

IAS



INTERNATIONAL ASSOCIATION
OF SEDIMENTOLOGISTS

NEWSLETTER

N° 181 August 2002

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Report on the

AQUIFER HETEROGENEITY AND ENVIRONMENTAL IMPLICATIONS

Ancient and Modern Coastal Plain Depositional Environments

(SEPM/IAS Research Conference, Charleston, SC, March 24 - 27, 2002)

A SEPM/IAS research conference on Aquifer Heterogeneity and Environmental Implications with emphasis on ancient and modern coastal plain environments was held in Charleston, SC – March 24 – 27th, 2002. The conference objectives were to bring together individuals from a variety of disciplines including sedimentologists, hydrogeologists, geochemists, regulators, and engineers to facilitate discussion and broaden comparative research activities amongst scientists in the environmental field.

Over 50 participants representing the United States, Canada, Ukraine, France, and New Zealand attended the oral and poster sessions held on Monday and Wednesday, with over 60 participants attending the day-long field trip on Tuesday. One unique aspect of the conference was student sponsorships. The US Department of Energy (DOE) at the Savannah River Site sponsored 10 students to attend the entire conference, while the College of Charleston's Geology Department sponsored 8 students to attend the field trip. These sponsorships provided valuable opportunities for students to interact with professional geoscientists in an informal setting.

The meeting was initiated by providing participants the opportunity to attend an informal core workshop and cone penetrometer demonstration on Sunday, March 24th. Cores presented for viewing were obtained using a variety of drilling techniques including vibracoring, sonic, roto-sonic, wireline, and cone penetrometer. The cores illustrated the diversity of subsurface drilling techniques available for retrieving both unconsolidated coastal sediments. The cores illustrated both modern (Holocene) and ancient (Pleistocene and Tertiary) coastal plain depositional facies/systems and illustrated the heterogeneity commonly encountered in trying to environmentally characterize these types of deposits.

Monday's theme was "Sedimentology and characterization of coastal plain and fluvial depositional environments and systems". Invited talks focused on the historical significance and recognition of depositional systems and sequences as a basis for hydrostratigraphic analysis and how to construct geological models using advanced geostatistics. A unique aspect of Monday was an oral presentation on the interaction of geology and groundwater flow related to groundwater contamination at Chernobyl by

Alexander Bohuslavsky from the National Academy of Sciences in Ukraine. Afternoon posters covered topics of field mapping techniques for characterization of aquifer heterogeneity in large-scale fluvial systems.

Tuesday was an all day field trip (by boat) to Price Inlet and Capers Island located north of Charleston, SC to observe "Modern Shoreline Depositional Environments - Aquifer and Aquitard heterogeneity". Field trip stops included 1) Price Inlet which is an excellent modern example of an ebb-tidal delta and associated sedimentary deposits and bedforms, and 2) Capers Island which is a regressive mesotidal barrier island formed when the shoreline prograded seaward. Washover fans and back barrier tidal and marsh deposits were observed. These features illustrated the complexity of aquifer and aquitard heterogeneity associated with modern coastal environments.

Wednesday's theme focused on "Groundwater modeling approaches and applications addressing aquifer and aquitard heterogeneity". Invited talks and posters ranged from theoretical/geostatistical insights to practical modeling applications. Topics included evolving concepts and measurements techniques related to subsurface heterogeneity, the prediction of hydraulic conductivity, and the relation of thermohaline convection to sedimentary rocks. Afternoon posters covered a variety of topics including scaling issues for heterogeneous anisotropics aquifers, geostatistical environmental workflows for geological modeling, dual-medial contaminant

transport applications, geochemical heterogeneity, and stochastic frameworks for site characterization and subsequent modeling needs.

Comments received from participants have been positive. The majority of the participants felt that the meeting provided positive technical exchange and enlightening discussions. The attendees represented a diverse group including hydrogeologists, and modelers, environmental engineers, sedimentologists, stratigraphers, representing academic, industry (environmental and petroleum), and regulatory agencies. The small number of invited participants and the informal setting of the meeting contributed to the professional and rewarding experience. Many felt they would develop future collaborative research initiatives based upon the information gained and the relationships made with other participants. The field trip was a big success and having it in the middle of the meeting was positive. It broke up the formality of the scheduled talks and posters and allowed participants to have the opportunity for informal technical discussions in a relaxed atmosphere. Suggestions for future research conferences included Quaternary sea level change, fluvial depositional systems, carbonate depositional systems, and seismic geomorphology.

For additional information contact:

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NATO ADVANCED RESEARCH WORKSHOP (ARW) – NEW IGCP PROJECT PLANNED FOR NORTH AFRICAN CRETACEOUS CARBONATE PLATFORMS

(Tunisia, May 13th – 18th, 2002)

Thanks to the initiative of Eulàlia Gili (Barcelona) and Hédi Negra (Tunis), NATO funded an ARW to discuss the state of the art in research and further scientific needs with regard to North African Cretaceous rudist and coral formations and their contributions to carbonate platform development. During the workshop, geologists from several North African countries (Algeria, Tunisia, Egypt), Europe (Spain, Italy, Great Britain, Germany), and the USA exchanged scientific and applied experiences on various tectonic, sedimentologic, and micro- and macropaleontologic aspects, all of them controlling the evolution of huge platform systems that rimmed the North African Craton during the Cretaceous. The excellent preparation of both parts, field-type and seminar-type workshops, contributed largely to an inspiring atmosphere between all participants within which stimulating discussions on exchanges of ideas and experience were very easy (thanks to all our Tunisian colleagues!).

During the first two days, all participants worked together on

outcrops in two key-areas of the Central Tunisian Platform:

- the Cenomanian-Turonian Jebel Bireno section with rudists of the post-drowning succession
- the Campanian of Jebel el Kébar with a coral-rudist association that rimmed the Kasserine Island

Many micro- and macro-scale aspects of sedimentary structures, surfaces and diagenesis including the biota were discussed and comparisons made with other North African platforms.

During the subsequent three days in Tunis, the present knowledge on the biosedimentary interactions of different Cretaceous platform systems was reviewed. Fourteen key-note lectures were given on general aspects of Cretaceous platforms, on new and well-established high-resolution stratigraphic methods for their calibration and correlation, on rudists as important biologic contributors and on diagenetic aspects of different case studies of North African platform systems, in both surface and subsurface settings. In

combination with three short communications and four posters on Tunisian and Italian platforms, a wide range of various aspects controlling the demise and recovery of the North African Cretaceous platforms was treated.

Abstracts of the key-note lectures are summarised in a booklet. It is planned to publish the contributions in a special volume of the Nato Sciences Series (Kluwer) which will appear in Spring 2003.

Among the many aspects in need of scientific investigation in the near future, the following were accepted to be of a major importance for further co-operative work:

- calibration of basin-platform events
- study of biotic events of various platforms
- investigation of diagenetic events, including their synchronicity

The participants agreed that the goals can only be realised within an international co-operation including all disciplines for the study of carbonate platforms. Focussing on the ideas of the workshop, P. Skelton, H. Negra, F. Chikhi-Aouimeur and R. Abdel-Kireem will work out a proposal for a new IGCP project under the title "North African Cretaceous Carbonate Platform Systems". It is planned to study crisis and recovery of the Lower-Upper Aptian platforms and the Cenomanian-Turonian platforms on the basis of different North African key-sections.

Besides the well-established oceanic records, the Cretaceous tectonic history and sedimentary platform processes will be studied to synthesise the major controlling factors and use them for global correlation and application.

Sedimentologists and paleontologists interested in contributing to this planned IGCP project are kindly invited to contact *P.W. Skelton (Department of Earth Sciences, Open University, Milton Keynes MK7 6AA, UK. E-mail: p.w.skelton@open.ac.uk) for more information.*

THE GEOMETRY AND PETROGENESIS OF DOLOMITE HYDROCARBON RESERVOIRS

3-4 December 2002

Geological Society, Burlington House, London, U.K.

The meeting will bring together dolomite geologists in industry and academia. The objectives are to review and summarize the latest views regarding the process(es) of dolomitization, and to determine how these can improve our understanding and management of oil and gas reservoirs.

Keynote speakers are Jay Gregg (University of Missouri), Mitch Harris (Chevron-Texaco), Jerry Lucia (University of Texas) and Hans Machel (University of Alberta).

Topics include the 3D geometry of dolomite reservoirs and outcrop analogue studies; a sequence stratigraphic perspective; reservoirs of North Africa, Iran and Iraq; the origin distribution and timing relative to oil emplacement of dolomite cements; the evolution and distribution of porosity;

reservoir modelling using wireline logs and image log analysis, fractured reservoirs; hydrogeology of modern and ancient dolomites; dolomite models - the latest ideas.

Papers on offer include Wireline log characterisation of dolomite; the Karachaganak Field, Kazakhstan; dolomitization in the Agadir Basin; Cretaceous reservoirs in the Anaran block, Zagros mountains; the Al Rayyan field Qatar; dolomitization, fluid flow and mineralization in Ireland; microbial mediation of dolomite precipitation in the Coroong region, fault-related burial dolomitization.

Convenors:

giancarlo.rizzi@bakeratlas.com
(Gillian Darke) *GILLIJ@Statoil.com*
c.braithwaite@earthsci.gla.ac.uk

For registration and further information
contact: *helen.wilson@geolsoc.org.uk*

FORENSIC GEOSCIENCE – PRINCIPLES, TECHNIQUES AND APPLICATIONS

3-4 March 2003

Geological Society, Burlington House, London, U.K.

The aim of this meeting is to provide a forum for the discussion of recent developments in forensic geoscience, including theoretical principles, analytical techniques and examples from criminal and civil investigations. Contributions are invited relating to any aspect of the application of geoscience techniques and environmental information, to such investigations. Individual sessions will focus on the nature of different types of geoscientific evidence, ground and remote sensing survey techniques, laboratory methods for the physical, chemical and biological characterization of sediments and soils, methods for the

evaluation of evidential value, and examples of cross-disciplinary integrated investigations. There will be a number of invited contributions by speakers from the UK and overseas.

Offers of papers should be sent to the convenors as soon as possible and no later than 31 October 2002. There will also be opportunities for poster presentations.

For further details please contact the convenors: *Kenneth Pye* (k.pye@gl.rhul.ac.uk) and *Debra Croft* (Royal Holloway, University of London).

IAS POSTGRADUATE GRANT SCHEME

IAS has established a grant scheme designed to help PhD students with their studies. We are offering to support postgraduates in their fieldwork, data acquisition and analysis, visits to other institutes to use specialised facilities, or participation in field excursions.

Up to 10 grants, each of 1000 Euros, are awarded twice a year.

These grants are available for IAS members only, and only for postgraduates. The application must include a short CV and a budget. A letter from the supervisor supporting the application must be sent directly to the Treasurer of the IAS.

An application form is on our website (<http://www.blackwell-science.com/uk/society/ias>) or can be requested from the Treasurer's Office (IAS, Office of the Treasurer, Ghent University, Department of Geology and Soil Science, Krijgslaan 281/S8, B-9000 Gent, Belgium; E-mail: Patric.Jacobs@rug.ac.be)

Applications must be sent to the Treasurer of the IAS.

Application deadlines:	1st session:	March 31
	2nd session:	September 30
Recipient notification:	1st session:	before June 30
	2nd session:	before December 31

CALENDAR

DRYLANDS RIVERS: PROCESS & PRODUCT

August 7-10, 2002, SCOTLAND (Aberdeen)
 Contact: Adrian Hartley or Colin North
 Department of Geology & Petroleum Geology,
 University of Aberdeen, Aberdeen
 AB24 3UE, Scotland, U.K.
 E-mail: a.hartley@abdn.ac.uk or
 c.p.north@abdn.ac.uk
 Web-
 page: www.DrylandRivers.com/conference/aberdenn02.htm

SEPM RESEARCH CONFERENCE

Incised Valleys: Images and Processes
 18-23 August 2002, U.S.A. (Casper, Wyoming)
 Contact: Rod Tillman
 E-mail: rodtillman@worldnet.att.net
 Web-page: <http://sepm.org>

FOURTH SYMPOSIUM OF IGCP 434
Cretaceous Continental Margin of East Asia:
Stratigraphy, Sedimentation, and Tectonics
 September 3-12, 2002, RUSSIA (Khabarovsk)
 Contact: S.M. Stavitskaya, L.D. Peskova,
 Institute of Tectonics & Geophysics
 Far Eastern Branch RAS, Khabarovsk
 Russia
 Tel.: +7 4212 21 08 59
 Fax: +7 4212 22 76 84
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SHORT COURSE: Facies Analysis and High-Resolution Sequence- and Cyclostratigraphy of Fluvial to Shallow-Marine Successions (with examples from the Lower Triassic of NW Bulgaria)
 9-13 September 2002, Sofia, Bulgaria
 Web-page: <http://www.blackwell-science.com/uk/society/ias/SCBulgaria.htm>

6TH INTERNATIONAL SYMPOSIUM ON THE JURASSIC SYSTEM

A meeting of the IUGS International Subcommission on Jurassic Stratigraphy
 12-22 September 2002, ITALY (Palermo)
 Contact: Luca Martire
 Dipartimento di Scienze della Terra
 Via Accademia delle Scienze 5
 10123 Torino, Italy
 Fax: +39 011 54 17 55
 E-mail: martire@dst.unito.it
 Web-page: www.dst.unito.it/6thISJS

6TH INTERNATIONAL CONGRESS ON RUDISTS

16-18 September 2002, CROATIA (Pula - Istria)
 Contact: Mrs. Alisa Martek and Dr. Ivo Velic
 Institute of Geology, Sachsova 2
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6TH INTERNATIONAL CONFERENCE LITTORAL 2002

22-26 September 2002, PORTUGAL (Porto)
 Contact: G. Soares de Carvalho
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CONTINENT-OCEAN INTERACTIONS WITHIN THE EAST ASIAN MARGINAL SEAS

November 11-14, 2002, U.S.A. (The Bahia
Resort, San Diego, California)

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Web-page: www.whoi.edu/pclift/EAB.html

ORGANIC-CARBON BURIAL, CLIMATE CHANGE AND OCEAN CHEMISTRY (MESOZOIC-PALEOGENE)

December 9-11, 2002, U.K. (Geological Society
of London,

Burlington House, London)

Contact: Juergen Thürow

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Web-page:

www.earthsci.ucl.ac.uk/conferences/GSLC

THIRD INTERNATIONAL LIMNOGEOLOGY CONGRESS

29 March - 2 April 2003, U.S.A. (Tucson,
Arizona)

Contact: Andrew Cohen,

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BRAIDED RIVERS 2003

April 7-9, 2003, U.K. (Birmingham)

Contact: Greg Sambrook Smith

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E-mail: g.smith.4@bham.ac.uk

Web-page: <http://www.cwr.bham.ac.uk/braid/>

COASTAL SEDIMENTS '03

The 5th International Symposium on Coastal
Engineering and Science of Coastal Sediment
Processes

May 18-23, 2003, U.S.A. (Clearwater Beach,
Florida)

Contact: Darlene K. Gregory

Conference Secretariat

Tel: +1 361 939 90 04

Fax: +1 361 939 93 55

E-mail: dgregory@coastalsediments.net

Web-page: www.CoastalSediments.net

3RD LATINAMERICAN CONGRESS OF SEDIMENTOLOGY

June 8-11, 2003, BRAZIL (Belém, Pará)

Contact: Dilce de Fátima Rossetti

Museu Paraense Emilio Goeldi

CP 399, Belém, Pará 66040-170

Brazil

E-mail: latinoamericano@museu-goeldi.br

Web-page: www.ufpa.br/latinamerican

12TH BATHURST MEETING OF CARBONATE SEDIMENTOLOGISTS

8-10 July 2003, U.K. (Durham)

Contact: Maurice Tucker or Moyra Wilson,

Department of Geological Sciences

University of Durham, Durham

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E-mail: M.E.Tucker@durham.ac.uk

E-mail: Moyra.Wilson@durham.ac.uk

Web-page: <http://www.dur.ac.uk/bathurst.2003/>

**16TH CONGRESS OF THE
INTERNATIONAL ASSOCIATION FOR
QUATERNARY RESEARCH (INQUA)**

July 23 - 31, 2003, U.S.A. (Reno, Nevada)

Contact: M. Jones

Division of Hydrologic Sciences

Desert Research Institute

2215 Raggio Parkway, Reno

NV 89512, U.S.A.

E-mail: inqua03@dri.edu

Web-page: <http://inqua2003.dri.edu>

**22nd IAS MEETING OF
SEDIMENTOLOGY**

September 17-19, 2003

CROATIA (Opatija)

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IAS-2003, Institute of Geology, HR-10000

Zagreb, Sachsova 2, Croatia

Fax: +385 1 6144718

E-mail: dpavelic@yahoo.com

Web-page: <http://www.igi.hr/ias2003>

**8TH INTERNATIONAL SYMPOSIUM ON
FOSSIL ALGAE**

September 18-20, 2003, SPAIN (Granada)

Contact: Juan C. Braga or Julio Aguirre

Departamento de Estratigrafía y Paleontología

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Campus Fuentenueva s/n

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**PRESENT STATE AND FUTURE
EVOLUTION OF PALEOGENE
STRATIGRAPHY**

A Symposium of the International Sub-

commission on Paleogene Stratigraphy

August 26-30, 2003, BELGIUM (Leuven)

Contact: Noël Vandenberghe

Dept. Geografie-Geologie

Afd. Historische Geologie

KU Leuven, Redingestraat 16

B-3000 Leuven, Belgium

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Web-page: www.uniteubingen.de/geo/isps/news

**FIFTH INTERNATIONAL CONFERENCE
ON ASIAN MARINE GEOLOGY**

January 14-16, 2004, THAILAND (Bangkok)

Contact: Thanawat Jarupongsakul

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Chulalongkorn University,

Bangkok 10330, Thailand

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**23rd IAS MEETING OF
SEDIMENTOLOGY**

September 15-17, 2004

PORTUGAL (Coimbra)

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