CAM QUA

The newsletter of the
GODWIN INSTITUTE FOR QUATERNARY RESEARCH

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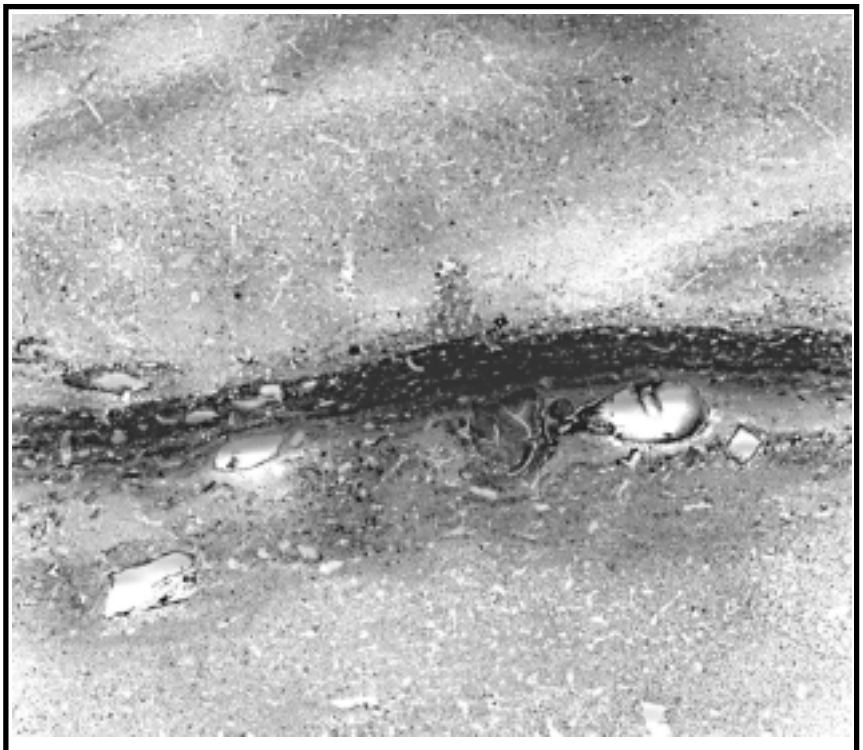
Refurbished laboratories pave the way for collaborative research

Laboratory changes enable comprehensive soil and sediment characterisation

Following a summer of upheaval, the Department of Geography is pleased to announce the opening of three newly refurbished laboratories. These new facilities include a more spacious Graduate Microscope Room, a new Malvern Room housing a brand new Malvern 2000 laser particle sizer, a Bartington magnetic susceptibility meter and a Stellarnet spectrophotometer, and a Thin-Section Facility (TSF) set up in conjunction with the Department of Archaeology. Benefits of these changes have also included a newly re-organised field equipment store.

The new Graduate Microscope Room will provide facilities for PhD students, Quaternary MPhil students, visiting scholars and other workers wishing to undertake high-power and low-power microscopy in the laboratories. The new Malvern Room will provide facilities for laser particle sizing, colour spectrometry and the determination of magnetic properties for a range of soil and sediment samples. Its location close to the Foreign Soil Store, Environmental Chemistry Laboratory, Pollen Preparation Room, Soils and Sediments Laboratory and Graduate Microscope Room means that an integrated approach to soil and sediment analysis is now possible. However, it is the addition of the new Thin-Section Facility that gives workers, for the first time, a 'one-stop' shop for soil and sediment characterisation within the University. This important achievement has only been possible through close collaboration between the departments of Geography and Archaeology.

STEVE BOREHAM
Laboratory Manager, Geography



Thin-section through the floor of a Viking Period pit-house from Hofstadir, Iceland. A natural andosol is topped by a compacted floor deposit and sealed by a collapsed turf roof. Photo, K. Milek.

Announcing a new Thin-Section Facility

The most exciting development of the year has been the expansion to our thin-sectioning facilities on the Downing Site. After ten years with premises solely in the Department of Archaeology, a new Thin-Section Facility has just been set up in conjunction with the Quaternary Palaeoenvironments Group of the Department of Geography. This new collaborative facility acknowledges a long-standing sharing of facilities and expertise between our two Departments. The new laboratory will be a pan-University facility, with additional equipment being bought through the University's SRIF2 initiative.
The facility has just become operational. Anyone thinking of new projects which may wish to use the Thin-Section Facility should contact either Julie Miller (jb10001@cam.ac.uk) or Charles French (caif2@cam.ac.uk) to discuss costs and timetables.

CHARLES FRENCH
Head of Department, Archaeology

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New facilities to boost links within GIQR

The arrival of the Department of Archaeology's thin-sectioning facilities (TSF) in the Department of Geography's laboratories in September marked a major step forward in interdepartmental co-operation under the auspices of the Godwin Institute of Quaternary Research. This new facility will mean that members of both departments, as well as others from throughout the Cambridge geoscience community, will have access to a first-rate thin-section preparation laboratory for both teaching and research purposes.

This development comes at a time when micromorphological investigations are revealing new and important details about the nature of sediments, soils and materials, of both natural and anthropogenic origin. Such studies are revolutionising our understanding of the genetic processes in a wide range of ways.

In a more general sense, this interdepartmental co-operation strengthens both departments' positions within their respective national fields. It also provides an excellent example of the potential for mutual interdepartmental support that could arise if proposed University developments are given free-rein to reach fruition.

The TSF has been warmly welcomed by everyone involved.

PHIL GIBBARD
QPG Group Co-ordinator, Geography

The staff of the QPG and the McBurney Geoarchaeology Laboratory would take this opportunity to thank the many people who have worked to bring the new TSF to fruition. A successful outcome would not have been possible without the support and commitment of Professor Bob Haining (head of the Department of Geography) and his staff, nor without the time, energy, enthusiasm and support of Mr Chris Dixon (EMBS), Ms Julie Miller (Archaeology), Mr Chris Rolfe, Mr Simon Virr, and Mr Adrian Hayes.

News from the Charles McBurney Geoarchaeology Laboratory in Archaeology

To give a flavour of the work of members of this laboratory, the following projects are described briefly:

A collaborative project involving Dr Richard Periman of the United States Department of Agriculture Forest Service in New Mexico, Dr Steve Hall (formerly of the University of Texas at Austin), Julie Miller and Charles French has now undertaken two seasons of fieldwork. This has discovered a series of major standstill phases in the last 5,000 years of the Holocene erosion record, including a very well developed phase of the Archaic period (c. 2-3000 years ago) which is associated with ditch features which are suggestive of floodplain management, possibly for maize agriculture. Immediately prior to this phase, there appears to have been frequent, short-lived and limited extent fires in the tributary valleys, associated with alternating stable/unstable valley erosion and infilling deposits. The driver for these events is as yet unknown, but the massive erosion and incision that has exposed these deep stratigraphic exposures in the past 120 years or so is a consequence of over-exploitation for grazing associated with a large-scale ranching economy.

Funded by the Wenner Gren foundation, Manuel Arroyo-Kalin continues his research into the archaeology of tropical lowland South America. Through micromorphological and geo-chemical studies of anthropogenic dark earth from a number of different sites excavated by the Central Amazon Project (CAP), he is investigating pre-Columbian anthropogenic landscape trans-formations.

Gabriella Kovacs is conducting research on the micromorphological signatures of buildings and occupation deposits at the Szazhalombatta Bronze Age tell site in Hungary as part of the European Network Training Programme: The Emergence of Bronze Age Communities in Europe."

Miranda Semple has begun a micro-morphological study of domestic space on tell sites in north-eastern Syria. Her research targets roofed and unroofed space to examine how the space was organized, allocated and used. A sampling programme has been implemented at three urban centres (Chagar Bazar, Tell Leilan and Hamoukar) where current excavations have exposed well-defined domestic and public architecture.

Ann-Maria Hart is investigating the effects of oxidation and iron oxide formation on the preservation of organic material within British archaeological contexts. Each site has a different soil type and environment including forest, pastoral and agricultural sites. Oxidation experiments will form the comparative database and will be used to predict the levels of preservation of organic material under different preservation environments and soil types.

Karen Milek completed her third field season as excavation supervisor at the Viking Age site of Sveigakot, northeast Iceland, where she uncovered a 10th century turf house. She also continued analysing micromorphology and bulk sediment samples from Viking Age houses at Kaupang (Norway), Kilpheder, Bornish (South Uist), Sveigakot, and Adalstræti (Iceland), as part of her research on the use of space in Viking Age Scandinavian houses in the North Atlantic region.

Other continuing projects include the micromorphological studies of Neolithic and Bronze Age agricultural soils of highland Yemen for Tony Wilkinson, now of the University of Edinburgh, the geoarchaeology study of Cranborne Chase with Drs Helen Lewis (Oxford), Mike Allen (Wessex Archaeology) and Rob Scaife (Southampton), and a variety of small contracts for English Heritage, the Cambridge Archaeological Unit and regional contracting units.

CHARLES FRENCH

In Cambridge

HELLO!

We welcome KIM COHEN at the Quaternary Palaeoenvironments Group in the Department of Geography. He will be working as a visiting post-doctoral scholar towards a global database on fluvial activity in the Late Glacial and Holocene. The project is funded by the Max Planck Institute for Biogeochemistry, research group Palaeoclimatology (Jena, Germany) and serves the Palaeoclimate Modeling Intercomparison Project (PMIP). Kim is working with Sandy Harrison (BGC-Jena) and our very own Phil Gibbard.

Professor HANS-F. GRAF has been appointed to the Chair of Environmental Systems Science in the Department of Geography with effect from 1 October 2003. Professor Graf is joining from the Max Planck Institute in Hamburg, where he has been heading the 'Analysis and Modelling of Atmospheric Processes' group.

Professor Graf has been working on a number of topical aspects of global and mesoscale atmospheric processes, with a particular focus on high energy plumes, such as those associated with volcanic eruptions and biomass burning. This includes the dynamic behaviour of the plume, and gas and aerosol transport and transformation. He also works on convection processes and their hydrological implications, and on the key issue of cloud representation in GCMs. Another focus is on global scale modes of atmospheric variability in observations and models.

NEW PHD STUDENTS IN QUATERNARY AND RELATED FIELDS

MICHAEL BURN (Earth Sciences) Silica cycling in high Himalayan catchments (C. de la Rocha, M.J. Bickle), NERC.

MICHAEL COOK (Earth Sciences) Climate connections of the Indian Ocean's changing inflows past 140ka (H. Elderfield), NERC.

SARAH FARQUHAR (Geography) Astronomically-calibrated late Cenozoic history and biostratigraphy of the eastern Mediterranean Sea using dinoflagellate cysts (M.J. Head, P.L. Gibbard) - CASE partnership with BG Group

ROBERT PUGH (Earth Sciences) The Late Quaternary changes in the Atlantic Circumpolar Current (I.N. McCave, C.J. Pudsey), BAS.

MAHNAZ REZAEIAN (Earth Sciences) Couple tectonics, erosion and climate in the Alborz mountains (N. Hovius), Gates Scholar.

JENS TUROWSKI (Earth Sciences) The coupling of hillslopes and channels in erosional landscapes (N. Hovius), NERC.

BUMPER YEAR FOR QUATERNARY MPHIL COURSE

Six students begin the Master's course in Quaternary Science—the largest intake since 1999-2000. A warm welcome to:

OLI BAZELY, BSc Geography, Leeds.

PHILIP CURRY, Physics, Oxford. (Philip comes to Cambridge after 30 years' in merchant banking to do something he always wanted to do.)

DANIEL MCMAHON, BSc Geography and Geology, Manchester

MARK PEACHEY, BSc Geography, Durham.

ELEN SHUTE, BA Environmental Studies, Biology and Public Policy, Flinders University, Adelaide.

MATTHEW WILLIAMS, BSc Geography, Leeds.

AASP PRESIDENCY COMES TO CAMBRIDGE

Dr MARTIN J. HEAD of the Quaternary Stratigraphy Group has been elected to the presidency of the American Association of Stratigraphic Palynologists (AASP). Martin will serve as President-Elect for the coming year, as President the following year, and as Past-President for the final year. AASP is the largest of many national palynological societies currently in operation. Although AASP is based in the U.S.A., about half of its members are from overseas making the association truly international. AASP was set up in 1967 at a time when traditional biostratigraphy and the needs of the oil and gas industry dominated the international palynology scene. These emphases have since shifted, and AASP members are becoming increasingly engaged in palaeoecological and environmental analyses, especially as they relate to the Quatenary, archaeological and forensic fields. AASP actively promotes all aspects of palynology and is always looking for new members, offering a quarterly newsletter, annual issue of the journal Palynology, student scholarships (see below) as well as a large range of student-priced publications. Details can be found on the AASP website at: www.palynology.org

Congratulations are due to STIJN DE SCHEPPER (Quaternary Stratigraphy Group) who has been awarded the AASP Scholarship Award for 2003. Stijn's PhD project is entitled: "Pliocene dinoflagellate cysts and acritarchs from the eastern North Atlantic and southern North Sea Basin: biostratigraphy, palaeoecology, taxonomy and sequence stratigraphy", supervised by Martin Head and Phil Gibbard (Geography, Cambridge) and Stephen Louwye (Ghent University). Stijn recently presented his research at the AASP Annual Meeting in St. Catharines, Ontario, in October.

It is a pleasure to welcome SARAH FARQUHAR to the Quaternary Stratigraphy Group in the Geography Department. Sarah is starting a PhD on "Astronomically-calibrated late Cenozoic history and biostratigraphy of the eastern Mediterranean Sea using dinoflagellate cysts", supervised by Martin Head and Phil Gibbard (Geography, Cambridge) and Matt Wakefield (BG Group, Reading). This is a CASE-level funded project with the BG Group. Sarah is no stranger to Cambridge, having recently completed her BA in the Earth Sciences Department. Sarah joins Stijn De Schepper and Maria Papanikolaou who are also engaged in graduate research on fossil dinoflagellate cysts, making this one of the largest centres for fossil dinoflagellate cyst research in the country.

GOODBYE!

BECKY BRIANT has left the Quaternary Palaeoenvironments Group in the Department of Geography to take up a lecturing position at Kings College, London. Becky, once editor of CAMQUA, (which no doubt played some part in her success we would like to think), had been at Cambridge on and off for some seven years from undergraduate to PhD.

IAN WILLIS, of SPRI, has departed these shores for another damp island – New Zealand, for his sabbatical year (2003-2004). During this time he will be at the Department of Geography, University of Canterbury, Christchurch.

On the publication of *Summing up: half a century of Quaternary geology*

Joakim Donner has been a longstanding friend of Quaternary in Cambridge. After completing a doctoral thesis at the University of Helsinki under Matti Sauramo and Pentti Eskola, he spent the years 1953-1955 in Cambridge as a research student working with Harry Godwin in the Sub-department of Quaternary Research. Writing of that period, he notes: "In working on problems abroad, the ideal situation is to be at another university for some time. The greatest benefit was, for me, the years at Cambridge in the beginning of the 1950s, technically still a student, but doing research in a surrounding with a number of helpful senior and junior members of the Quaternary community in Cambridge" (Donner 2002, p166). In 1965, he was appointed professor in Geology and Palaeontology at Helsinki. In addition to pioneering work with Richard West on the fabric of East Anglian tills, his research has included palynology and shoreline studies. He has recently published an account of his researches with reminiscences on the last half century of Quaternary geology, of which the abstract is printed here.

Abstract

Donner, Joakim 2002. Summing-up: half a century of Quaternary geology. *Annales Academiae Scientarum Fennicae, Geologica-Geographica* 164, 190pp.

In summing up the research in Quaternary geology during the second half of the twentieth century, the topics discussed are restricted to those dealt with by the author. The results obtained in the various studies are viewed against the general advances made subsequently by others. The interpretations in the older investigations are naturally more out of date than those in recent works; in many cases the author has himself later been able to reinvestigate and reinterpret conclusions made earlier.

The main part of the survey deals with studies of the Quaternary of Finland, starting with pollen stratigraphical problems, particularly of the Late Weichselian and the dating of deglaciation, but also of the Holocene history, followed by description of the identification and dating of land/sea-level changes, which eventually lead to the construction of a shore-line profile across Fennoscandia from Estonia over Finland and Sweden to the coast of Norway. Topics of archaeology, glacial geology and Quaternary stratigraphy are also discussed.

The investigations conducted in the British Isles include pollen analytical studies of the Late Glacial in Scotland, reconstructions of land/sea-level changes in Scotland and Ireland, as well as studies of East Anglia and the East Midlands using stone orientation and measurements of stones in till.

Shorter, more limited studies of the Quaternary stratigraphy of Long Island in the United States, including a pollen diagram of the Gardiner's Clay of the Sangamon interglacial, and pollen analytical studies of Cueca del Toll in Spain and Abri Pataud in France are described in separate chapters. Descriptions of investigations in the Arctic include studies of the geology of Bragenesat in Nordaustlandet, of the land/sea-level changes in west Greenland around Disko Bugt, as determined by radiocarbon dating of marine shells and of similar studies of Finnmark in North Norway. Some observations made in Alaska are also mentioned.

Localities used for dating marine shells in southeastern Australia are described, as well as sites along the coast of southern Africa used in studies of the stable isotope composition of recent marine shells. Finally, a description is given of studies in the western desert of Egypt of playas with evidence of an early Holocene humid phase. Some concluding remarks about the Quaternary studies in general are presented at the end of the account.

J. Donner and R.G. West on Brageneset, Nordaustlandet, Svalbard in August 1955.

Anyone interested in the history of Quaternary research in Cambridge should visit the webpages of GIQR at http://www.giqr.group.cam.ac.uk/about/history/ .

From *The Observer,* Sunday September 21, 2003

Britain's drowned landscapes

New underwater technology to reveal an age when the UK was linked to Europe by plains and forests

Herds of reindeer and horses migrated across its plains, huge forests covered much of the countryside and men and women made their homes by rivers and lakes.

Then came the deluge, and this ancient Arcadia - which stretched across the North Sea, and covered the Channel - was inundated. All signs of human and animal activity were covered by several hundred feet of water. Only the occasional stone tool, bone harpoon and mammoth tusk, trawled from the sea bed by fishing boats, has provided reminders of this lost world's existence.

But the drowned lands of the North Sea and Channel may soon be revealed by British scientists using a revolutionary underwater scanning technique that can create sea-bed maps and images as accurate and detailed as those made of dry land. In the process, the idea of Britain as an island kingdom will be challenged by researchers.

'For the first time, we have the technology to map the North Sea and Channel sea beds in unsurpassed detail,' said Dr David Miles, chief archaeologist of English Heritage. 'That offers us a unique chance to open up our history. There could be dozens of perfectly preserved sites down there.'

Miles is to meet senior government officials in the next few days to press for their backing for a project which would use techniques developed by researchers at Imperial College, London to survey the sea bed inside British territorial waters. The team, led by Dr Sanjeev Gupta, used an advanced sonar technology, known as bathymetry, to study the sea floor several miles off the coast of Sussex.

Ten thousand years ago, at the end of the last ice age, with much of the world's water still trapped in giant glaciers and ice caps, sea levels were many feet below their current level. The river Arun, which now enters the Channel at Littlehampton, then ran on for several miles before flowing into a valley that had been carved by a south-flowing river created by the combined waters of the Thames, Rhine and Seine.

Only a vague outline of the extended Arun river bed had been made until Gupta and his colleagues - who presented the first results of their surveys at a archaeology workshop this month - began their mapping project. They used a special echo sounder, strapped to the hull of their survey boat, to make great sweeps across the sea bed. Previously, echo sounders have only been able to plot in two dimensions, but by using computers, satellite positioning devices and special software, their bathymetry device was able to compensate for sea swell and ship movement and create a perfect three-dimensional image of the landscape beneath their craft.

'What we saw was astonishing,' added Gupta. 'The topography was incredibly detailed, rich and complex. We could see the river bed that the Arun had created thousands of years ago and examine the bays and cliffs along its valley. We could see a rocky ledge that might have formed a waterfall, an ideal place for an ancient settlement. We could also see where boats have since sunk and settled on top of this landscape.'

Now English Heritage, the agency that controls the nation's ancient monuments and which has also recently taken charge of maritime archaeology in Britain, is preparing to turn the techniques developed at Imperial College to create a national survey of Britain's territorial waters (which extend 12 miles from the coast), as well as mapping regions of the North Sea. To do that, they will need government and industry funding.

'Most of the world's seabed is still a mystery to mankind,' said Miles. 'We have better images of Mars and Venus than of two-thirds of our own planet. Now we can put that right. And given that Britain is a maritime nation, for whom the sea has been an immense influence, finding out its secrets around our shores is particularly important. For example, we know there was once a Roman lighthouse near Whitby. We could pinpoint that with this technique.'

Researchers are especially keen to create seabed maps so they can identify places humans might have picked for their homes and villages: sheltered bays, cliffs that would have contained caves, and freshwater lakes. The most promising candidates could then be selected for special attention. Divers could be sent down, robot submersibles used to investigate and samples dredged from surface boats. The aim would be to find stone tools, house timbers (which survive far longer in water sediments than on dry land) and other evidence of human activity.

'Britain has been occupied by human beings for the past 500,000 years and during that time sea levels have dropped, linking our land to Europe on five occasions,' said Gupta. 'In fact, we were more often connected to the continent than we have been an island. Our current status is really the unusual one. That makes this sort of research all the more important.'

However, the use of bathymetry scanners will not be confined merely to studying lost landscapes and drowned settlements. It will also be invaluable to the pinpointing of lost wrecks, as Dr Ian Oxley, English Heritage's head of maritime archaeology, pointed out. 'According to national records, there are 44,000 known shipwrecks off our shores. But that is only a tiny sample, we know. By extrapolating from shipping figures, we believe the true figure is more like half a million. This technology will also be crucial in helping us find these.'

Scientists are keen to map the seabed as soon as possible because increased commercial activity - marine cable laying and the dredging of special Channel trenches for container ships - threatens not just the archaeology of this lost world, but its rare plants and shellfish beds. Key sites could be identified and then protected by law.

'We have a good relation with industry over this,' added Miles. 'The money for the bathymetry project was provided by the new aggregates levy that companies have to pay to minimise their impact on the environment, and they recognise the importance of this sort of surveying as well. There are immense practical benefits for them - pinpointing new underwater aggregate sites, for example. There is something for everyone.'

ROBIN MCKIE, Science Editor, *The Observer*

XVI INQUA Congress

Reno, Nevada
23-30 July 2003

The underlying theme of 16th INQUA at Reno, Nevada 23-30 July 2003 was one of revision and reshaping. INQUA always claimed that the real work was done in the Commissions. Coming up to Reno I think that there were 12 Commissions, covering many aspects of the Quaternary. That 'many' was one of the problems. It was felt that the coverage of the Quaternary spectrum was patchy and that certain fields were not well represented (and certain others perhaps over-emphasized). It was recognised that the Commission structure had grown in a random and disorganised manner and that rationalisation was required. Some of the old Commissions were very much vehicles of their strong minded founders and presidents (one thinks of Aleksis Dreimanis and Glaciation, and Julius Fink and Loess). The new idea is to have a properly level playing field in which all Quaternary interests can be represented.

A few facts about the Congress: over 1000 registered delegates; over 1000 papers or posters; 56 nations represented; 56% of delegates not from the USA. The organisers were very proud to have achieved an American minority. The initial reception was in the Automobile Museum in downtown Reno and went well (it can be quite hard to get the reception right) and the final party was in the great hall of the posters. The dinner was out at the Bonanza Ranch- and I have reliable reports that a good time was had by all. The dinner can also be a tricky occasion, but the hurdle was surmounted.

We met in the Reno Hilton, a vast structure standing beside Reno airport. The setting is extraordinary; all around is a flat expanse of nothing and there, sticking up, is this gigantic blockhouse. It looks like the sort of building that wanderers in SF films come across. The inside is dominated by an enormous casino, think of a huge room the size of two football pitches full of lights and machines and bars and restaurants. Once in- no obvious way out, no windows, and no clocks. And off to the side - vast conference facilities, plentiful meeting rooms, a large hall of posters, places for registration and information (and a table to leave Loess Letters on). Many delegates stayed at the Hilton and it worked well as a gathering point, as a focus for conversations and discussion.

The People and the Commissions: for more discussions on the new world of INQUA see the articles by Nick Shackleton and Sylvi Haldorsen in Quaternary Perspectives v.13, no.2, 2003; and check the INQUA website at http://inqua.nlh.no. The new president is John Clague (Canada); the secretary is Peter Coxon (Ireland) and the treasurer is Allan Chivas (Australia). The vice-presidents are An Zhi-sheng (China), Margaret Avery (South Africa), Jan Piotrowski (Denmark) and Denis Didier Rousseau (France). The past-president (who is a member of the executive committee) is Sir Nick Shackleton.

The new Commissions are: Palaeoecology and Human Evolution; Palaeoclimate; Stratigraphy and Chronology; Terrestrial Processes and Deposits, and Coastal and Marine Processes. The Terrestrial Processes commission is a sort of super-commission. The last time I looked it had 15 sections, including aeolian processes, glaciation, volcanoes, natural hazards, palaeosols etc. I think that the plan is that discernable sub-divisions will become Sub-Commissions. In choosing people to lead these various INQUA activities two principles operate; it is necessary to maintain a fair distribution within the disciplines, and to ensure that there is wide international representation. The Loess Commission ended up split between the Stratigraphy and the TP commissions. Say about 80% into Stratigraphy to form a new Loess Stratigraphy Sub-Commission- led by Ludwig Zoeller from Bayreuth, and about 20% into the Aeolian processes section of the TP commission- leader Nick Lancaster of the Desert Research Institute in Reno. This aeolian junction may be useful in bringing together sand dune people and loess people.

The next INQUA Congress will be in 2007. The venue had to be chosen by the International Committee, and they had to choose between three possibilities: Tokyo in Japan, Cairns in Australia and Edinburgh in Scotland. The Japanese had propagandized mightily; never in the history of INQUA had so much effort been put into getting the INQUA Congress- there were stickers, flyers, posters, CDs, carrier bags, banners etc. but the eventual choice was Cairns. The decision puts the Congress in the Southern hemisphere again.

Past-president Steve Porter made a neat presentation at the opening ceremony showing the history of the INQUA Congresses: 1928 Denmark, 1932 USSR, 1953 Italy, 1957 Spain, 1961 Poland, 1965 USA, 1969 France, 1973 NZ, 1977 UK, 1982 USSR (50 years after 1932), 1987 Canada, 1991 China, 1995 Germany, 1999 South Africa, 2003 USA. Porter had some statistics on participation and papers presented. There was a noticeable dip in 1973 for the NZ congress- attributed to the distance problem. I remember Julius Fink observing that the East European loess people had not been able to reach NZ and that the Loess Commission meeting was poorly attended. Distance is not quite so critical now and a well-planned spin-off from the Cairns meeting could provide a glimpse of NZ for a large group of Quaternary enthusiasts.

What about Quaternary science? Well, no great paradigm shifts visible. A major task remains to relate the terrestrial record to the oxygen isotope stages of the marine record. The oxygen isotope stages still provide the framework for the Quaternary. One was aware of growing precision in many fields; some amazing technologies are developing and the growing computer power available to modellers means that climatic modelling and related activities loom larger and larger. One requirement for high quality Quaternary science is an interesting Quaternary environment to investigate.

IAN SMALLEY,
Nottingham Trent University

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The past, present and future of land-atmosphere exchange

A recent Open Science Conference in Helsinki developed the final stages of the 'Integrated Land Ecosystem-Atmosphere Processes' study programme (or ILEAPS, http://www.atm.helsinki.fi/ILEAPS/), that will shortly be proposed as a new core project to the International Geosphere Biosphere Programme (IGBP, http://www.igbp.kva.se). The focus of ILEAPS will be to measure, model and understand the physical and chemical exchanges, interactions and feedbacks between the land surface, the terrestrial biosphere and the atmosphere on all spatial scales. This new project will link with with other IGBP projects that focus on human-environment interactions (such as LAND), and will fulfil a role similar to the surface ocean – lower atmosphere study project SOLAS, (http://www.uea.ac.uk/env/solas/).

As the meeting showed, this is an exciting time as we can now start to see how land surface - atmosphere interactions, which feed back through the ecosystem loop, may be sensitised by some processes, and damped by others. Quaternary science has an important role to play here, in providing the quantitative record of past changes that may prove to be the key tests for the next generation of global circulation models that will include coupled land-ecosystem-atmosphere processes.

At the moment ILEAPS is just another acronym, but it should soon develop to be an 'umbrella', facilitating support for future meetings and international cooperation.

DAVID PYLE, Earth Sciences.

Royal Medal Awarded

Professor Sir Nicholas Shackleton, FRS, of the Department of Earth Sciences, received a Royal Medal in recognition of his seminal contributions to the fields of palaeooceanography and geochemistry. He made possible the analysis of stable isotopic composition of oxygen and carbon in very small samples, revolutionising our approach to climate research.

Climate, Plant Exploitation and Society: A Worldwide Perspective

Archaeobotany Symposium,
69th Meeting of the Society of American Archaeologists (SAA)

Montréal (Québec, Canada)
March 31 – April 4 2004

Plants and climate have played pivotal roles in prehistoric and historic societies and archaeobotany, with its several sub-disciplines, has shown to be a fundamental approach to understand subsistence strategies and exploitation of the environment in the past. In this session we bring together examples of works in archaeobotany from different perspectives (from collection management to carbonised remains and phytoliths) and geographical areas to foster intra-disciplinary discussion, theoretical approaches and model building.

For further information regarding the programme of presentations, please contact the organisers:

Marco Madella (mm10018@cam.ac.uk)
Manon Savard (ms436@cam.ac.uk)
George Pitt Rivers Laboratory for Bioarchaeology,
McDonald Institute for Archaeological Research

SPRI Physical Sciences Seminar Series 2003-2004

Wednesday, October 22
David Vaughan (British Antarctic Survey)
Climate change in Antarctica and ice sheet retreat

Wednesday, November 5
Simon Carr (Oxford Brooks University)
The Last Glaciation of the North Sea: extent, dynamics and chronology

Wednesday, November 19
Chris Stokes (University of Reading)
I*nvestigating the controls on fast ice flow in ice sheets: new insights from former ice stream beds*

Wednesday, December 3
Nick Hulton (University of Edinburgh)
Modelling the evolution of glaciated landscapes

Wednesday, January 14
James Scourse (University of Wales, Bangor)
Heinrich events: ice-ocean-climate dynamics in the NE Atlantic

All seminars will be held in the Scott Polar Research Institute Lecture Theatre at 16.30 hrs. For further information please contact: Dr. Colm Ó Cofaigh
Phone: 01223-336570, e-mail: co232@cam.ac.uk

Tuesday, 4th November 2003

Michael Frogley (University of Sussex)
Late Holocene environmental change in the Andean Highlands of Peru: climate, culture and collapse

This lecture is part of the CAMBRIDGE AMERICAN ARCHAEOLOGY SOCIETY Seminar Series, and takes place at 5 pm, in the McDonald Institute Seminar Room. All enquiries to Alexander Herrera (ach49@cam.ac.uk)

Tuesday, 11th November 2003

Greg Tucker (University of Oxford)
Climate Change and the dynamics of drainage basin evolution

An Earth Sciences Department Seminar
5pm, Harker Room, Earth Sciences.

6th – 9th January 2004

QRA Annual Discussion Meeting

ANNUALLY-BANDED RECORDS IN THE QUATERNARY

Organiser: Dr James Scourse

Co-sponsored by Marine Studies Group, Geological Society of London

CALL FOR PAPERS

ON-LINE ABSTRACT SUBMISSION AND REGISTRATION NOW AVAILABLE AT:
http://www.sos.bangor.ac.uk/qra%2Bmsg

Quaternary Discussion Group

Friday 31 October

Mike Kaminski (UCL)
The Holocene palaeoceanography of the Bosphorus Strait region: foraminiferal evidence

Friday 5 November

Scott Elais (Royal Holloway)
What beetles are telling us about Beringia

Friday 21st November

Jim Rose (Royal Holloway)
The Quaternary of Great Britain - an event stratigraphy based on earth surface dynamics, forced by major episodes of the Late Cenozoic

Talks will be held in West Court, Clare Hall, Hershel Road at 8.30pm. Everyone welcome.

All enquiries contact: R.C. Preece, (3)36666, e-mail r.c.preece@zoo.cam.ac.uk

Cambridge Philosophical Society

FENS

An interdisciplinary, one-day scientific meeting open to all who are interested.

Monday, 8th December 2003

Dr Peter Friend *Why the Fens are there - movements of Earth, Water and Ice*
Mr Francis Pryor *The Early People of the Fens*
Mr Brian Eversham *The Flora and Fauna of the Fens*
Mr Peter Bircham *The Fen's Avifauna*
Mr Mike Petty *Flooding in the East Anglian Fens*
Dr Laurie Friday *The History of Wicken Fen*
Dr Bryan Wheeler Mires, *Marshes and Morasses; the Ecohydrology of wetlands in and around Fenland*
Mr Adrian Colston *The future for Fenland*

Pippard Lecture Theatre, Cavendish Laboratory Madingley Road, starting 9:45am.

Applications for tickets and full programme to: Executive Secretary, Cambridge Philosophical Society, Bene't Street, Cambridge, CB3 3PY.
e-mail: philosoc@hermes.cam.ac.uk
tel: 01223 334743

Deadlines: Copy for the next issue of CAMQUA should be submitted to the editors by the end of term.

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