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PAL NEWS NUUS

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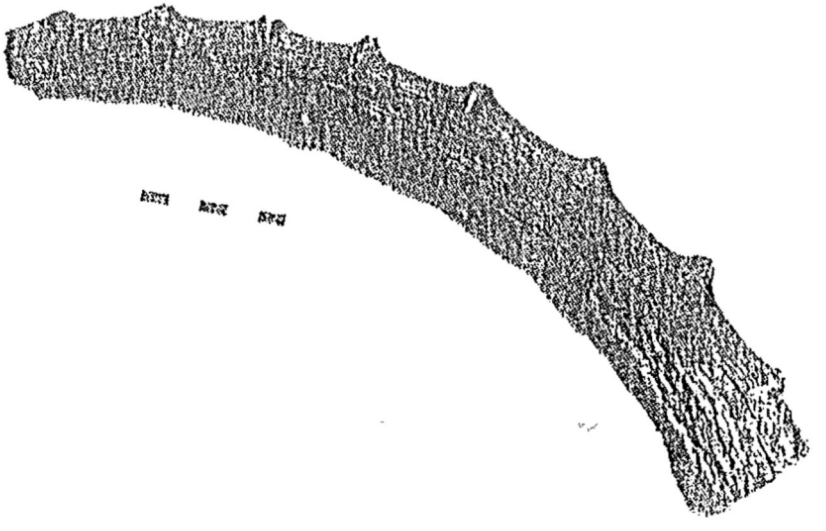

Damaliscus niro from Wonderwerk Cave ...
Back where it belongs (see page 3)

PAL News
PAL Nuus

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PAL News/PAL Nuus *is published by the Palaeontological Society of Southern Africa on behalf of its members. The views expressed are not necessarily those of the Society or its Officers.*

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1989

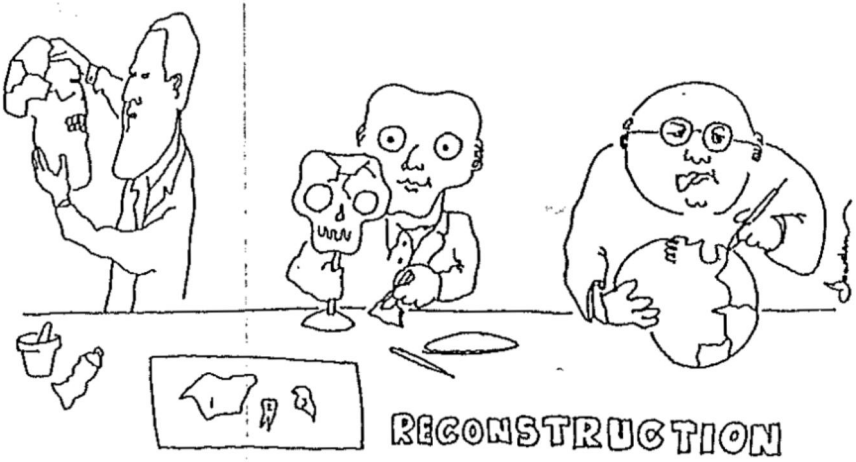
EDITORIAL

Here we go again... Another year has sped by, and we stare the new one in the face - the beginning of the final decade of this turbulent century. Who knows what 1990 holds for us, and for the work we do? If the indications in the provincial museums of the Cape are anything to go by, the tough going of 1989 will seem mild by comparison. Oh dearie, dearie me!...

What can I say but Happy Christmas? At least we can look forward to meeting in the gorgeous surroundings of Golden Gate Highlands National Park for our next PSSA Conference. See the item by the conference organiser, Gideon Groenewald, inside.

And gird up your loins for 1990 ...!

Mike Raath
Editor



FOUND:
DAMALISCUS NIRO HORN FROM WONDERWERK CAVE

by
Francis Thackeray
Dept. of Archaeology, University of Cape Town, Rondebosch, 7700

As mentioned in an earlier issue of Pal NEWS/NUUS [5 (3): 2 - 4], two remarkable horns of an extinct alcelaphine, *Damaliscus niro*, were found in the 1940s at Wonderwerk Cave south of Kuruman in the northern Cape Province. Both specimens retained not only the inner (bony) core but also the outer (keratinous) sheath. They had been examined by a number of palaeontologists, including Robert Broom, E C N van Hoepen, Laurie Wells, and Basil Cooke, who were puzzled by their close resemblance to the horns of ibex.

For more than ten years the larger of the two specimens has been missing from the collection of Wonderwerk Cave housed in the Archaeological Research Unit in Johannesburg. Its recent re-discovery in the Anatomy Department at the University of Cape Town brings the search to a close.

As shown in the photograph (fig. 1), the curved horn with eight prominent ridges is not unlike the horns of ibex or hippotragine antelope (e.g. roan and sable). In fact it is not surprising that it was initially misidentified as *Capra ibex*. However, in cross-section the Wonderwerk specimens conform to others which Alan Gentry has attributed to *Damaliscus niro* (formerly *Hippotragus niro*).

Since the keratinous sheath is preserved, it should be possible to analyse small samples of the keratin for DNA, using the polymerase chain reaction (PCR) technique which has previously been applied to the analysis of tissues attached to skins of the extinct quagga. Eric Harley (Dept. of Chemical Pathology at the University of Cape Town) is currently preparing a small sample of the *D. niro* horn from Wonderwerk for PCR analysis. It is hoped that the results will shed further light on relationships between this alcelaphine and other ungulates, including the blesbok and bontebok.

Unfortunately, the Wonderwrk horns were recovered from guano digging operations in the 1940s and contextual information was not recorded (apart from the report that the horns came from the back of the cave). The fact that the sheaths

are so well preserved could suggest that they are relatively recent, but on the other hand their excellent preservation could be attributable to dry conditions near the back of the cave. A small sample of one of the horns has been sent to the *dating laboratory in Oxford (the Radiocarbon Accelerator Unit), where milligram amounts of sample material are required for dating purposes.

Recent excavations at Wonderwerk have yielded remains of other extinct taxa in Holocene deposits. *Megalotragus priscus*, a giant alcelaphine larger than a wildebeest, and the giant horse, *Equus capensis*, are last recorded between 10 000 and 7 500 BP at the site. Environmental change could have contributed to their extinction since palaeoclimatic data from Wonderwerk indicate that this region of the northern Cape was warm and arid in the early Holocene. It will be interesting to establish whether the horns of *Damaliscus niro* provide evidence of its existence in the northern Cape during periods younger than 7 000 BP.

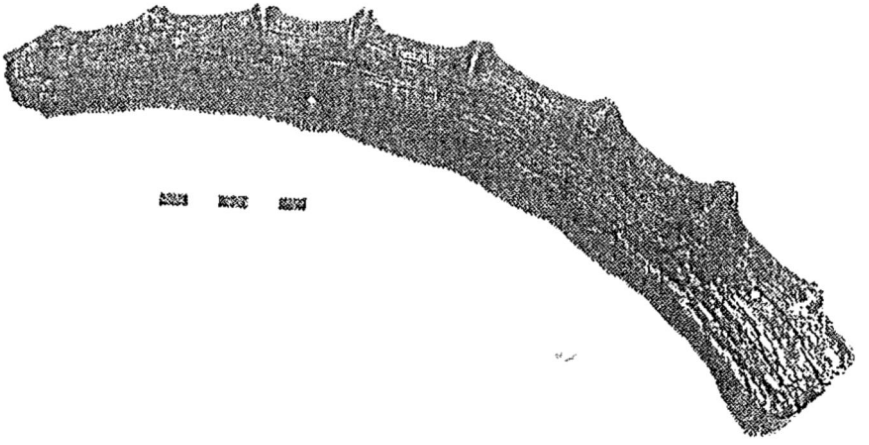


Figure 1.
Photograph of larger specimen of two horns of Damaliscus niro, an extinct alcelaphine, from Wonderwerk Cave. (Scale in centimetres).

*(See following article on dating. Ed.)

Unexpected errors affect dating techniques

Written by Andy Coghlan

THE MARGIN of error with radiocarbon dating, an analytical method for finding out the age of ancient artefacts, may be two to three times as great as practitioners of the technique have claimed. The shortcomings of the method, revealed earlier this month at a workshop at East Kilbride near Glasgow in Scotland, mean that while some laboratories consistently date artefacts correctly almost to the year, others are up to 250 years out.

The finding means that some artefacts whose age was determined by radiocarbon dating might actually be considerably older or younger than the results suggest. The research community is keen to improve standards in the light of the findings, and has agreed a plan of action to this end.

Britain's Science and Engineering Research Council (SERC) commissioned a trial that compared the accuracy with which 38 laboratories around the world dated artefacts of known age. Of the 38, only seven produced results that the organisers of the trial considered to be satisfactory.

Murdoch Baxter, the director of the Scottish Universities Research and Reactor Centre at East Kilbride near Glasgow, and one of the organisers of the trial, said that the survey represented "a major turning point in the history of the method". His laboratory was one of only three from Britain that participated. The others were the Department of Statistics at the University of Glasgow and the Natural Environment Research Council's Radiocarbon Laboratory in East Kilbride.

All 38 participants had to date a set of samples made from wood, peat and carbonate. The laboratories involved were on average "two to three times less accurate than implied by the range of error they stated", said Baxter.

The technique of carbon dating relies on the fact that living organic matter contains a fixed amount of the radioactive isotope, carbon-14, relative to the most abundant isotope, carbon-12. When a living organism dies, the ratio changes as carbon-14 within the tissue decays. The isotope decays at a constant rate so, by measuring how much an artefact contains, analysts can determine the age of the sample.

Most of the errors quoted acknowledge uncertainties in the accuracy with which the pulses of radioactivity from the sample are counted. "It is now clear," says Baxter, "that other unaccounted-for sources of error occur during the processing and analysis of samples." He suspects that the most serious unforeseen errors arise in the chemical pre-treatment of samples. The two oldest of the three techniques available are gas proportional dating and liquid scintillation dating. In both, the analysts heat the sample, though each treats the residue differently. Liquid scintillation dating and a third, much newer technique, called accelerator mass spectrometry, involve most chemical pre-treatment.

Baxter says that accelerator mass spectrometry, used last year by a laboratory at the University of Oxford to date the Turin shroud, allegedly the burial shroud of Jesus Christ, came out of the survey badly. Five of the 38 participating laboratories used this technique, for which samples weighing a few milligrams are acceptable. The other techniques require grams of the sample. Baxter says that some of the accelerator laboratories were way out when dating samples as little as 200 years old.

Because so little material is used in accelerator mass spectrometry, the effects of chemical pre-treatment are likely to be more serious, says Baxter. "The samples are probably more prone to atmospheric dust or dandruff," he said. In the light of the results, researchers are to adopt new practices to improve quality control. One is to increase the frequency with which laboratories have samples "blind" checked by others.

Another, backed by the International Atomic Energy Agency, is to improve the standard reference materials of known age for analysts to test their machines' accuracy. The agency will distribute a standard set of materials from 1990. □

(With acknowledgement to *New Scientist*, 30 September 1989)

PSSA CONFERENCE - 1990: GOLDEN GATE

Everyone who responded to the first circular will have heard directly from the conference organiser, Gideon Groenewald, by now. For those who have not heard, or are merely interested to know what ius going on, I repeat here the notification received from Gideon in October:

The Conference will be held at the Golden Gate Highlands National Park, 56 km from Bethlehem in the Northern Orange Free State. The final dates are:

Friday 7 September 1990	-	Arrival and Registration
Saturday 8 September	-	Papers all day; dinner at Brandwag Rest Camp;
Sunday 9 September	-	Papers all day; braal at Wilgenhof;
Monday 10 September	-	One-day excursion in the vicinity of Golden Gate; overnight at Golden Gate;
Tuesday 11 September	-	Two-day excursion to Memel; overnight on the farm Driekoppen;
Wednesday 12 September	-	end two-day excursion in Warden on the N3, at 14h00. Limited overnight facilities can be arranged at Golden Gate for that night.

Accommodation:

Four 4-bed chalets have been booked at a 15% discount granted by the National Parks Borad. One of them has already been taken, but three are still open on the basis of first come, first served. Please let Gideon know. The price per chalet is R70,00 pernight plus R12,00 for the third and fourth persons.

The Wilgenhof Youth Hostel has been booked and consists of the following:

Four dormitories with 20 beds each, arranged in cublicles of four beds in open plan. Bedding is provided. Meals will be served in the dining room of the complex. The complex has its own lecture hall and is well equipped with slide and overhead projectors. Display panels for posters will be arranged.

Delegates who want to bring their families along are welcome to do so. Short entertainment programmes for wives and children can be arranged.

The total fee for the conference will be approximately R205,00, made up as follows:

Registration @ R75,00:	75,00
Accommodation at Wilgenhof (R10,00 per person per day, +15%)	40,00
Meals at Wilgenhof (3 @ R20,00 pp/day)	60,00
Meal at Brandwag (1 @ R22,00)	22,00
Incidentals (Tea, coffee, etc)	8,00
Total	205,00

We will need three microbuses for the excursions. The total distance for both excursions is 1000 km, and depending on the goodwill of organisations to sponsor us, the costs will probably amount to R50,00 to R80,00 per person, including accommodation and meals.

Lastly, Gideon is negotiating with the editors of the National Parks Journal, *Koedoe*, to have the abstracts of the papers presented at the conference published as a special issue of *Koedoe*. Titles must reach Gideon not later than 31 May 1990, and he must have abstracts not later than 31 July 1990. Print-ready copies must be provided at the conference if they are to be included in the special publication

Gideon's address is:

Gideon Groenewald
Senior Research Officer for Inland Parks
Highlands National Park
P O Golden Gate
9708

Thank you, Gideon. It sounds as if everything is under control, and that you are cooking up something really special! I'm sure everyone is looking forward to it very eagerly. Ed.

OBITUARY: Edna Pauline Plumstead (nee Janisch)
DSc, FRSSAfr.

Born 15 September 1903 - Cape Town
Died 24 September 1989 - Johannesburg

As a child, Edna Janisch lived next door to Prof Pearson, the first Director of Kirstenbosch Botanical Garden. Thus was established an early love for plants and although she chose geology as a career, it was as a palaeobotanist that she gained her honours and will always be remembered.

She graduated with a BSc (Hons.) in Geology (First Class) in 1924 and went on to MSc. Her PhD studies at Cambridge were terminated by a cable to come home and lecture geology at the University of the Witwatersrand. Her career was then interrupted for 12 years when in 1934 she married Edric Plumstead and devoted her energy to raising five children.

After the war her services were once more desperately sought and she resumed lecturing part-time. Her affiliation with Wits University continued as Honorary Research Asociate in the Bernard Price Institute for Palaeontological Research up until her death.

I can remember her telling us about those busy days - how she would pack all her children into the car and ferry them to school in the morning and drive on to university. Then at lunch-time she had to collect them again and often rush back to prepare a lab for her students. It was through her students that she met Mr S F le Roux in Vereeniging and first spotted the now famous *Glossopteris* fructifications which she brought to the world's attention and described in a series of scientific papers fron 1952 onwards.

The year 1959 was a high point for Edna, when she was awarded the Jubilee Gold Medal of the Geological Society of South Africa, the Gondwana Gold Medal of the Geological and Metallurgical Institute of India, and her DSc in recognition of her palaeobotanical studies. Thereafter followed many other honours and three major palaeobotanical publications:
in 1962, *Fossil Floras of Antarctica* - 154 pp; in 1967, *Devonian Fossil Plants in the Cape System of South Africa* - 83 pp; and in 1972, *Three Thousand Million Years of Plant Life in Africa* (72 pp).

The latter publication was first presented as the 11th Du Toit Memorial Lecture - a tribute to the geologist who had promoted continental drift and studied the fossil plants of Gondwanaland.

It was from Dr Plumstead that, as an undergraduate, I first learned in detail about our wandering continents and the enormous amount of fossil evidence supporting this idea. It is largely thanks to the great enthusiasm and love for her subject that I became one of her palaeobotany students at the "Beep" (BPI Palaeontology). We students affectionately referred to her as "Plummy", and once or twice when it slipped out in her presence she would just laugh.

It was with sadness that many of her past students gathered with her relatives and colleagues at St George's Church in Parktown for her funeral service. However, her warm and lively spirit was reflected in the sunny spring day and lives on in all of us who had the privilege to know her.

Those who seek a full list of the achievements of Edna Plumstead are referred to the biographic entry in Anderson, J M and Anderson, H M (1985), *Prodromus of South African Megafloras - Devonian to Lower Cretaceous*: 72. A A Balkema

Heidl Anderson (nee Schwyzer)

(Members will recall that Dr Plumstead and the late Dr S H Haughton were elected the first Honorary Members of the PSSA at the General Meeting in July 1979, just two years after our Society's birth. Dr Plumstead's election honoured her signal contribution to South African and world palaeobotany. We extend our condolences to her family and her many friends, colleagues, and former students - all of whom will miss her. Ed.)

NEWS FROM MEMBERS

Thanks again to the small band of regulars who keep this section of the newsletter more or less viable!!
Ed.

Johan Loock wrote to say that during a recent visit to the Smithsonian Institution to see Nick Hotton, he bumped into two Russian geologists who are keen to establish contact with South African geologists and palaeontologists. He notes that although they can rattle off the names of our Karoo fossils, they know relatively little of the geology. For those who would like to establish contact, their names and addresses are:

1. Prof Mikhail Alexandrovich Shiskin
   Palaeontological Institute
   Academy of Sciences of the USSR
   Profsoyuznaya 123
   MOSCOW 117321
   USSR

He is working on Triassic-Jurassic rocks in the USSR and is interested in our Triassic-Jurassic stratigraphy and the biostratigraphy of the *Lystrosaurus* and *Cynognathus* zones;

2. Dr Vladlen R. Lozovsky
   Geological Prospecting Institute
   23 Miklusho Maklay Street
   MOSCOW 117485
   USSR

He would like to know more about the *Lystrosaurus* Zone.

South African Museum, Cape Town
Gillian King

I would like to thank all friends and colleagues who have given me such a warm welcome and friendly introduction to South Africa. I am enjoying being in Cape Town immensely - temperatures of 28° at this time of the year are a real treat for me. The fossil collections in Cape Town are superb, as far as my work is concerned, and I hope to visit the other valuable collections further afield before too long. No doubt I shall be cajoled (or bullied?) into doing fildwork before too long!

At the moment I am trying to finish off what was to be a quick conference presentation on *Lystrosaurus*. I wanted to see

whether there really was any good evidence for this dicynodont's being aquatic or semi-aquatic. I really don't think that there is. However, having decided what *Lystrosaurus* is not, I am now trying to suggest what it *is* - diet, general lifestyle, and so on. The more I look at the beautiful fossils in the SAM, the less I feel able to replace them in the store and get on with something else. But at some stage I must get back to Permian dicynodonts - in particular a specific revision and functional treatment of *Diictodon*. I hope that this might complement Roger Smith's work on the palaeoecology of the beast. I am also still reviewing the late Permian South African fauna in the hope that it might tell us something of the dynamics of the end-Permian event. This looks as though it might well turn up some very interesting hypotheses - probably untestable, but interesting!

I have also succumbed to the palaeontologist's version of "Yuppie Flu" - isotope infection: it starts in a few people and the rest of the world thinks that it is not worth bothering about. Then you wake up one day and everybody you know (including you!) has got the bug. Together with Jean-Jacques Jaeger and his colleagues in Montpellier we'll be looking at dicynodont bones with a view to extracting collagen for isotopic analysis. It's been done with Cretaceous dinosaurs. Will it work for Permian dicynodonts?

I'm very much looking forward to working here for the immediate future, and seeing more of the country.

Gillian also said in a covering letter that the picture of Tom Kemp and friend which featured in the last issue (volume 6 (2): back page), caused some merriment. She writes: "Perhaps what you do not know is the identity of the "student". He is the younger son of the present Emperor of Japan, who is doing some study under Tom's supervision. Tom was very amused by the caption and the source of the photo. I suspect that the Emperor might not be!"

Best wishes, Gillian. Ed.)

Roger Smith

Since the last report I managed to submit my PhD thesis on time, so all being well with the examiners I should graduate in mid-December. Once that was out of the way I had a few weeks to prepare a talk for the 4th International Fluvial Sedimentology conference in Sitges, Spain, on 1 - 4 October. Funds from the

FRD and the S A Museum enabled me to attend the conference, followed by a week-long fieldtrip to the Pyrenees.

Sitges is a small picturesque coastal town some 40 km south of Barcelona in SE Spain. The conference was held in the local cinema, providing delegates with the comfort of upholstered seats and the benefit of an extra-wide projection screen. Some 300 delegates attended the three days of oral presentation and poster displays. The poster venue was on the sea-front in a highly ornate palace decorated in gold leaf and ceramics, providing a distinctly Spanish backdrop that in some cases was more eye-catching than the posters. To attend all the oral and poster sessions we had an exhausting 12 hours each day - without *siesta*. This was far too long, as it left little time to enjoy the beaches!

Nevertheless, the standard of presentation was high and most speakers, including myself, made use of the dual projection system to pack in as much visual material as possible into their 20-minute slots.

My contribution was an analysis of the morphology and palaeohydrology of exhumed Permian point-bars in the southwestern Karoo. The organisers expressed concern that although the number of delegates was increasing, most of the newcomers were company sponsored geologists concerned with basin-scale modelling of exploration targets and ignoring the need for improved understanding of fluvial processes at bedform scale. The latter research, mostly done in academic institutions, is lagging behind through lack of funds.

The next conference is to be held in Brisbane, Australia, in 1992, despite a gallant effort from the handful of South Africans to bring it to Cape Town.

After the conference I joined 29 others on a 6-day trip to the southern Pyrenees where we studied the various foreland basins associated with the rising Pyrenean mountainlands from the Jurassic to Oligocene.

Extensive badlands-type exposures of flat-lying fluvial deposits allowed three-dimensional observation of channel sandstone geometry. Of particular interest to me were the calcareous palaeosols in the surrounding mudrocks and recognition of tidal influences on lateral accretion surfaces of palaeo-point bars in near-coastal settings.

The field trip leaders (eight in all) produced a 173-page, A5-sized, ring-backed, printed guide-book, setting a standard that will be hard to beat.

Spectacular exposures, photogenic scenery, comfortable hotel accommodation, and lively multinational discussions made this a very worthwhile field excursion.

A week after returning from Spain I presented three public lectures in a mini summer-school at the museum entitled "Aspects of the Ancient Karoo". This was followed by a week-long guided tour of the southwestern Karoo for three kombi loads of Museum Friends.

Trilobites in Gydo Pass, moon-gazing in Sutherland, dinocephalian trackways in Fraserburg, reptiles in Teekloof Pass, farm hospitality in Ouklooof Pass, eagle/dassie studies at the Karoo National Park, the SAM fossil dig, Rietkuil uranium mine, Roy Oosthuizen's fossil collection, Prince Albert Museum, locusts and more locusts - these were some of the highlights of this trip.

Before leaving Beafort West I joined Paul Oktober and Annelise Crean on *La De-Da* to excavate the pristerognathid skeleton that we left behind last March. To make it more interesting, SABC's 50/50 production crew filmed our labours for the three days it took to lift the fossil. This is scheduled to be screened in March next year.

Plans for the future include a contribution to the SACS working group on Karoo biostratigraphy to be edited by Bruce Rubidge, and a guide-book for the Geocongress '90 excursion to the Karoo. In February/March next year Gillian King and Mike Cluver have promised to join us for a collecting trip aimed at locating therapsid "nests" in the Teekloof Formation and a concerted effort to locate preparable dinocephalians in the Fraserburg area.

(Just as this issue is being put to bed, I have had word that Roger has been awarded his PhD. I am quite sure that everyone joins me in congratulating him, and wishing him every success in his continuing, exciting work. Ed.)

Herby Klinger

Sorry, but I never got around to writing about my trip to the Soviet Union last year.

In brief: I applied to attend a symposium on Tethyan correlation in Tbilisi, Georgian SSR. I received an official

invitation which I had to present to the nearest USSR embassy to obtain a visa. This happened to be Maseru. Thanks to British Airways I landed in Moscow without a hotel reservation, and feeling rather lost and apprehensive. But lo and behold, the first person I met in the foyer of the Intourist hotel was Annie Dhont from the Royal Museum, Brussels. Annie is really special, and a top linguist. Her fluent Russian assured me of a place in the hotel; chatting to her in Afrikaans, a mere stone's throw away from the Kremlin and Red Square was comforting. Moscow is a beautiful city, but really not my first choice for an extended holiday - unless you really want to lose weight and money fast!

Tbilisi is as different from Moscow as day and night. It is a mixture of mediterranean and oriental cultures, and really enjoyable. Our hosts in Tbilisi, Mikhail Kakabadze and Eliso Kotetishvili really went out of their way to make us feel at home, and showered us with their Georgian hospitality. After the starvation diet of Moscow, this was sheer luxury.

At the symposium I talked about the palaeobiogeography of the ammonite family Heteroceratinae. This includes the weirdly coiled genus *Colchidites*, which was first described from the Caucasus by Djanelidze in 1926. The amazing thing is that the same species occurs in the Caucasus, Zululand and Patagopnia. I am not exactly sure why *Colchidites vulanensis* has this curious distribution, but it is certainly does point to open marine connection along the east coast of Africa, from the Caucasus down to Patagonia, during the Early Cretaceous.

After the symposium I was able to examine the *Colchidites*-beds in the field and collect some material.

In retrospect, it was a wonderful experience, and I have to thank *Colchidites vulanensis australis* and *Glasnost* for making this possible.

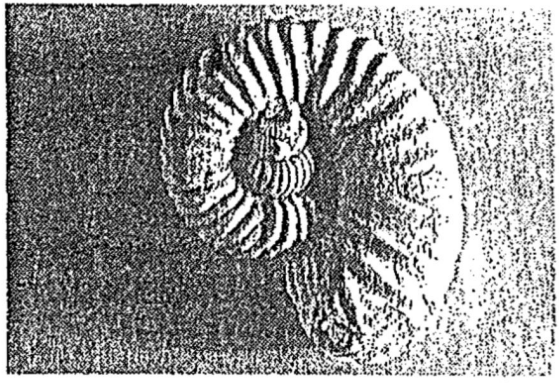
Nearer home this time, I went to the Geological Survey, Pretoria, to look at and sample cores of boreholes which had been drilled in Zululand more than 20 years ago. I was absolutely amazed at the quantity and quality of fossils in these cores. These should permit a precise stratigraphic correlation between the different fossil groups, especially the ammonites and inoceramids.

At the risk of being branded a chauvinist, let me state that nothing escapes the sharp eyes of a good housewife! Madel Joubert has been going through our invertebrate fossil

collections for the past two years, trying to sort them into different taxonomic groups. Recently she came to me with a minute ammonite, less than one centimetre in diameter, asking what it was. This immediately rang a bell with me, and I rushed to the microscope to look at the suture line. It was definitely a *Koloceras talenkanum*, thus far only known from a single locality - Estancia La Vega in Santa Cruz Province in Patagonia. During my visit to Argentina in 1986 I had been shown these ammonites. At first I thought they were just juvenile haploceratids, but Alberto Riccardi and Betty Aguirre Urreta convinced me that these were in fact true dwarfed forms with simplified suture lines. Bang goes another so-called endemic ammonite taxon! The amazing thing about this specimen is that it had been collected more than 50 years ago by van Hoepen, and had lain unidentified amongst other juvenile specimens all these years - that is, until "Hawk-eye" Madel arrived on the scene.

While on the topic of endemic faunas, Jim Kennedy and I have submitted another paper in which we record *Hatchericeras* from Zululand. Up to now, this genus has also been regarded as endemic to Patagonia. In another paper we are also able to show that *Cryptcrioceras*, another so-called endemic from Patagonia, occurs in Zululand.

According to one of my students at UCT, "conodonts have two large tusks and lived in the Karoo"!



Colchidites vulanensis -
the Patagonian / Zululand / Caucasus connection ...

James Brink,
National Museum, Bloemfontein
Current Palaeontological Research:
Joris Peters, a visitor from Munich, and I have continued our study on the osteological distinction between the springbok and vaalribbok; we checked the diagnostic features of the springbok and the vaalribbok and measured most of the skeletal material available in the local museums. We still have to measure some Kalahari springbok to get an impression of the full range of variation in the modern population. Joris also spent some time in the S A Museum to study the Elandsfontein *Pelorovis* material, which he is comparing with the modern African buffalo.

Angela von den Driesch, also from Munich, started an osteological reference collection for southern- and eastern Cape fish, with the aim of studying the Klasies River fish remains. I am studying the large mammal fauna from Klasies, and the information derived from the fish will be useful as an additional palaeoenvironmental control, apart from shedding some light on MSA human behaviour.

Recent Fieldwork:
Our excavations at Florisbad are still continuing. In the third test pit, which is to the north of the existing cuttings, MSA artefacts and bone fragents have been found ca. three meters from the top of the sequence. This is overlain by a virtually sterile unit and a recent (probably Holocene) aeolian sand unit, which contains two dicrete horizons with LSA material. We are also in the process of extending the existing excavations further to the south with the aim of uncovering a large area of in situ MSA material.

News of Palaeontological Interest:
Greg Botha from the Geological Survey, Pietermaritzburg, invited me to join him on a fieldtrip to the gravel exposures along the Schoonspruit, near Cornelia in the northern OFS. We were fortunate enough to rediscover the faunal locality, which is quite extensive, including a couple of *Damaliscus niro* horncores, a *Megalotragus* horn base, some equid teeth and an "*Afrochoerus*" tusk.

I am also reorganising the Mahemspan mammal collection, which is considered to be older than Florisbad. A remarkable aspect of the material is the presence of a large number of *Megalotragus* skeletal elements, and their relative completeness.

Julia Lee-Thorp
Dept of Archaeology, University of Cape Town
Current Palaeontological Research:
More analyses of faunal material from members in Swartkrans Cave, Transvaal.
Isotopic analyses of faunal material from Equus Cave.
Recent Fieldwork:
I went to Ecuador in July with Nicolaas van der Merwe to collect specimens for an archaeological study of subsistence patterns in early Ecuador.
News of Palaeontological Interest:
In collaboration with Peter Beaumont I have just finished a preliminary study of grazer tooth-enamel d13C values from Equus Cave. The results indicate that there have been episodes in the past with more C_3 grasses and winter rainfall, but there was never a reversal (in the last ca. 20 ka) of rainfall patterns.

Heidi Anderson,
Botanical Research Institute, Pretoria
News of Palaeontological Interest:
At long last, Volume 2 of the *Molteno Formation Palaeoflora* has been published and will shortly be reviewed for **Pal News**.

Colin MacRae,
Geological Survey, Pretoria
(Submitted for vol 6 part 2, but received too late for inclusion)
Current Palaeontological Research:
Palynology of the Whitehill Formation near Bloemhof, and the palynology of the No 4 Coal Seam.

Alan Turner,
Dept. of Human Anatomy and Cell Biology
University of Liverpool
P O Box 147
Liverpool
L69 3BX
Current Palaeontological Research:
Larger mammal fauna of Europe of the Plio-Pleistocene - evolution and turnover: includes first human appearance in Europe.

News of Palaeontological Interest:
Hoping to collaborate on a second edition of Kurten's *Pleistocene Mammals of Europe*, and to establish a network for collaboration in mammalian palaeontology in Europe.

Arthur Cruickshank,
72 Thirlmere Road
Hinckley LE10 0PF
Leicestershire
Current Palaeontological Research:
1. Origin and evolution of the dicynodont quadrate complex.
2. Various projects on the taxonomy, functional morphology and taphonomy of plesiosaurs in conjunction with Mike Taylor and Dave Martill of Leicestershire Museum and the Open University.
News of Palaeontological Interest:
Apart from needing a straight six months' sabbatical to get the backlog of papers written, nothing much. The Open University will host the 38th Symposium on VP&CA at Milton Keynes from 17 - 21 September 1990. Anyone interested and in the UK at that time can get details from myself or Dave Martill, the Open University, Walton Hall, Milton Keynes, MK7 6AA, UK. We look forward to seeing as many colleagues as is possible.

Bernard Price Institute for Palaeontological Research,
University of the Witwatersrand, Johannesburg
Chris Gow sent this report:

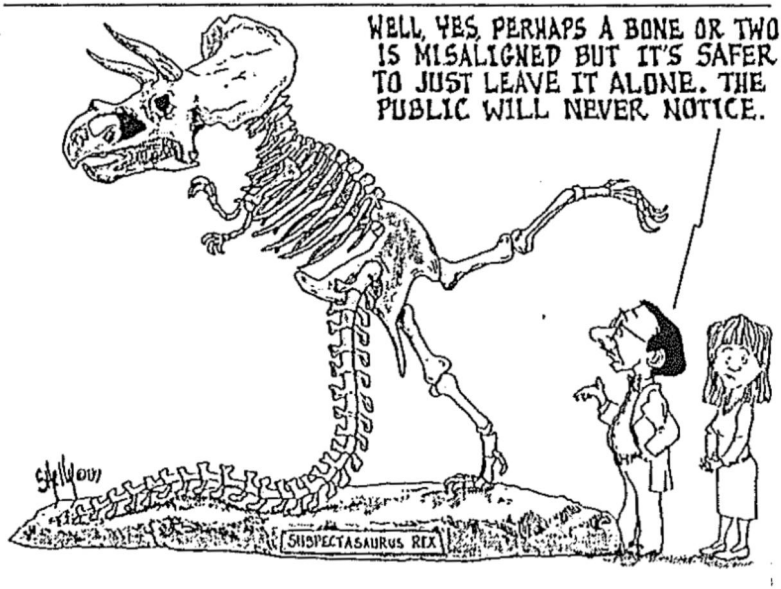
Dr **Dick Rayner** has just returned from a successful 12 month sabbatical at Harvard. He was invited by Professor Andy Knoll to spend time in the Botanical Museum of Harvard, which is a part of the Organismal and Evolutionary Biology Department. He also spent considerable time in the Museum of Comparative Zoology in the labs of Stephen Jay Gould and Richard Lewontin. In his work, Dick concentrated mainly on theoretical issues, arguing through the major controversies in palaeontology and evolution with Harvard's faculty. In addition, he used his time to attend several graduate courses on new techniques and developments in palaeontology, ecology and evolution. As well as being required to present seminars at Harvard, he was invited to speak at San Francisco and Brown Universities. The result of these activities has been new insights into the interpretation of

important parts of the fossil history of southern Africa, and several papers have already resulted, or are in preparation. The strength of Harvard is its depth and variety of talent, and Dick was fortunate in having the opportunity to form close ties with some of the best workers in his field.

Professor **James Kitching** continues as Acting Director, although he is looking forward to shedding the burden of administration once a new director has been formally appointed.
Chris Gow had a few undergraduate "howlers" to chip in, but the main crop were due to come in only after the deadline for this issue:

On australopithecines:
" ... their hands were free to perform other functions and could move around more, not being confined to certain areas ..."
(Groping for an answer? ...)

On the large dinosaurs:
"Pressure was needed to pump blood all the way up from the head to the tail and back again ..."
(Maybe they died of O2 starvation from a perpetual yoga position?...)



ANDREW GEDDES BAIN: "Father of S A Geology"

This article on A G Bain, like the one before it which appeared in Volume 6 part 2 (July 1989), is reprinted with the permission of the editor of Engineering News, *where it appeared as a three-part series in the issues published on March 17 and 31, and April 7 1989. We pick up the story ...*

"SELF-TAUGHT" BAIN DISCOVERS THE FIRST WALKING VERTEBRATE.

Inspired by Charles Lyell, whose authoritative work *Principles of Geology* greatly advanced the science of geology, Bain became a self-taught geologist while at Ecca-heights in 1837.

It was 150 years since Robert Hooke had conceived the possibility of an evolutionary linkage between species and investigation and debate into his hypothesis was intensive.

Bain embarked enthusiastically upon the search for fossils, a search that was to bring him the first of the properly documented discoveries of importance in this country which would be crowned a century later by Bain's fellow countryman, Dr Robert Broom and by Professor Raymond Dart. By strange co-incidence, Bain, on his last journey of exploration, penetrated as far north as Taung where the Taung child's skull of "missing link" fame was discovered.

Bain used all his leisure time while on road construction on his twin pursuits and within a year found a fossil reptile skull at Mildenhall - five miles south of Fort Beaufort - which had only two tusk-like teeth. He called it a "Bidental" and it proved to be a most important discovery becoming known as the famous *Dicynodon bainii.*

He found numerous fossil reptile skulls ranging from the size of a rhinoceros to that of a rat as well as fossil wood, fungi and plants. A friend and fellow enthusiast, Civil Commissioner M Borcherds, once played a jape on Bain by sending him a parcel marked "organic remains" which turned out to be Bologna Sausages. Bain then thanked him with the following witty verse:

"Many thanks, my dear B., for your kindness and pains,
In sending such precious Organic Remains;
In vain of description of them you may try all
The pages of Buckland, or Mantell, or Lyell;
For like our bidentals, they must be unique.
Only known to our own geological clique;
In science a novelty greater by far
Than glyptodon, mammoth or famed ichthyosaur."

Bain's most famous discovery was made at Blinkwater on the Katriver. Seeing a bone protruding from a rock, he excavated a number of bones which he assembled to form an armour-like plating covering the trunk of the body. The skull had a large jaw with 56 fluted and serrated teeth and was later identified as *Pareiasaurus serridens*, the earliest known vertebrate to give up crawling and take to walking.

In six years Bain amassed a large collection and at the request of his friends he held an exhibition of his fossils in 1844 at Ogilvie's store in Grahamstown. As there was no museum in Grahamstown at that time, Bain offered his collection to "a certain literary institution" with the proviso that it should form the nucleus of a museum when one finally came into being.

He was astonished and hurt when the offer was rejected by the directors of the literary society. (This was almost certainly the Literary, Scientific and Medical Society of that time.) There had even, apparently, been some off-hand reference to "a collection of old stones".

Undaunted by refusal of his collection in Grahamstown, Bain decided to send his palaeontological treasures, with an accompanying explanatory letter on the geology of the eastern Province, to the London Geological Society. Five full packing cases of fossils were despatched containing all his Bidental discoveries - heads and vertebrae of turtles, crocodiles, lizards and serpents. He also sent what he called his Blinkwater Monster which was in a comparatively good state of preservation.

The value of his collection was immediately recognised and extracts of his letter to the society appeared in the *Transactions of the Geological Society* (v. VII, second series) under the title "On the discovery of the fossil remains of bidental and other reptiles in South Africa".

Sir Richard Owen, Britain's greatest palaeontologist followed this up with a series of lectures on the implications of Bain's collection and within a matter of months Bain became a figure of stature.

He received a letter from the president of the Geological Society, which was worth its weight in gold to him. It was written in the most flattering terms and commended him highly on his fossil discoveries, and his description of the geology of the country....

"Your description of the rocks extending from the Indian Ocean to the Winterberg Mountains is an excellent geological sketch."

Further, Bain was informed that the president of the society had read a paper to the Fellows based on his letter, which had "met with a most flattering reception".

As a mark of appreciation for his work Bain was awarded 20 Pounds by the society and a year later he received 200 Pounds from Lord Peel "on behalf of Her Majesty's Government" in recognition of his contribution to science through his geological exploits.

It was only in 1853, however, that he received remuneration for his "parcel" of fossils despatched to London nine years previously after his collection had been purchased by the British Museum for 150 Pounds.

In 1851, after years of research and toil, Bain sent another collection of fossils, a geological map of the Cape Colony and a long detailed memoir to the London Society. Sir John Herschel, the astronomer and educationalist, acted as his patron and this memoir was published five years later.

On the strength of this effort, it was recommended that he be appointed Geological Surveyor to the Cape of Good Hope. While his ultimate destiny was to be a builder of South Africa's great roads and passes rather than a geologist in the employ of the Colony, it is clear from the following extract of the Geological Society's records that he fully earns the title of South Africa's "Father of Geology".

"....The circumstances ... are such as give rise to our astonishment at the triumphant results of the singlehanded labours and unaided research of one who, by his own perseverance and talent alone, has not only worked out so grand a geological problem but has trained and wholly educated himself for the task - a task indeed that would have absorbed no inconsiderable amount of public money and perhaps an indefinite number of years had it been confined to a scientific staff."

(To be concluded in the next issue ...)

LETTER TO THE EDITOR

Sir,

In the last issue of *Pal NEWS/NUUS*, Eva Endrödy drew attention to correspondence in *Nature* concerning anonymous refereeing. She asked for comments from South Africans.

The peer review process has its merits, but one may well ask whether anonymity is necessary. It would seem that referees who prefer to be anonymous often offer positive, constructive criticism. On occasions when a referee feels obliged to be very critical, he or she may prefer to remain anonymous, but surely they need not feel that anonymity is necessary if they are sure that their criticisms are fully justified? Any author worth his or her salt should be prepared to accept criticism where it is due, and in any case may want to acknowledge the help from referees in a revised, improved version of the manuscript.

Comments that editors receive from reviewers can reflect attitudes, assumptions and opinions of the referees themselves, but the editor may not be in a position to distinguish opinion from facts. Under such circumstances, it would be preferable for the editor to offer the author an opportunity to respond to referees' comments. In some cases the editor may simply decide on rejection, based on the adverse comments received from a referee. If those comments are deemed by the author to be unjustified, to whom does the author turn while the referee remains anonymous? Perhaps a code of ethics for referees might help to dissuade some reviewers from basing their recommendations on attitudes, assumptions and opinions under a cloak of anonymity.

Francis Thackeray

While I agree whole-heartedly with what both Francis and Eva [Pal NEWS/NUUS 6 (2): 29 - 30)] *say, as an editor myself I must say I wish more authors had a somewhat more professional attitude towards criticism of their work by their peers. Too many seem to regard any criticism, no matter how valid or justified, as a personal attack. In those circumstances, it is perhaps understandable for an editor to want to shield his helpers - the referees he has asked for help - from the slings and arrows of outraged "victims". Why should he draw the fire, when it is really the editor's job. Maybe if some authors were less paranoid about criticism, any need for anonymity would fall away and we could attain the utopian ideal that Eva and Francis advocate. I can't imagine any editor not welcoming that situation with open arms. Of course, Francis is absolutely correct when he says that authors should be given an opportunity to respond to referees' comments - that should be standard procedure. Ed.*

MEMBERS' ADDRESSES

It is some time since we last published a list of the names and addresses of Members. Recently some mail has been returned as unknown at that address. Please check your own address and any others that you might be certain of, and let us have any known changes, amendments, deletions, additions, etc. The addresses we currently have are:

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Merry Christmas