October 2020

Alice Springs Field Naturalists Club Newsletter

Connie Spencer took this photo at the beginning of September, of a patch of mainly annual daisies about 100 km south of Alice Springs. There must have been a small local rainfall. A lovely reminder of more bountiful years. More photos on page 5.

Meetings are usually held on the second Wednesday of the month at 7:00pm at the Olive Pink Botanic Garden Visitors Centre.
There will no formal October 2020 meeting, although there is a demonstration by Ian Coleman of a planting method that is now being used at Olive Pink Botanic Garden. See page 2.

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NEWSLETTER

The next newsletter will be November 2020

The deadline for the November newsletter will be 23rd October.

Please send your contributions to Barb Gilfedder: bjfedders@gmail.com

ALICE SPRINGS FIELD NATURALISTS CLUB

Saturday 10 October, 9.00am, Olive Pink Botanic Garden.

Planting Methods for Central Australian Native Plants by Ian Coleman . The Garden has planted 600 native plants this autumn using the Frank McEllister Planting Method. It involves using termites rather than worms to work the soil. The Garden will be opening up several deep planting holes to see if termites have been active and what the effects have been.

Sunday 1 November

Meet at **Ellery Big Hole** on Sunday, November 1 at 8.30am for a swim, bird watch and chat with Meg about the geology. Some of us will swim across the waterhole and go up through the gorge, possibly as far as the new Larapinta Trail shelter on the other side of the gorge. Contact Meg Mooney, 0404 564840.

Wednesday 10 November

General Meeting in the gazebo at Olive Pink Botanic Garden at 7.00pm.

Speaker: Nikola Van de Wetering

Wanna talk dirty? Coal may be a four letter word, but it's not as offensive as you may think. This unpopular black rock is potentially our best scientific tool for understanding how terrestrial life on Earth has adapted to past climate change.
Nikola Van de Wetering (MSc. BSc. GeoSci) is a rock and dead-things enthusiast previously of Queensland, fresh to Alice Springs. She was the host of Brisbane's 4ZZZ radio science-meets-punk show 'Hot Schist'. She now works in environmental consulting, and sound production at 8CCC Community Radio.

Saturday 28 November

ASFNC Christmas Breakfast at Alice Springs Telegraph Station. Bring a plate of finger food to share, your own drinks, possibly a chair or rug to sit on. Gate opens at 8.30am.

AUSTRALIAN PLANTS SOCIETY - ALICE SPRINGS

apsalicesprings@yahoo.com.au

Wednesday 7 October 7.30pm - Meeting at Olive Pink Botanic Garden. Speaker – Peter Jobson "Dead Tree Project". The aim of the project is to collect observations from 'citizen scientists' of dead or dying trees around Australia. Information collected will help to identify the cause, which trees are vulnerable to climate change and how to protect them.

Alice Springs Field Naturalists Club Committee Members

President	Barb Gilfedder	8955 5452
Vice-President	Margaret Friedel	0417 849 743
Secretary	Connie Spencer	0429 966 592
Treasurer	Neil Woolcock	0428 521 598
Property Officer	Rosalie Breen	8952 3409
Member	Lee Ryall	0417 401 237
Public Officer	Anne Pye	0438 388 012

Other Club Responsibilities:

Newsletter – Barb Gilfedder bjfedders@gmail.com
Facebook Organiser – Meg Mooney moon3@iinet.net.au
Website - Robyn Grey-Gardner 8952 2207

Saturday 31 October, from 8.30am
Standley Chasm walk followed by brunch at the cafe

Meet at Standley Chasm entrance and enjoy a walk along the creek to see how the valley is recovering after a bushfire completely burnt it out in January 2019.

Wednesday 4 November, 7.30pm Meeting at Olive Pink Botanic Garden.

Speaker – Doug McDougall "Gardens of New Zealand". In October 2019, Doug attended the BGANZ conference in Wellington, New Zealand. He will talk about his favourite speakers and show some of the amazing gardens and natural places he visited in Wellington and the South Island.

The Larapintine Seaway
and its weird and wonderful fauna

Presentation by Dr Adam Yates
Report by Lee Ryall

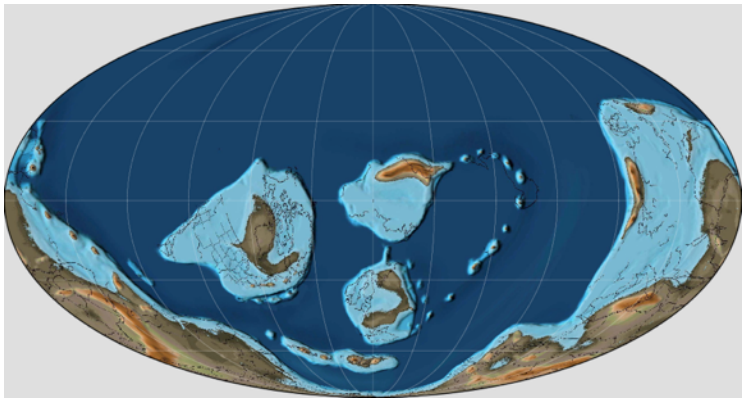
On 12 September, nineteen Field Naturalists were lucky enough to attend a repeat performance of Adam Yates's "Larapintine Seaway" talk at Megafauna Central.

In the Grand Canyon, the top third (including the green limestone) shows horizontal layers of rocks, Cambrian and later, while the lower rock layers are at an angle and have been tilted and eroded prior to the Cambrian rocks being laid down. This unconformity represents a huge missing slice of recorded time.

Adam started the talk with a discussion of the Cambrian "explosion", a concept which arose from the lack of fossil information for the period immediately prior to the Cambrian. He illustrated this with a telling slide of the angular unconformity (indicative of missing rock record) underlying the Cambrian strata at the Grand Canyon. Fossil information for the missing slice of time does exist, however, and some of it can be found in central Australia. Because of the soft-bodied nature of these early multi-cellular animals, the fossils left behind are mostly 'trace fossils', not fossils of the animals themselves, but a fossilised record of the traces left by their activity, such as burrows or scratchings. This segment of pre-Cambrian time is now known as the Ediacaran, named after the hills in the Flinders Ranges where evidence of a fascinating biota has been found.

The Cambrian may not have been quite as explosive as it's rumoured to be, but it was nevertheless a time of wonders. Over a period of about 20 million years there was a massive increase in diversity in body plans as well as in animals. The 'small shelly fauna' which appeared early in the time are bits and pieces - fragments of spines, shells and so on. Later, more complete fossils and random sites of soft body preservation gave us a vision of the range of creatures that existed. Some look weird and wonderful to our eyes.

There is the *Hallucigenia* (right), an early relative of the onychophera, the phylum that includes today's velvet worms, with a tiny head full of teeth and defensive spines along its back. Youtube has wonderful re-constructions of this creature going for a stroll. There was *Wiwaxia* (below left), a tiny armoured creature again with upright spines, and *Marrella* looking a bit like an assemblage of junk materials. All were small, generally shuffling along the sea floor or living just above it, and most were detritus feeders, while the prevalence of defensive armour and spines indicates that some were predators, including some trilobites and *Anomalocaris* (below right) which reached sizes up to a metre and had a disk-like mouth comprising a range of different-sized plates with a central hole encircled by sharp spikes. There was also a number of more recognisable animals including echinoderms (starfish and their relatives), sponges and sea lilies.

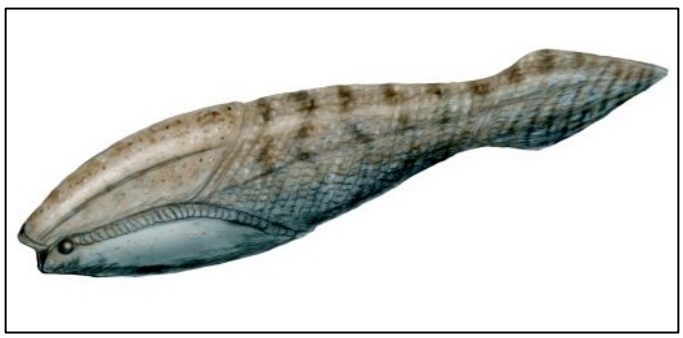


Although Australia wasn't consistently dry during the Cambrian, it was during the Ordovician that the shallow continental Larapintine Sea stretched across the middle of a hard to recognise 'Australia', north of the equator, part of the continent of Gondwana (far right on the map on the left). The richest fossils from this time were deposited in the Amadeus Basin, and have been found in two formations in the Northern Territory, the Horn Valley Siltstone and the Stairway Sandstone. The Great Ordovician Biodiversity Event marked an increasing complexity of life and its invasion of the upper reaches of the seas as well as the development of the first (necessarily marine) megafauna.

Ordovician Ocean by Beth Zaiken

Many of the body shapes now look more familiar- brachiopods difficult to distinguish from their modern descendents and gastropods resembling garden snails. Adam showed us a section of a cephalopod which would have reached at least 1.2m, although much larger creatures, possibly growing to nine metres have been found. It had a central siphuncle (airhose) with which it could fill air chambers and rise or fall in the water by adjusting its buoyancy. This jet-propelled creature would have been one of the major predators of the time. Some trilobites too, grew to a metre in size, including one of the more common species from the Amadeus, the *Lycophron* (left). The *Aegirocassis,* another arthropod related to *Anomalocaris* from the Cambrian occurred in (then) nearby Morocco. It was two metres long, but was possibly a filter feeder rather than a predator of larger creatures.

Adam also spoke about some of the significant finds from the Amadeus basin. The Stairway Sandstone has some exquisitely delicate scales and scraps of body armour belonging to *Arandanspis prionotolepis* (left), an ancient jawless fish. At the time of discovery they were among the oldest vertebrate remains known on the planet but have now been superseded by other finds. The Stairway Sandstone also contains the remains of shark-like scales from *Tantalepis gatehousei.* Although it is impossible to tell from the scales alone, these may be the oldest remains of a jawed vertebrate yet found anywhere on Earth. These finds are all instrumental in pushing back our understanding of when certain groups of animals, in this case the gnathostomes (jawed fish), emerged.



Recently, a local citizen scientist, Patrick Nelson, discovered a euthycarcinoid (an early relative of the millipede) in Ordovician rocks in the Stairway Sandstone. It had previously not been found in this period, disappearing at the end of the Cambrian, only to reappear in the Silurian as a freshwater creature and raising questions as to when animals first set foot on land.

Above: A latex impression of the fossil euthycarcinoid found by Patrick Nelson.
Right: An artist's impression of the same creature.

Adam ended his talk by encouraging people to take up an interest in fossils.
Citizen scientists (fossickers) have always played a part in palaeontology, and this opportunity still exists today. Thanks, Adam, for a great talk shedding a new light on the possibilities within our stunning Northern Territory rocks.

Wildflower Display down the South Road

The South Stuart Highway display on the cover included these individuals and a few others. Connie and Suzanne saw them at the beginning of the month, Barb a few weeks later when some had faded. Photos Connie and Barb.

The involucral bracts (left after seed dispersal) of *Rhodanthe Charsleyae*

Rhodanthe tietkensii

Haloragis gossei

Calocephalus knappii

Xerochrysum interiore

Rhodanthe floribunda

A lovely potter at Standley Chasm - Sept 19
By Meg Mooney

Barb led a lovely morning wander at Standley Chasm, checking out the flowers and weeding upstream along the creek from the kiosk. Highlights were a beautiful stand of Blue Halgania, *Halgania cyanea* and the rare Sunflower Daisy, *Apowollastonia stirlingii,* subspecies *fontaliciana.* The Butterfly Bush (or flutterby as Rosalie liked to call it), *Petalostylis cassioides*, *Hibbertia glaberrima* and some smaller daisies were also flowering. In that order below.




We got to meet *Ptilotus incanus*, Grey Fox-tail with soft furry leaves, a new Ptilotus for most of us.
Ptilotus from the Greek 'ptilotos' meaning feathered or winged, referring to the hairy flowers; incanus from Latin meaning grayish-white, referring to its appearance.

NT Flora tells us that it "occurs on rocky or gravelly ranges, hills or rises composed of neutral or acidic rocks. It is a soft perennial subshrub to about 60 cm high. The stems and leaves have a persistent covering of medium to dense whorl-branched hairs. The flowers are arranged in short spikes to about 38 mm long and 10-23 mm wide, borne singly along the stems. *Ptilotus incanus* is commonly confused with *P. obovatus*, the latter differing in its spikes often being borne in corymbs towards the ends of the branches, and its shorter, closer indumentum".



Clockwise from top right: *Ptilotus incanus* stem showing flower spikes along the stems; whole plant; close-up of single flower and branched hairs on the leaf.

Barb, Rosalie, Jill, Wendy, Ian and I collected 5 large bags of Buffel and Red Natal Grass, more than half of what we saw of these weeds.

There was a lot of the nasty grass weed, *Paspalum conjugatum*, creeping around in the wetter areas, despite great efforts of Rosalie and Peter Jobson and a Correctional Services team digging it up last year. Nova Pomare, whose family are the traditional owners and current managers of Standley Chasm, said she had asked the Correctional Services team to repeat their fight against the invasive weed this year. It will need to be a long-term commitment to get rid of it.

The Lemon-scented Grass, *Cymbopogon ambiguus* beside the path was looking magnificent and the first flowers on the Narrow-leaved Paperbark, *Melaleuca trichostachya* were opening.

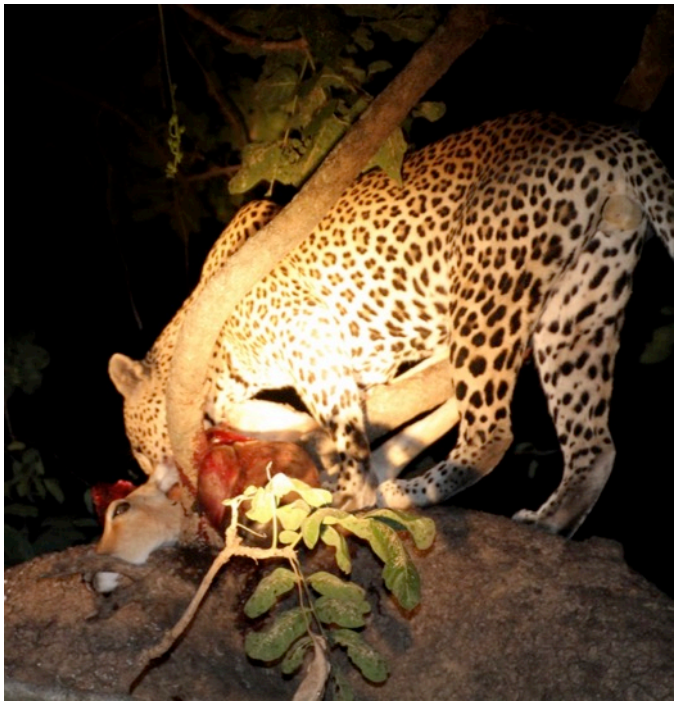
The morning ended with a cuppa and scones courtesy of Nova.

A companionable, informative and satisfying morning.

THE AFRICAN BIG FIVE

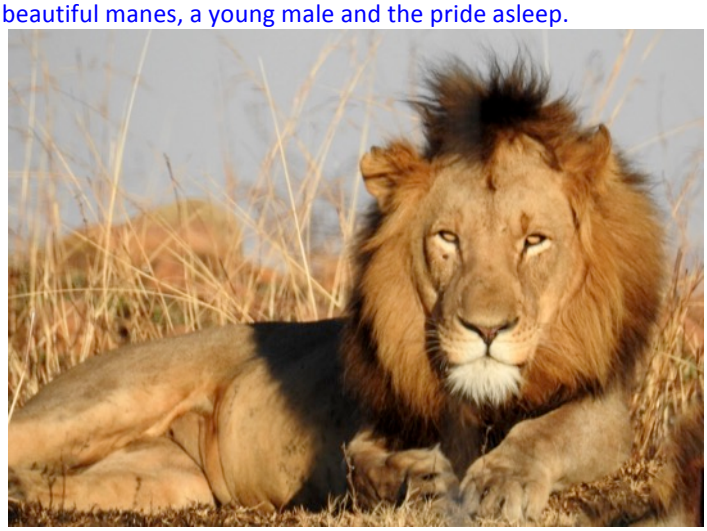
Text and photos by Jenny Purdie

Just to prove that the Big Five are definitely worth seeing here are some photos of them we took on our last safari.



Leopard - Leopards are the most difficult to see so we were delighted to come across a beautiful young female leopard in the first five minutes of our first game drive which was in Zambia. She blended well into the dry grass and was not at all concerned with our presence at a respectful distance (above left). Leopards often carry their kills into a tree to avoid having it stolen by bigger predators such as lions and hyenas (above right).

Lion - It is always exciting to find lions but they do spend a huge amount of time asleep. Sometimes you can be lucky to find lions hunting or feeding on a kill. Pictured male lions with their beautiful manes, a young male and the pride asleep.




Black Rhino - The Black or Hooked-lipped Rhino is smaller than the White Rhino; it is myopic but has excellent hearing, is short-tempered, solitary and a grazer. It is critically endangered because of poaching for its horns; these are sometimes removed in an attempted to deter poachers. In 1995 there were less than 2500 (about 2% of the 1960 numbers); today there are more than 5500 thanks to huge efforts by various conservation groups including an excellent one based in Perth WA. It is always an honour to encounter these special animals.

Elephant - Elephants are the most interesting to watch as they are always doing something - playing in water, having dust baths, feeding etc. Young ones often play together and can be very amusing when trying to figure out how to use their trunks! Babies are harder to see as the adults tend to keep them within their forest of legs.

African Buffalo - Often occurring in large herds, they can be grumpy and unpredictable. Older bulls are usually ejected by the herd and are known as dagga boys and can be seen in groups of two or three individuals. Thanks Jenny!