



**SASQUA**  
SOUTHERN AFRICAN SOCIETY  
FOR QUATERNARY RESEARCH

# NEWSLETTER

October 2005

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## PAST PRESIDENT'S REPORT

I am happy to report that SASQUA is alive and well, but perhaps not thriving as much as many of us would like. I thank my two most recent predecessors Colin Lewis and Julia Lee-Thorp for their past efforts and I welcome Stefan Grab as the new President and Mike Meadows as the new Vice President of the Society. Membership remains fairly steady at 130 odd, but we are losing many relatively young members as they move on to real jobs (often overseas). The Society is in a good fiscal condition, thanks largely to the work of Greg Botha as Treasurer and John Rogers as Secretary in chasing up members in arrears. So, a general appeal to students to please stay connected to SASQUA once you graduate, to overseas researchers working in southern Africa to join up and to those who are members to please pay your dues. The SASQUA Newsletter and Programme with Abstracts of the biennial meetings is the best way to keep abreast of what is happening and are available only to paid up members! Jeannette Smith has done an excellent job in producing an attractive Newsletter. Please forward items of interest when she sends out her appeal for the next Newsletter.

In our effort over the last two years to increase awareness and interest in the Quaternary, we have spearheaded the development of a SASQUA web page ([www.sasqua.co.za](http://www.sasqua.co.za)) and a SASQUA poster. These have both been initiated but need a strong follow through. Despite many appeals from Greg Botha and me, the website does not yet contain the sort of information to convey the importance and excitement of ongoing research in the Quaternary. To address this shortfall, Greg, Stefan and I will be making specific appeals to members to provide short text and illustration contributions. Once we have an attractive, informative web site that we can be proud of, the poster will be printed up and distributed to schools, university departments and museums throughout the region as an advert for people to visit the website. There will be a follow up in April 2006 to ensure that progress has been made on these two important efforts. In

addition, many of us give public lectures and I appeal to everyone to mention SASQUA to the public and to let Greg Botha know so that he can include it in his annual report to INQUA.

A big thanks to the Organising Committee and sponsors for making the biennial conference at the University of the Free State in Bloemfontein such a big success. It was, in fact, the 18<sup>th</sup> meeting according to some old timers who were there way back in 1969! There were a total of 62 attendees presenting a total of 38 abstracts on Quaternary research that stretched from the continental margin of South Africa to northern Europe. We heard evidence of climate change in the Southern Ocean, the southern continental interior of Africa (including the Kalahari), the tropics of Central Africa, the lakes in East Africa, the Nile River, the Mediterranean, and central and northern Europe. In summary, it was a fascinating overview of the IGP-PAGES PEP III transect, with an international array of speakers from Africa, Europe and beyond. It was particularly impressive to see the large number of OSL, radiocarbon and stable isotope values from which much needed age models were presented to make a really big step forward in our understanding of the complex array of palaeoenvironments covered by the PEP III transect. It was also great to see the comparisons of terrestrial and marine records. The meeting had many teas, dinners and a half-day field excursion (led by Johan Loock) out to the fossiliferous dongas of Erfkroon during which participants all had a chance to discuss ideas and make new friends and collaborations. I was sorry to see that only one participant was at the meeting from the proximal Gauteng area, especially after such an enthusiastic turn out at the last meeting. Congratulations to Brett Smith and Caren Herbert for receiving the best student poster and oral presentations, respectively. Be sure to mark your calendars now for the 19<sup>th</sup> SASQUA Biennial Conference to be held in Pietermaritzburg!

*John Compton*  
*University of Cape Town*

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## PRESIDENT'S REPORT

Dear SASQUA members,

It is an honour and privilege to serve you as President for the next inter-congress period leading up to the 2007 SASQUA meeting in KwaZulu-Natal. On behalf of SASQUA, I would like to thank John Compton (past president) and the previous council for their efforts and new initiatives taken over the past two years. Now that the 'hot seat' has shifted to me, I find myself with the challenge of continuing to take SASQUA forwards and building upon the good work and foundations left by the previous council. I am pleased to see that we have a dynamic council, which I am sure will work together well to take the society from strength to strength and offer outstanding service to members.

Unfortunately I was unable to attend the 18<sup>th</sup> SASQUA Conference held in Bloemfontein this last April. I believe the conference was a great success and offered a high standard of presentations. Congratulations to the conference organizers and all those who participated. It is particularly pleasing to see a growth in our student participation at conferences. Hearty congratulations to Caren Herbert and Brett Smith for being awarded the best student oral and poster presentations respectively. Students are the future generation of our society and so we place particular value in our student membership and participation. To those students who have recently graduated- congratulations to you and please stay in contact with us.....better still, endeavour to remain a paid up member!

It is also noteworthy that several of our 'retired' members have remained loyal and active within our society – many thanks to you all. Every SASQUA member is important to the Society and we would thus love to hear from you. I believe that the vision for our society should be to get every member involved in the building of a proactive Quaternary association in southern Africa. With ever increasing demands on our hectic time schedules and more conferences to choose from than we could dream to attend, I realize that such a vision is rather optimistic. Nevertheless, I invite you all to extend the name of SASQUA to colleagues and students who have an interest in the Quaternary of southern Africa. The future strength and growth of SASQUA will be

determined by the combined efforts of all its members. To this end, your ideas on how we can grow our membership and offer more to our members would be most welcome. I would be delighted to hear how you would like to become more proactive within our society.

SASQUA council remains committed to its members and we endeavour to work on the following areas:

1. Continue to improve the SASQUA web site ([www.sasqua.co.za](http://www.sasqua.co.za)). Members are please requested to forward interesting news, materials, pictures etc to Greg Botha: [iti04964@mweb.co.za](mailto:iti04964@mweb.co.za)
2. Complete the preparation of posters and pamphlets to advertise our web site and society.
3. Host regional talks or seminars during 2006.
4. Improve communication with our members (possibly through the establishment of a list-server).
5. Improve communication with other Quaternary research associations.
6. Continue to find ways of supporting our students.

We appreciate your input and further suggestions.

I wish you all enjoyable and memorable moments in the year ahead and hope to stay in contact with many of you during the forthcoming months.

Blessings  
*Stefan Grab*  
*Wits University*

**XVI Biennial Conference  
Bloemfontein, Free State  
30 March to 2 April 2005**

**Conference Report  
Prepared by Caroline Duncan  
University of Cape Town**

The University of the Free State, Bloemfontein played host to the most recent meeting of SASQUA, this time held jointly with researchers from the African and European Pollen Databases (APD and EPD respectively) in March/April 2005. Although usually dedicated to research into the changing nature southern African environments, the meeting allowed for an overview and integration of research spanning the African continent with some investigational forays into southern Europe owing to the strong ties with North African flora. The theme chosen for the conference was inspired by Paul Gaugin, with the translated French quotation: "Where do we come from? What are we? Where are we going" aptly transposed into the setting of Quaternary Research. This idea was introduced by the Dean of Natural and Agricultural Science, Prof HD van Schalkwyk during his conference opening speech. Setting the scene for the "where we are" component, SASQUA president Prof. John Compton introduced southern Africa in its potential for Quaternary study. He pointed out the ancient nature of the geology but also the lack of ideal deposits for investigating and assembling quaternary chronologies of change. The idea of "Where do we come from? What are we? Where are we going?" was reiterated through both the oral and poster presentations and extended to the post-conference excursions.

The conference was peppered with diversity. Presentations spanned a variety of scales; the relatively recent was investigated in A. Ekblom's study on the last 400 years of socio-natural change and environmental history of Chibuene Mozambique. A variety of Holocene studies from all over Africa were contributed, such as M. Meadow's study on the Okavango delta panhandle, J. Compton's investigation of sea-level fluctuation in Namibia, and C. Hely *et al.*'s review of mid-Holocene vegetation of central Africa. Even more distant environmental change was assessed in the late Pleistocene study by Henry Lamb *et al.*'s on the desiccation of Lake Tana, the Blue

Nile's source as a potential cause for the collapse of Egyptian empire, and the late Pliocene investigations by Lydie Duont *et al.* into the changes of vegetation and climatic conditions in Namibia during intensification of Northern Hemispheric glaciations.

Furthermore, a diversity of sources, materials and methods were used in understanding the Quaternary. These included ocean deposits (Rogers, Compton, Rau, Wiltshire, Herbert, Dupont and Perez), dung middens (Seliane, Gil-Rommerer), lake sediments (Meadows, Huang and Lamb *et al.*), marshes (Hajar) and aeolian sediments (Thomas, Chase). Geomorphological evidence for environmental change was contributed by Margaret Marker in her comparison between South Africa and British palaeokarst, Peter Holmes in his presentation on the barrier dune formation in the southern Cape and by R. Grow *et al.* in her presentation on slope instability mapping and classification of mass movement features in the Kwazulu-Natal area. Geological studies were added by M. de Wit and P. Beaumont in their conference-opening seminar on the work in progress at the site of Canteen Koppie, an alluvial diamond digging site active from 1869-1927 near Barkley-West. The site not only produced diamonds but thousands of stone-age artefacts while the geological and geomorphological appraisal considered whether the Vaal once flowed through a now-abandoned channel. Poster presentations by P. Srivastava *et al.* on fluvial sedimentation and tectonic uplift along the coast of central Namibia, and by A. Kharuxas and Compton on an Upper Quaternary coastal sediment succession north of the Orange River, reviewed change through geological sampling. Archaeological and palaeontological contributions were also provided, such as in H. Ron *et al.*'s investigation into the dates of first occupation of Wonderwerk Cave, Northern Cape using magnetostratigraphical approaches for dating, while J. Brink's poster in uncovering an aquatic ecosystem in central South Africa for middle to late Pleistocene using macro-mammal evidence provided an important faunal facet to environmental reconstruction, often dominated by floral studies (and pollen analysis in particular).

The conference was not, however, restricted purely to academics and on the evening of the first day, the lecture hall was opened to the

public for the informative (and humorously irreverent) lecture by Dave Thomas of the University of Oxford on the topic of "Will the Kalahari expand? Climate change in interior southern Africa 100 000 years ago to 2100 AD". The topic, providing a broad and enlightening account of dry land study, was found to be thoroughly pertinent and entertaining for delegates and public alike. The lecture theatre was abandoned in favour of the field on day 3 of the conference, for an excursion to Erfkroon, one of the most extensive Pleistocene fossil sites in southern Africa. The delegates were allowed to wander through the extensive dongas, whose walls provided natural profiles illustrating up to five episodes of cut and fill sequences as well as deposits of fossil artefacts including bones, shells and stone tools. The tour moved towards the banks of the Modder River to examine the river terracing and afterwards back to the University for the farewell conference dinner at the UFS Centenary Complex, ending the major part of this year's conference. The farewell dinner emphasized the amount of logistical and administrative care and planning by Louis Scott and his UFS team that was evident in every aspect of the conference.

The post-conference excursion visited a variety of important palaeoenvironmental sites through a number of South Africa's biomes. On the first leg of the excursion, from Bloemfontein to Colesberg, the tour stopped off at Deelpan as well as a remarkable archaeological site bearing San rock engravings and remnants of old kraals. The next day Blydefontein was visited, a farm situated near to Noupoot in a localised patch of grassland biome surrounded by Nama Karoo. This site revealed much through a variety of sources; pollen analysis of alluvium, swamp and peat deposits, dung middens, cave dust, palaeontological finds and geomorphology. The trip continued to the overnight stop in Knysna, in the Western Cape, situated in the region whose vegetation consists of a mosaic of dry and wet Afromontane forest intermingling with elements of heath or fynbos endemic to the Cape. The site of Groenvlei was visited briefly, last analysed in 1968 providing one of the earliest and most continuous records of environmental change in the Southern Cape area. The delegates then paid the nearby beach a visit under the pretext of examining

the beach profiles and palaeosols. At this point, further members split off for home, while the remaining group travelled north again to the Cango caves, significant for their speleotherm evidence.

The conference provided an excellent opportunity to mix, academically and socially, with members from both Africa and Europe and from diverse disciplines under Quaternary Research. It provided an excellent forum for revision of concepts and the introduction of new information, providing a continent-wide overview of the nature and extents of changes that have occurred at varying scales through the Quaternary. It was evident that dedication matched passion for the topic in conference and presentation preparation, resulting in a highly successful 16<sup>th</sup> biennial SASQUA meeting. And in the words of T.S Eliot, another artist whose words can so aptly describe palaeoecological pursuits,

*"And the end of all our exploring  
Will be to arrive where we started,  
And know the place for the first time."*

**TS Eliot**

**Little Giddings (No. 4 of 'Four Quartets')**

## **Conference Awards**

**Caren Herbert**, University of Cape Town, won prizes for best student presentations for her paper on "High-Resolution Holocene Records from the Namaqualand Mudbelt Off the West Coast of South Africa"

**Brett Smith**, University of Cape Town, won prize for best student for his poster "The Late Quaternary History of Mediterranean Climate Heathland in South Western Australia and the Western Cape, South Africa"

**BGM Minutes – find at end of newsletter**

**Prepared by John Roger  
University of Cape Town**

## RESEARCH NEWS & UPDATES

**John Compton**  
University of Cape

### Postgraduate Students in UCT Geological Sciences:

**Giuliana Franceschini** and I have been busy getting her PhD thesis chapters published (see *publication section for list*). In addition, she has just submitted a paper to *Journal of Coastal Research* "Holocene evolution of the Sixteen Mile Beach Complex, Western Cape South Africa." Giuliana is now back in Italy expecting a baby!

**Rochelle Wigley** is now in the UK working for the government. She will graduate with a PhD in December and has published two papers from her thesis (see *publication section for list*).

**Caren Herbert** continues to be up to her elbows in green mud from the Namaqualand Mudbelt. She is looking into high-resolution Holocene records from cores recovered during the 2003 Meteor M57-1 cruise and presented some of her initial results at SASQUA in Bloemfontein. For her age model she is using AMS radiocarbon dates of small gastropods preserved in the mud deposit. She successfully upgraded from the MSc to PhD programme.

**James Wiltshire** is working on slope cores from the same Meteor M57-1 cruise looking at glacial to interglacial changes in sediment deposition. He also presented his initial results at SASQUA on the relation of reworked shelf quartz and glauconite grains onto the slope during climatic and sea-level changes. James is busy picking foraminifera to make a high-resolution age model based on oxygen isotope stratigraphy and hopes to finish up his MSc by the end of this year.

**John Rogers** and I had several **Honours Projects** last year on Quaternary deposits on Robben Island (**Phumzile Mkhize**) and coastal Namibia (**Angela Kharuxas**). Both students have moved on to industry jobs to payback bursary support, but maybe they will return to postgrad studies in the future.

It was decided to discontinue the Quaternary Science Honours programme at UCT because most students doing a Quaternary Honours

Project preferred to graduate with degrees in Geology, Environmental Science or Archaeology. The MSc Quaternary Science degree will be retained. In addition, the Quaternary Research Centre will continue to promote Quaternary science through workshops and seminars but will no longer be a formal centre at UCT. It is sad to see **Julia Lee-Thorp** leave for the UK as she was the major driving force behind many of UCT's Quaternary initiatives. It is hoped that new recruits to the academic staff will have similar interests and ambitions!

### Meeting Attended:

As a national member of South Africa's Scientific Committee on Oceanic Research I attended the Executive Committee Meeting of the Scientific Committee on Oceanic Research (SCOR) in Cairns Australia (28 August – 1 September 2005) and would like to alert SASQUA members to many of the interests of SCOR that overlap with Quaternary science. There are a number of working groups within SCOR and collaborations with other organisations particularly PAGES (Past Global Changes) and IMAGES (International Marine Global Change Study) that have past climate change as their focus. You can visit their web site [www.jhu.edu/scor](http://www.jhu.edu/scor) for details on the current working groups and how to propose future working groups. John Rogers and I are currently trying to set up a South African committee to IMAGES. If any SASQUA members are interested in marine sediments as archives of past climate change and would like to be involved in future ocean cruises, please contact us.

**Stefan Grab**  
Wits University

### Current Research Projects:

1. Investigating Quaternary landforms and their associated contemporary vegetation dynamics in the Central Otago mountains, South Island, New Zealand. In collaboration with Prof. **Alan Mark** and Prof. **Kath Dickinson**, University of Otago.
2. Reconstructing Lesotho's climatic and environmental history for the period 1870-1950 based on archival records. In collaboration with Dr **David Nash**, University of Brighton.

3. NRF funded project to map and research geomorphological phenomena in the southern Drakensberg montane zone.

#### **PhD Student Projects:**

**Joel LeBaron** – Geoarchaeology along the Limpopo River

**Stephanie Mills** – Quaternary sedimentary deposits in eastern Lesotho

#### **MSc Student Projects:**

**Christine Deschamps** – Gully erosion in eastern Lesotho wetlands

**Nicholas Mulder** – Remote sensing for snow cover distribution in the high Drakensberg.

**Devlyn Hardwick** – A mass movement classification for the Drakensberg

**Uche Ezike-Dennis** – Reconstructing northern Nigeria's recent climatic and environmental history based on archival records.

#### **Philippa Huntsman-Mapila University of Botswana**

##### **Palaeo-environmental research in NW Botswana:**

Over the past few years, palaeo-environmental work in the Makgadikgadi-Okavango- Zambezi (MOZ) Basin has been a central theme of research carried out at the Okavango Research Centre based in Maun, Botswana. The MOZ Basin is a large structural depression formed by a southwesterly propagating extension of the East African rift system. This depression was drained and filled periodically by south easterly flowing rivers during the Tertiary and Pleistocene as the area was faulted and half grabens developed. Tectonic activity along the same trend resulted in uplift along the Zimbabwe-Kalahari axis possibly during the late Pliocene-early Pleistocene causing the impoundment of proto Okavango, Kwando and upper Zambezi drainage. Current work includes new approaches to the interpretation of palaeo-lacustrine environments within the MOZ basin.

Recent work has focused on Lake Ngami, where sediment samples from a continuous 4.6m profile were analysed for geochemistry and dated up to c. 40 ka. Certain units in the

profile were found to be diatom rich and these assemblages, with the geochemical results, were used as indicators of high and low lake levels within the basin. Preliminary results suggest that at 21 ka, shallow, aerobic, turbulent conditions were prevalent, but lake levels were at this time increasing to deeper water conditions up until c. 17 ka. This period coincides with the Late Glacial Maximum, a period of increased aridity in the central southern Africa region. These results indicate that lake levels in the Lake Ngami basin are responding to rainfall changes in the Angolan catchment area and local rainfall.

We now plan to link palaeo-environmental changes to patterns of human biogeography in the region. Please feel free to contact us for further information on this project at

#### **Contact Details:**

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#### **Julia Lee-Thorp University of Bradford**

##### **Affiliation Update:**

I have recently left the Department of Archaeology at the University of Cape Town to take up the Chair of Archaeological Sciences at the University of Bradford. I will retain strong links with UCT, however, and plan to continue with various active African palaeoanthropological and -climatological research programmes in addition to exploring avenues afforded by the new post. My new contact details are:

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#### **African Earth Observatory Network (AEON):**

SASQUA members may be interested to hear about the formation of a new multidisciplinary research initiative, lead by Professor **Maarten**

**de Wit**, and based at UCT. The aim is to use African geological and archaeological histories as guidelines to facilitate better planning for the future. The idea is to develop a common space from which to survey and test Earth System evolution, resource economics and the resilience of the environment, and to develop robust Earth Stewardship models. The heart is a state-of-the-art geochronological and analytical laboratory, for which the Innovation Fund has provided R25m for instrumentation. The centre will provide opportunities to train a new generation of post-graduates and post-doctoral researchers from multicultural backgrounds in Earth System Science, and researchers from South Africa and beyond will have access to the instrumentation. A building on UCT's upper campus has been allocated (the former Marine Geoscience Building) and plans for the refurbishment are currently in progress. A booklet is available; contact Prof. de Wit at maarten@cigces.uct.ac.za.

#### **Conference Report Back:**

The Department of Archaeology at UCT recently hosted, from 28-31 August 2005, the fifth in a series of multidisciplinary meetings to discuss topics concerned with processes of fossilization and preservation of calcified tissues in archaeology and palaeontology. The local organizing committee included Julia Lee-Thorp (convenor), **Judith Sealy, Becky Ackermann, and Nick van der Merwe, and Francis Thackeray and Lucinda Backwell** (the post-conference excursion organizers). About 45 local and international delegates from as far afield as Canada and Taiwan attended the meeting. The theme was "Beyond Documenting Diagenesis", and the meeting began with an overview paper "*Why study preservation of calcified tissues in archaeology and palaeontology, and how best to do it?*" by Judith Sealy and Julia Lee-Thorp. A good idea of the topics discussed can be gleaned from the sessions: Experimental Approaches to Diagenesis; Diagenesis and Taphonomy; Quantifying Diagenesis in Old Fossil Material; Elemental Mobility and Composition, and Preservation and Patterning of Biomolecules. The studies presented ranged widely in age (from the Middle Triassic to modern experiments), approach, and application. Dr **Bob Brain** presented the keynote public lecture, "Learning the language of the bones" in which he presented a personal history of his adventures among fossil bones and development of the new field of African cave

taphonomy. There was a half-day excursion to the West Coast Fossil Park (Langebaanweg) and the Middle Stone Age coastal site of Yzerfontein, and the post-conference excursion visited the Sterkfontein Valley sites.

Further information about the programme can be obtained from the website:  
<http://www.uct-cmc.co.za/conferences/2005/bonediag/info.html>.

#### **Colin Lewis Rhodes University**

##### **Field Research:**

I visited Ascension Island and the island of St Helena in May and June 2005 and undertook three weeks field work on the latter island. I collected bones from sand and colluvial deposits, which he logged, in the valleys leading into Prosperous Bay, Sandy Bay and Potato Bay, near Lot's Wife Ponds and at Sugarloaf Ridge. I also visited Dry Gut and other sites. Dr **Philip Ashmoel** is presently examining the bones in Scotland. His book on the biology of the island, written jointly with his wife, is the standard text on the subject relating to St Helena. Once Dr Ashmoel has completed his studies of the bones I hopes to send bone samples to QUADRU for dating. I have submitted a preliminary report on this research to His Excellency The Governor of St Helena and to the Saint Helena National Trust.

##### **Meetings Attended:**

I attended the AGM and West of Ireland Field Meeting of the Quaternary Research Association, which was held in Galway from 5-10 April 2005. I subsequently continued fieldwork in the Dingle Peninsula.

#### **Robyn Pickering Universitaet Bern**

I recently graduated with my MSc (with distinction) from Wits University in June 2005. My thesis is titled "The stratigraphy, chronology and palaeoenvironment of the Pleistocene cave fill, Galdysvale Cave, South Africa" and investigates the climatic control over the nature and rate of sedimentation at Gladysvale Cave. This research has lead me to my current PhD studies at University of Bern, Switzerland, with Prof. Jan Kramers.

Here I am looking into the Uranium-Lead dating of other hominid-bearing caves within

the Cradle of Humankind, particularly Sterkfontein Cave. This work includes a re-examination of the stratigraphy of these sites and this, combined with the U-Pb dates, will test the climatically controlled cave sedimentation model I developed at Gladysvale Cave.

**Affiliation Update:**

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**Francis Thackeray  
Transvaal Museum**

**HOPE at Transvaal Museum:**

I continue to excavate at Kromdraai in the Sterkfontein valley. Work is ongoing with a French team (**Frank Senegas, Jose Braga and Dominique Gommery**), together with **Stephany Potze and Ceri MacRae** (associated with the Transvaal Museum. Our programme is called HOPE, an acronym for Human Origins and Past Environments.

There is HOPE at the Transvaal Museum, despite limited funds! At Kromdraai B we have discovered a hominid humerus, which probably represents the same individual as the type specimen of *Paranthropus robustus* discovered in 1938 and described by Robert Broom. The newly discovered humerus will be described in a forthcoming issue of the *Annals of the Transvaal Museum*. We now know where to excavate at Kromdraai if we are to expect to find more of the skeleton of the type specimen of *P. robustus*. Frank Senegas, Ceri MacRae and Stephany Potze are working on rodents which are useful for palaeo-environmental reconstruction. Already we know that rodent concentrations are higher in sediments associated with high vanadium concentrations, and we infer that such intervals are associated with episodes of relatively high rainfall.

We have obtained palaeomagnetic dates for Kromdraai, working in collaboration with Joe Kirschvink of the California Institute of

Technology. We also have exciting new results concerning the age of Mrs Ples from Sterkfontein, based in part on a reconstruction of the orientation of the cranium, facilitating palaeomagnetic analysis of associated breccia and calcite.

**Periodicity in Tree Rings, Nile River Flooding and Sunspots:**

In 1996 I published the results of a study of tree rings in a sectioned trunk of a yellowwood tree (*Podocarpus*) which is now believed to have grown in the Knysna area from about 1350 - 1937 AD. (Thackeray, *Palaeoecology of Africa and the Surrounding Islands*, 24, 233-240). Periodicities of circa 18 and 135 years were identified.

An 18 year cycle has also been identified in a yellowwood disk from Karkloof in Natal, reported in 1976 by Martin Hall (*Annals of the Natal Museum*, 11, 693-703), and can be related to variability in rainfall cycles reported by Preston-Whyte and Tyson (1988, *The atmosphere and weather of Southern Africa*, Oxford University Press, Cape Town).

The 135 year cycle identified from *Podocarpus* tree rings was tentatively associated with long term variability in sunspots (Thackeray, 2002, *South African Journal of Science* 98, 104). More recently, a 135 year cycle in Nile river cycles has been reported in the media (Pretoria News, March 14, 2004, circulated by Sapa-AP). This 135 year periodicity was recognised by Joseph Fletcher, who looked at Nile River discharge records within the last millennium. Unfortunately Fletcher's work has apparently not been yet formally published, but I have communicated with both Dr Farouk El-Baz (Director of Boston University's Center for Remote Sensing, and Dr Gary Sharp, based at the Center for Climate/Ocean Resources Study in Monterey, California, about this "tele-connection".

From the data available to me, it would seem that tree rings records associated with periods of high rainfall in South Africa are out of phase with Nile river discharge. This is comparable to the fact that lake levels in East Africa are out of phase with southern African tree ring data. The 135-year periodicity needs to be explored in relation to other data, including sun spot cycles.

**Contact Details:**

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**Dave Thomas**  
**Oxford University**

I have rejoined SASQUA after many years-prompted by being at the Bloemfontein meeting, giving the keynote paper and being stimulated by what I heard from others. There is much southern African Quaternary work going on in Oxford University, to where I have returned after 20 years at Sheffield. My research remains focused the dynamics of the arid zone, including in southern Africa but also in other African regions.

We have just moved buildings here and have anew state of the art luminescence lab that brings together the two separate (geography and archaeology) labs that were here previously. Currently, I am supervising 10 D Phil students, many working on southern African Quaternary topics. This includes dune system records and lacustrine dynamics, and fieldwork in July-August work at Ngami and Chilwa in Malawi. We are also trying to use the ever improving Quaternary chronology of dune systems and advanced work on aeolian dynamics to address potential global warming interests. Thus, we link the Quaternary past with our uncertain future. Two recent papers have been published on this work (see *publication section*). This work has also generated a lot of media coverage despite being a modelling endeavour, but there was also a strong Quaternary dimension. The media coverage is summarised at: <http://www.geog.ox.ac.uk/news/articles/050630.html>.

**Project Initiative and Conference Information:**

I would like to draw members' attention to **IGCP500, an international project with the title Westerlies and Monsoons: Impacts of Climate Change and Variability on Dryland Environments, Hydrogeology and People**. Several in southern African researchers, including Mike Meadows and Peter Holmes,

are involved with this. The weblink is at <http://www.geog.ox.ac.uk/igcp500/>. All are welcome to participate. An IGCP 500 related meeting is being held in Chile this October. There are meetings each year: I intend 2008's to be in the Kalahari.

**Affiliation Update:**

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**RECENTLY COMPLETED THESES AND DISSERTATIONS**

Lucy Allott, Ph.D. University of the Witwatersrand (2005). *Palaeoenvironments of the Middle Stone Age at Sibudu Cave, KwaZulu-Natal, South Africa: An analysis of archaeological charcoal*.

Daryl Codron, MSc. University of Cape Town (2003). *Dietary ecology of chacma baboons (*Papio ursinus* (Kerr, 1792)) and Pleistocene cercopithecoidea in savanna environments of South Africa*.

Jacqui Codron, MSc. University of Cape Town (2004). *An isotopic comparison of elephant (*Loxodonta africana*) diets in the Kruger National Park and the Welgevonden Game Reserve*.

Robyn Pickering, MSc. University of the Witwatersrand (2005). *The stratigraphy, chronology and palaeoenvironment of the Pleistocene cave fill, Galdysvale Cave, South Africa*.

Christine Scott, MSc. University of the Witwatersrand (2005). *Analysis and Interpretation of Botanical Remains from Sibudu Cave, KwaZulu-Natal*.

Jeannette Smith, Ph.D. University of the Witwatersrand (2005). *Climate change and agropastoral sustainability in the Shashe/ Limpopo River Basin from AD 900*.

## RECENT PUBLICATIONS

### Note:

Collin Lewis may be able to obtain a SASQUA discount for his co-edited 2005 volume on *The Glaciations of Wales and Adjacent Areas*. For more details please contact:

Collin Lewis  
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South Africa  
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Bamford, M. and Grab, S. (2005). Highlights of Quaternary research in southern Africa and proceeding forwards. *Quaternary International*, 129: 1-3.

Britt Bousman, C. B. (In press). Coping with risk: Later Stone Age hunter-gatherers at Blydefontein Rock Shelter. *Journal of Anthropological Archaeology*.

Compton, J.S., Wigley, R. and McMillan, I. (2004). Late Cenozoic phosphogenesis on the western shelf of South Africa in the vicinity of the Cape Canyon. *Marine Geology* 206: 19-40

Compton, J.S. and Franceschini, G. (2005). Holocene geoarchaeology of the Sixteen Mile Beach barrier dunes in the Western Cape, South Africa. *Quaternary Research* 63: 99-107.

Franceschini, G. and Compton, J.S. (2004). Aeolian and marine deposits of the Tabakbaai Quarry area, Western Cape, South Africa. *South African Journal of Geology* 107: 619-632.

Franceschini, G., McMillan, I. and Compton, J.S. (2005). Foraminifera of Langebaan Lagoon salt marsh and their application to the interpretation of late Pleistocene depositional environments at Monwabisi, False Bay coast, South Africa. *South African Journal of Geology* 108: 285-296.

Franz-Odendaal, T.A., Chinsamy A., and Lee-Thorp, J.A. (2004). High prevalence of enamel hypoplasia in an Early Pliocene giraffid (*Sivatherium hendeyi*) assemblage. *Journal of Vertebrate Paleontology* 24 (1): 235-244.

Grab, S. (2004). Thermal regime through a sorted circle and stone-banked lobe, Drakensberg, southern Africa. *Zeitschrift für Geomorphologie*, 48: 501-518.

Grab, S. and Deschamps, C. (2004). Geomorphological and geocological controls and processes following gully development in alpine mires, Lesotho. *Arctic, Antarctic and Alpine Research*, 36: 49-58.

Grab, S.; Gatebe, C.K. & Kinyua, A.M. (2004). Ground thermal profiles from Mount Kenya. *Geografiska Annaler*, 86A: 131-141.

Grab, S. (2005). Aspects of the geomorphology, genesis and environmental significance of earth hummocks (thúfur, pounus): miniature cryogenic mounds. *Progress in Physical Geography*, 29: 139-155.

Grab, S. (2005). Earth hummocks (thufur): new insights to their thermal characteristics and development in eastern Lesotho, southern Africa. *EarthSurface Processes and Landforms*. 30: 541-555.

Grab, S., Scott, L., Rossouw, L. and Meyer, S. (2005). Holocene palaeoenvironments inferred from a sedimentary sequence in the Tsoaing River Basin, western Lesotho. *Catena*, 61: 49-62.

Grab, S., Van Zyl, C. and Mulder, N. (2005). Controls on basalt terrace Formation in the eastern Lesotho highlands. *Geomorphology*, 67: 473-485.

Griffiths, C.L., Van Sittert, L., Best, P.B., Brown, A.C., Cook, P.A., Crawford, R. J. M., David, J. H. M., Davies, B. R., Griffiths, M.H., Hutchings, K., Jerardino, A., Kruger, N., Lambert, S., Leslie, R., Melville-Smith, R., Tarr, R. and van der Lingen, C.D. (2004). Impacts of human activities on animal life in the Benguela -a historical overview. *Oceanography and Marine Biology* 42: 303-392.

Lee-Thorp, J.A. (2004). *Longterm, high resolution records of climate variability from cave speleothems in Cold Air Cave, Makapans Valley, Limpopo Province*. WRC Report No. 1013/1/04, Water Research Commission of South Africa, Pretoria, pp. 1-79.

- Lee-Thorp, J.A. & Sponheimer, M. (2005). Opportunities and constraints for reconstructing palaeoenvironments from stable light isotope ratios in fossils. *Geological Quarterly* 49 (2): 195-2004.
- Lewis, C.A. (2005). Late Glacial and Holocene palaeoclimatology of the Drakensberg of the Eastern Cape, South Africa. *Quaternary International* 129: 33-48.
- Lewis, C.A. (2005). Introduction. In Lewis, C.A. and Richards, A.E. (Eds) *The Glaciations of Wales and Adjacent Areas*. Logaston Press, Almeley, pp. 1-16.
- Lewis, C.A. (2005). Climate change. *Saint Helena National Trust Newsletter* No. 9: 7-8.
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- Lewis, C.A. and Thomas, G.S.P. (2005). The upper Wye and Usk regions. In Lewis, C.A. and Richards, A.E. (Eds) *The Glaciations of Wales and Adjacent Areas*. Logaston Press, Almeley, pp. 101-128.
- Marean, C.W., Nilssen, P.J., Brown, K., Jerardino, A. and Stynder, D. (2004). Palaeoanthropological investigations of Middle Stone Age sites at Pinnacle Point, Mossel Bay (South Africa): Archaeology and hominid remains from the 2000 field season. *Journal of Paleoanthropology* 1: 14-83.
- Mayewski, P.A., Rohling, E., Stager, J.C., Karlén, W., Maasch, K.A., Meeker, L.D., Meyerson, E.D., Gasse, F., van Kreveld, S., Holmgren, K., Lee-Thorp, J., Rosqvist, G., Rack, F., Staubwasser, M., Schneider, R.R. and Steig, E. (2004). Holocene climate variability. *Quaternary Research* 62: 243-255.
- Mills, S. & Grab, S. (2005). Debris ridges along the southern Drakensberg escarpment as evidence for Quaternary glaciation in southern Africa. *Quaternary International*, 129: 61-73.
- Sealy, J., Maggs, T., Jerardino, A. & Kaplan, J. (2004). Excavations at Melkbosstrand: variability among herder sites on Table Bay. *South African Archaeological Bulletin* 59: 17-28.
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- Sponheimer, M., Lee-Thorp, J.A., DeRuiter, D., Codron, D., Codron, J., Baugh, A. and Thackeray, J.F. (2005). Hominins, sedges and termites: new carbon isotope data for the Sterkfontein Valley. *Journal of Human Evolution* 48: 301-312.
- Sponheimer, M., De Ruiter, D., Lee-Thorp, J.A. and Spath, A. (2005). Sr/Ca and early hominin diets revisited: new data from modern and fossil tooth enamel. *Journal of Human Evolution* 48: 147-156.
- Thomas, D.S.G. and Leason, H.C. (2005). Dunefield activity response to climate variability in the southwest Kalahari. *Geomorphology* 64: 117-132.
- Thomas, D.S.G., Knight, M. and Wiggs, G. F.S. (2005). Remobilisation of southern African desert dune systems by 21st century global warming. *Nature* 435: 1218-1221.
- van der Merwe, N.J. (2005). Antiquity of the smoking habit in Africa. In J. Skinner (Ed.) *Special Volume of the Proceedings of the Royal Society of South Africa*. (This volume is a Festschrift to be handed to Phillip Tobias on his 80th birthday, October 14).
- Wigley, R. and Compton, J.S. (In press). Late Cenozoic evolution of the outer continental shelf at the Head of the Cape Canyon, South Africa. *Marine Geology*.

**MINUTES OF THE XVIII BIENNIAL CONFERENCE OF THE SOUTHERN AFRICAN SOCIETY FOR  
QUATERNARY RESEARCH  
SASQUA 2005**

**D'ou venons nous? (Where do we come from?)  
Que sommes nous? (What are we?)  
D'ou allons nous? (Where are we going?)  
(Paul Gauguin, 1897)**

**University of the Free State, Bloemfontein  
30 March to 2 April, 2005**

**President:** John Compton  
**Vice President:** Stefan Grab (Apologies)  
**Treasurer:** Greg Botha  
**Secretary:** John Rogers  
**Newsletter Editor:** Jeannette Smith (Alaska)

### **1. Date and Time of Biennial General Meeting**

The meeting was held on Saturday, 2nd April and commenced at 10h45.

### **2. Welcome and Thanks**

The President, John Compton, welcomed the members to the meeting and thanked the Organising Committee for their hard work. This committee consisted of:

Johan Loock (Patron)  
Rina Immelman (Secretary)  
Louis Scott (Chairman)  
Peter Holmes  
Lloyd Roussouw  
James Brink  
Zoë Henderson  
Leon Jacobson  
Derik De Bruijn (Deceased, December, 2004)

### **3. Apologies**

Apologies were received from Stefan Grab, Julia Lee-Thorp, Frank Netterberg, Colin Lewis, Garth Sampson, Christine Scott and Joey Coetzee.

### **4. Deceased Members**

Four members died since the last BGM:

Ray Inskeep (2003)  
Tony Brink (2003)  
John Grindley (2004)  
Derik de Bruijn (2004)

## 5. Minutes of the Previous BGM

The minutes had been circulated electronically by the Secretary and were taken as read. Graham Avery, seconded by Rodney Maud, proposed that they be accepted.

## 6. Matters Arising

### **INQUA 2003, Reno Nevada, USA:**

The South African contingent consisted of:

Tim Partridge (ending two four-year terms as one of four Vice Presidents)  
 Margaret Avery (elected one of the Vice Presidents at INQUA 2003)  
 Greg Botha (SASQUA delegate)  
 Julia Lee-Thorp  
 Louis Scott  
 Dave Roberts  
 Amanda Rau (Student observer)

The INQUA Commissions were streamlined to the following five, each with their own website:

Stratigraphy and Chronology  
 Palaeontology and Human Evolution (Headed by Margaret Avery)  
 Terrestrial Processes  
 Coastal and Marine Processes  
 Palaeoclimate

Seed money is available from the commissions for research projects, up to \$4000.

Tim Partridge reported that the debate on the retention or abandonment of the term *Quaternary* is ongoing, the terms *Primary* and *Secondary* having long been abandoned and the term *Tertiary* having been abandoned in favour of *Palaeogene* and *Neogene*. Were it to be abandoned, the *Quaternary* would form the youngest part of the *Neogene*. Greg Botha reported that at the IGC (International Geological Congress) in the Italian city of Florence in 2004 that Brad Pillans led the debate to retain the term *Quaternary* and that the base of the Pleistocene may be extended from the present 1.8 Ma (million years) to 2.6 Ma. This will be voted on in 2008, according to Tim Partridge.

INQUA is a full member of ICSU (International Commission of Scientific Unions), through its membership of the IUGS (International Union of Geological Sciences). Due to its multidisciplinary character, INQUA is seeking to be a full member in its own right within ICSU.

Greg Botha provides annual audits of SASQUA to SA-ICSU, which are approved in general, but SASQUA has been requested to be more proactive in outreach to publicise Quaternary matters via universities, museums and schools. Members are asked to inform Greg of any outreach activities on an ongoing basis, so that his task of providing an annual audit is facilitated. Louis Scott added that SASQUA 2005 was being publicised through the Media Department of the University of the Free State, especially the Public Lecture by Dave Thomas on the Kalahari. As an illustration of this, a reporter and a photographer of the local newspaper *Die Volksblad* were active in interviewing and photographing SASQUA delegates.

The next INQUA meeting will be held in Cairns (Queensland, Australia) in August, 2007.

### **SASQUA Website and SASQUA Poster:**

Having launched the SASQUA logo during SASQUA 2001 at Saldanha Bay, Greg Botha (SASQUA Webmaster) announced that the SASQUA Website ([sasqua.co.za](http://sasqua.co.za)) was up and running, but that it

urgently needed short contributions from the members, about half a page in length.

John Compton and Julia Lee-Thorp collaborated in the production of a draft of the SASQUA poster for distribution to universities, museums and schools. The draft version formed part of the president's presentation. The final version of the poster is expected by the end of 2005. Graham Avery asked whether INQUA would sponsor the posters, but Margaret Avery said that INQUA normally supports workshops. Leon Jacobson suggested that De Beers be approached as a possible sponsor and that Provincial Education Departments also be involved as Global Warming and Climate Change are of great interest to them.

***Oliver Davies Medal for the Best Published Paper by a Student member of SASQUA:***

Members were asked in the circular for SASQUA 2005, but no candidates have yet been proposed. SASQUA members are asked to send their suggestions with a motivating letter and a copy of the publication to John Compton by 1st June, 2005.

***Best Student Presentation and Student Poster:***

These awards were made after the BGM at the Conference Dinner at the end of the conference, Caren Herbert being awarded a R500 book voucher for the best Student Presentation. Brett Smith received a R500 book voucher for the best Student Poster.

***President's Report:***

John Compton presented his report as SASQUA President, a copy of which was sent to both the outgoing Secretary (John Rogers) and the Newsletter Editor (Jeannette Smith).

***Treasurer's Report:***

Greg Botha presented SASQUA's Income and Expenditure Statement for the period 21st March, 2003 to 29th March, 2005. He showed that the 2001 balance had been R45 999.33, the 2003 balance R66 038.32 and that the balance for 2005 stood at R85 736.74. An amount of R69 469.10 is now in a Money Market account and a smaller amount of R13 879.12 in a Cash Savings account. Greg Botha's secretary in the Council for Geoscience in Pietermaritzburg, Ms Pat Dlamini, was thanked for her assistance and an amount of R500 was voted as an honorarium. Rodney Maud, on behalf of the members, thanked Greg Botha for his excellent work as Treasurer and proposed that his report be accepted.

***Secretary's Report:***

John Rogers reported that the membership stood at 138 on 25th March, 2005. Those members with email addresses totalled 115 (83%), whereas those without email totalled 23 (17%). The Treasurer also informed the Secretary that, while 60% of members have paid their dues, about 40% of the members on the list were in arrears to varying degrees. This latter percentage is too high and that is why the financial status of the members was included in the updated list distributed electronically before SASQUA 2005. The ideal situation is for each member to have a valid email address and for each member to be paid up. Members were encouraged to assist the Secretary in keeping the membership list as accurate as possible. On behalf of the members, the Secretary was thanked by Rodney Maud.

***Newsletter Editor:***

Jeannette Smith was thanked for her work as Newsletter Editor, despite her new location in Alaska!

**Election of the new SASQUA Council:**

The following members were elected:

<b>President:</b>	Stefan Grab
<b>Past President:</b>	John Compton
<b>Vice President:</b>	Mike Meadows
<b>Treasurer:</b>	Greg Botha
<b>Secretary:</b>	Marion Bamford
<b>Newsletter Editor:</b>	Jeannette Smith
<b>Student Councillor:</b>	Caren Herbert
<b>Council Members:</b>	Peter Holmes
	Tim Partridge
	Angela Kharuxas
	James Brink
	Renato Spaggiari
	Amanda Rau
	Mandy Esterhuysen

**General:**

It was proposed to have a differential registration fee with SASQUA members paying less for SASQUA conferences.

In between conferences, issues can be debated and information exchanged by email, on the SASQUA website or in the SASQUA Newsletter.

Graham Avery stressed that it is important to obtain nominations and acceptance of nominations for SASQUA Council before each BGM.

**Next SASQUA:**

The offer to hold the next SASQUA in 2007 in Kwazulu-Natal was accepted. Rodney Maud elaborated that the venue would be the Umgeni Valley Lodge near Howick. There are many Bed-and-Breakfast establishments in the vicinity. The timing of the conference must take university vacations into account, but is likely to be in March or April, 2007. In addition, INQUA 2007 will be held in Cairns in August, 2007.

**Any Other Business:**

John Compton responded to a concern over the future of QUADRU (Quaternary Dating Research Unit) by accepting an offering from Francis Thackeray to make contact with Stephan Woodborne, who is in charge of QUADRU at the CSIR in Pretoria.

Members were encouraged to sign the petition opposing the closure of the World Data Centre (WDC-A) in Boulder, Colorado.

The meeting ended at 12h00.