
BEER 'BONES

Volume 1, Number 3.

June, 1997

FLINDERS UNIVERSITY PALAEOLOGY SOCIETY

Message from the President

Welcome back from KI. Hope you've all had as much fun as I did. Several fun and interesting events are being planned for the near future. The barbecue will happen certainly at some time. A 70's party is going to rage at Raelene's house in September so everyone dig out those flares and body shirts and don't forget your poncho. It might be chilly. As you may have heard there is a chance of some short field trips next semester as a preliminary search for some new sites. There is a possibility of some ABC documentary crews filming some of these sites for a documentary based on Tim Flannery's book "The Future Eaters". As places will be limited on these trips we will need you to give your name to Raelene Sherwin as soon as possible. Naracoorte field trip is only a matter of terms away so start saving up for your beer now. Good luck for your exams.

Jo Colmer : President.

KANGAROO ISLAND

The beautiful, unseasonably warm and dry weather set the scene for an extremely productive and rewarding voyage across the sea to Rocky River in April. The "primitive" lodgings in the Adelaide Uni Hut included as well as all amenities, a microwave oven, pot-belly stove and telephone!! Everyone bent their backs and within a day, Darren Groecke's previously fruitful little

dig had expanded into a 4 x 4 metre hole. Within another day, bones started appearing and lots of them. (see Matt McDowell's feature later). With our assigned little quadrats, which we guarded



jealously, we set to task. We all wished we had sat on Steve Brown's quadrat. He was the proud finder of the zygomatic skull that is presently slowly revealing itself from its cocoon, in the lab. Steve is proving himself quite a fossil diviner with that shovel. However we all found something interesting and worthwhile, including scapulas, diprotodon incisors and molars, various mandibles, tibias and femurs. Matt and LindaMarie took on the role of site stratigraphers.

Animal life was abundant. Kangaroos and possums hung around the hut to be fed and to make friends with Fernando. There were night time pit raids by roos, koalas in the trees, goannas in the toilets, Cape Baron geese, 3 people including myself saw a

platypus, and also present of course, that most crass of species, tourists.

Neil Draper, our archaeological counterpart, took us on a guided Aboriginal history tour on Saturday and Sunday necessitated a trip into Kingscote to watch Port Power thrash Adelaide Crows. Rod arrived, then a TV news crew from Channel 10 (Rob Morrison). An interesting little segment was show on the following Friday's news, regarding ours and the archaeologists work (see Chris Langeluddecke's feature later)

All in all, it was an extremely successful trip, no rain, interesting nights and plenty of material. We can look forward to future field work on KI. Thanks to Gav for organising it.

A LATE PLEISTOCENE DEPOSIT AT ROCKY RIVER, KANGAROO ISLAND, STH. AUST.

By Matthew McDowell

Since 1908, Pleistocene vertebrates have been periodically recovered from the edge of Black Creek Swamp at Rocky River, Kangaroo Island. Tindale *et al.* (1935) first investigated the deposit and recorded the remains of *Zygomaturus*, *Diprotodon* and *Macropus*. Subsequent excavations west of Tindale's pit were undertaken by Hope *et al.* (1976), and more recently by Groecke in 1996, and Wells & Prideaux 1996-1997.

The fossils previously collected from Rocky River are lodged at the South Australian Museum and include *Thylacinus cynacephalus*,

Phascolarctoscinereus, *Trichosurus vulpecula*, *Protemnodon anak*, *Macropus eugenii*, *M. fuliginosis*, *M. rufogriseus*, *Zygomaturus trilobus*, *Diprotodon australis*, *Sthenurus gilli*, *S. browni* and *Dromaius sp.*

In April 1997 members of the Flinders University Palaeontology Society excavated a 4 m square by 0.6 m deep pit approximately 5 m north of the Hope et al (1976) excavation. The swamps subsurface stratigraphy was investigated by auguring along transects 85.5 m east, 180 m north, and 55 m west of the pit in approximately 20 m intervals. Bone was recovered from almost all auger holes at approximately 0.4 to 0.6 m below the present surface of the swamp and the extensive nature of the fossil horizon was confirmed. Several well preserved megafaunal fossils were recovered from the pit along with many fragmentary remains. Bone is brown to black in colour and some is permineralised.

Species collected include *Diprotodon sp.*, *Zygomaturus trilobus*, *Zygomaturus sp. nov.*, *Sthenurus gilli*, *S. browni*, *S. occidentalis*, *Macropus fuliginosus*, *M. eugenii*, *Bettongia lesueur*, *Potorous platyops*, *Lagorchestes leporidis*, *Mastacomys fuscus*, *Rattus fuscipes*, *Pseudomys australis*, *P. shortridgei*, *Dasyurus sp.*, *Perameles bougainville* and *c.f. Dromaius bordinianus*.

Carbon dates of ~19.5ka obtained previously (Hope et al., 1976) and the discovery of a new dwarf *Zygomaturus* species highlight Rocky River's potential as one of the last refuges of Australian megafauna. This may well make Rocky River one of the most important and potentially informative Pleistocene fossil deposits in Australia. Further examination of the site should be conducted by a multidisciplinary team of scientists who can interpret the swamps' palaeo-



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environmental record by studying the vertebrate fossil, pollen, gastropod and geological histories preserved in the swamp sediments. The resulting palaeoenvironmental reconstruction may provide the missing clues required for us to determine what happened to Australia's extinct megafauna.

References

Hope, G.S., Clark, R.L. & Hope, J.M. (1976) Report of a stratigraphic investigation of a fossil bone deposit & its relationship to Black Creek Swamp at Rocky River, Flinders Chase National Park, Kangaroo Island. Unpublished report to SA National Parks & Wildlife Service.

Tindale, H.B./ Fenner, F.J. & Hall, F.J. (1935) Mammal bone beds of probable Pleistocene age, Rocky River, Kangaroo Island. *Trans. R. Soc. S. Aust.* 59, 103-106.

Matt is a PhD student in the Flinders University palaeontology lab, studying faunal changes through time as tool for palaeoenvironmental interpretation

KI ARCHAEOLOGISTS REPORT

by Chris Langeluddecke

At the time that the Palaeontology Society was conducting its dig at Rocky River on Kangaroo Island, an archaeological dig was also taking place. Headed by PhD student Heather Bluth, the aims of the archaeological expedition were to record the extent of surface archaeology, analyse the sediment and stratigraphy of the area, and to identify and test potential sites for future, larger digs. The aim of all this was to build up a picture of the Aboriginal activity at the Rocky River Site, which has been found to have the most recent dates for Aboriginal occupation of the Island, as close as 400 years ago.

As anyone that was at Rocky River site will tell you, the huge amount of surface material had the archaeologists jumping, declaring that the area was "strewn with

artefacts". We dug test pits along the dune system that boarded the lake plain, and got a clear picture of the stratigraphy of the area. Just after we began digging in what was potentially the most interesting area, down on the lake shore itself, we were stopped by the Department of State Aboriginal Affairs, barely a week into the dig (interestingly, it has not yet been clearly defined just *why* we were stopped.) Recovering from this set-back as best we could, we gathered up all the information we could, without disturbing any artefacts, as per DOSSA's orders, and made the best of a bad situation.

Heather's PhD research is based on trying to find a connection between megafauna on the Island and the Aboriginal population, and although no evidence was found on this dig, it must be remembered that this was only a test area, and one that was cut short, at that. Hopes are still high that this area could provide concrete evidence of interaction between humans and megafauna in Australia. Time, as always, will tell.....

Chris is a second year BA Archaeology student, looking forward to further dealings with government departments in the future!!



TRAVELSAND TRAVAILS OF AN ENGINEER

by Ed Bailey

This is the first of a 3 part series taken from Ed's autobiography, written at the persistence of his family.

"...My interest gradually increased in the fossil work and I was soon going down to Naracoorte on some weekends just to dig fossils. Other trips I went for cave exploration and some great discoveries were being made in the 1970's. My work also took me to the South-east of the state, working just south of Mt Gambier at Kilsby's Hole, a water filled sink hole. If I had some spare time at the weekends, I would drive up to Naracoorte and do a spot of caving with other cavers. I was down in the fossil chamber one weekend doing some fossil digging, when another caver found a very large jaw. It belonged to an extinct member of the Diprotodon family and was called Palorchestes. This was and still is the only complete jaw ever found of this species. I recorded the event by taking several photographs. News of this find soon reach the outside world and we were visited by a newspaper reporter. Rod (Wells) explained the nature of this animal by comparing its size with a modern animal. He said it was more lightly built than its bigger relation, which was about the size of a bull. Palorchestes was more like a horse in size. The next we knew was a big article in the *Sunday Mail*, describing this latest find as another first for Australia, we had found the jaw of a marsupial horse. Let this be a warning to you, don't believe everything you read in the newspapers, better still, don't believe anything.

On another weekend trip, Grant Gatrell, a keen caver and one who has made many spectacular discoveries, including the

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discovery with Rod Wells, of the fossil chamber in the Victoria Fossil Cave, was on the way to making another discovery. He had noticed a faint breeze coming from a crack in the rock face in a small cave on the edge of the reserve, called Blackberry Cave. This was one of several caves which did not present any difficulties and was used to initiate newcomers to caving. Early on the Sunday morning, Grant, Dot Peisley and myself walked a short way down the track to the cave. Grant was wanting to do a quick survey to pinpoint the exact location of the faint breeze. This was done BEFORE breakfast, an unheard of thing in caving circles, almost broke the code of honour in caving. Eventually, he managed to break into this small opening during the next few weeks and found a spectacular cave that extended for a considerable distance. The cave decoration was outstanding, so much so, that the Cave Exploration Group, with the co-operation of the National Parks and Wildlife Service, who managed the reserve, made and fitted a steel gate in the restricted part of the new extension and put a padlock on it. Down we went a few weeks later to continue exploration and take loads of photographs. I went mainly to use my camera, which had been on many hard caving trips. We went on passing through the gated section and into the dark. This was going to be a 12 hour trip, so we had taken hard rations with us, such as bars of chocolate and nuts. There was so much to photograph that the process was very slow. I remember taking slides of spectacular helictites, which grow in all directions, seemingly defying gravity. One slide was of a piece of flowstone, from which helictites grew upwards like twigs up to 30 cm high. In a far chamber along with other cave decorations were several long straws up to 3 metres long.



The journey back out was equally slow, especially going through the tightest squeeze I had ever experienced. It was a long low tunnel, where crawling flat out was the only way to make progress. In the middle of this tunnel was the squeeze. A hard piece of limestone formed the bottom of the hole, the sides were barely far enough apart to allow shoulders to pass and the top sloped so the height was less at one side. I had always comforted myself with the thought that if I could get through a squeeze, I could always get back out again. This squeeze nearly proved me wrong, the floor of the hole sloped down going out with a hard ridge at the inner end. Coming in, one could ride up the slope, but coming out, the ridge made hard contact with the chest. Also the body had to squeeze as far as possible to the high side of the opening. The only way to get through was to find good toe holes and breath out as hard as possible. To help, all unnecessary equipment was first removed, such as helmet, belt with battery and in sheer desperation, clothing. To

narrow the shoulders, put one arm through first, then ram hard. If not successful, don't breath in, but immediately breath out again, take fresh toe holes and ram even harder. After several attempts, success was achieved, this probably due to two things, unnecessary flesh would have been removed from the chest, and so much sweat would have been generated that you would float through on a miniature tidal wave. I came through with several longitudinal scratches down my chest. This also answers a question I have sometimes been asked, what do you do about bodily functions on a 12 hour trip such as this one? The brief answer is you don't, you sweat it out of you and I mean SWEAT, not perspiration.

There was an interesting sequel to this tale of struggle and endurance. A few weeks later, the slides of Blackberry Cave were projected on to the screen at the caving meeting. There were numerous oohs and aahs at the spectacular cave decoration, one member declared he would definitely be going on the next trip into the cave. This was Gordon Peterson, a keen caver and even keener photographer. The next trip was eventually arranged and along went Gordon. He endured all the scratches and bruises that we had experienced and when he at long last managed to scramble out of the cave, he had a shower and a meal and then attended to his camera. Winding the film back into the cassette, he then opened the back to take the film out. To his utter disgust, the end of the film had been torn and the sprocket teeth had not engaged the film. Consequently, he was happily composing shots, arranging the flash units and then pressing the shutter button for the benefit of the film that was not resting happily all the time in the cassette. Sometimes it is hard not to laugh..."

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Ed became an engineer in England after working with artillery units during the War, specialising in fuses, detonators etc. He later worked for High Explosives

Research. In the early 1960's, Ed was transferred to Australia to work at the atomic weapons testing site at Marralinga. After returning to England the family decided to move permanently to Australia. Since 1983, (in his "retirement"), Ed has been working in the palaeo lab as a self titled "general dog's-body", an interest inspired from his previous activities in caving and fossil digs.

ALCOOTA

Students of the Vertebrate Palaeo II course will leave for Alcoota, NT, on the 14th July. The 2 day bus trip will carry the eagerly anticipating bunch 200 kilometres north-east of Alice Springs, to the Late Miocene assemblage on the Alcoota Station, near nowhere in particular.

In the mid 1960's, Michael Woodburne, a PhD student from the University of California, began the systematic dig in Alcoota, at a site known since 1930's. Since 1985, the NT Museum has been involved in regular digs at the site under the guidance of Dr Peter Murray. Palaeo students have had the wonderful opportunity to be involved in the July field course to this 8 million year old deposit, thus escaping some of Adelaide's dreary winter weather.

Alcoota Local Fauna is dominated by large vertebrates, notably the diprotodontoids, *Kolopsis*, *Plaisiodon* and *Pyramios*, kangaroos *Dorcopssoides* and *Hadronomas* and those wonderful 'thunderbirds', *Dromornis stirtoni* that grew to the height of 3 metres. Also represented are species of crocodile, *Thylacinus* the Tasmanian wolf, turtles, flamingoes, *Ibandornis* (a smaller

dromornithid) and *Emuarius*, a small ratite that is structurally intermediate between emu and cassowary.

To all those students that are travelling north for the field course, good luck and enjoy !!

ABC DOCUMENTARY

Rod Wells has been approached by the ABC TV Documentaries Unit to provide a list of fossil sites suitable for inclusion in a species based on Tim Flannery's book "The Future Eaters".

If the ABC chooses to proceed it may be necessary to do some reconnaissance work at the sites such as Dempsey's Lagoon at Port Augusta, Lake Pimba on the Frome Downs and possibly Lake Callabonna off the Flinders Ranges. Any members interested in these potential trips and/or filming if it eventuates, and would be available at short notice, please leave your name and contact details with Raelene Sherwin. This is unlikely to occur until late August, early September.

WHERE IS THAT?

A couple of other dig sites are of current interest to the Palaeo Society, and many people have asked the big question, "Where is that?" (see map)

Lake Callabonna, east of Lake Eyre in SA's Far North, is one of the possible sites to be visited by the ABC for Tim Flannery's documentary. This is a Late Pleistocene deposit where many articulated fossils of *Genyornis*, *Diprotodon*, *Phascolonus* and *Sthenurus* have been uncovered.

Kanunka is a Late Pliocene assemblage east of Lake Eyre, noted for its "plethora of kangaroos." This is the destination of Gav's next expedition in July, and an area notorious for the "getting frequently bogged" sagas.

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MEDIA WATCH

PHILADELPHIA

Sunday Mail (18.5.97) reported the assemblage of a skull of *Giganotosaurus carolinii* at the Academy of Science in Philadelphia. This dagger toothed dinosaur measured 13.7 to 14.3 metres long and weighed 7-8 tonnes. Found in Argentina, it is arguably the largest carnivorous dinosaur found to date. The skull was 1.8 metres long and indications are that it chased its prey on hind legs.

UGANDA

The Advertiser reported the unearthing of an early ape, *Morotopithecus bishopi* in Uganda. It was reputedly the oldest common ancestor of humans and apes found to date, the

fossils possibly 20.6 million years old. The ape weighed approximately 45 kg, "scampered around on all fours and lived in trees".

NATIONAL GEOGRAPHIC

From March 1997

"Led to a gully in Thailand by a thirsty dog, a scientist spotted large bones protruding from rocks." *Siamotyrannus isanensis* was a 7 metre tyrannosaur and at 120 million years old, possibly the predecessor of North America's *T. rex*. The oldest previously known tyrannosaur from Mongolia was 30 million years younger, the find supports the theory that tyrannosaurs originally arose in Asia.



The huge dinosaur skull is compared to that of a human

And in January 1997.

Field notes included Philip Gingerich of University of Michigan's ancient whales. His most significant find was a 40 million year old whale in Egypt, with "feet and toes, vestiges of ancestors that lived on land." His next expedition will be to Pakistan, where, he notes, the older specimens actually walked.

ARGENTINA

Another bird-like dinosaur has been reported, this time from Argentina (see April 1997 issue for the Chinese feathered dinosaur). This 90 million year old fossil, named *Unenlagia comahuensis*, which means "half-bird found in north-west Patagonia" in local dialect, walked on land, but tucked its forelimbs against its body in a wing-like fashion. Its morphology may have been capable of an upstroke movement for flight. It rested on 2 slender legs, and was approximately 2.1 metres long but it is unknown whether it had feathers. The Australian quotes "...Dr Novas said the most compelling thing about the find was its resemblance to the primitive bird *Archaeopteryx*, even though *Unenlagia* lived more than 50 million years after *Archaeopteryx*. Certain skeletal features of the new dinosaur, such as the shoulder bone and hip bones, strongly resemble those early birds, he said. The dinosaur looks very different from the group of flying reptiles known as the pterosaurs, which could fly by gliding on a wing membrane.... their wing structures and bones were very different...."

AND FINALLY

The RAA magazine!!! has a lovely spread regarding "Our Own Jurassic Park." It is of course advertising the redevelopment of the information centre at

Thanks to Fiona, my "assistant media scout," for her continued vigilance.

HOUSEKEEPING

Our current membership has risen from 10 1996 Vertebrate Palaeo students who wanted to stay in touch after the Alcoota trip, to 46 people ranging from 1st years to PhD students from all walks of life, but with one common interest, palaeontology. Welcome to our newest members. Help us to get the Society working, socially and intellectually. Everyone, get involved.

Inthira Thammakhantry has taken over the role of Social coordinator, and has many ideas, but of course she needs help. Get involved. Her first function is the barbecue on 12th June. EVERYONE WELCOME. See the noticeboards for details.



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FUND-RAISING ACTIVITIES

By Raelene Sherwin

Fundraising

At the last meeting it was decided to set a realistic fundraising goal. This year it will be to raise approximately \$50.00 to purchase excavating tools to establish the Palaeo Society's own digging kit, things like dustpans, brushes, trowels etc.

To kickstart this project \$4.90 was raised from our inaugural chokky raffle. Congrats Matt, hope you enjoyed those M & M's. Thankyou to Dave who has offered to donate the prize for the next meeting's raffle.

UP & COMING EVENTS

We have the first of our speakers coming up in the beginning of Semester 2 (no prizes for guessing who it will be!). Rod Wells will present a talk on "Desert Lakes and Fossils" This will be a history on the search for marsupials in the Lake Eyre and Lake Frome Basins. As this is a lunchtime presentation, we ask that everyone gets there a few minutes early so that Rod can start at 1:00pm

DATE: AUGUST 12TH
(TUESDAY)
TIME: 1:00PM
ROOM ; 029 Biological Sciences.

A gold coin will be appreciated.

PARTY

As announced in the last newsletter our major social event will be held on Saturday Sept. 13th. It will be a "BACK TO THE 70'S" night, so start scrounging around for flares, lumber jackets and for the ultimate 70's look, THE SAFARI SUIT. For those of you that don't remember the 70's, it was an era

when Sturt won the SANFL premierships and football, meatpies, kangaroos and Holden cars were the go.

Thanks to the following people who have offered their help in organising the night ; Jo, Inthira, Briony, Simone, Paul, Chris, Fernando and Dave.

If anyone else could help with the loan of a couple of floodlights, large tarpaulins or even a fondue set, please let me know. We are also looking for a spit, so if anyone knows where we can get hold of one, we'd love to hear about it. Food and drink details are still being arranged, but as soon as we know costs we'll let you know.

APOLOGIES

Many apologies to Grant Gully in regards to his article in April 1997 BEER'N'BONES. His title should have read, "A Recent Trip to Tight Entrance Cave", not "A Recent Trip to Entance Cave". The first line followed on to say "As the name suggests, there are no paved tourist entries to be found in this cave," which would have made more sense!! Sorry Grant, I hope this will not stop you from submitting further articles on your research.

Also in Matt McDowell's section on his work in Venus Bay, the Western Bored Bandicoot should have read Western Banded bandicoot. Apologies, Matt.

NEXT ISSUE

Dr Sue Thomas reports on the recent bacterial colonies found in the Naracoorte Caves system.

Next BEER'N'BONES will be released in August 1997. Articles may be forwarded to the Editor at any stage

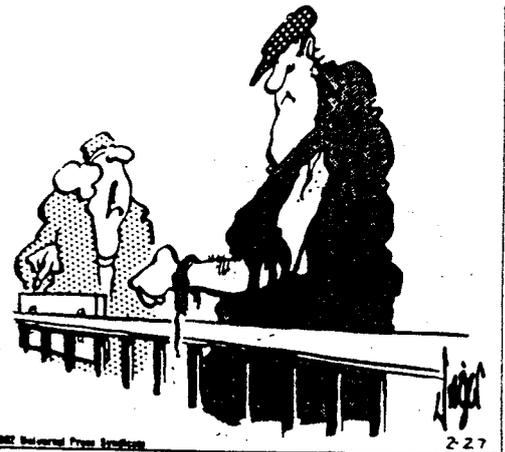
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Members on
K.I
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Dont feed
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on KI - or
please feed
the palaeon-
tologists!
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HERMAN



"It says 'Do not feed'. Look at your best coat!"

PICTURES

"Ids 'n oids", "Steropdon gamani" & map of Australia from Riversleigh : The Story of Animals in Ancient Rainforests of Inland Australia, by M. Archer, S. Hand & H. Godthelp, Reed Publications, Australia.
KI dig courtesy of Matt McDowell & Linda Marie Hall.

Naracoorte Caves from April 1997 RAA Magazine.

PRESIDENT ;
Jo COLMER, ph 83707260

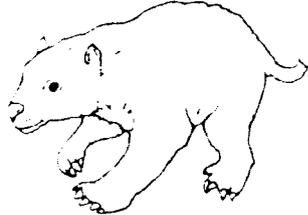
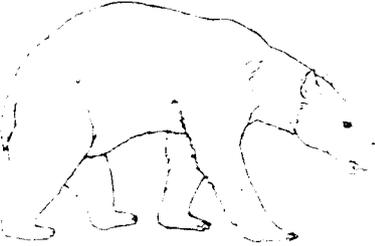
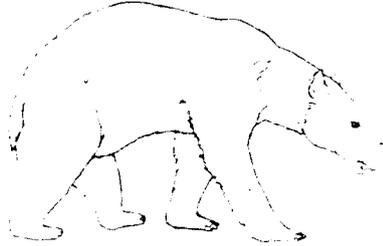
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LyndleeTURNER.
(ph;82866836)

SECRETARY: Narrelle CRAIG

5/5/95
MEMBER

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We classify common objects like vehicles (e.g. planes, boats, trains, cars and bikes) into sub-categories based on relationship (e.g. within 'cars' we recognise as 'natural' groups all Fords, all Holdens, all Mercedes). In the same way, animals are classified in a hierarchy of relationship. Each level has a distinctive technical ending on the word: '-oidea' for superfamilies; '-idae' for families; and '-inae' for subfamilies (which contain genera and these, in turn, species). When informally discussed, a member of these higher categories is referred to as an '-oid' ('-oids', pl.), '-id' ('-ids', pl.) and '-ine' ('-ines' pl.). Thus members of the Diprotodontoidea are diprotodontoids and members of the Palorchestinae are palorchestines.

	Subfamily Ngapakaldiinae (ngapakaldines)	Ngapakaldia Pitikantia	 <i>Ngapakaldia tedfordi</i>
Family Palorchestidae (palorchestids)		Bematherium	
	Subfamily Palorchestinae (palorchestines)	Propalorchestes Palorchestes	 <i>Palorchestes painei</i>
Superfamily Diprotodontoidea (diprotodontoids)		Raemeotherium Neohelos Kolopsis Kolopsoides Plasiodon Hulitherium Zygomaturus	 <i>Neohelos tirarensis</i>
	Subfamily Zygomaturinae (zygomaturines)		
Family Diprotodontidae (diprotodontids)		Pyramios Nototherium Euowenia Meniscolphus Euryzygoma Diprotodon	 <i>Diprotodon optatum</i>
	Subfamily Diprotodontinae (diprotodontines)		