No. 34, Spring 1997

NEWSLETTER CONTENTS

Editorial

Sue Rigby

I am pleased and rather nervous at taking over the Pal. Ass. Newsletter from Barrie Rickards. He and his team in Cambridge have done an excellent job over the last few years, and we owe them all an immense debt of gratitude for getting the Newsletter to its current state of reliability and excellence. I will do what I can to continue the tradition, but I warn you to expect more typos and less grammatically correct sentence construction from now on.

We have high hopes for the new look Newsletter. First we have a good production team in Edinburgh. The Newsletter is being put together by Meg Stroud, and printed by Edinburgh University Press. We introduce photographs for the first time in this issue, and would welcome your compromising pics for future editions. We will gradually be reducing the density of text and increasing the variety of design over the coming issues.

There are several new features which I hope will become regular slots, and for which contributors are sought. The first is a focus on palaeontology in Museums, beginning in this issue with a report on the new 'Jurassic Pond', sorry, 'Life in the Jurassic Seas' exhibition at the Sedgwick Museum. The second is a column devoted to the press coverage of Palaeontology. I am not very systematic in my reading: is there someone out there who would like to become our regular columnist?

Next, Palaeocomment. I have been delighted at the response to David Loydell's article on the use of specimens in private collections. We print two more comments in this Newsletter, but will draw a line under these proceedings after the next issue, so if you have last words, get them to me by 1st August. Is it time to rethink our approach to the use of these specimens, and define a modified code of practice for members of the Palaeontological Association? Should we petition Council to set up a working committee or a seminar to discuss this topic more formally? Let me know your views. And, of course, if anyone is left who is willing to put his or her head over the parapet with another controversial issue, please let me know.

Finally, I am very keen to make the Newsletter more useful and interesting to its readers. The results of the Pal. Ass. survey were helpful, but not

enough. If you would like to change the Newsletter, or to contribute to it in any way, please contact me with your suggestions and requests.

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NEWS

The British Micropalaeontological Society goes "on-line"

On 11th January 1997, The British Micropalaeontological Society World Wide Web site went on-line. The site, which is hosted on the Web server at The Natural History Museum, can be found at http://www.nhm.ac.uk/bms

The site was developed by Ian Boomer (University of East Anglia) and Giles Miller (NHM) with the help of Dave Polly (Webmaster at The NHM). The BMS wish to acknowledge The Natural History Museum for agreeing to host the site. Giles Miller, who was appointed the first Webmaster of the BMS at the 1996 AGM in November, will maintain the site. At present the following information is posted but there are plans to expand the site in future:

- Profile of the Society: a brief history of the BMS
- Society Officers: email links to main committee members and specialist group representatives
- Specialist group information: latest reports from the Conodont, Nannofossil, Ostracod, Palynology and Foraminifera groups including information about Group Meetings
- Publications: a list of Special Publications and how to order them
- *Micropalaeontology* and *Newsletter of Micropalaeontology*: all future editions of the Newsletter will be posted at this site
- Membership: details of how to join the BMS. An application form can be printed off, filled in and posted. Alternatively an application can be submitted over the Internet
- Meetings: details of meetings such as the 1997 Demonstration Meeting in Birmingham, and the forthcoming AGM
- Links: links to micropalaeontology-related websites. Sites are ordered by microfossil group and links to University, Museum, Micropalaeontological Company, Publishers and Government sites are also included.

If you have any comments about the site then please contact me at the address below. Alternatively, if you have any micropalaeontological links that you think should be included then please contact me directly by email. If you wish to publish articles in the Newsletter and on this site then please contact Philip Donoghue (Newsletter Editor, BMS) in the first instance. He will pass details on to me for inclusion on this site.

Dr C. Giles Miller
Department of Palaeontology
The Natural History Museum
Cromwell Road
London SW7 5BD (e-mail G.Miller@nhm.ac.uk).

Kirtlington Quarry reopen

Kirtlington Quarry, c.1923: Photo courtesy of Oxford University Museum

Last September, Blue Circle Company handed over a 25-year lease of Kirtlington Quarry, Oxfordshire, to Cherwell District Council. New steps, paths, barriers and sign-boards are being erected to make the quarry safer and more interesting to the visitor. The work is still in progress.

More importantly, the Quarry is now freely open to geologists. Eventually, more platforms and safety barriers will be erected. In the meantime the District Council asks that visitors should not hammer on any vertical face, especially the one at the south end of the Quarry where loose blocks above make it potentially very dangerous.

The Quarry is described in G.A. Guide No.3 published in 1973. References to more recent literature on the Great Oolite of Oxfordshire may be found in: Wyatt, R.J., 1996, Proc. Geol. Assoc. 1207, 299-322. Attention is also drawn to the exhibits on Oxfordshire geology in the Oxford University Museum of Natural History, open Monday to Saturday, 12 noon to 5pm, admission free.

Stuart McKerrow

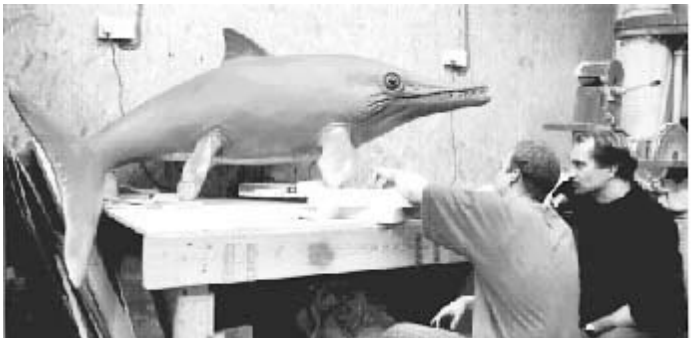
There's life in the Jurassic Pond

15th March saw the opening of a major new permanent display at the Sedgwick Museum of Geology, Cambridge. Called 'Life in the Jurassic Sea', the project's working title soon became 'Jurassic Pond' and it was this that the press latched on to in the publicity surrounding the opening. This was the focal event of Cambridge University's contribution to National Science Week, and was accompanied by local schoolchildren building a life-sized plywood *Stegosaurus* in the courtyard outside the entrance to the museum.

'Life in the Jurassic Sea' has brought on display many of the Sedgwick's important Jurassic fossils, which have undergone extensive conservation work in the Geological Conservation Unit of the Department of Earth Sciences. This includes two very fine ichthyosaur specimens found by Mary Anning, and a number of specimens donated to Adam Sedgwick's museum by Thomas Hawkins. A complete plesiosaur skeleton, having suffered from being originally mounted vertically in the aisle of the museum, has been conserved and remounted and now forms a focal point in the centre of the display. The skull of *Grendelius*, a large ichthyosaur found in Norfolk in 1958, is on display for the first time following extensive treatment for pyrite decay. Jurassic invertebrates are represented by some fine specimens from the Museum collections, many also of historical importance.

To 'bring the fossils alive', and present them in their ecological context, the display includes a striking 'Seascape', a reconstruction of what the Jurassic Sea might have looked like. This theme is paralleled in a copy of T.H.de la Beche's *Duria Antiquior* ('Ancient Dorsetshire'), one of the earliest attempts to illustrate the fauna of the Jurassic Sea. This copy was painted by one of Sedgwick's curators in the 1840s and will be undergoing restoration during the coming year.

Discussing the finer points of the life-size ichthyosaur model. Photo. D. Simons



'Life in the Jurassic Sea' is targeted at the public but, as the Sedgwick is a University museum, is also intended to be used by undergraduate students in the Department of Earth Sciences. Specimens are clearly and simply

labelled, and further details are available for the interested visitor. Introductory information about the different fossil groups is intended to help the visitor appreciate not just the Jurassic fauna, but the extensive collections on view elsewhere in the Museum. A number of specimens are not behind glass, and visitors are encouraged to touch them. The display is supported by a children's 'Discovery Trail' and a large set of leaflets which offer more specialised information on many aspects of both the Jurassic fauna and the historical background to the fossils.

This is an exciting new development in the history of the Sedgwick Museum, and the publicity surrounding it has already boosted visitor numbers. Come and see for yourself! The Sedgwick Museum, Downing Street, Cambridge is open Monday-Friday 9-1 and 2-5, and Saturdays 10-1. Further information is available on (01223) 333456.

Liz Hide
(Liz Hide is now Curator of Invertebrate Palaeontology at the Royal Museum of Scotland, Edinburgh).

Inspirational Palaeontological Speakers

The health of palaeontology is clearly dependent on a constant infusion of enthused new students, but an increasing number of departments have no palaeontologist to inspire potential recruits. By encouraging student geological societies to include palaeontological presentations in their lecture programmes we are hoping to take a small step towards addressing this problem. We are therefore seeking palaeontologists who are good speakers and who would be prepared to have their names on a list to be circulated to the secretaries of student societies.

So, if you know of anyone who fits the bill, then please let us know (information to Mark Purnell at the address below). Any suggestions are welcome (as are volunteers), and potential speakers will be contacted to confirm their willingness to participate.

Mark Purnell
Publicity Officer, The Palaeontological Association
Department of Geology
University of Leicester
Leicester LE1 7RH
e-mail map2@le.ac.uk, tel +44 116 2523645, fax +44 116 2523918

Celebrate Science!

The British Association's Annual Festival of Science is being held at the University of Leeds this year from the 7th to 12th of September. As well as a whole range of exciting science events, from debates about the psychology of eating, visits to the Royal Armouries, talks on the mathematical aerodynamics of birds, 'A day trip to Mars' public lecture and 'Sunday Sundae the science of chocolate and ice cream', there will be a whole range of geoscience activities for specialists and public alike.

The Geology Section will be organising children's and family activities, field trips and a couple of days of public talks. On Sunday 7th and Monday 8th September the Earth Science department at Leeds will be hosting a range of hands-on activities for families and secondary school children. Children can also have fun at the BAYS events that will be running all week; Peter Styles will be giving the Young People's lecture about earthquakes.

On Wednesday 10th September this year's Geology Section President, Professor Joe Cann, will be hosting his own President's Day of talks, called 'The Earth Turned Inside Out'. Starting in the core and working out to the surface, a suite of talks will be presented by speakers from Leeds on the latest news on everything from dumping garbage in the deep oceans, through big floods that cause big problems in Bangladesh, to what South African gold can tell us about the early atmosphere. A specialist John Mason meeting on Thursday 11th September, hosted by the Rock Deformation Research Group and Getech (Leeds), will present a group of speakers from both academia and industry to talk about North Sea Petroleum and exciting links between universities and industry for the future. In addition, there are more talks for geoscientists with the Lyell Lecture on Extinctions and the Beverley Halstead Lecture on 'The Big, Bad and the Beautiful Predatory Dinosaurs' by T. Lingham-Soliar. You can also join in with the joint Geology/Geography/Archaeology Chinese Banquet on Tuesday 9th September.

You can get some exercise too and join field trips to Staithes, Ingleton and Coal Measures sites to look at some classic Yorkshire geology. Even within the city you will be able to see some spectacular geology if you join Eric Robinson's tour of Lawnswood graveyard and Murray Mitchell's walk around Leeds city centre to look at the huge variety of building stones that make up the impressive Victorian buildings.

For more details and information about booking contact The British Association, Major Events Department, 23 Savile Row, London W1X 2NB, or from mid April try their Web site

Dr Jane Francis
Earth Sciences
University of Leeds
LS2 9JT, UK
Tel: 0113 2336761; Fax: 0113 2335259

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What the Papers say

Palaeontology has been much in the news over the last few months, with the bizarre fringes of exobiology and a good dose of millennium panic contributing to a lively interest in fossils. Five stars for poor reporting to the *Grauniad*, which ran a long interview with Dick Kroon. Dick, a micropalaeontologist from Edinburgh, has just returned from an ODP leg in the central Atlantic which has retrieved complete sections across tektites and tsunamis at the K-T boundary. The *Guardian* article, of 1st March, is entitled 'Victory for a man who likes to dig', and is a masterful misinterpretation of basic geological information. Referred to throughout as an archaeologist, Kroon is attributed with providing 'conclusive evidence' that a massive asteroid killed the dinosaurs. A huge relief to us all, I am sure, having that cleared up once and for all. On a line directly from Schliemann, and with a copy of the Iliad (honest) in hand, the article portrays Kroon intrepidly dating the Cretaceous with carbon isotopes (really). Dick, an excellent scientist well known to many, is less than delighted. It makes you wonder about the accuracy of any other reporting, doesn't it.

A long article in the *Independent on Sunday* early in April (but not quite early enough) describing bombardment of the Earth by meteorites, inevitably touched on the dinosaur demise. Factually accurate, this article became more surprising as it began to detail the other mass extinctions, end Permian, end Ordovician and so on. Surely not more impacts? Well, postulated the reporter, perhaps not by themselves, but if climate was already changing, or ice advancing, a small meteorite could do a lot of harm Indeed it could, but the arguments do seem to be stretched to

squeaking point here.

Turning to reputable scientific journals, the News and Views section of *Nature* has restored the balance with a series of well written notes on palaeontology; the failure of Cope's rule from Stephen Jay Gould, the use of ostracodes to interpret climate change in the deep sea from Michael Rex, and an illuminating instruction kit on how to make a head from Per Erik Ahlberg. However, *New Scientist* has had a mixed Spring as far as palaeontology is concerned, with a large article on the origins of flight being marred by dinosaurs being described as 'the first creatures to take to the air'. Good job dragonflies have no legal representation.

The solution to our problem is clear. We should be writing broadsheet articles, not letting journalists mess up good science for us. In the meantime, we can look forward to more months of palaeontological, sorry, archaeological, misinformation. Send gems to the editor for gleeful inclusion in subsequent issues.

'Archaeologist'

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Palaeo-Comment

Two more replies to *Palaeo*-Comment on Specimens in private collections

Specimens in private collections - editorial responsibilities

At risk of prolonging an already long correspondence (*Newsletters* 31, 32, 33) on this important issue, I add four rhetorical questions. I appreciate that my point of view may be contentious!

1. Why have private collections anyway?

There are several reasons why specimens are in private collections, rather than in the public domain.

- *People don't want to give*
  Steve Etches (*Newsletter* 33: 16) described one reason a collection as wonderful as his has been assembled with love and at considerable cost, in time, effort and out-of-pocket expenses (Steve does not buy from dealers). It has enormous value to him: I suppose he would regard it as 'priceless'. Although Steve has donated important specimens to museums, generally he does not wish to part with the whole collection or individual items, especially (as he points out, perhaps painfully to us professional curators) when his experience is that public and university museums are sometimes careless with his material and often less able than he is to manage its long-term care.
- *Museums can't or won't pay*
  Another reason is that private collections have financial value they have been bought and paid for; and market value they are an investment that may be realised by selling. Some collectors (and all dealers, presumably) assemble private collections for the same reasons that many people collect art and antiques. Most public museums either have a policy of not 'encouraging trade' in fossils or cannot afford the purchase price, so such specimens stay in private hands. The cost (and risk) of collecting, particularly vertebrate fossils in the richest-yielding countries world-wide, means that many museums lack the resources or inclination to acquire specimens direct.
- *Legal and ethical issues*
  Private collections may also include specimens that have been acquired in contravention of the UNIDROIT (1995) Convention, which regulates international trade in cultural objects, including fossils. Many countries, including Brazil and China, have laws controlling the export of vertebrate fossils; such laws are recognised by the (non-statutory) UNIDROIT Convention. Although the UK is not a signatory to the Convention (thus fossils exported illegally from abroad can be imported quite 'legally'), the Museums Association Draft Code of Conduct (Museums Association 1996), with the agreement of most or all professional curators, effectively prohibits public museums from acquiring specimens lacking valid export papers. Although legal export, for research (not trade), is possible (and practised by a few intrepid palaeontologists, including at least one of the earlier contributors to this correspondence), few of the vertebrate fossils from Brazil, China and several other 'third world' countries offered for sale by dealers have been exported strictly legally. These specimens go to and mostly remain in private collections.

The 'illegality' of these fossils depends on a couple of awkward points of fact. The export laws of some countries (mentioning none by name) are either based on or provide encouragement for systems of trade exploitation of local peoples, control of workers by the gun, payments to local officials to secure the 'correct documents' which are corrupt. The UNIDROIT Convention is intended to control trade in cultural property; fossils are only included, first, because they have a market value this meaning of 'property' is reinforced by European law (EC 1992) which controls trade in fossils above a certain market price; and, second, because of a misunderstanding by the Convention's drafters (politicians and lawyers with, I suspect, arts specialists as advisers) about the relevance of either culture or property to fossils, which are culturally neutral and, according to us curators who want to be entrusted with the specimens, the property of no-one (or everyone). There are complicated ethics here: have we really thought through what we hope to do by being inflexible in our application of the 'letter of the law' to these fossils?

2. What level of taxonomy are we bothered about?

Patrick Wyse-Jackson (*Newsletter* 32: 5-6) argues for strict application of ICZN rules to editorial decisions. Angela Milner (*Newsletter* 33: 15) talks about 'voucher' specimens. Both mean that the crucial issue is the future assured availability in the public domain of type specimens, in other words alpha-level taxonomy. I agree: specimens that support alpha-taxonomy are special.

Specimens representing lower-level taxonomy, however, as well as stratotypes, members of type series, fossils showing features of anatomical, biomechanical, preservational or taphonomic interest could, by the same rule, be published even if not in public collections. It may not be vital for future workers to review the systematic identification of these specimens, or to compare them with new material, in order to be able to advance the science of palaeontology.

3. Replicas, sometimes?

Dave Martill (*Newsletter* 32: 6) suggested that good quality photographs can show the salient features of fossils demonstrating evidence of the physiology or ecology of extinct animals. Mike Taylor and Peter Crowther (*Newsletter* 33: 19-21) inferred that Martill also argued for the use of casts; he didn't, but I will. When the original fossil is a natural mould or cast, with

no preservation of internal structures, a good-quality artificial cast can provide as much information as the original, and is therefore just as 'good' for publication. If 'plastotypes' of important specimens lost to science because they have been destroyed are acceptable for publication, why not casts of specimens in private collections?

4. Safe in our hands?

The concept of 'private' versus 'public' museums is a very British one! A few other countries, mainly northern European, make the distinction in the same way, but on a world view the idea is a rarity. What is the editorial policy on specimens in major US private museums, or in run-down third world public museums? By public, do we mean state-funded, statutory, not-for-profit, institutional, open to all, or what? Nothing inherent to these definitions assures the safety in perpetuity of the collections they hold.

Taylor and Crowther make the case for only Registered public museums being suitable repositories for published specimens. I notice that they wonder what to do about University museums (many UK readers will remember what happened to some of them ten years ago), but in fact Registered status can be withdrawn, and will be, when any museum ceases to meet the very criteria by which we judge its ability to preserve specimens in perpetuity. At best, the assured long-term conservation of published specimens in public museums is only a matter of degree superior to that in other collections.

Conclusions

At face value, the editors' policy is simple: don't publish on specimens that might not be around in the future. But the implications of the policy, perhaps also the ideas behind it, are more complicated. Refusing to publish specimens in private collections does little (or nothing) to change the world of corrupt fossil trade or black marketeering. It does not significantly affect the market prices of fossils, or discourage dealers from selling privately. It does, however, banish vital specimens to intellectual limbo.

Finally, some suggestions for further discussion! We could be prepared to pay the true cost of important specimens, instead of expecting private collectors to give them away; we could agree to publish non-alpha taxonomy specimens in private hands, or allow publication based on replicas or images. We could try to change inappropriate laws and review the inclusion of fossils as cultural property in the UNIDROIT Convention.

It is a very complicated issue; at least let's continue to think about it and be flexible meanwhile.

References

UNIDROIT, 1995. Convention of 24 June 1995 on Stolen or Illegally Exported Cultural Objects.
EEC, 1992. European Regulation 3911/92 of 9 December 1992 on the export of cultural goods, Council of the European Communities.
Museums Association 1996. Draft Code of Conduct (in prep.; the full Code to be approved and published 1996-7), London.

John Martin
Curator, Leicester Museum & Art Gallery
and
Department of Geology
University of Leicester

To all who replied to Loydell

Wow! Several cans of worms have been well and truly opened. In my response to David Loydell's Palaeocomment (*Newsletter* 31: p.6) I pleaded that rather than have a blanket ban on the publication of fossils held in private collections, the Editors be able to exercise discretion. Mike Taylor and Peter Crowther (*Newsletter* 33: p.19) point out that the notes for authors (*Palaeontology* 39: p.1073) effectively prohibit publication on specimens in private collections. The Editors of *Palaeontology* would have served its membership better if perhaps they had allowed us to discuss this issue before putting it in tablets of stone.

For the purposes of alpha taxonomy I fully agree that specimens should be housed in 'proper' collections, whatever those may be. It is where specimens have other uses, for example in palaeoecological analysis, dating, functional morphology, that I sought editorial discretion. A blanket ban on publishing on privately owned specimens to protect the requirements of alpha taxonomy will be a hindrance to palaeontologists concerned with the many non-taxonomic aspects of our profession. I look forward to hearing the editors' response to my request.

Angela Milner (*Newsletter* 33: p.15) commented on the importance of being able to verify scientific results. That a specimen is in a private collection does not automatically prevent it from being used by another worker to perform the required verification. Bearing in mind that the

interpretation of a morphological feature in a fossil is usually pretty subjective, any so-called test may also be subjective.

But, is it not also the case that a scientific test might be in the recognition of the same feature in another specimen? For example, in the case that I raised previously I recognised a 'horny' beak-like extension to the premaxilla of a Lower Cretaceous tapejarid pterosaur. At the time of writing my Palaeo-comment, this specimen was held in a private collection (I stress that it was not my collection, as might have been inferred from the Palaeo-comment of Tunnicliff, *Newsletter* 33: p.18). In his now famous Encyclopaedia of pterosaurs, Wellnhofer (1992) suggested that pterosaurs might have had a horny beak on the basis of a Solnhofen Limestone specimen in which an external mould of such a structure was present anterior to the jaws of a small rhamphorhynchoid. This specimen is not wholly convincing, but the new tapejarid in a private collection has now convinced me that Wellnhofer was correct in his interpretation. Publication of a photograph of the privately owned tapejarid might stimulate other workers to re-examine more carefully specimens in their care, and who knows, they too might discover other examples with beaks. These examples would constitute a valid scientific test; science would benefit, and it would not matter a damn if the privately owned specimen then disappeared.

The only risk is that publication might inadvertently increase the commercial value of the privately owned specimen (is it a risk I should be concerned about?). But big museums are paying high prices for fossils and have already put most specimens out of my reach.

In a purely hypothetical case, suppose that Mr Etches, (*Newsletter* 33: p.16) perhaps the best 'amateur' (I use the word in the strict sense, for his collection is the best curated and looked after I have seen in this country) had assembled his collection from a non-marine, poorly dated deposit, rather than the Kimmeridge Clay. And suppose, because of his diligence that he discovered the only ammonite from this hypothetical deposit. Suppose too that it was a magnificent example of a highly characteristic zone fossil, restricted to some well defined biozone, and solved everyone's stratigraphical problems by providing a much needed date. Would it surely not be possible to describe the original and make a perfect replica, to be housed in a museum? Such a replica would be little different from a natural external cast. It would be all the morphological evidence anyone required to provide the much needed date, and then stratigraphers and correlators, basin modellers and the like could all get on and advance their disciplines

because the undated rock would then be dated. Also, MrEtches could retain his valuable fossil. After all, whenever I work on the Oxford Clay Formation, and write that it is Jurassic, I do not go back to the original holotypes of *Kosmoceras* and *Cardioceras* to prove it.

The only time when I see a real problem with replicas is in cases of deliberate forgery. But in the most famous example, Piltdown Man, the original specimen was held in a proper collection, but sadly scientists were prohibited from examining it (see Spencer 1990, p.149); the hoax might not have been perpetuated for so long had those officers of the British Museum (Natural History) allowed access to the original specimens.

References

Spencer, F. 1990. Piltdown: A scientific forgery. Natural History Museum Publications, Oxford University Press. 272 pp. London.
Wellnhofer, P. 1992. The illustrated encyclopaedia of pterosaurs. Salamander Books. 192 pp. London.

Dave Martill
Department of Geology
University of Portsmouth
Portsmouth PO1 3QL

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MEETING REPORTS

Ichnofacies and Ichnotaxonomy of the Terrestrial Permian (Workshop)

Germany
8 - 11 March 1997

Sponsored by the Deutsche Forschungsgemeinschaft and Kulturministerium Land Sachsen-Anhalt, and convened by Professor Hartmut Haubold (Martin-Luther University, Halle/Saale, Germany), a workshop to discuss the current problems and future of the tetrapod ichnotaxonomy and ichnofacies of the continental Permian was recently held in central Germany. Fifteen selected researchers from the field of vertebrate and invertebrate ichnology attended the meeting. The program

was very intensive and included oral presentations, visits to museum collections of tetrapod footprints and reconnaissance of outcrops/quarries of classical localities of the German continental Permian.

The activities started in the small town of Nierstein (near Frankfurt), continued in Rotenburg, Cornberg, Tambach, and Gotha, to finish in Halle (Saale). Most oral sessions were preceded by an introductory speech by the convenor (H.Haubold), which always stemmed from the present understanding of the nomenclatural problems of some Permian footprint ichnotaxa (Haubold, 1996). G. Gand (France) talked about the French Permian footprints and compared them with other European ichnofaunas. An overview of the characteristics and composition of the large Early Permian tracksites of New Mexico presented by A.Hunt (USA) and H.Haubold (Germany) was followed by a reassessment of the rich Permian "Collio" ichnofauna of Italy by S. Conti and others (Italy). C. Meyer (Switzerland) described a new (and expensive) method of high resolution mapping of tracksites.

A. Hunt and others reported on the recent discovery of a Permo-Carboniferous tetrapod tracksite in Nova Scotia (Canada), where they found probable evidence of gregarious behaviour in tetrapods. A further elaboration on the interplay between anatomical input and extramorphological (i.e., non-anatomical) deformation of footprints was presented by C.Karl (Germany). A.Seilacher from Germany (the pioneer of modern ichnology), underlined some aspects of the concept of undertrack applied to vertebrate footprints and the need for studies on the mechanics of track formation to understand them. Different topics on aeolian tetrapod ichnofaunas were addressed by M.Lockley (USA), and P.McKeever (Northern Ireland) and H.Haubold. Lockley highlighted the principles to recognise ichnofacies (recurrent associations of particular track types in like sedimentary facies) applied to the Laoporus and related ichnofacies.

McKeever and Haubold used the example of the Scottish Permian ichnofauna to remark the sedimentological influences on the previous nomenclature of tracks and trackways. Late in the second evening of the workshop we enjoyed the detailed description and interpretation of a Triassic tracksite in Lesotho (South Africa) by P.Ellenberger (France).

In front of spectacular large mudcracked and trampled blocks of the Tambach Sandstone both at the quarries and in the Museum der Natur (Gotha) T.Martens (Germany) summarised the ichnofossil and body fossil content of that unit. From the point of view of invertebrate ichnology

R.Bromley (Denmark) suggested probable ichnotaxobases for tetrapod trace fossils. R.Melchor (Argentina) described the composition and affinities of the only two known Permian ichnofaunas from Argentina, which further suggest a fairly similar Permian terrestrial fauna in the Pangaea Supercontinent. The presentations concluded with a re-evaluation of the ichnogenus Pachypes from the Val Gardena Sandstone (Italy) by the Italian crew (S.Conti and others).

The last half day was dedicated to a discussion of the most useful ichnotaxobases in tetrapod ichnology and the recommended procedures for an appropriate documentation of tetrapod ichnofaunas. It was agreed that an ichnotaxa must be based on morphological characteristics of the track/trackway (after "filtering" the noise produced by extramorphological deformations and using a large sample size). Furthermore, any description of ichnofaunas should include detailed measurements as well as documentation of the sedimentological and stratigraphical context of the tracks. The urgency for a deep taxonomic revision of most tetrapod Permian ichnotaxa in the light of the present consensus was very clear for everybody at the end of the workshop. Finally, if these guidelines are followed there are good perspectives for using the tetrapod track record in evolutionary studies, ichnostratigraphy and palaeoecology.

The abstracts of the contributions presented during the workshop will be submitted for publication in *Ichnos*, and the complete papers will appear late this year in the *Hallesches Jahrb. Geowiss.* (Halle, Germany). Finally, I would like to congratulate Professor Harmut Haubold for his initiative in convening this successful workshop and for the excellent organisation.

Reference

Haubold, H. (1996) Ichnotaxonomie und Klassifikation von Tetrapodenführten aus dem Perm. Hallesches Jahrb. Geowiss., B18:23-88. Halle/Saale.

Ricardo Nestor Melchor
Universidad Nacional de La Pampa,
Argentina.
email: rpmelcho@criba.edu.ar

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FUTURE MEETINGS OF OTHER BODIES

Conference on Australasian Vertebrate Evolution, Palaeontology and Systematics (CAVEPS)

Perth, Western Australia
7 - 11 July 1997

Pre- and post-meeting field trips to the Kimberley (Broome, Blina Shale, Gogo) and Margaret River region (Pleistocene mammals). Contact John Long or Alex Baynes for details, Australia (09) 427 2757; fax (09) 328 8686 or email: long@muswa.dialix.oz.au

Second European Palaeontological Congress - Climates: Past, Present and Future

Vienna, Austria
10 - 12 July 1997

Under the auspices of the European Palaeontological Association, the Second European Palaeontological Congress will be held in Vienna from the 10th to 12th of July 1997. The theme of the conference will be 'Climates: Past, Present and Future'. The idea is to emphasize the role which palaeontology can play in the Global Change debate. For further information, contact Dr Heinz Kollmann, Natural History Museum, Burgring 7, A-1014 Vienna, Austria. Fax: + 43-1-5235254; Telex: 134441 natur a

Devonian Cyclicity and Sequence Stratigraphy

University of Rochester, Rochester, New York, USA
20 - 27 July 1997

IUGS Subcommission on Devonian Stratigraphy and University of Rochester Symposium and fieldtrips
Contact: Carlton E. Brett, Dept. of Earth and Environmental Sciences, University of Rochester, Rochester, New York 14627, USA. Tel: + 1 (716) 275-2408; Fax: +1 (716) 244-5689. E-mail: cebh@db1.cc.rochester.edu or William T. Kirchgasser, Dept. of Geology, SUNY Potsdam, Potsdam, NY

13676 Tel: + 1 (315) 267-2296; Fax: + 1 (315) 267-2695. E-mail:kirchgwt@potsdam.edu

PaleoForams '97

Western Washington University, Bellingham, WA, USA
17 - 21 August 1997

Examining all aspects of Paleozoic Foraminifera and their stratigraphic and geographic distribution. An initial list of topics for which talks and/or posters are solicited include: Evolution, dispersal and paleobiogeography; Classification and taxonomy; Biostratigraphy and zonation; Paleoecology and sedimentary environments of deposition; Biological interpretations and significance; Numerical and statistical methods; Composite standard sections and their utility in Foraminifera biostratigraphy; New techniques. At this time the organizers welcome additional topics that participants wish to have included.

Field trips are planned through the late Paleozoic accreted terranes of southern British Columbia and to the Mid-Carboniferous boundary succession in southern Nevada.

For further information, contact the organizer: C. A. Ross, Dept. Geology, Western Washington University, MS-9080, Bellingham, WA 98225, USA; Fax: (+360)650-3634; e-mail: rossjrp@henson.cc.wwu.edu

Second International Trilobite Conference

St. Catharines, Ontario, Canada
22 - 25 August 1997

Four days of technical sessions will be held at Brock University, St. Catharines, Ontario. We invite papers on all aspects of trilobite reserach: systematics, biostratigraphy, palaeoecology and evolution. Three field trips will be offered as part of the conference. Pre-meeting trips will deal with the Cambrian sequence of the Canadian Rockies (August 15-21); Leaders: Brian Chatterton and Brian Pratt) and the Cambrian of Maritime Canada (August 12-21; Leaders: Ed Landing and Steve Westrop). The trip to Maritime Canada will double as the Third Field Conference of the Lower Cambrian Stage Subdivision Working Group. A post-meeting trip (August 26-29) led by Kevin Brett and Dave Rudkin will examine the Ordovican and Silurian sequence of southern Ontario. For further details, contact:

Steve Westrop, Second International Trilobite Conference, Department of Earth Sciences, Brock University, St. Catharines, Ontario L2S 3A1, Canada; e-mail: swestrop@spartan.ac.brocku.ca

Second European Meeting on the Palaeontology and Stratigraphy of South America

Heidelberg, Germany
2 - 4 September 1997

(To be held in conjunction with the 18th IAS Regional Meeting on Sedimentology.) Organized by P. Bengtson and H. Bahlburg. Preliminary registration a.s.a.p. Further information incl. registration form is available through the WWW site or from the organizers: Geologisch-Palaeontologisches Institut, Im Neuenheimer Feld 234, D-69120 Heidelberg, Germany; e-mail: Peter.Bengtson@urz.uni-heidelberg.de or Heinrich.Bahlburg@urz.uni-heidelberg.de

Regional Meeting of IGCP Project 381 "South Atlantic Mesozoic Correlations"

Heidelberg, Germany
2 - 4 September 1997

(To be held in conjunction with the 18th IAS Regional Meeting on Sedimentology.) Organized by P. Bengtson. Preliminary registration a.s.a.p. Further information incl. registration form is available through the WWW site or from the organizer: Geologisch-Palaeontologisches Institut, Im Neuenheimer Feld 234, D-69120 Heidelberg, Germany; e-mail: Peter.Bengtson@urz.uni-heidelberg.de

Biotic Recoveries from Mass Extinction, IGCP Project 335

Prague, Czech Republic
12 - 14 September 1997

The final meeting of IGCP Project 335 "Biotic Recoveries from Mass Extinctions" will be held in Prague, Czech Republic. Organized by the Czech Academy of Sciences, the meeting will include three days of scientific meetings plus associated field trips.

Organizers: Petr Cejchan and Jindra Hladil.

For more information check the recovery wwwsite
or contact Petr Cejchan, Geological Institute, Czech Academy of Sciences, Rozojova 135, CZ-16502, Praha 6-Suchdol, Czech Republic
OR Douglas H. Erwin, Dept. of Paleobiology, MRC-121, Smithsonian Institution, Washington, DC 20560 USA (email: MNHPB028@SIVM.SI.EDU)
OR Erle G. Kaufmann, Dept. of Geological Sciences, Indiana University, Bloomington, IN 47405 USA (email: CLAUDIA@INDIANA.EDU).

Evolution of the Marine Phytoplankton

AASP Annual Meeting and Research Symposium
Woods Hole, Massachusetts, USA
14 - 18 September 1997

In conjunction with the society's annual meeting, the American Association of Stratigraphic Palynologists (AASP) will be sponsoring an extended symposium on the Evolution of the Marine Phytoplankton at Woods Hole, Massachusetts, USA from September 14 through 18, 1997. The aim of the symposium is to bring together the disparate workers in all fields related to the historical analysis of phytoplankton evolution including Palaeoecology, trophic relations in modern and ancient oceans, Systematics, etc. More information is available at the meeting website. Contact Paul K. Strother, Department of Geology & Geophysics, Boston College, Weston Observatory, 381 Concord Road, Weston MA 02193 USA, Ph: + 1 (617) 552-8395; Fax: + 1 (617) 552-8388; Email: strother@hermes.bc.edu

Canadian Palaeontology Conference

Saskatchewan, Canada
27-29 Spetember 1997

This is a two-day field trip to Cretaceous and Tertiary, mainly terrestrial deposits of southern Saskatchewan, followed by a one-day meeting. Contact Brian R. Pratt, Department of Geological Sciences, University of Saskatchewan, 114 Science Place, Saskatoon, SK S7N 5E2, Canada (tel1306-966-5725, fax 1-306-966-8593, e-mail brian.pratt@usask.ca).

Palaeobiogeography of Australasian Faunas and Floras

University of Wollongong, NSW, Australia

8 - 11 December 1997

The Organizing Committee (Tony Wright, John Talent, Gavin Young) cordially invites all interested scientists to attend this conference and to submit papers for publication and/or oral presentation. The rationale behind the conference is the urgent need for a comprehensive monographic publication summarizing the changing patterns of biogeographic affinities of the Australasian region through geological time.

This meeting will be the only 1997 conference sponsored by the Association of Australasian Palaeontologists, so papers on other palaeontological themes (e.g. evolutionary studies, palaeoecology, precision in biostratigraphy) are welcome. In keeping with the major theme, papers dealing with the biogeography of any group for any geological period are particularly welcomed.

For further information, contact Tony Wright, School of Geosciences, University of Wollongong, Wollongong NSW 2525, Australia. Tel: + 61 42 213 329; Fax + 61 42 214 250; E-mail: t.wright@uow.edu.au

International Symposium: Palaeodiversifications, land and sea compared

Lyon, France
6 8 July 1998

The Conference is held under the auspices of the UMR 5565 of the CNRS and is organised by Mireille Gayet, UFR des Sciences de la Terre, Université Claude Bernard, Lyon I, 27-43 bd du 11 novembre 1918, 69622 Villeurbanne cedex, France (tel +33 (0)4 72 44 83 98, fax +33 (0)4 72 44 84 36, e-mail gayet@univ-lyon1.fr or lysiane.thevenod@univ-lyon1.fr).

5th International Symposium on the Jurassic System

Vancouver, B.C., Canada
17 - 20 August 1998

Organized by the IUGS Jurassic Subcommission. There will be pre- and post-meeting field trips to the Canadian Rockies, the Coast Mountains, the Queen Charlotte Islands and Nevada. Contact Paul L. Smith, Earth and Ocean Sciences, University of British Columbia, 6339 Stores Rd., Vancouver, B.C. V6T 1Z4, Canada. Tel: (604) 822-6456; Fax: (604) 822-

6088; e-mail: psmith@eos.ubc.ca
or via the Symposium Website

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Out of the Archives: Snaps from the past

The Pal. Ass. archive is held at the Lapworth Museum in Birmingham and offers a rare insight into the great and good of previous generations of palaeontologists.

As a taster, here are two photographs of Lapworth on fieldtrips, the first to Comley Quarry, Shropshire, on 30th May 1896, and the second in 1913 (location unknown?).

Lapworth is in the centre, legs bent.

A rather older Lapworth, fifth from right, holding a hat. Also present is

Miss G.L. Elles, of Graptolite monograph fame, particularly prominent as the front-most woman on the left, wearingacharacteristically flamboyant hat.

Our thanks to the Lapworth Museum, University of Birmingham, for providing these photographs from their archives.

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Information, whether copy as such or Newsletter messages, Review material, news, emergencies and advertising suggestions can be sent (preferably on disk) to Dr Sue Rigby, Dept. of Geology and Geophysics, University of Edinburgh, West Mains Road, Edinburgh EH9 3JW; e-mail suerigby@glg.ed.ac.uk
It would be helpful if longer items of copy could be sent on a 3 1/2" disk with text in Microsoft Word or Wordperfect. Disks clearly marked with the owner's name and address will be returned as soon as possible.

Deadline for copy for Issue No. 35 is AUGUST 1 1997.

Palaeontological Association on the Internet

The Palaeontological Association has its own pages on the world-wide web, including information about the Association, and copies of the *Newsletter*. The locator is
http://www.nhm.ac.uk/paleonet/PalAss/PalAss.html

Site-keeper Mark Purnell can be reached by e-mail on map2@le.ac.uk

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Reminder:
Deadline for copy for Issue No. 35 is
***1 AUGUST 1997**.*

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HTML version of The Newsletter by Mark Purnell (map2@le.ac.uk)