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PAL NEWS NUUS



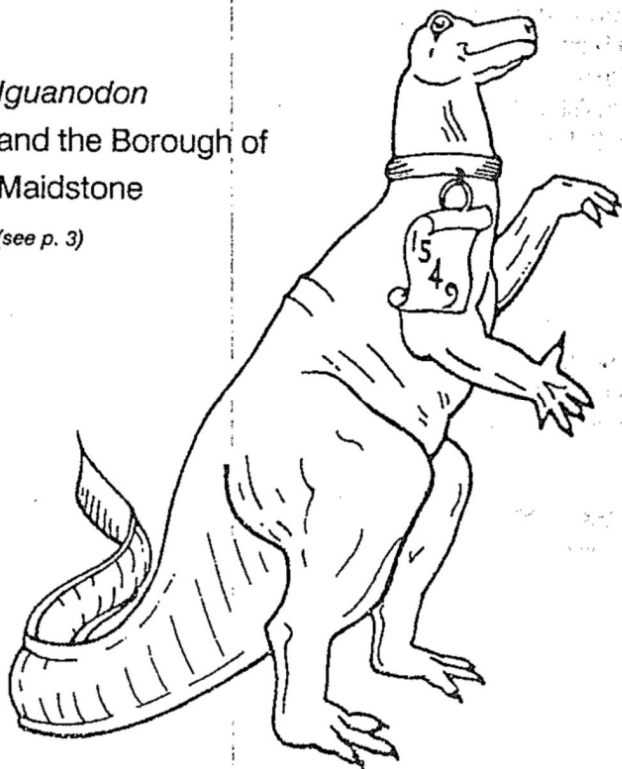
Biannual Newsletter of the Palaeontological Society of Southern Africa
Halfjaarlikse Nuusbrief van die Paleontologiese Vereniging van Suidelike Afrika

Vol./Band 5 (4)

July/Julie 1988

Iguanodon and the Borough of Maidstone

(see p. 3)



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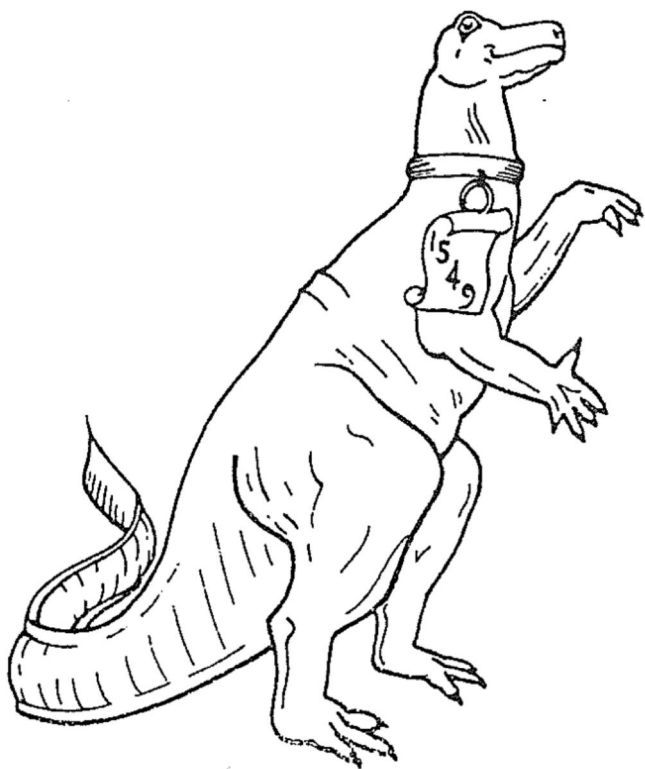
FROM THE EDITOR

Once more, when I finally sat down to put this issue to bed, I said to myself "Does every editor have it so tough? Each time when the deadline for getting Pal News out is approaching, I send out notices and then wait in vain for material to come in from members." I despaired because I just didn't think I had enough to make an issue. Anyway, once I got down to it, I was quite pleasantly surprised. Maybe it's not as fat an issue as we have had in the past, but it's enough to be going on with.

I think members will be as pleased as I to note that since the last issue of *Pal New/Pal Nuus* two of our members have been "doctored" - Colin MacRae and Bruce Rubidge were both awarded PhDs in the past few weeks, and at least two student members that I know of have completed their dissertations for Masters - Francois Durand and Ian MacKay. There's a whole crop more about to follow too. There might well be others that have graduated that I don't know about, and I would welcome news of these academic happenings from members who know. But to those I've mentioned, our heartiest congratulations!

This issue contains some important information about the Conference, as well as the draft programme. Remember to make your plans to attend right away if you have left it until now. I think it is going to be a very special occasion. Come along and help to honour our colleague, friend, and Vice President - James Kitching - on his home turf, nogal!

Mike Raath
EDITOR



(see facing page note by Barney Newman)

IGUANODON AND THE BOROUGH OF MAIDSTONE

Barney Newman sent a snippet from the writings of that doyen of British/Canadian palaeontologists, W E Swinton. It arose from the debate about our own society emblem during PSSA 4 at Cape Town, when there was such a wrangle about what was heraldically correct or acceptable, and what was not.

Barney writes:

At the mention of heraldry in connection with palaeontology I was reminded of the Maidstone Iguanodon. The first associated remains of this dinosaur were found at a quarry in Maidstone, Kent, in 1835. I quote the following from a paper by W E Swinton, Gideon Mantell and the Maidstone Iguanodon:

"The civic authorities of Maidstone recently decided to approach the College of Arms for an additional grant to their armorial bearings. It is interesting to note that the connexion between Maidstone and *Iguanodon* was not forgotten in these high quarters and in the words of the 1949 citation, 'I the said Garter Principal King of Arms do by these Presents further grant and assign unto the Borough of Maidstone the Supporters following that is to say:- On the dexter side an *Iguanodon* proper Collared Gules suspended therefrom by a chain Or a scroll of parchment...'

It need only be added that the College of Arms, being bolder than the palaeontologists, has no hesitation in rendering an *Iguanodon* proper as of a *scaly grey*."

BURROW CASTS FROM THE UPPER BEAUFORT GROUP (TRIASSIC)

by

Jorge Hayes-e'Silva

P O Box 1701, East London, 5200

In mid-1984, excavation started at a bend in the Oukraal River some eight kilometers west of the Sada Township on the Commonage of Shiloh, Republic of Ciskei, for the foundations of an earth embankment wall for the future Oukraal Dam and associated structures. Geologically the site is underlain by sandstones and mudstones of the Katberg Formation, Beaufort Group. Although the predominant rock type is sandstone, it is interbedded with minor thin layers and lenses of red mudstone, believed to be of Upper Beaufort age.

When excavations reached design level, seven meters below present surface level, tubular sandstone structures were exposed in the red mudstone, in the vicinity of the ancient river bed. The diameter of these structures varied from approximately 300mm to 1 500mm, and some were several meters long, running more or less analogous with the red mudstone horizons. A large number of them were exposed on the sides of the rock cut at various levels, showing their circular cross sections. The rock cut or excavation in which they were exposed was made parallel to the present natural course of the river. Some features of these intrusions, such as the corrugated and rippled surface of the cast, the general appearance, and their orientation suggest that they might represent burrows of reptilian or therapsid origin.

In Lower or Middle Triassic times an assemblage of prehistoric burrowing saurians might have populated the banks of an ancient waterway in the Oukraal vicinity. In the course of rock formation, the burrows excavated in the red mud would have been subsequently filled with a sand matrix, so creating the casts now exposed.

Roger Smith of the South African Museum (Cape Town) reported in a paper in 1986 that no burrows in terrestrial deposits of Triassic age have ever been discovered or ascribed to a reptilian origin. The only ones reported are the helical burrow casts of the therapsid origin, from the Lower Beaufort Group (Permian), also reported by him. These burrows were constructed by the dicynodont, *Diictodon*.

² Unfortunately, detailed studies of the Ockraal burrow casts are no longer possible, as the Ockraal Dam wall is now complete and all vestiges of the burrows are buried under many tons of earth. The only evidence that they ever existed consists of some photographs that the author and the Consultant Engineer's geologist, Neal Carter, took at the time they were exposed. Further study material is available in the form of a partial skull, initially suspected to be of *Kannemeyeria*, but teeth of dissimilar length subsequently found at the site suggest a carnivore. Might they belong to the builder of the burrows? Or to its predator?

An interesting feature of the burrows is the presence of a median ridge or "*middel mannetjie*" at the lower part of the burrow in most casts. I suggest that this ridge was caused by the feet of the animal scraping a furrow on either side of the mound, straddling it as it were, in the process of entering and leaving the burrow. The central mound might have been further pronounced if the animal's tail had become shortened or vestigial, as was evidently true of several burrowing forms in Beaufort times. Thus there would have been no following tail to flatten the central mound. The animal in this case had to have widespread legs, in at least a "semi-improved" posture. This all points to a dicynodont as the possible inhabitant of the burrows, but the picture does not fit for the larger diameter burrows.

Because of the rarity and importance of these trace fossils, the author, as an amateur palaeontologist, aims to study them with the purpose of publishing all findings. The area upstream of the dam wall is now in the process of being systematically searched for further fossils and burrow casts, prior to flooding of the completed dam. The river course above and below the dam will

also be investigated. Comparisons will be made with the known Lower Beaufort (Permian) helical burrows.

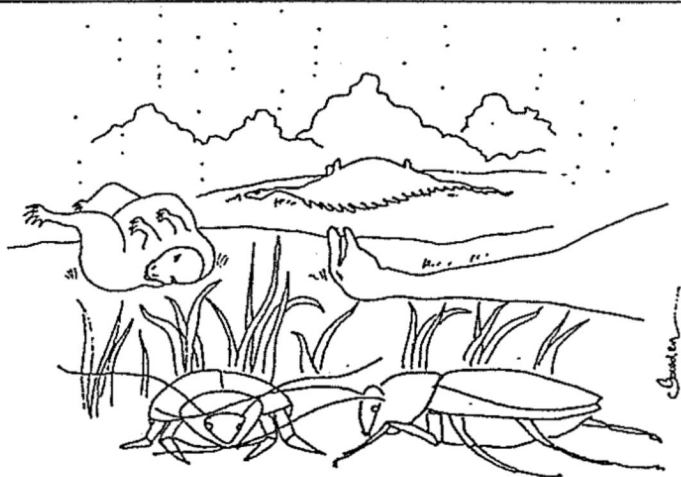
The possibility that the deposits of the study area might be of Middle Beaufort age is also being investigated.

Assistance has kindly been given by Dr Mike Raath of the Port Elizabeth Museum, Roger Smith of the South African Museum and Neal Carter, geologist of the Oukraal Dam Project Consulting Engineers (Cape Town).

LIFTED FROM THE JOURNAL OF GEOLOGICAL EDUCATION

Stop, passenger, a wondrous tale to list -
Here lies a famous mineralogist!
His fossils, flints and spars of every hue
With him, good reader, here lie buried too!
Sweet specimens, which toiling to obtain,
He split huge cliffs like so much wood in twain:
We knew, so great the fuss he made about them,
Alive or dead, he ne'er would rest without them,
So to secure soft slumber to his bones,
We paved his grave with all his favourite stones.

(Felicia Dorothea Hemans, 1836)



Have you ever noticed that we tend to get new neighbors around here about every 26 million years?

NEWS FROM MEMBERS

Fewer even than usual, this time! Ed.

Willem Smuts, Geologiese Opname, Pretoria

Ek is op die oomblik (soos almal) hard besig met voorbereidings vir September se kongres in Graaff-Reinet.

Ek is ook besig om te werk aan bamboes/riet fossiele wat deur Markasiet (FeS_2) verplaas is in veen afsettings in die Wes Kaap. Hannes Theron is mede-outeur.

Ek beplan om in Augustus die Agste Wereld Veen Kongres van die International Peat Society in Leningrad by te woon. Op pad daarheen beplan ek om ook 'n draal te maak in Skotland en Ierland om na hulle veen te kyk.

Verder werk ek en Koos Reddering nog steeds aan verskeie artikels oor die Palaeo-Swartkops getymonding en die fossiele/spoorfossiele van die afsetting.

Dr Rosemary Falcon, Falcon Research Laboratory, Johannesburg

We have been quietly and consistently busy in palynology of the Karoo Sequence in South Africa, Mocambique, Zimbabwe, Zambia and Botswana for some time now. Several papers have been published (*Dr Falcon sent me a list, which is available to anyone interested - just contact Dr Falcon or me, Ed.*) More recently we have been involved in correlating palynology with coal seams and their sub samples or bands within them. Very interesting, as it is confirming the relationship of plant community to coal type and environment. I also have a slightly crazy idea re sea level fluctuations during Upper Dwyka to Beaufort times, i.e. that the transgressions and regressions went synchronous Central Gondwana wide, not only because of the possibility of isostatic fluctuations, but also possibly because of a series of waxing and

waning (but generally reducing) ice ages not unlike the later Pleistocene times. This story is written up in a paper; I would be very glad of critical assessment of this idea - the coals and sediments certainly do not seem able to contradict the idea so far. It could be very important for climatic, stratigraphic correlation, and palaeontological reasons.

Roger Smith, South African Museum, Cape Town

The year has been a bit of a disappointment in that I was refused a visitor's visa to enter Pakistan to join the Smithsonian field party working in the Siwaliks. The reason for refusal - domicile in South Africa.

To fill the gap in my calendar caused by the cancelled trip I was able to make a two-week visit to my study areas in the Karoo to check the details of some stratigraphic panel sections that I have previously recorded and drafted. Meanwhile Clive Booth and Annelise Creen continued preparations for mounting the fossil display in the Karoo National Park. Whilst working on Dunedin I took the opportunity to visit Nick Hotton's rich *Diictodon* locality on the adjoining farm Leeukloof. Here we found several tiny dicynodont skulls, the smallest only two cm long, showing incomplete ossification of the postorbital bar.

Several new burrow fills of both helical and straight types were located on Leeukloof (Fraserburg Dist.). We were able to excavate one of the helical ones and re-assemble it back in the lab. On the same "horizon" a "den" of three intermeshed articulated *Diictodon* skeletons was collected.

After 119 mm of rain overnight I was determined to continue collecting but unfortunately I drove the "Landie" into a quagmire and sank up to the diff. We were 12 km from camp, and the sun was just setting. Spirits were audibly down during the long hike back to camp in the pitch darkness. Next morning I managed to borrow the only tractor in the area, an old banger with no registration and the sloppiest steering rack ever! We had only

weaved a mere 500 m up the road when a couple of diligent provincial cops flagged us down. After lengthy negotiations they agreed to let us continue provided I did all the driving.

At the beginning of May I spent a week in the Lichtenburg diamond field investigating the stratigraphy and depositional history of Karoo rocks caught within the fill of palaeosinkholes in the Malmani dolomites. This is a joint venture with de Beers Consolidated Mines.

Four very interesting and enjoyable days were spent with James Kitching in the hills around Graaff-Reinet. We were planning and documenting the field excursion/workshop for after the September Conference. The first day's excursion promises to be of special interest to palaeontologists, stratigraphers, and fluvial sedimentologists, and takes the participants through some of the most scenic valleys in the Karoo. The morning of the second day will be spent at a single locality in the Graaff-Reinet Karoo Park nature reserve. Here there is a fascinating *Palaeomutela*-rich conglomerate that contains representative elements of almost every fossil group known from the Lower Beaufort and probably a few not yet known. The aim of the ca. 2 hour visit is to reconstruct the depositional history of the sequence that contains this unique deposit. James and I will compile a field guide for the expected 30-odd participants that have registered to date.

Current research is concentrated on finishing a paper entitled "Alluvial palaeosols of the Permian Lower Beaufort (southwestern Karoo, South Africa) and their palaeoenvironmental significance".

Recent publications:

(in press) Palaeoenvironmental reconstruction of a Cretaceous crater lake deposit in Bushmanland, South Africa. *Palaeoecology of Africa*.

(in press). A review of the stratigraphy and sedimentary environments of the Karoo Basin of South Africa. *Continental Deposits of Africa (IGCP Project 210)*.

Colin MacRae, Geological Survey, Pretoria.

And history is made - the Survey "Palies" submit a contribution to *Pal News*! This was written v-e-r-y- s-l-o-w-l-y, so don't rush yourself reading it!

Francois Durand has joined our staff (Jan 1988) and will be continuing his research on the detailed cranial morphology of *Moschorhinus* and the whaitsiids. His MSc dissertation on the former taxon has been perused by his external examiner and passed for the purposes of upgrading to a PhD at the BPI (Wits). Congratulations Francois, and give it all you have for the final hump!

Francois and Eva (Endrody) are presently braving the cold fronts moving in over the Cape in an attempt to collect additional *Promissum* material. First reports are that they are finding fossils and also enjoying the exhilarating Cedarberg environs. Eva's detailed description of *Promissum* has now been published (*Ann. Geol. Surv. S. Afr.*, 20 (1986): 93 - 118) and we are all eagerly awaiting reaction to this in the international scientific literature. We are especially interested in the claims of Dr Aldridge (University of Nottingham) and Dr Rickards (Cambridge) that *Promissum* is a conodont bedding plane assemblage. Views that it is a graptolite, metazoan colony, or the earliest ancestor of MacRae's moustache, will probably also appear!

Eva is once again entangled in the taxonomic spaghetti marsh surrounding the genus *Belemnopteris* Feistmantel. She should have it all unravelled and published in the not too distant future.

Andre (Keyser) has completed the biostratigraphic description of the 1:250 000 Victoria West sheet in conjunction with F G le Roux. The map should appear in print soon. He also reports that the taxonomic revision of the smaller endothiodonts is also now nearing completion.

Ian Brink's volume 2 of the synapsid catalogue is now at the Government Printer and we are hoping that it will be ready in time for the Pal Conference.

I have now graduated and submitted a manuscript on the Permian palynostratigraphy of some of the northern Transvaal basins for publication as a memoir of the Geological Survey. I will be travelling to Australia in August/September to attend the 3rd International Palaeobotany Conference (Melbourne) and the 7th International Palynology Congress (Brisbane). I will use the opportunity to briefly study and photograph Permian palynological type material housed in various institutes there.

Magdel Gricius is busy with the mammoth task of getting our new fossil store organized and documenting of our collections on computer. When last seen she was trapped in a "do" loop. Linda Karny is going flat out preparing palynology samples, producing single grain mounts and SEM photographs of my fossil spore and pollen material. Ibolya Sopik is doing fine-scale preparation of small therocephalians - and finally Pam Prowse is taking a well deserved holiday after the hectic days preparing to submit the synapsid catalogue.

Judy Maguire, Gem Valley Mine, P O Box 684, Silverton 0127

I'm afraid nothing significant to report for *Pal News*... except that I'm still alive and well and living in Pretoria.

I have been giving a course of 12 "Faunal Analysis" lectures to Tom Huffman's Archaeology Hons. students (Wits University), and enjoying the stimulus of meeting and interacting with other peoples' minds once again. I was there when James Kitching had his pulmonary thrombie recently. He looked awful, but insisted that he would see one Graaff-Reinet field trip through the following week. He must have a cast-iron constitution for it to stand up to the hammering he subjects it to!

I hope to put two papers out soon - one on porcupines (at long last!), one on further developments on bone damage in the fossil deposit at Makapansgat, and perhaps an updated faunal list.

(Nice to hear from you after so long, Judy. Ed.)

Bruce Rubidge, Nasionale Museum, Bloemfontein

Palaeontological research in Bloemfontein has taken on a new dimension this year as Johann Welman (also an old student of Stellenbosch University), has joined the Palaeontology Dept at the National Museum. Johann is working on the cranial structure of early thecodonts, with a view to reconstructing their cranial muscles. To this end he has started preparing *Proterosuchus* specimens from the National Museum collection. Johann and Steve Fourie undertook a field trip to the Aliwal North, Venterstad and Verwoerd Dam districts during March. Jacques Gauthier's visit to the National Museum was well timed as he and Johann were able to have useful discussions on the relationships of the Thecodontia.

Steve Fourie is continuing his battle with *Tritylodontoides* and is currently working on the postcranium. He considers that the postcranium, like the skull, is more advanced than that of *Tritylodon* and compares closely with early mammal material.

James Brink has extended his stay in Germany in order to attend an additional course on bird osteology and is due back at the end of July.

Jim Hopson spent four days at the department en route to Cape Town at the beginning of May, as he and I are working on a combined paper on the relationships of dromasaur, *Otsheria*, *Venjukovia*, and a new primitive dicynodont which was discovered by my assistant, John Nyaphuli, in the Eccle-Beaufort contact rocks near Prince Albert.

Colin MacRae and I recently spent a few days in the Prince Albert and Rietbron districts collecting rock samples for palaeontological analysis in the hopes that we might be able to obtain an age for the Lower Beaufort rocks.

I have prepared a paper on the cranial morphology of *Eodicynodon* in the light of new material. The four dinoceratopsians which we have found in rocks of the Ecca-Beaufort contact in the southern Karoo also appear to be more primitive than others described from the Lower Beaufort.

Wait till September to hear more!

Mike Raath, Port Elizabeth Museum

There still isn't much to report from this museum on developments in terms of Algoa Basin palaeontology. So far I have spent most of my time on other things - settling in to the routines of this far-flung and diversified museum complex. But when I have been able to turn to fossils it has so far been more in connection with the lovely tracksite at Maclear than with much else. For much of the time since our article in the last issue of *Pal News*, the tracks have been under water, and I am desperate to get at them so that I can get some pictures for our paper at the Graaff-Reinet conference! I believe they are visible again right now, but with all winter's snow around, I don't suppose it will be long before they are under a raging torrent again.

I must thank Steve Fourie and Johan Visser for their response to our call for information about the geology of this tracksite in that last article. Their help is much appreciated, and has certainly helped in the interpretation we will put forward.

It has been interesting to note from the reaction to media publicity for this track site that the tracks have been known as a "dinosaur-spoor" picnic site since the early years of this century - one man told me that he has a boyhood memory of when his

father took Lord Baden Powell (founder of the Boy Scout movement) to see them in 1926.

It seems that there is a better than even chance that the access road to the tracksite may be upgraded, and a group of us is pressing ahead to get the site declared a National Monument. I have never yet been involved with such an interested and supportive group of people as those with whom I have been dealing over this tracksite. It would be great to have a monument like this so close to a town, where members of the general public can enjoy something of the palaeontological heritage of this country to which they so seldom get any exposure. It would also make a welcome change for some monuments attention to be turned the way of palaeontology at last.

It was good to have some palaeontological visitors down this way recently, including Jacques Gauthier on his way between Bloemfontein and Cape Town, and also the members of the SACS Task Group for Biostratigraphy - Dr F J Coertze (Chairman of SACS), Dr Mike Johnson (Secretary of SACS), Colin MacRae (Secretary of the Biostrat Task Group), Bruce Rubidge, Ian McLachlan (SOEKOR), and Russell Shone by invitation.

IN MEMORIAM - F J du Plooy

Mr F J du Plooy, a member of our Society, died in April. Resident in Aliwal North, he had wide interests, including palaeontology, geology, as well as archaeology and history. He had written a book on Aliwal North, describing the people and events that shaped its history.

Material from Mr du Plooy's private collections has been deposited in the Museum at Aliwal North.

The Palaeontological Society of Southern Africa extends its sincere condolences to Mrs du Plooy and family.

(Francis Thackeray)

**PALAEONTOLOGICAL SOCIETY OF SOUTHERN AFRICA
FIFTH BIENNIAL MEETING
GRAAFF-REINET, SEPTEMBER 12-16 1988**

Those members who have not yet made their hotel bookings for the PSSA conference in September must do so immediately if they are to avoid disappointment. If you intend to join the excursion, your booking should include the nights of Wednesday and Thursday (September 14/15 and 15/16).

Bookings at the Drostdy Hotel can be arranged through Mrs E Pringle, P O Box 400, Graaff-Reinet, 6280 (Tel. 0491-22161) - but *DO IT NOW!!*

Provision is being made for the projection of slides and transparencies (overhead projection). Members will be asked to run through their own slides before they give their talks, to ensure that there are no problems with projection.

PLEASE BRING YOUR OWN SLIDE TRAYS IF YOU CAN (CAROUSEL OR STRAIGHT).

Only a few poster boards will be available. Please notify Francis Thackeray if you intend to present a poster.

Registration fee: The registration fee (including the cost of the dinner) has been set at R65,00 for Members other than students. Wives/partners who would like to attend the conference (including dinner) are asked to pay R25,00. Payment can be made before the conference, to Jurie van den Heever at the S A Museum, P O Box 61, Cape Town, 8000; alternatively, payment can be made at the time of registration at the Drostdy Hotel, preferably on the Sunday evening (September 11, 7:00-9:00 pm).

Please note: Some of the entertainments during the conference are rather formal, notably the Civic Reception on the Monday evening, and the Conference Dinner on the Wednesday evening, and those attending are asked to dress accordingly. Gentlemen please ensure that you pack a jacket and at least one tie before leaving home!! Or else hire them!

PROVISIONAL PROGRAMME

Please note that the programme outlined below is tentative, and serves as a guide only. Changes might well be made before the Conference gets under way.

Sunday September 11, 7:00 pm - 9:00 pm

Registration in main lounge of the Drostdy Hotel

(Delegates are urged to register on Sunday rather than on Monday morning.)

Monday September 12:

- 08:30 - 09:00 Registration
- 09:00 - 09:15 Welcome and Opening by Mayor of Graaff-Reinet
- 09:15 - 09:45 Presidential Address
- 09:45 - 10:30 1st Session. Chair: Dr M A Cluver
Dr T S Kemp: Further thoughts on the macroevolutionary processes of the origin of mammals.
- 10:30 - 11:00 Tea / Coffee
- 11:00 - 11:30 R M S Smith: Lower Beaufort palaeosols - recognition and interpretation.
- 11:30 - 12:00 B S Rubidge: The Ecca-Beaufort contact in the southern Karoo, and the palaeoenvironment.
- 12:00 - 12:30 G M King: Dicotylodonts and the end-Permian event.
- 12:30 - 14:00 Lunch
- 14:00 - 14:15 Conference photograph
- 14:15 - 14:45 2nd Session. Chair: Dr J W Kitching
J van Heerden & B Rubidge: Evolutionary trends in some early cynodonts.
- 14:45 - 15:15 S Fourie: On the postcranial skeleton of *Tritylodontioideus*.
- 15:15 - 15:45 Tea / Coffee
- 15:45 - 16:15 J van den Heever: Therocephalia, *Quo Vadis?*
- 16:15 - 16:45 J F du Rand: The endocranium of the therocephalian *Moschorhinus* (Reptilia: Therapsida).
- 16:45 - 17:15 J F Thackeray: Temporal variation in two diversity indices for reptiles and mammal-like reptiles.
- 18:30 (for 19:00) CIVIC RECEPTION (Dress: jacket and tie)

Tuesday September 13:

- 08:30 - 09:00 3rd Session. Chair: Dr T S Kemp
C E Gow, Kitching & Raath: *Massospondylus*, benign Draken of the Berg.
- 09:00 - 09:30 A Chinsamy: Physiological implications of the bone histology of *Syntarsus rhodesiensis*.
- 09:30 - 10:00 M A Raath, Kitching, Shone & Rossouw: The new dinosaur trackway at Maclear.
- 10:00 - 10:30 B Newman: A bipedal dinosaur trackway from Swanage, England.
- 10:30 - 11:00 Tea / Coffee
- 11:00 - 11:30 J Welman: The jaw muscles of *Proterosuchus*.
- 11:30 - 12:00 C E Gow: Elliot and equivalent crocodylomorphs.
- 12:00 - 12:30 C MacRae: (Title to be announced)
- 12:30 - 14:00 Lunch

(Tuesday 13 September, cont)

- 4th Session. Chair: Dr G M King
14:00 - 14:30 A S Brink: Catalogue of Synapsida: Volume II.
14:30 - 15:00 J W Kitching: Summary of the vertebrates of the Graaff-Reinet area.
15:00 - 15:30 Tea / Coffee
15:30 - 16:00 POSTER SESSION (Authors are asked to stand by their posters to explain to delegates and to answer any questions)
16:00 onwards: VISIT TO "WELLWOOD"
Evening Braai (*Moschops* and worse)

Wednesday September 14:

- 5th Session. Chair: Dr C S MacRae
08:30 - 09:00 A Cadman: The implication for palaeontology of modern pollen-rain studies. *+ Fourie*
09:00 - 09:30 S J Kerr: Pollen analysis of section of Member 2 Breccia, Makapansgat Limeworks.
09:30 - 10:00 E Kovacs-Endrody: Clarification of the systematic position of the genus *Belemnopteris* Feistmantel 1876.
10:00 - 10:30 E Harley and M F Essop: Construction of a phylogeny for Bovidae by analysis of mitochondrial DNA.
10:30 - 11:00 Tea / Coffee
11:00 - 11:30 N Hiller: Lower Devonian hyoliths in South Africa, and their palaeoenvironmental significance.
11:30 - 12:00 H C Klinger: (Title to be announced)
12:00 - 12:30 W J Smuts & G J Rossouw: The first portunid crab from the Late Tertiary Alexandria Formation, Eastern Cape.
12:30 - 14:00 Lunch
6th Session. Chair: Dr M A Raath
14:00 - 14:30 B S Rubidge: A new tapinocephalid dinocephalian and its *phylogenetic* significance.
14:30 - 15:00 J F Durand: The cranial blood vessels of the Therocephalia.
15:00 - 15:30 Tea / Coffee
15:30 - 17:00 BIENNIAL GENERAL MEETING OF PSSA
19:00 (for 19:30) Conference dinner at Drostyd Hotel (*Dress: jacket and tie*)

Fourie

EXCURSION/FIELD WORKSHOP:

Thursday, September 15 - Friday, September 16

James Kitching and Roger Smith have organised a two-day excursion/workshop. The sites to be visited will include localities which yielded the types of *Prorubidgea maccabei*, *Cistecephalus microrhinus*; *Dicynodon leoniceps*, etc; a fossil fish (*Atherstonia*) site; and occurrences near the contact between *Dicynodon/Whaitsia* and *Lystrosaurus/Thrinaxodon* Range zones.

James and Roger have prepared a field guide for this workshop/field excursion. If desired, pack-lunches - can be ordered at the time of registration at the Drostdy Hotel. The cost of the field guide and pack-lunches is **not** included in the conference fee.

NB Those wishing to go on the two-day excursion should ensure that they reserve overnight accommodation (Thursday night) in Graaff-Reinet. The excursion will take place in the vicinity of Graaff-Reinet, and will end at 2:00 pm on Friday 16 September, when delegates can disperse.