CAM QUA

The newsletter of the
GODWIN INSTITUTE FOR QUATERNARY RESEARCH

ISSUE 29 ***MICHAELMAS TERM 2004***

Is Nick There?

Nick Shackleton will be retiring in October after a long and fruitful career in research. In recognition of his ground breaking research in isotope stratigraphy, climate history and oceanography, he received several medals. In 1998, he was knighted for his contributions to Earth Sciences. He has also been the director of the Godwin Institute for Quaternary Research since its foundation.

A more extensive biography can be found at http://www.giqr.group.cam.ac.uk/about/history/directors/shackleton.html

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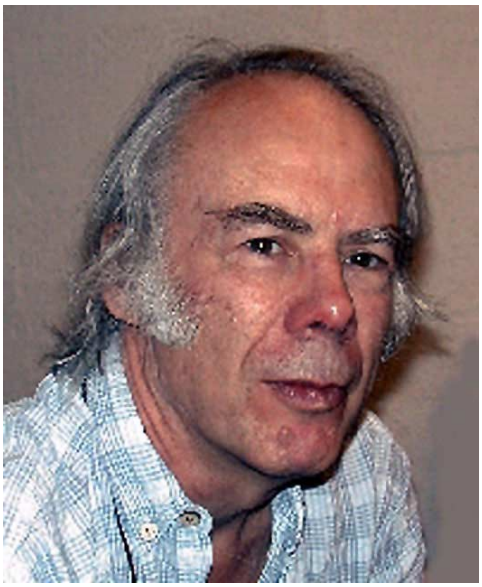

Reader: *"Well, what about Nick Shackleton?"*
Biographer: *"He is retiring!"*
R: *"Retiring? For heavens sake, what for? What does that mean? Does he want to retire? I say, what does retiring really mean anyway?"*
B: *"There are three ways to retire. You might get a new job so you won't be bored. You can keep doing the things you always liked – except for telling others what they would do if they were you! Or you can go home, of course, do the garden and play all your antique clarinets."*
R: *"Does Nick have enough antique clarinets then to keep him busy playing?"*
B: *"Aw, cut the silly stuff. Of course he will continue his research. He seems to get better at it all the time, and everything he says or writes is so subtle, so profound, so amazing, so much more so even than before, I think. And he won't have to keep on managing the place."*
R: *"Won't that be awkward? No more Nick to be the boss?"*
B: *"No, because the Department thought about that and made Nick McCave the director. So when you go there, yell as usual "Is Nick there?"*

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I met Nick in 1962 when, courtesy of Air France, I arrived with six hours delay in Nice to lead an expedition to the Adriatic on Scripps' RV Horizon. I found her in the Old Harbour, moored alongside a broad pier. On the pier, next to the ship under bright lights, a table was laid for a grand seafood dinner that was being disposed of by the ship's officers – formal in their whites, the captain with a gorgeous, expensive lady – and the scientific staff dressed in dungarees, including Nick, who wore sandals; all in anticipation of the midnight departure. The crew were on the town for other fancies. It was a lovely, mellow Mediterranean night, a small moon, little waves splashing gently against the dock.

For three weeks we cruised up and down the Adriatic, seeing the blue coast only in the distance. Nick, brought along by his Cambridge adviser to measure sedimentary magnetics, was obviously one of those bright chaps Cambridge used to grow in those days, but a rather quiet one. Friendly he was, as he has always been, but not one of those self-advertising blokes that are so easy to size up.

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As the years passed, word came occasionally from Cambridge; that Nick had his PhD, that he was acquiring a name in a subject called on the cover of his dissertation "The Measurement of Palaeo-temperatures in the Quaternary Era" – a cool way to say "I do $^{18}O/^{16}O$ ratios". Gradually he was catching up on the competition, Cesare Emiliani in Miami, who was known best for his generosity in offering visiting colleagues the right to take one of his many gorgeous secretaries to lunch (after he had picked his own first, of course).

More years passed as we all grew older, until in 1970 I found myself in Washington DC from Sunday morning to Wednesday night each week for a year's secondment to the National Science Foundation to manage the International Decade of Ocean Exploration. That meant passing $17 million per year for ten years on to the best of a crowd of big-research robber barons, all wholly without shame or honour. This was the time that we began to suspect that human-induced global warming was not a good thing but therefore worth studying, but no proposals came in. Feeling the urge to do something in this line, I got several colleagues from the US and the UK together, such as John Imbrie, Andy McIntyre, Ross Heath and also that oxygen isotope wizard Nick Shackleton, locked them in a conference room to put a proposal together, and promised sandwiches and beer for when they had done it. Twisting high-up arms and pouring Chivas Regal by the litre, I was allowed one million dollars per year for ten years, and CLIMAP was on its way.

Without fanfare the CLIMAP clan analysed hundreds of ocean cores for fossil environmental indicators. They invented age models and re-introduced climatology, generally thought to have been dead since the 1920s. They latched on to climate modelling to justify their palaeo-climate models as test beds for the dynamics of the modern climate. And in the midst of all this, Nick got on applying improved $^{18}O/^{16}O$ ratios to questions about past temperatures and such.

Ten years later Quaternary geology had been shaken, re-shaped and dragged into a wholly new era. The new earth history (reserved then for the Quaternary) came of age when the CLIMAPPERS validated the orbital theory of Milankovitch and showed it had potential for chronology. Some saw this as no more than an attention gathering stunt for CLIMAP and to be honest, I thought so too, "neat but who needs it?" Better minds soon showed that it was an independent chronological tool, in principle capable of taking us into the deepest past. Nick was one of that reckless little group who thought of this and devised the first orbitally based time-scale, naming it SPECMAP. To construct SPECMAP it had to be "tuned" like a car engine until it fitted the climatic record. I still recall Connie Sancetta's sceptic face when she came out of a SPECMAP tuning session, mildly sick of all that game playing.

Do not think that, in all this excitement, Nick grimly stuck to one life-long straight, single-method, single-target oxygen isotope job. $^{18}O/^{16}O$ ratios have a serene beauty and using it for a single life-time path is a sure way to receive loads of honours – assuming you have greatness – and PRIZES and AWARDS will be raining upon you. Would you like some numbers? Total papers published: 306 with 48 by a single author, and half a dozen in press. If you have about 20 honours (some big ones), that comes to one medal for every 15 papers.

Delta $^{18}O/^{16}O$ makes a fine main road, but for Nick branches soon began to sprout, bud and flower: seasonality studies applied to archaeology, or Cenozoic stratigraphy using deep ocean drilling cores, optical dating methods and much more show in his list of publications. The range of applications of his diverse skills brought him into contact with numerous colleagues, stratigraphers, geochemists, archaeologists, and many more and built for him a first class international reputation.

This diverse, at-the-front activity left its mark on the Godwin Laboratory and influenced its atmosphere as distinguished scholars passed through, graduate students dug in with their thesis work, and PhD candidates and postdocs came from everywhere to this lively, creative and enthusiastic place, where the great and the good mingled with the young and brave. It made the Godwin Lab a true centre of the many aspects of the new approach to earth history created or first applied by Nick.

One of Nick's qualities, rare among the stars of science, he shares with Harold Urey, one of my personal heroes. Urey had a deep respect for the minds of his co-workers and students and never talked down to anyone. The result was sometimes that what he was saying was obviously brilliant, important and exciting, while we lesser ones, enthusiastic and definitely motivated, got our minds stretched.

A few years ago, as Nick and I discussed in private the true revolution started by CLIMAP and underpinned by the ocean drilling project, he referred in passing to the last three decades as "the quiet revolution". No doubt he himself deserves the title of

"Quiet Revolutionary"

by *Tjeerd Van Andel*

Graeme Barker is New Disney Professor in Archeology

Graeme Barker was brought up in London (his father was a percussion player at the Covent Garden Opera) and came to Cambridge as an undergraduate in 1965, to read Classics at St. John's College. At the end of his Part I, a brief conversation with a Junior Research Fellow at St John's (though just beginning a Lectureship at Sheffield), a Dr Colin Renfrew, enthused him to change from Classics to Archaeology (the Part II of the Archaeology and Anthropology Tripos). His new Director of Studies at St John's was Professor Glyn Daniel. That summer (1967), at Colin Renfrew's suggestion, he undertook his first experience of archaeological fieldwork, excavating first on a Neolithic settlement in northern Italy for Lawrence Barfield and then at a Palaeolithic cave in Epirus, northwest Greece, for Eric Higgs, where he had the pleasure of excavating with a senior visitor to the excavation, the then Disney Professor Grahame Clark. His decision to pursue an archaeological career after graduation owes an enormous amount to the teaching of all four of these brilliant Cambridge prehistorians, three of them his predecessors as Disney Professors, though the mix of classics and prehistory in his undergraduate training has also meant an abiding interest in long timescales, inter-disciplinary approaches, and societies at different levels of complexity.

He wrote his Cambridge PhD on the transition from hunting to farming in central Italy as a Rome Scholar at the British School at Rome, between 1969 and 1972. He was a Lecturer and then Senior Lecturer in Prehistoric Archaeology at the University of Sheffield from 1972 to 1984. He then returned to the British School at Rome as its Director from 1984 to 1988. In 1988 he was appointed Professor of Archaeology and Head of the School of Archaeological Studies (now the School of Archaeology and Ancient History) at the University of Leicester. He remained Head until 2000 (in which period the School moved from a RAE research score of 2 in 1988 to 5 in 1996 and 2000), when he was appointed the founding Graduate Dean of Leicester's Graduate School. In his last year at Leicester, before his move to Cambridge, he was Pro-Vice-Chancellor (Resources).

Through his university career he has taught widely across the discipline, especially aspects of the prehistory of Europe, environmental archaeology, archaeozoology, and landscape archaeology. He believes passionately in the benefits for both staff and students of an effective synergy between research and teaching. In Leicester he developed pioneering Masters and PhD programmes by Distance Learning, and the School was awarded the maximum score of 24/24 by the Quality Assurance Agency in 2001. Beyond the institutions in which he has worked, he has also been actively involved in promoting the discipline of archaeology in higher education generally. In recent years he has been Chair of the Standing Committee of University Professors and Heads of Archaeology, Chair of the QAA Benchmarking Panel for Archaeology, he was a member of the Archaeology panel for the 2001 Research Assessment Exercise, and is currently President of the Prehistoric Society. He is also a member of the Board of Management of the Arts and Humanities Research Board. He was elected a Fellow of the British Academy in 1999.

His research interests have focused principally on relations between landscape and people, in Europe and the Mediterranean (Italy especially), in arid zones (Libya, Jordan) and currently in tropical environments. (He also had a brief foray to Mozambique in the 1970s, to study the fauna from a new zimbabwe discovered there!) The principal focus of his research has been, and remains, relations between people and landscape in the past. He is recognised for leading complex inter-disciplinary teams of archaeologists and environmental scientists in significant field studies, notably in the Biferno Valley in Italy, the Tripolitanian Pre-desert in Libya, the Wadi Faynan in Jordan, and currently the Niah Cave Project in Sarawak. The publication of the Libyan project, Farming the Desert: the UNESCO Libyan Valleys Archaeological Survey (1996), won the James Wiseman prize of the Archaeological Institute of America.

His current project (involving some 40 researchers from a dozen universities and research institutions in Australia, Malaysia, the Philippines, Singapore, and the USA, as well as the UK) is a re-investigation of the famous Niah Caves in Sarawak (Malaysian Borneo).

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The caves were the focus of major excavations by Tom and Barbara Harrisson in the 1950s and 1960s, their most dramatic discoveries being a modern human skull dated to about 40,000 years ago by C14-dating of adjacent charcoal, and a cemetery of several hundred Neolithic graves. The project is addressing three major research questions that are central to the prehistory of Island Southeast Asia: when did modern humans first reach Borneo? What kind of landscapes did they encounter, and how did they deal with them in terms of their foraging strategies? And when, why and how was foraging eventually replaced by farming?

The latter questions have also been at the centre of a major project to be published by Oxford University Press next year, The Agricultural Revolution in Prehistory: Why Did Foragers Become Farmers? In addition to taking a world-scale perspective, the study integrates the findings of modern scientific research on climatic change, flora, fauna, DNA studies etc, with the arguments of social archaeology and anthropology regarding hunter-gatherer and farmer 'world views' and how the cognitive transformations from one to the other might have happened, and when.

And he is really excited about 'coming home' to Cambridge – to the McDonald Institute, to the Department of Archaeology, and to a Professorial Fellowship at St. John's College. That Junior Research Fellow he met in 1967 has a lot to answer for!

by Charly French

Quaternary Youth Flex Muscles in Brussels

An eminent gathering convened in Belgium's capital from the 14th – 17th September, and for a change, or perhaps by definition, not at the European Parliament building. Peter Mandelson was not invited.

It was, in fact, the 3rd annual QRA postgraduate symposium, which boasted the largest gathering yet with 86 participants, and was 'global' because one young man had come all the way from Chile. We were warmly welcomed by Professor Cecile Baeteman to the Royal Belgian Institute of Natural Sciences. Professor Baeteman set the tone for the symposium, highlighted how important it is for young researchers to gather, discuss and provide mutual support, and promised that the stress of preparing for presentations and posters was actually good for us in the long run.

The symposium was a rallying point and record-breaking occasion for Quaternary Science in Belgium, indeed with none so surprised at the number of young Quaternary researchers working in Belgium (more than 30) as the Belgians themselves. As the expression goes, you know least about what's happening in your own backyard (is there such an expression?), and it proved a good chance for me to meet lots of PhD students from the UK. There were people from Holland, Germany, Poland, France and others, and the atmosphere was convivial.

As we gathered for the first session of presentations, the air fizzed with an electric mix of tension and ambition. Beneath the jaunty, laddish and care-free façades we all preserve from pre-PhD life and bring out on public occasions, tender nerves cringed at the prospect of judgement, humiliation, disaster. But a spark, of ambition or vanity, promised recognition, validation, success, glory! And these things were felt not only for oneself, but for everyone else. Dare I say it? Yes, the atmosphere was one of excitement.

The presentations began. Like young stallions eager to test their paces, we took our turn at the podium, and delivered with punch, vigour, enthusiasm, pride and fear. Some delivered with monotone voices, which was less stallion-like, but overall the presentations were very good. Everyone kept to time; no-one made pitiful jokes about not knowing how to use Powerpoint. It was really impressive, and should give hope to future generations of undergraduate students who may have to listen to these same people for the next 75 years.

With parallel sessions over two days, presentations spanned Quaternary fluvial systems, palaeoclimate and palaeoecology, GIS and remote sensing, and geochronology. We were treated to two stylish and wide-ranging guest lectures from Törbjorn Törnqvist (fluvial response to environmental change) and Helmut Brückner (geo-archaeology in the eastern Mediterranean and Middle East). Coffee breaks, in-house lunches and a conference dinner (chicken soup followed by roast chicken – a Belgian speciality?) gave ample time for conversations. We enjoyed a walking tour of Brussels' landmarks, but the tour guide's voice was very quiet so we didn't learn anything. However, the tour ended at a ferociously well-stocked bar and we were soon fluent in Chimay, Westmalle, Kwak, Delirium Tremens...

by QPG's one and only Will Fletcher

Quaternary... now you see it, now you don't!

Also published in Quaternary Perspectives

Perhaps you were wondering whether there had been any developments in the discussions on the state of the term Quaternary that were reported in the last issue of *Quaternary Perspectives* (Clague *et al*., 2004; Pillans, 2004; Gibbard, 2004), following the International Geological Congress (IGC) in Florence? Well, there's good news and there's bad news.

First the good news. Two meetings were held at the Congress. The first was a meeting of the International Commission on Stratigraphy's Subcommission on Quaternary Stratigraphy (SQS) to present progress on the division of Quaternary time. Although it was held on the first afternoon, at the same time as the prestigious opening ceremony, the meeting was well attended. The question of the definition of the Quaternary was not the main topic on the agenda but was inevitably brought up and initiated a lively discussion. Following a suggestion by Professor Cita, the participants voted on two proposals:

1. Should the Quaternary be maintained as a formal chronostratigraphic unit?
2. Should the Quaternary be kept at system rank or redefined at subsystem rank?

The first question was carried by 28 in favour and 1 against, and to the second 25 were in favour of retaining a system rank, 1 in favour of subsystem rank and there were 3 abstentions. These results confirm the INQUA position laid out in *Quaternary Perspectives* (Clague *et al*. 2004). The results of these discussions were communicated to the ICS by the SQS board.

And the bad news? Throughout the meeting members of the Quaternary community were agitating for a solution to the attempted suppression of the term. This sense of unease was not helped by the fact that the ICS were selling their new time scale chart (produced to accompany the new, extensively revised edition of the *Geologic Time Scale* that will be published shortly - Gradstein *et al*. 2004, Fig. 1C). In contrast to previous versions (Fig.1A, B), the word Quaternary is omitted from this table; Pleistocene and Holocene being shown within the Neogene Period which therefore extends to the present. Since nothing has been agreed, or even discussed, except between the ICS' executive officers, this decision to produce a chart that will go around the world showing the unofficial situation is somewhat premature. It is, however, important to realise that neither the chart nor the volume it accompanies are technically official publications of the ICS, approved by the IUGS, but independent documents.

The reason that we later discovered from Jim Ogg, the ICS' Secretary, was that the term Quaternary has

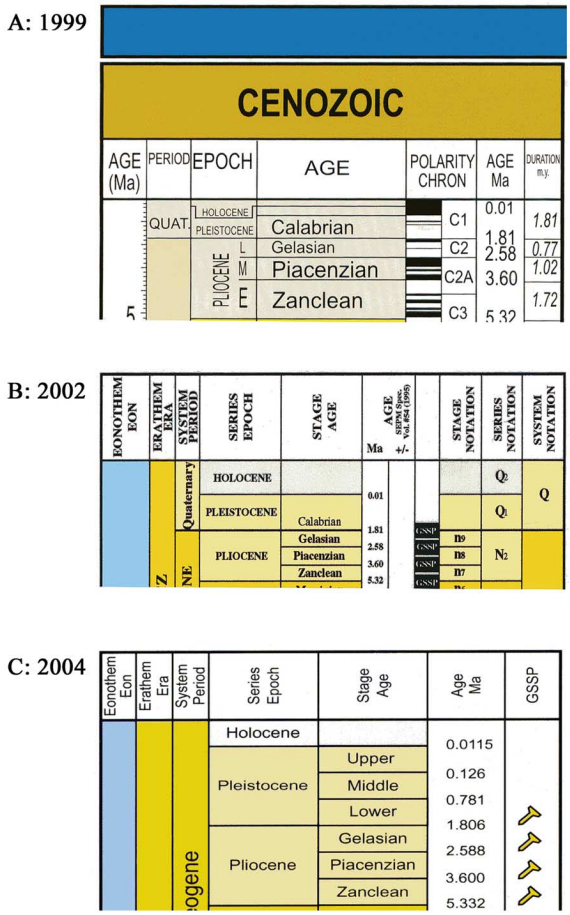

Fig. 1 Examples of the division of the late Cenozoic Era in geological time tables produced for the International Commission on Stratigraphy (ICS). A: Gradstein and Ogg (1999), B: Remané et al. (2002), C: Gradstein et al. (2004). The blue box indicates the Phanerozoic Eon.

apparently never been formally defined and therefore cannot be included in the chart (for his opinion, see Ogg, 2004). Although this point is debatable, it is important to understand that the current ICS management only accept terms that have been 'defined-formally'; effectively 'if it isn't defined, it doesn't exist'. Leaving aside the fact that the term has been in continuous use for 200 years, the unilateral decision to drop it from the geological timetable chart reflects the opinion policy that chronostratigraphical terms must be defined to meet the ICS' criteria. In reality this shows that both (1) the ICS procedure of voting/ ratificationing etc., and (2) individual policy decisions by the ICS secretariat, can produce results that run counter to mainstream opinion and usage, sometimes dramatically so (e.g. Tertiary). It is unclear whether all the major system names etc. have been subjected to this test. What this means for Quaternary is that it is up to us all to save it, if we want it to continue to have a formal stratigraphical meaning, especially at system level, a process for which we have strong support across the board (e.g. Gibbard *et al*. 2005).

At the general public meeting of the ICS, a week later, it became clear that longevity of usage is not an argument that cuts any ice with the ICS executive. Here it seems that ICS policy diverges markedly from biological nomenclature where conservation of long-established names is accepted as a criterion for their continued use. Discussion

of the status of the Quaternary was carefully managed at this meeting. Here, Jim Ogg presented his view that the term, unlike the Pleistocene and Holocene, lacked formal definition (Ogg 2004), and Brad Pillans followed with his proposal to regrade the term to a subperiod (subsystem) (Pillans 2004). Dissent and discussion was restricted, although John Clague (INQUA President), Charles Turner and others made a series of impassioned appeals to the ICS to consult the user community and accept the real situation. The session was halted by lunch and afterwards nothing more was discussed. Personal appeals by Brad Pillans and myself to Felix Gradstein (ICS President) at the end of the meeting revealed that he had decided to accept our joint suggestion, to establish a group to discuss the status and definition of the term. We proposed to convene a committee comprising 4 members of the ICS' SQS, 4 from the INQUA SACCOM, and two others, one from ICS' Neogene Subcommission and a neutral chairman (the chair of another system subcommission).

That's where we are today, awaiting the establishment of this committee, with neither closure nor substantial advance on the pre-Florence situation. In the meantime, the status of the term Quaternary hangs in a void, at least as far as the ICS is concerned. So what is one to do about using the term in the interim? Jim Ogg recommends that it should not be used! Clearly this is not an option for Quaternary workers. The SQS, like the INQUA Executive (Clague *et al*. 2004), take the opposite view (Fig. 2). Since these discussions could last many years, nobody should stop using Quaternary; the term that has served us so well for so long. Even if the ICS choose to believe that it's status is uncertain, the vast majority of the user community do not share this opinion. It is a pity that the ICS management could not accept a small loss of face by backing-down from this unfortunate and ill-advised *contretemps*....

If there's a lesson to be learnt from this, it is that we in the Quaternary have not been doing our job properly in the past. We have allowed terminology to become established without taking care to ensure that it is properly defined, a process that is still happening. Although it is understandable how these things can arise, as our subject advances at lightning speed, we have ourselves to blame partially for the current problems. Several examples of stratigraphical or quasi-stratigraphical terms that we use daily might be consider by others to be un-, or at best, ill-defined, e.g. the Last Glacial Maximum, Heinrich event, etc. It is time to 'get our house in order' so that these terminological tangles can be avoided in the future.

The message seems to be that if we want to retain the Quaternary as a formal term and an indispensable concept, then we will have to keep using it, and to organise to ensure that it is returned to the global geological column.

Phil Gibbard
(Chair, Subcommission on Quaternary Stratigraphy)

Acknowledgements
I thank Jan Zalasiewicz for commenting on an earlier version of the text.

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Global Boundary Stratotype Sections and Points (GSSPs)

Status in March 2004; see ICS website (www.stratigraphy.org) for updates.

EON, Era, System, Series, Stage	Age (Ma) GTS2004	Est. ± myr	Derivation of Age	Principal correlative events	GSSP and location
PHANEROZOIC					
Cenozoic Era					
Quaternary System					
Holocene Series					
base Holocene Series	11.5 ka	0.00	Carbon-14 dating calibration and laminae counts of varved sediments and ice	Exactly 10,000 Carbon-14 years (= 11.5 ka calendar years BP) at the following the Younger Dryas Chronozone and the end of Greenland Stadial 1	
Pleistocene Series					
base Late Pleistocene Subseries	0.126	0.00	Initially dated using astronomical cyles. Now dated using U/Th and OSL.	Base of the Eemian interglacial Stage (=base of Marine Isotope Substage 5e) before final glacial period of the Pleistocene	Potentially, in the Amsterdam Terminal borehole, the Netherlands
base Middle Pleistocene Subseries	0.781	0.00	Dating of volcanic rocks (K/Ar and Ar/Ar)	Brunhes-Matuyama magnetic reversal	
base Pleistocene Series	1.806	0.00	Astronomical cycles in sediments and dating of volcanic rocks (K/Ar and Ar/Ar)	Just above top of magnetic polarity chronozone C2n (Olduvai). Above are lowest occurrence of calcareous nannofossil medium Gephyrocapsa spp. and extinction level of planktonic foraminifer Globigerinoides extremus.	Top of sapropel layer 'e', Vrica section, Calabria, Italy
Neogene System					
Pliocene Series					
base Gelasian Stage	2.588	0.00	Astronomical cycles in sediments and magnetic polarity	Marine Isotope Stage 103, base of magnetic polarity chronozone C2r (Matuyama). Above are extinction levels of calcareous nannofossil Discoaster pentaradiatus and D. surculus (base Zone CN12c).	Midpoint of sapropelic Nicola Bed ("A6"), Monte San Nicola, Gela, Sicily, Italy

Fig. 2 Current recommendations of the ICS' Subcommission on Quaternary Stratigraphy (2003).

DEUQUA – Nijmegen, 30/8 - 3/9

The German Quaternary Association (DEUQUA) held their biannual conference (30–8 to 3–9) jointly with Quaternary colleagues from the Netherlands in Nijmegen, along the Rhine (Waal) river close to the Dutch-German border. Cambridge was represented by Phil Gibbard and Kim Cohen. The 5-day meeting had talks in plenary and parallel sessions, and special symposia on topics as "*The Rhine - a major fluvial record*" and "*The Late-Quaternary of South America, – biological and sedimentological archives for palaeoenvironmental reconstructions*". Two days were filled with excursions.

The theme of the meeting was 'From Source to Delta'. Many of the Dutch and German contributions were from sites along the Rhine River – a system from which the wealth of accumulated data now more and more enables us to truly study a river system from source to sink. It was recognised that to do this it is needed to push the insights in local/regional (sub-)systems further. The Rhine special symposium ended with a discussion on how to scale up our efforts in a meaningful way to try to understand interaction of processes along the whole Rhine, at the same resolution as we now appear to understand the local/regional mechanisms.

The plenary sessions covered a wide range of topics. *O. Anisimov* (Inst. of Hydrology, St-Petersburg, Russia) talked about Modelling Permafrost distribution and degradation under projected future climate conditions. *Phil Gibbard* talked about the Channel area and its rivers. *Zheng Hongbo* (Tongji University, China) gave an impressive talk bridging Indian and SE Asian Monsoonal enhancement (as seen in ODP cores), Chinese Loess deposition and uplift episodes of the Himalayan-Tibetan region since the Late Miocene: e.g. major Neogene developments that created the setting for the Quaternary. On the last day, *Wim Westerhoff* (TNO-NITG, the Netherlands) gave a very clear talk on how the Dutch Geological Survey is now treating their subsurface information such as borehole data and mapped faults. He clarified the concepts of their digital database and the kind of products that TNO-NITG now produce, as a follow up on the traditional analogue geological mapping. Lastly, *J.F. Shröder* (University of Nebraska, USA) talked about denudation and uplift in the Western Himalaya, where incision by Indus-river headwaters may be driving localized, abnormally rapid uplift of mountains such as Nanga Parbat and the K2 by denudational unloading.

The four excursions covered:

- The Twente area, a type area for wind-blown sand in NW Europe showing Saalian ice-pushed deposits and fluvio-glacial sediments, and Weichselian fluvio-aeolian activity; by *R. van Balen* and *J. Vandenberghe*.
- The Niers and Lower Maas valleys: a Saalian Rhine ice-marginal course, with Weichselian reoccupation and Late Glacial abandonment. Using the combination of palynological correlation, dating, fluvial sedimentology and geomorphology, river response during climatic amelioration was reconstructed. The short return to braided conditions that is recognised in the Lower Meuse and was thought to be typical for the rivers in this area, surprisingly was not found in the Niers Valley; by *C. Kasse* and *W.Z. Hoek*.
- The Central Rhine-Meuse Delta: Late Glacial and Holocene fluvial deposition and interaction with sea-level rise and differential tectonics; by *K.M. Cohen* and *W.Z. Hoek*.
- The Reuverian and Tiglian type localities. The latest works in this area have now identified that the classic Tiglian type sites mostly represent a single complex interglacial event sometime between ~2.6 and ~1.8 Ma, and not a period covering a large timespan. W. Westerhoff and H.A. Kemna presented new results on Rhine-river activity during the Reuverian-Tiglian transition, and showed that the lithostratigraphic and chronostratigraphic division around this transition is not one and the same boundary; by *W. Westerhoff*.

For those interested, the DEUQUA excursion guide provides good general introductions to these areas. Other goodies of the meeting were Dutch bread lunches, coffee-'strippenkaart', a nice buffet dinner and a lovely palish-blue bag-pack with the last issues of *Boreas*, *Quat. Int.* and *JQS*. A good time was had by all.

Kim Cohen (Visiting Scholar, QPG)

"Watercannon used on Overheated Palynologists"

XI International Palynological Congress

4-9 July, Granada

Over five hundred participants attended the XI International Palynological Congress, held in Granada between 4–9 July. The conference provided a wonderful opportunity to meet palynologists from different parts of the world, and to learn about the challenges being faced. It was a big meeting with 800 poster and oral presentations divided between the varied topics of palynology. One third of the contributions dealt with living pollen (pollen and spore biology, aerobiology, pollen allergies, melissopalynology [*boneys*], and forensics) and two thirds related to fossil pollen (palaeopalynology and evolution, Quaternary palynology and world pollen databases). Lots of information and only restricted time meant several parallel sessions, occupying four auditoriums of the massive Granada Eurocongres centre.

The dinoflagellate sessions were strategically positioned on Monday morning and Thursday afternoon. Notwithstanding the early hour on Monday, the tone was set with the keynote lecture of Barrie Dale (University of Oslo), on dinoflagellate cysts as ecological/palaeoecological indicators. During the rest of the morning dinoflagellate cyst studies from most parts of the stratigraphical column were presented. The dinoflagellate session finished on Monday evening with Karin Zonneveld's talk on calcareous dinoflagellates as environmental tools. This was not the end of dinoflagellate talks, since several dinoflagellate studies where presented in the session on Tertiary Palynology.

A major part of the conference was occupied, of course, by presentations on Quaternary palynology. The first day kicked off with one of the major themes, 'Vegetation response to abrupt climate changes'. This theme has dominated Quaternary palynology in recent years, supported by numerous studies involving high-resolution pollen analysis of sediments from both the marine and terrestrial domains. Increasingly, high-resolution pollen studies are being accompanied by the investigation of independent climate proxies. Of course, sedimentological sequences with outstanding chronological control are now required to make advances in this area. This was accomplished, for example, by the convincing demonstration of individual species responses to the 8.2 kyr event recorded within laminated lake sediments from Estonia (Seppä & Veski).

As perhaps to be expected, Mediterranean pollen studies were well represented, with a variety of presentations on the theme of 'Evolution of the Mediterranean ecosystem'. Regional perspectives from Portugal, Spain, France, Italy

and the Levant were presented, while a comparative approach to the timing of vegetation changes in the Balearics and Sicily was offered by Pérez-Obiol & Sadori. The outstanding paper on the Holocene was that of Sadori, whose analysis of pollen and, critically, microcharcoal from Lago di Mezzano in Central Italy accomplished the elusive goal of distinguishing climate-driven from human-induced episodes of vegetation change. The QPG end was more than upheld by Vasiliki Margari's excellent presentation on her research on Lesvos, although her demonstration of the far-reaching effects of the North Atlantic climate signal during the Pleniglacial would have sat equally comfortably in one of the sessions dominated by Pleistocene, rather than Holocene, talks.

Perhaps the most striking aspect of the pollen sessions was the truly global outlook of the research. As demonstrated by the sessions on long continental records, tropical palaeoceology and world pollen databases, pollen analysis is active in every continent. While the density of research sites is not comparable, there were many impressive studies from the tropics, the southern hemisphere and Asia. Moreover, these studies revealed the health of local research institutions in these diverse regions.

Compared with the number of high-resolution, multi-proxy studies (where pollen types are effectively reduced to pseudo-climatic variables), ecological approaches to pollen data were not much in evidence. Maybe it's not the stuff of big conference presentations but contributions stressing the ecological nature of pollen evidence, e.g. searching for ecological information in taxonomic details, considering pollen source plants and areas, attempting landscape-scale reconstructions etc., were uncommon in the main Quaternary sessions. In contrast, these interests came to light in some of the other sessions. For example, speakers in the session chaired by Bas van Geel on non-pollen palynomorphs (from freshwater deposits, peats and archaeological sites) stressed the potential ecological interest of the fungal and algal bodies in pollen samples and urged other researchers to document these objects. Of course, the issue of ecological interpretation was addressed explicitly in the session on pollen calibration and quantitative reconstruction of past vegetation cover. The efforts of the researchers who presented in this group demonstrated the lengths it is necessary to go to in order to relate pollen and source area vegetation, and however successful these efforts were in their various settings (Japan, Denmark, Ireland, Britain) they left one with the chilling realisation that all the interpretations of the palaeo-data might be terribly skewed. This was the penultimate day, and may have sparked a downturn in enthusiasm. Time for the conference dinner, I say.

However, before the dinner, one could not help but feel enthusiasm for the outstanding plenary lecture, by Prof. Henry Hooghiemstra (University of Amsterdam) on *Ice-ages in the tropics: new records and improved understanding of long Colombian pollen records*. The combination of a dramatic study region, beautifully crafted natural experiments in terms of the selection of study sites, and an almost inconceivable quantity of pollen analyses (including the world's longest pollen record) added up a memorable lecture.

Comedy moment of the conference was, for me, observing Valérie Andrieu Ponel shouting "Sabotage!" in horror at the prospect of a Powerpoint slide that in some way (although it looked fine to us) wasn't up to scratch. One to remember! Maybe it was just a Beastie Boys moment. The other great moment was watching a mixed gaggle of students and luminaries strolling care free along the city pavement at 2am, oblivious to the approaching water jets of the street cleaners. Although the accident was avoided, the image, however fictional, was so vivid that it stuck in our minds, with the appropriate tabloid heading.

The social program for the conference started with an ice-breaker on the roof of the conference centre on Sunday evening. On Tuesday, there was a typical Andalucian dinner in a traditional hacienda in the countryside near Granada. This included excellent food and local flamenco dancers. *Olé*! On Thursday evening a gala dinner was organised, and we came to the conclusion that at least 300 ducks were sacrificed for us, hungry palynologists. The evening ended with a live performance of local rock band, which inspired most people to reveal their dancing capabilities, and without doubt the stress of the past few days, only to see themselves end up in a large polonaise!

Many of the attendees stayed (at least) one extra day to enjoy a guided tour to the magical palaces of the Alhambra on Friday morning. It must be said that those who had a crack at living *la vida loca* in Granada's Barrio Sacromonte attended the tour with eyes half open.

All in all, a great conference – scientifically and socially!

For those who missed the conference, presentations from the XI IPC will be published as special volumes of *Protoplasma, Grana, Aerobiologia, Review of Palaeobotany and Palynology* and *Quaternary Research*. Abstracts of the oral and poster presentations can be found in the special conference issue of *Polen* (14).

by William Fletcher and Stijn De Schepper

W(h)ither... the Godwin Institute?

CAMQUA continues to cover the story on the Godwin Institute for Quaternary Research

In CAMQUA issue 28 of the previous term, worries were expressed about the future of the Godwin Institute for Quaternary Research after the retirement of its director Nick Shackleton, and readers may wonder what the status is now! The Godwin Institute for Quaternary Research still exists and will continue to exist, although most probably it will go on with a new management structure and under a new name. The "Godwin Institute " and the "Godwin Laboratory" are thought to be too confusing, and "Institute" is thought to falsly suggest some kind of building.

At university level, it is now the policy to stimulate formalised cross-departemental research structures, such as the Godwin Institute, and the continued Godwin Institute may benefit from this policy. The plan is to organise a relaunch event, once the status of the continued Godwin Institute has become clear.

CAMQUA will keep you updated!

Welcome to...

Department of Archaeology

New colleagues, with expertise in palaeodiet, archaeozoology and archaeogenetics research, will be arriving this October at the Archeology Departmernt:
Dr Tamsin O'Connell, Wellcome Fellow
Prof Tony Legge, Leverhulme Fellow
Dr Harriet Hunt and **Dr Diane Lister**

Department of Earth Sciences

David Thornalley, member of Churchill College, joins us as a graduate student supervised by Harry Elderfield and Nick McCave, working on ocean changes in fast climate transitions in the deglaciation and Holocene. He was a Part III student in the Department of Earth Sciences, graduating last summer, and sailed on the *Darwin* in July to collect the cores on which his thesis will be based.

Quaternary Palaeoenvironments Group (Dept. of Geography)

Two new students enroll in the MPhil in Quaternary Science this year:

Carolyn Snyder did a BA, with double Major in Geology and Biology, at Amherst College (Mass., USA). She has already spent some time in the UK, during her MPhil in Environmental Change and Management (Geography Dept.) at Trinity College, Oxford.

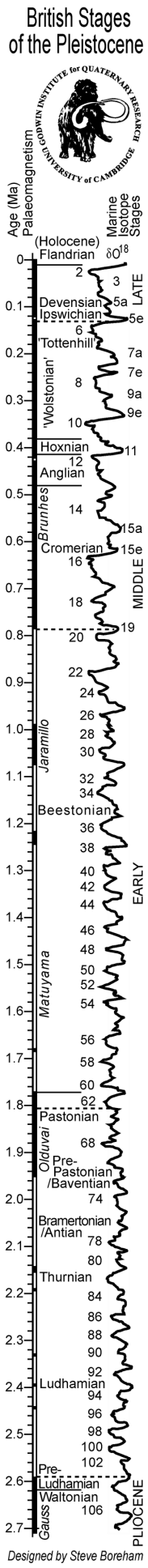
Roy Marden studied Geography at the University of Leeds, where he did a dissertation on the Lateglacial history of southeast USA, using pollen and marine proxy from an ODP core. This year he hopes to continue working on this core, but now looking at a different timeslice.

Oliver Bazely, after finishing the MPhil in Quaternary Science, will continue with a PhD at the Quaternary Palaeoenvironments Group. His project, under supervision of Phil Gibbard and David Pyle (Earth Sciences), will use Mediterranean and Georgian tephra to correlate onshore and offshore vegetation records in the Black Sea region. The project is NERC funded, and hopes to provide a climatological background for the EFCHED project, as well as improving chronological control in the Black Sea and expanding knowledge of Eastern European tephra.

Although not really being a new student or new member of the GPQ, our devoted lab manager **Steve Boreham** deserves a special mention, since he will become a member of the academic staff (Technical Officer) from 1 January 2005. Congratulations!!!

All the best to...

Dr. Philip Hughes (Celebrated Editor of CAMQUA) received his PhD degree earlier this year and has now left Cambridge. He moved northwards to take up a position as Post Doctoral Research Fellow in Geography at the School of Environment and Development, University of Manchester. There, he will continue to study the glacial and periglacial history of the Mediterranean region. This academic year, he will be working in the mountains of Montenegro and Bosnia Herzegovina.



A must have!

"...The ideal Christmas Gift."

"A wooden ruler. Just like in the old days!"

This wooden ruler shows the British Stages of the Pleistocene, Age in Ma, palaeomagnetic reversals and Marine Isotope Stages along it's length from the present day back to 2.7 Ma (MIS 108). The ruler is 30cm long, marked in cm and 10cm divisions on reverse for use as a scale in the field.

"... useful in the laboratory, as in the field"

"Although not recommended,
can also be applied on unruly *students"*

Available from Steve Boreham, Dept. of Geography (sb139@cam.ac.uk) for the mere price of £0.80 (cash)

Quaternary Research Association - postgraduate membership

Postgraduate membership of the Quaternary Research Association costs £10 per year, and includes the Quaternary Newsletter (QN). Membership also provides the opportunity to apply for research grants through the QRA, including New Research Worker's Awards of up to £300 to assist new researchers (PhD and MPhil students of more than 6 months' membership) and Postgraduate QRA Meetings Awards to help with the cost of attending QRA meetings. After one year of membership, members may also apply for the Quaternary Research Fund and the Quaternary Conference Fund. More information at www.qra.org.uk

At the Brussels meeting (*see report on page 4*), Tom Hill (University of West England) stepped down as QRA Postgraduate Representative; Lynda Yorke (University of Newcastle, Lynda.Yorke@newcastle.ac.uk) was elected, joining Fionna Ross (University of St Andrews, fnr@st-andrews.ac.uk) as QRA Postgraduate Representatives for 2004-2005.

Diary Dates, Michaelmas Term 2004

October

QDG Friday, October 22, 8.30pm. "*Multiproxy reconstruction of the glacial ocean surface"* Dr. Michal Kucera (Royal Holloway)

SPRI Wednesday, October 27, 4.30pm. *"Ice stream switching during deglaciation of the northwestern sector of the Laurentide Ice Sheet"* Dr. Chris Clarke (University of Sheffield)

November

SPRI Wednesday, November 3, 4.30pm. "*Evidence for ice flow direction change in central West Antarctica*" Prof. Martin Siegert (University of Bristol)

SPRI Wednesday, November 10, 4.30pm. *"Environmental, social and developmental problems in the Russian Arctic"* Dr. Morgunov (Russia)

SPRI Wednesday, November 17, 4.30pm. *"Measuring millimetric motions: Advancing polar research using precise geodetic techniques."* Dr. Matt King (University of Newcastle)

QDG Friday, November 19, 8.30pm. "*The last days and hours of Long Ago Person, the first ancient glacier body from the Americas: Clues from remains of plants and animals and from isotope chemistry"* Prof. Jim Dickson (University of Glasgow)

SPRI Wednesday, November 24, 4.30pm *"The Neoglacial (late Holocene) mass balance history of the Greenland Ice Sheet"* Prof. Antony Long (University of Durham)

Royal Holoway, London Quaternary Lectures, November 24.
3.30pm "*Deglaciation of the Irish Sea Basin: a return to the Flood?*"
Dr. D. McCarroll (University of Wales, Swansea)
5.00pm "*Heinrich Events and the British Ice sheet: ice-ocean-climate interaction in the NE Atlantic*"
Dr. J. Scourse (University of Wales, Bangor)
Both talks to be held at Main Lecture Theatre, Queen's Building, Royal Holloway.

December

ARCH Friday, December 3, 4.30pm. *"The archaeobotany of cotton in Egypt"* Dr. Alan Clapham (University of Durham)

QDG Friday, December 10, 8.30pm. "*Neotectonics and river response – The Rhine-Meuse delta story"* Dr. Kim Cohen (University of Cambridge / Utrecht University)

QDG talks to be held in West Court, Clare Hall, Hershel Road.
Enquiries contact: M. J. Head, (3)39751, (martin.head@geog.cam.ac.uk)

SPRI seminars to be held in the Scott Polar Research Institute Lecture theatre.
Enquiries contact: Jeff Evans, (3)36570, (jeffrey.evans@spri.cam.ac.uk)

ARCH Talks of the George Pitt-Rivers bioarchaeology laboratory are held in the McDonald Institute lecture room (ground floor).

Deadlines: Contributions for the next issue of CAMQUA should be submitted before the start of next term.

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