

COKE

Reflexence
Kerogen

MACERAL

char

54th ICCP Meeting Maputo - Pretoria Mozambique - South Africa

Organising Committee

Lopo Vasconcelos

Universidade Eduardo
Mondlane



João Mugabe



Humberto Saeze



Nelson Ocuane

Ministry of Mineral Resources
and Energy, National Directorate
for Coal & Hydrocarbons



AfriOre Limited



Ricky Pinheiro

SABS

South African Bureau
of Standards



Ronel Pretorius



Vivien du Cann



Coal and Mineral
Technologies Pty Ltd

Annette Ellis



Nikki Wagner

SASOL

inside

this issue

3 from ed. / pres.

5 54th ICCP meeting

13 registration form

16 accreditation news

17 book review

18 degradinite

19 from archives

22 research notes

Council of the International Committee for Coal and Organic Petrology (ICCP)

President (1999 - 2003)

Dr. Alan C. Cook
Keiraville Konsultants Pty. Ltd.
7 Dallas Street
Keiraville, NSW 2500
AUSTRALIA
Tel : +61-2-4229 9843
Fax : +61-2-4229 9624
Email : acc@ozemail.com.au



Commission 2 Chair (1999 - 2003)

Prof. Dr. Wolfgang
Kalkreuth
wolfgang.kalkreuth@ufrgs.br



Commission 2 Secretary (1999 - 2003)

Dr. M. Ángeles Gómez
Borrego
angeles@incarc.csic.es



Vice-president (1999 - 2003)

Prof. Dr. Barbara K.
Kwiecinska
kwiecin@uci.agh.edu.pl



General Secretary (2000 - 2004)

Dr. Petra David
p.david@nitg.tno.nl



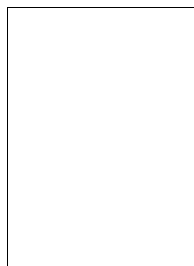
Commission 3 Chair (2000 - 2004)

Dr. Rosa Menéndez
rosmenen@incarc.csic.es



Commission 3 Secretary (2000 - 2004)

Dr. Henrik Ingerman
Petersen
hip@geus.dk



Treasurer (1997 -)

Dr. Rudolf (Rudi) M.
Schwab
rudi@chesternet.co.uk



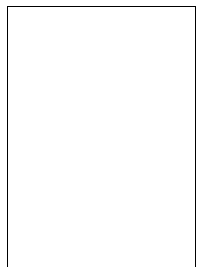
Editor (2000 - 2004)

Dr. Peter J. Crosdale
peter.crosdale@jcu.edu.au



Commission 1 Chair (2000 - 2004)

Dr. Walter Pickel
walter.pickel@
syd.dpr.csiro.au



Commission 1 Secretary (2000 - 2004)

Dr. Deolinda Flores
dflores@fc.up.pt

Past President

Manuel João Lemos de Sousa mlsousa@fc.up.pt

Returning Officer

Harold Smith a.h.smith@sheffield.ac.uk

Honorary Auditor

Alan Davis ddu.@psu.edu

Reinhardt Thiessen Award Committee

Chairman Geoff Taylor ghtaylor@webone.com.au

Webmaster

http://www.iccop.org
David E. Pearson dpearson@coalpetrography.com

Archives

Faculdade de Ciências, Universidade do Porto
Manuel João Lemos de Sousa mlsousa@fc.up.pt

Handbook Administration

Petra David p.david@nitg.tno.nl

Membership Enquiries

Dr. Petra David
Netherlands Institute of Applied Geoscience TNO
National Geological Survey, Department of Geo-Energy
P.O. Box 80015
3508 TA Utrecht
THE NETHERLANDS
Ph. +31 30 256 4648 Fax +31 30 256 4605
Email : p.david@nitg.tno.nl
OR visit our web site <http://www.iccop.org>

From the Editor

In the last issue of ICCP News, I focussed on publications and their importance in maintaining the vitality of ICCP. This time I would like to talk about the strong community feel of ICCP and ways of encouraging an even greater group feeling.

In an effort to make the ICCP Council less faceless, I have in the past concentrated on placing images of Council members, where possible, in amongst newsletter items. For future newsletters, I hope to have photos of all Council members included with the list of office bearers inside the front cover. This time around most of us appear and hopefully in the next ICCP News you will be greeted by the full Council when you open it! This leaves the opportunity to get more of the general membership onto the pages of ICCP News so we all get to know who is who - but council members should lay down their guard and they may still be targetted if caught on film.

In this vein, I have put in a request in this newsletter for all members to submit a passport style photograph of themselves. This is entirely voluntary. The purpose is mainly archival so that we have a visual record of members for historical purposes. I would also like to receive photos of past members for the archive, along with some brief information if possible. One possibility for this archive would be that members may choose to have their photo in future membership directories (but this has yet to be discussed). It would help make us all a little more accessible to each other instead of being just faceless names in a booklet. I hope that members will agree and see fit to send in their photograph.

Again I have been a little disappointed at the lack of input from members to ICCP News, despite an email reminder with a few suggestions. I guess that it is because members are yet to get used to the idea of contributing in this way. To give a little nudge along of the type of item that may be nice to see, I have included a small piece on the almost forgotten 'maceral' degradinite - yes, it was a maceral but is now no longer recognised by our system! I have also included some archival material (from my own files) on this maceral. It would have been nice to have had a photograph of Dr Asai from the archives to place next to his article. I am sure that others will have suitable reminders of past work and past workers that we will all find of interest. Material from the archives not only connects us with our past but also serves to give us hints for future directions.

Cheers, Peter
ICCP Editor - email Peter.Crosdale@jcu.edu.au

From the President

I write this piece after a couple of days spent drafting agenda items for the coming meeting and I note that a large number of items were in previous agendas and should already have been decided. They are still to be considered. The listing of formal agendas should have speeded consideration but as yet it does not seem to have done so. It has allowed us to know more certainly what it is we have not done - which, to be optimistic is some sort of progress! It may seem that we have infinite time but this is not so.

I think that it is fair to say that the Accreditation Program brought organic petrology back from a kind of "brink". It has also brought time constraints. The concept of certified analyses was first raised at the Doncaster meeting in 1986. At that time, many of those discussing coal classification at ECE and at ISO considered organic petrology data to be a joke in terms of obtaining reliable results. It was a joke at which, luckily, ICCP failed to laugh. Hard work has allowed us to progress to a point where some of the same persons who were sceptical of the value of **our** data, now show considerable respect for coal petrological measurements. If we had been just a little bit later in getting our house in some sort of order, we would most likely have been too late. The very fact that Accreditation is now accepted (not as widely as I hope it will be, but more widely than before) means that we now have a time imperative of a sort we have never, as far as I know, had before. Aivars Depers never tires of reminding me that ISO 9000 states that Accreditation must have time limits and the normal cycle is one year. We need to continue to meet this sort of requirement year after year. It is a daunting task to meet the renewal requirements and we must be equal to it. Even after the work of the past decade, we do not have a maceral system that fully meets the needs of the ISO system for classification of coals that is about to be finalized.

Organic petrology is a technique with immense value and extremely wide applications. Overall, we need to be more successful in letting our colleagues in other fields know this. Look how vitrinite reflectance data are subsumed in almost any oil company report you see within a section that is titled Organic Geochemistry. We should have ensured that organic petrology stood on its own but we did not. Petrological data are qualitatively

different from chemical or empirical methods. Bulk methods generally cannot distinguish the components within mixtures. We can describe associated features and our measurements are on specific macerals. Vitrinite reflectance data should be consistent with liptinite fluorescence characteristics. The two properties are complimentary and the extent of this can be tested. How often are organic geochemistry databases set up to take advantage of these facilities? Too frequently, all that is wanted is a number to fit in the database, and even worse, a number to fit a preconception. If the number does not match the preconception, well then try another method!

We need to spread approved analytical processes to other parts of our work. I can now see a start to this expansion and this is, without doubt, a major positive event.

However, it does mean that we need to examine carefully whether Accreditation Programs can continue to be run by an organization structured along the current lines of ICCP. We are probably an organisational equivalent of bituminite - it has a name, it is useful, you can define some properties, but saying exactly what it is proves more challenging. There are reasons why we should become more formally structured. These include a greater ability to undertake additional tasks (such as UN affiliation), enhanced standing with organisations such as ISO and ability to retain copyright. There are costs, and these would be both financial and structural. I can see both sides of the argument and could live with either outcome - stay as we are, or restructure. What does cause me problems is that the issue was first raised at the Rio meeting in 2000, but we have still not even **started** a formal discussion of it.

The upcoming meeting will see elections being called for a number of Council positions. Some of the positions due for elections are either those of Officers who will not be standing or of those who have already served two terms. Nominations will be called at the coming annual meeting. Consideration should be given to the nominations that are to be made. Holding positions on Council involves a considerable commitment to the work of ICCP and implies an intention of attending most if not all of the annual meetings. Council members do not receive support from ICCP to attend meetings (there are as far as I know only two occasions that were exceptions to this statement - none within the last five years) so accepting nomination represent a

considerable financial cost to the persons elected. Nominations should result from consideration and consultation between the nominators and the potential candidates. Election to Council also carries a responsibility to represent the broader interests of ICCP. Members of Council are not there to press their own views, but to try to construct a path that advances ICCP, even where this may run contrary to their own private views on specific issues.

The coal industry seems to have survived (more or less) the gyrations of the fuel industry that have occurred in the past 12 months while the oil industry has merely had its fears confirmed that it cannot rely on higher levels of oil prices. We have also seen the immense pressures exerted by the market on companies suffering the loss of revenue to be expected in a period of falling oil prices. With the coal industry, the "more" seems to relate to production and to coking coal prices, and the "less" to the number of large coal companies as mergers imitate the pattern seen in the oil industry in 1998 and 1999 and steaming coal prices.

Both of these trends have implications for ICCP. The tendency to reduce the number of specialists within large companies will continue and the base from which we can draw corporate support will shrink. We have already seen many specialist organisations like Bergbau Forschung go, the remaining ones do not have the discretionary expenditure that they had in the past, the Universities are somewhere between less supportive and hostile and the number of oil and mining companies is shrinking. So we will be thrown back even more on our own resources. Thus, the ways that were appropriate for ICCP in its early days, have to be re-evaluated to make certain that they will permit it to continue in an entirely different environment - a vastly larger membership, much more diverse geographic reach and much less institutional backing. Perhaps the way we are is the best way. Equally, it is possible that there are new forms we should adopt. Most of all, we need to consider our structure and make a conscious decision about what we do. We know what happens to organisms that fail to change with their environments! We can change but we need to be conscious of the time constraints within which we are operating.

ACC Tuesday, May 07, 2002 9:57:43 PM
Bandung

54th Annual Meeting of the ICCP

**Maputo -Pretoria
22-29 September 2002**

Preliminary Agenda

Members are referred to the ICCP homepage (<http://www.iccp.org>) for the most up to date announcements as well as for additional information on what to see and do and some very nice photos.

Sunday, 22.09.02

15.00-18.00 Meeting of the ICCP Council
18.30 -20.30 Registration and ice-breaker

Monday, 23.09.02

8.30-10.30 Opening Ceremony/Opening Plenary Session of the General Assembly
8.30 - 8.40 Welcome by the co-Chairman of the Organising Committee, Lopo Vasconcelos
8.40 - 8.50 Welcome by Brazão Mazula, Rector of the Eduardo Mondlane University, Maputo, Mozambique
8.50 - 9.00 Welcome by Castigo Langa, Minister for Mineral Resources and Energy of Mozambique
9.00 - 9.20 Presentation on Coal and Hydrocarbons in Mozambique by Arsénio Mabote, National Director for Coal and Hydrocarbons
9.20 - 9.30 Lopo Vasconcelos - General information
9.30-10.30 Opening Plenary Session - general business
1. Apologies and other attendance matters
2. Minutes of the Copenhagen meeting
3. Results of Elections
4. Future meetings
 4.1 Utrecht, the Netherlands (2003)
 4.2 Budapest, Hungary (2004)
 4.3 Patras, Greece (2005)
5. Membership
 5.1 Associate Membership
 5.2 Full Membership
 5.3 Honorary Membership
6. Status of ICCP
7. Elections

10.30-11.00 Coffee Break

11.00 - 12.30 Opening Plenary Session (Continued)

13.00 - 14.30 Lunch

14.30 - 16.00 Meeting of Commission I

Chair: Walter Pickel

Secretary: Deolinda Flores

1. Accreditation Programme (A Depers);
2. Training Programmes (Alan C. Cook, Aivars Depers)
3. New ICCP Reflectance Standard (W. Pickel, D. Pearson);
4. Standardization Working Group (H. Read)
5. Standardization II (reflectance standard) (David Pearson, Walter Pickel)
6. Review of new methodologies and techniques in Organic Petrology (L. Gurba, R. Schaefer).
7. Sample Preparation Techniques (David Pearson)

16.00 - 16.30 Coffee Break

16.30 - 17.30 Meeting of Commission I (cont.)

Tuesday, 24.09.02

8.30 - 10.30 Meeting of Commission I (cont.)

Chair: Walter Pickel

Secretary: Deolinda Flores

8. Temporal variations of coal (L. Vasconcelos);
9. New Handbook Edition (Alan C. Cook, Walter Pickel, Peter Crosdale)
 - 9.1 Liptinite (Walter Pickel)
 - 9.2 Lithotypes (hard coals) (Peter Crosdale, Walter Pickel, Gerd Bieg, Jim Hower)
 - 9.3 Huminite (Kimon Christanis, Ivana Sykorova, Walter Pickel)
 - 9.4 Bitumens (Jack Burgess, Alan Cook)
 - 9.5 Graphites, semigraphites, natural coke, pyrolytic carbon (Barbara Kwiecinska, Aivars Depers, Henrik Petersen, Costel Nedelcu)
 - 9.6 Oxidation (Krystyna Kruszewska)
 - 9.7 Zooclasts (Fariborz Goodarzi)

10.30 - 11.00 Coffee Break

11.00 - 12.30 Meeting of Commission I (cont.)

12.30 - 14.30 Lunch

14.30 - 16.00 Meeting of Commission I (cont.)

16.00 - 16.30 Coffee Break

16.30 - 17.30 Meeting of Commission I (cont.)

20.00 CONFERENCE DINNER

Wednesday, 25.09.02

8.30 - 11.30 Visit to the Coal Terminal in Matola City, 10 km NW of Maputo
11.30 - 14.00 Lunch
14.30 Departure to Berg en Dal (in Kruger Park)

Thursday, 26.09.02

8.30 - 10.30 Meeting of Commission II
Chair: Wolfgang Kalkreuth
Secretary: Angeles Gómez Borrego
8.30 - 9.00 Classification of DOM (L. Stasiuk/J. Burgess) Report on WG activities
9.00-9.30 Environmental Applications of Organic Petrology (M. Mastalerz). Report of Atlas on development of Anthropogenic Particles: the structure, selection of images etc.
9.30 - 10.30 Reflectance Data Qualifying System (A. Gómez Borrego). Report on the results of the 2002 Round Robin exercise on qualifying vitrinite reflectance analysis
10.30 - 11.00 Coffee Break
11.00 - 13.00 Meeting of Commission II (cont.)
11.00 - 11.20 Thermal Indices (C. Araújo). Geochemical and petrographical results from analysis of torbanite, Joadja, Australia
11.20 - 11.40 Coalbed Methane (P. Crosdale/L. Gurba). Status report on WG activities:
1. Isotherms - Round Robin Exercise, Establishing collaboration with the group in the USA.
2. Coal Seam Gas and CO₂ Sequestration into Coal Seams: Standards and Legislation.
11.40 - 12.00 Coal Facies M. Hámor-Vidó/G. Nowak. Status report on WG activities
12.00 - 12.30 Pseudovitrinite (L. Gurba and C. Ward). Status report on WG activities
12.30 - 13.00 *In-situ* analysis of coal macerals, electron microprobe (L. Gurba/M. Mastalerz). Status report on WG activities
13.00 - 15.00 Lunch
15.00 - 18.00 Visit to Kruger Park

Friday, 27.09.02

8.00 Departure to Secunda
12.00 - 14.00 Lunch
14.00 - 17.00 Visit to SASOL/Leeuwpan
17.50 Departure to Pretoria

Saturday 28.09.02

8.30 - 10.30 Meeting of Commission III
Chair: Rosa Menendez
Secretary: Henrik I. Petersen
8.30 - 9.30 Coal Blends WG (Isabel Suárez Ruiz). Report and discussion of the 2002 round robin exercise.
9.30 - 10.30 Coke Petrography WG (NN). Election of a new convenor and discussions on Atlas preparation and organization of future activities. Review of coke petrography current situation prepared in collaboration with María Díez and presented by the Chair
10.30 - 11.00 Coffee Break
11.00 - 12.15 Meeting of Commission III (cont.)
11.00 - 12.00 Combustion WG (Diego Alvarez/Edward Lester). An overview of the work done in the last few years, results of the 2002 round Robin exercise and discussion on future activities.
12.00 - 12.15 Automation WG (David Pearson). In the absence of the convenor, under his indications, to enquire the names of those interested in receiving pellets for a single coal and blend coal automated analysis.
12.15 - 14.30 Lunch
14.30 - 15.30 Meeting of Commission III (cont.)
14.30 - 15.30 Application of Reflectance to Estimate Structural Order WG (Slawomira Pusz) Presentation of a review on the influence of thermal treatment on the optical texture of coals and carbon products, and relations between optical properties and structural order of carbonized materials.
15.30 - 16.00 Coffee Break
16.00 - 16.40 Meeting of Commission III (cont.)
16.00 - 16.40 New Working Groups. Presentation of the search carried out by Cristina Rodrigues on improve image analysis for general purposes (porosity in coals and carbonaceous materials). **New ideas.**

20.00 FAREWELL DINNER

Sunday 29.09.02

9.30 - 11.00 Closing Plenary Session of the General Assembly
8. ISO Coal Classification

9. Treasurer's Report
10. Reports from the Chairpersons of the Commissions
11. Report from the Council Meeting
12. Thiessen Award
13. New Edition of the Handbook
14. Statutes
15. Editor's Report
16. Nominations for elections to positions on ICCP council
17. Thiessen Medal

11.00 - 11.30 *Coffee Break*

11.30 - 13.00 **Closing Plenary Session of the General Assembly (cont.)**

Monday 30.09.02 - Optional Excursion

- 8.00** Departure
17.00 Return to Pretoria
-

Short Agenda for the Council Meeting

- 1.* Apologies from ICCP members for non-attendance
- 2 Minutes of previous meeting and starring of items
 - 2.1* Minutes of the previous Council meetings
 - 2.1* Minutes of the previous Plenary Sessions
 - 2.3.* Starring of items and adoption of the unstarred items.

Items marked with an asterisk will be discussed. If discussion is not required on an item (that is the explanation and proposed motion are sufficient) the item will be adopted in the form in the Agenda papers without further discussion following adoption of the unstarred items.

- 3.* Arrangements for Maputo-South Africa meeting
4. Future meetings
 - 4.1* Arrangements for meeting in Utrecht in 2003.
 - 4.2* Arrangements for meeting in Budapest in 2004.
 - 4.3* Invitation to Greece in 2005
- 5.* Membership
 - 5.1* Applications for Associate membership
 - 5.2 * Applications for Full membership
 - 5.3 Applications considered by Council between meetings
 - 5.4 Resignations
 - 5.5 Membership Directory

- 5.6* Honorary Membership
 6. Thiessen Medal
 - 6.1 Thiessen Medal Award
 - 6.2* Production of new Thiessen Medal
 - 7.* ICCP Postgraduate Scholarship
 - 8.* Treasurers Report
 - 8.1 Treasurer's report
 - 8.2 Financial procedures and accountancy standards/requirements
 - 8.3 Budget 2002/2003
 - 9.* Editor
 - 9.1 Summary report from Editor
 - 9.2. Proposals for 2002-2003
 - 9.3. Other issues of importance
 - 9.4* Draft budget for the editor
 - 9.5* Charging Policy for CDs.
 - 10.* Website
 - 10.1 Publication of material arising from work of ICCP on the ICCP Homepage
 - 10.2 Balance between information published on Homepage and in Newsletter
 11. New Handbook
 - 12.* Elections
 13. UN Relations
 - 14.* Status of ICCP
 - 15.* Revision of Statutes
 - 16.* Standards for acquittal of ICCP funds
 17. Structure and administration of Accreditation Programs
 18. Feedback from members
 - 19.* Other business
-

Know Your Coal Petrologist #2



Who is this well known coal petrologist and what crimes has he committed that have sentenced him to be hanged? Answer page 17.

GENERAL INFORMATION

VISAS

For MOZAMBIQUE:

All foreign citizens need a visa to enter Mozambique, except from Malawi and Mauritius. In Countries without Mozambican embassy/consulate, delegates must fax (+258- 1-475280) copies of the relevant sheets of passport to Lopo Vasconcelos (**by 31st July 2002 at the latest**), who will obtain required visa from the Mozambican Immigration Authorities and will send a letter (signed by the Authority) to the delegate. The delegate will need this letter to embark, as air companies check whether passengers have a visa for the country of destination. On arrival in Maputo, delegates will present the letter to Immigration that will endorse the visa. ICCP Organisers will be at the airport to receive the delegates and assist with this procedure. The price of the visa for Mozambique is USD 16 to 20, depending on the exchange rate. Delegates travelling from countries with Mozambican embassy/consulate must apply for a visa in their respective countries.

For SOUTH AFRICA:

Delegates shall contact the nearest South African Embassy to get information on visa requirements to enter the country.

For both Countries:

PASSPORTS NEED TO HAVE AT LEAST SIX MONTHS VALIDITY FOR VISAS TO BE ISSUED BY MOZAMBIKAN AND SOUTH AFRICAN AUTHORITIES.

HEALTH

Maputo Province and Kruger National Park are endemic areas for malaria, although inside Maputo City the mosquito species (*Culex*) is not a malaria vector (case of *Anopheles*), which occurs in the surrounding areas up to Kruger Park and beyond. Therefore, delegates are advised to take preventive treatment 7 days before travelling to Mozambique/South Africa until 7 days after returning home.

Differences between both species are clear, as the biting position of *Anopheles* is horizontal to the skin, while *Culex* has an oblique position when biting.

We suggest that delegates contact relevant health authorities in their countries to confirm what treatment to follow, as requisites vary from country to country.

Both in Maputo and Pretoria the tap water is drinkable. However in restaurants we recommend that you drink bottled mineral water.

Any visitor who has travelled through or landed in a place infected with yellow fever within the last six days before arriving in South Africa, will need a yellow fever vaccination certificate. This applies even if there was no outbreak of yellow fever in the infected area at the time of visit. Yellow fever occurs mainly in West and Central Africa and also in South America. No other health certificates are required.

Neither Mozambique and South Africa have a National Health service accessible to foreign visitors, free of charge.

We **STRONGLY** suggest you read carefully the text below, taken from the Kruger Park WebPage:

1. Malaria Can Be Prevented in the Following Ways

The most important and most effective way of preventing malaria is firstly to prevent mosquito bites. The following preventative measures can be taken:

- Remain indoors from dusk to dawn if possible as malaria mosquitoes usually feed in the early evenings and mornings.
- Cover your arms and legs towards evenings with light coloured clothing to cover exposed skin areas and especially the ankles. Wear long sleeved shirts, long trousers, socks and closed shoes.
- Apply insect repellents to exposed skin areas every 4-6 hours.
- Burn insecticide coils or electrically heated insecticide tablets in the bedroom at night.
- Spray knock-down insecticide for flying insects inside the bedroom in the early evening with windows/doors closed if there are no window screens.
- Screened mosquito proof windows and doors and mosquito nets guard against mosquito bites.
- Clothes and nets impregnated with Pyrethroid could be used.

Another way of preventing malaria is to take additional preventative drugs when visiting an

endemic malaria area, especially in the warm and rainy months from October to May.

The preventative medication of choice for visitors to the Kruger National Park and surrounding areas is a combination of CHLOROQUINE and PALUDRINE. Chloroquine is taken on a weekly basis and Paludrine daily. The first dose of Chloroquine should be taken a week before entering a malaria area to see if there are no serious side effects. Paludrine can be taken 2 days before entering the malaria area. It is important to continue to take the medication during your stay AND FOR FOUR WEEKS after leaving the malaria area. It is advisable to take the medication at night with food to reduce side effects like nausea. MEFLOQUIN is an alternative to the Chloroquine / Paludrine combination and it is the drug of choice when visiting other areas such as Zimbabwe and Mozambique if there are no contraindications for using Mefloquin. If the Chloroquine/Paludrine combination or Mefloquin cannot be used, DOXYCYCLINE on a once daily basis can be taken after meals as a preventative drug. Please contact your general practitioner or chemist for the correct dosage according to age and weight. Discuss if any of the medications are contraindicated (i.e., in infants, young children, pregnancy, patients with psoriasis, porphyria or epilepsy).

2. Malaria in Pregnancy, Infants, Small Children and Other Special Cases

Despite the fact that the South African National Department of Health recommends that pregnant women should preferably not visit a malaria area, many pregnant women do visit a malaria area and even live in the Kruger National Park. Extra care for preventing mosquito bites should be taken as malaria in pregnancy holds an increase in risk for both mother and child. It is safe to use Chloroquine and Paludrine in pregnancy, even in the first three months of pregnancy. Mefloquin and Doxycycline must not be used in pregnancy. Because malaria has a faster and harsher effect in infants and small children, extra care should be taken to prevent mosquito bites. Take chloroquine syrup weekly and paludrine tablets daily in dosages according to age and weight – the appropriate dosage can be obtained from your general practitioner or chemist. Drug transfer in breast milk is insignificant and infants require full preventative medication. It is important to take the medication during and for four weeks after leaving the malaria area.

The following people should, if possible avoid visiting malaria areas – or take extra care in preventing mosquito bites.

- Cancer patients on chemotherapy
- Persons on long term steroid therapy
- Persons whose spleen have been removed
- Persons with full blown aids – it is not contra-indicated for an HIV positive person to visit a malaria area.

People suffering from porphyria must not use Doxycycline. In this case, the combination of Chloroquine and Paludrine is probably safe to use. The safety of Mefloquin in porphyria has not been established.

People with epilepsy should take care when using Chloroquine. Mefloquin is contraindicated in epilepsy. Pilots and mountaineers should not take Mefloquin as it could impair balance.

3. Malaria Symptoms

If you develop influenza-like symptoms, such as body pains, headache and fever, 7 to 20 days after visiting a malaria area, you must have your doctor test you for malaria immediately.

CLIMATE

Maputo and Pretoria are almost at the same latitude (approximately 26° south), Maputo being at the sea level and Pretoria at an altitude of 1,370 m. Maputo is therefore much more humid than Pretoria. Average temperatures in September/October are of 25 - 28 °C both in Maputo Pretoria. The rainy season in this part of Africa occurs between November-April. The end of September/ beginning of October is a transition period between dry and rainy seasons, and occasional rain may occur. Nights can be chilly in both cities, more likely in Pretoria than in Maputo.

CURRENCIES AND CREDIT CARDS

The Mozambican Currency is called METICAL (MZM, or MT) with Bank notes of 100,000 MT, 50,000 MT, 20,000 MT, 10,000 MT and 5,000 MT and coins of 5,000 MT, 1,000 MT and 500 MT (old bank notes of 1,000 MT and 500 MT are rare but legal); the present rate to the American Dollar is USD 1.00 = 24,000.00 MT, and to the South African Rand is R 1.00 = 2,200 MT (March 2002). Currency can be exchanged at any bank (official hours on weekdays: 08:00 - 15:00; Saturdays: closed), or at Exchange Houses (no tax charged).

The South African Currency is the RAND (ZAR

or R), with bank notes of R200, R100, R50, R20 and R10 and coins of R5, R2, R1, 50c, 20c, 10c, 5c, 2c and 1c. The present rate to the American Dollar is USD 1.00 = R10.35 (June 2002). Currency can be exchanged at any bank (official hours on weekdays: 09:00 - 15:30 and on Saturdays: 08:30 - 11:00).

In South Africa, credit cards are widely accepted. In Maputo, credit cards are not yet so widespread, but all hotels and a great number of restaurants accept credit cards (mostly VISA and Mastercard).

INSURANCE

Travel and health insurance are recommended.

TRAFFIC

Both in Mozambique and South Africa, traffic keeps to the left hand side of the road.

RENT-A-CAR

Several rent-a-car companies are operating in both Mozambique and South Africa: Avis, Herz, Europa, etc.

TEMPLES

Both countries, in the words of Nelson Mandela, are rainbow countries, with different cultures. Therefore, all main religions have their temples in both countries: Catholic, Protestant, Orthodox, Muslim, Jewish, Hindu, etc.

LANGUAGE

The official language of Mozambique is Portuguese, but English is widely spoken/understood, especially in hotels and restaurants. In South Africa, English is one of 11 official languages, and is spoken at all hotels, shops and other attractions.

SECURITY

It is not advisable to walk alone after dark, unless in a group. It is better use a taxi service approved by your hotel. Do not show expensive photographic equipment, foreign currency, expensive jewellery, etc.

TIPPING

In Maputo there is no fixed percentage for tipping, which can vary between 5-10%. In South Africa, 10% is the norm for taxis and in restaurants.

VAT

In Mozambique, the VAT rate is 17%, whilst in South Africa is 14%. Mozambique has no policy of VAT refund, but in South Africa delegates can claim a VAT refund on their departure. At the airport, delegate must produce all VAT invoices and show the items purchased.

ELECTRICITY SUPPLY

Both in Mozambique and South Africa electricity is supplied to 220-240V. Plugs are different in both countries:

- a) Mozambique: 2 x round pin plug;
- b) South Africa: 3 x round pin plug

ACCOMMODATION

The majority of the hotels in Maputo demand a deposit that must be paid beforehand, the deadlines varying from hotel to hotel. These deposits should arrive in Maputo by **no later than 31st July 2002**. Nevertheless, information on the hotel of your choice must be received in Maputo by no later than **1st July 2002**.

For hotels in Pretoria, delegates are requested to provide detailed Credit Card information (please refer to updated registration form).

All payments should be made to the following bank account:

Bank: BANCO DE FOMENTO
Av. Julius Nyerere, No. 1016, Maputo,
Mozambique
Tel: +258-1-494009/11; Fax: +258-1-493408
Account No. 0200.31.2608889.001
In name of José António Joaquim Esmael
Swift Code: BFMXMZMA

As soon as payments are made by the delegate (either by bank transfer or by supplying credit card information as requested in updated registration form) information should immediately be sent to Lopo Vasconcelos, either by fax (+258-1-475280) or as e-mail attachment (lopo@zebra.uem.mz).

Hotels in Maputo

Prices include VAT and Tourism Tax; subject to changes.



Hotel Polana (5 star)

(1 in the map)

(all taxes included; breakfast not included; English US15; Continental US10)

STUDIO Room US 115

STANDARD Room US 185

EXECUTIVE Room US 265

AMBASSADOR Suite US 340

Hotel Polana-Mar (5 star)

(2 in the map)

(all taxes included; breakfast not included; English US 15; Continental US 10)

STANDARD Room US 165

EXECUTIVE Room US 265

NOTES:

1) Children: maximum one child up to 12 years can share a room with 2 adults.

2) WEB: www.polana-hotel.com

3) E-mail: res@polana-hotel.com

Hotel Avenida (4 star)

(4 in the map)

(all taxes and breakfast included)

SINGLE Room US 94

DOUBLE Room US 119

Suite (1 pax) US 130

Suite (2 pax) US 155

Extra bed US 33

NOTES:

1) Children: free up to 6 years old; 50% discount for children 7-12 years old sharing parents rooms;

2) WEB: www.hotelavenida.co.mz

3) E-mail: h.avenida@teledata.mz

Hotel Terminus (3 star)

(5 in the map)

(all taxes and breakfast included)

ECONOMIC Room US 60

STANDARD Room US 85

EXECUTIVE Room US 100

FAMILY Suite US 150

DE LUX Suite US 140

Extra bed US 35

NOTES:

1) WEB: www.terminus-hotel.com

2) E-mail: termhot@terminus-hotel.com

Guest House Villa das Mangas (3 star)

(6 in the map)

(all taxes and breakfast included)

SINGLE Room US 60

DOUBLE Room US 75

EXECUTIVE Suite US 85

VIP Suite US 110

NOTES:

1) E-mail: villadasmangas@hotmail.com

2) Group rates can be arranged if 7-10 persons registered

Guest House Hoyo-Hoyo (3 star)

(3 in the map)

(all taxes and breakfast included)

SINGLE Room US 30

DOUBLE Room Jr. US 40

DOUBLE Room US 50

JUNIOR Suite US 60

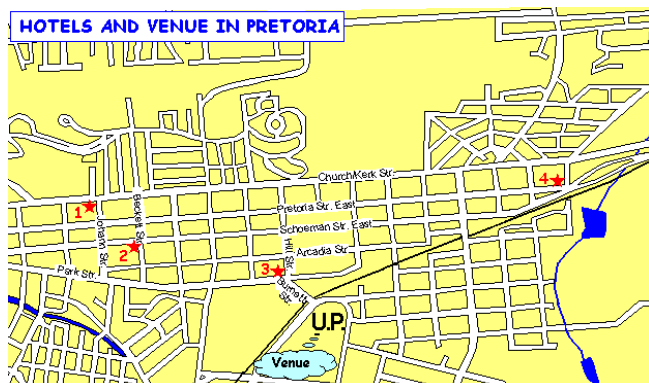
Extra bed US 10

NOTE:

1) E-mail: promotur@zebra.uem.mz

Hotels in Pretoria

Prices include VAT and are quoted in ZAR (South African Rand: US\$ 1,00 = ZAR 11,30 at time of printing); subject to changes



Sheraton Pretoria (5 star)

(1 in the map)

SINGLE Room ZAR 828

DOUBLE Room ZAR 828

NOTES:

- 1) Breakfast not included: ZAR 80/person
- 2) E-mail: sheraton@iafrica.com
- 3) Internet: www.sheraton.com or www.startwood.com

Court Classique (4 star)

(2 in the map)

SINGLE Room ZAR 510

DOUBLE Room ZAR 545

NOTES:

- 1) Breakfast included
- 2) E-mail: pretoria@courtclassique.co.za
- 3) Internet: www.courtclassique.co.za

Courtyard Arcadia (4 star)

(3 in the map)

SINGLE Room ZAR 550

DOUBLE Room ZAR 630

NOTES:

- 1) Breakfast not included: ZAR 49/person
- 2) E-mail: cyarc.resv@citylodge.co.za
- 3) Internet: www.citylodge.co.za

Holiday Inn Garden Court (3 star)

(4 in the map)

SINGLE Room ZAR 409

DOUBLE Room ZAR 409

NOTES:

- 1) Breakfast not included: ZAR 51/person
- 2) E-mail: higcptahatfield@southernsun.com
- 3) Internet: www.southernsun.com

VENUES

Maputo:

Faculty of Medicine

Eduardo Mondlane University

Av. Salvador Allende Nr. 48.

Excursion:

Berg en Dal, in Kruger Park

Pretoria:

University of Pretoria

Icebreaker Party

Fortress of Our Lady of Conception. This fortress belongs to Eduardo Mondlane University and is the Museum of Colonial History

Conference Dinner in MOZ

Kaya Kwanga Restaurant. Around the swimming pool. Want to jump? Bring the swimming costume.

Conference Dinner in RSA

Lesedi Cultural Village. Lesedi is a multi-cultural village set amongst the pristine bushveld and rocky hills less than an hour's drive north of Johannesburg.



Dr Rheinhardt Thiessen (centre) and his two assistants, Hugh J. O'Donnell (left) and George Sprunk ca. 1937. This photograph (previously published in a portrait of Thiessen by Paul Lyons and Marlies Teichmüller, Geol. Soc. America Memoir 185) was taken at the US Bureau of Mines Experimental Station, Pittsburgh, Pennsylvania, where Thiessen spent almost all of his professional career with the US Government. The Rheinhardt Thiessen Medal of the ICCP honours Thiessen for his pioneering work in transmitted light coal petrography and coal petrology. *Paul Lyons*

54th ICCP – 2nd REGISTRATION FORM

Complete **BOTH** sides of form and return to :
Lopo Vasconcelos : fax +258-1-475280 or by e-mail to lopo@zebra.uem.mz

Delegates who answered the 1st circular **MUST** still complete the 2nd registration form, as it includes information not present in the 1st circular

PERSONAL DATA:

Title (Prof., Dr., Mr., Mrs., Ms.)

Are you an ICCP Member? Y N

Last (Family) Name:

First (Given) Name:

Organization:

Mailing Address:

City:Postal Code:

Country:

Fax number :

E-mail:

Phone number:

TRAVELLING DETAILS:

Date of arrival: Time schedule: Flight:

Date of departure: Time schedule: Flight:

HOTEL RESERVATION

please mark your 1st choice, both in Maputo and Pretoria:

MAPUTO		PRETORIA	
Hotel/guest House	Type of Room	Hotel	Type of Room
Polana Mar (5 stars)	Standard (USD165)	Sheraton Pretoria (5 stars)	Single (ZAR828 = +USD75)
	Executive (USD265)		Double (ZAR828 = +USD75)
Polana (5 stars)	Studio (USD115)	Court Classique (4 stars)	Single (ZAR510 = +USD45)
	Standard (USD185)		Double (ZAR545 = +USD48)
	Executive (USD265)		(breakfast included)
Avenida (4 stars)	Single (USD94)	Courtyard Arcadia (4 stars)	Single (ZAR550 = +USD49)
	Double (USD119)		Double (ZAR630 = +USD56)
	Suite (1 p) (USD130)		
	Suite (2 p) (USD155)		
Terminus (3 stars)	Economic (USD60)	Holiday Inn Garden Court (3 stars)	Single (ZAR409 = +USD36)
	Standard (USD85)		Double (ZAR409 = +USD36)
	Executive (USD100)		
	Family Suite (USD150)		
	De Lux Suite (USD140)		
Guest House Villa das Mangas (3 stars)	Single (USD60)		
	Double (USD75)		
	Executive Suite (USD85)		
	VIP Suite (USD110)		
Guest House Hoyo-Hoyo (3 stars)	Single (USD30)	NOTES:	
	Double Jr. (USD40)		- S. African Hotels: Breakfast generally not included
	Double (USD50)		-Prices include VAT in both countries
	Junior Suite (USD60)		

2nd and 3rd choices of Hotels

MAPUTO		PRETORIA	
Hotel	Room type	Hotel	Room type
2nd Choice			
3rd Choice			

Will you share a room? N / Y

With whom?

KRUGER PARK

In the event of the shortage of chalets, delegates might be asked to share accommodation. Please indicate your choice of accommodation in registration form. Price included in excursion fee.

3-bed chalet I am prepared to share: N / Y ;

2x2-bed chalet I will share with

Do you intend to attend the CONFERENCE DINNERS? Y / N

Will you attend the OPTIONAL EXCURSION (USD50)? Y / N

How many ACCOMPANYING PERSONS?

Please provide names:

- 1.
- 2.
- 3.

If attending the optional excursion, will accompanying person(s) attend too? Y / N

POSTER SESSION:

Are you presenting a poster? N / Y ; How many?

Please provide title(s) (provisory):

- 1
- 2.
- 3.

PAYMENTS:

Item	Total USD	Notes
Hotel deposits (Maputo)		Required for Maputo. For Pretoria, credit card details are sufficient to secure accommodation
Excursion		US\$ 75 PER PERSON; includes transportation from Maputo to Pretoria and 2 night accommodation in Berg en Dal; shall be paid in advance, together with the hotel deposits not after 31st July 2002
Registration Fee		US\$ 70 PER PERSON; Optional: either settle with this registration, or on arrival in Maputo
Conference Dinners		US\$ 35 PER PERSON and includes both dinners
Optional Excursion		US\$ 50 PER PERSON deadline for registration to optional excursion: 30.06.2002
Total		

How will you do the payment: a) Bank transfer or b) Credit card

Credit card details: (a credit card number is required to secure your hotel booking in South Africa)

Mastercard / Visa / American Express / Diners Club

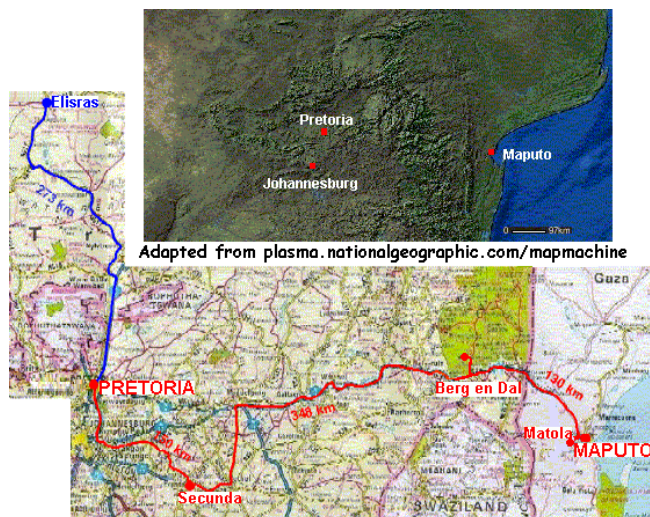
Credit card number

Expiry date (month/year)

Card holder's name:

EXCURSIONS

Due to the fact that this ICCP meeting will be organised by two countries – Mozambique and South Africa – with sessions occurring in both, delegates will have to move from one country to the other. This trip, which will be by luxury coach, will be used as an excursion starting in Maputo and ending up in Pretoria. The following map shows the itinerary and the stops.



As it can be seen, the excursion starts in Maputo in direction to Matola, in order to visit the Matola Coal Terminal (TCM). Although a national holiday, TCM will be operating normally.

In the afternoon, after a lunch at an esplanade-restaurant in Matola city, between Maputo and Bebeluane, we will travel to the border at Ressano Garcia/Lebombo and from there to Berg en Dal.

The following day, ICCP session meetings will be held (refer to program) followed by a visit to Kruger Park in the afternoon to view some game. Night visits are also possible.

The following day we travel to Secunda to visit SASOL and Leeuwpun Mine, before heading to Pretoria, to continue with the sessions the following day.

SASOL Plant at Secunda: today, Sasol is one of South Africa's Top 10 private companies with a multibillion rand turnover. The company has more than 15 000 shareholders and employs over 35 000 people (adapted from www.sasol.com; photo from www.girdernaco.co.za).

Iscor, South Africa - Turnkey plant contract at the Leeuwpun Colliery, Northern Province. The plant includes four discrete-cyclone modules (two at 800mm diameter), two spiral plants and slimes thickening and disposal. DRA also undertook the site erection of a load-out conveyor system, crushers, and ancillary stack-out yard, as well as the entire electrical and control system. DRA design input at Leeuwpun incorporates a sophisticated supervisory control and data acquisition (SCADA) system. DRA also supplied Leeuwpun with an interim 150-200 t/h drum and cyclone plant (from www.draca.co.za).

Optional Excursion

Grootgeluk Mine: The Grootgeluk Coal Mine is one of the largest opencast mines in the world and is located in the Waterberg Coalfield, estimated to host 55% of South African coal reserves. Nearby is the Matimba power station, one of the largest directly dry cooled power stations in the world. It is estimated that the Ellisras region hosts 55% of South Africa coal deposits. In the air photo, the coal appears as a dark blue/black colours. The general lack of vegetation is indicated by cyan/brown colours, though patches of green vegetation is apparent in some areas (adapted from www.globalserve.net).

Grootgeluk is an open-cast mine 2,2 km x 1,8 km x 104 m deep which produces coal for steel production at Iscor and for Eskom's Matimba Power Station, at nearby Ellisras. Matimba is the third largest power station in South Africa with a generating capacity of 3990 MW (adapted from www.gorp.com).

Matimba Power Station. Matimba means "power" in Tsonga. Designed to generate 3 690 MW, Matimba has the world's largest turbo-generators using the direct dry-cooled steam condensing system. The dry-cooled system is necessary because of the severe shortage of water in the area. Temperatures at Ellisras vary as much as 30 degrees from day to night and in summer will frequently rise into the 40s. The six 665 MW turbo-generator units make it the largest direct dry-cooled station in the world. The first unit was placed on commercial load in September 1987 (in www.eskom.co.za/story/matimba.html).

Copenhagen Minutes

Due to a formatting error, the report of the Commission I Working Group on the temporal variation in coal was not properly highlighted in the minutes of the Copenhagen meeting (ICCP News No 25, page 17, line 12). My apologies to Lopo and the group for this error. For those of you who may have consequently missed this information, it is again reproduced :

Temporal variation of coal - Lopo Vasconcelos

A report on the first year activities was presented by the Convener. After a request from the Convener, he collected data sent by Mick Frank (Mesozoic coals from North America), I. Sýkorová (Holocene peats, Tertiary lignites, Paleozoic bituminous coals from Czech Republic and Central Europe), W. Pickel (Pennstate Data Coal Bank) and the Convener himself assembled data from South Africa, Mozambique, Zimbabwe and Brazil.

Some problems were discussed concerning the vitrinite macerals nomenclature as the literature available uses old and new terms and the same happened for sclerotinite versus secretinite / funginite.

Activities for the next year will include the homogenisation of the data tables layout, complete blank fields of data tables collected until now, find more participants to the working group and concentrate the search in Paleozoic coals. The USGS Coal Quality Database was brought to Lopo's attention.

Accreditation Program For Coal Blends

Background

A number of coal blend analysis studies have been carried out by ICCP over more than 40 years. Recent results have been sufficiently encouraging to lead to a belief that it is now possible to establish an accreditation system for analysis of coal blends using petrographic methods.

Coal petrographic analyses provide the only method that permits the resolution of coal blends into their constituent parts. Bulk analytical methods provide data that are broadly referable to the mean values that are obtained from vitrinite reflectance analyses and maceral analyses for coal blends. Partition into blend components can, however, be attempted using petrographic methods.

Blend analyses will differ slightly from other petrographic accreditation measures in that the percentages of the constituent coals will be known so these need not be estimated from group means, but the values for vitrinite reflectance for individual components will resemble the values used in the

existing Accreditation Program in terms of establishing accepted values.

Proposal

It will be proposed at the 2002 Meeting that an Accreditation Program be introduced for coal blend analysis. The properties to be determined are likely to be:

1. The mean (average) vitrinite reflectance value for the blend.
2. The number of coals that form the blend, on the basis of the % of vitrinite measured for each coal during the reflectance analysis.
3. The mean vitrinite reflectance value for each coal in the blend.
4. The maceral composition for the blend sample as a whole.

Examination could also be made of estimation of the percentages of each blend component. It is probable that the number of samples to be examined would be much more limited compared with the existing Accreditation Program for vitrinite reflectance due to the large amount of work required for each blend.

We look forward to discussions on this issue and are hopeful that it will be possible to agree to commence a program of Blend Analysis Accreditation.

Isabel Suarez Ruiz

Alan Cook

Accreditation Programme News

2002 Exercise

An accreditation exercise is currently in progress. A second set of samples will be sent out to laboratories in late June, 2002. Any laboratory or Member that wishes to register for this exercise should contact the Organiser as soon as possible.

Inexperienced petrographers are encouraged to participate - a preliminary evaluation will be made by the statistical analysis of data from the analysis of a set of coals. Acceptable results will allow the petrographer to participate in the next exercise.

Call for coal samples

Additional coals are required for future exercises. The Organiser would like to hear from any laboratory or Member that may be in a position to supply one or two coals.

Ideally, the coals should be washed, but this is not an essential criterion. All coal samples must be single seam coals or sections of a single seam coal (e.g., selected ply or plies). Approximately 4 kg of coal are required and the top grain size required is 6 mm. The coal should also contain a reasonable percentage (5-10 %) of Telovitrinite, as the reflectance assessment is based entirely on this maceral sub-Group. While the age of the

coal is not important, the rank range should fall between approximately 0.70 % and 1.45 % mean random reflectance.

The Accreditation Programme is willing to pay for any expenses involved in shipping the coal(s) to Australia.

Contact details:-

Aivars Depers,
Organiser,
Accreditation Programme,
P.O. Box 51,
Dapto, N.S.W. 2530,
AUSTRALIA.
E-mail: iccpap@ozemail.com.au

Change of Address

Please update your new membership directory for:

Dr Petra David

Netherlands Institute of Applied Geoscience TNO

National Geological Survey

Department of Geo-Energy

P.O. Box 80015

3508 TA Utrecht

THE NETHERLANDS

Ph. +31 30 256 4648 Fax +31 30 256 4605

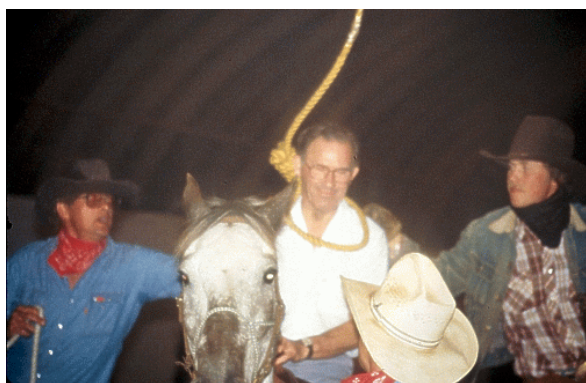
email : p.david@nitg.tno.nl

pug@belgacom.net

Answer to "Know your Coal Petrologist"

Duncan Murchison at the 1984 ICCP Meeting in Calgary is shown desperately trying to defend himself against charges of :

1. Using an air lens to measure reflectance and
 2. Keeping thin sections in the top drawer in his desk
- Unusually, Duncan did not do a very good job in his self-defence and things only got worse....



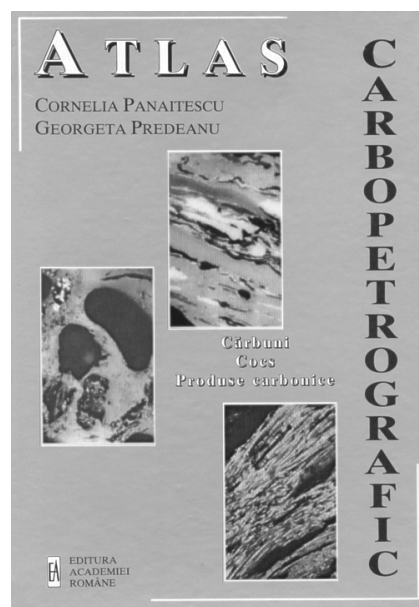
Book Review

ATLAS CARBOPETROGRAFIC

by

Cornelia Panaitescu and Georgeta Predeanu

Editura Academiei, Române, 1999, 264pp



The atlas is subdivided into a short text part (introduction, methodology and specifications) and the main body of the book (109 black and white and colour plates). The main body consists of four sections on various types of Romanian coals, coal derived products, such as coke, and dispersed organic matter derived from sedimentary rocks. The text part and plate descriptions are in both Romanian and English.

In the text part the reader is introduced to the locations of the major Romanian coal deposits and the classification schemes used for determination of coal rank and the description of organic components in coal and coal derived products.

Section 1 shows examples of the most common Romanian coal macerals, representing a rank range from lignite to anthracite, with many excellent plates in colour. This section also deals with the identification of macerals in dispersed organic matter.

Section 2 shows the transformation of coal macerals in the carbonization process, presenting numerous photomicrographs on coke texture, coke porosity and coke textures before and after reactivity tests. Sections 3 and 4 deal with other coal and petroleum derived residual substances such as needle petroleum coke, mesophase, combustion residues and briquettes

This atlas is an important source of information for anyone interested in the nature of Romanian coals and coal-derived products. The atlas is also an excellent tool for people working in the field of coal and organic petrology to assist in the identification of coal macerals, dispersed organic matter and products from

technological processes such as carbonization and combustion.

Within România, contact :

Editura Academiei Române
Calea 13 Septembrie, nr. 13, sectorul 5, Cod 76117
București, România
Phone/Fax: +40-1 410 3983
e-mail: edacad@ns.ear.ro

Elsewhere, prepayment of US\$50 (cheque etc - no credit card facilities available) is required, which includes postage, to :

Orion Press Impex 2000 SRL
PO Box 77-19
București 3
România
Phone/Fax : +40-1-335 0296

W. Kalkreuth

Instituto de Geociências, UFRGS
Porto Alegre, Brazil

Call for Member's Photographs

This is a call for all ICCP Members to submit a passport style photograph of themselves for archival purposes. **Submission of the photograph is purely voluntary.** The main purpose is to obtain a visual record of all present, future, and where possible, past, ICCP members. From time to time, with the member's permission, it may be useful to append such a photograph to a research article or to an historical item. Some members may even like to have their photograph reproduced in the membership directory along with their contact details.

Electronic images (preferred) can be submitted by email (jpeg, tiff etc) or photographs can be posted to the editor. In either case, indicate the year in which the image was taken. If posting a photograph, let me know if you would like it returned. Please also indicate if you would like your picture in future editions of the Membership Directory (although we cannot guarantee that this will happen).

DEADLINE FOR NEXT ICCP NEWS : OCTOBER 21

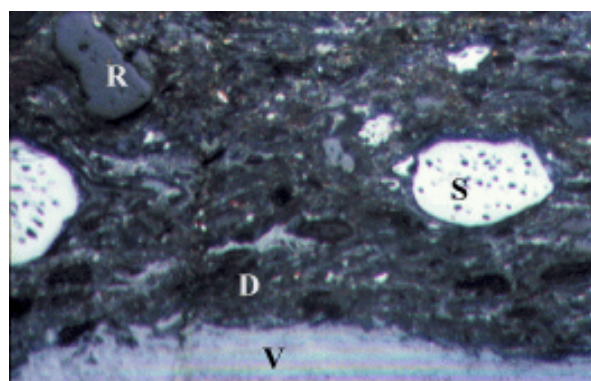
Dredging up Degradinite

Peter Crosdale

James Cook University, Townsville, Australia

In the 1963, 2nd edition of the ICCP Handbook, a couple of terms appear that have not found great favour in the intervening years (and yes, the handbook is again available in CD ROM format if you don't have a copy!). These terms are 'degradinite' and its microlithotype equivalent 'hydrite'.

My first encounter with degradinite (see photomicrograph) was not a happy one. During my PhD studies of Miocene coals from the Taranaki region of the North Island of New Zealand, I discovered something that I had never seen before - despite having point counted about 2000 Permian coal samples from Australia in the previous couple of years. I scratched my head. My supervisor, Pip Black, scratched her head. Pip decided to take a sample to the ICCP meeting in Aachen in 1988 to get some opinions. After some discussions around the microscope, Marlies Teichmüller declared the offending material to be bituminite. That was settled. I therefore confidently published on the bituminite in these coals.



Degradinite (D) in coal from New Zealand Miocene coal. S = sclerotinite; R = resinite; V = vitrinite. Reflected light, oil immersion. Field of view approx. 250 μ m.

Now that I am a little older, I am sure that my mysterious bituminite was in fact the little appreciated maceral described from Tertiary Japanese coals nearly 50 years ago. This maceral now has the ignominy of appearing only as a note in the ICCP 1994 System vitrinite classification : "The degradinite of Tertiary coals belongs to dark vitrinite." Dark vitrinite being described as "a type of vitrinite characterized by its significantly lower reflectance and stronger fluorescence when compared with other vitrinite macerals in the same coal."

Well, should degradinite be relegated to a footnote as a type of "dark vitrinite" or does it really deserve to be a separate maceral in its own right?

Personally, I have seen what I would call degradinite in Tertiary coals of Indonesia and New Zealand as well as Jurassic coals from Australia. Including the Japanese occurrences, degradinite is therefore widespread both

geographically and temporally. My degradinite often occurs in coals with high suberinite content and indeed, there appears in some cases to be a transition between the degradinite and suberinite. The suggestion is that at least some of the degradinite represents accumulations of fragmented bark tissue, along with other resistant maceral types. As such, degradinite could be classified as liptodetrinite, and not vitrinite at all.

Have others also encountered this “degradinite” in significant quantities? If so, do we need to re-evaluate the place of this maceral? Finally, what are the ‘grey’ and ‘black’ durite and durain referred to in the paper by Asai and Tanno?

Literature

- Asai, K. and Tanno, H. (1956) Proposal to the nomenclature of coal petrology in the tertiary coal of Japan. Proc. 2nd Meeting ICCP Bruxelles, pp. 77-80.
- Crosdale, P. J. (1993) Coal maceral ratios as indicator of environment of deposition: do they work for ombrogenous mires? An example from the Miocene of New Zealand. Organic Geochemistry, vol. 20, pp 797 - 809.
- ICCP (1963) International Handbook of Coal Petrography, 2nd Edition. Centre National de la Recherche Scientifique, Paris (CD ROM edition, 2001).

From the Archives

The following article appeared in the Proceedings of the 2nd Meeting of the ICCP in Bruxelles in 1956, pp. 77-80. It concerns the introduction of the term **degradinite**. It has been reproduced here as faithfully as possible, including spellings and capitalisations, but a series of 8 photomicrographs appended to the article were of too poor a quality to reproduce. Legends on some figures were also unclear. The figure sizes reproduced here are approximately the same as in the original manuscript.

Proposal to the nomenclature of coal petrology in the tertiary coal of Japan

by Dr. K. ASAI and H. TANNO,
Coal Research Institute

1) Introduction.

Most of the bituminous coal in Europe and America was made mainly from Pteridophyta or Cycadales or Gymnospermae in the mesozoic era while that in Japan was formed mainly from coniferales of soft wood or some of hard wood in the palaeogene tertiary period. While the European or American coal is geologically considered as autochthonous, the Japanese, as allochthonous. The geological time ranges of the carboniferous period and of the tertiary Period are very different from each other. As the result of rapid coalification the Japanese coals though made in the

tertiary period have various kinds of anthracite and bituminous coal to brown coal. This will be explained by the fact that the Japanese islands, a volcanic chain, had been given the strong natural pressure of the strata, terrestrial heat, volcanic action and crustal movement.

Such factors had functioned so as to make the Japanese coal remarkably different from the European or American coal.

Now I tell you rather particularly of the fine geological structure studied petrologically by microscope and explain the coalification process and the chemical structure of coal types statistically available from the result of chemical analysis. These will serve, I believe, to figure out some characteristics of the Japanese coal different from yours.

2) Microscopic composition of Japanese coal.

The ground-mass of the Japanese coal is very dirty and obscure. Between that coal and the others, the modes of occurrence of other macerals are similar to that of others. The nature of that ground-mass is the greatest difference.

Our ground-mass is translucent in colour of reddish brown as well as vitrinite under thin sections, on the contrary to micrinite, and has features which fine vitrinitish matter has gathered. In other words, our dull coal is a complex of fine material.

Considering the fact that the material of the same nature as vitrinite has been micro-collapsed, the genetical process of ground-mass is different from that of common vitrinite. R. Thiessen called such matter « humic-degradation-matter ». Thus Japanese researchers have called vitrinitish ground-mass as « degradinite » provisionally.

Finally, Japanese dull coal has degradinite as ground-mass which has cemented exinite, sclerotinite and resinite. And then, degradinite is similar to vitrinite, therefore Japanese dull coal is similar to European clarain. Still more, Japanese dull coal contains much hydrogen and volatile matter than foreign dull coal. It is called as « hydrite », distinguishing it from foreign common clarain.

3) Characteristics of Japanese coal in view of chemical analysis.

a) Coalification degree and alteration points (fig. 1).

In case of coal of low coalification degree, carbon content (on dry and ash free basis) of bright and dull coal taken from the same seam is higher in bright coal than in dull coal while in the case of that of high degree, vice-versa.

In the low grade bright coal, carbon content is higher than in dull coal by 1,4 % on the average. The higher the degree, the smaller the percentage difference.

When the degree reaches 84 % of carbon content, no difference appears, in higher degree of coalification, the

dull coal carbon content becomes higher than the bright one's, that is, the coalification degrees of them cross each other at 83 % of carbon content, which is called the « alteration point of coalification » between bright and dull coal. This is one of the peculiarities of Japanese coal formed in the tertiary period.

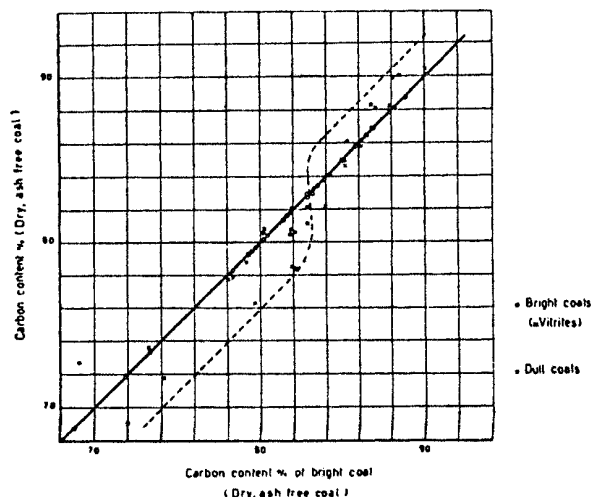


Fig. 1.

Figure 1

Horizontal axis - Carbon content % of bright coal (dry ash free coal); scale numbers are 70, 80 and 90 on a 2% grid

Vertical axis - Carbon content % (Dry ash free coal); scale numbers are 70, 80 and 90 on a 2% grid

Legend - circle = bright coals; (= vitrites); square = dull coals

According to M. H. H. Lowry who studied 127 kinds of coal in various stages of coalification, 120 kinds have more durite by 1.42 % average against only 7 with more vitrite. M. S. S. Sprunk studied 17 kinds of coal and reached a similar conclusion.

b) Hydrogen content (fig. 2).

Dull coal has more hydrogen than bright coal by 0,7 % on the average in general.

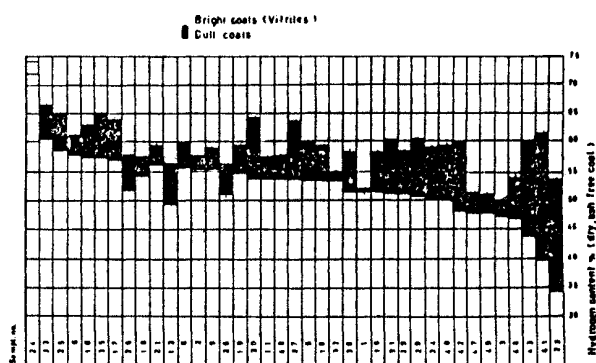


Fig. 2.

Figure 2

Horizontal axis - Sample Number

Vertical axis - Hydrogen content % (Dry ash free coal); scale numbers are 3.5 at bottom to 7.5 at top on a 0.5% grid

Legend - empty squares = Bright coals (vitrites); solid squares = Dull coals

This may be a result of the great content of resinous matter with rich hydrogen and rich exinite of cuticles of leaves, pollens and spores and the lack of micrinite and fusinite in dull coal.

c) Volatile matter content (fig. 3).

Japanese dull coal has always higher volatile matter content by 7 % on the average than bright coal.

As the coalification degree goes up, the difference decreases so much. The difference becomes null when the content is 20 %. The volatile matter content is higher in Vitrite than in durite. However, M. H. Hoffmann's report on the result of his study of 12 kinds of Saar coal, prove, contrarily to Japanese coal, that durite has higher volatile matter content than vitrite. Messrs Wandless and Macrae report that the case of black durite of top Beeston seam is the same as above while that of grey durite has less volatile matter content than vitrite. These reports prove that there are two completely different types of durite. Japanese dull coal is similar to black durite.

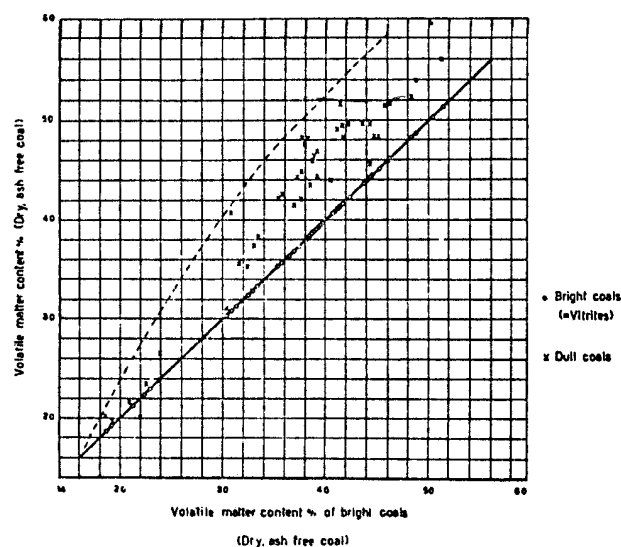


Fig. 3.

Figure 3

Horizontal axis - Volatile matter content % of bright coal (dry ash free coal); scale numbers are 14 to 60 on a 2% grid

Vertical axis - Volatile matter content % (Dry ash free coal); scale numbers are 20 to 60 on a 2% grid

Legend - circle = bright coals; (= vitrites); cross = dull coals

Then what is the reason why the Japanese coal contains more hydrogen and volatile matter? According to the geological study, the Japanese coal is an allochthonous one which was made from precipitate of vegetation which had flown and settled into kales, swamps, valleys and river mouths. A coal such as formed in a wet place and with water as agent holds dehydration reaction in check. Therefore a substance is obtained from which hydrogen and oxygen could not easily escape and in which condensed rings are

subsisting with their complex nature. It becomes a degradinite with higher hydrogen content and a hydro-aromatic structure.

On the contrary, the western coal is considered generally to be autochthonous. It was formed in dry land. Therefore, cellulose such as full of OH-Radical is easily separable. to take a stereostructure such as C-C or C-O-C bond. As the result, it becomes micrinite or fusinite with less hydrogen and more carbon content.

(d) Carbon – hydrogen – volatile matter.

The relationship among carbon, hydrogen and volatile matter is indicated in fig. 4.

If Japanese bright and dull coal are pointed, volatile matter will be indicated as on oblique line. Hydrogen increases little by little to the same range as volatile matter line, correspondingly to the increase of carbon up to 84 % of carbon content. Consequently carbon increase does not result in sharp decrease of volatile matter. This inclination is seen in dull coal which is rich in exinite. This is the reason that ordinary Japanese coal has rich volatile matter and poor fuel ratio.

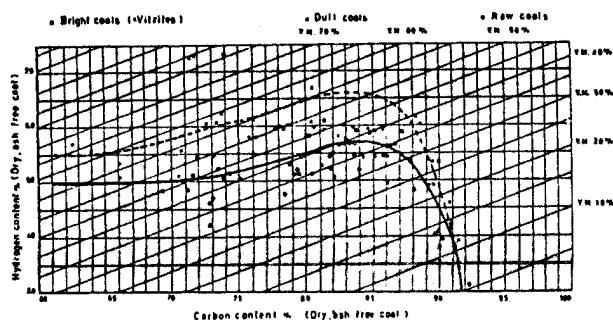


Fig. 4.

Figure 4

Horizontal axis - Carbon content % of bright coal (dry ash free coal); scale numbers are 60 (left) to 100 (right) on a 1% grid

Vertical axis - Hydrogen content % (Dry ash free coal); scale number are 3 (bottom) to 7 (top) on a 0.5% grid

Sloping lines - VM%; scale : first indicated mark at bottom right is 10% with each line incrementing by 5%

Legend - unclear but includes Bright coals (=vitrinites), Dull coals and raw coals

In a coal with over 84 % carbon content, exinite is decomposed and metamorphosed and hydrogen disappears suddenly, entailing sharp fall of the curve. In consequence, volatile matter also shows the downward line proportionally to the increase of carbon. In other words, in the stage of coalification after the leap, volatile matter and carbon of coal are in the proportional relationship each other. But such an inclination is generally seen in the American or European coal, not much in the Japanese.

e) Comparison with the foreign coal relationship among carbon, hydrogen and volatile matter (fig. 5).

Certain figures are taken from C. H. Fisher's and G. C. Sprunk's experiments.

It means that the Japanese dull coal has more volatile matter than vitrinite while durite of foreign coal has less volatile matter than vitrinite. They change continuously to fusite, as micrinite and inert substance of durite of foreign coal increases, and there exist fusites of not single but various chemical structures which are changing gradually. Japanese dull coal is situated on the opposite line and further up are situated candle coal, boghead coal, and exinite. Clarite has the nature middle between vitrinite and Japanese dull coal and not middle between vitrinite and durite of western coal which contains rich micrinite. This must be noticed. As the coalification progresses, the line of durite rich of micrinite and fusite and that of vitrinite take different course. Japanese dull coal takes a dotted line in coalification and meets with vitrinite line. This means that in the high coalification degree, Japanese coal is characterized with the similar chemical property of dull and bright coal and with the similar structure of them under microscopic review. This similarity is almost indistinguishable. That is to say, Japanese dull coal is characterized with its hydroaromatic structure and with mobile system according to M. Riley.

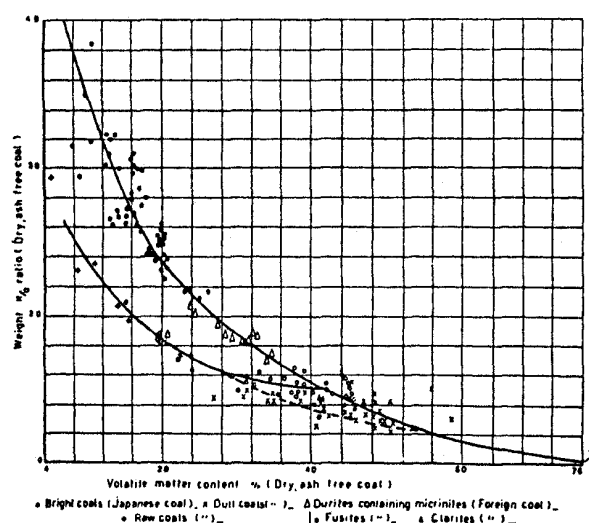


Fig. 5.

Figure 5

Horizontal axis - Volatile matter content % of bright coal (dry ash free coal); scale numbers are 4 to 76 on a 4% grid

Vertical axis - Weight H/O ratio (Dry ash free coal); scale number are 0 to 4.0 on a 0.4% grid

Legend not entirely clear but with circles representing Bright coal (Japanese), Raw coal (Japanese) and Fusites (foreign coal); open triangle = Durites containing micrinites (Foreign coal); filled triangles = Clarites (Foreign coals)

The dull coal taken from Japanese coal carries out dehydration reaction in the coalification process, having a hydroaromatic mobile system in it.

The Japanese dull coal is more hydroaromatic than clarite, it is assumed, although exinite contents in them are rather same, and the ground-mass of this dull coal is different from vitrinite. This component is, however, more hydroaromatic than the vitrinite.

Japanese dull coals are dark grey or white-grey just like vitrite in reflected light, but their ground-mass is not so homogeneous as vitrite. The very fine granular structure is visible with highly magnifying lenses especially in transmitted light. Fragments of exinite, which are dark grey in reflected light and yellow in transmitted light, can easily be recognized in the ground-mass. This constituent, we think, corresponds to « translucent humic degradation matter » of the R. Thiessen's classification. The component, which is built by the degradation matter and fragments of exinite, is the « translucent attritus ». Therefore we propose the new term « DEGRADINITE » to be used for this component. Japanese dull coals have a special appearance which is characteristic for the « Degradinite ». This rock type has a smaller specific gravity and higher volatile matter and hydrogen contents than vitrite, and the coke produced from this is a very fragile one of extremely open texture.

This, rock-type has the chemical structure of hydroaromatic and the distinct nature is also of practical importance. Because of this fact we propose that « clarite » should be subdivided into two categories:

(vitro - clarit (clarit)... vitrinit, exinit

(hydro-clarit. (hydrit)... degradinit, exinit

It is preferred to designate a new name to this new component and such a new classification will be applicable enough not only to Japanese coal but to European or American coal.

4) Summary and conclusion.

In Japanese coal, we find no fusinite or micrinite; the dull coal is a new component containing mixture of exinite and resinite based on the ground-mass of hydroaromatic degradinite. It is quite different from the foreign durite which has micrinite as a ground mass and quite adverse chemical properties. I propose « hydrite » to designate the Japanese dull coal.

A. M. Wandless and J. C. Macrae have arbitrarily named this rock-type « black durain » and the durite having the inert materials was named « Grey durain ». G. W. Fenton and B. Alpern proposed the international designation « E-durite » for the former and « I-durite » for the latter. But « Hydrite » is different from « durite » in the chemical properties. The former is active and the latter is inactive in comparison with vitrite. For this reason it is not correct that the two components are in the same category of « durite ».

Finally we shall propose the nomenclature of coal petrology as per the following table.

a) *Constituents (Maceral)*

vitrit	telinit
	collinit
degradinit	
exinit	
resinit	
mikrinit	koriger mikrinit
	massiger mikrinit
fusinit	
semifusinit	
sklerotinit	

b) *Microolithotypes (types of banded coals)*

vitrit	vitrinit
clarit (vitro-clarit)	vitrinit, exinit
hydrit (hydro-clarit)	degradinit, exinit
durit	mikrinit, semifusinit, exinit
fusit	fusinit, semifusinit

c) *Macrolithotypes*

bright coal	vitrit
dull coal	clarit, hydrit, durit

RESEARCH NOTES: ABSTRACT

Petrographic Characterization and Evolution of the Coal from Pench Valley, Kanhan Valley and Pathakhera Coalfields, Satpura Basin, India*

R. Rakesh Shukla and Dr. H.S. Pareek (Research Fellow in Coal Petrology),
Banaras Hindu University,
Varanasi- 221 005, INDIA

Coal occurs in the Barakar Formation (Permian) of Gondwana Supergroup, the formation thickening from 160 m in the Pench Valley, to 350 m in Kanban valley, and 450m in Pathakhera coalfields. The coal seams have been correlated geologically (Pareek, 1970) and by coal seam petrographic profiles (Pareek et al., 1964, Pareek, 1969) earlier, wherein vitrinite content is recorded to increase laterally, thereby enhancing the caking property of the coals. The present four year duration investigation is an outcome of petrographic studies on pillar coal samples collected from working faces in the three coalfields. Utilising the scheme of Diessel (1965), megascopic seam profiles were prepared. Variations of each of the microscopic and chemical constituents were ascertained from bottom to top of each of the coal seams, being related to coal facies, rank and evolution, and their potentiality in utilisation assessed.

These coals have vitrinite from 27.52 to 50.72%, while inertinite is 25.27 to 51.14%, liptinite being 9.80 to 20.27%. Blue irradiation study indicates the presence

of the secondary liptinite, i.e., exsudatinite (0.18% to 1.14%), fluorinite (0.23 to 2.09%) and bituminite (nil to 1.28 %). Argillaceous mineral matter is 4.13 to 12.80% carbonates 0.60 to 1.21%, and sulphides 0.30 to 0.60%. In general, mineral concentration is higher in coals of Pench valley. The microlithotype composition indicates that these coals have vitrite 32.46% and inertite 34.26%, duroclarite, clarodurite and liptite being much less than 1%. The mean of random vitrinite reflectance (Rom) is 0.35 to 0.58% in Pench, 0.52 to 0.92% in Kanhan, and 0.53 to 0.88% in Pathakhera coals. As per ASTM classification, these coals are sub-bituminous C to high volatile bituminous A. On volatile matter (daf) basis, they are sub-bituminous "C" to medium volatile bituminous. The H/C versus O/C ratio suggests them type III Kerogen.

The plots of maceral and microlithotype composition cluster in the zone of foreland basin of triangular diagram (Hunt and Smyth, 1989). The microlithotype plots in facies diagram (Hacquebard and Donaldson, 1969) relate these coals to forest moor, under limno-telmatic conditions. The Gelification Index (Diessel, 1986) of these coals ranges between 0.40 to 2.20 and the Tissue Preservation Index 1.57 to 35.94, suggestive of wet and partly dry conditions of peat formation. The ground water index (Calder et al, 1991) indicates development of these coals in fen and bog forest under mesotrophic to ombrotrophic hydrological conditions. On the basis of the international coals classification system (Falcon, 1986), these coals are intermediate in type, meta sub-bituminous to hypo-bituminous in rank and ashy coal in grade. Based on petrographic and chemical composition, the Satpura coal is recommended for gasification and blend coking coals.

REFERENCES

- Calder, J.H; Gibbing, M.R; Mukhopadhyay, P.K. (1991) : Peat formation in a Westphalian B piedmont setting, Cumberland basin, Nova Scotia : Implication for the maceral-based interpretation of rheotrophic and raised paleomires, Bull. Soc. Geol. Fr. 162, 283-298.
- Diessel, C. F. K. (1985) : Correlation of macro- and micro Petrography of some New South Wales Coals, In Proc. 8th Commonw. Min. Metall. Congr. 6, 669-667.
- Diessel, C. F. K. (1986) : On the correlation between coal facies and depositional environment. In: Advancement in the Studies of the Sydney Basin, Proc. 20th Symp., Dept. Geol., Univ. New castle, N.S.W., 19-22.
- Hacquebard, P.A. and Donaldson, J.R. (1969) : Carboniferous coal deposition associated with flood plain and limnic environments in Nova Scotia. In : E.C. Dapples and M.E. Hopkins (Eds), Environment of Coal Deposition, Geol. Soc. Am. Spec. Pap., 114 : 143-191.
- Falcon, R.M.S. (1986) : Classification of coals in South Africa, 1899-1921. In: C.R. Anhaeusser and S. Maske (Eds), Mineral Deposits of Southern Africa, I and II. Geol. Soc. S. Afr., 2335.

- Hunt, J.W. and Smyth, M. (1989) : Origin of inertinite rich coals in Australian Cratonic basins. Int. J. Coal Geol., 11 :23-46.
- Pareek, H.S., Sanyal, S.P. and Chakrabarti, N.C. (1964) : Petrographic studies of the coal seams in the Pench-Kanhan coalfields, India. XXII Int. Geol. Cong., IX, Gondwanas, 1-16.
- Pareek, H.S. (1969) : The nature of coal from the Tandsi seam, Upper Tawa Valley Coalfield, M.P. Ind. Mins., 20, 2, 165- 172.
- Pareek, H.S. (1970) : On the Geology and the Correlation of coal seams of Pench-Kanhan-Upper Tawa Valley Coalfield. Palaeobotanist, 18, 1, 95-102.

* This work forms a concised abstract of a thesis submitted for Ph.D, under the supervision and research guidance of M.P. Singh, Reader in Geology, and the research fellow being funded under "Dr H.S. Pareek Endorsement Fund" for 4 yr term, or monthly scholarship and annual contingency. The research fellow for next 4 yr term is selected.

- H. S. PAREEK

Eds note : reproduced from ICCP News No. 24 June 2001 "Web Extra"

Carbon 2003

The Carbon 2003 Conference will be held in Oviedo, Spain, from July 6 to 10, 2003 and will be organized by the Spanish Carbon Group. Carbon 2003 will attempt to promote an interactive atmosphere by facilitating debate, with state-of-the art keynote lectures and by making maximum use of posters. The aim of Carbon 2003 is to emphasize new carbon materials and the need to enhance the efficiency of established materials, focusing sharply on need and application.

Information about scientific content, transportation from Oviedo (Asturias) airport and accommodation in Oviedo is now available on the web (<http://www.carbon2003.com>). The web site will be completed SOON and up-dated REGULARLY. We plan to have on-line registration. For further information, please contact the local chair-persons, Dr. J.J. Pis (jjpis@incar.csic.es) or Dr. R. Menéndez (rosminen@incar.csic.es).

1963 ICCP Handbook 2nd ed on CD ROM

A limited number will be available for purchase at the meeting in Maputo / Pretoria. To be sure to get one, orders will be taken up until August 23. Email Petra : p.david@nitg.tno.nl

WHAT'S HAPPENING

July 21 - 26 , 2002

29th International Symposium on Combustion, Sapporo, Japan

Contact : Prof. Ken-ichi Ito

email : ito@york-me.eng.hokudai.ac.jp

August 25- 30 2002

Gondwana 11 Correlations and Connections, Christchurch, New Zealand.

Contact : Susannah Hawtin

email : s.hawtin@anta.canterbury.ac.nz

<http://www.anta.canterbury.ac.nz>

September 2002

54th Annual Meeting of ICCP, Maputo-Pretoria, Mozambique - South Africa

Contact : Lopo e Vasconcelos

email : lopo@zebra.uem.mz

or Ricky Pinheiro

email : ricky.pinheiro@afriore.co.za

<http://www.iccop.org>

July 10 - 16 2003

Carbon 2003, Oviedo, Spain

Contact : Dr. J.J. Pis or Dr. R. Menéndez

email : jjpis@incar.csic.es

rosmenen@incar.csic.es

August 2003

55th Annual Meeting of ICCP, Utrecht, The Netherlands.

Contact : Petra David

email : p.david@nitg.tno.nl

<http://www.iccop.org>

www.nitg.tno.nl/eng/55iccp.shtml

2004

56th Annual Meeting of ICCP,

Budapest, Hungary

Contact : Dr Mária Hámor-Vidó

email : vidom@mafi.hu

<http://www.iccop.org>

ICCP Publications

ICCP Handbook

International Handbook of Coal Petrography 2nd Edition (1963) (in English) as CD ROM

PC and Mac Compatible

Requires Adobe Acrobat Reader Ver. 4 or above

ICCP member \$25US (including postage)

ICCP non-member \$50US (including postage)

International Handbook of Coal Petrography, supplement to the 2nd edition, second print (in English) 1985 US\$30

International Handbook of Coal Petrography, 2nd supplement to the 2nd edition (in English) 1986 US\$10

International Handbook of Coal Petrography, 3rd supplement to the 2nd edition (in English) 1993 US\$20

Prices do not include shipping unless stated (approx US\$15 in Europe and outside US\$23 Europe per item) or cost of money transfer.

Prepayment should be made to Postbank.

Swift code ING-BNL-2A, Amsterdam, NL

Giro account nr. 4292437

with reference to: ICCP HANDBOOK

Budapestlaan 4

3584 CD Utrecht

Payment can also be accepted by credit card (Mastercard or Visa)

Contact

Dr Petra David

Netherlands Institute of Applied Geoscience TNO

National Geological Survey

Department of Geo-Energy

P.O. Box 80015

3508 TA Utrecht

THE NETHERLANDS

Ph. +31 30 256 4648

Fax +31 30 256 4605

email : p.david@nitg.tno.nl

If undeliverable return to :

Dr P. Crosdale,

Editor, ICCP

School of Earth Sciences

James Cook University

Townsville, Qld 4811 AUSTRALIA