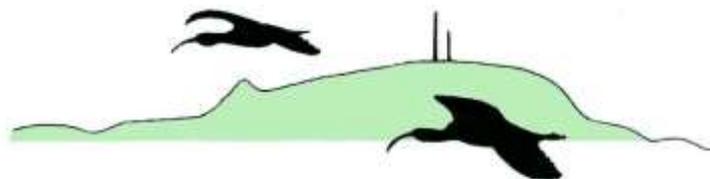


ORANGE FIELD NATURALIST AND CONSERVATION SOCIETY Inc



NEWSLETTER JUNE 2019

NEXT MEETING

Thursday, 13th June, 7.30pm

SPEAKER: Prof. Warren Somerville

**TOPIC: The Wonderful World of
Fossils**

Committee Meeting at 6.30pm

**Senior Citizens and Pensioners Centre
(On opposite side of Woolworths
carpark to Harris Farm)**

All welcome

EXCURSION

Saturday, 8th June

Bathurst Mineral & Fossil Museum

**Note the change of date
Travel individually**

See details below

Next Meeting:

The Wonderful World of Fossils

Speaker: Professor Warren Somerville AM

Warren will bring examples of fossils from his collection and tell us about them and stories of how he came to have them.

Warren Somerville is a remarkable Australian. He has spent a lifetime building one of the world's leading private collections of minerals and fossils. In 2000, Warren gifted part of his priceless life's work and legacy to the people of Australia. The Somerville Collection is housed in the Australian Fossil and Mineral Museum in Bathurst.

As a child in Orange, Warren became fascinated with mineral crystals and fossils. Over the next 50 years he became one of Australia's leading collectors. The holder of five degrees, Warren was a university lecturer, a TAFE lecturer and a successful horticulturalist.

As part of the museum project, Warren was originally the Curator of the collection and was given an honorary professorship from Charles Sturt University. In 2007 he was inducted into the General Division of the Order of Australia (AM) for his services to natural history and the community. He currently holds a position on the museum's management board.

Next Excursion: Saturday 8th June
Bathurst Fossil and Mineral Museum
224 Howick Street.

Note this is a week earlier than usual and before the regular meeting. There will be **no excursion** on Sunday 16th.

The Chapman Collection, from the Australian Museum, will be housed at the Bathurst Museum from 7th June. There is a special event on the 8th June to celebrate the collection's visit, from 10am to 2 pm.

It is a great opportunity as there will be a floor talk about the Chapman Collection at 11am with Ross Pogson, from the Australian Museum, and Warren Somerville. There will be a reduced entry fee of \$5. This links well with the talk by Warren on Thursday 13th.

Find out more about Warren Somerville and the Chapman Collection at the museum website <https://www.somervillecollection.com.au/> or on their Facebook page.

Rather than go to the museum as a group on the 8th members should make their own way there in their own time and take in whatever suits them. Alternatively, check out the Chapman Collection at a time to suit. Note that there is not a lot of long-term parking close to the museum.

If you do go to see the exhibition in Bathurst please send me your impressions so I can add them to the next OFNCS Newsletter.

Last Speaker: Exploring Central Australia,
Dr Murray Fletcher

Report by Rosemary Stapleton

In September and October 2018 Murray and Vicki took a slow drive to the Australian Entomological Society Conference in Alice Springs. Over five weeks and 8,000 kms they explored Central Australia. For Murray it was the first visit to many of the places he had learnt about when at primary school in Adelaide. Murray took us on part of their trip from Port Augusta on Spencer Gulf to Coober Pedy, Alice Springs and their return via Uluru and Kata Tjuta (the Olgas), Woomera and Roxby Downs.

Botanic Gardens and parks as well as natural landscape features were a focus with roadside stops to look for birds and other creatures. Highlights were the Australian Arid Lands Botanic Gardens in Port Augusta and the Olive Pink Botanic Gardens in Alice Springs. Last year the Port Augusta Gardens were rated as one of the top 10 botanic gardens in the world; in part because of their *Eremophila* collection. Vicki said the best time to visit was August when most are flowering. While the Olive Pink BG also featured arid zone plants Murray and Vicki were fascinated by a male Western Bowerbird ‘doing his thing’ at his bower when a lady friend visited.



Male Western Bowerbird. Photo Vicki Glover

Travelling north in South Australia they went to Lake Hart and Coober Pedy, but the highlight was the Kanku Breakaways Conservation Park where the mesa landforms were ‘magnificent’. Crossing the border into the Northern Territory they stopped at the Erldunda Roadhouse (comfortable) that claims to be the geographic centre of Australia and then to one of the twelve Henbury meteorite craters.

In Alice Springs Murray and Vicki visited many of the chasms and gaps in the MacDonnell Ranges such as Stanley Chasm and Emily and Jessie Gaps Nature Park. Other places that were a must visit were The Desert Park and The Reptile Park. There they watched small nocturnal animals, such as the Bilby, reptiles such as the Marbled Velvet Gecko and the Desert Park’s free flying bird display. Not only did they fly raptors like Hobby Falcons and a Barn Owl but also a Magpie and White-faced Heron. Murray’s video showing Thorny Devils picking off ants was mesmerising.



Kanku Breakaways Conservation Park; the feature called two dogs sleeping.

Photo Murray Fletcher

The conference logo featured a caterpillar and Veronica Perrule Dobson AM, an elder of the Arrernte people who gave the first plenary address, explained that the caterpillars were the centre of their world. The caterpillars, rather than the moths, of 3 species of Hawk Moth, were significant to the local people as the larvae were a significant food source for 6 months of the year. The wider community has taken up the caterpillar theme with sculptures and parts of the Parrtjima Light Festival featuring them.

Murray became technical outlining details of his conference paper which was on a Central Australian leafhopper that he has recognised and is yet to be named. There are 8 specimens, all on loan from the British Natural History Museum, and with some detective work he found they were all collected by F.L. Hill just prior to the British Government's atomic tests at Emu Field in October 1953. At the end of his talk Murray brought us back to leafhoppers. Picture a ‘senior’ long-bearded man walking around the bushes in Roxby Downs with a kitchen strainer sweeping the

bushes. Who else could it be but Murray? He had forgotten his butterfly net and the best 'tool' he could find in the town was the strainer. He was trying to catch the species of leaf hoppers that F.L. Hill had collected so many years ago. This obviously perplexed a local Council worker who asked Murray if he was okay. Sadly, his efforts were in vain as the insects quickly hopped out of the strainer. So perhaps Murray and Vicki will be travelling this road again but this time with a butterfly net.

Other flora and fauna they saw in the parks and the wild were the stunning Ghost Gums, Sturt's Desert Rose, Sturt's Desert Pea, Crested Bellbird, Chiming Wedgebill and the 50 or 60 Shinglebacks on the road south. They spotted a Desert Flannel Flower at Stanley Chasm and at Kings Canyon watched the Spinifex Pigeons and a Dingo hanging around.

On the way south Murray and Vicki took the side road to Uluru, which was remarkable, however the majesty of Kata Tjuta created a greater impression. Continuing south they visited Woomera, with its array of weaponry, and then Roxby Downs, which was well cared for, and out to Andamooka.

Unfortunately, it was a very dry time with wind a feature of their trip, particularly in the southern parts of South Australia. Murray did a wonderful sales pitch for this route as I sensed a number of people were taking mental notes of places they should visit in the future.

Last excursion: Mt Canobolas SCA
Report by Rosemary Stapleton

As Cookamidgera was so affected by the drought and Sunday was Mother's Day a few hours in a local reserve seemed a better choice for the excursion. At 9am Hai drove in so just two of us decided to go to Mt Canobolas. The air was fresh from the recent rain and the bright sunshine made it a stunning day to be in the bush.

First stop was the unburnt forest area near the start of Pine Ridge Trail. I suggested we go there to look around tussocks for land snails and lift small logs to look for yellow Planarian Worms as the Australian Museum Team hadn't had time to search this area.

The rain and wind on Friday night had brought down several large trees across the trail. Off the fire trail the leaf litter and logs were quite damp, and we found several types of fungi but no snails or worms. Yellow-tailed Black Cockatoos were calling and several groups of three flew through the trees often landing just out of range of our cameras. There were at least 2 young as we could hear their begging calls which were quite different to their usual screeches. On the way back we still turned over logs but didn't find much; a small sluggish skink, a millipede and then hurrah at last a yellow worm. It was curled up and took a while to show the faint brown stripes on its head. This is the fourth one found and it's good that one has been found in a different part of the park.



Yellow Planarian Worm. Photo Hai Wu

As it was so pleasant, we decided to go to a burnt heath and rocky area to the east and down slope from the vegetation monitoring site (CPF03) opposite Pine View. We were surprised to find quite a few small channels of water trickling over the rocks. The mossy areas were glowing bright green and the shrub seedlings looked very healthy. Hai spotted a seedling with oddly shaped triangular leaves, which was later identified by Dick Medd as *Acacia gunni* or Ploughshare Wattle.



Based on Hai's photos (above) Dick said *'This looks like a seedling recruited after the fire. It is a very widespread species; we saw it last excursion at Neville State Forest and it's quite common in the Mullion Ranges but not that common on Mt Canobolas so well spotted.'*

During the orchid searches this rocky slope was dry and looked quite different. I am continually surprised at how the mountain has so many different areas that you can't see from the road – all you have to do to find them is to get out of the car and walk into the bush. All in all, a delightful morning on the mountain with a few interesting discoveries.

Committee News:

The autumn vegetation surveys in Mt Canobolas SCA were completed on the 28th April. These were funded by OFNCS and aimed to document the changes that had occurred since the first surveys in November 2018. Marianne, the consultant, said she had turned up a few interesting things in different spots but nothing new. Her full report is due at the end of June.

Mt Canobolas Update: Part 3

Looking for Land Snails and Velvet Worms: a visit by the Australian Museum
Report by Rosemary Stapleton



Orange is extremely fortunate to have a community of scientists who have come to work at places like the Department of Primary Industry or CSU. Not only are they happy to share their knowledge but they have many contacts in the wider scientific community. An excellent example of this resulted in a visit to Mt Canobolas SCA by Dr Mandy Reid, Collection Manager, Malacology, Australian Museum Research Institute. Dr Murray Fletcher had emailed her about the Mt Canobolas Velvet Worm, *Cephalofovea pavimenta*. It was the right email at the right time as it prompted Mandy to bring a small team to the mountain to look for land snails and velvet worms.

Murray contacted Mandy as she was the first author on a paper in 1995 which described the Mt Canobolas Velvet Worm. This is one of the endemic species on the mountain. Murray was concerned that it may have been wiped out by the fire as he had heard that the local species of Velvet Worm at Coonabarabran had not been seen since the major fires in the Warrumbungles in 2013.

Here is Mandy's story and the results of the museum's visit. Mandy emailed:

'It was only by chance when Murray made contact that I started to think more about Mt Canobolas and a potential visit.

Just a bit of background on where I am coming from here: my role is Collection Manager for Malacology at the Australian Museum. I did my PhD on Onychophora (Velvet Worms) before returning to what had been my first taxonomic interest: the cephalopods (squids, cuttlefishes and octopuses), which lead to my job looking after the molluscs (marine and terrestrial) at the Australian Museum in 2010.

Part of my role involves building our mollusc collections at the museum for researchers to subsequently work on. Our work is guided by our museum Science Strategy and one focus of this is, of course, climate change. For this reason, I am very keen to survey and build our collection of land snails from the 'high country' of eastern Australia because these areas are among the first impacted by the warming climate. We already have some specimens in our collection from various high-altitude locations mainly from collecting trips of a more or less serendipitous nature, rather than focussed collecting over the last two centuries. While it is a little late in terms of climate change effects, which are already well underway, it seems opportune to focus on these areas to compile species lists and document distributions at the current snapshot in time.

Land snails are interesting because there are many local endemics as is the case for onychophorans. So, when Murray contacted me, with all of this in the back of my mind as a focus for future fieldwork plans, I thought we might as well start with sampling at Mt Canobolas!

Despite my responsibility to look after the Australian Museum Malacology collections I

have retained a 'soft spot' for the *Onychophora*. The next big step in their study is to undertake molecular work to resolve species. It is only possible to go so far with morphology in this group because they are not always easy to tell apart from their morphology alone. There is no doubt that many cryptic species will be present in Australia and elsewhere. Obviously, onychophorans are not part of my watch at the Australian Museum (they are actually housed in the spider department, although now known to be more closely related to insects). Molecular systematists are already showing us that there is much unfinished business in onychophoran research.'

With this in mind Mandy, and three others from the Australian Museum, spent 2 days at the beginning of April in Mt Canobolas SCA. When looking for land snails, their main focus was on leaf litter sampling (especially under trees), in moist pockets, among grass tussocks, under rocks, and logs. The National Parks and Wildlife Service gave permission for small samples of leaf litter to be collected for examination at the museum as the land snails of interest are tiny (less than 4 mm) and can easily be missed by searching in the field. The search for the Velvet Worms was in and around large rotting fallen logs.



Above: The 'A Team' (from left) – Jen, Andrew, Dick, Mandy and Guanglong.
Photo Rosemary Stapleton

Dick Medd gave invaluable assistance by suggesting suitable places to search and leading the museum team all over the mountain. I joined in and helped fossick for the targets although looking for the minute snails

was best done by those with younger eyes. While most of the searches were done in unburnt areas of the SCA, a few burnt areas were included as well as Towac Creek to look for freshwater snails.

Our searches were successful, adding four additional species to the biodiversity list for Mt Canobolas SCA. However, only a small number of land snails were found, possibly due to the very dry conditions and the impact of the fire. Mandy has emailed to say the team collected the following species:

- Rhytididae *Anabellia occidentalis* Shea and Griffiths, 2010* - a carnivorous species that feeds on other snails
- Camaenidae *Galadistes molong* Shea and Griffiths, 2010
- Charopidae *Elsothera brazieri* (Cox, 1868) (Sydney Basin Pinwheel Snail)
- Charopidae *Elsothera funera* (Cox, 1868)* (Grim Reaper Pinwheel Snail)
- Planorbidae *Glyptophysa novaehollandiae* (Gray, 1833) (a freshwater snail)*
- Limacidae *Limax maximus* Linnaeus, 1758 (introduced Leopard Slug)*

*these species do not appear on the currently available species list for Mt Canobolas SCA.



Above: Rhytididae *Anabellia occidentalis*, one of the snails found by the Australian Museum Team. Photo Guanglong Xie

There were cheers when the first Velvet Worm was found, in an unburnt area, and we went on to find several more including in a log in an area that had been burnt. This is great news as it shows they survived the bushfire. The museum scientists collected two Velvet Worms and the specimens (or part thereof) will be DNA sequenced and logged on Genbank for researchers worldwide to use in their evolutionary analyses. Creature of the Month gives details of the onychophorans. After watching one move and reading how unique

Velvet Worms are, I can see why Mandy has a soft spot for them.

Bonus finds were several Planarian Worms; not just the bright yellow species with a brownish head that was found during the fauna surveys but three yellow ones with black stripes from head to tail.

This beetle with orangey mites on it was also spotted under a log. From this photo Murray has said *'it belongs to the family Tenebrionidae, which are generally known as darkling beetles, but they include the piedish beetles. Many tenebrionids are flightless and this looks like one of those and is possibly undescribed.'*



So, once again, new discoveries are being made on Mt Canobolas. Let's hope that in years to come these creatures will still be found on the mountain and not just in the museum collection. Thanks to Murray for his initial enquiry and to Mandy and her team for adding to our knowledge.

Planarian Worm – notes from Dr Leigh Winsor, James Cook University, Townsville

Once again Murray's contacts have provided information on one of the finds. Leigh provided the following comments on the photo below of the striped Planarian.



'A very interesting find! The stripe pattern has similarities to Caenoplana sulphurea,

originally described from NSW, but which occurs in Victoria. At the very least, this is a variant of C. sulphurea. In terms of suites of species of land planarians, the presence of "Caenoplana cf. sulphurea" is consistent with the other species of land planarians that you have found.

Caenoplana sulphurea was originally found at Mt Wilson and at Hartley Vale. In May 2015 I found a typical but immature specimen of C. sulphurea just west of Hartley on Blackheath Creek Road, and I have additional records for NSW. It occurs extensively in central Victoria and south to the Otway Forest, and east into the highlands and Gippsland.'

Land Clearing. Note from Jenny Medd

The NSW Environmental Defender's Office has published an article in their 24 May ebulletin assessing the current state of land clearing legislation.

The authors' conclusion states: *"The lack of a finalised NVR map, the unconfirmed existence of a Native Vegetation Panel, and the complete underutilisation of protections such as the AOBV mechanism, mean that after two years, implementation of the new clearing rules in NSW remains without a clear foundation and without proper accountability."* The full article can be accessed on-line and is worth reading. More importantly: What do we do about this state of affairs?



Land clearing west of Forbes. Photo Rosemary Stapleton

Dates for your Diary

5 June - World Environment Day and also National Fossil Day.

2 July - watch the media to see if The Lucky Galah, by Bathurst author Tracy Sorensen, moves from the Miles Franklin Literary Award Longlist to the Shortlist. Tracy's first novel has received wide praise. It is a quirky and well-

crafted novel where the Galah is a real character.

Sightings around Orange

If you see anything interesting please email orangefieldnats@gmail.com or post it on Facebook.

Freckled Duck. The Huxtables were surprised to see a Freckled Duck at Lake Canobolas as they have never seen one there before. There are still at least 10 at Spring Creek Reservoir.

***Veronica perfoliata* (Digger's Speedwell)**



Hai found and photographed this flowering plant during one of his long walks on Mt Canobolas. Identified from Hai's photo Dick said 'Very interesting observation you found on Mt Canobolas – the plant is more often seen to the north of Orange in the Mullion Range. I've no record for Mt C, so well done. Hai went back after the excursion and found the plant had set seed.

Greenhood rosettes – in the last week rosettes have been found at several places on Mt Canobolas. Cath Stapleton found a small group one weekend and a large number of rosettes were found by Jenny Medd and Rosemary Stapleton a few days later at a different site. At present there is debate about what species they are, and Col has said '*Greenhood rosettes are notoriously difficult to identify and I suspect we may all be surprised by the outcome.... and we will have to wait until late winter - early spring and late summer – autumn to see if they flower.*'

***Genoplesium sagittiferum* – Horned Midge Orchid** (called *Corunastylis sagittifera* by Jones) (Magnified image: Cath Stapleton). Cath found about 20 of these tiny orchid plants

across the top of a gravelly rock slope on Mt Canobolas. Quite a few more were found during a more extensive look a week later. Col Bower identified it and commented '*I have seen this only from the Devils Hole previously, so great to have a new location for it. Twenty plants is also impressive – many more than seen in the Devils Hole. Your specimen is a bit withered, showing signs of the dry, but clearly a robust plant with more flowers than usually seen.*'



Corybas Orchids – a check of the sites on Mt Canobolas where these were seen last spring found leaves over a wider area. Again, a wait and see to see if the plants flower.

Creature of the Month:

Onychophora, Velvet Worms, with our local species the Mt Canobolas Velvet Worm, *Cephalofovea pavimenta*. Photos Mandy Reid

Following the visit by Dr Mandy Reid and seeing some real live velvet worms I was curious to know more about them. The Australian Museum website has some interesting details, some of which are below. <https://australianmuseum.net.au/learn/animals/worms/velvet-worm/>

Velvet worms belong to a phylum of their own, the Onychophora, meaning 'claw-bearers'. They are small, terrestrial (land-dwelling) worms that look rather like caterpillars, with antennae and clawed legs down the whole length of their bodies. They live in moist places, such as rotting logs and leaf litter. Velvet worms are quite secretive and display 'photonegative' behaviour, meaning they hide away from light.

While the body structure of onychophorans is a very simple one, it works well. It has enabled them to live very successfully on land, largely unchanged in structure, for about 500 million years. To date, only a couple of hundred species of onychophorans are known, but it is very likely that many more remain to be discovered and described.

Those most often encountered in Australia are between two and four centimetres long. They are generally blue-grey or brownish in colour, often intricately and beautifully patterned. On seeing these photos from Mandy, Murray emailed to say that her 1995 paper on the genus noted that *'body colour and pattern are highly variable within Cephalofvea populations. In each population, two colour morphs, reflecting the dominant colour or hue, are found, one tan and the other greyish blue-violet.'* He commented that the two colour forms in the photos are consistent with the colour morphs found in *C. pavimenta*.



Australian velvet worms have between 14 and 16 pairs of lobe-like, stumpy legs. Their characteristic flowing movement is caused by the alteration of fluid pressure in the limbs as they extend and contract along the body. This movement led to a second common name,

peripatus, from 'peripatetic', which means 'wandering'.

Despite their apparently gentle appearance, velvet worms are voracious and active carnivores, feasting on other small invertebrates (for example, termites, woodlice and small spiders). They capture their prey by squirting sticky slime which entangles the prey so it can't escape. The velvet worm bites off parts of the prey then sucks them up after they have been softened by digestive saliva extruded from the velvet worm's mouth. The slime is also squirted in self-defence. An enemy with a face full of slime gives the velvet worm time to escape.



Velvet worms breathe through little holes called 'trachea' that are scattered over the body. These pores are permanently open, so water from the body can easily be lost and they will easily dry out. This is why they are restricted to areas of high humidity, such as in logs, under stones, in the soil, or among leaf litter.

If you want to see some amazing close up photos of Velvet Worms; their colours, patterns and amazing feet and head just look at the images on the web.

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