

- Cleal, C.J. and Thomas, B.A., 1999. Plant fossils. Fossils Illustrated, 3. Boydell Press, Woodbridge, Suffolk, 128 pp.
- Palmer, D. and Rickards, B. (Editors), 1991. Graptolites: writing in the rocks. Fossils Illustrated, 1. Boydell Press, Woodbridge, Suffolk, 138 pp.
- White, M.E., 1986. The greening of Gondwana. Reed Books Pty, Frenchs Forest, New South Wales, 256 pp.
- Whittington, H.B., 1992. Trilobites. Fossils Illustrated, 2. Boydell Press, Woodbridge, Suffolk, 145 pp.

### NEWS FROM THE MEMBERSHIP

**Dr. Mihai E. Popa**, from the University of Bucharest, Romania, received a Fulbright postdoctoral fellowship for a project in collaboration with Dr. David L. Dilcher, from the University of Florida, Gainesville, USA. This project, scheduled for October 1, 2001 - June 1, 2002, has two themes: a research, paleobotanical theme, regarding the Mid-Cretaceous conifers of United States and Romania and an educational theme, for comparing the American and Romanian higher education systems. For the American paleobotanical material, the focus is centered on conifers of the Dakota Formation, belonging to the families Taxodiaceae (Cupressaceae), Cheirolepidiaceae and Incertae Sedis, while for the Romanian material, representatives of the same families are studied from several coeval formations. Dr. Popa is also giving a series of lectures on various topics in Paleobotany.

The **Montpellier paleobotanists** have moved to a new laboratory. housed in an institute, more dedicated to Botany. The new address and contact information for Jean Galtier, Brigitte Meyer-Berthaud, Nick Rowe, and Aude Soria are:

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Jean: 33 4 67 61 75 52

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**Dr. Yongdong Wang**, a research professor of the Nanjing Institute of Geology and Palaeontology, Chinese Academy of Sciences (CAS), is now carrying out a one-year program (sponsored by CAS, from September 2001 to September 2002) of the Senior Visiting Research Fellow in Paleobotany Lab, Florida Museum of Natural History, University of Florida, USA with the collaboration of Prof. David Dilcher. His research project entitled "Comparative anatomy and fine structure of the representative Mesozoic plants" consists of three parts: 1) Further study of the structurally preserved fossil wood from the Late Jurassic in Junggar Basin, Xinjiang, China. 2). Investigations of some reproductive material from the Early Cretaceous Dakota Formation of Northern America; and 3). Fine structures and anatomy of the related Early Jurassic plants from southern China. For more information of Dr. Yongdong Wang, please visit his web page at <http://www.flmnh.ufl.edu/natsci/paleobotany/ydwan g.htm>.

**Dr. Sun Ge** has accepted the position as Director of the Research Center of Paleontology and Stratigraphy at Jilin University. New contact information for Dr. Sun is as follows:

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## OBITUARIES

### Tatsuaki Kimura (1925 -2001)

On June 16th, Prof. Dr. Tatsuaki Kimura passed away after short illness at age of 75. For more than 40 years he has been one of the leading paleobotanists in Japan.

Dr. Kimura is well known for his division of paleofloristic provinces in the Mesozoic of East Asia and the discovery of deciduous cycads, *Nilssoniocladus*. His career in paleobotany started after discovery of the Jurassic Iwamuro Flora during his geological survey work. He studied paleobotany under Professor Thomas M. Harris at Reading University, UK, where he stayed 3 to 4 months every year from 1970 to 1975. Dr. Kimura had broad interests in paleobotany, as reflected in more than 140 papers published during his career. His topics ranged from studies of Paleozoic to Quaternary floras and even include a paper on the distribution of living conifers. However, he spent most of his career researching the Mesozoic floras of eastern Asia with special interest in paleophytogeography.

Before the 1960s, the Jurassic-Cretaceous Ryoseki Type Flora in the outer zone (Pacific side) of Japan and Tetori Type Flora in the inner zone (Japan Sea side) of Japan were considered to be stratigraphically different floras. In 1961, he recognized the occurrence of two synchronous floral provinces among the Mesozoic floras of eastern Asia. This floristic interpretation was expanded in time and space and he clarified the floral and paleophytogeographical changes during the Paleozoic and the Mesozoic Period in the eastern Eurasia.



His research on paleophytogeography was enhanced through collaboration with paleobotanists in many other countries. His students and local colleagues also benefitted from the opportunity to meet many paleobotanists from many countries at his office.

The study of Nilssoniocladus, Nilssonia leaves attached to dwarf shoots on long shoots, is a memorable example for his search of evidence. After he retired as Professor of Tokyo Gakugei University in 1989, he established Institute of Natural History to continue his researches and to enlighten the public about natural history.

On his desk at the Institute, many scientific problems have remained with unfinished manuscripts. Some of these projects will be continued by his colleagues. Without a doubt, his scientific influence and warm personality will remain long after his death.

Tamiko Ohana, Junji Horiuchi and Ken'ichi Saiki,  
Tokyo, Japan

### **Divya Darshan Pant (1919-2001)**

Pure passion for botany. Pure dedication to botany. Pure devotion to botany. That's what Professor Divya Darshan Pant was made up of. He died on the 9<sup>th</sup> May 2001 after suffering from paralytic attack for some days. Professor Pant had established a strong school of Palaeobotany and Plant Morphology in the Department of Botany of Allahabad university where he served as Lecturer, Reader, Professor and Head and Dean Faculty of Science in succession and lustre to this great centre of learning which was often referred to as "Oxford of East". He dominated the Indian botanical horizon for about four decades.

Professor Pant was born on 18<sup>th</sup> October, 1919 in the pine dotted picturesque surrounding of Ranikhet in Kumaon Himalaya. His father Sri Ambika Dutt Pant was a highly respected Ayurvedic Physician and Editor and Publisher of a magazine, *Himalaya*. After his early school education in Ranikhet and

Nainital he moved to Lucknow where he graduated and later received his post graduation and research training under Professor Birbal Sahni, F.R.S. In 1946 he was married to Dr. Radha Pant, a biochemist who later headed the Department of Biochemistry and Home Science in Allahabad University.

He was one of the top ranking botanists of international repute who left his marks in the fields of Palaeobotany and Plant Morphology. Among the extant plants his main interest was in cycads which is reflected by his three books. The revised third edition his comprehensive monograph on cycads entitled "Introduction to Gymnosperms, Cycas and Cycadales" is being published by Birbal Sahni Institute of Palaeobotany and is likely to be released soon. About a month before his death he had corrected the final proofs of this book.

He was conferred with a number of academic awards and honours. He was a Fellow of the; The Indian National Science Academy, New Delhi; The National Academy of Sciences of India, Allahabad; and The Indian Academy of Sciences, Bangalore. He was also a Fellow of the Indian Botanical Society and the Linnean Society (London) and Palaeobotanical Society. He was the President of Botany Section in 65<sup>th</sup> Indian Science Congress held in 1978 in Ahamadabad. He was a Honorary Foreign Life Member of Palm and Cycad Society of Australia (PACSOA) and Cycad Societies of U.S.A. and South Africa. He had been bestowed Birbal Sahni Gold Medal of Indian Science Congress Association (ISCA) in 1976, Fifth Biennial International Gold Medal of Palaeobotanical Society in 1987 and First Birbal Sahni Centenary Gold Medal of ISCA in 1995.

In his honour and as a mark of recognition of his versatile academic status seven taxa have been named so far, viz., Pantopteris Chandra & Rigby (a pteridophyll), Pantophyllum Rigby (a noeggerathiopsid leaf), Isoetes pantii Goswami and Arya (an extant lycopod), Hepaticites pantii Bose & Pal (a fossil bryophyte), Brachyphyllum pantii Nautiyal & Srivastava (a fossil conifer),

*Glossopteris pantii* Chandra & Surange (a pteridosperm) and *Birbalsahnia divyadarshanii* Bajpai & Maheshwari (a male pteridospermous fructification). On the last named fossil plant a postal stamp was released by the Government of India in 1997 on the occasion of Golden Jubilee of Birbal Sahni Institute of Palaeobotany.

Professor Pant believed in quality work and for that he wanted his students to make strenuous endeavor. He was an indefatigable, inspiring and respected teacher. He was always approachable and willing to sacrifice his own time and work for sincere students. Whenever I went to him to show my research work, he would often keep on with me for long hours and get delayed in his meals. This irritated Mrs. Pant (a distinguished biochemist) and she never failed to protest but in this matter she could not bring him round to her way of thinking.

An author of more than three hundred research publications in addition to three books and an edited volume could not resist to complete his monograph on *Pinus*, his another favourite plant after *Cycas*. Professor Pant is no more but in the eyes of his countless admirers in India and abroad, there is one vivid reconstruction of *Glossopteris* as a deciduous tall tree that springs to life even if it flourished most during the Permian time.

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