SEGments

Journal of the Scientific Expedition Group Inc.
Volume 31 No. 3 Dec 2015

Scientific Expedition Group Inc.

Volume 31 Number 3 Dec. 2015

Cover photograph: *Podaxis pistillaris* – a puffball on a stalk. Photograph J. Haska

Back Cover Photograph: Male Mwanza Flat-headed rock agama (Agama mwanza) Serengeti National Park, Tanzania. Photograph Alun Thomas

The Scientific Expedition Group is a not-for profit organisation which began in 1984. SEG undertakes several expeditions each year to record scientific information on wildlife and the environment in many parts of South Australia.

A major expedition to conduct a biodiversity survey occurs each year over two weeks. Scientific experts lead volunteers in surveying mammals, reptiles, invertebrates, vegetation, birds and physical geography. The data collected on each survey are archived with the relevant State scientific institutions to ensure they are available to anyone interested in our State's environment.

In addition to the major expedition, a number of trips for the Vulkathunha-Gammon Ranges Scientific Project are organised annually. A long term study of rainfall on the ranges and of water flow in arid-zone creeks is undertaken. All data are supplied to the Department of Environment Water and Natural Resources and to the Bureau of Meteorology and are available for analysis.

SEG conducts four-day biodiversity surveys at eight different sites each autumn and spring in the Heritage Area of scrub on "Minnawarra" farm near Myponga. Data collected are entered into the Biological Data Base of SA. SEG also conducts annual mallee-fowl monitoring over a weekend in the Murraylands.

ISSN 0816 6463
SEGments is the authorised journal publication of the Scientific Expedition Group Inc., PO. Box 501, Unley SA 5061. It is published four times a year to promote articles about biodiversity, scientific exploration and ecological research.

Contacts:
SEG Secretary: Sarah Telfer
PO. Box 501, Unley SA 5061
Email: sarahtelfer@internode.on.net

SEG email: scientificexpeditiongroup@gmail.com

SEG website Http://www.communitywebs.org/ScientificExpeditionGroup

SEGments

Volume 31 Number 3 Dec 2015

CONTENTS

Chairman's report 2015

The 31st year of SEG has been as usual a busy one. When I was persuaded to become Chairman last year I only had a vague idea of the range of the organisation's activities and the hard work of its members. I have been most impressed by what I have learned and humbled to see the commitment of the committee and many other volunteers. I salute you and will touch on some of the main activities of the year past.

Witchelina. Some of us have had two trips to this huge Nature Foundation SA property: a reconnaissance, 6 – 10 July, and the biological survey, 20 September – 3 October. An enormous amount of work was done in at times trying conditions by over 30 members. It is proposed that we return during the spring of 2016 to investigate another portion of the property.

The Vulkathunha Gammon Ranges Scientific Project continues its monitoring but Chris Wright has instigated a succession plan (a lesson to all of us). Among noteworthy achievements in this its 27th year was an Anzac day weekend event at North Moolooloo.

Minnawarra biodiversity survey. The spring survey, which unfortunately overlapped with the Witchelina survey, was very successful with a most welcome capture of a bandicoot among many other species. We look forward to the autumn survey. This is one of the few examples of important long-term monitoring of our local biota.

Malleefowl monitoring. Hot weather upset last year's survey while this year's is scheduled for 31st October – 1 November.

SEGments. Alun Thomas and Helen Johnson have maintained the very high standard set by Andrew Barr and are producing one of the best natural history publications in South Australia.

The Committee. A stalwart who meet most months in the room kindly made available by Andrew Telfer. Well done to all of you: President, Richard Willing; Vice-Chairman, Stuart Pillman; Hon Secretary, Sarah Telfer; Hon Treasurer, Graeme Oats; Administration Officer, Alun Thomas; and Andrew Barr, Helen Johnson, Greg Johnston, Adam Mathews, John Love, Duncan McKenzie, Trent Porter, Jill Tugwell and Chris Wright.

Let's see what 2016 holds for us.

Dr. Robert Sharrad, AM

FUNGI – THE HIDDEN KINGDOM

Julia Haska

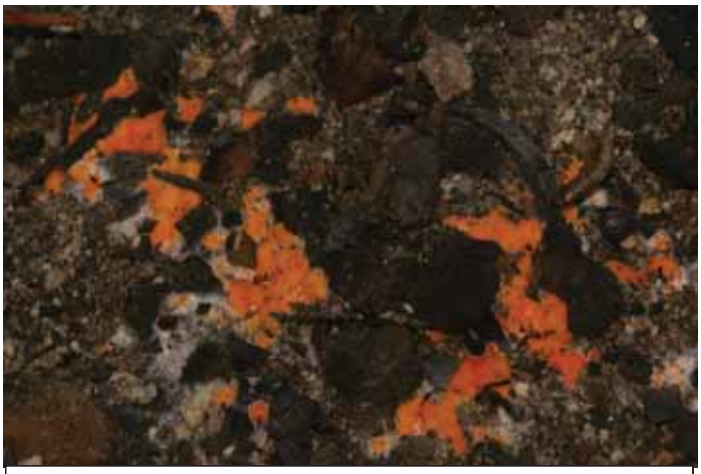
Joining a SEG expedition, mammal trapping, birding or helping with vegetation mapping, is also an opportunity for me to indulge my real passion – fungi! They come in many shapes and sizes and vary from the beautiful to the bizarre! They are most commonly seen in the wetter parts of Australia but can also be found in the arid zone.

Fungi are one of the five kingdoms of living organisms; the Kingdoms being Bacteria-like, Slime Mould-like, Fungi, Plants and Animals. Traditionally fungi have been studied as part of Botany, but they are not plants. They don't contain the pigment chlorophyll so they can't make energy from sunlight as plants do. They obtain their food from the substrate on which they live (e.g. wood). They have rigid cell walls that contain chitins not cellulose. They reproduce generally by minute spores that are only visible en masse or under a microscope.

Fungi are an essential part of the ecosystem and may constitute up to 25% of the total biomass on Earth. They are the only organisms that can break down wood so are essential to the decomposition and recycling of nutrients. Some, known as mycorrhizal fungi, form specific and mutually beneficial relationships with plants (generally trees) – they provide water and nutrients directly to the fine roots and take up sugars. It is thought that this relationship is essential if plants are to grow taller than 10 metres high.

Some fungi form an early crust over soil after fires, while other fungi change the chemical structure of soil after fires or disturbance enabling other fungi and plants to grow. They are also food (and shelter) for a wide variety of animals, and some need these animals to disperse their spores. And sometimes they are plant pathogens, causing either minor or major damage to their hosts. They have traditionally provided us with food, but are increasingly important as sources and potential sources of antibiotics, immune-suppressants and anti cancer derivatives.

Cortinarius subarcheri. This spectacular gilled fungus, approximately 5 cm high, is found in the wetter and forested parts of the State. Australian Cortinarius species number in their thousands, mostly undescribed, and are mycorrhizal. There are three closely related species of this purple fungi distinguished by their spore size. Photographer A. C. Robinson



Pyromena omphalodes This disc fungi is one of the first to be seen after fire. Thousands of these tiny (up to 1 mm across) fungi carpet the surface, forming a soil crust. Wind, or rain, falling on the surface of the disc disperses the spores. Photographer J. Haska

Despite their importance, fungi are among the least known of Australia's living organisms. Estimates for the total number of fungi in Australia vary from 50,000 to 250,000, of which up to 90% may be endemic. (Chapman, A. D. 2009) The vast majority are micro fungi (moulds, mildews, rusts, smuts and yeasts). But even for the 10,000 or so Australian macrofungi (i.e. those that are visible to the naked eye) less than a third have been named and described and little is known of their distribution, conservation status or the details of their interaction with plant and animal species. (Lindsay, A et.al. 2013) There are many little brown mushrooms!

In the macrofungi, what is visible is actually the spore dispersing body (rather like the fruit of a tree). Most of the fungus grows and spreads throughout the substrate or host (such as within wood or in the soil) as microscopic filaments -

The white mycelium can be seen penetrating the underside of bark with the fungal fruiting body above. Photographer A. C. Robinson

called 'hypha' individually and 'mycelium' collectively. (Lindsay, A. et.al. 2013) Sometimes, however, when the threads are massed together they are visible to the naked eye – you may see this under bark or in leaf litter. (The white substance in the photograph of *Pyromena omphaloides* is also mycelium.) When the organism has enough food stores and weather conditions are right it produces the spore dispersing body. While fungi are 'generally found after suitable rainfall in the wetter months of the year' (Lindsay, A. et.al. 2013) the right conditions may not be 'right' again for many, many years. This spore dispersing body may only last for a few hours through to several weeks.

Fungal morphogroups

While identification of macrofungi to species usually involves many hours of microscopy, it is easy to recognise the morphogroups, i.e. fungi grouped together according to their visible similarity to each other and the means by which they carry and disperse their spores. Probably the group most familiar are the gilled fungi (commonly called mushrooms), see he first photograph. They emerge from the substrate as buttons and as they grow their stalk (or stem) elongates and the cover over the gills drops away. The spores, borne on the gill edge, then drop and can be dispersed by wind.

Other morphogroups include:

- soft pored fungi;

Amanita conicoverucosa. This specimen, the first recorded for Kangaroo Island in 2015, was found in a patch of forest that I have been visiting frequently since 2007! Photographer J. Haska

Boletes, or soft pored fungi, such as this *Austroboletus occidentalis* often appear early in the fungal season for the wetter parts of South Australia.

- tough pored fungi;

These tiny jelly fungi, barely a centimetre across, were found growing on dead logs on a misty morning on a hilltop south of Nugent Well during the SEG survey at Hiltaba Station 2013. Photographer A. C. Robinson

Tough pored (or sometimes called a bracket) fungi. These brilliantly scarlet fungi (well, at least on the underside) are commonly seen on dead wood throughout South Australia. Collected on the SEG survey of Hiltaba it is still to be determined whether this is *P. coccineus*, common in the wetter areas or another species.

- Coral fungi;

Aptly named, this *Ramaria* species can be found on the forest floor. Coral fungi come in an array of colours from white through to purple.

- smooth or wrinkled fungi;
- disc and cup fungi, jellies;
- pins;
- puffballs;

The outer layer (peridium) of this *Lycoperdon glabrescens* is essential for identification and all too often is worn away. The centre darker patch will erode away forming a hole through which the spore mass will emerge with wind or physical pressure. *Lycoperdon* species can be found in the arid zone.

- earth balls;
- earthstars;

Earthstars, such as this *Geastrum* species from Hiltaba, have a thick outer layer that splits apart as it breaks away from the inner spore containing capsule.

- toothed fungi;
- morels; and
- stinkhorns.

Stinkhorns, such as this *Aseroe rubra*, emit a strong, unpleasant odour that attracts blow-flies and other insects to feast on the brown slime. The spores are distributed after passing through the insects. These may be occasionally found in the wetter parts of the state.

Photographs of fungal morphogroups by A. C. Robinson

Lichens are fungi too!

Lichens are fungi that grow symbiotically with either a green algae or a blue-green algae, or occasionally both. Lichens are important ecologically as rock weathering agents and as a biological soil crust. The cup and disc fungi are the group that most commonly form this relationship and the fungal nature of lichens is most obvious after rain when the tiny discs can be seen (but you might need a x 10 lens). For further information on lichens see Fungimap Newsletter 39 or the Australian National Botanic Gardens Website (anbg.gov.au/lichen).

Fungimap Target Species

Although collecting fungi is best left to those that have appropriate approvals and the equipment to preserve specimens for later study, there are a small number of fungi (somewhere around 120) that are so distinctive that they can be recognised to species on their macro characters alone. See for instance *Podaxis pistillaris* on the next page.

Any SEG members interested in learning about Australia's fungi and contributing to the mapping of these species should visit the Fungimap website (www.fungimap.org.au). This not for profit organisation is dedicated to advancing knowledge of Australian fungi. On the website you will find a host of useful information, an online bookshop and a photographic record of the fungimap target species. All you will need is a camera and a GPS and to document the record in their standard format.

A word of caution

Some fungi are poisonous, a few are lethal and others cause allergies. With so many unknown Australian fungi, the

difficulties in identification and so little known of their chemical properties it is recommended that you don't eat any fungi you find in the field. If for some reason you need to handle them wash your hands afterwards and avoid breathing in spores.

A Few Bizarre Fungi

Cordyceps gunnii found only in the South East of the State is a fungus that has invaded the larval stage of a moth. Photographer A.C. Robinson

Omphalotus nidiformis colonises stumps and logs, and can occasionally be found at the base of living trees. It is worth a closer look as it has forked gills, and at night it glows in the dark! Photographer A.C. Robinson

Is that a mushroom or a toadstool?

The term 'Toadstool **'**is now considered to be an outdated term that was generally used for mushrooms that look different from the edible field mushrooms, or used in a restricted sense for poisonous species (Definition from Lindsay, A et. al. 2015).

References & Resources

Chapman, A.D. (2009). Numbers of living species in Australia and the world: a report for the Australian Biological Resources Study. (Australian Biodiversity Information Services, Toowoomba). 2nd Edition. Updated version available at http://www.environment.gov.au/biodiversity/abrs/publications/other/species-numbers/2009/pubs/07-nlsaw-fungi-pdf [accessed 24/11/2015].

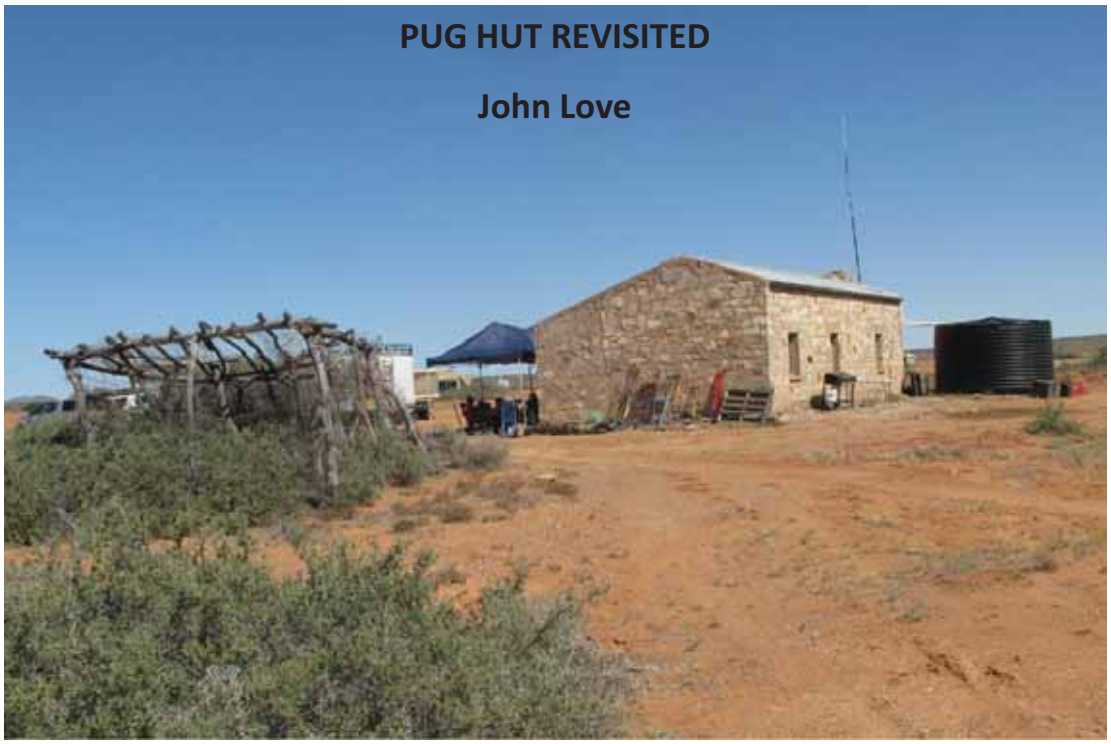
Lindsay, A., Robinson, R., May, T & McMullan-Fisher, S.J.M., (2013). Guide to Surveying Fungi in Australia. Citizen Science Guides. Fungimap Inc. South Yarra, Victoria. Edition 1.1 available at http://www.fungimap.org.au/Guide_to_Surveying_Fungi_in_Australia_v1.1.pdf [accessed 24/11/2015].

Podaxis pistillaris – a puffball on a stalk. While this Fungimap Target is commonly found in the arid zone this specimen from Muckera Camp, Nullabor Survey 2012, was a new location record. The hard, white outer casing has started to erode exposing the black spore mass below. Photographer J. Haska

Jhaska62@gmail.com

PUG HUT REVISITED

John Love



Pug Hut. Meat house left, new plastic tank right. SEG canopy over dining place beside hut

We stored food in it, cooked in it, ate beside it, prepared specimens in it, walked all round it, slept not far from it and drove past it. That summarises the domestic story of Pug Hut on SEG's Expedition Witchelina 2015.

What of the hut's own story? It has been standing out there in the middle of nowhere for 100 years or more. Why there? The answer is water. So the story of the hut begins with a dam. The small creek that flows north to Lake Watherston was diverted into a settling pond, where most of the silt would remain. When the pond filled, a large diameter pipe through the dam bank conducted water into the dam.

Dam interior. Inlet pipe from settling pond indicated by V.

It seems that stock were free to walk into the dam to drink. This is not best practice in the pastoral industry. The animals would tend to foul the water and tread down the bank. However, it was the cheapest way to secure a water supply. Better practice is to fence the dam and put a windmill or other pump on the bank to convey water into a tank and then to a trough, controlled by a ball-cock.

There was a windmill – over a well, with a tank beside it and a trough nearby. Perhaps the catchment of the creek was not enough to ensure a reliable supply.

Steel tank stand, left, well covered with planks, centre, remains of windmill tower, right. (Tent in background)

Obviously the supply, from dam or well, was enough to warrant a three-room stone hut with a fire place and an underground tank. This was not just a place to visit but a dwelling, no doubt for a shepherd, his wife and family, with a dog or two outside. The front veranda appears to have been a later addition.

The most convincing evidence for permanent residence is the meat house. It is now a tired old ruin, the roof fallen in and the walls ragged. Originally the structure consisted of rough posts, rails, fencing wire, wire netting and branches cut from trees. It had to keep the meat in shade all day and let breezes through. There does not appear to have been any fly wire netting. Hessian might have been used instead, or perhaps the

Sheep trough (serving as wind-break for tent!)

meat was hung in bags, making sure no part of the meat was touching the bag.

Meat cost the shepherd nothing. Other food would have been rather expensive. An enterprising woman could introduce some variety in the diet. She might have had potatoes and onions (they keep well), flour, rice, some condiments (including curry), sultanas, currants or dates, tea and sugar, cool water from the underground tank, but probably no green vegetables or fresh fruit. The family would have been very largely carnivorous.

Pug Hut. New plastic tank, left, underground tank (not used) right

The shepherd had to do the killing, skinning, gutting and dressing. This appears to have been the use of the small building east of the hut - a shambles - now a fairly well preserved skeleton with the remains of a bench at one end. It too had wire netting, but no boughs for shade and apparently no fly wire – probably more hessian.

It would have been in the employer's interests to engage married men as shepherds – steady, reliable and not likely to decamp without notice. It was a job for men and women who could survive long periods of loneliness with little social life. However, the construction of more water sources and smaller fenced paddocks to keep stock in and vermin-proof

The meat house

Shambles. Small stockyard in background

Upper mill stone, postage stamp as scale

fences to keep dingos out made shepherds redundant and accommodation for them tended to fall into ruin.

But there is an older story. Numerous Aboriginal artefacts, mostly discarded chips, were found neat Pug Hut (and, we trust, left there). In fact, artefacts were found widely scattered in unlikely places, but for obvious reasons, they are more concentrated near water sources. The 1:250 000 topographical map shows a 'waterhole' a little east of Pug Hut. This is a shallow depression in the creek near the 'shambles' mentioned above. There are artefacts near it, the

most interesting being an upper mill stone, unfortunately broken. Evidently water lay here long enough to grow food that was worth harvesting. When the creek was diverted, the Aborigines would have gone to the dam for water and camped a little way from it. The best artefacts have probably been taken as souvenirs long since. Taking Aboriginal artefacts away from where they are found is now illegal.

Foot-note: A Witchelina paddock plan shows 'Pug Hill Hut'. Where's the hill? The 1;250 000 topographical map mentioned above shows 'Pug Hut'. (Natmap Series SH54-09 Copley, Edition 2, 1994.)

jhlove@internode.on.net

WITCHELINA EXPEDITION STUDENT REPORT

Calypso Theunens (Age 13)

The 2015 Witchelina SEG expedition was the first time I've camped in the remote Outback and my first SEG expedition. I wasn't sure what to expect despite being told many stories of previous SEG expeditions by my sister Sappho and my Grandad Kevin.

The first day was enormous with an early start, a long drive to Witchelina, Setting up our camp at Pug Hut, having dinner and thankfully into bed by 7:45! Overnight the wind sprung up and the Outback quiet was broken by the flapping of tents all around the camp. Luckily our trusty tent withstood the full force of the southerly.

For the next two weeks we worked in teams of four or five people. Everyday the teams were given different jobs. These included setting up and taking down survey sites, vegetation collection, bird observations, collection of specimens from the trap lines and even included a hot, steep climb to the top of Termination Hill. In between times I was able to help catch and record opportunistic sightings of wildlife. Even though there were long distances to be travelled each day from Pug Hut to the survey sites, it was fun looking at the different landscapes and joking about with a car full of people. Sometimes they resembled 'Dad jokes' but I laughed all the same… must have had a little bit too much sun!

There were so many highlights it's hard to pick favourites, however I really enjoyed handling lizards, helping Annette set up the Micro-pits, watching Harald and others handling snakes and explaining different species and coming back to Pug Hut for our evening meal. Since I had never done anything like this before everyday there was something to learn and experience, for example, even climbing Termination Hill, I learned about Goyder and his surveying work in the north of South Australia. I was also able to appreciate how tough life must have been for the early European settlers living in that country after I visited and walked around Ediacara Ruins. Another interesting area was looking at and talking about the many Aboriginal artifacts, most of which were worked stone tools.

Some of the things I learned were:

1. Difference between 'genus' and 'species'
2. The scientific method for recording information, consistency and asking questions.
3. A small insight into how important botany is in the landscape and its relationship to the various species that live in that particular habitat.
4. Annette taught me how to mount ants for collection.
5. How animals develop special characteristics that enable them to live in specific habitats. For example, the Lake Eyre dragon.
6. Scientists will happily share knowledge, and to not be afraid to ask questions.
7. I learned that Trent will always come up with something silly and funny and that Harald is so casual with snake handling, he managed to freak me out once or twice!

In conclusion, I'd like to thank SEG for the whole expedition and giving me the opportunity to experience how science works. In the future I hope to pursue a career in science and this expedition has been a wonderful introduction. This trip has been eye opening for me and I plan to attend Witchelina two and three!

The shelter outside Pug Hut

CONTRIBUTIONS TO SEGments

The editors welcome contributions for SEGments in relation to natural sciences, adventure and SEG activities.
For ease of publication we request that text is supplied in Microsoft Word or text format and that pictures and photographs are supplied separately. If desired captions for photographs can be placed in the text to indicate optimal position for pictures and photographs .
Pictures should be in JPEG format and at least 5MB if possible. Documents in PDF format cannot be used.

EATING OUT AT YADLAKINNA

Heather Willans and John Love

About seven kilometres south of Pug Hut, near the boundary of Witchelina and Myrtle Springs, stands a big, rectangular stone tank on rising ground beside a well. This is the original Yadlakinna Well, shown on a Government map dated 1887.

Yadlakinna well and tank

A little east of it is a more recent bore, windmill, tank and hut, with the same name. Running west from the old tank is a long stone trough. The ground round it had been paved with wide sheets of slate to prevent erosion of the sandy soil. All these structures are now in ruins and the creek (the reason for sinking the well where it is) is undercutting its bank, edging towards the tank.

Stone trough and slate pavers. Tank in background

However, there are signs of considerable activity in times past. Remains of hand shears indicate that sheep were crutched here. (Crutching is removing the wool from round the sheep's backside to keep that area clean and free from maggots. It is done about six months after the annual shearing. As only a small amount of wool is removed it is not necessary to take the sheep to the woolshed.)

Hand shears

Men must eat. The staple food was, of course, mutton, of which there are no remains. The bones might have been thrown into the camp fire and buried. There were at least two good sized fire places ringed with stones and filled in with earth. A long handled toasting fork, made of fencing wire, tells of another staple food.

Toasting fork

Other food came in tins. Some were oval shaped, about 20 cm long and 3-4 cm deep, embossed 'G T MORTON Aberdeen & London': Aberdeen kippers! (Kippers are herring fillets cured with salt and smoke, a fishy equivalent to ham, but much tastier, commonly eaten for breakfast. Surely someone on the station was Scottish.) There were also sardines, no doubt also from Britain.

The commonest tin on the site was of the kind that probably contained fruit. One of these had a pattern of small holes punched in the bottom. It was probably used as a water cooler. You would fill it up and let the water trickle down into a billy, being cooled by the breeze as it fell. A large billy or small bucket was also found.

Kippers, sardines and a hook

A stone's-throw west of the camp fires is a patch of ground littered with many thousands of glass fragments.

So how's this for a day's menu?

Kippers for breakfast.

Char-grilled mutton and tinned fruit for midday dinner.

After a hard day's crutching, cool some water to drink while waiting for the billy to boil.

Sardines on toast for tea.

Water cooler ?

Then settle down to some serious drinking. When you have emptied your bottle, hurl it as far as you can away from the tank.

Then get into your swag.

PS: Mr Don Nicolson of Linden Park informs us "The jam tin with nail holes in the bottom was probably used to sift dirt when setting rabbit or dog traps." So cool drinks are off unless you bring your own waterbag.

jhlove@internode.on.net

heather.willans@internode.on.net

WITCHELINA BOUND

Calypso Theunens, Annette Vincent and Helen Johnson
(Sung to the tune of "It's a Long Way to Tipperary")

It's a long way to Witchelina, it's a long way to go
It's a long way to Witchelina where the stars put on a show
Goodbye to the big smoke, hello Lyndhurst town
It's a long long way to Witchelina, but that's where SEG's bound.

It's a long way to the SEG sites, it's a long way to drive
It's a long way to the SEG sites but each day we did survive
We caught many reptiles, some of them are rare
It's a long long way to Witchelina, but come if you dare.

It's a long way to the salt lake, it's a long way to go
Sheila took along her bathers for a swim she wanted so
Goodbye to the salt lake, farewell bumpy track
We caught two Lake Eyre dragons, which went in a sack.

Calypso attracts brown snakes, they follow where she goes
She was sitting very quietly and one curled around her toes
She jumped up rather quickly and hid behind the truck
And she said a rather naughty word that rhymes with luck.

It's a long way to Termination, it's a long way to go
Har-ald closed the track off, for the foot-prints to show
Was it the Plains Wanderer, we all hope it is true
It's a long long way to see one, and that's from the crew.

Jarryd laughs when Trent salutes the Gods of the Track
We all laugh till our ribs hurt, squeak, pop, snort and quack
Trent's our Portermaster, he shows great restraint
When we move those food boxes, no SEGGOS a saint.

Goodbye to Witchelina, and goodbye Lyndhurst Pub
Now we're bound for Adelaide and a good soak in the tub
Goodbye to the bull dust and likewise friendly flies
It's a long long way to Adelaide, and high rise skies.

Performed at the Lyndhurst Pub on the last night of the Witchelina Expedition.

A KIWI'S EXPERIENCE ON A SEG BIODIVERSITY SURVEY AT WITCHELINA RESERVE, 2015

Sheila Grady

On my way home to New Zealand from the UK, in September, I joined the SEG Expedition to Witchelina as a first time volunteer for the week 20th-26th September.

It had all come about because my sister in law, Annette Vincent, asked me earlier in the year, if I would be interested in accompanying her on the survey. I thought it sounded interesting and fun so agreed. Even better, it came packaged as a 70th birthday present for me.

I wasn't too sure what I was in for, though I had been advised by Annette that there would be plenty of dust, long drop toilets and flies. Nothing that a young at heart Kiwi couldn't manage. I was more concerned about snakes and scorpions, fauna that are distinctly lacking in NZ.

But what an amazing experience I was in for!

The journey to Witchelina was an adventure in itself.... for me, anyway. I hadn't been to Adelaide since 2001, let alone the outback of South Australia. The very early start on the morning of 20th September was a taste of what was to come. The long distances to drive, to get anywhere in Australia, never ceases to astound me, but I enjoyed the wide expansive views from the comfort of the back seat in Annette's 'truck'; it seemed rather too sunny in the front.

I had never heard of quandong pie, but eat it I must, said Annette, when we arrived in Quorn for an early lunch. It was delicious, of course.

We arrived at the Witchelina campsite about 3.30 pm, in plenty of time to pitch tents before dark and sort out our sleeping bags, mats and luggage. Just as well, it was dark soon after 6pm.

I was introduced to the scientists and other volunteers at or soon after the evening meal, eaten under canopy outside Pug Hut. I tried most evenings, thereafter, to sit with my back to the hut, because as it got darker, it got colder. The hut was a source of warmth and stability!

Annette may have mentioned that it can get quite windy in the outback, but I was amazed at the strength of the wind that blew up at midnight, that first night under canvas. I wouldn't think many of the thirty plus people at the camp got much sleep that night. In fact, quite a few tents blew down or were torn badly enough that other accommodation was necessary, untill repairs could be made.

Parakelia on sand dunes in the swale country

Luckily mine stood the test of time, due mainly to Annette and Helen Johnson's help with pitching it, in the first place. However, the wind was such that the next night I slept in Annette's truck, Matilda. At least it didn't flap about.

Over the ensuing week I learned much about biodiversity surveys from the scientists and volunteers. I learnt how to make baits from peanut butter and porridge oats; how to press wildf lowers between sheets of newspaper at the back of a truck, while the wind is blowing; how to set the micro-pits for the ant surveys and top up the ethanol as needed; how to measure out the required area for the plant survey; how to set the pitfall lines, Elliott, cage and funnel traps for mammals and reptiles; how to actively search for reptiles and frogs and make a note of opportunistic sightings.

Tawny frogmouth on its nest

Also, how to handle the teasing about going swimming at Lake Torrens and how to cook rice without burning the bottom, for thirty plus tired, hungry people!

I was disappointed I didn't get to go on a bird survey during the week, but I did get to see quite a few interesting birds, the likes of which we don't see in New Zealand. The strange tawny frog-mouth, so still and stick like, on its nest; zebra finches, white winged fairy wrens, crested bellbirds, wedge tailed eagles, galahs, red-vented blue bonnets, to name just a few. Jarryd and Trent, in particular, pointed out many of these birds to me, for which I thank them.

But the things that impressed me most about my time on the expedition, was the wild beauty of the area and the passion that the scientists and volunteers displayed for the environment and its flora and fauna.

I was bewitched by the colours of the countryside, with its red earth and wild flowers in shades of purple, pink, white

Sheila installing micropits

Annette collecting and recording ants on Lake Torrens

and yellow; the stunning sunrises and sunsets; the high flying space station seen travelling in the night sky; the interesting animals and reptiles found in the traps and in nearby areas; the ants and trapdoor spiders buried deep in the moisture of the salty sand-like soil of Lake Torrens; the tracks of a dingo crisscrossing with an emu's along the salt lake surface; the mouse-like planigale eating a large insect, almost as big as itself; the deadly brown snake, held by Harald, for some of us to touch, myself included; the spine rattling bumpiness of the trucks on the rough, red earthed tracks; the sublime joy of a shower and hair wash at the Lyndhurst pub after several days of just a 'lick and a promise' with facial wipes. (When I asked the publican how much I had to pay for the shower, he told me “Not to worry”, then peering at me, over the counter, he said “You're so small, you wouldn't have used much water, anyway”!).

These are just a few of my wonderful memories of the expedition. My grateful thanks to all the scientists and volunteers I had the pleasure to work with; for the knowledge they so willingly imparted to me; for their patience and humour; for the great organisation around camp and in the field. I believe I coped with the dust, long drop toilets and flies, without too much grumbling!

It was the best 70th birthday present I could have wished for

Thank you Annette and Bob.

msgrady45@gmail.com

OCTOBER 2015 V-GRASP TRIP

Garry & Michelle Trethewey

This trip was for photopoints and opportunistic sightings only.

After a massive amount of work over the last couple of years, the pluvios, electronics & communications seem to have been sorted and pretty much look after themselves.

One exception to this was a trip in September 2015 by Graham Blair and Ben Plush. Lightning protection had been installed at Plateau Pluvio after a strike in October 2014, but hadn't quite achieved its aim, so was upgraded.

Operation Flinders, through who's land we travel, was having an exercise, so we'd spoken by phone with the Exercise Commander and arranged to drop in to Owie to check for any last minute concerns. No dramas so quickly on our way.

Generally for this trip things are drying up. The Rock Sida *Sida petrophila* has dried out, dropped most of its leaves, the stems died back and has no flowers. The Sennas are becoming “see-through,” and currently have green seed pods but no flowers. Other mature vegetation is still looking happy, but with bare ground between.

The only water sources, Woodcutter's Well and the Seeps, were about as low as I'd seen. Woodcutter's Well normally overflows and has a metre or two of accessible water on the ground outside its wood & steel mesh enclosure. This time, there was only a small amount, big enough to put half a fist (or a single euro, goat or emu nose) into, between two rocks. The Seeps had in total 6 places where water was visible, but all down between the rocks. It looked like noses couldn't reach the water, but tongues could, resulting in large areas of splash on surrounding rocks. Forty goats, twenty euros and some emus all jostling for a position is a sight I haven't seen before, even in drier times. I'm guessing that in the drier times the numbers have already dropped, so we're currently at the “drought approaching” stage.

However, other than around water sources, we still saw a lot more animals along the way than we have on some other wetter trips. Just another mystery.

We got to Upper Vandenberg well before dark (daylight saving helps), picked up water from our cache, settled down for the night.

Next morning, up the hill to do the photopoints. We'd been interested for a while in an unusual Eremophila. It had been identified from the photos as *Eremophila undulata*, which would have been very significant. We picked up some samples of, as it turns out, *E subfloccosa ssp glandulosa* for SA

herbarium. Still significant, only five records from the Gammons, one by Warren Bonython in 1956. Far more common in the Mt Lofty Ranges.

We took a few happy snaps of a cheeky little dragon along the way, not thinking anything special. When we got home we asked Mark Hutchinson to confirm our identification as we normally do. Turns out that a *Ctenophorus decresii* in the Gammons is also noteworthy, as northern populations have been decreasing, (hence the name?). I've got pictures of probably the same individual from 2½ years ago, which suggests questions about longevity, competition, succession, population. Obviously need more pix on future trips.

At mid-afternoon near SAMBOT waterhole we disturbed an Australian Owlet-nightjar *Aegothelese cristatus* from a rock overhang. We'd never seen one before, and so snapped a few pix into the sun, thinking they wouldn't work, but it turned out that the whiskers showed up beautifully reflecting the light around a partial silhouette.

Australian Owlet-nightjar *Aegothelese cristatus*

I noticed that for a hundred metres or so around Upper Vandenberg there were goanna tracks. We must have walked past goanna tracks before, but I've never actually noticed them. We found ourselves later following an emu's tracks and identifying that it was limping with a damaged toe, and noticing the difference between fast & slow goanna tracks.

Tawny Dragon Ctenophorus decresii

Sometimes your brain just "tunes in" to something, in this case, tracks. I think credit for this gift must go to Harald Ehmann.

Next day, we took a leisurely 4 hours to walk back to our car, stopping to look at things along the way. At a slight detour, (for those who know, the eastern of the two high points of the shortcut) we walked up to the rocky ridge 70 metres to the south and saw 2 Yellow Footed Rock Wallabies. Later, creeping quietly toward a group of 40 goats and a scattering of 20 euros at the Seeps, two more YFRW's on the south side of Arcoona Creek.

Back to the car, a quick word with Operation Flinders, and off to Lake Frome.

This trip produced over a gigabyte of photos. They are available on request from garrytre@bigpond.com

Late note 22/11/15: Just after I sent this to Helen for inclusion in SEGments both Plateau and Bluff pluvios got 90mm, and Chris Wright reports 100mm at South Branch. The stream gauge showed Arcoona Creek 1 metre deep, the fourth deepest since inception.

garrytre@bigpond.com

MINNAWARRA BIODIVERSITY SURVEY DATES 2016

Autumn Wednesday 20 April to Sunday 24 April 2016

Spring Wednesday 28 September to Sunday 2 October 2016

Come for half a day, one day or several days.

Minnawarra is situated on the southern Fleurieu Peninsula

For further information and registration forms, contact Janet Furler on 0419 842 667

SEG EXPEDITION FREELING PLATEAU AND THE 1986 LINKWALK

John Waterhouse

One of the many facets of Expedition Freeling Plateau was a meeting on Mount Babbage, one of the northern outliers of the Flinders Ranges, to launch the "Link Walk". The Link Walk was an event forming part of South Australia's "Jubilee 150" sesquicentenary celebrations that year. The Link Walk event took many young people the length of the Flinders and contiguous Mount Lofty Ranges from Mount Babbage to Cape Jervis. A burst of activity, checking and scanning selected old 35 mm colour transparencies brought many memories back recently.

Linkwalk plaque on Mount Babbage

I'm sure all of us who were expeditioners or leaders on Expedition Freeling Plateau still cherish the memories, and the Link Walk morning was a bonus. We rendezvoused on the flat summit of Mount Babbage, not far from Terrapinna Waterhole, with the first group of walkers and various newsfolk, cameras etc for the event's launch near dawn. A small group of us, including Warren Bonython, had climbed Mount Babbage the previous afternoon to install a commemorative plaque and we slept there, welcoming the rest of the participants as they trickled up the hill in the early morning.

Mount Babbage overnight party

As I remember the morning, Warren Bonython was the obvious speaker to launch the walk, given its route. Any readers of this article who have not read his "Walking the Flinders Ranges" should find, beg, borrow or buy a copy and read it, several times! One of Warren's legacies to South Australia is the Heysen Trail, running the length of these lovely ranges. I presume someone from the Jubilee 150 organisation spoke but I must confess to forgetting!

SEG group at sunset on Mount Babbage, the plaque on John Waterhouse's lap. Warren Bonython standing

Finally, Reg Sprigg from Arkaroola was scheduled to speak about the area, presumably its geology and landforms and his history there. In the event, Reg couldn't make it and, at the last minute, I had the pleasure of taking his place and speaking off the cuff. It was a great opportunity to talk geology! Mount Babbage is itself a great geological link. Its summit is Cretaceous sandstone of the Cadna-owie Formation, resting on Precambrian sedimentary rocks. This juxtaposition links the great geological sequences of the Adelaide Geosyncline with those of the Great Artesian Basin, which extends from Mount Babbage across much of eastern Australia to the Gulf of Carpentaria. The geosyncline's rock sequences, folded and uplifted, eroded and vegetated, form the chain of ranges from Cape Jervis north to Mount Babbage, incorporating all of the great landscapes of the Flinders Ranges, and beyond to the north west from the Willouran Ranges to the Peake and Denison Range and east towards Broken Hill. This is grand, romantic and continental-scale geology and I was all too delighted to have a chance to say so.

And so the Linkwalk started. Official parties and press folk departed and, for the rest of us, it was back to Expedition Freeling Plateau. The photo (over the page) shows a happy group of SEG folk from Richard Willing on the right to Louise Grandfield bottom left (beside the author).

I wonder how many people have been to Mount Babbage since and seen the plaque? Perhaps that is worth a deviation from one of the trips in to the Gammon Ranges.

johnalex@iinet.net.au

SEG group on Mount Babbage

SEEN AT WITCHELINA

Brian Swann photographing a Lake Eyre Dragon on Lake Torrens. Photograph by Stuart Pillman

Sand Goanna *Varanus gouldi* seen at Witchelina. Photograph Alun Thomas

Brown snake seen at Witchelina. Which one? Photograph Alun Thomas

SCIENTIFIC EXPEDITION GROUP INC.
APPLICATION FOR MEMBERSHIP AND MEMBERSHIP RENEWAL for 2015 —16

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

SUBSCRIPTION RATES

Adult member - - - - - - - - - - - - - - - - -	$30.00
Concession cards/ student - - - - - - - - -	$15.00
Family membership - - - - - - - - - - - - -	$35.00
Corporate membership - - - - - - - - - - -	$35.00

Name. . . . . .

Address . . . . . .

. . . .

Telephone (H) . . . . . (W) . . . . . .

E-mail . . . . . .

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

. . . . . .

. . . . . .

ELECTRONIC PAYMENT

If you have access to the internet, payment can be made using SEG's bank account at Bank of South Australia, details as follows:
Acc Name – Scientific Expedition Group Inc.
BSB - 105-086
Acc No. 330629440

Please use your last name if possible to identify your payment **AND** also advise us by email that you have made a payment to our bank account.
Email address – gdoats@bigpond.net.au

PLEASE NOTIFY ANY CHANGE OF POSTAL ADDRESS

Or send a cheque made out to Scientific Expedition Group Inc. with a photocopy of this page to:

The Secretary
Scientific Expedition Group Inc.
P.O. Box 501
Unley S.A. 5061