Quaternary Australasia

Volume 18 No 2 December 2000 ISSN 0811-0433

Last words from President Paul

Progress in phytolith research

Global continental palaeohydrology

Perfumed Pineries

A new tandem accelorator approved for ANSTO

Book Review:
Mary E. White,
Running Down - Water in a Changing Land

...and much more.

Quaternary Australasia volume 18/2 December 2000

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Material for the next issue should reach the editor by **29th January 2001 (papers)** and **29th February 2001 (other).**

The **Australasian Quaternary Association (AQUA)** is an informal grouping of people interested in the manifold phenomena of the Quaternary. It seeks to encourage research by younger workers in particular, to promote scientific communication between Australia and New Zealand, and to inform members of current research and publications. It holds biennial meetings and publishes the journal *Quaternary Australasia* twice a year. *Quaternary Australasia* is edited by Kate Harle. The annual subscription is $A25 or $15 for students, unemployed or retired persons. To apply for membership please contact Professor Geoff Hope (address below). Members joining after September gain membership for the following year. Existing members will be sent a reminder in December.

All research papers published in Quaternary Australasia have been peer reviewed.

Committee Members

Cover Illustration - Two Kates in the field - core subsampling in southwest Tasmania. Photograph by Henk Heijnis

Editorial

Lucid brevity will be amply rewarded....

One of my clearest memories of undergraduate Quaternary Studies at Monash, is Jim Peterson proffering this wise advise prior to our sitting his exams (which incidentally were far from brief!). He also encouraged us to hand our essays in on time, which I never seemed to manage either! For this issue of QA, however, I think I have finally managed to attain brevity and a reasonable measure of lucidity.

This volume of QA heralds the last of the June/December issues. I have found the timing of production at the end of the financial and calendar years rather difficult, given the demands that more mundane activities, such as work, place on me around these times. It has irked me somewhat (and seriously annoyed Christine) that I never seem to be able to get an issue out on time. So, in the interests of punctuality, and hopefully an associated improvement in quality, I am switching the issue times to March and September. Consequently, the deadlines for the next issue are rather tight (January and February -see front cover), which I apologise for. Anticipating that I may well be light on material for the next issue, I have held over two research papers due for publication in this issue as well as some information technology material. As a result, this issue is more of a magazine than the previous volumes I have produced. It is, nevertheless, packed full of information.

Rob Ferguson has provided an entertaining and candid review of Mary White's latest offering - *Running Down - Water in a Changing Land*. His comments are, I believe, fair and to the point and well worth reading.

There are three conference reports covering a wide range of material. Lynley Wallis has provided an excellent report on the Third International Meeting on Phytolith Research in Turveren, Belgium. Lynley attended this meeting with the assistance of the AQUA Postgraduate Travel Prize, 2001. She was a joint winner with Nick Porche, who will no doubt be soon providing me with an account of the American Quaternary Association 16th Biennial Meeting he attended in May (2000). The deadline for applications of this prize for attendance at conferences up to March 2002 is March 31st 2001. This is not far off, so I suggest the postgrads amongst us scan the conference diary, choose some appropriate conferences and send their applications in to Paul as soon as possible (see page 11). It is well worth applying for, being for up to $1000, and also makes a useful addition to your CV.

Justine Kemp, who is keeping in touch with the Australasian Quaternary scene from the wilds of Scotland, has written a highly informative account of the Fourth International Meeting on Global Continental Palaeohydrology (GLOCOPH), which was held in Moscow in August. The meeting appears to have been an interesting mixture of geomorphology, dendrochronology, palynology and archaeology with a highly scenic and eventful field trip to the Seim River Basin.

Diane Hart has provided an "aromatic" report on the Perfumed Pineries Conference held in Coonabarabran in November. In spite of the threats of floods at the beginning, the conference seems to have been a great success. The state of research into the Australian native cypress pine (*Callitris* sp.) was well covered, with talks ranging from environmental history on varying time scales as well as various aspects of management.

It is interesting to note that the conference/meeting reports were all provided by young researchers. There is still a worrying lack of reporting from some of our more senior Quaternarists, particularly those who attend major international meetings which are closed to the general scientific community. I have mentioned this lack of reporting before and will continue to do so, no doubt, until the situation changes. I feel quite strongly that those who attend international (and even national) meetings that are not open, have a responsibility to share their information with those of us less privileged. In essence they are representing Australasian Quaternary research when they attend such meetings and it would be useful and valuable for some sort of interchange with the Australasian Quaternary research community to occur. AQUA provides the ideal forum for this, whether it simply be presenting a short report at our meetings (which are soon to become annual) or providing a short written report to be published in QA. Such returns to the Quaternary community, on whose hard earned data contributions to such meetings are no doubt based, would not take inordinate amounts of time. Something lucid, something brief.....come on guys, give a little back!

Well on that note of a familiar Aussie whine (it is appropriately 7 pm on Australia Day - which gives away how late this issue is), I'll wrap this editorial up. The next issue will hopefully be on time and once again be bursting with information.

Kate Harle
Editor

Late, Last, Latte

To borrow the generic excuse from my students: this essay is late, I had lots of other essays to write, plus I had to work, and I was stricken down with (illegible)itis so despite my best intentions it is now way overdue and I really don't have a leg to stand on but please look kindly on this offering which will be below the usual standard.

This is my last offering in my capacity as President of AQUA. As my inability to meet deadlines testifies, it is time someone else took over the orb, sceptre and ermine robes. If it wasn't so very late in the day it would be pause for reflection of the glorious achievements of the last few years.

Instead, I will just thank a few people: Kate Harle for the reinvention of the journal and the enormous effort she has placed into producing it; Christine Kenyon who has worked enormously hard on the vital but mundane tasks of keeping subscriptions and membership lists up to date and in ensuring the financial organisation of the conferences; Tim Barrows for maintaining the web site and setting up the AQUA list server. It is worth emphasizing that all three have undertaken these roles while studying and writing their theses, a very generous use of their valuable time. Lastly, Simon Haberle has been lumbered (by me) with the task of organising the conference in Port Fairy, for comparatively little glory. He has my undying gratitude!

I have very much enjoyed the opportunity to be on the AQUA executive and the increased understanding it has provided me of who all the members are, what you do and the chance to talk to more of you than I probably would have otherwise. It has been a pretty good job.

If there are any lingering regrets they are that Kate and I have still not had the success we would have liked in bringing news of international bodies, such as IGBP or PAGES to members of AQUA. In some ways there seems to be a flagging of the sense of a Quaternary community, although this is certainly not the case amongst the many students who attend the conferences and join AQUA.

The Port Fairy conference is set to be a raging success, and I look forward to seeing many of you there.

Now for a coffee.

Yours Quaternarily,

Paul Hesse

Forthcoming conferences & meetings

Australasian Quaternary Association
Biennial Conference
5th - 9th February 2001
Port Fairy, Victoria

The next AQUA meeting is proposed for 5th-9th Feb, 2001 at Port Fairy, western Victoria. The conference will be held in a small conference centre, Southcombe Lodge, which is adjacent to the beach and Griffiths Island Park in Port Fairy. There is a kitchen, bunk room accommodation for up to 66 people and camping facilities at approximately $13 per night. Hotels are also within walking distance.

The given dates are mainly to avoid a clash with the New Zealand Geomorphology/Geographers conference in January 2001 and hopefully will suit the majority of people. The proceedings will include a special oral paper and poster session in honour of Bernie Joyce to focus on new work in and reviews of geomorphic history from the Highlands to the youthful basaltic province of Central and Western Victoria.

Possible pre- and post- conference field trips

A 2 day Pre-Conference fieldtrip in the western plains of Victoria possibly with Bernie Joyce and Kate Harle taking people through a number of key sites on the way to the conference.

A mid conference 1/2 or 1 day fieldtrip to Tower Hill and Discovery Bay.

A post-conference fieldtrip to the Snowy mountains led by Tim Barrows. This would involve one day of travel to get to the Snowy Mountains, one day walking around the glacial lakes (showing the new dated sites etc) and a second day looking at some newly dated periglacial deposits.

For more information or to make suggestions contact:

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Monash University
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Australia
Ph: 03 9905 2932 Fax: 0 3 9905 2948
Email: Simon.Haberle@arts.monash.edu.au

Other general events

QRA Discussion Meeting: The use of modern analogues for reconstructing past environments
(3-5 January 2001)
National Museum & Galleries of Wales,
Contact: Dr. Mary Seddon
Mollusca Biodiversity & Systematic Biology
National Museum of Wales
Cathays Park, Cardiff
Ph: 44-2920-573-343
Email: Mary.Seddon@nmgw.ac.uk

Joint Conference of NZ Geographical Society and Institute of Australian Geographers: "2001 – A Spatial Odyssey"
(30 Jan - 2 February 2001)
Univ Otago, Dunedin NZ.
E-mail: geography@otago.ac.nz

Australasian Archaeometry Conference 2001 Australasian Connections and New Directions
(5-9 February 2001)
University of Auckland, Auckland, NZ
Contact: Australasian Archaeometry Conference
Department of Anthropology
University of Auckland
Private Bag 92019
Auckland, NZ
E-mail: archconf@car.ant.auckland.ac.nz
Website: http://www.car.auckland.ac.nz/archconf/

Global Change Open Science Conference
(10-13 July 2001)
Amsterdam, The Netherlands
International Geosphere Biosphere Programme.
Website: http://www.sciconf.igbp.kva.se

Archives of human impact of the last 200 years
(27-28 September 2001)
AINSE Theatre, Lucas Heights, Sydney
Contact: Workshop Co-ordinator
Archives of human impact of the last 200 years
AINSE, PMB 1, Menai, NSW 2234
Tel: 02 9717 3436
Fax: 02 9717 9268
E-mail: ainse@ansto.gov.au
Website: http://home.ansto.gov.au/ainse/

Archaeology

Computer Applications in Archaeology
(25-29 April 2001)
Visby, Gotland Island, Sweden
Contact: Professor Gvran Burenhult
Cramirgatan 3, 621 57 Visby, Sweden
E-mail: caa@hgo.se
Web site: http://caa.hgo.se/

10th Archaeological Chemistry Symposium
(26-30 August 2001)
American Chemical Society
Chicago, Illinois
Contact: Kathryn A. Jakes,
1787 Neil Avenue,
Columbus,
E-mail: Jakes.1@osu.edu

Archaeological Science 2001
(29 August - 1 September 2001)
University of Newcastle upon Tyne, UK
Contact: Matthew Collins
Email: m.collins@ncl.ac.uk
Web: http://www.ncl.ac.uk/geography/conference/conference.html

Geomorphology

Glacier-influenced sedimentation on high-latitude continental margins: modern and ancient
(29-30 March 2001)
School of Geographical Sciences
University of Bristol
Bristol, England
Contact: Dr. Colm Ó Cofaigh
School of Geographical Sciences
University of Bristol
E-mail: Colm.OCofaigh@bristol.ac.uk

ESF conference, "meso- and microscale sea-surface changes"
INQUA Commission on Sea-level Changes and Coastal Evolution (RT) 17 Paleo-tsunamis and storm records
(31 March - 5 April 2001)
St. Andrews, Scotland
Contact: INQUA Commission on Sea-level Changes and Coastal Evolution
Cesar Andrade,
E-mail: candrade@fc.ul.pt
Website: http://www.pog.su.se/sea/

European Union of Geosciences Biennial Conference: EUG XI
(8-12 April 2001)
Strasbourg
Symposium D2: Late Quaternary Floodplains: sedimentary records of environmental change
Contact: philip.collins@brunel.ac.uk

Symposium D3: Surface- and ground-water cemented geochemical sediments: processes and products
Contact: David Nash
E-mail: d.j.nash@brighton.ac.uk

And many other symposia which could be of interest to Quarternarists. For more information visit
Web: http://eost.u-strasbg.fr/EUG

6th International Drumlin Symposium
INQUA Commission on Glaciation
(17-23 June 2001)
Poland
Contact: Prof. Jan Piotrowski
Department of Earth Sciences
University of Aarhus
E-mail: jan.piotrowski@geo.aau.dk
Web: http://www.inqua.au.dk (see upcoming meetings)

7th International Conference on Fluvial Sedimentology Nebraska, USA "Alluvial and tectonic system interactions"
(6-10 August 2001)
Contact: John Holbrook
Dept. Geosciences,
Southeast Missouri
State University, USA
E-mail: jholbrook@semovm.semo.edu

5th International Conference on Geomorphology
(23 - 28 August 2001)
International Association of Geomorphologists
Chuo University, Tokyo, Japan.
E-mail: 5icg@aptech.co.jp
website: http://wwwsoc.nacsis.ac.jp/jgu/

Palaeo-ice stream international symposium
INQUA Commission on Glaciation
(17 - 20 October 2001)
University of Aarhus, Denmark
Contact: Prof. Jan Piotrowski
Department of Earth Sciences
University of Aarhus
E-mail: jan.piotrowski@geo.aau.dk
Web: http://www.inqua.au.dk (see upcoming meetings)

VI International Symposium and Field Workshop on Paleopedology (ISFWP)
(October 2001)
Mexico City, Mexico
Contact: INQUA Commission on Global Continental Palaeopedology
Dr. Elizabeth Solleiro-Rebolledo,
nstituto de Geologia, UNAM
Ph: +52-56-22-42-86 ext. 142
E-mail: solleiro@geologia.unam.mx,
Website: http://inqua.nlh.no/commpl/pedmeet2.htm

17th World Congress of Soil Science Arid and Semi-Arid Soils: Records of Past Climates, Carbon Sequestration, Genesis and Management
Bangkok Thailand
(14-21 August 2002)
Contact: Dr. Brenda J. Buck
Department of Geoscience,
University of Nevada Las Vegas,
E-mail: buckb@nevada.edu

Micro and Macro Fossils

3rd International Congress of Limnogeology
(29 March - 2 April 2003)
Tucson, Arizona
Contact: Andy Cohen
E-mail: acohen@geo.arizona.edu

12th Symposium of the International Workgroup for Palaeoethnobotany (IWGP)
(17-23 June 2001)
Sheffield, England, UK.
Contact: IWGP,
Department of Archaeology and Prehistory,
University of Sheffield
E-mail: iwgp@sheffield.ac.uk
Website: http://www.shef.ac.uk/uni/academic/A-C/ap/conf/iwgp/iwgpx.html

The state of the art in phytolith and starch research in the Australian-Pacific-Asian regions
(1-3 August 2001)
The Australian National University
Contact: Lynley Wallis Department of Geoscience,
Dept of Archaeology and Natural History
Research School of Pacific & Asian Studies
ANU, Australia
E-mail: car.conference@anu.edu.au
Website: http://car.anu.edu.au

The state-of-the-art in phytolith and starch research in the Australian-Pacific-Asian regions

1-3 August 2001

The Australian National University Canberra, Australia

Expression of Interest Form

Please complete the details on this form and return it to:
Lynley Wallis,
Department of Archaeology and Natural History,
RSPAS, ANU, Canberra ACT 0200,
Australia
(e-mail: car.conference@anu.edu.au).

Name
Address
Institution/Affiliation
Phone
Fax
E-mail

Are you interested in attending the conference?
Are you interested in giving an oral presentation?
Are you interested in giving a poster presentation (with five minute oral introduction)?

If you are thinking of giving a presentation, please indicate the general area of research, selecting from one ore more of the following categories:
archaeology
palaeoenvironment
botany
sediments
Pacific (specify where exactly)
Asia (specify where exactly)
Australia (specify where exactly)
Other (specify where exactly)

Are you interested in a hands-on workshop component? If so, please specify what areas you would like to cover? e.g. laboratory techniques (any in particular), light microscope techniques, SEM, image capturing and archiving.

Third International Meeting on Phytolith Research, Turveren, Belgium

by Lynley Wallis

Department of Archaeology and Natural History
Research School of Pacific and Asian Studies
The Australian National University
Canberra ACT 0200, Australia

The Third International Meeting on Phytolith Research was held at the Royal Museum of Central Africa, Tervuren (on the outskirts of Brussels), from the 21st to the 25th of August, 2000. The meeting was attended by 40 participants, including representatives from Argentina, Australia, Belgium, China, Finland, France, Germany, Italy, Mexico, Netherlands, Russia, Spain, Sweden, Switzerland, UK and USA. Although numbers of participants were fewer than seen at the previous international phytolith meetings, this by no means detracted from the value of the conference as a venue for information dissemination and forging useful contacts with like-minded researchers.

Under the banner of 'Man and the (Palaeo) Environment: The Phytolith Evidence', 22 papers and 14 posters were presented within four well-established, broad research streams: Phytoliths and Soils; Phytoliths and Plants; Phytoliths and Archaeology; and Phytoliths and Palaeoenvironment. Additionally, two afternoon workshops were held, the first on the issue of 'Phytolith Nomenclature' and the second on 'Mineral Inclusions in Woody Tissues'.

Three papers and three posters by Australian researchers were offered. Doreen Bowdery from The Australian National University presented the results of phytolith analysis at three archaeological sites in Indonesia. I presented two papers, one of which examined the phytolith evidence from an archaeological rockshelter in northwest Australia, with the second paper exploring the value of phytoliths as indicators of ecological zones with modern sediments from the Kimberley region as a case study. The three posters (co-authored by Doreen Bowdery, Di Hart, Carol Lentfer and myself) addressed the issue of phytolith morphological descriptions, nomenclature and identification keys, building on earlier work presented at the Second International Meeting on Phytolith Research in 1998. As was also the case previously, these posters generated a considerable amount of discussion (not always supportive!) and were particularly pertinent given the nomenclature workshop.

It was extremely promising for the future of the discipline to see that so many of the participants were newcomers, with the high quality of research (especially that of a fundamental nature) undertaken by students rivalling the best that the old hands could offer. In particular, great interest was generated by the work of PhD student Adriana Carnelli (University of Geneva, Switzerland) who demonstrated using trace element analysis that polyhedral phytoliths produced by conifers and Eriaceae always contain high levels of Aluminium, in contrast to similar forms produced by monocotyledonous plants, the latter of which apparently always have very low Al levels. This bears out the suggestion made by our own Di Hart in 1998 (at the Australasian Phytolith Workshop held at Macquarie University) that the elemental composition of phytoliths might prove a valuable means of 'fingerprinting' sediments or identifying the source of phytoliths in sediments, allowing researchers to move beyond simply the morphological identification of 'types'.

One of the (hopefully) positive results to emerge from the 'Phytolith Nomenclature' workshop component of the conference was the formation of an official 'International Committee on Phytolith Nomenclature' (ICPN). Members were appointed by the Society of Phytolith Research (SPR) to the committee and include Marco Madella (Cambridge University, UK - Chairperson), Anne Alexander (CEREGE, France), Terry Ball (Brigham Young University, USA – SPR Representative) and myself. However, given that similar working groups formed by the international phytolith community have failed spectacularly in the past (most recently after the last meeting in France), time will reveal whether the new committee will be more effective.

Another constructive proposition raised at the conference was the development of an on-line database providing information on past and present researchers involved in phytolith studies, and detailing their respective projects and areas of investigation.

Just in case it sounds as though the conference was all work and no play, it should be mentioned that socially it was also a great success, with the smaller number of attendees resulting in a greater sense of group cohesion and

unity. This sense of bonding was certainly aided by the attempts of some delegates to collectively sample the more than 450 Belgian beers on offer in Brussels. Definitely more civilised was the conference dinner featuring speciality Belgian foods, (supplemented by more beers), a highlight of which was the treacherous trek up and down an extremely rickety and precarious set of narrow stairs to the third floor of the brasserie. On the final afternoon, conference attendees were treated to a fascinating historical tour of Brussels led by Ann Degrave, a local archaeologist with the Royal Museums of Art and History and the Region of Brussels Capital.

I would like to thank the Australasian Quaternary Association for kindly assisting with my travel expenses via the provision of a Student Travel Prize.

A booklet of abstracts from the conference can be obtained by contacting the President of the Organising Committee, Luc Vrydaghs, at the Royal Museum of Central Africa, Lab of Wood Biology and Xylarium, ch. de Louvain 13, B-3080 Tervuren, Belgium or by e-mail at mphytor@africamuseum.be. A volume of papers from the conference is being prepared and will be published as an issue of the Annals of the Royal Museum of Central Africa in 2001.

It has tentatively been proposed that the Fourth International Meeting on Phytolith Research be held at Cambridge University in the UK in 2002. Readers are also advised of the upcoming Phytolith and Starch Conference to be hosted by the Centre for Archaeological Research (ANU) in August 2001 (see the upcoming conference notice in this journal).

Fourth International Meeting on Global Continental Palaeohydrology (GLOCOPH)

Moscow, 21-26 August 2000

by Justine Kemp

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The 4th meeting of GLOCOPH, a subcommission of INQUA (International Quaternary Association) was held in Moscow, in the magnificent new Russian Academy of Sciences building near Gorky Park. The group was moderately small, 28 international delegates and perhaps 35 Russians attended, some of whom had travelled from as far as Uzbekistan and Siberia. 36 papers were delivered in three days with one poster session.

GLOCOPH meetings aim to bring together people from geological, geomorphic and historical backgrounds who study the hydrological consequences of global climate changes from different areas around the world. The emphasis is on understanding past hydrological responses to climate that they may provide good analogues of future conditions. This year, GLOCOPH was held jointly with the Symposium on Glaciation and Reorganisation of Asia's Drainage Network of Drainage (GRAND), led by Jim Teller (Winnipeg). This group was formed specifically to study the extent and timing of late Quaternary glaciation in Siberia, the Himalayas and Tibet, and the impact this ice had on the continent's hydrological system.
Ken Gregory (Southampton), the present President of GLOCOPH, opened the meeting. Some of the original GLOCOPH members were present, including Victor Baker, Leszek Starkel (Krakow), Mike Thomas (Stirling), Tony Brown (Exeter) as well as newer members from Europe, Japan, Brazil and Canada who presented papers on diverse subjects. One paper was presented on the Australian region from Mike Thomas (Stirling) on late Pleistocene alluvial fans along the northern Queensland escarpment. Because the conference was held in Russia, the spirit of the meeting was pioneering. There still remains much work to be done to develop a framework of Quaternary change in Russia's vast territory. Andrey Panin (Moscow) presented a preliminary history of palaeochannels of the Seim and Svapa rivers of the central Russian Plain with fluvial histories also from the Tisza valley, Hungary (Kees Kasse, Amsterdam), Zapadnaya Divina river, Belarus (T. Kalicki, Krakow) and the Vychegda River, northern Russia (A.

Sidorchuk, Moscow). Vegetation histories are emerging from European Russia (D. Subetto, St Petersburg). Margriet Huisink (Amsterdam) described hitherto unstudied rivers in sub-arctic regions of eastern Russia. As many expected, Mikhael Grosswald (Moscow) began several entertaining and vociferal debates on the extent of last glacial ice in Siberia.

An interesting session was devoted to records from the historical period. The construction of tree-chronologies from the Central Russian plain was discussed by M. Chernavskaya (Moscow). These temperature records, extracted from oaks growing at their latitudinal limits, now extend back to the 16th century. A. Krenke (Moscow) presented a collection of documentary records of extreme climatic events, including floods, droughts and catastrophic storms, that he argued show the effects of the Medieval Warm Period and Little Ice Age extending into the Russian Plain. The recent increase in large floods in Germany prompted historian, Mathais Deutsch (Erfurt), to collect information on floods for seven rivers in the Elbe Basin. His flood record (1500-1900) shows a significant concentration of floods during the 18th century beginning around 1720. Gerardo Benito's (Madrid) impressive flood archive for the Tagus River in central Spain, based on documentary, historical and sedimentary sources, extends back to AD849 and shows that the period of peak flooding in this region did not coincide with the Little Ice Age but occurred AD1100-1200.

Most of the international visitors stayed on for the field trip to the Seim River basin led by Andrey Tchepalyga and Andrey Panin. A slow overnight train took us to Kursk, 500 km due south of Moscow. Over the next three days we travelled extensively within a large radius of Kursk over the wide forest-steppe of the Middle Russian Uplands. Despite its northerly latitude, this part of the Russian plain was not ice-covered during even the most extensive of the Quaternary glaciations. Except for the influence of permafrost, the landscape must have appeared similar to parts of Australia during the late Pleistocene, with accumulating loess deposits, reduced vegetation cover, and higher sediment loads from a periglaciated catchment. We visited terraces and palaeochannels of the Seim River basin that were active during this period. Within the loess are impressive buried soil profiles with preserved pollen assemblages that cover the last glacial cycle.
The present soils are fertile black chernozems, which support the region's intensive and important agriculture. However, we visited an archaeological site on the banks of the Seim which suggests the area was inhabited 17,000 years ago when the climate and soils were far worse. We were impressed when the excavated figurines, carved from mammoth tusks, were brought from the museum for our inspection. Several archaeologists and geomorphologists working on the site gave short presentations to us and to a news group from Kurchatov city. Leszek Starkel (Warsaw) was persuaded gave an impromptu interview for the television cameras in schoolboy Russian!

The day the television tower caught fire and hope was abandoned for those aboard the *Kursk*, we were back in Moscow, with a little time to visit the museums and galleries before departing.

The next meeting in Spain, 2002, will be the last of GLOCOPH in its present form. A proposal to extend the sub-commission, under the topic "short term palaeohydrological change" will be submitted to INQUA at the next congress. Anyone who wishes to be added to the membership list for GLOCOPH or to be informed about its activities should contact Gerardo Benito (benito@ccma.csic.es) or myself (Justine.Kemp@stir.ac.uk).

Perfumed Pineries Conference

by Diane Hart

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Sydney, NSW, Australia
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A conference on the environmental history of Australia's cypress pines was held from Monday 20th November to Friday 24th November 2000 in Coonabarabran, NSW. The "Perfumed Pineries" conference was arranged and supported by the Australian Forest History Society Inc., The Australian National University and Macquarie University and was organised by John Dargavel (Department of Forestry, ANU) and Diane Hart (Department of Physical Geography, Macquarie University).

The conference was deliberately timed to take advantage of the fine, sunny weather normally enjoyed by northwest NSW in November. But, in the days before the conference, the sky darkened and the rain came down and by Monday one-third of NSW and most of the area around Coonabarabran was under water. Roads began to close.

By the time of the opening on Monday night only half of the attendees had managed to struggle through rapidly rising floodwaters. Tuesday morning saw the beginning of paper sessions and a sudden influx of damp but determined conference delegates. In all, the conference was attended by 65 delegates from many diverse areas brought together by their interest in the Australian native cypress pine (*Callitris* sp.). It was a great success.

The first session on Tuesday, "Long History", featured a keynote paper from Henry Nix (Centre for Resource and Environmental Studies, ANU) which examined the long environmental history of cypress pine judging the genus to be the most successful of the austral conifers given the extremely wide range of environments it occupies.

Of interest to Quaternarists was a paper by Paul Hesse and Geoff Humphreys (Department of Physical Geography, Macquarie University) on the "Quaternary environments, geomorphology and landscape history of the Pilliga". One landscape discussed, an alluvial outwash plain, still shows traces of the abandoned channels of the creeks which constructed it; palaeochannels known locally as "sand monkeys" which thermoluminescence dates show were active to around 60 000 to 45 000 years ago.

Dating of the native pine was covered in a session on Tuesday dealing with dendrochronology and stump counts. Tree-ring chronologies are difficult due to false and missing rings but a paper by John Banks (Department of Forestry, ANU) suggested that with careful site selection these problems could be minimised. Papers were also presented which covered *Callitris* pollen (Jon Luly, Alison Holmes), phytoliths (Diane Hart) and wood anatomy (Roger Heady).

David Bowman (Northern Territory University) gave the first of Wednesday's keynote papers, "The 'wilderness effect' and the decline of cypress pine on the Arnhem Land Plateau, northern Australia". Systematic differences in the proportion of living and dead cypress pine trees detected in aerial surveys of the Arnhem Land Plateau in an area where Aboriginal people still lead a semi-traditional life style, led to a model which suggests that cypress pine populations rapidly fluctuate in response to changes in fire regime but that extinction is unlikely if some seedlings escape burning in fire-protected micro sites.

On Wednesday afternoon Jim Noble's (CSIRO Wildlife & Ecology, Canberra) keynote paper on "A tale of two pineries" contrasted the "woody-weed" problem in the cypress and poplar box woodlands with the endangered status of mallee cypress pine. Historical evidence suggests that prior to European settlement interactions between grazing, fire and browsing of regenerating vegetation produced complex mosaics in a wide range of ecosystems. The impacts of altered fire regimes after European settlement were discussed.

The conference attracted a range of posters including a series on the Pilliga fires by Peter Brookhouse (NSW Parks and Wildlife Service) which traced the fires of the last 50 years and demonstrated that the area most burned by wildfire is in the eastern Pilliga.

The conference was to tour the East Pilliga State Forest on Wednesday, but the weather forced a change of plan and day to Thursday. The weather held fine and cool, and a pleasant day was spent on the Forest Study Tour, led by Don Nicholson (State Forests of NSW, Dubbo) and Diane Hart (Department of Physical Geography, Macquarie University). In the afternoon, researchers from the Macquarie University group (Geoff Humphreys, Paul Hesse, Liz Norris and Diane Hart) introduced the delegates to a variety of landscapes, both present and past. These included an example of the extensive network of palaeochannels (sand monkeys), with their distinctive vegetation and soils; mallee and broomplains; and a visit to Salt Caves to look at the small salt weathered outcrop of conglomerate and sandstone, part of a lithic sandstone unit which overlies the more spectacular quartz-rich Pilliga sandstone seen elsewhere.

Friday morning saw remaining delegates planning the future of cypress pine studies. In the light of the lack of any overall treatment of the *Callitris* genus, it was decided to explore the possibility of filling this gap. An editorial board was chosen and the possibilities of further collaborative research discussed. Any Quarternarist who is currently working or has worked in the native pine forests and who wishes to investigate contributing to a future publication should contact Diane Hart, e-mail dhart@nelsonbay.com

In all, a thoroughly enjoyable conference with many ideas shared and new friends made. The Proceedings will be available mid-2001 from the organisers.

AQUA Student Travel Prize

Applications are now open for the AQUA Postgraduate Travel Prize, 2001.

The prize (up to $1000) supports a postgraduate student in Quaternary studies to attend an international conference.

Applications close on March 31st 2001 for attendance at conferences up to March 2002.

Downloadable forms are available from the AQUA web site:

http://rses.anu.edu.au/enproc/AQUADATA/AQUA/aqua_aa.html

Send completed applications to Paul Hesse, by the deadline.

Department of Physical Geography
Macquarie University, Sydney
NSW 2109, Australia
Ph: 02-9850 8384
Fax: 02-9850 8420
E-mail: phesse@laurel.ocs.mq.edu.au

Monash answers the Baby Boom challenge

Not to be left behind ANU, the Monash contingent has answered with their own baby boom, albeit partly long-distance.

Angus Gillespie-Penny was born to Dan (of diatom fame) and Josie on Sunday 6th August at 1:04 am. The happy event took place in Scotland (presumably the inspiration for his name) whilst Dan was conducting research at Edinburgh University.

Back in Melbourne, Antonia Grace Haberle was born to Simon and Kath at 9.30 pm on Thursday 26th October (3.3kg, 7.5lbs).

Congratulations to both couples.

New Accelerator for AMS C-14 Dating

In late 1999, The Australian Research Council awarded a RIEF (Research Infrastructure Equipment and Facilities) grant of A$1M to a consortium of 12 universities, ANSTO and AINSE (The Australian Institute of Nuclear Science and Engineering) for the purchase of an accelerator facility for environment, archaeology and heritage, biology and materials sciences.

The tendering process for this equipment has now been completed and a purchase order was placed in December 2000 for a 1.8MV tandem accelerator manufactured by HVEE (the Netherlands) at a total cost of approximately A$2.72M. The equipment is contracted to be delivered to Lucas Heights for installation at ANSTO's laboratories in October 2002, and for operation by July 2003.

Since the original application for funding was submitted, a further 11 universities have committed funds to the project beyond their normal AINSE subscription. The current 23 university contributors represent nearly all participants in the fields of Quaternary Research in Australia.

The accelerator will be used principally for two purposes, carbon-14 dating by accelerator mass spectrometry, and for ion-beam analysis (IBA). The latter includes near non-destructive elemental analysis of small volumes of materials, such as aerosol and dust particles, samples of rock art, pottery, other archaeological materials (eg. glazed ceramics, coins) and industrial materials (eg. electroplated metals, exhaust catalysts, polymers, micromachines and semi-conductors).

The specified precision of the new equipment for AMS ^{14}C dating is 0.5% and the degree of automation is expected to lead to greater throughput of samples than is currently available with the existing ANTARES accelerator.

The higher voltage ANTARES system will continue to be used for other cosmogenic isotopes (eg. ^{10}Be, ^{26}Al, ^{36}Cl and ^{129}I) and for higher precision ^{14}C measurements. Consideration is being given to a major upgrade of graphite-target preparation facilities at Lucas Heights to further increase the number of samples that can be ^{14}C-dated for the Australasian Quaternary Community.

In the most recent round of AINSE awards (October 2000 submissions), 48 applications from Australasian universities were approved (total value $224,580) for accelerator-based dating. It is this increasing demand for such dating that will be addressed by the commissioning of the new accelerator.

For further information, please contact:

Prof. Allan R. Chivas
School of Geosciences
University of Wollongong, NSW 2522
toschi@uow.edu.au
Ph: (02) 42213263
Fax: (02) 42215703

Convenor, AMS Specialist Committee of AINSE; and
Chairman, Stakeholders' Advisory Committee, New Accelerator Project.

PhD studentships

Department of Biological Sciences, University of Durham, UK.
A PhD position is available in the Department of Biological Sciences at the University of Durham.

Project title: Quantifying pollen-vegetation relationships across the Arctic tree line
Supervisors: Prof. Brian Huntley & Dr Judy Allen, with Dr Geoffrey Smith (CEH, Monks Wood)
Enquiries to: Jean Mather (jean.mather@durham.ac.uk)
http://www.dur.ac.uk/biosci

Quaternary Geology and Palaeoclimatology
The Department of Geosciences, University of Nebraska - Lincoln has several openings for graduate research assistantships, funded by NSF grants:

Project title: Holocene Lake-Level Fluctuations in West Greenland
Supervisors: Sheri Fritz and Mike Blum

Project title: Late Quaternary Fluvial Systems of Southern France
Supervisor: Mike Blum

Project title: Late Quaternary Loess Stratigraphy of the Central Plains
Supervisor: Joe Mason

Project enquiries to:
Sheri Fritz (sfritz2@unl.edu), Mike Blum (mblum@unl.edu) and Joe Mason (jmason2@unl.edu)
http://www.unl.edu/geology/geohome.html

Department of Physical Geography, Macquarie University
There is an opportunity for a student with interests or background in Quaternary palaeoclimatology and climate modelling to undertake a project in earth system modelling using EMICS at Macquarie University, Sydney.

For more information contact:
Prof. Andy Pitman, ,
apitman@penman.es.mq.edu.au

Lectureships

Lecturer in Plant Ecology and Groundwater Studies
Environmental Sciences
University of Technology, Sydney
The Department of Environmental Sciences and the National Centre for Groundwater Management invites applicants for the position of Lecturer in Plant Ecology and Groundwater Studies.
The position is a 3-year lectureship.
Salary range - $55,0558-$60,024
Available from early 2001.
For further details contact Professor Derek Eamus (Derek.Eamus@uts.edu.au)

INQUA news

Planning is proceeding for the next INQUA Congress to be held in Reno in 2003. A key component of the Congress is the program. John J. Clague is chairing the Program Committee and is seeking suggestions for symposia. A list of topics supplied below is given below. The committee is aiming to keep the number of concurrent sessions small in order to maximise attendance.

List of suggested symposia received to date:
"Onset of the last glaciation: regional and global environments during isotope substage 5d"

"Neoglaciation: regional and interhemispheric patterns and chronology"

"Climate change in the tropics during the last glacial-interglacial cycle"

"Advances in modelling Quaternary environmental change"

"People of the Americas"

"Past episodes of rapid climate warming in the Quaternary"

"Linked atmosphere-ocean forcing of climate change"

"The end of the last glaciation"

"Impacts of climate change on surface processes and the landscape"

"The use of paleoseismology in evaluating seismic risk"

"Rates of change during the Quaternary"

"Deserts"

"What's happening to the Greenland and Antarctic ice sheets? -- Recent and present changes in regime"

Please send suggestions to

John J. Clague
Department of Earth Sciences
Simon Fraser University
Burnaby, British Columbia
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E-mail: jclague@sfu.ca
Web: http://www.sfu.ca/earth-sciences/faculty/clague.htm

New and re-released books and journals

Textbook of Pollen Analysis, 4th. edition

(Blackburn Press - http://blackburnpress.com)

By Knut Faegri, Johs. Iversen, Peter Emil Kaland and Knut Krzywinski

This book is a reprint of the fourth edition of the Textbook of Pollen Analysis and is unique in its approach as it discusses both the practical and theoretical aspects of palynology. It uses palynological techniques as tools for solving problems in quaternary geology, ecology and archaeology.
This edition of this standard reference has the same objectives as the earlier ones but the objectives have been widened, particularly the archaeological.

There are over 130 illustrations and the identification keys have been thoroughly revised and are now illustrated.

ISBN 1-930665-01-6

Price: $74.95 (US?)

The Seed Identification Manual

(Blackburn Press - http://blackburnpress.com)

by Alexander C. Martin and William D. Barkley

This title was first published by the University of California Press and is an attempt to deal with the long-standing need for a reference work dealing exclusively with seed identification.

The immediate aim of the manual is to help agriculturists, foresters, wildlife biologists and others interested in land-use programs to identify the seeds in their particular fields of interest. The authors have, in the main, restricted the content of the description to those characteristics useful for identification. The descriptions are, to the extent possible, nontechnical and therefore useful to a broader range of interests and skills.
(It could be useful for macrofossil studies - Ed)

ISBN 1-930665-03-2

Price: $64.95 (US?)

New Journal - Prehistoria 2000

Journal of the International Union of Prehistoric and Protohistoric Sciences Revue de l Union Internationale des Sciences Prihistoriques et Protohistoriques

At the end this year the first issue of a new archaeological Journal, called Prehistoria 2000 will appear. The journal will be published by the UISPP, better known as the International Union for Pre- and Protohistoric Sciences. The main goal of this new periodical will be the encouraging of a continuous exchange of knowledge between specialists in the entire world. In order to achieve this, a wide range of scientific information will be supplied and discussions between various scholars will be hosted.

The actual publication of the new journal has been foreseen for the year 2001, when its first issue will be distributed during the XIVth UISPP Congress, being held in Lihge (Belgium) from 2-8 September of that year. From then on Prehistoria 2000 is intended to appear on a yearly basis. A special issue, however, consisting of a more summary version of the journal as it will be, was planned to appear at the end of 2000. For more information contact Sandra Verhulst (E-mail: s.verhulst@abaco-mac.it).

Reviews

A review of Running Down - Water in a Changing Land

Mary E. White,
Kangaroo Press, $50.00

by Dr Rob Ferguson
Department of Physical Geography
Macquarie University
North Ryde
NSW 2109

Mary White has done a generally excellent job in synthesising a large body of Australian river literature into a format suitable for consumption by all. That this lavishly illustrated hard cover book is available at the very reasonable price of $50 is a credit to Mary, her publishers and generous sponsorship of CSIRO Land and Water and Bob Walshe, Chair of Sutherland Environment Centre.

Mary takes us on a region by region tour of Australian river systems, and gives the reader far more than just Holocene fluvial processes and landforms. A distinct effort has been made to give insight into long term fluvial and landscape evolution, with western (Yilgarn Plateau) and southeastern examples (Riverine Plain, eastern passive margin, Cranbrook Terrace) getting good treatment. This summary alone makes it a required purchase for members of Quaternary Australasia. I really like this approach, making it ideal for quick initial dips into regions that one is unfamiliar with. As a professional fluvial geomorphologist, I will use it for such a purpose, and I'm confident that other scientists, university and secondary students will be ongoing users too. There is no doubt that this book should be purchased by every scientist and professional working with or trying to manage the Australian landscape. I'm sure that every school and public library in the country will soon have a copy. This book will be a vital resource, particularly for secondary students. It would be nice to think that a copy would end up on every politician's bookshelf - and with the PM belatedly getting on the salinity mission even this might not be too much of a fantasy.

However many of our politicians and business community may not like what Mary has to say. From page one the book is fantastically up front in ramming home the environmental degradation and indeed vandalism inflicted on our rivers over the last 200 years. I was particularly impressed with critiques on European land use practices, major water transfer and irrigation schemes, and the horrific prospects of potential schemes on the Fitzroy. Groundwater too has not been neglected. I was delighted to read very early on (p.6) that "floodplains are essential components of Australian river systems"

I do have some niggles, which will take up a disproportionately large chunk of this review! To some degree this is unfair, as on the whole my praise for this book, it's scope, presentation and vision is unstinting.

Firstly, this book is a synthesis of the work of numerous scientist, including a number of my closest colleagues. To be blunt, I feel Mary has been somewhat miserly and inconsistent in her acknowledgement of those whose work she has so extensively utilised. For example Wende is mentioned in the text as the worker responsible for studying the Durack River in the Kimberley, but the Bega work is attributed only to "scientists at Macquarie University". As a scientist herself I would have thought Mary more in tune with the professional need and plain courtesy to carefully acknowledge all concerned. I'm not suggesting that fragile egos need boosting, but more to make the kiddies at secondary school aware that science is carried out by real people.

Secondly, the range subject matter presented is highly selected, with noticeable absences. For example Erskine's work in the Hunter catchment, and Warner's in the Bellinger are two obvious omissions. Many millions of Natural Heritage Trust dollars have been spent on river rehabilitation. As such, I would have thought a section or even chapter dedicated to efforts to revive our vandalised rivers quite appropriate.

There are a number of unfortunate and very obvious errors in some of the figures. The figure on page 137 showing the location of the escarpment on the NSW south coast is simply wrong in a number of places! Having done a PhD on the lower Tuross River, I can assure Mary White that the escarpment in the Tuross catchment is nowhere near Bodalla. On page 147, the detachment of over 8 000 km^2 of Mann/Boyd/Nymboida drainage

from the Clarence River is indeed unfortunate. As a general comment, the often superb photos and figures are let down by poor captions. There is also a distinct lack of cross referencing photo and figure locations to catchment maps. And please! some discharge and stream power figures to accompany the fabulous photo of Katherine Gorge in raging flood in 1998 (p.86) would make my day. Gerald Nanson's set of aerial photos of Cooper Creek are a real highlight.

While I applaud the attempt at systematic catchment by catchment coverage of the NSW north coast, it falls short at times. The single paragraph on the Macleay catchment tells us nothing. The recent work of Weissel and Seidl (1998) unfortunately gets no mention, which I find surprising given the author's interest in long term landscape evolution.

I admit many of these comments are minor in the overall scheme of things. Without hesitation I recommend this book to everyone in Quaternary Australasia. This book will be around for a very long time to come, and rightly so. Well done to Mary White (and sponsors) for producing a long overdue summary of Australian rivers, and wrapping it up with a forceful environmental message.

Thesis abstracts

Secrets in the sediments: a history of human impacts upon Lake Dora, western Tasmania

Kate Corke (Hons)
Department of Environmental Science
University of Wollongong

Lake Dora lies in the West Coast Range, Tasmania, an area which has been subject to extensive mining activities since the middle of the nineteenth century. Environmental impacts from these activities include the denudation of the hills surrounding Queenstown from an extensive metal smelting industry and severe contamination of King River with toxic levels of heavy metals. The aim of this project is to identify the extent of post-colonial human impact upon Lake Dora, which is located approximately fifteen kilometres north-east of Queenstown and less than thirty kilometres from two other major mining centres, Rosebery and Zeehan. This study forms part of a larger project researching human impact and climate change in Australia (managed by Australian Nuclear Science and Technology Organisation).

A nine centimetre sediment core from the deepest part of Lake Dora was dated and sedimentation rates determined using the ^{210}Pb technique. The oldest basal date for this core is *ca.* 1774 AD $\pm$ >40 yrs, well before European occupation in western Tasmania. The overall sedimentation rate from *ca.* 1774 to the present was 0.037 cm/yr, which is significantly slower than many other mainland Australian lakes but compares with other lakes in Tasmania. Several disturbances were identified in the ^{210}Pb profile that may correlate to local prospecting and regional mining activities.

Trace metals were analysed along the sediment profile and showed substantial elevations in several metals, commencing *ca.* 1900 and increasing sharply to the late 1970s. This was followed by a decrease in metal concentrations. These changes correlate with records of mining and associated activities for the relevant period. Autecological information from a modern diatom set of highland lakes in western Tasmania was applied to fossil diatom assemblages from Lake Dora in order to reconstruct past pH, HCO_3 and Ca values. No clear pattern of temporal change was identified within either the palaeo-reconstructions or the diatom assemblages. These results suggest that although Lake Dora has not suffered acidification from nearby smelting works it has been subject to impacts from the regional mining activities in the form of elevated trace metal concentrations. Investigations of the broader ecosystem and other water quality parameters may further elucidate the impact of mines and associated industries on lakes located in the vicinity of mining regions.

Other Recent Publications

Baker R.G.V and Haworth R.J. 2000. Smooth or oscillating late Holocene sea levels in southeast Australia: an application of the fixed biological indicator method. *Marine Geology* 163, 367-386

Baker R.G.V and Haworth R.J. 2000. Smooth or oscillating Late Holocene sea levels in the Southern Hemisphere: a statistical analysis. *Marine Geology* 163, 387-402.

Haworth R.J., Gale S.J., Short S. and Heijnis H. 1999. Land use and lake sedimentation on the New England Tablelands of New South Wales, Australia. *Australian Geographer.*, 30, 51-74.

Haworth R.J. and Baker R.G.V. 1999. Evidence for the nature of late Holocene sea-level fall on the New South Wales coast from fixed biological indicators: was the fall smooth or fluctuating? *Geodiversity Proceedings of the IAG Conference 1998.* Australian Defence Force Academy, Canberra, pp 1-9.

Lowe, D.J.; Newnham, R.M.; McFadgen, B.G.; Higham, T.F.G. 2000. Tephras and New Zealand archaeology. *Journal of Archaeological Science* 27, 859-870.

Newnham, R.M.; Lowe, D.J. 2000. Fine-resolution pollen record of late-glacial climate reversal from New Zealand. *Geology* 28, 759-762.

Instructions to authors

This mostly applies to those submitting research papers. However, the formatting information will also be of use to those submitting research/conference reports and other material.

Preparation of the text

a) The manuscript should preferably be prepared using a word processor, with single spacing using either Abadi MT Condensed Light or Ariel font. The document should have at least a 2 cm page margin.
b) Please provide an abstract of no more than 200 words.
c) Please include on the title page the name(s) of the author(s), their affiliations, fax and email numbers. In the case of more than one author, please indicate to whom the correspondence should be addressed.

References

a) References in the text should consist of the surname of the author(s) followed by a comma then the year of the publication in parentheses. eg. (Quaternarist, 2000) (Quaternarist and Palynology, 2000)
b) The reference list should contain all authors of a paper, the year of publication, the title of the article/chapter, the full name of the journal or book (if relevant) italicised, page numbers. See examples below.

Quaternarist, A.B., 2000. The top twenty field sites in Australia. *Journal of Field Studies*, 62 (2), 191-200.

Quaternarist, A.B. and Palynologist, C.D., 2000. The top twenty field sites in Australia. In A.N. Smith (editor). *A Guide to Happy Quaternary Studies.* Fun Book Company, Sydney. 109-146.

Quaternarist, A.B., Palynologist, C.D. and Geomorphologist, E.F., 2000. *A Guide to Happy Quaternary Studies.* Fun Book Company, Sydney. 300 pp.

Tables and figures

a) Tables and figures should be compiled on separate sheets and should be numbered according to their sequence in the text.
b) Both table and figure captions should be supplied on a separate sheet.
c) Figures should be constructed taking into account the possible need for reduction.

Submission of manuscript

a) Authors are requested to provide the names and addresses of two potential referees.
b) All manuscripts should be sent in duplicate to the editor (see below for address)
c) Submission of an article is understood to imply that the article is original and unpublished and is not being considered for publication elsewhere.
d) Final versions of the article should be submitted in electronic format as a word file (PC is preferred). These can either be sent on floppy disk (which will be returned at a later date) or as an attachment using email. In the case of the latter, the file will need to be in PC format as the editor's stupid computer cannot read Macintosh files sent as attachments!
e) Final tables should be sent as separate word files.
f) If possible, final figures should be sent as bmp files scanned at 400 dpi. If you do not have access to a scanner, then please submit good quality versions on paper.
g) Address for submission:

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Quaternary Australasia

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