

ICCP

NEWS



Monika Wolf

Letter from the editor

During the last ICCP Meeting at Penn State University it was decided, to enlarge our ICCP NEWS. Therefore this will be the last number in its old style. In the future the ICCP NEWS will contain the former contents but additionally some other materials such as letters, short papers etc. Members from different regions will act as coordinators and send the materials for publication to the editor. The coordinators are:

Australia/New Zealand

Dr. R. Sykes  
Institute of Sedimentary & Petroleum Geology  
Geological Survey of Canada  
3303/33rd Street N.W.  
Calgary, Alberta T2L 2A7  
Canada

Southeastasia, Japan

Dr. A. Cook  
Keiraville Consultants Pty. Ltd.  
7 Dallas Street  
Keiraville, N.S.W. 2500  
Australia

China

Dr. Wang Jie  
China University of Mining & Technology  
Xuzhou, Jiangsu  
People's Republik of China

North America

Dr. St. Bend  
Department of Geology/E.R.U.  
University of Regina  
Regina, Saskatchewan  
Canada

South America

Dr. C.V. Araujo  
Petrobras - Cenpes Divex/Segeq  
Cidade Universitaria  
Ilha do Fundao, Quadra 7  
21910 Rio de Janeiro, RJ  
Brazil

South Africa

Dr. R. Falcon  
Falcon Research Laboratory  
P.O. Box 41086  
Craighall  
Johannesburg  
Republic of South Africa

Europe

Dr. M. Wolf (acting until decision next year)  
Lehrstuhl für Erdöl und Kohle der RWTH Aachen  
Lochnerstraße 4-20  
D-5100 Aachen  
Germany

### Reinhardt Thiessen Award

Full Members of the ICCP are invited to **nominate** an internationally well-known scientist in the field of coal and/or organic petrology for the Reinhardt Thiessen Medal to be awarded in 1993. The final recommendation based upon the proposals received will be made by the Award Committee. Letters of nomination, which should include a short justification of the proposal, should be made to Prof. C.F.K. Diessel, Chairman of the Thiessen Award Committee, Geology Department, University of Newcastle, Newcastle N.S.W. 2308, Australia, to be received by January 15, 1993.

### Short minutes of the 44th Meeting of the ICCP held in University Park, Pennsylvania, USA

The meeting took place in conjunction with the 9th Annual Meeting of the Society for Organic Petrology (TSOP) from July 19 to 25, 1992. It was attended by the President, Dr. Alan Davis, 48 members and 42 guests from 16 countries. The meeting was officially opened at the Plenary Session by Dr. John A. Dutton, Dean of the College of Earth and Mineral Sciences.

### General Events

During the course of the meeting three keynote addresses were given under the auspices of the three commissions and in conjunction with TSOP which followed immediately after the ICCP meeting:

Commission 1: The need for standardized quantitative fluorescence methods in petroleum exploration  
(C. Thompson - Rizer)

Commission 2: Relationship of the molecular fraction of coal to measurements of porosity and density -  
Implications regarding the role of coal as a petroleum source rock (J.R. Levine)

Commission 3: The nature of inertinite and its effect on hydrogenation, carbonization and combustion  
(C.F.K. Diessel).

On Sunday, July 19, a reception was held in the University House. The Conference Dinner was a Barbeque held in Shavers Creek Environmental Center on Wednesday, July 22.

On Saturday, July 25, the field excursion, given in combination with TSOP, visited the anthracite district of Pennsylvania.

### Thiessen Medal

The Thiessen Medal was awarded this year to Dr. Alex Cameron for his outstanding work on coal petrology of the Canadian coals. The Laudatio was read by the President who invited Dr. Marlies Teichmüller to present the Medal.

### Treasurer's Report

Prof. Murchison reported that the accounts cover a period of 10.5 months from 14.8.91 to 30.6.92, shorter than the last accounting period. The total balance is £ 24,826.09 some £ 200 higher than 10 months ago. The Handbook account balance is £ 1,127.03.

Growth of this account has decreased slightly because the pound has slipped relative to the dollar and because interest rates have dropped in the U.K. Operating costs during the year have been the new Handbook Supplement.

The Treasurer outlined the possibilities of publication for the Supplements and the 1963 edition of the Handbook. After short discussion it was decided that, (a) the 1963 edition should not be reprinted, but if required by anyone an original copy would be xeroxed and charged at cost, and (b) Treasurer should be given "carte blanche" to produce the 3rd Supplement as expeditiously as possible, bearing in mind that it would be helpful to have the 2nd (1975) Supplement reproduced in the current format used for reprinting the 1st and 3rd Supplement. There should be wide advertisement of the availability of the Supplement in the Newsletter.

### Elections

The following officers were elected during the year:

General Secretary:	Dr. Zuleika C. Correa da Silva
Chairman of Commission 1:	Dr. Manuel J. Lemos de Sousa
Secretary of Commission 3:	Dr. Rosa Menendez

### Membership

Dr. A.H.V. Smith, United Kingdom, was elected to HONORARY Membership of the ICCP.

The following Associate Members were elected to FULL Membership of the ICCP: Willem Fermont, Netherland; Davis Pearson, Canada; Carla Viviane Araujo, Brazil; Jin Kuili, Peoples Republic of China and Stephen Bend, Canada.

The following were elected to ASSOCIATE Membership:

Geoffrey Clayton, Ireland	Douglas Lowenhaupt, USA
Lorraine Eglinton, USA	Costel Nedelcu, Romania
Joan S. Esterle, Australia	Ray Patalsky, USA
Elizabeth Gravonski, Australia	Ivan Rozkosny, Czechoslovakia
William A. Kneller, USA	A. Kumar Varma, India
Charles Landis, USA	Lavern D. Stasiuk, Canada

### Resignations

The resignations of Hans von der Dick (Canada) and Vlastimil Holubar (Czechoslovakia) were accepted with regret.

### Working Group Objectives

#### Commission 1 (General Coal and Organic Petrology)

Chairman:	Prof. Dr. Manuel J. Lemos de Sousa, Universidade do Porto, Faculdade de Ciencias, Praca de Gomes Teixeira, 4000 Porto, Portugal
Secretary:	Dr. Alan Cook, Keiraville Consultants Pty., 7, Dallas Street, Keiraville, N.S.W., Australia

##### 1. Standardization (Convener: W. Pickel)

W. Pickel presented a report indicating that a low rank Jurassic coal from China has been circulated and is being analysed. A. Davis suggested that an approach should be made to ASTM to see if some of the samples that have been analysed by that organization could be circulated to the Working Group. A possible contact was suggested but it is not clear that sufficient material is still available of the ASTM sets to make this viable at present. However, an approach will be made to see if some commonality of samples for analysis can be achieved.

##### 2. Fluorescence (Convener: K. Ottenjann)

K. Ottenjann had supplied a draft of a standard for the measurement of fluorescence and requested that a small sub-committee of experts be set up complete the work. A sub-committee with Dr. Rui Lin as Convener and Wolfgang Kalkreuth, Jeff Quick and Jennifer Thompson as members was proposed.

This group will also test the draft by making measurements on set of samples strictly according to the standard.

### 3. Gondwana Coal (Convener: Z. Correa da Silva)

Prof. Correa da Silva presented a report for the Gondwana Working Group. Nine samples of a Brazilian coal had been sent out and 4 sets of analyses had been returned but one of these only included the maceral analysis and another only the reflectance determination. Agreement for the reflectance values was acceptable but the agreement for the maceral analyses was poor. The Convener considered that progress had been poor and the meeting was asked if the Group should be continued. Prof. Diessel believed that it should not, but R. Falcon expressed a view that there was a generic set of problems that should be investigated within a number of other working groups. It was proposed by A. Davis and seconded by R. Falcon that the Gondwana Working Group be wound up.

### 4. Standardization, training and accreditation program (Convener: R. Kutzner)

Work had been undertaken on the accreditation part of this program and was reported by Reinhold Kutzner. Difficulties in implementation have centred on setting replies from sufficient laboratories and evaluating the results.

Information on the analyses that had been returned was shown in a form that did not compromise the security of the system. Using the criteria suggested by Smith, only 3 out of 20 analysts would be reported as category A. It was noted that the consistency for reflectance data was much better than for the maceral analyses.

#### Salient points included:

1. The limits of reproducibility found are close to the theoretical limits.
2. Outlying values for a number of the analyses tend to be biased to one side of the band containing the majority of the results.

Kutzner stated that the rules for the analyses were based on the ISO standards. He indicated that these would be reviewed to see if the instructions should be tightened. Instructions had been given that telocollinite should be measured for the reflectance measurements.

Davis asked about the method for determining mineral content and noted that the term "mineral matter" should be restricted to data recalculated from ash analyses.

Moore suggested that analysis of variance models should be used to analyse the data.

The Council had suggested that ICCP should look at undertaking a training program to assist members and non-members. It was also considered that a training scheme should improve the overall quality of work and achieve greater acceptance for petrological work by other groups. A number of proposals were made but no firm commitment was made to any specific program.

### Editorial Group, 3rd Edition of the Glossary (Editor: M. Wolf)

Prof. Wolf explained that in Porto Alegre, 1991, it was decided to form three groups for the revision of the macerals of the three maceral groups. This year drafts for the macerals of the Vitrinite Group were presented.

On Tuesday, the discussion started again - as last year - with the definition of the term "maceral" itself. Agreement now exists about the definition but the sheet has to be rearranged in order to make more clear what is the definition itself and which are additional remarks.

On Friday the discussion of the definition of single macerals stopped, since no consensus was possible about what is telinite and what is collotelinite. Discussion went back to the fundamentals of vitrinite classification, although the scheme of a subdivision of vitrinite in three subgroups and the macerals corresponding to these subgroups was accepted on Tuesday. After an extended discussion a proposal of A. Davis was accepted from the majority present during this meeting. The two proposals - the accepted at first and the new - will be presented to the members of ICCP by a questionnaire prepared by Prof. Wolf and the results will be the basis for future work.

Prof. Wolf then reported on the status of the groups preparing material for the third edition of the Glossary. Work on the vitrinite group is well advanced and will be the subject of detailed reporting and discussion at the next meeting. - No reply had been received from the persons given responsibility for preparing new sheets for the inertinite group. After some discussion, it was decided that to ensure the progress of this part of the Third Edition of the Glossary a new leader for this group be selected. Prof. Diessel was invited to undertake this work and accepted. - The persons given responsibility for the liptinite group have collected geochemical data but no text was prepared.

## **Commission 2 (Application of Coal and Organic Petrology in Geologie)**

Chairman: Dr. J. Senftle, ARCO Oil and Gas Company,  
Exploration and Production Research, 2300 West Plano  
Parkway, Plano, TX 75075, USA  
Secretary: Dr. W. Kalkreuth, ISPG, Geological Survey of  
Canada, 3303-33rd Street NW, Calgary, Alberta T2L 2A7, Canada

### **1. Alginite (Convener: A. Cook)**

The discussion focussed on the status of the telalginite and lamalginite sheets prepared by A. Cook. It was suggested to evaluate some new analytical data obtained from TEM work for inclusion in the descriptive sheets. General agreement was to put the working group on hold until the next meeting in Chania, Greece.

### **2. Isolation of Organic Matter (Convener (new): J. Castano)**

Initial results from a sample of Woodford shale (7 laboratories participated in the exercise) showed that vitrinite reflectance was not effected by HF and HCl treatments, however spectral shifts were observed when measuring fluorescence properties of telalginite. Due to the resignation of the former chairman of the working group (A. v.d. Meulen), no progress was made since the meeting in Porto Alegre. In the following discussion general agreement was to continue the work and J. Castano agreed to serve as the new convener for this working group. Anyone interested to participate in the activities of this working group please contact: J. Castano, 722 Oder Lane, Houston, Texas 77090, USA.

### **3. Thermal Indices (Convener (new): B. Pradier)**

At the Aachen (1988) and Wollongong (1990) meetings it was proposed to establish this working group to look into the role and range of thermal indices and to integrate petrographical results with data obtained from organic geochemistry. As suitable sample locations the Gippsland Basin (Australia) and the Pictou Coalfield (Canada) were proposed. For various reasons no samples were ever distributed to interested members of Commission 2. B. Pradier agreed to serve as the new convener of this working group. Anyone interested to participate in the activities of this group please contact: B. Pradier, S.N.E.A. (P), C.S.T.J.F. L2/144, Avenue Larribau, 64080 Pau Cedex, France.

### **4. Environmental Applications (J. Senftle)**

This topic was introduced by J. Senftle to discuss possible contributions by organic petrology in environmental issues. Suggested applications included fly-ash analyses, analyses of soils, peats, sewage sludge and coal dust. Members were asked to put further suggestions to the chairman or the secretary of Commission 3 over the next year to reassess the establishment of a working group on this matter at the next meeting in Chania, Greece.

### **5. SOM Working Classification**

Results were presented from a round robin exercise using two shale samples from the Bobroudja Basin, Bulgaria. A total of 15 laboratories participated in the exercise using a simplified working classification as proposed at the Wollongong meeting. Samples had been prepared for incident light microscopy and as strewn slides. Results indicated a wide range in the proportions of the various components and much of the discussion focused on the problems of quantifying organic components in strewn slides. After a lengthy discussion it was agreed to repeat the analysis using a new set of strewn slides (microphotographs presented at the meeting indicated problems in estimating the proportions of components because of overlapping materials). 31 members signed up for this exercise. Anyone else wishing to participate please contact: J. Castano, 722 Oder Lane, Houston, Texas 77090, USA.

### **6. Report on "Kerogen Isolation and Characterization Procedures" prepared by TSOP Research Committee (J. Senftle)**

The objectives of this study were to characterize organic matter from a wide range of sedimentary environments and included as specific goals a) the applications of various organic matter classifications; b) integration of microscopic results with geochemical and geological parameter; c) application of various kerogen preparation techniques. From the results it is apparent that for future work a standardization of microscope techniques is needed. It was also felt that the nomenclature used to describe "amorphous" material has to be addressed. Future work will use a round robin of microphotographs for a better understanding of the organic materials. Anyone wishing to obtain a copy of this report please write to: S. Teerman, Chevron Oil Field Research Co., P.O. Box 446, La Habra, CA 90633-0446, USA.

## 7. Bituminite (J. Castano)

A brief report was given on the transition from "amorphous" organic material into "massive" and "micrinized" OM during the course of maturation. Examples were given from hydrous pyrolysis experiments and from Alaska exploration wells.

## 8. Proposal for new working group on "Basin Modelling" (W. Fermont)

This new working group was proposed to integrate results from organic petrology with data obtained from organic geochemistry and geophysical and geological investigations. To undertake this study an exploration corehole from the Carboniferous of The Netherlands was proposed, which already has been studied in terms of petrography, burial history and sedimentary environments. In the discussion it was felt that there would be some overlap with the working group on thermal indices, however, there was sufficient interest to embark into this new topic including calibration of petrographic input parameter, measurement of maturity, identification of source rock intervals and types, quantitative estimation of hydrocarbon generation and the calibration of burial history models. Anyone interested to participate in the activities of this working group please write to: W. Fermont, Geologisch Bureau, P.O. Box 126, NL-6400 AC Heerlen, The Netherlands.

## Commission 3 (Application of Coal Petrology to Utilization)

Chairman: Dr. C.F.K. Diessel, Geology Department, University of Newcastle, Newcastle N.S.W. 2308, Australia

Secretary: Dr. Rosa Menendez, Instituto Nacional del Carbon, Ap. 73, La Corredoria, 33080 Oviedo, Spain

### 1. Reactive Inertinite (Convener: K. Kruszewska)

Aim of the working group: To evaluate methods for the recognition of fusible inertinite in coal samples, to correlate optical coal with coke analyses, and to produce a definition of reactive inertinite.

Activities during 1991/92: It is understood that K. Kruszewska does not work anymore in this field and that the working group has been dormant since the 1991 meeting in Porto Alegre. In reference to the remarks made above and the inherent difficulties in reaching a global agreement about reactive inertinite, the chairman proposed to prepare a comprehensive status report on the activities and achievements of the working group in particular and the question of reactive inertinite in general. This report will be tabled at the 1993 ICCP meeting with the view of either terminating or revitalising the activities of the working group. In the meantime Dr. Rosemary Falcon will try to contact the convener for the purpose of ascertaining her plans for the working group.

### 2. Combustion (Convener: J. Bailey)

Aim of the working group: To increase knowledge of the combustion behaviour of coals and to develop a char classification which is not only reproducible but also a meaningful tool for the correlation of coal composition with optical char properties and char combustion.

Activities during 1991/92: In the absence of the convener the chairman tabled her report of the working group's activities. A set of photomicrographs of char particles with known porosities compiled by J. Bailey was made available for inspection. They included pyrolysis chars and combustion residues. A questionnaire was included in which the members of the WG are asked to send to the convener suggestions for a possible simplification of the current char classification. So far only one laboratory has replied.

Future work: Following agreement on the alterations of the classification system a new Round Robin would be conducted.

Presentations: Rosa Menendez presented some preliminary results, emanating from the Joule Program (EEC), about the use of computer simulation of the combustion of pyrolysis-char particles. At present this work considers only morphological aspects of the particle, for which purpose an optical microscope equipped with a video camera and an image processing computer are being used in order to produce an accurate account of the effects of char structure on char combustion. A set of four chars from coals of different rank and two from a series of inertinite-graded density fractions were used. Computational grids were obtained by digitising images of cross-sections of char particles. An effect of coal rank was observed on the theoretical reactivity of chars but no influence of maceral composition.

John Vleeskens presented some results, also within the Joule Program, about the comparison of SEM and Optical Microscopy of 19 char samples from the KEMA combustion test facility. A comparison of these results with those from existing char classification methods appear to show that SEM data are more sensitive to burn-off than those obtained by classical methods. Final burnout values of the coals studied must be obtained to make a statement on the predictive value of char analysis data.

Chris Thomas presented a paper about "The Determination of Percentage reactive Inertinite under PF Combustion Conditions". A laser microreactor technique which simulates the initial stages of pf combustion was described. In a study of 6 coals individual inertinite particles were converted into char. The results showed the very wide variety of char types that are formed from macerals in the inertinite group. For each coal, it was found that at a particular reflectance the chars divided into fusible and infusible types. In conjunction with a coal reflectogram the proportion of the fusible inertinite could be calculated. For 4 Australian coals the proportion averaged 75 %, whereas the mean for an American and a German coal was 51 %. During discussions Neely Bostick point out the differences between fusibility and reactivity.

### 3. Coke Petrography (Convener: D. Vogt)

Aim of the working group: To establish a classification of coke textures which is reproducible and which can predict coke-technological properties.

Activities: In accordance with the decisions made at the Wollongong meeting, a simplified classification system was discussed by using a set of slides and pictures obtained from the coke samples used by the Reactive Inertinite Working Group during 1990/91. Points of possible controversy were highlighted. Appendix 2 includes the proposed classification.

Future Work: A set of pictures will be circulated by the convener who will ask participants in the exercise to identify specific areas in the illustrations. A description of the classification system will be included. After that a Round Robin analysis of an actual coke will be conducted.

### 4. Automation (Convener: D. Pearson)

Aim of the working group: To develop analytical methods, sample preparation techniques and evaluation methods for the rapid automated analysis of single coals and blends.

Activities: No activities on Round Robin analyses. In the absence of the convener the chairman read the conveners report which outlined new developments in automatic data acquisition in his laboratory.

Presentations: Petra David presented preliminary results of a joined project between the Geological Survey of The Netherlands and PAES Olympus of the application of colour image analysis in coal petrology in comparison to conventional optical methods. Four high volatile bituminous coals were used. Randomly chosen area were analysed using the CUE 3 system. The colour composition of each maceral group was defined via intensity levels in the red, green and blue spectral ranges. When analysed 20 or more areas repeatability was better than using conventional maceral analysis.

Javier Prado presented a discussion of the fundamentals of a new system of automatic analysis of macerals under the title "Automatic Petrographic Analysis of Coal Macerals and their Reflectance by Computer Vision and Expert System". This is a project financially supported by EEC and the Spanish Government. The hardware and software and the basis of the expert system were explained and also the method of calibration and automatic focussing.

Future work: It was decided to instruct the convener to prepare a Round Robin analysis consisting of a single, i.e. non-blended coal for the purpose of comparing results obtained by the different automatic systems currently in use, and to relate them to manually obtained reflectance and maceral analysis.

### Future Meetings

The next meeting of the ICCP will take place in the Technical University of Crete, Greece, September 1993. There will be a field trip to the lignite region of Peloponeso. An invitation to host the 1994 meeting was made by Dr. Rosa Menendez, from the Instituto Nacional del Carbon, Oviedo, Spain.

### Note

The following is a list of the ICCP publications:

- 1963: 2nd edition of the Handbook, printed by CNRS in English, French and German
- 1971: 1st Supplement, printed by CNRS
- 1975: 2nd Supplement, printed by CNRS
- 1981: 1963 2nd edition, re-printed
- In Press: 3rd Supplement, to be printed in Newcastle-upon-Tyne

Copies of the 1st and 2nd Supplements are available, but the reprinting of the 1963 edition has been exhausted. The initial run of the 3rd Supplement will be about 250 copies and will probably cost about £ 14 for 124 pages with 6 plates.

### ICCP Liaison with other similar groups

The ICCP exchanges minutes and newsletter with the American Society for Testing and Material (ASTM) and The Society for Organic Petrology (TSOP). Liaison with other regional groups concerned with organic petrology such as the Canadian group, the Francophone group, the German Group, etc. were discussed. Dr. Bostick suggested that ICCP should help in the organization of new groups. Prof. Wolf says that ICCP could publish the round robin analysis in the TSOP News and Dr. Harvey, from ASTM, suggested that the exercises require rigorous statistical treatment. Prof. Diessel asked whether the exercises would be conducted by the ICCP alone or would there be local organization. Dr. Rui Lin proposed a commission for organizing the analysis and he was elected to start the contacts.

### Other Meetings

The Society for Organic Petrology, 10th Annual Meeting, October 9-13, 1993, Norman, Oklahoma. Information: Brian Cardott, Oklahoma Geological Survey, 100 E. Boyd St., Rm. N-131, Norman, OK 73019-0628, (405) 325-3031, Fax (405) 325-7069.

Des Petrographes Organiciens Francophones, IXe Colloque, Pau, les 17 et 18 juin 1993. Information: B. Pradier et R. Baranger. Elf Aquitaine Production CSTJF-L2/144, Avenue Larribau F-64018 Pau Cedex, Fax: 33-59835551 ou 33-59834566.

### Miscellaneous

Dr. H.S. Pareek, BH 23 Pallav Puram, Meerut 250 110, India, informs that he has International Journal of Coal Geology, Elsevier, Vols. 7, 8, 9 and 10, available with himself. Any institution desiring to stock them in their library may write to him, directly. They will have to bear packing, forwarding and postal transit expenses by Air/Surface (as desired), for this present.

### Misprint

In no. 5 of the ICCP News two of the new associate members were announced with wrong citizenships. The correct declaration is:

- Mrs. Deolinda Flores                      - Portugal
- Mr. L. Sousa e Vasconcelos            - Mosambique

Sorry!  
The editor