

SEGMENTS

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Inside this Issue

- 1 DUNG BEETLES
- 2 GAMMON RANGES DATA RECOVERY
- 4 KIDS CORNER
- 4 EDITORIAL
- 6 FUTURE PROGRAMME
- 6 BEETLES COLLECTED ON SEG EXPEDITIONS
- 7 MINNAWARRA PROJECT
- 8 ENCOUNTER 2002 UPDATE

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PO Box 501, Unley, SA 5061

DUNG BEETLES Saviours of the Australian countryside?

by Richard Willing

It is time to turn our minds to dung - mountains of it - and a small worker that may save a drastic situation.

Cattle have been getting bad press lately, what with mad cow disease, foot and mouth disease, methane production to muck up the atmosphere and cholesterol to muck up our arteries. One unmistakable aspect requiring attention is that cows also produce large amounts of dung.

When you see cows grazing in the paddock think that they are converting grass into meat, milk and dung. Each cow drops about 18 kg of dung per day. That means that a herd of 250 cows will produce more than 1600 tonnes of dung per year. Since European introduction 200 years ago the Australian cattle population has grown to 28 million - producing more than 180 billion tonnes of dung per annum!

What happens to this dung mountain? Untreated it lies around the paddock producing patches of rank and unpalatable grass that is ignored by grazing animals - you have probably seen these clumps scattered through lightly grazed paddocks. In summer millions of flies are attracted and breed in the dung. In winter heavy

rainfall may wash it into water-courses, introducing nutrients and increasing bacterial counts downstream - of great significance in water catchment areas for urban consumption.

Enter the dung beetles. These small fellows belong to a large world-wide family, some of which, endemic to Australia, have been cleaning up after our native fauna for ever. Some species have been introduced, and some have a taste for cow dung. These chaps fly in to a freshly dropped cow pat, burrow into it, consume nutrients, burrow into the soil beneath the pat and dig breeding chambers up to 30 cm below the surface. Into these they roll balls of dung and lay eggs. It is remarkable to see a cow pat disappear in a very short time after a swarm of dung beetles descend upon it. On lifting the remains the burrows can be seen going down into the earth.

The advantages of this system are obvious. Not only do they remove excess dung from the surface, but the dung beetles carry nutrients into the soil to enrich and aerate it. There is a marked diminution in fly population where they are active and run-off into waterways is diminished with improvement in water quality. Most

South Australian dung beetles are active in summer. While this is a great bonus it is particularly important to have winter-active species in pastures when run-off is maximal. The Fleurieu Beef Group are helping to initiate the introduction of winter-

active beetles to selected areas of the Fleurieu Peninsula, a trial which will be monitored for at least ten years.

of the health of our Australian environment (and water catchment.) Interested in a Dung Beetle Party for the next election? No bull-shit!

So you can see the importance of this little chap in the maintenance

Gammon Ranges Data Recovery and Wallaby Watch

Trip Dates: Friday 13th April to Tuesday 17th April 2001

**Leaders: Linton Johnston (Pluvio party)
Annie Bond (Wallaby watchers)**

Expeditioners

Pluvio party:

Clive Jenkins
Fiona Chambers
Mark Darter

Wallaby watchers:

Paul Wainwright
Trent Porter
Shannon Carne
Christine Arnold

The Expedition from the Pluvio party perspective

Friday.

Drove in via Port Wakefield after a pleasant rest at Kensington for an hour or so in the early morning. Linton's Volvo got a very flat tyre about 5 km from the Junction at Copley on the first stretch of recently graded dirt roads. On with the spare and we arrived soon after at Owiana. Mobile phones don't work out there but the bush telegram certainly does - we pulled up and one of the hands greeted us with "you the Volvo that had a flat up the road earlier?".

We serviced the pluvio at the exclusion zone just before dark.

Saturday.

We left base camp at 8:45 carrying two radios with the plan to attempt communication with the Wallaby group throughout the weekend. Quite hot/dry conditions were expected, and the party carried in varying amounts of water (up to 10 litres). Had a leisurely walk to Wild Ass Creek Junction and picked up the additional gear at the cache. There

was no water in the water hole, but we found a bit of shade. Walked on to Vandenburg camp, arriving at 13:15 for lunch. After setting up camp we took the photo points on the West side of North Tusk. Back at the base camp we had some trouble finding the drop pit lines, as none of the group had located them before and the new GPS (Fred) led us to the cliffs at the North edge of the Creek. We enjoyed Clive's stories of high school science sleep outs and fell asleep dreaming of aliens.

Easter Sunday.

Left Vandenburg camp by 7:45 for North Tusk. Mark Darter made some amended diagrams for finding the two upper photo points to update the leader's manual. We left the radios on all day and sent the odd message, but couldn't make contact with the wallaby watchers. We had a well deserved break for lunch under the lone native pine on the plateau, and siphoned off about 3 litres from the plateau pluvio bottle as it was overflowing (and we needed the

drink). On the way back we tried contouring around the west side of North Tusk from the saddle. Not so easy. But after spending 30 minutes extracting Spinifex from Clive's rear (so painful for Clive, so funny for everyone else) we made it back to camp for tea at 17:00.

Monday.

Packed up from Vandenberg camp by 8:15 and made it to Wild Ass cache by 9:30. We measured up the equipment at the cache for the construction of a new case to be left there in the near future, then headed south. Walking in a fairly straight line, there were lots of ups and downs! It was very hot and the landscape was almost lunar in parts as we approached the pluvio at Arcoona South. It was in good calibration, and we returned more along the creek which was easier. We picked up our gear from Wild Ass, and headed back to the car park arriving mid afternoon. The drum of water left in the boot of the Volvo was much appreciated and Linton

and Fiona had a wet T-shirt competition whilst dancing to Offspring. Mark retired to his tent, preferring a more sedate wind down. The pit lines were difficult to find, but we found one at Vandenburg camp and one at AC02 and AC03. Any damaged lids were carried out (there were a few), and the buckets filled in with dirt and rocks. I thought I was in pretty good shape, yet I have a distant, fuzzy

recollection of sushi and pancakes on the last night around the camp light. I must have been delirious.

Tuesday.

Drove out with an early start. Linton's Volvo suffered a second flat and, without a second spare we waited (~ 10 km out of Copley) for a car to pass. An hour later a local passed by and took a message to the Copley garage. The attendant headed

out from Copley with a car trailer and towed us into town where the tyre was repaired (and a new spare added to our weaponry). Apart from the three hours or so lost in this effort, the trip back to Adelaide went to plan.

SOTALLY TOBER

Starkle starkle little twink
Who the hell you are I think
I'm not under what you call
The alcofluence of incohol
I'm just a little slort of sheep
I'm not drunk like tinkle peep
I don't know who is me yet
But the drunker I stand here
The longer I get
Just give me one more drink
To fill me cup
'Cuz I got all day sober
To Sunday up.

SIGNS OF OUR TIMES

SOME DO'S AND DON'TS FOR ALL YOU TRAVELLERS

In an Austrian hotel catering to skiers: *Not to perambulate the corridors in the hours of repose in the boots of ascension.*

On the menu of a Polish hotel: *Salad a firm's own make; limpid red beet soup with cheesy dumplings in the form of a finger; roasted duck let loose; beef rashers beaten up in the country people's fashion.*

In a Hong Kong supermarket: *For your convenience, we recommend courageous, efficient self-service.*

In a Japanese hotel: *You are invited to take advantage of the chambermaid.*

In a Bucharest hotel lobby: *The lift is being fixed for the next day. During that time we regret that you will be unbearable.*

On the menu of a Swiss restaurant: *Our wines leave you nothing to hope for.*

In a Rome laundry: *Ladies, leave your clothes here and spend the afternoon having a good time.*

At a Budapest zoo: *Please do not feed the animals. If you have any suitable food, give it to the guard on duty.*

Kids Corner

This time the hidden words are to do with the Fleurieu Peninsula.
They are hidden in all directions. Can you find them all?

U	N	B	A	A	G	N	U	L	L	I	W	Z	O	
T	A	R	R	A	W	A	N	N	I	M	V	K	D	E
A	M	Y	P	O	N	G	A	C	N	F	L	G	Q	L
L	U	R	W	T	F	V	I	C	T	O	R	S	H	T
I	Y	A	N	K	A	L	I	L	L	A	K	N	U	T
S	K	E	M	I	S	S	E	L	L	I	C	K	S	A
K	A	G	N	I	L	A	K	C	I	R	R	A	C	W
E	E	R	E	M	A	L	E	D	T	O	J	K	A	E
R	X	A	G	N	I	T	A	R	E	G	N	O	C	D
N	O	R	M	A	N	V	I	L	L	E	A	R	R	E
B	U	N	G	A	L	A	N	G	J	G	M	A	Y	E
Y	T	W	M	K	S	I	V	R	E	J	N	P	J	P
X	G	S	L	A	L	D	I	N	G	A	I	I	C	R
T	A	P	A	N	A	P	P	A	L	M	F	D	D	Y
E	A	G	N	I	P	T	I	A	W	E	I	X	X	J

WORD LIST

ALDINGA	RAPID
BUNGALA	SELLICKS
CARRICKALINGA	TALISKER
CONGERATINGA	TAPANAPPA
DEEP	TUNKALLILA
DELAMERE	VICTOR
INMAN	WAITPINGA
JERVIS	WATTLE
KEMISS	WILLUNGA
MINNAWARRA	YANKALILLA
MYPONGA	
NORMANVILLE	

EDITORIAL

After all my promises in the last edition of SEGments I must unfortunately report that I was not able to go on the last GRaSP expedition. A knee injury meant that I had to decline the opportunity. Unfortunately several other expeditioners from the party due to start a Grindell Hut also had to pull out for a variety of reasons so in effect that half of the walk was cancelled. The ascent of Benbonyathe Hill will have to wait until another day.

The expedition still went ahead with a cross-over and was by all accounts a success. I hope to have a report of it in the December issue of SEGments.

For those of you who missed the Annual General Meeting I can only say that you missed a very interesting talk by Bob Sharrad on the successes of biological field work in Australia and particularly South Australia since European occupation. I, for one, was very disappointed when he finished. It was the sort of talk one would wish would go on for much longer because there was so much fascinating information.

The next major SEG expedition will be to Munyeroo which is on the eastern coast of Eyre Peninsula. The area includes both myall and mallee scrub and has an interesting range of habitats. The Scientific Leader will be Kingsley Turner and we are currently looking for leaders for the various disciplines such as vegetation, mammals, birds, reptiles and invertebrates. Please contact us if you would like to take part in this exciting expedition.

Alun Thomas

SCIENTIFIC EXPEDITION GROUP

The Scientific Expedition Group came into being at a public meeting on 21st August 1984. Membership is open to any persons, family or organisation interested in the following aims:

The promotion and running of expeditions of a scientific, cultural and adventurous nature.

The furthering of knowledge, understanding and appreciation of the natural environment.

Promotion of the values and philosophy of wilderness.

Enabling people to learn the skills required for planning and running expeditions, and to develop sound field techniques.

Members will receive regular information on S. E. G. activities and expeditions

SUBSCRIPTIONS (Including GST)

Working adult member	-----	\$16.50
Pensioner student or unemployed	-----	\$11.00
Family membership	-----	\$22.00
Organisation membership	-----	\$22.00

APPLICATION FOR MEMBERSHIP AND MEMBERSHIP RENEWAL

Name

Address

.....

Telephone (H) (W)

Details of scientific, cultural, adventuring or other relevant skill or interests you may be prepared to share with the group:

.....

Applications should be addressed to : The Hon. Secretary
 Scientific Expedition Group Inc.
 P.O. Box 501
 Unley S.A. 5061

Patron: His Excellency, the Honourable
 Sir Eric Neal, AC, CVO.
 Governor of South Australia

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FUTURE PROGRAMME

The Scientific Expedition Group (SEG) welcomes enquiries from all members and friends who are interested in participating in one or more of our projects or expeditions. Please contact the leader or convener of the project or expedition that interests you for more information.

We welcome enquiries from anyone from 16 - 60 years (or more) who would like to participate in our scientific, environmental and educational projects.

Current recurring projects

GRaSP

Gammon Ranges Scientific Project (GRaSP) is now in its thirteenth year. The project involves a four or five day trip to the Gammon Ranges about four or five times a year. A data collection project involving flora and fauna and rainfall gauging which also involves bush camping and trekking. Other activities include feral animal counts, fox baiting and yellow footed rock wallaby counts. Expeditions are being planned for September and December 2001.

Contact Chris Wright 8278 8818

Minnawarra

SEG is running a biodiversity project in the Spring Mount area near Myponga based on a number of Heritage Sites on Richard Willing's property, Minnawarra. . The next survey will take place during October. For information contact Richard Willing on mobile phone 0408 807 517 and see the notice on page 7.

Future Expeditions

An expedition to Munyeroo on the eastern coast of Eyre Peninsula is in the early stages of planning. The Scientific Leader will be Kingsley Turner. For information contact Richard Willing on mobile phone 0408 807 517

DESCRIPTION OF SEVERAL NEW SPECIES OF BEETLE COLLECTED ON SEG EXPEDITIONS

Peter Hudson

In 1995 and 1997 SEG conducted expeditions to the Gawler Ranges on Eyre Peninsula and to Balcanoona near the Gammon Ranges. During these expeditions various collections of salt lake invertebrate were made. It is my pleasure to report that three new species of beetle have been described from material collected during these expeditions, two are in the genus *Pogonus* and the other is in a new genus *Syrdenoidius*. These were described by Martin Baehr and Peter Hudson in their recent paper published in the Records of the South Australian Museum (Baehr & Hudson, 2001), a copy of which is in the SEG library for any members wishing to read it.

Prior to this, twelve species of *Pogonus* were known from Australia, with about 49 species described worldwide. The newly described beetles are about 4-6mm long and are pale to red-brown in colour. They were collected by excavating them from burrows and by pit trapping. A notable feature of two of the new species collected on the SEG expeditions is that they have much reduced wings and consequently cannot fly. This is particularly rare in this group of beetles with the first record of it in Australia being a new species described from Western Australia (Hudson, 2000). Flightlessness severely limits the potential of these beetles to disperse widely and given the "island like" nature of their habitat these recent discoveries suggest that there may be many new species awaiting collection.

If there are many such beetles and they are restricted to particular lakes then severe environmental impact on any particular lake could result in the extinction of one or more species. Conservation of this fauna is not a simple matter since salt lakes will not have identical species. To establish conservation priorities will first require comprehensive survey of many lakes to get some handle on how many species there are and where they occur.

References

Baehr, M. & Hudson, P. (2001). New species and a new genus of the subfamily Pogoninae from South Australia (Coleoptera: Carabidae). *Records of the South Australian Museum* **34(1)**:1-18.

Hudson, P. (2000). A new flightless species of *Pogonus* Nicolai (Coleoptera: Carabidae) from Western Australia. *Australian Journal of Entomology* **39**:241-243.

Syrdenoidius spinipes, a new genus of beetle collected from Lake Gairdner during the 1995 SEG Gawler Range Expedition. (From Baehr & Hudson, 2001)

MINNAWARRA PROJECT



SEG is commencing a new project to monitor long term change in the ecology of blocks of remnant vegetation.

The South Australian Government has financed the fencing of privately owned areas of remnant vegetation in various parts of the State in order to encourage the maintenance of biodiversity. These blocks are known as Heritage Blocks. The idea is to keep stock out of these areas. The fencing will, of course, only keep out the larger herbivores and hence at best can only be partially effective in this aim. Little is known whether biodiversity loss will be halted or slowed or what rates of regeneration might be expected.

This new project will investigate and record changes in the biodiversity over a long period of time in recently fenced blocks on the property called "Minnawarra" near Myponga. Surveys will be carried out every six months in autumn and spring. The project was started last year with the installation of the pitfall buckets and had its first survey over the Easter long week end and will be run again in the Spring.

Volunteers from the Scientific Expedition Group are invited to take part in this project. This is an opportunity to take part in a scientific expedition close to Adelaide. It is a chance for some of us armchair expeditioners to see what actually goes on on a biodiversity project.

The survey involves pitfall trapping to record small mammals and reptiles, vegetation surveys and bat observations. Expeditioners with skills in these area will be especially welcomed.

If you are interested please contact Richard Willing on 8558 6381, mobile 0408 807 517 or email willingr@intertech.net.au for details of when the next survey will be held and a map of how to get to Minnawarra.



Encounter 2002 Mt. Brown Update

Graeme Oats

In the last issue of SEGments I confirmed that SEG had received advice from the SA Tourism Dept. that a grant to fund the project had been approved under the Encounter 2002 Grants Program. The cheque has arrived so implementation of the program can now proceed.

The program includes all events from February through April 2002 commencing in Ceduna on 16 February and final events occurring at Robe on 13/14 April 2002. There is a Tall Ships program offering packages on some of the vessels varying from half day to 12 day voyages. The Tall Ships will track the South Australian coastline exactly 200 years after Capt Flinders voyage of discovery.

Most of the regional coastal centres will be celebrating the 200th anniversary of Capt. Flinders passage past their port. The one in which SEG has an interest will take place over the period 9-12 March 2002 when the One & All and the Enterprize will be in Port Augusta. Our project with assistance from the Plant Biodiversity Centre, (PBC) is to re-enact as near as practicable the route taken by Robert Brown on his ascent of Mt Brown from the coast near Chinamans Creek. A walking party of up to 10 persons is envisaged comprising some botanists from the PBC, several SEG members and other personnel as agreed with the Australian Major Events.

The Australian Arid Lands Botanic Garden at Port Augusta will feature an exhibition of botanical samples collected by the naturalist Robert Brown in 1802, together with a collection of prints, paintings and maps.

A number of events and projects are planned for the Adelaide region taking place at the Art Gallery of SA, the Botanic Gardens, Plant Biodiversity Centre, Migration Museum of SA Flinders University, Port Adelaide Community Arts Centre and others. Over Easter (30/31 March) the Tall Ships will be open to the public at Port Adelaide.

The Encounter 2002 events program has been recently published and anyone interested can obtain a copy from Australian Major Events, phone 8463 4706 or visit their website, www.encounter2002.com



Mount Brown