

No. 17

June 1998

Aachen

### Attention

Does your copy of the news carry a red label? If so, please, contact the treasurer,

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immediately. Otherwise this issue of the news is the last one which will be forwarded to you, your ICCP membership will be finished and your name will be canceled from the membership list.

### Tentative programmes for the 50th ICCP Meeting:

#### Commission 1:

- Accreditation (A. Depers) 2 hours
- Standardization (W. Pickel) 1 hour
- Handbook structure (M. Wolf, A. Cook, W. Pickel) 2 hours
- Vitrinite (M. Wolf) 1 hour
- Inertinite (M. Wolf) 1 hour
- Liptinite (W. Pickel) 4 hours
- Microlithotypes (M. Wolf) 1 hour
- Training Programs (A. Cook) 1 hour
- Microscope session: 4 hours
  - . reflectance analysis
  - . maceral analysis
  - . various topics

#### Commission 2:

No information was available until this issue was printed.

#### Commission 3:

1. Coke Petrography (convener: Raphael Javier): Discussion of solutions for the major reasons of discrepancies pointed from the last Round Robin exercise.
2. Coal Blends (convener: to be elected): Report on the 98 Round Robin exercise organized by Isabel Suarez and Amalia Jimenez in collaboration with Alan Davis.
3. Inertinite in Combustion (convener: Angeles Gomez): Report on the results of 98 Round Robin exercise about the classification of the different Inertinite-derived char occurrences.
4. Combustion (convener: Diego Alvarez and Edward Lester): Presentation of the results of the 98 Round Robin exercise about petrographic characterization of chars.
5. Automation (convener: Petra David).

**Dead line for the next issue of the ICCP NEWS is 31.10. 1998!**

### **The Editorial Board's Request**

During the time of the next ICCP meeting at Porto we have planned to organize photo sessions in order to illustrate the different definitions of macerals and microlithotypes already available for the 3rd Edition of our Handbook. A time of one hour will be at disposal for the maceral groups vitrinite and inertinite and the group of the microlithotypes each.

All participants of this meeting are requested to bring with them photos illustrating the different macerals and microlithotypes respectively. The photos in black and white (brilliant!) should have the format 9 X 13 cm. The photos should have been taken using oil immersion objectives having a magnification of about 50 in the case of the macerals and of about 25 to 32 in the case of the microlithotypes (carbominerites included).

The photos will be exposed and a selection of the most suitable ones will be made. The chosen sets of photos will be obligatory for the print.

### **Reinhardt Thiessen Medal Award, 1997**

Each year the International Committee for Coal and Organic Petrology (ICCP) may award ist Reinhardt Thiessen Medal to one outstanding petrologist who has made significant contributions in the field. At its 49th meeting in Wellington, New Zealand the ICCP was pleased to award its medal to Professor Geoffrey Taylor of the Australian National University, Canberra, Australia. Prof. Taylor was cited for his outstanding contributions as an innovative researcher in organic petrology into the ultrafine structure of coals, cokes and carbons as revealed by electron microscopy, and the discovery of the mesophase mechanism of carbonization.

Geoffrey Hamlet Taylor was born in Corowa, New South Wales on July 7, 1924. In 1950 he graduated with a Bsc in Geology in Melbourne

and his Msc in Economic Geology was obtained in Adelaide in 1953. His Dr. rer. nat. was acquired at the University of Bonn under Prof. Erich Stach in the Mineralogisch-Petrologisches Institut on the subject "Die Beziehungen zwischen Petrographie und Verkokung australischer und deutscher Steinkohlen". In 1968 Taylor received his Dsc from the University of Melbourne on the basis of his thesis entitled "Collected Papers - Petrology". In 1979 Dr. Taylor was elected Fellow of the Australian Academy of Technological Sciences for outstanding contributions of considerable industrial importance to the science and technology of coals. His contributions to carbon science and technology were recognised in 1995 by his receiving the American Chemical Society's Sigri Great Lakes Carbon George Skakel Memorial Award.

From 1949 to 1953 Geoffrey Taylor was Assistant Geologist at the Geological Survey of South Australia, during part of which time he was a postgraduate student at the University of Adelaide. He began working on Precambrian rocks and uranium ores but was transferred to an evaluation of the Leigh Creek coal, although South Australia produced no coal at that time. To aid that investigation Geoff was seconded for a period to the Department of Geology at the University of Sydney to learn coal geology and petrology in the laboratories of Charles Marshall and John Dulhunty. Thus came about Dr. Taylor's abiding interest in the petrology of coal. In 1955 he became Research Officer in CSIRO's Coal Research Section. Between that time and 1968 he served as Senior Research Officer and Principal Research Officer in the same section which later became the Division of Coal Research at North Ryde where he was leader of a coal petrology group. From 1968 to 1971 Dr. Taylor was leader of the Geochemistry Section in the Division of Mineral Chemistry and rose to the position of Senior Principal Research Scientist. During the period 1971 to 1977 Dr. Taylor became the Officer-in-Charge at North Ryde and Assistant Chief of the Department of Mineralogy at the rank of Chief Research

Scientist. Then, from 1977 to 1980, Dr. Taylor was Officer-in-Charge of the Fuel Geoscience Unit at North Ryde, with a staff of about 40, established to concentrate on research into fossil resources. This new Unit's research focussed on laboratory techniques to be used in exploration for petroleum and natural gas in major Australian basins and in the assessment of Australian coals including their conversion to liquid fuels.

Under Dr. Taylor's direction, CSIRO became one of the world's principal centres of coal and organic petrology, staffed by the highly competent team of research scientists which he assembled. As well as systematically surveying the nature and industrial potential of Australia's main coal and petroleum resources, Taylor's group developed *avant garde* position on the prediction of metallurgical coke properties, coal and vitrinite classification, the origin of petroleum from terrestrial organic matter, and the nature of sclerotinite. Dr. Taylor's own place in history is assured by his discovery of liquid crystal-like ordered domains in the transient fluid phase (mesophase) formed during the natural carbonization of coal, and the subsequent observation, in collaboration with Dr. James Brooks of CSIRO, that the same types of structures evolve during the laboratory or industrial carbonization of bitumens, pitches and some coals and polymers.

From 1980 to 1982 Dr. Taylor took a brief respite from the CSIRO as Professor and Director of the Centre for Resource and Environmental Studies at the Australian National University (ANU) in Canberra. The basic aim of this centre was the development of new concepts to resource and environmental problems, mostly through multidisciplinary efforts involving fields as varied as medicine, law and mathematics as well as science. One of the biggest projects undertaken by the Centre under Dr. Taylor's direction focussed on the important coal resources of the Hunter Valley.

In 1982 Prof. Taylor became a full-time member of the CSIRO Executive in Canberra

while retaining the rank of Emeritus Professor at ANU. Thus the remarkable progress of this individual had led from the leadership of a group concerned with coal petrology to the highest administrative body concerned with all branches of governmental research in the country. Geoffrey Taylor's distinguished career serves as a role model for all aspiring scientists, not just those in the discipline of coal science.

Since 1986 Prof. Taylor has been a Visiting Fellow in the Research School for Earth Sciences. One might suppose that after a career which had led to high executive office, that his appetite for research might have been dampened. This certainly has not been the case. Instead, his scientific curiosity, energy and inventiveness have been revealed in another highly productive phase of this lifework. During this period Prof. Taylor has reported significant results in the areas of carbon fibres, nanotubes and fullerenes as well as in the origin of micrinite and Gondwana inertinite and the nature of bituminite and fluorinite. His innovative application of electron microscopy to coal and carbon science is well known and has benefited the carbon fibre, petroleum and aluminium smelting industries.

Taylor is the author or co-author of over 120 publications, noteworthy among which is his collaboration as author and translator in the second and third editions of "Stach's Textbook of coal Petrology". He is the Editor of the new book "Organic Petrology".

Dr. Taylor served as Secretary of the ICCP's Nomenclature Committee of the ICCP from 1965 to 1967. He was also the ICCP's first Honorary Member.

Alan Davis

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### Information about the 51st ICCP meeting in Bucharest, 1999

The ICCP meeting in Bucharest will be organized under the auspices of the Romanian Mineralogical Society, being also supported by the Mining Trade Union of Romania. A local committee has already been formed which is responsible for the organization of the meeting. Members of the committee are:

#### Honorary Chairman:

Prof. Dr. eng. Cornelia Panaitescu

#### Executive Chairman:

Dr. eng. Costel Nedelcu

#### Secretary:

Dr. eng. Georgeta Predeanu

#### Members:

Dr. eng. Anea Penu

Eng. Gabriela Hristea

Eng. Raluca Sezoi

### New Books and Papers

The new textbook **Organic Petrology** is just published. The full reference is:

Taylor, G.H., Teichmüller, M., Davis, A., Diessel, C.F.K., Littke, R. and Robert, P. (1998): *Organic Petrology*. - Verlag Gebrüder Borntraeger, Berlin-Stuttgart; 704 pp.

Please, kindly note the added enclosure.

Finally, the printed version of the **New Vitrinite Classification** is available! The full reference is:

International Committee of Coal and Organic Petrology (ICCP) (1998): *The new vitrinite classification (ICCP System 1994)*. - *Fuel* 77(5): 349-358.

All petrographers who use the new classification should refer to this reference.

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### Miscellaneous

#### Palaeodepth and palaeotemperature studies of Damodar valley coalfield basins of India

Miss Dr. Banani **Bardhan**, Coal Wing, Geological Survey of India, Calcutta and Prof. Arabinda **Ghosh**, Department of Geology, Jadavpur University, Calcutta

In India, the prime coking coal reserves are confined to the Damodar valley coalfields. Petrographic studies on the coals of the different basins of the country have been carried out, in detail, and evaluation of the data indicated that vitrinite oil reflectance is the main parameter for delineating, predicting and assigning coking properties (Pareek, 1988). Palaeotemperature and palaeodepth relationship with vitrinite oil reflectance in coals from deeper parts of the basins have revealed that non coking coals lie in palaeodepth below 1.8 km, while coking coals between 3.4 - 3.9 km (Pareek, 1988, p. 301, Table 2).

Detailed intensive and extensive field and laboratory studies on Permian coal seam cores from deep semi-collinear nine bore holes representing the Raniganj, Jharia, East Bokaro and South Karanpura coalfields of the Damodar valley basin, from east to west, stretching 250 km, were undertaken by the authors, for estimation of palaeodepth and palaeotemperature of each of these basins.

Maturation studies indicated maximum carbonization in the easternmost basin, being minimum in the west. Bardhan (1993) carried out detailed studies on the Jharia coalfield. The results have indicated that, in the eastern basins, geothermal regime was as high as 155°C with profuse intrusive activity, but in the western basins, it was 110°C with scarce intrusions. Palaeodepth and subsidence of the basin floor was 3040 m, in the westernmost, and 3920 m in the easternmost (Jharia) basins. Thus high palaeodepth governed and accounted for the origin of cokings.

Geothermal gradient is 5.7°C/100 m in Jharia and 3.1°C/100 m in South Karanpura coalfields. Sinking, stabilisation and uplift of the sedimentary pile followed by erosion is the maximum in the easternmost and minimum in the western basins, and this is in concurrence with the present day slope of the Damodar River and its tributaries.

The error percentage between calculated (authors) and stipulated (other workers) pre-erosional stratigraphic thickness of the four coal-basins is 0.56 % - 4.8 %, which is very low.

#### References:

- Bardhan, Banani (1993): Petrological and Oil Reflectance Studies on deep core coal samples of B.H.No.JKP-5 and JS-7 of Jharia coalfield, Bihar, with special reference to evaluation of prevailing Palaeotemperature and Palaeodepth. *Rec. Geol. Surv. Ind.*, v. 121, 2-8, 139-143.
- Bostick, N.H. (1979): Microscopic Measurement of the level of catagenesis of solid organic matter in sedimentary rocks to aid exploration for petroleum and to determine former burial temperature - A Review. *SEMP Special Publication* 26, 17-43.
- Pareek, H.S. (1988): Petrographic Characteristics of the Solid Fuels of India with Particular Reference to the Coking Coals. *Intern. Jour. Coal. Geol.*, 10, 285-307.

spelled very often Monica in place of Monika, but quite recently a funny letter arrived at her old place of employment. The correct address of that would be:

Lehrstuhl für Geologie, Geochemie und Lagerstätten des Erdöls und der Kohle, Technische Hochschule Aachen  
Lochnerstr. 4-20  
D-52056 Aachen

In place of that is was written:

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Hockschule Aschen Loenestrasse  
4-20, 5100 Aachen

A compliment to the post-office clerks who found out the correct addressee!

M. Wolf

#### Printer's Devil

Members of the ICCP are very disappointed if their name is spelled wrong or the address is not correct. But to the editor's or the secretaries' excuse it has to be said that often the handwritten informations are difficult to read. We all would be very glad if such informations could be given typewritten or written in block letters.

Much to your relief I can inform you that also the editor whom's address is printed in each number of the news is pursued by the printer's devil. She is accustomed that her first name is

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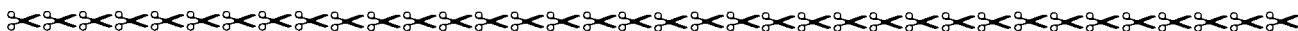
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**Membership List**

Did you change your job during the last year or did you move? In any case where your particular items have to be changed or improved, please, send the form below filled in to:

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|                  |
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