

No. 19

April 1999

Aachen

**51st Meeting of the ICCP in Bucuresti (Romania)
September 12 – September 18, 1999**

Information of the Organizers

By different circumstances the first announcement of the coming meeting and the invitation-card was not dispatched in all cases with the correct address. Therefore, the Organizing Committee begs all members involved pardon. The organizers tried hard to repair the damage as quickly as possible. But, if you did not get the documents mentioned above until now or if you have any other question in connexion with the next meeting, please, contact immediately

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The Organizing Committee has postponed the **dead line** for abstracts and registration to
Mai 15, 1999.

Tentative Programme

Working groups/topics of Commission 1 at the Bucharest Meeting

Accreditation	A. Depers
Standardization	W. Pickel
Handbook structure	M. Wolf, A. Cook, W. Pickel
Lithotypes (hard coals)	M. Wolf, G. Bieg
Huminite	G. Taylor, I. Sykorova, W. Pickel
Bitumens	J. Burgess, A. Cook
Zooclasts	F. Goodarzi
Graphites, semigraphites	B. Kwiecinska, A. Depers
natural coke, pyrolytic carbon	H. Petersen, C. Nedelcu
Oxidation	K. Kruszewska
Automation	P. David, J. Prado
Radiation Damage	<i>up to now, no convener</i>

Temporal variations of coals	L. Vasconcelos, A. Cook
ICCP Training Programmes	A. Cook, A. Depers
Liptinite	W. Pickel
Microolithotypes	M. Wolf
Microscope session	A. Cook, W. Pickel etc.
- reflectance analysis	
- maceral analysis	
- various topics	

Members of Commission 1 wishing to contribute to or participate in one of the groups are requested to contact the corresponding chairperson or the chairman/secretary of the commission. Note: comment is welcome even if you will not be able to be at the Bucharest meeting.

! Dead line for the next issue of the ICCP NEWS is 31.10.1999 !

Proposals for the microscopy session would be very welcome and we would like to remind you, that you will not very frequently have such a bunch/group of petrographers available to discuss your petrographical problems.

Draft Agenda Commission 2 for the 1999 ICCP Meeting

1. Environmental Applications (Convener: A. Depers)

Preliminary report on the Round Robin Exercise and additions to the Atlas of Photomicrographs. Possibility of publishing articles from the White Paper in a special edition.

2. Coal Facies (Conveners: M. Hámor-Vidó and G. Nowak)

Summary about the activities of the coal facies W.G. Progress done for the publication of the white paper.

3. Thermal Indices (Convener: C. Araujo)

Preliminary results of the round robin comprising the analysis of two pairs of samples (torbanite and coal from the same seam).

4. Classification of DOM (Conveners: A. Hutton, L. Stasiuk, J. Burgess)

Report on discussion about the DOM classification scheme proposed at Porto Meeting.

5. Coalbed Methane (Convener: P. Crosdale)

Progress of the activities of the new W.G.

6. Pseudovitrinite (Conveners: Lila Gurba and C. Ward)

Discussion of the results of recent tests (including follow-up of 1998 round robin exercise; „etching“ by immersion oil and additional tests carried out on coal containing pseudovitrinite). Discussion on nature, origin and nomenclature of pseudovitrinite. Development of white paper draft.

Draft Agenda Commission 3 for the 1999 ICCP Meeting

1. Automation (Convener: P. David)

Evaluation of the results of the 2nd round robin analysis and discussion about the further activities of WG on automation.

2. Combustion (Conveners: E. Lester and D. Alvarez)

Report of the results of the round robin exercise. Discussion about possible modifications in the classification scheme (slide session).

3. Inertinite in combustion (Convener: A. Gómez-Borrego)

Report of the results of the round robin exercise comprising the analysis of a low rank inertinite char, a high rank inertinite-rich char (both of them analysed also last year) and the exercise on CD images.

4. Coal Blends (Convener: I. Suarez)

Report on the results of the round robin exercise consisting on the analysis of two commercial blends (one used in coke ovens and one used in power plants).

5. Coke Texture (Convener: R. Javier)

Summary of the activities of the WG.

Announcement of the Standardization Working Group

The Standardization Working Group wants to announce, that in addition to the round robin with the glass standards, that is still on the way, a second round is planned, using a YAG.

The scope of this round robin will be

- a) to check on variations in results of the glass standard round robin, that might be due to the not very good quality of the standards,
- b) to offer a service for everyone, who wants to check his own reflectance calibration.

Prospective participants are asked to contact as soon as possible

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ICCP's Accreditation Programme

The last phase of the 1996 Exercise has now been finalised. All petrographers in this scheme have received their statistical appraisals. In total, 59 petrographers took part in the 1996 Exercise and 56 were awarded certificates in the scheme. Three petrographers were not accredited at this stage. Full Accreditation certificates were awarded to 30

petrographers and 29 petrographers were awarded Provisional Accreditation certificates.

The following petrographers awarded Full Accreditation certificates:

Dr. Judy G. Bailey
 Dr. E. Rolando Carrascal-Miranda
 Dr. Petra David
 Prof. Alan Davis
 Prof. (em.) Claus F.K. Diessel
 Mrs. Norma Duarte Mergel
 Ms. Vivien M. Du Cann
 Dr. Rosemary M.S. Falcon
 Dr. Willem J.J. Fermont
 Ms. Larissa Gammidge
 Dr. Ángeles Gómez Borrego
 Mr. Ken N. Hall
 Mr. Leo F. Jegers
 Dr. Amalia Jiménez Bautista
 Mrs. Dagmar Joa
 Prof. Dr. Wolfgang Kalkreuth
 Mr. Gary D. Mitchell
 Dr. Jane Newman
 Dr. Dave E. Pearson
 Dr. Werner Pfisterer
 Dr. Walter Pickel
 Dr. Rejane Pujol de Vargas
 Mr. Adrian P. Reifenstein
 Mr. Ray J. Smith
 Dr.-Ing. Monika Steller
 Dr. Elisabeth A. Stumpf Viegas
 Mrs. Maria Tomica
 Dr. Harry Veld
 Mrs. Angelika Vieth-Redemann
 Dr. Nikki Wagner

Congratulations on being the first group to be awarded Full Accreditation in this scheme! Names and affiliations of Full Accreditation certificate holders will be placed on the ICCP's web site in April.

Petrographers awarded Provisional Accreditation certificates will be contacted in May regarding the next phase of the Accreditation Programme. Petrographers with a few years of experience in coal petrography, who are interested in joining the scheme, should contact me as soon as possible (see below). Petrographers who have recently started coal petrography are also encouraged to join the scheme, subject to a satisfactory analysis of a trial set of coal blocks.

I wish to thank the members of the current Accreditation Committee (Dr.'s Cook, Fermont and Pickel) for their support and advice over the past 4 or so years.

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Reinhardt Thiessen Medal Award, 1998

1. Laudatio

Each year the International Committee for Coal and Organic Petrology (ICCP) may award its Reinhardt Thiessen Medal to one outstanding petrologist who has made significant contributions in the field. This year the ICCP honoured **Dr Javier Prado** of the Instituto Nacional del Carbon of Oviedo (INCAR), Spain on September 26th at its 50th meeting held in Porto .

Javier Gonzalez Prado was born in Gijon in 1926. All of his degrees were obtained at the University of Oviedo. His B.Sc. degrees were obtained in Chemistry in 1951 and in Geology in 1965. In 1972 Prado was awarded a Ph.D. with Special Honours for his thesis on the microscopy of oxidised coals.

Javier Prado commenced work at INCAR in 1952 as a student; his activities were concerned with the study of coal coking blends and the presence of phosphorus in coals and coal ashes. In 1955 he was awarded a permanent position with the Spanish Research Council; his involvement at this time was the development of a method for measurement of ash fusion temperatures.

In 1958 he first began working as a coal petrologist, examining blends of Spanish bituminous coals. Early reflectance work, before the advent of photometric systems, was conducted with the Berek comparator. Other work at this time included the study of Asturian tonsteins and durains as means of correlating coal seams for industry, and the occurrence of natural cokes. Prado was a pioneer in interpreting the composition of bituminous coal blends using the Gaussian reflectance distributions of the blend components. Anthracites posed a problem because of their non-Gaussian reflectance distributions; only by studying hundreds of coals was it possible to determine the blend compositions in these cases.

The establishment of correlations between reflectance and volatile yields of Spanish coals provided a means for identifying the presence of weathered coals in blends. Deviation of the actual from calculated volatile matter indicated the possibility of weathering. These studies began a long-term interest in the mechanism and identification of coal oxidation including the phenomena of inertinite weathering and paleo-oxidation and the use of microhardness as an indicator of mild oxidation.

Another ongoing interest has been the improvement of analytical procedures in microscopy, in geometric considerations and mathematical treatments of 2-dimensional data (stereology) as well as in automation. Recently he has developed a fully automated system of

maceral analysis capable of recognising not only maceral groups but also individual macerals.

Dr. Prado has supervised many theses in coal and coke petrology, including studies of the relationship between coal depositional environment and petrographic composition, the petrology of source rocks in relation to petroleum occurrences and oil shale petrology and geochemistry. As a member of INCAR he has also supervised hundreds of projects involving international research efforts. Dr Prado has continuously assisted the industry of Northern Spain by advising on operational problems such as coke quality for the steel companies, mining problems for coal producers and the characterization of coal supplies for utility companies. During the 1980s Dr. Prado was the Spanish representative at meetings undertaken to establish an international coal classification system within the framework of the ECE. He is currently serving on the Editorial Board of the International Journal of Coal Geology.

Dr. Prado has been a member of the ICCP since 1966 and has been a regular participant of our meetings since then, actively participating in numerous Working Groups. He was Convener of a Working Group on coal oxidation and has recently investigated on behalf of the ICCP the use of the internet for exchanging petrographic images.

The ICCP has been pleased to award its Reinhardt Thiessen Medal to Javier Gonzales Prado for his contributions as an innovative researcher in coal petrology, especially in the development of improvements in microscopic analytical procedures, including automation, and for his ongoing efforts in addressing the operational problems experienced by industry.

Dr. Alan Davis

2. Dr. Prado's Reply

I have to begin giving many thanks to many people. First at all to the members of the Thiessen Medal Award Committee and also to those anonymous persons who have nominated myself.

Apart from the usual thanks I would like to say some words telling you how deep my gratitude is to the people mentioned above. Awards should not be expected and when they are awarded without being demanded they are received with great pleasure.

The Thiessen Medal that you have presented to me now is not the first reward that I have received from the ICCP. During many years and every year again I have received the reward in the friendship of many members, the reward of receiving a big part of their

science, their kindness and their patience with me trying to understand my English (as now!). If I compare my contributions to the ICCP with the matters I got back from it, than I must express my serious gratitude.

I was always in favour of the pure or basic science, but the majority of my work at INCAR has been devoted to the application of the science of coal petrography to industrial problems.

I agree with Federico Mayor Zaragoza, the former director of the UNESCO when he said: „**The applied science does not exist, there are only science applications**“. For this reason, my concern in the ICCP was always to develop scientific methods, procedures or definitions outside the application that they may have.

Now we are precisely in this situation with the maceral analysis. The basic statistical theory and the point-counting method gave us only a limited application or, if you wish, a limited accuracy and reproductibility. We intend to cover the industrial demands knowing that it is not possible to improve our results further on. It is interesting to mention that none of the norms ASTM, ISO and ICCP for maceral analysis are following the statistical principles that are the basis of the point-counting method for the binomial distribution. The only way to solve these problems is to go deeper in the theory or to develop other analytical methods based in reliable scientific fundamentals.

The results of the ICCP are, like in other international committees, the result of consensus. But danger arises when the consensus is reached by a majority that does not fully understand the theoretical aspects involved.

Changing the old habits is a difficult task, as it is to preserve all the good habits, major findings and knowledge acquired. Thank's for the work done by many of the ICCP members in the past.

Working as a referee for the International Journal of Coal Geology, I noticed that, despite the facilities introduced by informatics, many authors tend to cite only the papers published by researchers of their own country, ignoring the work done abroad. This practice, more and more accentuated nowadays, is totally opposite to the scientific principle of propagation and recognition of the information.

The knowledge accumulated by a scientist on his own benefit has no sense at all, it has to be shared with the rest of the scientific community. Thus, the scientific development carried out in private or state companies does not yield any benefit for the society until it is easy of access by proper dissemination channels. The countries under development remain in that situation. No matter how much technological aid they receive, until they achieve their basic science background.

The acquisition of a large scientific background by individuals or institutions is of no use unless it is properly spreaded, except, of course, the private benefit obtained by that individual or that institution.

Furthermore, we become enriched by giving ourselves to the others, and this has always been my attitude, as it has also been the attitude of many other ICCP members.

Rabindranath Tagore, the famous Indian writer, expressed this remarkable idea as follows:

I was sleeping and dreaming that life was joy
I woke up and saw that life was service
I served and saw that joy was in serving.

I hope I will be able to serve the ICCP for many forthcoming years.

Thank you

Book Review

Organic Petrology

Written by G.H. Taylor, M. Teichmüller, A. Davis, C.F.K. Diessel, R. Littke, and P. Robert with contributions by D.C. Glick (with A. Davis), M. Smyth, D.J. Swaine, M. Vanderbroucke, and J. Espitalié

Printed by Gebrüder Borntraeger, Berlin, Stuttgart, 1998;

ISBN: 3-443-01036-9 DM 196; U.S. \$ 116. Hardcover
Review by Jack D. Burgess, Humble Geochemical Services, Humble, Texas.

This volume of nine chapters covers the subject of organic petrology and were written by six major and five contributing authors. Chapters are of varying length with the Introduction and historical survey consisting of 5 pages and the longest chapter on Methods with 112 pages. The chapter headings include: Introduction and Historical Survey, The Origin of Organic Matter in Sedimentary Rocks, Coalification and Maturation, The Nature of Organic Matter – Macerals and Associated Minerals, Lithotypes and Microlithotypes, Some Important Coals and Other Carbonaceous Rocks of the World, Methods and Procedures, Geologic Applications, and Technological Applications. Each chapter contains a short introduction and then greater details as individual topics are developed. The table of contents along with an extensive subject index following the references makes for easy access to a specific topic. This book is unique in functioning both as a handbook of techniques in coal and organic petrology as well as a complete reference guide.

The Introduction and Historical Survey brings together into a few pages the important work of individuals, and the International Committee for Coal and Organic Petrology (ICCP) in establishing coal petrology as a descriptive science. The historic trends of the Stopes-Heerlen terminology usage are well covered and makes clear the debt owed these many early coal scientists.

Chapter 2 on The Origin of Organic Matter in Sedimentary Rocks was written by M. Teichmüller, R. Littke, and G.H. Taylor. The chapter is entitled Deposition and preservation of organic matter in sedimentary rocks other than coal, and covers such diverse topics as climate paleogeography and environments of deposition, types of deposition, peat forming communities, accumulation rates of organic matter-rich sediments other than coal, and migrabitumen in rocks. In the section on deep marine environment the authors develop a triangular diagram depicting maceral associations in small oceanic basins and along passive continental margins, and which is also used as a logo on the book cover.

Chapter 3, 4, and 5 cover Coalification and Maturation, The nature of organic matter – maceral and Associated Minerals, and Lithotypes and Microlithotypes. The subjects are well covered in these chapters with many new diagrams and cross-sections, and some that have been seen before. Also noted are sections dealing with organic matter-rich sediments other than coal, the calibration of vitrinite reflectance in basin modelling, and macerals in oil shales and other petroleum source rocks. The recognition and application of coal petrology to rocks other than coal is a most welcome trend, and the authors are to be commended for this emphasis.

Chapter 6: Some important Coals and Other Carbonaceous Rocks of the World was written by G.H. Taylor and collects a great amount of material on organic-rich rocks and coals worldwide. Reading this chapter and referring to the colored stratigraphic columns in Appendix 1, graphically showing occurrences of carbonaceous rocks from the Phanerozoic to the Pliocene and reveals the ubiquity of carbonaceous rocks through time. A conclusion by the author shows that carbonaceous rocks were deposited in every geologic age and have been exposed to a variety of post depositional conditions, yet there is no consistent correlation between age and rank. Some carbonaceous rocks of Precambrian age, have never been exposed to temperature > 100°C, while some Tertiary coals are of bituminous or even anthracite rank.

Chapter 7 covers Methods and Procedures and is the longest segment of the book with 112 pages. It was written by A. Davis, D.C. Glick, M. Vanderbroucke, and J. Espitalié. This chapter starts with Sampling methods and preparation procedures and leads to a

Description of coals, and oil shales, with sample preparatory techniques for coal, strew mounts and well cuttings. Reflectance analysis is described along with recording and reporting of data. Automated image analysis is discussed, described, and compared with manual methods. Complimentary geochemical methods to augment organic petrography are covered along with interpreted gas chromatograms of kerogen types I, II, and III. Etching and staining hardness, microstructure in coals and chars are covered in detail.

Chapter 8 covers Geological applications and was written by M. Teichmüller, P. Robert, R. Littke, and M. Smyth. This chapter is divided into 7 sub-headings including Methodology of Organic Petrology Applied to Solving Geologic Problems; Diagenesis Through Metamorphisms and its Relationship to Concurrent Rock Interactions; Uses of Organic Petrology in Crustal Distensions and Convergence Systems; Exploration for Hydrocarbons, Source Rocks, Maturity, Limits of Maturity for Oil and Gas Occurrences, Coal as a Source and Reservoir Rock, and Four Basin Studies Utilizing Organic Petrology; Ore and Mineral/Organic Matter Interactions; and finally Applications in Soil Science, Archaeology, and Effluent Studies. This chapter will be the one most referred to by those exploring for oil and gas.

The final chapter, Chapter 9 in the book, was written by C.F.K. Diessel with assistance from M. Smyth. The chapter is divided into seven major-sub-headings: Coal Exploration and Preparation, Coal Carbonization and Petrology of Coke, Coal Combustion, Coal, Gasification, and Liquefaction, and Coals for Other Industrial Purposes. The authors set the stage for the subjects in their introduction, "...the emphasis of the discussion is on the important role the microscope has played in developing an understanding of the function of coal and its components as a chemical feed stock and provider of energy." For one who is not well versed in this field as I am not, the authors do a first-rate job of leading one through these technical subjects in a logical and comprehensive way, and at the end of the chapter you feel a good grasp of the subject matter, and a ready reference to their technology.

This book is a must have for all practicing coal and organic petrologists, and should be an available reference for all organic geochemists.

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**Dead line for the next issue of the ICCP NEWS is
31.10.1999!**

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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 the treasurer:

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