



INTERNATIONAL
SUBCOMMISSION ON
JURASSIC
STRATIGRAPHY

Newsletter 28

Edited by Nicol Morton and Paul Bown

March 2001



CONTENTS

	<i>Page</i>
CHAIRMAN'S REPORT, Nicol MORTON	1
REPORT FROM THE PAST BUREAU, Giulio PAVIA	2
REPORTS OF STAGE WORKING GROUPS	
Progress of GSSP proposals	2
Triassic/Jurassic Boundary, Geoff WARRINGTON & Gert BLOOS	3
Sinemurian, Gert BLOOS	4
Pliensbachian, Christian MEISTER	5
Toarcian, Serge ELMI & Hugh JENKYNS	6
Aalenian, Stefano CRESTA	6
Bajocian, Andras GALACZ	7
Bathonian, Sixto FERNANDEZ LOPEZ	8
Callovian, John CALLOMON	8
Oxfordian, Guillermo MELENDEZ	9
Kimmeridgian, Andrzej WIERZBOWSKI	9
Tithonian, Federico OLORIZ & Guenter SCHWEIGERT	10
REPORTS OF THEMATIC WORKING GROUPS	
Geoconservation, Kevin PAGE	11
Isotope Stratigraphy, Peter BAUMGARTNER	13
Liaison, Robert CHANDLER	13
Microfossils, Susanne FEIST-BURCKHARDT	13
Palaeobiogeography, Fabrizio CECCA	14
Palaeoclimate, Helen MORGANS BELL & Bruce SELLWOOD	14
Palaeomagnetism, Jim OGG	14
Sequence Stratigraphy, Nicol MORTON & Angela COE	14
Time Scale, Jozsef PALFY	15
CORRESPONDENCE	
Circulation of unpublished papers, Kevin PAGE	15
Oxfordian/Kimmeridgian boundary, Andrzej WIERZBOWSKI	16
Jurassic foraminifera in the Baltic area, Algimantas GRIGELIS	17
IGCP project 458 T/J boundary events, J. PÁLFY, S.P. HESSELBO, C. McROBERTS	17
German Subcommission on Jurassic Stratigraphy, Gert BLOOS	18
NEWS AND MEETINGS	
6th International Symposium on the Jurassic, Sept. 2002, Luca MARTIRE	19
OTHER MATTERS	
Circulation of Newsletters, Nicol MORTON	19

FROM THE CHAIRMAN

Nicol MORTON

It was for me a surprise to be asked to accept nomination as Chairman of the Jurassic Subcommittee, and an honour to be "elected" to follow in the footsteps of my illustrious predecessors. I am grateful to Paul Bown for accepting nomination as Secretary and Paul Smith as Vice-Chairman of the Subcommittee. The Bureau of the Subcommittee moves to London and this is the first Newsletter of our term of office.

We intend to circulate this Newsletter and other information electronically because this is easier, cheaper and quicker. It also makes it possible to copy information to a larger number of individuals and we hope that better lines of communication can be established than in the past. We hope soon to establish a web-site for the Jurassic Subcommittee.

I begin by stating that the Subcommittee and its Bureau are in themselves of little importance. As individuals we MAY make scientific contributions on Jurassic geology, but the primary role of the Subcommittee is to act as a facilitator to others who do the real work of research on the Jurassic. We hope we can make international collaboration easier by providing a vehicle and perhaps a focus through which it can be encouraged.

My first task on becoming Chairman in September was to prepare the Annual Report of the Jurassic Subcommittee to the International Commission on Stratigraphy. This had to include the modern "management-speak" jargon of a mission statement and goals, which I include here for your amusement.

Mission statement

The Subcommittee is the primary body for facilitation of international communication and scientific cooperation in Jurassic stratigraphy, defined in the broad sense of multidisciplinary activities directed towards better understanding of the evolution of the Earth during the Jurassic Period. Its first priority is the unambiguous definition, by means of agreed GSSPs, of a hierarchy of chronostratigraphic units which provide the framework for global correlation.

Goals

These fall into two main areas:

- (a) The definition of basal boundary stratotypes (GSSPs) and the refinement of standard chronostratigraphical scales, through the establishment of multidisciplinary Working Groups;
- (b) Coordination of international research on Jurassic environments, through the establishment of Thematic Working Groups, for example on Palaeobiogeography, Palaeoclimate, Sequence Stratigraphy and Tectonics.

The Jurassic Subcommittee

Membership

The Officers and Voting Members of a Subcommittee are elected every four years, and it is expected that there should be a rotation of the membership. This time approximately half of the membership has changed. The Chairman, Vice-Chairman, Secretary and Convenor of the Triassic/Jurassic Boundary Working Group are ex-officio Voting Members of

the Jurassic Subcommittee. For the other Voting Members we deliberately set out to broaden the range of expertise on the Subcommittee. The results can be seen in the Subcommittee Directory, which is being circulated separately.

I would like to emphasise that Voting Members are NOT elected to represent a particular country, but as individual scientists with expertise and experience which they can contribute. You will read in the Directory that each has been allocated at least two specific areas of responsibility.

The list of Corresponding Members has also been revised, with the aim of achieving a better international regional coverage. The Corresponding Members are at least as important to the success of the Subcommittee, in many ways. In particular, we emphasised in our invitations to membership that Corresponding Members should be ACTIVE in three ways:

- 1) To act as a channel of communication, in BOTH directions, between the Subcommittee and ALL those in your geographical region who are active in research on the Jurassic;
- 2) To report to the Subcommittee from time to time (for example once every two or three years) on research activities on the Jurassic in your region, or on other matters of interest. These will be reported in the Newsletter (and eventually web-site) to the wider community.
- 3) To participate as appropriate in the activities of the various Working Groups established by the Subcommittee.

Although ICS Statutes emphasise that only Voting Members have a vote on, for example, GSSP proposals, I see no reason why the opinion of all members of the Jurassic Subcommittee should not be sought on important issues.

Working Groups

The other important change in the Subcommittee is that we plan to establish a number of new Thematic Working Groups. The rationale behind this is that the current concentration on Stage boundary stratotypes, proposed by Stage Working Groups, should come to an end over the next two or three years. We can begin to think more about other activities. The existing Stage Working Groups will, we hope, continue and turn their attention to other matters, for example definition of smaller chronostratigraphic units such as substages and Zones, refined correlations based on multidisciplinary investigations and so on.

However, we also propose to use the channels of international communication which SHOULD be available through the Subcommittee to encourage collaboration on selected themes of research on the Jurassic. This year (2001) these include Geoconservation, Isotope Stratigraphy, Liaison, Palaeoclimate, Palaeobiogeography, Palaeomagnetism and Time Scale. You will see in this Newsletter preliminary information and details of the Convenors for each of the Working Groups. We hope that you will join in the activities of whichever of the Working Groups are of interest to you, by contacting the appropriate Convenor. Next year (2002) we hope to introduce other new Thematic Working Groups, so please contact us with suggestions.

The first general indication of the success (or otherwise) of these Working Groups will be clear from reports in the next

Jurassic Subcommittee Newsletter. The new Groups have been asked to present at least preliminary results to the 6th International Symposium on the Jurassic in September 2002. The further target is a special theme on the Jurassic World which we hope to have included in the programme for the International Geological Congress in Florence in 2004.

Nicol MORTON
Birkbeck College
University of London
nicol.morton@ucl.ac.uk

FROM THE PAST BUREAU *Giulio PAVIA*

At this time of handing over of office to the new ISJS Bureau, the occasion of the first British Newsletter is appropriate for taking stock of the activities carried out during the Italian coordination of the Subcommittee. During the past four years we focussed on two main targets.

a) Fostering circulation of news and information about national and international Jurassic projects in progress

The result has hardly been brilliant, judging by what was published in the very recent ISJS Newsletters. A more positive impression would result from including the reports compiled by the Working Groups Convenors. Though such information mainly deals with GSSP activities, and thus it appears too much restricted to a single topic, in fact it concerns subjects which at any rate are of high interest for Jurassic stratigraphers.

b) Pressure on the WG Convenors to formulate proposals for Stage GSSPs

The progress reports for many stages are always optimistic about the possibilities of reaching stratotype formalization, most notably the Triassic/Jurassic boundary. Therefore, in the ISJS Annual Reports submitted to the ICS Bureau, only the Toarcian, the Callovian and the Tithonian seemed to suffer problems in definition and/or correlation of possible GSSPs. In reality, some unfortunate events with convenors or unexpected difficulties in the evaluation of some parameters (either in the local stratigraphy or in the correlation potential related to the sections being proposed as possible boundary stratotypes), delayed formalisation of several GSSPs. As a consequence, collaborative work on proposals for Hettangian (and thus for the system boundary T/J), Pliensbachian, Bathonian, Oxfordian, and Kimmeridgian have still not been concluded.

At present, the Jurassic Subcommittee can record ratification of the Sinemurian and Aalenian GSSPs at the last International Geological Congress held in Rio de Janeiro in 2000. The Bajocian GSSP was approved at the Beijing IGC in 1996. Should progress appear not so great, it is worth noting that work carried out on other stratotypes has progressed enough to encourage expectations of conclusions in the near future. However, it is useful to remember that for stratotypic results the Jurassic Subcommittee is among the most successful within the whole ICS and remains the most active of the Mesozoic subcommittees.

From a different point of view, this report could be read as the inheritance left by the Italian Bureau to its successors. Nicol Morton's forecasts and programme are oriented through this way, of course with the necessary innovations that the new management has introduced in term of convenors and new objectives beyond the GSSP topic.

I would like to close these short words with a friendly acknowledgment to all Voting Members, Corresponding Members, and WG Convenors who, in different ways, contributed to the results obtained during my chairmanship of the Jurassic Subcommittee. Lastly, a warm thank you to the Secretary, Fabrizio Cecca, for his help in this office.

Giulio PAVIA (ISJS past-Chairman)
University of Turin
pavia@dst.unito.it

PROGRESS OF GSSP PROPOSALS

TITHONIAN: The hunt is still on for suitable candidate sections. Field trips and meeting being held in Stuttgart, southern Germany, in late June 2001.

KIMMERIDGIAN: Two leading candidate sections identified - Staffin (Skye, Scotland) in Boreal Realm and Mt Crussol (France) for Tethyan Realm; field trip to Skye and meeting in Egham planned for July 2001, mainly to resolve Boreal-Tethyan correlation problems.

OXFORDIAN: Two adjacent sections near Serres (Chaines Subalpin, France) selected by WG as best candidate for GSSP; preparation of formal proposal to ISJS under way.

CALLOVIAN: Candidate GSSP section selected by Working Group in southern Germany; preparation of formal proposal to ISJS under way.

BATHONIAN: Unexpected apparent gaps in favoured candidate section in Digne area need to be investigated, also possible alternative sections.

BAJOCIAN: GSSP at Cabo Mondego (Portugal) and ASP at Bearerraig (Skye, Scotland) ratified by IUGS in 1996.

AALENIAN: GSSP at Fuentelsaz (Spain) ratified by IUGS in 2000.

TOARCIAN: Possible candidate sections being investigated, but selection by WG not yet imminent.

PLIENSACHIAN: One favoured GSSP candidate section, at Wine Haven, Robin Hood's Bay (Yorkshire, England) identified by WG; preparation of formal proposal to ISJS under way.

SINEMURIAN: GSSP at East Quantoxhead (Somerset, England) ratified by IUGS in 2000.

HETTANGIAN AND T/J BOUNDARY: No new suitable sections, beyond four candidates already identified, have appeared; ballot within WG imminent after further discussions; possible field trip to Somerset.

REPORTS OF STAGE WORKING GROUPS

TRIASSIC-JURASSIC BOUNDARY WORKING GROUP

Geoff WARRINGTON, *Convenor*

During the last year some important changes have occurred in the TJBWG. Professor Mouterde has retired as Convenor of the Group and I have been asked to take his place. Professor Mouterde served as Convenor for many years; indeed, I first became involved with the TJBWG after the very successful and stimulating meeting convened by him and the then Secretary, Jean Guex, in Lyon in 1988. I am grateful to Professor Mouterde for his courtesy on those occasions when I visited him in Lyon, after I succeeded Jean as Secretary of the Group.

I am very pleased that Gert Bloos has agreed to be the new Secretary of the Group, and I welcome him as my successor in that position. It was my intention that a preferred candidate GSSP would have been selected by now from the four proposed for the base of the Hettangian Stage. That this has not happened is due to a series of unforeseen events in 2000. I apologise to the proposers of the candidate sections in British Columbia, Nevada and Peru, who returned updated dossiers on their sections to me early in 2000, that their efforts were confounded by circumstances beyond my control. I hope that I do not tempt fate again when I say that the matter of the selection of a preferred candidate will be submitted to the Voting Members of the TJBWG soon. The new Secretary has the valuable experience of the recent successful selection of the GSSP for the base of the Sinemurian and I am sure that this will be helpful in dealing with the case of the Hettangian GSSP.

In an earlier Newsletter a joint field excursion by the Hettangian and Sinemurian Working Groups to the respective candidate GSSP and GSSP sections of those stages on the west Somerset coast, England, was suggested. The problems alluded to above made this impossible to arrange for 2000 but the project may be revived if there is sufficient interest. Any members of the Working Groups who wish to participate in such an event should advise myself or the Secretary of their interest quickly, stating any preference for time and any known periods of non-availability. With regard to the west Somerset candidate Hettangian GSSP, the magnetostratigraphic study of that section by Briden and Daniels (1999: *Journal of the Geological Society of London*) has been extended and amplified, and a biostratigraphically-calibrated magnetostratigraphic profile is now in preparation for publication.

A list of recent publications relevant to Triassic-Jurassic boundary studies follows. I would particularly like to draw readers' attention to the contribution by Gert Bloos (*Aspekte der Wende Trias/Jura*) published in *Trias - Eine ganz andere Welt* (1999) which offers a comprehensive review of this subject.

Triassic-Jurassic Boundary, new literature

AMODEO, F. 1999. The uppermost Triassic - Jurassic of the Lagonegro Basin. Stratigraphic studies on the Scisti Silicei Formation in Basilicata (southern Italy). *Mémoires de Géologie (Lausanne)*, **33**, viii+121pp.

- BLOOS, G. 1999. *Aspekte der Wende Trias/Jura*. Pp.43-68 in Hauschke, N. & Wilde, V. (eds) *Trias - Eine ganz andere Welt*. Munich, Verlag Dr Friedrich Pfeil, 647pp.
- BROMLEY, R.G. & MØRK, A. 2000. The trace fossil *Phoebichnus trochoides* in the condensed Triassic-Jurassic-boundary sequence of Svalbard. *Zentralblatt für Geologie und Paläontologie Teil 1*, **1998**, H.11-12: 1431-1439.
- BUCEPHALO PALLIANI, R. & RIDING, J.B. 2000. Subdivision of the dinoflagellate cyst Family Suessiaceae and discussion of its evolution. *Journal of Micropalaeontology* **19** (2): 133-137.
- COSTAMANGA, L.G. 2000. Analisi di facies della successione Triassico-Giurassica di Porto Pino (Sardegna Sud-Occidentale). *Atti Ticinensi di Scienze della Terra* **41**: 65-82.
- DETRE, C.S. 1999. Biostratigraphic evidences of the Triassic/Jurassic boundary in the Mesozoic horst near Csovár. *Annual Report of the Geological Institute of Hungary*, **1992-1993/II**: 21-25.
- EDWARDS, R.A. 1999. *The Minehead district - a concise account of the geology*. Memoir of the British Geological Survey, 1:50 000 geological sheet 278 and part of sheet 294 (England and Wales). London: The Stationery Office, xii+128pp.
- GONZALEZ-LEON, C.M., STANLEY, G.D. JR., & TAYLOR, D.G. 2000. Ammonoid discoveries in the Antimonio Formation, Sonora, Mexico: new constraints on the Triassic-Jurassic boundary. *Journal of South American Earth Sciences* **13**: 491-497.
- HALLAM, A. & WIGNALL, P.B. 2000. Facies changes across the Triassic-Jurassic boundary in Nevada, USA. *Journal of the Geological Society, London*, **157** (1): 49-54.
- HALLAM, A., WIGNALL, P.B., YIN JIARUN & RIDING, J.B. 2000. An investigation into possible facies changes across the Triassic-Jurassic boundary in southern Tibet. *Sedimentary Geology* **137**: 101-106.
- HAMES, W.E., RENNE, P.R. & RUPPEL, C. 2000. New evidence for geologically instantaneous emplacement of earliest Jurassic Central Atlantic magmatic province basalts on the North American continent. *Geology* **28** (9): 859-862.
- HUBBARD, R.N.L.B. & BOULTER, M.C. 2000. Phytogeography and paleoecology in western Europe and Eastern Greenland near the Triassic-Jurassic boundary. *Palaios*, **15**: 120-131.
- KENT, D.V. & OLSEN, P.E. 2000. Magnetic polarity stratigraphy and paleolatitude of the Triassic-Jurassic Blomidon Formation in the Fundy basin (Canada): implications for early Mesozoic tropical climate gradients. *Earth and Planetary Science Letters* **179**: 311-324.
- LIU, S. & YANG, S. 2000. Upper Triassic-Jurassic sequence stratigraphy and its structural controls in the western Ordos Basin, China. *Basin Research* **12**: 1-18.
- LUCAS, S. G. & ESTEP, J. W. 1999. Triassic-Jurassic boundary in the Sierra del Alamo Muerto, Sonora, Mexico. *Albertiana*, **23**: 36-41.
- ODA, H. & SUZUKI, H. 2000. Paleomagnetism of Triassic and Jurassic red bedded chert of the Inuyama area, central Japan. *Journal of Geophysical Research* **105** (B11): 25791-25808.
- PALFY, J., MORTENSEN, J.K., CARTER, E.S., SMITH, P.L., FRIEDMAN, R.M. & TIPPER, H.W.

2000. Timing the end-Triassic mass extinction: First on land, then in the sea? *Geology*, **28** (1): 39-42.
- PALFY, J., SMITH, P.L. & MORTENSEN, J.K. 2000. A U-Pb and ⁴⁰Ar/³⁹Ar time scale for the Jurassic. *Canadian Journal of Earth Sciences* **37**: 923-944.
- PE-PIPER, G. & PIPER, D.J.W. 1999. Were Jurassic tholeiitic lavas originally widespread in southeastern Canada?: a test of the broad terrane hypothesis. *Canadian Journal of Earth Sciences*, **36**: 1509-1516.
- POWELL, J.H., GLOVER, B.W. & WATERS, C.N. 2000. *Geology of the Birmingham area*. Memoir of the British Geological Survey, 1:50000 geological sheet 168 (England & Wales). London: The Stationery Office, viii+132pp.
- SCHWEITZER, H.-J., KIRCHNER, M. & VAN KONIJNENBURG-VAN CITTERT, J.H.A. 2000. The Rhaeto-Jurassic flora of Iran and Afghanistan. 12. Cycadophyta II. Nilssoniales. *Palaeontographica* **B.254** (1-3): 1-63.
- SUMBLER, M.G., BARRON, A.J.M. & MORIGI, A.N. 2000. *Geology of the Cirencester district*. Memoir of the British Geological Survey, 1:50000 geological sheet 235 (England & Wales). London: The Stationery Office, viii+103pp.
- TEKIN, U.K. & SÖNMEZ, I. 2000. The Rhaetian-Hettangian radiolarian fauna from Antalya nappes, Dikmetas village, Antalya, Turkey. 53 *Geological Congress of Turkey, Abstracts volume*: 268-269.
- WHATLEY, R. & BOOMER, I. 2000. Systematic review and evolution of the early Cytheruridae (Ostracoda). *Journal of Micropalaeontology* **19** (2): 139-151.

Geoffrey WARRINGTON (Convenor)
British Geological Survey
gwar@bgs.ac.uk

Gert BLOOS (Secretary)
Staatl. Museum für Naturkunde
bloos@gmx.de

SINEMURIAN WORKING GROUP

Gert BLOOS, Convenor

The year 2000 was dedicated to the final ballots on the proposed GSSP for the base of the Sinemurian (East Quantoxhead, West Somerset, SW England). The proposal had been made by Kevin Page in 1995. A report on the locality was published by Bloos and Page, 2000 (GeoResearch Forum, 6: 13-26) and a more detailed account is in preparation. The proposed GSSP was accepted by the Working Group in 1999 (see report for 1999 in ISJS Newsletter no 27, p. 25).

The results of the ballots in the year 2000 were as follows:

(1) Ballot within the ISJS.

The following information was sent to the Working Group:

The vote involved a postal ballot by the Voting Members of the ISJS. Voting papers, together with a booklet containing all geological and stratigraphical data on the proposed East Quantoxhead (UK) section for Sinemurian GSSP, were mailed to all Voting Members (20 colleagues): Europe 11 (France 3, U.K. 2, Germany, Italy, Poland, Russia, Spain, Sweden); North and South America 6

(Canada 3, U.S.A. 2, Argentina); Asia 2 (India, China); Oceania 1 (New Zealand).

On the basis of the result of both the choice of the East Quantoxhead section by the Sinemurian WG and the proposal submitted by the Convenor, Gert Bloos, the ballot within the ISJS offered the Voting Members a triple choice: (1) Yes, (2) Abstention, (3) No.

By the deadline for the ballot 16 answers (80%) had been returned: 15 (75%) answered YES; 1 (5%) answered NO; 4 (20%) did not respond.

Among those who answered YES, 3 (15%) made suggestions to improve the proposal for the vote within the ICS.

In conclusion, a significant majority of the ISJS Voting Members (75%) expressed a positive answer for the proposal of the East Quantoxhead (UK) section as the Sinemurian GSSP.

Fabrizio CECCA, Secretary of ISJS, May 5th 2000

(2) Ballot within the ICS

The following information was received:

I herewith send the final result of the postal ballot within the Full Commission on the proposal for Global Stratotype Sections and Points (GSSP) defining the base of the Sinemurian Stage (the Lower Jurassic Series).

The final results of the postal ballot within the Full Commission are:

15 (68%) of the 22 voting members have voted.
14 (93%) voted YES, 1 abstention (7%), and 0 NO.

The GSSP-proposal has thus been accepted by the Full Commission.

Olaf MICHELSEN, Secretary General, July 21st, 2000

(3) The last step was ratification by the IUGS

The secretary of IUGS sent the following information:

I can confirm that the IUGS Executive Committee at its meeting during the International Geological Congress in Rio de Janeiro discussed and ratified the proposal for the GSSP defining the base of the Sinemurian Stage.

Hanne REFSDAL, IUGS Secretariat, October 13th 2000

The main objective of the Hettangian-Sinemurian Working Group has now been achieved. Herewith I want to thank all members again who contributed to this result. Without the work in different parts of the world it would not have been possible to recognize the most suitable section.

New goals for the Working Group in the future are not yet envisaged. It seems reasonable to continue stratigraphic research in all regions and in different fossil groups since a sufficient number of questions still remain.

New literature on the Hettangian-Sinemurian boundary interval

BLOOS, G. & PAGE, K.N. 2000. The proposed GSSP for the base of the Sinemurian Stage near East

- Quantoxhead/West Somerset (SW England) - the ammonite sequence. *GeoResearch Forum*, **6**: 13-25.
- HILLEBRANDT, A. v. 2000. Die Ammoniten-Fauna des sudamerikanischen Hettangium (basaler Jura). Part III. *Palaeontographica, A*, **258**: 65-116.
- HYLTON, M.D. 1998. A preliminary analysis of the foraminifera from the Hettangian-Sinemurian boundary of East Quantoxhead, West Somerset. *Geoscience in southwest England*, **9**: 203-208.
- MANCENIDO, M.O. 2000. A systematic summary of the stratigraphic distribution of Jurassic rynchonellid genera (Brachiopoda). *GeoResearch Forum* **6**, 387-396.
- PAGE, K.N., BLOOS, G., BESSA, J.L., FITZPATRICK, M., HESSELBO, S, HYLTON, M., MORRIS, A. & RANDALL, D.E.. 2000. East Quantoxhead, Somerset: a candidate Global Stratotype Section and Point for the base of the Sinemurian Stage (Lower Jurassic). *GeoResearch Forum*, **6**: 163-171.
- TAYLOR, D.G. 1998. Late Hettangian - Early Sinemurian (Jurassic) ammonite biochronology of the Western Cordillera, United States. *Geobios*, **31**: 467-497.
- TAYLOR, D.G. 2000. The Canadensis Zone (Early Jurassic) in the Shoshone Mountains, Nevada. *GeoResearch Forum*, **6**: 211-223.

Gert BLOOS
 Staatliches Museum für Naturkunde, Stuttgart
bloos@gmx.de

PLIENSCHACHIAN WORKING GROUP

Christian MEISTER, Convenor

Introduction: In 1999 the Working Group focused on field study in different areas but in 2000 concentrated on analysis of material collected from the Wine Haven section (Robin Hood's Bay, Yorkshire, UK). This is the only known Sinemurian/Pliensbachian boundary section which fulfils the principal criteria for definition of a GSSP.

Foraminifera: Work by Malcolm Hart and his team on the microfauna is in progress.

Palynology: Susanne Feist-Burkhardt presents the following report:

Sampling and preparation. The processed samples cover the entire sampled interval from the Macdonnelli Subzone to the Taylori Subzone. Preparation followed standard palynological processing techniques, including HCl_{conc.} and HF_{conc.} treatment, heavy liquid separation with saturated ZnCl₂ solution, sieving at 11 µm, short oxidation with HNO₃ and staining with Fuchsin. Slides were prepared using Eukitt®, a commercial mounting medium for microscopical slides on the basis of resin.

Composition of organic residues. All samples yielded a rich palynological residue. Preservation of the palynomorphs is generally mediocre. Composition of the organic residues (=palynofacies) is quite similar in all samples. Palynofacies is generally composed of high amounts of opaque phytoclasts, brown translucent phytoclasts, translucent degraded phytoclasts, few to no amorphous organic matter, high amounts of pollen grains, spores, very few acritarchs, prasinophytes and foraminiferal test linings, and no

dinoflagellate cysts. Amorphous organic matter is abundant in only two samples: RBH/B/10 and RBH/B/14. Dinoflagellate cysts have not been found in any of the samples investigated.

Palyostratigraphy. Dinoflagellate cysts are the palynomorph group with the best palyostratigraphical resolution potential in marine Jurassic sediments, especially from the Toarcian/Aalenian onward. Following the pertinent literature only very few dinoflagellate cyst species are known from the Sinemurian and Pliensbachian. Few species are known to occur in older Liassic sediments, a few other species occur in the Pliensbachian. The studied interval itself, the uppermost Sinemurian to lowermost Pliensbachian is considered by some authors to be barren of dinoflagellate cysts (e.g. Stover et al. 1996); others report the scarce occurrence of small dinoflagellate cysts with inconspicuous morphologies (Feist-Burkhardt & Wille 1992, Feist-Burkhardt 1998). The exact stratigraphical ranges of the species are currently not known. In the palynological samples studied, unfortunately, no dinoflagellate cysts at all have been found, thus inhibiting the characterisation of the interval by means of dinoflagellate cysts. Pollen and spores have relatively little potential in Jurassic stratigraphy and enable only a gross biostratigraphical breakdown of the Jurassic Period. In all the palynological samples studied the pollen and spore assemblages are very similar and correspond to assemblages known from Lower Jurassic sediments elsewhere in Europe. No characteristic change in the assemblages has been encountered.

Palaeoenvironment. The palynofacies is characterised by high amounts of terrigenous phytoclasts, pollen and spores. Marine components are rare, but present in all samples and composed of acritarchs, prasinophytes and foraminiferal test linings. The high amounts of terrigenous components together with minor amounts of amorphous organic matter is typical for a nearshore oxygenated environments with strong terrigenous input. The abundance of amorphous organic matter in samples RBH/B/10 and RBH/B/14 is interpreted as the result of less oxygenated conditions.

Isotope stratigraphy and ammonite distribution: Hesselbo, Meister and Gröcke have documented the isotope stratigraphy and re-examined the ammonite distributions. A paper entitled 'A potential global stratotype for the Sinemurian–Pliensbachian boundary (Lower Jurassic), Wine Haven, Robin Hood's Bay, Yorkshire, UK: ammonite faunas and isotope stratigraphy' is in press in *Geological Magazine*. The authors conclude that the coastal exposure at Wine Haven, Yorkshire fulfils the principal criteria (Remane et al., 1996) for definition as GSSP for the base of the Pliensbachian Stage. The section is well exposed, relatively thick, lacks a major hiatus, and has not been subject to synsedimentary or tectonic disturbance. It contains an abundance of well-preserved marine fossils and does not show abrupt facies changes. The best candidate level for the boundary is at the base of the Taylori Subzone as characterized by the association of *Bifericeras donovani* Dommergues & Meister and *Apoderoceras* sp. The seawater ⁸⁷Sr/⁸⁶Sr ratio at this level is 0.707425, with uncertainties of ±0.000017 (2s) attached to measurement of the standard, and ±0.000006 associated with fitting a straight line through the whole stratigraphic dataset. Correlation with the boundary section based on either biostratigraphy or Sr-

isotope stratigraphy should be of comparable global resolution, but there is considerable potential for improved correlation using either method. Belemnite oxygen-isotope data suggest a local seawater temperature drop of ~5 °C from the latest Sinemurian to the earliest Pliensbachian.

Conclusions: An official proposal involving several authors (J. Blau, M. Hart, S. Hesselbo, M. Hylton, C. Meister, K. Page, G. Price and S. Feist-Burkhardt) will be submitted to members of the Working Group for voting as soon as possible. Please contact the Convenor with comments and for information.

Christian MEISTER
Muséum d'Histoire Naturelle Genève
christian.meister@mhn.ville-ge.ch

TOARCIAN WORKING GROUP
Serge ELMi (Serge.Elmi@univ-lyon1.fr)
Hugh JENKYNS (hughj@earth.ox.ac.uk)

AALENIAN WORKING GROUP
Stefano CRESTA, Convenor

Progress

Since the last report (see Newsletter 27, pp. 27-28) in which the results of the ballots in the Working Group and in the Jurassic Subcommittee were given, the GSSP proposal was approved by the ICS:

I herewith have the pleasure to tell you that the proposal for the Aalenian GSSP has been accepted by the Full Commission. 14 members (64%) have voted, and all voted YES (100%).

The proposal will soon be forwarded to IUGS for ratification at the executive meeting in January 2000.

Olaf Michelsen
Secretary-General
7th October 1999

Notes on Aalenian geo-bureaucracy!

First step, Winter 1994 - Rejuvenation of the Aalenian WG directory.

Second step, 1995 - selection of two candidate sections (Wittnau and Fuentelsaz).

Third step, Summer 1996 - visit and discussion of both sections with the selection of "stratigraphic boundary events".

Fourth step, Winter 1996-97 - fixing the lowest distinguishable, correlatable Aalenian faunal horizon.

Fifth step, Winter 1997-98 - the ballot within the Aalenian WG, the vote involved the directory of the AWG. Voting papers were mailed to 46 colleagues: Europe 37 (France 5, Germany 7, Italy 8, Poland 1, Spain 8, England 4, Portugal 1, Switzerland 2, Sweden 1); North and South America 8 (Argentina 3, USA 2, Canada 3); Africa 2 (Morocco); Asia 2 (Iran 1, Japan 1).

The ballot offered a triple choice: (1) selection of the Wittnau section for Aalenian GSSP; (2) selection of Fuentelsaz section for Aalenian GSSP; (3) abstention meaning that a different section would be proposed. Options (1) and (2) were documented by reports. By the deadline for

the ballot, 31 answers (70%) had been returned: 9 (30%) for Wittnau; 18 (60%) for Fuentelsaz; 4 (10%) abstentions.

Sixth step, Summer 1998 - presentation of the resolution to define the GSSP of the Aalenian Stage in Fuentelsaz during the Vancouver meeting of the ISJS.

Seventh step, Winter 1998-99 - Submission of the proposal to the ISJS where the Voting Members expressed a positive answer (18 answers (90%) have been returned: 16 (80%) answered YES).

Eighth step, Summer 1999 - Submission of the proposal to the International Commission on Stratigraphy; copies were sent to Olaf Michelsen who provided the circulation into the ICS Bureau (six month before the business meeting preparing the IGC, usually in January).

Ninth step, Summer 2000 - Ratification by the IGC (Rio de Janeiro).

Tenth step, Autumn-Winter 2000 - Writing of the final manuscript on the Aalenian GSSP at Fuentelsaz.

Eleventh step, January 2001 - submission of the manuscript to *Episodes*.

Total time needed: 7 years, good luck to all the Convenors!
[P.S. from Chairman: and this does not count the first meeting of the WG in April 1991 in Skye!]

Submission to *Episodes*:

A paper summarising the procedures which led to the GSSP proposal and giving a description of the Fuentelsaz section has been submitted to *Episodes*. The abstract and conclusions are presented here.

Definition of the Global Boundary Stratotype Section and Point (GSSP) of the Aalenian (Middle Jurassic) and the Toarcian-Aalenian Boundary

S. Cresta, A. Goy, S. Ureta, C. Arias, E. Barrán, J. Bernad, M.L. Canales, F. García-Joral, E. García-Romero, P.R. Gialanella, J.J. Gómez, J.A. González, C. Herrero, G. Martínez, M.L. Osete, N. Perilli and J.J. Villalain

Abstract

The Global Boundary Stratotype Section and Point (GSSP) for the Aalenian Stage, formally defined at the base of bed FZ107 in the Fuentelsaz section, Castilian Branch of the Iberian Range (Spain), has been ratified by the IUGS. Multidisciplinary biostratigraphical data, based on ammonites, brachiopods, ostracods, bivalves, foraminifera, calcareous nannofossils and palynomorphs, assure worldwide correlations; magnetostratigraphic data increase this correlation power. The position of the boundary coincides with the first occurrence of the ammonite assemblage characterized by *Leioceras opalinum* and *Leioceras lineatum* and corresponds with a normal polarity interval correlated with the recent Jurassic magnetic polarity time scale (Gradstein et al., 1994; Ogg, 1995).

Conclusions

The GSSP for the Aalenian Stage, is formally proposed at the base of bed FZ107 at the Fuentelsaz section (Nuevalos, Spain).

In summary this section fulfills the following requirements: (1) Global scale correlation by means of ammonites is available; in particular, with the first occurrence of *Leioceras opalinum*. The Opalinum Subzone in the Fuentelsaz section is characterized by the first appearance of representatives of

the genus *Leioceras*, coexisting with the last representatives of the genus *Pleydellia* (*P. buckmani*, and *P. leura*). The species *L. opalinum* and *L. lineatum* appear simultaneously. As for the Hammatoceratinae, *Bredyia subinsignis* is still present. This horizon is perfectly correlatable with the Wittnau section where the base of the Opalinum Zone is defined by the *Pleydellia misera* biohorizon, characterized by *L. opalinum*, *L. subcostosum*, *L. subglabrum*, *L. partitum* and the last representative of the genus *Pleydellia* (*P. falcifera*, *P. misera*, *P. buckmani*).

(2) There is an absence of unconformities in the interval from Upper Toarcian to Lower Aalenian in a section with continuous exposure from Aalensis to Comptum Subzones.

(3) The sediments corresponding to the uppermost Toarcian and Lower Aalenian consist of two main lithologies (total thickness 36 metres), with alternating marly and calcareous beds. These two lithologies irregularly alternate and constitute a rhythmic succession, except for the upper portion of the section (Comptum Subzone) where limestones are predominant and marly components are very reduced in thickness. The Aalensis Zone and the base of the Opalinum Zone are characterized by shallowing-upward sequences, except for a small deepening episode located at the boundary between the Aalensis and Buckmani Subzones. In the central part of the Iberian Range sedimentation took place in a platform or external ramp environment, open and with good marine connections and relatively undisturbed. In general the sea-floor must have been well oxygenated to allow colonization by benthonic organisms, producing the high abundance and diversity of well preserved fossils.

(4) Studies on ammonites, bivalves, brachiopods, ostracods, palynomorphs, foraminifera and calcareous nannofossils have been completed. The ammonite assemblages are relatively rich in specimens, generally in a good state of preservation (complete specimens with the peristome preserved). This indicates that most have accumulated *in situ* and that redeposition is not common. No evidence of reworking has been found. It has been established that the subsequent assemblages are mainly made up of adult and young specimens of the macro- and microconch forms, especially in the Aalensis Zone and in the lower and middle parts of the Opalinum Zone.

Eleven different species of brachiopods have been distinguished in the Aalensis and Opalinum Zones. The stratigraphical distributions of these species basically coincides with what has been observed in other parts of the Iberian Range, although the more marly nature of the sediments in this section probably influenced the distributions.

Several bivalve taxa are represented at the base of the succession, in Toarcian sediments of the upper Pseudoradosa Zone and the Mactra Subzone. The maximum abundance and diversity occurs near the middle of the Mactra Subzone. Diversity decreases slowly in the Aalensis Subzone, but this trend is reversed in the Buckmani Subzone. In the Opalinum Zone bivalve taxa are very scarce.

The foraminiferal assemblages consist largely of calcareous hyaline species dominated by lenticular forms of the family Vaginulidae. A total of 62 benthic taxa were recognized

from the Upper Toarcian to the Lower Aalenian. Agglutinated foraminifera, mainly saccamminids and lituolids, were identified in most of the samples. Spirillinids are common throughout the interval, while opthalmidids and ceratobuliminids are present in small numbers. There is no significant event at the Toarcian-Aalenian boundary.

In the ostracod assemblages of the Aalensis and Opalinum Zones, the species of the genus *Praeschuleridea* are predominant. From a biostratigraphic point of view the most important are *P. bernierensis*, *P. angulata* and *P. ventriosa*, together with *Kinkelinella sermoisiensis* and *K. fischeri*, present throughout the interval studied.

A preliminary palynological study on samples from the Toarcian and Aalenian interval has been undertaken, revealing the presence of a well preserved palynological assemblage consisting of spores, pollen grains, acritarch and other organic-walled microplankton, such as Tasmanaceae. A total of 18 species have been recognised.

The calcareous nannofossil assemblages from the Aalensis to Opalinum Subzones are generally moderately preserved and rare to common.

(5) There are no structural complexities or metamorphism.

(6) There is a possible correlatable palaeomagnetic signal with an inversion from reversed to normal polarity in the Aalensis Subzone.

The magnetostratigraphy of the section is characterized by the existence of a normal polarity interval at the base (N1) which extends between bed FZ22 and bed FZ54. This is followed by a reversed polarity interval (R1) comprising beds FZ56 to FZ76-86. The reversed interval is overlain by another interval of normal polarity (N2) defined by beds FZ88 and FZ163 including, however, several gaps. The reversed magnetozone R1 extends between the Mactra and Aalensis Subzones and can be correlated with the reversed interval that appears in the Lower and Middle Jurassic magnetostratigraphic time scale proposed by Gradstein and others (1994).

(7) The section is easily accessible and well exposed on the cliff at Fuentelsaz.

Stefano CRESTA
Servizio Geologico, Provincia di Roma
scresta@hotmail.com

BAJOCIAN WORKING GROUP

András GALACZ, Convenor

The main action of the Working Group in 2000 was the meeting organised jointly with the Bathonian Working Group, and held in Budapest, 23 to 27 August.

The circulars were answered promisingly, but eventually only a little more than a dozen participants turned up at the meeting. The small number proved to be an advantage; we had a meeting of good mood and use, hopefully.

The venue of the Workshop was the Bolyai College of the Eötvös Loránd University, where the sessions and the accommodation were situated. There were two days for presentation of talks and posters, and two days for excursions. The "conference dinner" took place on a ship going up and down the river Danube. The excursions visited southern Hungary (Mecsek and Villány) and the Transdanubian Central Range (Bakony and Gerecse).

The meeting gave good possibilities to discuss Working Groups and Subcommission matters, and the preparation of the 2002 Symposium in Sicily.

The abstracts and excursion guide were distributed as a booklet for the participants, and all the papers presented as talks and posters will be published this year in a separate volume of *Hantkeniana*, the periodical of the Department of Palaeontology of the Eötvös L. University.

András GALACZ
Eötvös Loránd University
galacz@ludens.elte.hu

BATHONIAN WORKING GROUP

Sixto FERNANDEZ LOPEZ, *Convenor*
(sixto@geo.ucm.es)

CALLOVIAN WORKING GROUP

John CALLOMON, *Convenor*

The Bathonian-Callovian boundary stratotype

There is little new to report. Formal submissions etc. will be made when time permits. The delay is perhaps regrettable, but it raises increasingly the question: the main features of the proposals having been published, most recently in the volume of proceedings of the Jurassic Symposium in Vancouver in 1998 (Callomon & Dietl 2000), what, other than completion of the formalities, remains to be done? What alternatives might or should be considered? Who dissents, on what grounds? What are the pros and cons that should be debated? Hence, what serious scientific project is or has been held up pending a final decision? The experience of the last 20 years (at least: some would say 37, or even 69) suggests that, administrative tidiness aside, very little: certainly nothing that is life-threatening. Nevertheless, it would be nice to hear from our colleagues, not only those in the Jurassic working primarily in the Bathonian-Callovian, but also anyone else more generally.

This especially so in view of the discussion of the principles of the whole exercise examined at Vancouver and published in the volume - principles that do not wholly coincide with those propounded in the ICS's Revised Guidelines (Remane et al., 1996), both in the points contained in them as well as in some important points that are not. Where better than in these pages to mount a debate? Does silence imply agreement, or moribundity, or pressure of more important things to be doing? There continues to be vociferous comment in extra-Mesozoic circles suggesting a rather different world view (see e.g. Aubry et al., 1998), to the point where the absence of a flood of ICS-ratified proposals to designate Stage [sic] GSSP's (two out of 11 in the Jurassic so far) is perceived as possibly an underlying

conceptual problem, calling for remedial re-education. Jurassickers of the World, rally to the Flag: do we need re-educating?

News from the Front

It is with very great pleasure that we welcome the publication of a masterly survey of the stratigraphy of the Lower Callovian of the Russian Platform by Vasilii Mitta (2000). It reviews the localities, presents a chronostratigraphic framework down to Subzonal level (three standard Zones, five Subzones) and beyond, to the ultimate observable time-resolvable biozonal units, the biohorizons, here the faunal horizons of ammonites (17, compared with the current list of 18 in Britain, 14 in Germany, ca. 12 in France). The rich collections of ammonites are splendidly illustrated on 70 plates. All the classical names of the Russian Callovian going back to the times of Nikitin over a century ago have now been fleshed out, giving a much better impression of the diversity of the faunas and the relative importance, the biostratigraphy and hence the probable evolutionary biochronology, of its elements. Many forms familiar over a wide area of distribution, from the Arctic to the Caucasus but hitherto hardly described from Russia, are represented in strength, such as the Cadoceratinae and Kosmoceratidae. Old friends include the veritable *Sigaloceras calloviense*, so well known from its eponymous home at Kellaways, in Wiltshire.

Another is the great GSSP- messenger *Keplerites kepleri*, already signaled on previous occasions. A splendid collection of it has been separately described by Mitta and Starodubtseva (2000) in another welcome new serial, VM-Novitates, that bears an uncanny resemblance in format to AM-Novitates of New York; VM, here, stands for Vernadsky Museum, Moscow. This collection had been made by W.A. Stchirowsky in 1891-3 in the region of the river Sura, a tributary of the Middle Volga, and lain in the cellars of the museum ever since. (It illustrates a guiding principle much followed by the late James Edmonds, curator of the geological collections in the Oxford University Museum, that when the weather is too bad to do field-work outside, field-work in the cellars of the museum could be equally rewarding. Many were the types of old species thus rediscovered.)

Then there are some local specialities, leading among them a group based on *Cadoceras subpatrum* Nikitin, now separated under the new generic name *Cadochamoussetia* Mitta. It persists over a stratigraphical range in always the same restricted area, that of the Russian Platform, in which it is therefore typically endemic. Only a few examples have been found further afield; the rich collections from the Kellaways Beds in the English museums contain at most a handful. The genus *Chamoussetia* has a rather wider distribution, previously well known from East Greenland, England, and the Petshora; what appeared to be a curious gap in this distribution, in central Russia, is now also filled. But equally significant are the absences. Submediterranean elements such as *Macrocephalites* and the otherwise ubiquitous Perisphinctinae are rareties in the Lower Callovian. In this respect, the Russian Platform does not differ greatly from, e.g. England, and reflects a well-known Subboreal bioprovincialism. But more puzzling perhaps is the rarity also of an otherwise very common Subboreal element, the genus *Proplanulites*: abundant in Britain and southern Poland, well known in East Greenland,

western France and southern Germany, yet seemingly almost unknown in the Volga Basin. It is moreover a genus that appears suddenly in the succession and persists, yet has no plausibly identifiable ancestors. The Russian Platform provides therefore yet further examples of some of the residual mysteries in our understanding of ammonites: how did a lineage like *Cadochamousetia* persist for a million years and yet remain so strongly coupled to such a relatively small area of marine habitat, one that had moreover unhindered access to much wider regions? Conversely, what kept *Proplanulites* out? And, as our biostratigraphical record and hence the fossil record becomes ever more complete, in cases such as the present as close to complete as it probably ever will be: why do these discontinuities in the record, both geographical and phylogenetic, seem to persist unchanged? We do not appear to be asymptotically converging on a final, continuous and complete description in even a group as abundant and time-diagnostic as Jurassic ammonites. What are they trying to tell us about habitat, ecology, ontogeny and hence phylogeny, Darwinian or otherwise?

References

- AUBRY, M.-P., BERGGREN, W.A., VAN COUVERING, J.A. & STEININGER, F. 1999. Problems in chronostratigraphy: stages, series, unit and boundary stratotypes, global stratotype section and point and tarnished golden spikes. *Earth-Science Reviews*, **46**: 99-148.
- CALLOMON, J.H. & DIETL, G. 2000. On the proposed basal boundary stratotype (GSSP) of the Middle Jurassic Callovian Stage. In: R.L. HALL and P.L. SMITH (eds): *Advances in Jurassic Research. GeoResearch Forum* **6**: 41-54.
- MITTA, V.V. 2000. Ammonites and biostratigraphy of the Lower Callovian of the Russian Platform [in Russian]. *Bulletin of CF VNIGNI*, Moscow, **3**: 144p., pls.1-70.
- MITTA, V.V. & STARODUBTSEVA, I.A. 2000. W.A. Stchirowsky and the study of the Mesozoic in the Alaty-Kurmysh area (basin of the Middle Volga) [in Russian]. *Vernadsky-Museum Novitates*, **5**: 20 p., pls.1-4.
- REMANE, J., BASSETT, M.G., COWIE, J.W., GOHRBAND, K.H., LANE, H.R., MICHELSEN, O. & WANG NAIWEN. 1996. Revised guidelines for the establishment of global chronostratigraphic standards by the International Commission on Stratigraphy (ICS). *Episodes*, **19**: 77-81.

John CALLOMON
University College London
johncallomon@lineone.net

OXFORDIAN WORKING GROUP

Guillermo MELENDEZ, *Convenor*
(gmelende@posta.unizar.es)

KIMMERIDGIAN WORKING GROUP

Andrzej WIERZBOWSKI, *Convenor*

Due to well known biogeographical differentiation of ammonite faunas during the Late Oxfordian and Early Kimmeridgian, and consequently two definitions of the Oxfordian/Kimmeridgian boundary, selection of a candidate

GSSP section is not easy. Further work is required, mostly to resolve the problems of correlation between Boreal and Tethyan ammonite subdivisions. The current state of knowledge and directions for future studies are summarised below.

According to the past convenor of the Kimmeridgian WG, (Atrops, 1999, p. 34): "the best choice would be between the section of Staffin Bay at Skye in Scotland, and that of Mt. Crussol in south-eastern France". The former is the best section of the Boreal/Subboreal areas known so far (Wright in: Melendez & Atrops, 1999, pp. 69, 74; see also Wierzbowski, 1999). It shows a continuous sequence of dark clays with abundant ammonites both of the Aulacostephanidae and Cardioceratidae (e.g. Wright, 1973, 1989; Birkelund & Callomon, 1985) with good magnetostratigraphy (Ogg in Atrops, 1999), and micropalaeontological documentation (palynomorphs, foraminifera and radiolaria) (Riding & Thomas, 1997; J.Gregory, pers. inf.). The section at Mt. Crussol is possibly the most famous in the Submediterranean Province, once treated as the type of the Submediterranean Kimmeridgian "Crussolien". It shows a continuous limestone-marl sequence rich in Submediterranean ammonites. The ammonites are especially well recognised from the base of the Platynota Zone upwards (Atrops, 1982), but some additional studies are needed to recognise in detail a somewhat lower part of the ammonite succession around the Bimammatum and Hauffianum Subzones (Atrops, 1999). The section also provides good magnetostratigraphy (Ogg & Atrops in prep., see Atrops 1997, 1999). The Chateaufort d'Oze section, also in south-eastern France, has well described palynofacies, palynology, geochemistry and sequence analysis (see Atrops, 1999, and references given therein). It can be easily correlated biostratigraphically with Mt. Crussol, thus giving additional evidence about the GSSP section in this area.

Detailed multidisciplinary studies on the sections indicated are planned for the near future. Those on the Staffin Bay section will be coordinated by J.K. Wright; those on the Mt. Crussol section have been planned by F. Atrops (1999, p. 34). Nevertheless, this does not exclude consideration of any other section which fulfils basal requirements (see Remane et al., 1996) as a possible GSSP candidate, and such proposals are still feasible.

The main problem before preparation of the ultimate proposal on the GSSP remains recognition of the detailed correlation between the Boreal/Subboreal and the Submediterranean/Mediterranean ammonite successions. In the Subboreal/Boreal ammonite succession the Oxfordian/Kimmeridgian boundary is traditionally located at the base of the Baylei Zone, but one cannot recognise the position of this boundary in the Submediterranean succession more precisely than stating that it lies not higher than the mid-lower parts of the Hauffianum Subzone, and not lower than the Bimammatum Subzone (Bimammatum Zone). Conversely, the traditional Oxfordian/Kimmeridgian boundary of the Submediterranean succession is placed at the base of the Platynota Zone, somewhere in the upper part of the Baylei Zone of the Subboreal succession, and possibly close to the base of the Kitchini Zone of the Boreal succession. Thus, there are no doubts that the two boundaries are not isochronous, although their detailed biostratigraphical positions outside the area of occurrence of

diagnostic fossils remain unknown (see Matyja & Wierzbowski, 1997; Schweigert & Callomon, 1997; Matyja & Wierzbowski, 1998, and earlier papers cited therein).

The precise establishment of the stratigraphical positions of each of the two "classic" boundaries outside the corresponding provinces seems the main task for the future. This can be done by elaboration of the ammonite biostratigraphy in areas where the ammonite faunas of different provinces overlap, making correlation of the biostratigraphical schemes possible. Of the European areas, Poland and southern Germany in particular seem the most promising for such a study. The detailed analysis of both the Submediterranean and Subboreal/Boreal ammonite faunas of the Bimammatum and Hauffianum Subzones, as well as those at the boundary between the Planula and Platynota Zones from Poland to make correlations more clear will be a subject of forthcoming studies by B.A. Matyja and A. Wierzbowski.

I am waiting for new propositions and presentation of the latest results of the studies, as well as discussion of the problems in question. These could appear in future issues of the ISJS Newsletter, or could be sent directly by me after receiving, to the members of the Working Group. I should like to ask those who are interested in active membership of the Working Group to confirm their wish to remain members (the last full list of members of the Kimmeridgian WG was published in ISJS Newsletter no. 25 in 1997), as well as those who want to become new members of the WG to let me know. The full list of the members of the Kimmeridgian WG including addresses, contacts (e-mail), and fields of interest, will be published in one of the next ISJS Newsletters and/or sent by e-mail.

References

- ATROPS, F. 1982. La sous-famille des Ataxioceratidae (Ammonitina) dans le Kimmeridgien inferieur du sud-est de la France. Systematique, evolution, chronostratigraphie des genres *Orthosphinctes* et *Ataxioceras*. *Doc. Lab. Geol. Lyon*, **83**: 1-463, 43 pls.
- ATROPS, F. 1997. Report of the Oxfordian-Kimmeridgian Boundary Working Group. *ISJS Newsletter*, **25**: 47-49.
- ATROPS, F. 1999. Report of the Oxfordian-Kimmeridgian Boundary Working Group. *ISJS Newsletter*, **27**: 34.
- BIRKELUND, T. & CALLOMON, W.J. 1985. The Kimmeridgian ammonite faunas of Milne Land, central East Greenland. *Gron. Geol. Under.*, **153**: 1-56, 23 pls.
- MATYJA, B.A. & WIERZBOWSKI, A. 1997. The quest for a unified Oxfordian/Kimmeridgian boundary: implications of the ammonite succession at the turn of the Bimammatum and Planula Zones in the Wielun Upland, Central Poland. *Acta Geol. Polon.*, **47(1-2)**: 77-105, 7 pls.
- MATYJA, B.A. & WIERZBOWSKI, A. 1998. The stratigraphical and palaeogeographical importance of the Oxfordian and Lower Kimmeridgian succession in the Kcynia IG-IV Borehole. *Biul. Panstw. Inst. Geol.*, **382**: 35-70, 4 pls.
- MELENDEZ, G. & ATROPS, A. 1999. Report of the Oxfordian-Kimmeridgian Boundary Working Group. *ISJS Newsletter*, **26**: 67-74.
- REMANE, J., BASSET, M.G., COWIE, J.W., GOHBRANDT, K.H., LANE, H.R., MICHELSON, O. & NAIWEN, W. 1996. Revised guidelines for the

establishment of global chronostratigraphic standards by the International Commission on Stratigraphy (ICS). *Episodes*, **19(3)**: 77-81.

- RIDING, J.B. & THOMAS, J.E. 1997. Marine palynomorphs from the Staffin Bay and Staffin Shale formations (Middle-Upper Jurassic) of the Trotternish Peninsula, NW Skye. *Scottish Journ. Geol.*, **33 (1)**: 59-74.
- SCHWEIGERT, G. & CALLOMON, W.J. 1997. Der bauhini-Faunenhorizont und seine Bedeutung fur die Korrelation zwischen tethyalem und subborealem Oberjura. *Stuttgarter Beitr. Naturk., B*, **247**: 1-69, 7 pls.
- WIERZBOWSKI, A. 1999. Comments on the selection of the Oxfordian-Kimmeridgian boundary stratotype. *ISJS Newsletter*, **27**: 35-37.
- WRIGHT, J.K. 1973. The Middle and Upper Oxfordian and Kimmeridgian Staffin Shales at Staffin, Isle of Skye. *Proceed. Geol. Assoc.*, **84(4)B**: 447-457.
- WRIGHT, J.K. 1989. The Early Kimmeridgian ammonite succession at Staffin, Isle of Skye. *Scottish Journ. Geol.*, **25(3)**: 263-272.

Andrzej WIERZBOWSKI
University of Warsaw
awzw@geo.uw.edu.pl

TITHONIAN WORKING GROUP

Federico OLORIZ, Convenor & Guenter SCHWEIGERT,
Secretary

Newsletter no. 10: Granada and Stuttgart February 2001

NEWS

Leadership change

At the end of 2000, Federico Oloriz (Granada) has become Convenor in place of Fabrizio Cecca (Marseille). Guenter Schweigert (Stuttgart) continues as Secretary of the Working Group and will organize a WG meeting at the end of June 2001. A first circular was sent to all Working Group members. In February, the second circular was sent to those members of the WG who were interested in attending this meeting. Its content is included below.

Meeting of the Kimmeridgian/Tithonian WG in Stuttgart, Germany: June 26-30, 2001 Second Circular

Dear Colleagues,

Thanks for your replies to my first circular. This second circular will be sent only to those colleagues who expressed some interest in taking part.

There is only a small change in the program concerning the scientific session which is now incorporated between fieldtrips due to the availability of our conference room. We will have the possibility to present oral communications (about half an hour each?). Please let me know who wants to present such communications so that I can plan the exact duration and order.

June, 26th (Tuesday): Arrival; Short introduction on the uppermost Jurassic of Swabia in the late afternoon (about 17.00).

June, 27th: Field trip to sections of the Upper Kimmeridgian and Lowermost Tithonian in the middle part of Swabia (surroundings of Grabenstetten, Donnstetten, Wittlingen).

Joint dinner in the evening possible.

June, 28th: Scientific session, possibility for oral presentations on new results on the Ki/Ti boundary; demonstration of the ammonite faunas around the Ki/Ti boundary in Swabia.

Joint dinner in the evening possible, visit to the typical small Swabian town of Stuttgart-Bad Cannstatt.

June, 29th: Field trip to the western part of Swabia (recent excavations in the Kimmeridgian Nusplingen Lithographic Limestone; Ki-Ti boundary within massive sponge limestones at Buchheim; Lower Tithonian near Liptingen, Talmühle section near Engen Ki-Ti boundary).

Joint dinner in the evening possible.

June, 30th (Saturday): Departure (or possibility for further scientific discussions if necessary).

Concerning your stay here in Stuttgart I will try to look for cheap hotels or guest rooms in the surroundings (bed, breakfast). Please confirm your participation not later than April 1st. If you would like to stay longer than until the morning of June 30th, or if you prefer looking for a room by yourself (<http://www.stuttgart-tourist.de>) please tell me immediately because this will be important for the reservation of the rooms. I also need to know if you prefer a double-room instead of a single room, or if you will come with your wife/husband.

I will contact each of you directly for the details of your accommodation after I have your confirmation.

Hoping for a nice meeting,
Best regards, Guenter Schweigert

New Publications

The references of new papers concerning Ki/Ti boundary, Early Tithonian stratigraphy or containing information on these topics are listed below. These papers correspond only to those which have been communicated to the Convenor or to the Secretary.

CARACUEL, J.E. & OLORIZ, F. 1999. Recent data on the Kimmeridgian-Tithonian boundary in the Sierra Norte of Mallorca (Spain), with notes on the genus *Hybonoticerias* Breistroffer. *Geobios*, **32**: 575-591, 8 figs; Lyon.

CARACUEL, J.E., OLORIZ, F. & SARTI, C. 1998. Updated biostratigraphy of the Kimmeridgian and Lower Tithonian at Lavarone (Trento Plateau, Italy). Correlation from epiocenic western Tethys. *Geologica et Paleontologica* **32**: 235-251; Marburg.

MATSUOKA, A. & YANG, Q. 2000. A Direct Correlation between North American and Japan-Pacific Radiolarian Zonal Schemes for the Upper Jurassic. In: Hall, R.L. & P.L. Smith (eds.): Advances in Jurassic Research 2000, *GeoResearch Forum*, **6**: 119-127, 6 figs; Zurich

MYCZYDSKI, R. 1999. Inoceramids and buchiids in the Tithonian deposits of western Cuba: a possible faunistic link with South-Eastern Pacific. *Stud. Geol. Polonica*, **114**: 77-92, 4 figs; Krakow.

MYCZYDSKI, R. 1999. Some ammonite genera from the Tithonian of western Cuba and their palaeo-biogeographic importance. *Stud. Geol. Polonica*, **114**: 93-112, 8 figs; Krakow.

OLORIZ, F., MOLINA-MORALES, J. & SERNA-BARQUERO, A. 1999. Revisión estratigráfica del intervalo Kimmeridgiense-Tithonico basal en el perfil G10 del sector de Venta Quesada (Sierra Gorda, provincia de Granada). *Geogaceta*, **26**: 71-74.

OLORIZ, F. & VILLASENOR, A.B. 1999. New microconchiate *Hybonoticerias* from Mexico. *Geobios*, **32**: 561-573; Lyon.

OLORIZ, F., VILLASENOR, A.B. & GONZALEZ-ARREOLA, C. 2000. *Hybonoticerias mundulum* (Oppel) from the Mexican Altiplano. A case of geographic control on phenotype expression. *Lethaia*, **33**: 157-74.

SCHERZINGER, A. & SCHWEIGERT, G. 2000. Phylogenie der dimorphen Ammonitengattungen *Danubisphinctes/Parapallasiceras* in der Neuburg-Formation (Oberjura, Südliche Frankenalb). *Terra Nostra*, **2000/3**: 173; Berlin.

SCHWEIGERT, G. 2000. New biostratigraphic data from the Kimmeridgian/Tithonian Boundary Beds of SW Germany. In: Hall, R.L. & P.L. Smith (eds.): Advances in Jurassic Research 2000, *GeoResearch Forum*, **6**: 195-202, 2 figs, 2 pl.; Zurich.

SCHWEIGERT, G. 2000. Immigration of Amoebozeratids into the Submediterranean Upper Jurassic of SW Germany. In: Hall, R.L. & P.L. Smith (eds.): Advances in Jurassic Research 2000, *GeoResearch Forum*, **6**: 203-209, 1 fig., 1 pl.; Zurich.

VILLASENOR, A.B., OLORIZ, F. & GONZALEZ-ARREOLA, C. 2000. Recent advances in Upper Jurassic (Kimmeridgian and Tithonian) recently collected ammonite assemblages. In: Hall, R.L. & P.L. Smith (eds.): Advances in Jurassic Research 2000, *GeoResearch Forum*, **6**: 249-261, 3 figs; Zurich.

ZEISS, A. 1999. The Upper Jurassic ammonite fauna of Ernstbrunn (NE Austria) and its interesting position between the Tethyian and Subboreal faunas.- In: Histon, K. (ed.): V Int. Symp. Cephalopods - Present and Past, Vienna, Abstracts Volume. *Ber. Geol. Bundesanst.*, **46**: 127; Vienna.

Federico OLORIZ
Universidad de Granada
foloriz@ugr.es

Günter SCHWEIGERT
Staatl. Museum für Naturkunde
schweigert@gmx.de

REPORTS OF THEMATIC WORKING GROUPS

GEOCONSERVATION WORKING GROUP

Kevin PAGE, Convenor

Background: Scientific concern and social awareness of the need for geoconservation, including palaeontological heritage conservation and site protection, has increased significantly in recent years. This is largely due to a response by earth scientists, heritage managers and concerned politicians to increasing industrialisation, environmental degradation and the all too frequent loss of or damage to important sites by human activity, including development and uncontrolled fossil collecting.

The progressive development of legal frameworks in various European countries, and elsewhere, has often created a good foundation for geoconservation, but one which could ultimately be used to the detriment of geoscientists, especially palaeontologists themselves, if applied without adequate consideration of the needs of research and education (Page, Melendez & Gonera, 1999).

Paleontological heritage conservation does not stop when a fossil is collected. It includes custodianship of important specimens, ideally in a public institution such as a museum or university collections. This is 'conservation' in a museological sense.

Relevance to ISJS: Effectively, geoconservation systems are crucial to the ISJS. The core activity of the Subcommission, the establishment of GSSPs, is a conservation activity in itself, involving the selection of key representative sites with status in perpetuity, as references for subsequent consultation (cf. Page & Melendez, 1996). Without adequate national site protection and management systems this fundamental function is liable to fail as the selected site remains vulnerable to loss and damage which could negate or destroy the features for which it was first selected.

ICS guidelines (Remane et al., 1996), as applied by, for example, Page et al. (1999b), include the following "other requirements":

Permanently fixed marker: only possible on a managed conserved site.

Accessibility: another aspect of site and area management.

Free access: as above, governmental conservation and site management systems are essential if private landowning and commercial interests are not to prejudice or inhibit site use and protection.

Guarantees from the respective authority concerning free access for research and permanent protection of the site: again, the establishment of formal conservation systems and procedures is implicit

Despite this key aspect of GSSP selection and use, there appear to be no formal ICS/IUGS guidelines on appropriate conservation systems, or even minimum requirements. This consideration is left to each Subcommission.

However, other UNESCO projects, at least partly linked to IUGS, are developing or have developed such conservation systems. Site management is crucial to World Heritage Site listing, although few GSSPs could claim to be of the required 'universal' value to the culture of the peoples of the planet as a whole! A new UNESCO designation under development, *UNESCO Geoparks*, and the European Union *European Geoparks*, provide a context for the sustainable management of geologically important regions, and detailed conservation guidance. However, these projects also emphasise human interaction, and are not designed for purely scientific conservation aims.

In contrast, the UNESCO Geosites initiative (Wimbledon 1999), aims to establish a listing, or inventory, of geological heritage sites considered to be, scientifically, most important globally. Almost by definition, this would

include all ratified GSSPs (although these are not generally stated as such). A similar programme within the EU may ultimately develop, potentially driven by ProGeo (The European Association for the Preservation of the Geological Heritage) perhaps through a Directive similar to that already in place to protect habitats and species considered to be of Community importance.

Conservation prescriptions or guidelines will be crucial as Geosites are formally selected or listed. Within the context of this proposed ISJS Working Group, a primary aim will be to establish such a guiding framework for the effective protection of GSSPs and other stratotypes - whilst maintaining full accessibility, facilitating future study by international groups and safeguarding the results of such studies in an accessible data management or museological sense (cf. Page et al., 1999a).

Establishment of Working Group: It is proposed that a Working Group be established of interested members of the ISJS. Others with an established international profile and relevant experience in geoconservation working groups and practice, especially linked to stratigraphical studies and palaeontological heritage management, would be invited.

Interested colleagues are asked to contact the Convenor at the Exeter address, or via email, if possible stating their particular concerns, attitudes or experience in this field. It would be very useful if eventually each colleague could compile a list of such issues which they would like the WG to address, with indications as to relevant case histories if possible. Any additional documentation/publications would also be very welcome. If such texts are not available in English, Spanish or French, a short review or abstract in one of these languages would be very much appreciated, whilst I investigate translation opportunities!

Should interest be sufficient, a WG meeting can be convened in 2001 or early 2002, in the first instance linked to an appropriate ISJS Stage WG meeting or another geoconservation forum.

The ultimate aim of this Working Group would be to produce detailed management guidelines, and minimum requirements, for the conservation and continued international scientific use of GSSPs and other stratotype localities, including aspects of palaeontological heritage management and data or specimen curation and accessibility. Production of these guidelines would, of necessity, involve liaison and potentially collaboration with other international geoconservation projects and organisations, including UNESCO's Earth Science Division, the UNESCO Geosites initiative, ICS and IUGS, ProGEO and appropriate international curatorial organisations. In this way any agreed guidelines should have the greatest support for international application, and, hopefully, the consequent establishment of clear and simple procedures for the continued and truly global use of GSSPs and other sites of recognised international stratigraphical, and especially biostratigraphical, importance.

References:

- PAGE, K.N. & MELENDEZ, G. 1996. Protecting the Jurassic: global boundary stratotypes and conservation. *Geology Today*. **November-December 1995**: 226-228.

- PAGE, K.N., MELENDEZ, G. & GONERA, M. 1999. Protected sites or protected heritage? - Systems and opinions for palaeontological conservation from a trans-european perspective. In: BARETTINO, D., VALLEJO, M & GALLEGU (eds), Towards the balanced management and conservation of the Geological Heritage in the new Millenium, *Sociedad Geologica de Espana*, Madrid: 45-51.
- PAGE, K.N., BLOOS, G., BESSA, J.L., FITZPATRICK, M., HART, M., HESELBO, S., HYLYON, M., MORRIS, A. & RANDALL, D.E. 1999. East Quantoxhead, Somerset: A candidate Global Stratotype Section and Point for the base of the Sinemurian Stage (Lower Jurassic). In: HALL, R.L. & SMITH, P.L. (eds.), *Advances in Jurassic Research 2000. Proceedings of the Fifth International Symposium on the Jurassic System, GeoResearch Forum 6*: 163-172, Trans Tech Publications.
- REMANE, J., BASSETT, M.G., COWIE, J.W., GOHRBANDT, K.H., LANE, R.H. MICHELSEN, O., & NAIWEN, W. 1996. Revised guidelines for the establishment of global chronostratigraphical standards by the International Commission on Stratigraphy (ICS). *Episodes 19/3*.
- WIMBLETON, W.A. 1999. L'identificazione e la selezione dei siti geologici, una priority per la geoconservazione. In: POLI, G. & PREVIDI, G. (eds), *Geositi, Testimoni del Tempo ñ Fondamenti per la conservazione del patrimonio geologico. Servizio paesaggio, Parchi e Patrimonio Naturale, Regione Emilia-Romagna*: 52-63.

Kevin PAGE
University of Plymouth
KevinP@bello-page.fsnet.co.uk

ISOTOPE STRATIGRAPHY WORKING GROUP
Peter BAUMGARTNER, Convenor
Peter.Baumgartner@igp.unil.ch

LIAISON WORKING GROUP
Robert CHANDLER, Convenor

The value of the 'so-called' amateur contribution to palaeontology has long been recognised. Internationally the expanding body of fossil collectors includes an increasing number of individuals with invaluable local expert knowledge of specific strata and their fossil content. This is often the result of years of intensive study undertaken with a devotion and time commitment normally not possible for the professional academic geologist.

The intention of the proposed Liaison Working Group is to bring to the attention of the Jurassic Subcommittee geological research by those not employed as professional geologists. The Working Group will have a number of aims and objectives:

- (1) To provide channels of communication between professionals and amateurs, and encourage collaboration in advancing Jurassic geology;
- (2) To assist in achieving publication standards of research by amateurs;
- (3) To compile a list of individuals currently active in Jurassic geology outside of mainstream research, facilitating

identification of contacts where there is mutual interest in a specific topic.

A number of collectors have a commercial interest in Jurassic fossils. Often, they are best located to deal quickly with temporary exposures (cliff falls, on site at road cuttings, etc). However, new finds are too often sold without adequate details of geological provenance. We will encourage collectors to record and provide details of new finds, collaborating with experts if they do not already do so. Such new finds would be available for study, regardless of final destination of specimens.

We must be aware of important finds made by individuals with private collections, not only in terms of the specimens, but also for the personal knowledge of the collector. Usually, location of specimens in a private collection need not raise fears of specimen loss. In my experience the quality of curation and maintenance of such collections is often superb and many wish to see their collection properly cared for in the future. Those with interesting, published or type status material will be encouraged to ensure its eventual deposition in a suitable museum.

My personal experience in Aalenian and Bajocian ammonite biostratigraphy is that collaboration between amateur and professional, locally and internationally, has proved to be a rich source of constructive debate and advance.

I fully appreciate that some amateurs and some professionals will not approve of this initiative. However, amateur collectors will continue to be active, so with the correct approach perhaps we can assist in working together to add to the sum of our knowledge about our subject.

Robert CHANDLER
Riddlesdown High School and Birkbeck College
Aalenian@aol.com

MICROFOSSIL GROUP
Susanne FEIST-BURKHARDT, Convenor

The Jurassic Microfossil Group (JMG) is an informal thematic group of the ISJS whose aim is to enable and encourage co-operation within the Jurassic micropalaeontological community but also between micropalaeontologists and the Jurassic geosciences community as a whole. In 1999 we launched a web-site (<http://www.tu-darmstadt.de/fb/geo/jmg/jmg.htm>) which gives an introduction to the group and from which the yearly JMG Newsletter can be downloaded. Hard copy of the newsletter is no longer sent out but all information will be accessible directly on the web pages in the future. In the coming year the web pages will be updated and re-organised in order to facilitate exchange of information on data about sections being considered as candidates for GSSPs and other relevant micropalaeontological research.

If there are any questions, ideas or contributions, please contact me.

Susanne FEIST-BURKHARDT
The Natural History Museum, London
S.Feist-Burkhardt@nhm.ac.uk

**PALAEOBIOGEOGRAPHY WORKING GROUP:
AIMS & OBJECTIVES**

Fabrizio CECCA, Convenor

Thematic Working Groups within the ISJS have been proposed to broaden its range of activities beyond the definition of Stage boundary GSSPs. Refinement of the chronostratigraphical scale by integration of multidisciplinary methods of correlation remain a priority. However, at least in a first phase, the creation of a Working Group on Jurassic Palaeobiogeography has been proposed to provide sources of information and consultation to the Stage WG Convenors.

Two fields of investigation of a WG on Palaeobiogeography can be suggested:

(1) The different phases of provincialism and cosmopolitanism known in the Jurassic have important implications for biostratigraphic correlations. These may affect the choice of GSSPs of stage and sub-stage boundaries. Therefore the biogeographic limitations to biostratigraphic correlation may be evaluated through biogeographic analyses of different kinds (definition of biotic provinces through phenetic method or by means of parsimony analysis of endemicity, etc.). This could represent a possible starting point for the Working Group.

(2) The WG could also produce palaeobiogeographical maps for different fossil groups during selected time-slices of the Jurassic. The palaeogeographic base can be represented by the numerous atlases now available.

Other suggestions are welcome.

The first objective is to present at least some preliminary results on the occasion of the 6th Symposium on the Jurassic (Sicily, September 2002) with possibly a further target being the IGC in Florence in 2004.

All persons interested in participating in the activities of this WG should contact:

Fabrizio CECCA
Université de Provence, Marseille
cecca@newsup.univ-mrs.fr

**PALAEOCLIMATE WORKING GROUP: A
NEW VENTURE**

*Helen MORGANS BELL & Bruce SELLWOOD,
Convenors*

The Jurassic Palaeoclimate Working Group is a new venture under development by the ISJS. The aim of the Working Group is to set up a group of international specialists who are prepared to collaborate on any aspect of Jurassic palaeoclimate. Our task as the co-convenors is to facilitate the co-operation of those interested in exchanging information and ideas which will contribute towards the creation of global palaeoclimate maps for selected time intervals of the Jurassic Period.

We anticipate that the Working Group will be of interest to a diverse body of geologists, including climate modellers, palaeogeographers, sedimentologists, stratigraphers, palaeo-

ntologists, palaeobotanists, and geochemists. We are open to ideas as to how the maps will be created, but in these initial stages would particularly welcome anyone with well-dated data-sets collected at a continental or global scale, as they will be of paramount importance if we are to successfully produce the global palaeoclimate maps. For example, anyone with well-dated distribution lists of fauna, flora and/or sediments could contribute to the project. We anticipate that the aims of the Working Group - as well as the selection of time intervals to concentrate upon - will evolve as membership grows.

At the current time we aim to present a first progress report at the next Jurassic Symposium in Sicily, September 2002, followed possibly by a dedicated session at the IGC in Florence, 2004. Periodic newsletters will be sent out as a way of keeping members in touch with the progress being made by the group as a whole.

We would like to hear from anyone interested in becoming part of the Working Group. Please contact either of us.

Helen MORGANS BELL
University of Oxford
Helen.Morgans-Bell@earth.ox.ac.uk

Bruce SELLWOOD
University of Reading
b.w.sellwood@reading.ac.uk

PALAEOMAGNETISM WORKING GROUP

Jim OGG, Convenor
jogg@purdue.edu

**SEQUENCE STRATIGRAPHY WORKING
GROUP**

Angela COE, Convenor

The time interval since the last ISJS Newsletter has been one of mixed fortunes for the Sequence Stratigraphy Working Group. It started well, with the publication of the Proceedings of the 5th International Jurassic Symposium. Confusingly, the date of publication of this is given as 2000, but copies had already been distributed to participants before the end of 1999. The Proceedings include nine of the papers which had been presented at the Special Session on sequence stratigraphy during the Symposium in Vancouver.

Less encouraging was the relatively poor response to the Field Workshop planned by Marc Aurell, planned to take place in Spain in the late Spring of 2000. There were not enough definite registrations to justify going ahead with the Workshop, so a decision had to be taken to postpone until some later date. Recalling the enthusiasm with which the proposal was greeted when announced in Vancouver, it is to be hoped that more successful dates will be found.

The Working Group was set up to encourage international collaboration. So it is for me personally a great pleasure to record a rather striking example of this. Professor Shi Xiaoying (China University of Geosciences, Beijing) invited me to accompany him and two colleagues for a long spell of fieldwork in southern Tibet. The project, funded by the National Science Foundation of China, was to study the

sequence stratigraphy of the Mesozoic of the North Himalayan margin. My travel to China was funded by the Royal Society. We spent nearly seven weeks in Tibet and collected a lot of new data, including several new ammonite faunas. Exploration of the Mesozoic in Tibet is still at an early stage, so that dating for many parts of the succession remains inadequate. Watch out for future reports. For myself, having spent most of my fieldwork time at sea level in NW Scotland, it was a fantastic experience, though physically hard, working on some of the highest Jurassic within sight of the highest mountains of the World.

The Sequence Stratigraphy Working Group has made a very successful start, but it is now time for the Group to move on. So I am delighted that Angela Coe is taking over from me as Convenor. Those of you who know Angela will recognise that she will bring new initiative and impetus to the Working Group. I do not need to wish her well!

Nicol MORTON (ex-Convenor)
Birkbeck College London
nicol.morton@ucl.ac.uk

Angela COE (Convenor)
The Open University
A.L.Coe@open.ac.uk

TIME SCALE WORKING GROUP

Josze PALFY, Convenor

This new thematic working group was established during the 'change of guards' of Officers and Voting membership of the Jurassic Subcommittee in 2000. Within the short time since then, we have only taken the first steps towards organization of a functioning WG and attempted to enlist geoscientists who have an interest in the Jurassic time scale. I use this opportunity to spread the word about this new WG and call for participation by all interested colleagues.

The primary aim of the WG is to promote collaborative research leading to a better calibration of the Jurassic numeric time scale. While traditional Stage WGs have been chiefly concerned with improving high-resolution biochronologic zonation, particularly around the stage boundaries, the Time Scale WG will emphasize collaboration between geochronologists, biostratigraphers, cyclostratigraphers, magnetostratigraphers, and isotope stratigraphers to promote:

- i) obtaining new data to help constrain the Jurassic time scale;
- ii) integration of all the available methods in time scale research; and
- iii) giving more consideration to the possibility for numeric dating in the GSSP selection process.

The WG will foster international collaboration, exchange of information and research results concerning isotopic dating of Jurassic rocks from all over the world, especially when it is relevant to time scale calibration.

Year 2000 was marked by the publication of a number of articles in the field of time scale research. I call attention to some of them, without providing a comprehensive list. Results from the time scale special session at the Jurassic Symposium in Vancouver appeared in the proceedings

volume. (If sufficient interest exists, a similar thematic session is planned for the next Jurassic meeting in 2002 in Sicily.) An entirely recalibrated Jurassic numeric time scale was presented in a paper by Pálffy, J., Mortensen, J.K., and Smith, P.L. (A U-Pb and $^{40}\text{Ar}/^{39}\text{Ar}$ time scale for the Jurassic. *Canadian Journal of Earth Sciences*, 37 (6): 923-944). The use of Sr isotope stratigraphy for time scale calibration was demonstrated by J. McArthur et al. - Strontium isotope profile of the Early Toarcian (Jurassic) Oceanic Anoxic Event, the duration of ammonite biozones, and belemnite paleotemperatures. *Earth and Planetary Science Letters*, 179: 269-285.

The WG convenor made contact with a similarly newly formed working group of the Geological Society of America, whose mandate is to produce an updated geologic time scale. Further collaboration and their soliciting input from our WG was agreed upon.

In closing, let me extend again an invitation to all colleagues interested in Jurassic geochronology and time scale research to join this WG. I hope that year 2001 will see a good start to meaningful activities of the Time Scale WG.

József PALFY
Hungarian Natural History Museum
palfy@paleo.nhmus.hu

CORRESPONDENCE

CIRCULATION AND USE OF UNPUBLISHED PAPERS AS PART OF WORK OF ISJS: INTELLECTUAL COPYRIGHT ISSUES

Kevin PAGE

As we all know, the circulation of site notes, records and comments are essential to the effective functioning of the ISJS and its component Working Groups. Full publication is now such a long drawn out process, that real collaborative work would be stifled if such informal circulation was curtailed. The ISJS Newsletter can provide a useful forum for, effectively, publishing these results but will certainly never be able to accommodate all the notes and sections that colleagues may wish to circulate within thematic Working Groups.

A recent incident, however, highlighted that perhaps a little more caution may be needed regarding this circulation. Towards the end of last year, I discovered that a section I had produced for a new, although temporary, Callovian-Oxfordian boundary exposure had been illustrated and commented on in a paper published in a local UK journal. The author had received the section from a third party, but did not contact me directly regarding his use of my unpublished notes.

Having now established contact with the author, it would appear that there was a genuine misunderstanding of the etiquette and intellectual copyright issues which can arise out of the use of unpublished materials. Nevertheless, the incident does highlight that perhaps we all need to exercise a little more caution when circulating our notes and manuscripts if we do not want to risk losing control or

credit for work which may have taken a considerable amount of time, effort and even money to compile.

To address this matter and, I hope, reduce the risk of future and, perhaps, more devious or malicious misuse of individual's unpublished works, I would like to suggest the following protocols:

Unpublished material over which colleagues would wish to exercise their intellectual copyrights, but is circulated within Working Groups, is initially labelled "*Restricted Circulation*", with the recipient group named, and a statement to the effect "*Not for wider circulation without authors permission*". To support this, or as an alternative, any documents, and all diagrams are stamped or labelled: [Authors Name] not for publication without author's permission.

All materials which are circulated within the ISJS as part of the voting process for GSSP designation should be considered as being in the public domain, as part of a process of demonstrating scientific objectivity in decision making linked to an IUGS/UNESCO project (and in accord with the principles of freedom of access to environmental information, which are legally binding in the EU at least). To safeguard author rights, some nominal form of publication is therefore advisable for the scientific reports which support the voting process, if indeed they are not already published elsewhere. Options could include both the ISJS Newsletter and Symposium or Working Group meeting proceedings (i.e. formal scientific publication).

I hope these suggestions are useful, I am not sure how many others have experienced similar problems to myself, but I now understand why one senior French colleague always writes in red ink across the front of his manuscripts something to the effect of "For information only, NOT FOR PUBLICATION!"

Kevin PAGE
University of Plymouth
KevinP@bello-page.fsnet.co.uk

**THE OXFORDIAN/KIMMERIDGIAN
BOUNDARY: SOME COMMENTS ON THE
PAPER BY R. JAN du CHENE et al. (2000)**
Andrzej WIERZBOWSKI

The paper of R. Jan du Chene et al. (2000) and their opinions on the lower boundary of the Kimmeridgian Stage presented there have induced me to present short comments dealing both with stratigraphical procedure (as I understand it), as well as with the way in which the authors used the discussion documents.

The recognition of the lower boundary of the Kimmeridgian Stage at the base of the Planula Zone (or not precisely indicated, some upper part of the Hauffianum Subzone ?) in the Submediterranean succession, as interpreted by R. Jan du Chene et al. (2000), appears premature. Instead of making the problem more clear they introduce some additional complications. Whereas there is no doubt that the Oxfordian/Kimmeridgian boundary in the Boreal/Subboreal succession (drawn at the base of the Baylei Zone) is placed stratigraphically at a lower level than the Oxfordian/Kimmeridgian boundary in the Submediterranean/Mediterranean succession (drawn at the base of the Platynota Zone), the precise biostratigraphical correlations of the schemes, and thus recognition of each of these levels in the successions from other provinces is still impossible (see, e.g. Wierzbowski, 1999).

Hence, no one can indicate precisely where lies in the Submediterranean succession the level strictly corresponding to the base of the Baylei Zone, i.e. the basal zone of the Subboreal Kimmeridgian. Putting this level arbitrarily at the base of the Planula Zone (or close to it) in the Submediterranean succession, as interpreted by Jan du Chene et al (2000), has not solved the problem. Instead it introduces a new, almost surely temporary, boundary of the Kimmeridgian, as it is obvious that the base of the Baylei Zone lies below the base of the Planula Zone, not higher than the lower-middle parts of the Hauffianum Subzone (see Matyja & Wierzbowski, 1997). Moreover, who knows if the stratotype of the lower boundary of the Kimmeridgian will be established in future just in the Subboreal succession at the base of Baylei Zone? Thus, instead of "improving" the Stage meaning it is possibly better to wait for the time being, until the position of the lower boundary of the Kimmeridgian Stage will be both firmly clarified and ratified.

The references dealing with the possibility of recognition of the base of the Subboreal Baylei Zone in the Submediterranean succession, as given in the paper of Jan du Chene et al. (2000), are shown in an incomplete and misleading manner. Of the two most important recent papers on correlation of this interval between the Subboreal and Submediterranean zonal schemes, i.e. Schweigert & Callomon (1997) and Matyja & Wierzbowski (1997), only the first is cited, whereas the latter is completely neglected. On the other hand, two other papers, by Melendez & Atrops (1999) and by Hantzpergue et al. (1998), are cited (Jan du Chene et al., 2000, p. 275) as "demonstrating that the Planula Zone has to be considered as entirely in the Kimmeridgian, and the Tethyan Oxfordian-Kimmeridgian boundary placed in the upper part of the Hauffianum Subzone".

In fact Melendez & Atrops summarize in this matter only data taken from Matyja & Wierzbowski (1998) as well as some other papers and reports. Hantzpergue et al. revived proposals for correlations around the Oxfordian/Kimmeridgian boundary (see plate XI therein), suggesting a solution (see table XII therein) which, at the very least, is far from currently accepted opinions. Thus, one should be more careful in giving references to show the current state of knowledge. Those presented by Jan du Chene et al. (2000) may be misleading to persons who are not fully involved in the study of ammonites and the relevant considerations on the position of the Oxfordian/Kimmeridgian boundary.

References:
JAN du CHENE, R., ATROPS, F., EMMANUEL, L., de RAFELIS, M. & RENARD, M. 2000 (1998). Palynology, ammonites and sequence stratigraphy from Tethyan Middle Oxfordian to Lower Kimmeridgian, SE France, comparison with the Boreal Realm. *Bulletin Centre Rech. Elf Explor. Prod.*, **22** (2): 273-299.

- HANTZPERGUE, P., ATROPS, F. & ENAY R. 1998. Kimmeridgien. In: Cariou E. & Hantzpergue P. (Coord.), *Biostratigraphie du Jurassique ouest-europeen et mediterraneen. Bull. Centre Rech. Elf Explor. Prod., Mem.* **17**: 87-96.
- MATYJA, B. A. & WIERZBOWSKI, A. 1997. The quest for a unified Oxfordian/Kimmeridgian boundary: implications of the ammonite succession at the turn of the Bimammatum and Planula Zones in the Wielun Upland, Central Poland. *Acta Geologica Polonica*, **47** (1-2): 77-105.
- MELENDEZ, G. & ATROPS, F. 1999. Report of the Oxfordian-Kimmeridgian Boundary Working Group. *ISJS Newsletter*, **26**: 67-74.
- SCHWEIGERT, G. & CALLOMON, J.H. 1997. Der bauhini-Faunenhorizont und seine Bedeutung für die Korrelation zwischen tethyalem und subborealem Oberjura. *Stuttgarter Beitr. Naturk. Serie B*, **247**: 1-69.
- WIERZBOWSKI, A. 1999. Comments on the selection of the Oxfordian/Kimmeridgian boundary stratotype. *ISJS Newsletter*, **27**: 35-37.

Andrzej WIERZBOWSKI
University of Warsaw
awzw@geo.uw.edu.pl

JURASSIC FORAMINIFERA IN THE BALTIC AREA

Algimantas GRIGELIS

GRIGELIS, A. & NORLING, E. 1999. Jurassic geology and foraminiferal faunas in the NW part of the East European Platform. A Lithuanian-Swedish Geotraverse Study. Research Papers, SGU Series Ca 89, Uppsala, 1-101 pp., 5 paleontol. plates, 11 coloured maps.

Abstract. In the southern Baltic Sea and surrounding land areas, thick deposits of Jurassic age are preserved, mostly covered by younger sediments, but to a certain degree outcropping too. In the east of the study area the northernmost finds of Jurassic rocks are located in southern Latvia, near the border with Lithuania. To the west Jurassic sediments occur along the margin of the Baltic Shield and further to the south and west. The northernmost finds in Swedish territory are located in the Province of Scania and adjacent parts of the Øresund Strait and the Kattegatt. The present publication describes the Jurassic succession of Lithuania, the South Baltic Basin, and Scania. The Jurassic stratigraphical representation is treated, as are biostratigraphical dating and correlation with the European standard chronostratigraphy. The foraminiferal faunas obtained from the areas in question have been used for biozonation. The taxonomic composition and representation of the faunas of Lithuania and adjacent areas are compared with those of Scania and adjacent sea areas. Similarities and major differences are commented on, and an attempt has been made to explain the major characteristics of depositional environments, palaeoecology and palaeo-biogeography. According to the authors interpretation the main differences between the two areas compared may be a closer contact between the Baltic-Polish Basin and the Tethyan Sea than between Scania and the Tethys. Southern Scandinavia, on the other hand, was more influenced from the northwest through gateways to the Arctic Basin than Lithuania. Such differences caused discrepancies in salinity

and water temperature between the western and eastern areas studied, which had effects on faunal diversity, ecological conditions and, most likely migration trends. The publication is illustrated with 31 figures and 7 tables. Foraminiferal species are illustrated by scanning electron micrographs in 5 plates. The lithology and palaeogeography of the Jurassic Stages of northern and eastern Europe is illustrated by 12 coloured maps. An index of foraminifera and their stratigraphical ranges in Lithuania and Sweden is presented.

Algimantas GRIGELIS
Lithuanian Institute of Geology
grigelis@geologin.lt

Eric NORLING
Swedish Museum of Natural History
erik.norlin@nrm.se

NEW IGCP PROJECT! IGCP Project 458 (2001-2005): Triassic/Jurassic boundary events: Mass extinction, global environmental change, and driving forces

Proposers: J. Pálffy (Hungary), S.P.Hesselbo (U.K.), C. McRoberts (U.S.A.)

The boundary between the Triassic and Jurassic periods marks one of the major mass extinction events in the history of life. Recent research suggests that this event, to date the least well-understood of the large extinctions, coincided with an unusual volcanic episode, sudden changes in sea level, and extreme climate warming. The reconstruction of processes of environmental and biotic change, and identifying causes and effects requires acquisition of new data from the scarce global geologic and fossil record of this interval. Only such augmented, multidisciplinary datasets will enable us to model how the Earth system worked during these events some 200 million years ago.

The project will generate integrated paleontological, stratigraphical, sedimentological, geochemical, geochronological, paleomagnetic, and mineralogical data from Triassic/Jurassic boundary sections globally. Field studies are directed towards previously known localities as well as recently or newly discovered ones. A global database of temporal and spatial distribution of major fossil groups across the boundary will be compiled. Patterns of the end-Triassic extinction and Early Jurassic recovery will be analyzed using the database in order to develop quantitative models. New radiometric ages will be obtained to establish a reliable temporal framework. Environmental perturbations and their role in different extinction scenarios will be assessed using geochemical methods. Further studies of the Central Atlantic Magmatic Province and a search for a hypothetical end-Triassic impact will provide clues to the trigger of global environmental change. Reconstruction of the end-Triassic events will use an Earth systems approach to integrate all new findings into the most plausible model.

The level of research activity focusing on Triassic/Jurassic boundary events has started to increase in recent years, although it still considerably lags behind that of the Cretaceous/Tertiary and Permo-Triassic events. Nevertheless, the time is ripe to initiate a major international

collaborative research effort, as the problems can now be clearly defined, a suite of modern research methods are available, and diverse studies are already ongoing based on individual initiatives. Deciphering the extinction processes, reconstructing the trajectory of environmental change, and identifying their causes requires a coordinated, multi-disciplinary and global research effort as proposed herein.

We have identified nine key areas of study for this project:

- (1) The fossil record of the end-Triassic mass extinction;
- (2) Isotope geochemistry across the Triassic/Jurassic boundary;
- (3) Late Triassic to Early Jurassic geochronology;
- (4) The Central Atlantic Magmatic Province and related tectonic events;
- (5) Search for extraterrestrial impact signatures at the Triassic/Jurassic boundary;
- (6) Late Triassic to Early Jurassic paleoclimate reconstructions;
- (7) Late Triassic to Early Jurassic magnetostratigraphy;
- (8) Late Triassic to Early Jurassic sea level change and sequence stratigraphy;
- (9) Global correlation and selection of GSSP for the base of the Jurassic system.

We look forward to hearing from all interested colleagues who are willing to participate in this research project. Please contact one of the project proposers:

József Pálffy palfy@paleo.nhmus.hu

Steve Hesselbo stephen.hesselbo@earth.ox.ac.uk

Chris McRoberts mcroberts@cortland.edu

**German Subcommittee on Jurassic
Stratigraphy
(Deutsche Subkommission für Jura-
Stratigraphie)**
Gert BLOOS

History

The subcommittee was initiated by Helmut Holder, following a suggestion by P. L. Maubeuge during the Jurassic Colloque at Luxembourg 1967. At this time it was merely an informal working group. Neither the German Stratigraphic Commission nor the German Union of Geological Sciences (DUGW) yet existed.

Organisation

The Subcommittee is now subordinate to the German Stratigraphic Commission (Deutsche Stratigraphische Kommission) which is a member of the aforementioned DUGW (Deutsche Union der Geologischen Wissenschaften). The German Subcommittee on Jurassic Stratigraphy is independent of the ISJS. As a national institution it has only to respect the instructions of the German Stratigraphic Commission. Nevertheless, there is a good relation to the ISJS (see last passage).

The German Subcommittee on Jurassic Stratigraphy has at present 48 members. The number of Voting Members ("Ordentliche Mitglieder") is constantly 15, whereas the number of Corresponding Members ("Korrespondierende Mitglieder") is not limited. The Voting Members are elected by all members every four years. The Subcommittee is directed by the Chairman (G. Dietl for the period 2000-

2003) and the Secretary (G. Bloos for the same period). The Chairman and Secretary are elected by the Voting Members.

Anyone who contributes significantly to the stratigraphy of the Jurassic in Germany can be a Member. This means that not only graduate Germans are members but also stratigraphers from abroad (at present from Switzerland) and amateurs with scientific experience (qualified publications) based on detailed knowledge in special fields. The latter members co-operate closely with professional paleontologists in the Subcommittee; their contributions are the more welcomed as the number of professional paleontologists decreases dramatically, caused by the lack of jobs in this field.

The Subcommittee organizes an annual meeting, generally in May, which is of internal character. The region of the meeting changes every year in order to deal with problems of different occurrences of Jurassic. The meeting consists of the annual session and excursions to sections of the visited region. In the year 2001 the meeting will be in the Solnhofen area.

Tasks

The improvement of biostratigraphy and of stratigraphic correlations is a permanent, unlimited task. Therefore there exists no particular program in this field. A limited program at present is a monograph on Jurassic lithostratigraphy in Germany. This program is an instruction by the German Stratigraphic Commission. The aim of the program is a revision of lithostratigraphic names in order to replace names with biostratigraphic meaning and to achieve unequivocal definitions of the names including the designation of stratotypes and type regions. This monograph will appear in consecutive volumes, beginning with the volume on southwest Germany, probably in 2002.

Relation to ISJS

The German Subcommittee on Jurassic Stratigraphy encourages its members to co-operate with the ISJS, particularly in the Working Groups. The following members are active in the ISJS at present: G. Dietl as Voting Member; Corresponding Members of ISJS are: G. Bloos (Stuttgart), W. Ernst (Wolfen), R. Gygi (Basel) and A. v. Hillebrandt (Berlin). These members as well as E. Monnig (Coburg), W. Ohmert (Freiburg i. Br.) and G. Schweigert (Stuttgart) are active in different Working Groups within ISJS. Honorary Members of the ISJS are H. Holder (formerly Tübingen, then Münster, today Stuttgart) and A. Zeiss (Erlangen). In the annual sessions the members of international Working Groups report on the activities and results within ISJS. International conventions achieved in ISJS are accepted, as already mentioned above.

Gert BLOOS

Secretary of the German Subcommittee on Jurassic Stratigraphy
bloos@gmx.de

NEWS AND MEETINGS**IUGS-ISJS 6TH INTERNATIONAL
SYMPOSIUM ON THE JURASSIC SYSTEM
SICILY 12-22 SEPTEMBER 2002****Dates:**

12-15 September: Pre-Symposium field trip
 16-19 September: Scientific sessions (Mondello, Palermo)
 20-22 September: Post-Symposium field trips

Web-site: www.dst.unito.it/6thISJS

This Symposium is organized under the auspices of the ISJS, with the financial support from the Italian Ministry of University and Research.

The Subcommittee, its Working Groups and various IGCP Projects will meet during the Symposium. Special sessions include: tectonic control over sedimentation in passive continental margins; taphonomy and diagenesis in condensed successions; paleobiogeographical relations between Tethyan and Peritethyan provinces.

Outstanding biostratigraphical, sedimentological and paleostructural aspects of carbonate Jurassic successions will be the subject of several field trips in Western Sicily and other Italian regions:

Pre-Symposium field trip

(W Sicily) An overview of the geology and stratigraphy of the main paleogeographic units developed on the Sicilian part of the Jurassic Apulian passive continental margin.

Post-Symposium field trips

(W Sicily) Sedimentological and palaeontological details of the pelagic successions of the Trapanese Domain.

(W Sicily) Sedimentological and biostratigraphical details of the pelagic successions of the Sicilian, Imerese and Saccense Domains.

(Central Apennines) Jurassic and Early Cretaceous ammonite assemblages in the classical localities of the Umbria-Marche Apennines.

(Central Apennines) Sedimentological and paleostructural details of pelagic carbonate platforms in the Sabina Mountains.

(Venetian Alps) Sedimentological, biostratigraphical and paleoceanographical details of the pelagic successions of the Trento Plateau and Belluno Basin.

Deadlines:

March 1st 2001: reply to the First Circular
 February 1st 2002: submission of abstracts

Organizing Committee:

Giulio PAVIA (Chairman), Luca MARTIRE (Secretary),
 Francesca LOZAR (Treasurer), Enzo BURGIO, Stefano

CRESTA, Piero DI STEFANO, Umberto NICOSIA, Guido PARISI

All correspondence to:

Dr. Luca Martire
 Dipartimento di Scienze della Terra
 Via Accademia delle Scienze 5
 10123 TORINO - ITALY
 fax: 39.011.541755
 e-mail: martire@dst.unito.it

OTHER MATTERS**CIRCULATION OF NEWSLETTERS**

Nicol MORTON

One of the most widely expressed criticisms of the Jurassic Subcommittee, and one of its biggest problems, is lack of communication. From several countries, including my own, I have been told that information and news from the Subcommittee does not extend beyond the few who directly receive the Newsletter and other documents. It is clear that in too many instances the members, both Voting and Corresponding, have not been passing things on to colleagues who would have been interested to receive them.

I admit to being guilty of this failing myself. It was just too difficult and costly to take apart the Newsletter, make a large number of photocopies and then post them on. Fabrizio Cecca made things easier with the last Newsletter, no. 27, by distributing it as an email attachment, which I could simply forward by email to others. This worked well in all but a very few cases. So this year I have set up an email list (my 'British Jurassic' list) which aims to be as complete as possible. To date I have 46 email addresses but there are still gaps. One message preparation, one inclusion of an attachment and one click on the mouse and the distribution is complete.

So I am asking each one of you to organise (in collaboration with other Subcommittee members in your country if appropriate) a similar email forwarding list. It would be helpful if you could copy this to the Subcommittee Bureau, either Paul Bown or myself, for our information (but please do the forwarding yourself), so that we can have some idea of the numbers worldwide being reached.

Paul Bown and I will be investigating the best formats for distribution of future Newsletters. This time we have kept it simple (text only), but in future we could be more ambitious. There is a maximum practical size, so perhaps smaller more frequent Newsletters might be more appropriate. We also must look into the question of publication. Comments and suggestions are welcomed.

Nicol MORTON
 Birkbeck College London
nicol.morton@ucl.ac.uk