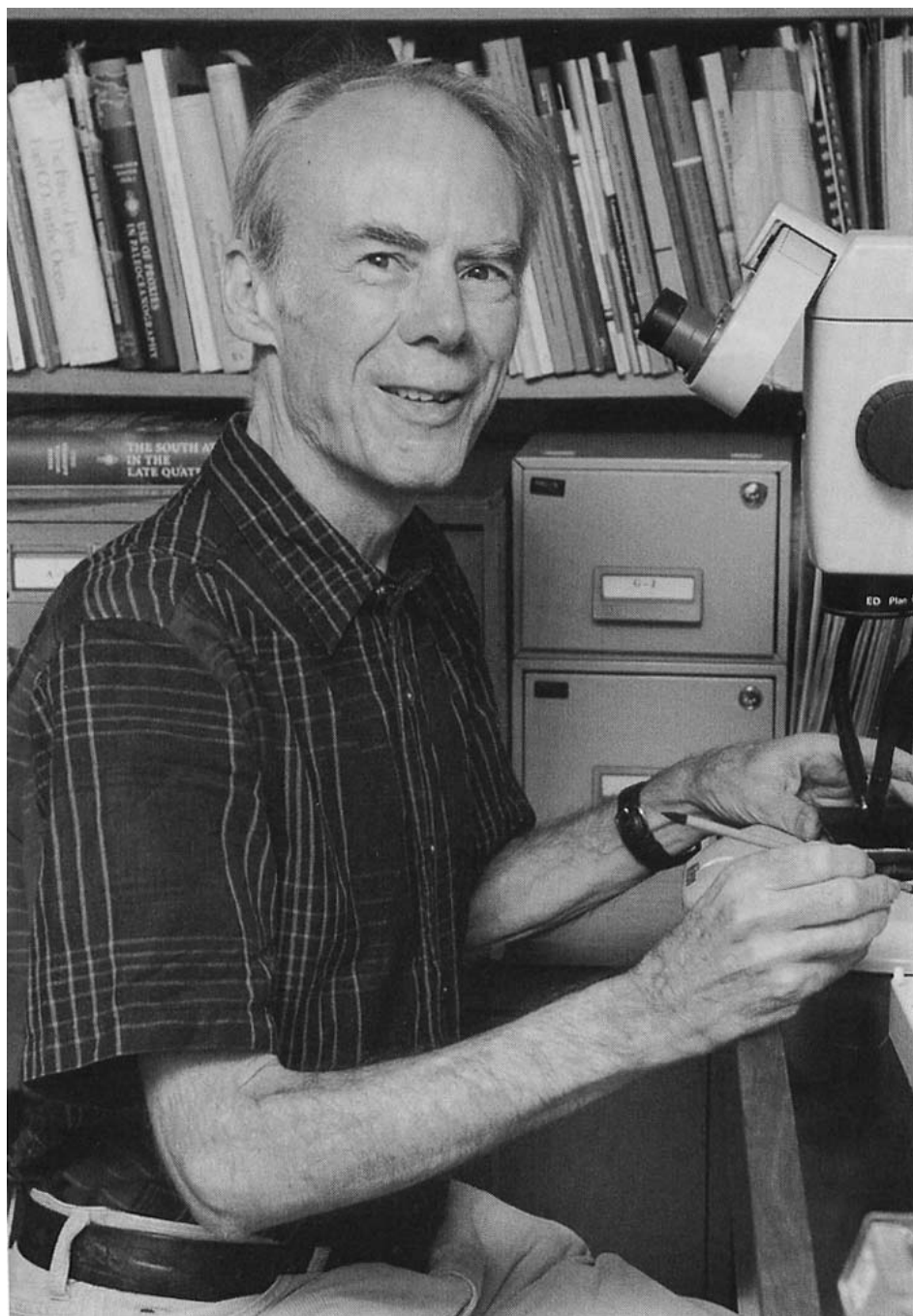


CAM QUA

The newsletter of the CAMBRIDGE QUATERNARY

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EASTER 2006



Professor Sir Nicholas Shackleton FRS 23.06.1937 - 24.01.2006

As you all know, Nick Shackleton died at the age of 68 on the 24 January 2006. We all knew him and for most of us there is no need for the detailed obituaries that have since been appearing in the national and indeed in the international press (see below). Suffice it to say that Nick was arguably one of the greatest geoscientists who ever lived. To most of us he was a friend, a colleague and someone who we just worked alongside. It was so easy for us to be blasé about the fact that he was always around. Now that he's gone, everyone, and especially those in the Godwin Lab group, will be getting used to the enormous gap he has left. Whilst we all know that he could be very difficult when he didn't want to be disturbed, as many have already said, he could also be tremendously challenging and stimulating when his mood was right.

One of Nick's final wishes was that palaeoclimate research and Quaternary studies should continue in Cambridge. This has been, in part, assured by the establishment of a generous endowment of a Visiting Fellowship in Palaeoclimate Research in his name to Clare Hall. But it is now up to all of us to ensure that his legacy, together with that of all the other past members of the Quaternary Research community like Harry Godwin and Robin Andrew, continues in the University.

Listed below are a selection of the recent obituaries for Nick. Personal tributes and some photographs are still available on the Cambridge Quaternary website at:

<http://www.quaternary.group.cam.ac.uk/about/nicktributes.html>

Phil Gibbard

Selected obituaries :

<http://www.guardian.co.uk/climatechange/story/0,,1708274,00.html>

<http://news.independent.co.uk/people/obituaries/article343908.ece>

<http://linux02.lib.cam.ac.uk:2124/nature/journal/v439/n7079/pdf/439928a.pdf>

<http://www.geolsoc.org.uk/template.cfm?name=Obits2005B>

Sir Nicholas Shackleton – Memorial Service
Saturday 6 May 2006
Great St Mary's Church, Cambridge 10.30 arrival for 11 am service
Light refreshments at Clare Hall: 3 – 5 pm

The Formal position of INQUA regarding the status and definition of the Quaternary, March 2006

Taken from the SQS website: <http://www.quaternary.stratigraphy.org.uk/>



International Union for Quaternary Research

The INQUA Executive Committee has finished polling its constituents on the status of the 'Quaternary.' Specifically, the Executive Committee asked individuals and INQUA National Committees whether the recommendation of the International Commission on Stratigraphy (ICS), based on discussions at Leuven in the fall of 2005, was acceptable or unacceptable. That recommendation is that the Quaternary be assigned the status of a Sub-Era/Sub-Erathem with its base at the base of the Pliocene Gelasian Stage GSSP at ca. 2.6 Ma at Marine Isotope Stage 103. INQUA received 204 responses, of which 188 were from individual scientists and 16 were from INQUA National Committees. Verbatim responses are provided in the attached file and are summarized below.

Of the 188 individual respondents, 30 (16%) stated that the ICS recommendation was acceptable; 123 (66%) stated that the recommendation is unacceptable; and 23 (13%) expressed acceptance with considerable misgivings. Most of the respondents in the last group noted that they didn't agree with the ICS recommendation, but preferred it over the apparent alternative that the Quaternary might be removed entirely from the stratigraphic column. Three respondents (1%) recommended that the Quaternary be removed from the Geological Time Scale; and the position of eight respondents (4%) could not be gauged.

Thirteen of the 16 National Committees deemed the recommendation unacceptable; two National Committees stated that it is acceptable, and one Committee voted for acceptance with misgivings. In summary, 66% of individual respondents and 81% of National Committees advised the Executive Committee to reject the recommendation and to continue to work with ICS to find a solution satisfactory to the Quaternary community.

The respondents nearly unanimously support ICS's proposal to define the base of the Quaternary at the base of the Gelasian Stage (2.6 Ma), which is widely recognized as the time at which key changes in Earth's climate, oceans, and biota occurred and corresponds to the Gauss-Matuyama magnetostratigraphic boundary. The vast majority of respondents, however, do not welcome the proposal to assign the Quaternary to a Sub-Erathem. They consider the status of System/Period to be justified and essential. The ICS proposal would leave the base of the Quaternary detached from the base of the Pleistocene, which most respondents consider would violate established practice concerning hierarchical structures. Their view is that it makes more sense to extend the Pleistocene back to 2.6 Ma.

Based on its consultation and lengthy deliberations, the INQUA Executive Committee cannot accept the ICS proposal. Our reasons, which we consider well founded, are as follows: (1) The proposal would allow the extension of the Neogene from the base of the Quaternary to the present day, an extension for which there is no historical precedent or scientific justification. (2) The status of the Quaternary is likely to be progressively diminished. There are no other Sub-Era/Sub-Erathem divisions in the Geological Time Scale, unless the Tertiary is readopted and promoted to this position. The most likely outcome is that the Quaternary will simply be omitted from charts and quickly side-lined in all but local circles or national timescale schemes. (3) Most significantly, the current proposal, with the base of the Quaternary detached from that of the Pleistocene, infringes the hierarchical structure of the Geological Timescale.

The Executive Committee has noted that some recently published stratigraphic schemes already marginalize the status of the Quaternary, and some have omitted the term altogether. It finds this

practice regrettable and considers it may be unsustainable in the long term. It is difficult to envisage that the term 'Quaternary' could be effectively supplanted or marginalised, given that it is already embedded within our daily lexicon and that the study of Quaternary stratigraphy is attracting an ever-increasing number of practitioners who are content with the term and its geological importance. Further, the term is gaining greater public attention and recognition. A four-volume Encyclopaedia on the Quaternary is soon to be published by Elsevier, in both hard and electronic form, which will embed the term and its geological meaning even deeper into the public and scientific psyche. The view of the Executive Committee is that the term will continue to be used widely to facilitate communication and learning, and that there will be wide resistance to any attempt to impose a scheme that does not fit with widespread professional practice and has a sound geological justification for its existence. We would regret confrontation between ICS and the Quaternary community, especially if aired publicly during the *International Year of Planet Earth*, when the eyes of the world will be upon us.

The unanimous position of the INQUA Executive Committee is the following:

- 1) The Quaternary must be a full formal chronostratigraphic unit, the appropriate status for which is the Period (or System).
- 2) The base of the Quaternary should be placed at the current base of GSSP Gelasian Stage (currently in the Pliocene) at MIS 103.
- 3) The base of the Pleistocene should be lowered to 2.6 Ma to coincide with that of the Quaternary Period/System boundary.

INQUA understands that the lower boundary of the Pleistocene cannot be changed until 2008, at the earliest; it is prepared to wait until that time to consider this matter further. We note, however, that the top of the Neogene has never been defined and therefore insist that ICS not extend it to the present. An attempt to do this would be a unilateral and hostile action to the Quaternary community.

We respectfully request that ICS continue its dialogue with INQUA and not simply dismiss the Union's position. Our community is now united, knows what it wants, and will settle for nothing less than control over our period of geological time. We ask that you circulate this letter and the poll results to all members of your Commission as a basis for continued discussion.

John Clague, President INQUA
& the INQUA Executive Committee

Dates for your Diary

Easter 2006

May

- Wed 3rd**
SPRI Dr. Mike Meredith (British Antarctic Survey)
"Variability and change in the Southern Ocean"
- Fri 5th**
QDG Atle Nesje (Department of Earth Science, University of Bergen, Norway)
"Changing Norwegian glaciers: past, present and future"
- Wed 17th**
SPRI Dr. Jemma Wadhams (University of Bristol)
To be confirmed.
- Fri 26th**
QDG Will Gosling (Open University)
"Glacial - interglacial vegetation dynamics in the tropical Andes"

June

- TBC**
QDG Neil Edwards (Open University)
Ocean general circulation models, and their discontents - title TBA

ZOO talks are yet to be finalised check their website for details:

<http://www.zoo.cam.ac.uk/zooone/forthcoming/index.html>

ARCH talks also yet to be finalised – check the website for details too:

<http://www.arch.cam.ac.uk/pittrivers/GPRtalks.html>

PSci (Plant Sciences) are yet to be announced. Check the website:

<http://www.plantsci.cam.ac.uk/seminars/index.html>

QDG talks to be held at 5:30 pm in the Lloyd Room at Christ's College Cambridge.

Full program: <http://www.quaternary.group.cam.ac.uk/events/qdg/>

SPRI seminars to be held in the Scott Polar Research Institute Lecture theatre. Full program:

<http://www.spri.cam.ac.uk/research/seminars/physical/> Enquiries contact: Jeff Evans, (3)36570,
(jeffrey.evans@spri.cam.ac.uk)

**Le Quaternaire, Limites et Spécificités: An International Colloquium organised by AFEQ
(Association Française pour l'Étude du Quaternaire). 1-3 February 2006 at the Muséum national
d'Histoire naturelle, Paris.**

This was undoubtedly one of the largest and most wide-ranging Quaternary conferences held in France for many years attended by over 175 registered participants as well as late-comers. They came from institutions across the country and were joined by colleagues from Italy, Spain, Belgium, Switzerland, Austria, particularly from Morocco, as well as Algeria, Tunisia and Senegal, and, farther afield, from Canada and Chile. The UK was represented by Phil Gibbard and Charles Turner.

The prime reason for holding the meeting was to provide as wide a forum as possible for discussion the issues in the current debate between INQUA and the International Commission on Stratigraphy (ICS) on the future status and definition of the Quaternary, including the long-standing wrangle about the position of its lower boundary.

There was an extremely intensive programme of oral presentations over two and a half days, as well as many posters which were also introduced briefly in the lecture theatre as well – a procedure we had not met before. Although a good number had a definite bearing on the matters under debate, the topics of the lectures and posters concerned a broad range of Quaternary science, some quite eclectic - deliberately, in order to bring together a truly representative congregation. Highlights for us were papers by Jean-Paul Suc and his students from Lyon on Plio-Pleistocene vegetational and climatic development, with evidence from right across the Mediterranean Basin, from the Black Sea to Spain and North Africa. Also impressive were the first results of the big international collaborative project, led by Valérie Andrieu-Ponel and Jacques-Louis de Beaulieu, on the deep lacustrine sequence of deposits from Les Echets, near Lyon, which span the last 140 ka.

As might be expected from the traditional strengths of French Quaternary research, there was a strong showing in the fields of mammalian palaeontology and archaeology, particularly of cave sites. Claude Guérin from France and Maria Rita Palambo from

Italy and others emphasised the marked nature of the faunal turnover at 3.0 - 2.6 Ma, as opposed to lesser developments, often staggered in time, such as the "wolf event", at younger horizons between 2.0 – 1.5 Ma. From both the palaeobotanical and palaeozoological specialists there was, therefore, strong and virtually unanimous support for recognising the base of the Quaternary at about 2.6 ma, to coincide with well-defined natural biostratigraphic and palaeoenvironmental changes. There was also discussion of early hominids and their fossil record and taxonomy in Africa (Sandrine Prat) and their subsequent colonisation of Europe (Carlo Peretto & Robert Sala) and South-East Asia (François Sémah).

On the last day, following the oral presentations, we moved to the nearby Institut de Paléontologie Humaine for a buffet lunch and then to the 'amphithéâtre' of the Institut for the final debate under the chairmanship of Denis Didier-Rousseau (as one of the Vice-Presidents of INQUA) and with a panel including our own Phil Gibbard, who had previously given his paper on the historical terminology of the Quaternary. Discussions were very lively and raised a variety of points, but it rapidly became clear that, as with almost all the earlier oral presentations, there was a very strong preference for the second preference set forward in the recent INQUA circular, namely that the Quaternary should be retained as a system, to follow the Neogene, and that the base of the Quaternary should be lowered to 2.6 Ma, with the Gelasian Stage being incorporated within the Pleistocene. Since the base of the Gelasian has an already defined stratotype, this would provide and a fully prepared and acceptable type site for both the base of the Pleistocene and of the Quaternary itself. At this point Carmen Zazo revealed that the result of the AEQUA internet poll in Spain had also produced a majority of over 90% for the same option. With a single abstention on a show of hands, it was resolved that AFEQ should send this message too to INQUA, as the virtually unanimous view of this large gathering of French and international Quaternary scientists.

Charles Turner



UNIVERSITY OF
CAMBRIDGE

A PUBLIC LECTURE
to celebrate the opening of the
Leverhulme Centre for
Human Evolutionary Studies

Richard Leakey

*Human evolution:
what can be known?*

Tuesday 2nd May

5.00pm

Lady Mitchell Hall,
Sidgwick Site, Cambridge

ALL WELCOME



Mammoth Maketh the Man

From The Times 17th April 2006

By Mark Henderson, Science Correspondant

REGULAR meals of mammoth meat helped some early human tribes to expand more quickly than their largely vegetarian contemporaries, according to a genetic study by British scientists.

Human populations in East Asia about 30,000 years ago developed at dramatically different rates, following a pattern that appears to reflect the availability of mammoths and other large game.

In the part of the region covering what is now northern China, Mongolia and southern Siberia, vast plains teemed with large, now extinct mammals such as mammoths, mastodons and woolly rhinoceroses and the number of early human beings grew appreciably between 34,000 and 20,000 years ago.

Further south, where the terrain was covered in thick forest, the population expansion began much later — between 18,000 and 12,000 years ago.

Chris Tyler-Smith, of the Wellcome Trust Sanger Institute in Hinxton, Cambridgeshire, who led the research, said: “We asked ourselves what differentiated these two groups — what was different about the environment in the north? The most appealing explanation is the vast abundance of the “Mammoth Steppe” — a time and a region when large numbers of grazing animals and their predators roamed the grassy plains.

“At that time, the southern regions of East Asia were probably densely forested and impenetrable to humans. The only robust explanation for the early success of the northern populations is that they 50,000 years ago that was discovered near Thetford, Norfolk, in 2002.

The extinction of mammoths and many other large mammals has also been persuasively linked to the arrival of humans on different continents: the decline of the creatures in North America, for example, correlates closely with the date at which a human presence there has been confirmed.

Scientists think it likely that Stone Age man hunted mammoths by ambushing them and attacking them with spears at close range. As the vast animals had no other natural predators they would have been easy prey. It is also possible that hunters drove them into traps or off cliffs.

BEAST	HUMAN
Dates	
2m — 9,000 years ago	c150,000 years ago to present day
Distribution	
Asia, Europe, North America	Every continent bar Antarctica
Diet	
Herbivore	Omnivore
Typical height	
14ft (4.3m)	5ft (1.52m) (Stone Age humans)
Typical weight	
2.75 tonnes	10 stone (63kg)



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Letter from the editor:

It is really important to the continuation of this newsletter that people do send in contributions. If you read something relevant in a newspaper then PLEASE drop me a line about it – I don't have time to read every newspaper and inevitably interesting articles get missed. Also if you do something interesting that is relevant then let me know that too!

Editor: Sarah Farquhar (saf28@cam.ac.uk)
Department of Geography, University of Cambridge



Check out back-issues of CAMQUA on-line at
<http://www.quaternary.group.cam.ac.uk/camqua>
