

# Latrobe Valley Naturalist

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#### Office bearers

President: David Stickney Secretary: Rose Mildenhall Treasurer: David Mules Publicity Officer: Alix Williams Magazine editor: Tamara Leitch Conservation Coordinator: Denis Nagle Archivist: Marja Bouman Webmaster: John Sunderland

#### Contact

The Secretary Latrobe Valley Field Naturalists Club Inc. P.O. Box 1205 Morwell VIC 3840 info@lvfieldnats.org 0428 422 461

#### **Website**

www.lvfieldnats.org

#### General meetings

Held at 7:30 pm on the fourth Friday of each month at the Newborough Uniting Church, Old Sale Road Newborough VIC 3825



A Broad-lip Bird-orchid *Chiloglottis trapeziformis* with its only known pollinator, the flower wasp *Neozeleboria cryptoides* (Photo: Mitch Smith).

# **Upcoming events**

<u>Club Summer Camp</u>: 1-5 February 2019 at Mount Buller <u>Botany Group</u>: Saturday 9 February – Plants from Mt Buller area. Details TBC. <u>Bird Group</u>: Tuesday 12 February – Glen Nayook. Meet 8.30am in carpark NE of Neerim East Road roundabout. <u>Bird Group</u>: Thursday 21 February – EA Wetland survey. Meet 8.30am at Morwell Bridge gate. <u>February general meeting</u>: Friday 22 February Cat tracking on Phillip Island – Frank Gigliotti <u>February excursion</u>: Saturday 23 February – Phillip Island. Details TBC. <u>Bird Group</u>: Tuesday 5 March – Port Albert. Meet 9.30am (later than usual to allow for travel) at Port Albert jetty. Contact Joelle 0459 504 305 or Jay 0439 334 730.

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# Excursion to Tyers Park 28.07.2018

# <u>Geology</u>

After carpooling at Tyers we proceeded to W3 Track where we parked at the old lime kilns and quarry. Most of the following geological information has been extracted from notes provided by Scott Murray on a previous field trip he led for the Friends of Baw Baw National Park.

The beehive lime kilns were once used to make refractory bricks for mining smelters, and lime for agriculture and manufacturing cement. On the opposite (east) side of the track, the rocky outcrops are part of the Upper Devonian (375 – 350 million years old) Coopers Creek Limestone. The rocks are very dark in colour. Sedimentary bedding is highly prevalent, the beds dipping steeply to the west. There is also some 'chert conglomerate', which is part of the underlying Boola Formation. This formation is made up of mudstone, grits and interbedded fossiliferous limestones, and is also Upper Devonian. We were delighted to find several fossils which we could recognise as crinoid stems, corals and a brachiopod.

We proceeded to walk along the track to the Water Board gate. Examples of mudstone and shales of the Strzelecki Group (Lower Cretaceous 135 – 90 million years old) were scattered over the ground. There were excellent views of Tyers Gorge bending back on itself. Scott notes that the Gorge outcrop has played a significant role in establishing age relationships of rocks in the area.



Fossils found in the Upper Devonian limestone (Photos: Irene Proebsting)



The pipe from Moondarra Reservoir (Photo: Irene Proebsting) Next we walked west along Pipeline Track to the bridge over the Tyers River. The pipe carries water from Moondarra Reservoir to Traralgon. From the bridge we could observe rock outcrops at and above the waterline exhibiting a weathering feature known as 'solution notches'. The water has slowly dissolved calcium carbonate out of the limestone beds, resulting in undercuts of the rocks in the bank. These rocks are part of the aforementioned Boola Formation.

With botanising along the way contributing to the usual slow pace, it was now time to head back to the cars for lunch. On the way home, most of us stopped by a crag of Tyers Conglomerate

(Strzelecki Group), more familiarly known as Petersons Lookout, to enjoy the view.

Julie Parker

**Botany** 

A sunny Saturday, and a leisurely walk along the track from the carpark near the beehive lime kiln in Tyers Park, gave us a chance to revise many known plants and to learn the names and particular characteristics of new ones. Thank you, Ken, for sharing your wealth of knowledge.

The predominant eucalypt species along the road entering Tyers Park was Mealy Stringybark *Eucalyptus cephalocarpa*, which was replaced by Red Box *Eucalyptus polyanthemos* as we

approached the carpark. Either side of the track along the ridge were smooth-barked gums, of which, without closer inspection of buds and capsules, it was difficult to distinguish between Mountain Grey Gum *Eucalyptus cypellocarpa* and Manna Gum *E. viminalis*, though near Carrs Bridge the predominant species was identified as Manna Gum. Three other eucalypts in the gullies along the track were Narrow-leaved Peppermint *E. radiata*, Apple Box *E. bridgesiana* and Messmate *E. obliqua*.

Nine different wattles were seen along the track, though mostly only in bud: Narrow-leaf Wattle *Acacia mucronata*, Hop Wattle *A. stricta*, Prickly Moses *A. verticillata*, Varnish Wattle *A. verniciflua*, one Golden Wattle *A. pycnantha*, Silver Wattle *A. dealbata*, Black Wattle *A. mearnsii* and Blackwood *A. melanoxylon*. Next to the track to Peterson's Lookout was one specimen of Ploughshare Wattle *A. gunnii*.

On either side of the track approaching the ridge, where there was a glorious view of the Tyers River below and the associated gorge bending back on itself, were Hop Bitter-pea bushes *Daviesia latifolia*. Unfortunately they were not in flower, but it would be an amazing sight in spring. *Correa reflexa* did, however, give us a stunning show of its profusion of deep red tubular flowers with bright yellow stamens protruding below the green tips of the petals. Next to Carrs Bridge on the far side was a healthy clump of Victorian Christmas Bush *Prostanthera lasianthos;* it was obviously not in flower, but again would be a magnificent show in December-January.

Among many, the main species encountered along the track were Sweet Bursaria *Bursaria spinosa*, Hazel Pomaderris *Pomaderris aspera* and Dusty Miller *Spyridium parvifolium* with its silvery flowers. Some others were: Blanket-leaf *Bedfordia arborescens*, Large-leaf Bush-pea *Pultenaea daphnoides*, Shiny Cassinia *Cassinia longifolia*, Tasman Flax-lily *Dianella tasmanica*, Honeypots *Acrotriche serrulata* and Common Everlasting *Chrysocephalum apiculatum*. Ken also came across some Common Maidenhair ferns *Adiantum aethiopicum* and a Rasp Fern *Doodia aspera* below Carrs Bridge. Nearby, a 20 cm tall seedling of Muttonwood *Myrsine howittiana* was identified by its shiny, dark-green leaves and undulating margins...and Ken's expertise.

While having lunch, sitting on rocks at the bottom of the limestone cliff at the carpark, we discussed our favourite plant of the morning. Ken's was his find of *Hydrocotyle geraniifolia* or Forest Pennywort, under Carrs Bridge; the arduous clamber down the slippery embankment was well worth it. Wendy was intrigued by the few specimens of the Stately Helmet-orchid *Corybas diemenicus*, with their white, shimmering centres. Baiba's plant of the morning was *Pomaderris elliptica*, which has a smaller, smoother leaf than Hazel Pomaderris and a fine, whitish mat of short, stellate hairs underneath, giving it a very velvety feel. The tiny, golf-tee like fruits of the Pixie Cups Lichen *Cladonia sp.* were also amazing and you could imagine pixies sipping dew from them.



Stately Helmet-orchid (Photo: Irene Proebsting)

On the drive back to the main road, we were delighted to come upon a pair of Spotted Quail-thrush walking about on the road ahead of us.

Baiba Stevens

# **Excursion to Peach Flat Community Wetland 25.08.2018**

We visited Peach Flat Community Wetland for our August excursion. The wetland is located on private property at 647 Marathon Rd, Briagolong. You can view it from Marathon Road, or a visit can be arranged with the owners, Rod McMillan and Michele Adler (5145 5422, www.adland.com.au).

When we visited the wetland, the area was very dry. Although our group was enjoying the winter sunshine after driving through fog for much of the way, it was sobering to learn from the owners that they had had only 30% of their usual rainfall. The wetlands were constructed on an existing floodplain that had historically been drained for cattle grazing, and were made with careful attention to water levels so that they wouldn't flood the road during wet weather. The project received funding from Wellington Shire and Landcare, and assistance was also provided by local professionals and community groups, hence the 'community wetland' designation.

Until recently, Rod and Michele had been relying on natural regeneration of local plants to vegetate the site. However, browsing and grazing by wallabies, kangaroos and deer had resulted in many plants struggling to survive or become established. The owners also mow the area to

mitigate the fire risk. Recently some



Peach Flat Community Wetland (Photo: Jay Duncan)

seedling trees have been planted on one of the islands and tree guards put in place to protect them.

Some older trees have not been able to tolerate the change in hydrology. An old Red Box *Eucalyptus polyanthemos* near the dam has died, and there are now many saplings growing where it was. Some Apple Box *E. angophoroides* along the road have also died. Rod suggested that this species is over-represented among the remnant trees because it wasn't particularly useful to European settlers in the area.

Our group recorded 32 species of birds at the property – a pair of Yellow-billed Spoonbills, a Latham's Snipe, a Collared Sparrowhawk and a Nankeen Kestrel caused the most excitement. The wetland itself had fewer waterbirds than the dam closer to the house. The house garden, and the creek valley and escarpment on the opposite bank where we returned from our circuit walk, seemed to be where most of the small birds were spending their time.

Bug enthusiasts enjoyed looking at a dead Metallic Shield Bug *Scutiphora pedicellata* and, for the botanists there was an unusual mint bush *Prostanthera lasianthos* specimen that had smaller leaves than the local ones and no scent - Michele said they never have scent in that area.

After lunch we went on to the Briagolong Red Gum Reserve, which is between Briagolong and Stratford. Birds noted there were a Weebill, and Buff-rumped Thornbills with a nest low down in the

bark of a Forest Red Gum. Nodding Greenhoods and *Hardenbergia* were flowering, and we saw a juvenile Kurrajong.

Jay Duncan



Rod McMillan (left) and LVFNC members at Peach Flat (Photo: Michele Adler)

# Flora between Perth and Geraldton

At our August meeting, Phil Rayment spoke about his tour of the region between Perth and Geraldton, which he undertook prior to attending the ANN get-together in Perth in September 2016. Guided by Jolanda Keeble, around 20 field naturalists from various clubs travelled north from Perth, taking an inland route and returning via the coast.

Phil was struck by the species abundance in the areas through which they travelled. In Western Australia (WA) there are well over 13,000 species of flowering plants recognised, with many new ones still being identified. Phil explained that, according to J.S. Beard's system, WA is divided botanically into three provinces: the far north, the south-west corner and the vast area in between. Within the south-west botanical province there is a further division of seven vegetation zones. Phil's group explored two of these zones: the Northern Mallee Shrubland and Heath zone, which is one of the most biodiverse, and the Wandoo Woodland vegetation zone.

There is another system that separates WA into vegetation zones that are broadly compatible with the Beard system. The Interim Biogeographic Regionalisation for Australia (IBRA) system is used by Florabase, an online database covering WA flora.

Phil's journey started at Wongamine Nature Reserve near the township of Toodyay, north-east of Perth. This reserve is on the edge of the Yilgarn Craton which is underlaid by a massive belt of granite. Soil variation occurs in this reserve due to greenstone that uplifted through the granite eons ago, so there is a mixture of deep gravels and yellow sandy clay soils. This makes for very diverse plant communities.

Phil started off with a photo of the vibrant Blue Leschenaultia, *Lechenaultia biloba*. Another loud, blue flower appeared later, a little member of the *Halgania* species. We gasped at the intensity of the

colours and the clarity of the photos. A Blue Enamel Orchid, one of the *Elythranthera* species, is a small blossom in real life but on the screen was hugely glossy and gorgeous.

From Wongamine the group travelled to Rica Erickson Nature Reserve at Calingiri, further north. This reserve is named after a leading WA naturalist and botanical artist, Rica Erickson, who was born in 1908. She wrote a book about the *Stylidium* genus in the 1950s, and Phil included many photos of flowering *Stylidium* species in his presentation. Some more *Lechenaultia biloba* were found in this reserve and photographed by Phil, again a vibrant blue shade. Phil also photographed a rich orange-russet coloured Banksia, probably *Banksia menziesii,* many yellow flowers of Catspaw *Anigozanthos humilis,* orchids, and *Verticordia* and *Acacia* species.

Next the group visited the Gathercole Nature Reserve, right on the Yilgarn Craton and therefore underlaid by granite and with granite boulders where the surrounding soil has weathered away. Phil



Blue Enamel Orchid (Photo: Phil Rayment)

photographed Granite Kunzea in flower, a delicate blossom in a strong red colour, and another bright blue-flowering species *Dampiera lindleyi*. A tree that only grows in granite outcrop areas in WA is *Eucalyptus caesia* and Phil took some beautiful shots of the spiralling, peeling bark of this tree.

The following site the group visited was Wongan Hills, a series of mesas dissected by deep gullies and overlaid by a deposit of laterite. Phil showed us a rare plant, *Daviesia euphorbioides*, a cactus-like shrub, very small with slender boughs. He also took a stunning photo of Toothbrush Grevillea *Grevillea armigera*.



Granite Kunzea (Photo: Phil Rayment)

Continuing to explore the granite country, the group went on to Petrudor Rocks, south-east of Dalwallinu. This area had rockpools, fields of everlastings, sedges, and drifts of a plant with feathering flower heads *Ptilotus* (possibly *P. exaltatus*). North of Dalwallinu they visited Buntine Nature Reserve. In this reserve Phil photographed yet another tiny flower of piercing blue, *Brunonia australis*, and a large *Stylidium piliferum* with long, flowing stems.

Around Perenjori, Phil saw *Lechenaultia macrantha,* which grows like a wreath with the green foliage inside and the outside edge a mass of yellow flowers edged in deep pink. There were other herbs and shrubs with masses of flowers. Moving on to the Coalseam Conservation Park, north of Mingenew, the group looked at cliffs revealing many layers of siltstones and sandstones, some

with fossils. The wide river bed of the Irwin River had a trickle of water at the time of the group's visit. Phil showed us a huge field of flowers near a bend in the river, forming a river of yellow blossoms. Depot Hill Nature Reserve is on the Irwin River, and there Phil photographed a *Lobelia gibbosa*, one more loud-but-tiny blue flower, and a small flowing plant endemic to that area, *Wurmbea* species (Paynes Find).

Phil and the group turned towards the coast and, near Dongara, visited Beekeepers Nature Reserve and Jurien Bay Marine Park. Limestone knobs and cliffs, and coastal heathland known as Kwongan, featured here. At Grigson's Lookout, close to Green Head, there were Quandong *Santalum murrayanum* fruiting, and a whole suite of new plants. Phil photographed a range of *Verticordia*, some with very pale flowers and others extremely bright. Further along the coast they visited Lesueur National Park, a biodiversity hotspot. Phil showed us a wide range of plants growing in this heathland environment. A plant with an ordinary name, Common Brown Pea *Bossiaea eriocarpa*, had a stunning stem of flowers shaded yellow to deep orange. Phil showed us a wattle, *Acacia truncata*, with a modest flower but very interesting triangular leaves. Phil learned that there are 11 species of *Xanthosia* and photographed several of these.





Inland from Lesueur National Park the group

Common Brown Pea (Photo: Phil Rayment)

visited Coomallo Nature Reserve. A *Verticordia* growing here blooms yellow, but following pollination it changes colour to red. Phil showed a photo of a Kangaroo Paw, a green kind with black edges. The group turned back towards the coast, visiting Lake Thetis near Cervantes, their final stop of the tour. Stomatolites and thrombolites were visible in the low, saline water. They are ancient organisms, perhaps 3,500 years old, that can now only be found in isolated sites like this lake.

Rose Mildenhall

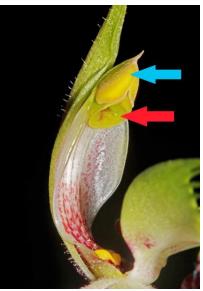
Pityrodia lepidota (Photo: Phil Rayment)

# **Fascination of Orchid Pollination**

Mitch Smith was apologetic in advance about some of the risqué aspects of his topic to be presented at our September meeting, especially when he saw that we were using the chapel rather than the usual meeting room – he prayed we weren't going to be struck by lightning as a result.

He began by outlining where the sexual structures of an orchid are, including the most important part, the *viscidium*, which he referred to as the 'sticky bit'. This feature facilitates the transfer of *pollinia* (solid masses of pollen grains) onto a pollinating insect, and is, he said, basically what defines an orchid.

Some orchids may look like 'normal' flowers, whereas others (for example, Duck-orchids) have a most bizarre shape and, as he put it, a very 'dangerous' way in which to be pollinated; with only millimetres between each structure, self-pollination is precariously probable. Genetically it is better to cross-pollinate from one flower to another, and orchids have developed a strategy for cross-pollination that involves adhering their pollen to the back of an insect that is just the right shape – not only to collect the pollen, but to then go to a flower of the same species of orchid to have it removed. Therein lies the clue to the bizarre shapes of some orchids.



Pollinium (blue arrow) and viscidium (red arrow) of a Spiderorchid (Photo: Mitch Smith)

In Victoria, wasps, bees and flies account for most pollination of

orchids, along with some ants and beetles. One of the evolutionary mechanisms used to enable one species or group of insects to pollinate a plant, and make sure only that plant gets pollinated, is known as 'sexual deception'. Instead of attracting insects with a reward, like nectar or pollen, designs have evolved where part of the orchid looks, smells and feels like a female receptive insect, mimicking the pheromones produced by the female insect when she is ready to mate. The Broad-lip Bird-orchid *Chiloglottis trapeziformis,* for example, attracts only the male thynnine wasp *Neozeleboria cryptoides* by emitting a unique compound which is similar to the scent of the female. In contrast, all four of the Tongue-orchids *Cryptostylis* are pollinated by the same wasp *Lissopimpla excelsa.* 



*Lissopimpla excelsa* on a Large Tongue-orchid (Photo: Mitch Smith).

To us, a Tongue-orchid may not look much like a wasp, but *L. excelsa* is totally fooled, so much so that he will copulate with, and even ejaculate on, the flower. It is then, when he is in the exact position, that the pollen attaches to his tail-end via the viscidium. He is fooled again by the very next orchid, inadvertently transferring the pollen to the plant's stigma. This extraordinary evolutionary trick was recorded by Edith Coleman in 1927 and caused a sensation in the botanical world.

Mitch then moved on to the Spider-orchids, which introduced the 'hinged labellum', a modified sixth petal that can move up and down. This landing platform attracts a wasp that is sexually dimorphic – that is, the male looks like 'your average wasp'

but the female is smaller, flightless and looks more like an ant. He picks her up and carries her to a flower to mate, then returns her to the ground where she burrows into the soil, laying her eggs in a grub. How these wasps mate, and the rituals involved in this process, are integral to how the Spider-orchids have developed their hinged labella. Again the male wasp is tricked into thinking the

orchid is a female wasp, but when he tries to fly away with it, the hinged labellum comes into action, forcing the wasp against the viscidium and thereby attaching the pollen. He then flies off to the next orchid, 'carrying a backpack of someone else's genetic material, only to be duped again.'

But the Masters of Hinge would have to be the Elbow-orchids, *Arthrochilus sp.* These babies not only need an insect the right size and shape, but with the right actions, and there are very few that meet this criteria. Only through a series of awesome photos, where Mitch had captured this precision mechanism in action, could one truly appreciate how wonderful nature is.

As for the peculiar shape of the Small Duck-orchids *Paracaleana sp.,* the structure and function that the duck-shaped 'head' plays in pollination by the sexually-deceived male wasp *Neozeleboria* is to spring over the wasp, trapping it upside-down against the column in the neck of the duck's 'body'. The labellum mimics aspects of a female thynnid wasp, including the genitalia, and is critical for correctly orienting the male for successful pollination. How this rapid movement of a plant is facilitated, Mitch said would have to be a whole new topic for another time.



Thynnid wasp trapped by an Elboworchid (Photo: Mitch Smith)

Mitch then followed with a range of orchids and their pollinators including the Small Greenhood *Pterostylis parviflora* being pollinated by a small fly attracted by a food reward or food mimic mechanisms, and the Nodding Greenhood *Pterostylis nutans* pollinated by a fungus-gnat *Mycomya sp.* Tall Greenhoods *P. melagramma* specialise in having one of these dipteran pollinators, while for the 12 species of Rustyhoods, there are five known pollinators.



Fungus gnats, second one carrying an orchid pollinium (Photo: Mitch Smith).

Mitch, after many days hanging around the Maffra Cemetery, observed a female colletid bee pollinate a Donkey-orchid *Diuris sp.* The pollinator of the Purple Donkey-orchid *D. punctata* is also of this Order, a *Lipotriches* species, and Hyacinth-orchids *Dipodium sp.* are pollinated by Leafcutter Bees, which are in the Family Megachilidae. Midge-orchids are pollinated by various tiny flies including Chloropidae and Michilidae (Grass Flies).

There are also other mechanisms for pollination: 'floral deception', where the orchid looks and smells like a flower but doesn't offer any reward for the insect, 'food reward', where the orchid provides a reward just like other plants, and 'self-pollination'.

The talk concluded with many questions, including the vexed one: What is the pollinator for the Butterfly-orchid *Sarcochilus australis?* No known pollinator has yet been recorded.

Mitch's dedication and enthusiasm was evident, especially in the quality and detail of his knowledge of the subject, aided by his brilliant photography. I also acknowledge the time he has taken to review and amend this report.

Denis Nagle



Colletid bee *Leioproctus obscurus* carrying orchid pollinia (Photo: Mitch Smith).

# **Report on Birdlife Australia Challenge Count 2018**

Thirty-one people turned out for the 2018 Count over four days from 29<sup>th</sup> November to 3<sup>rd</sup> December. Some people attended for one day only, and some stalwarts were out every day, surveying up to four sites per day.

The most unusual bird observed during the count was a single Red-Necked Stint seen at Moe Treatment Works, where the group also recorded the highest number of any species with 1,500 Pink-eared Ducks seen. Consequently, this site had the highest total number of birds, with a whopping total of 2,525.

This result bumped up the average number of birds seen at each site to 300. The median number per site was 153, which is a better reflection of the experience. Several sites had counts of around 45 birds.



Yellow-billed Spoonbill at TRRCR (Photo: Tamara Leitch)

The site with the greatest number species was Yarragon

South with 53 seen by 9 observers. This was followed by Mathison Park in Churchill where seven people found 51 species, and then the Energy Australia Wetlands with 46 species identified by 8 observers.



Black-faced Cuckoo-shrike at TRRCR (Photo: Tamara Leitch)

Some highlights during the event included:

Time spent per site varied from all day at one site, to an hour or less in transit between sites. Most sites were surveyed for between two and four hours.

Grey Fantails and Yellow-faced Honeyeaters were seen at all main sites, and there were Red Wattlebirds everywhere except Morwell National Park at Kerry Road and Uralla Reserve in Trafalgar.

Overall, a total of 120 species and 5,710 individual birds were recorded across all sites. Introduced birds made up almost 9% of total bird numbers.

- Nankeen Night-herons rising from the trees at Beck's Bridge
- An unusual number of White-necked Herons seen at different spots between Yarragon South and Moe via Trafalgar
- A male Satin Bowerbird shining in the sun during lunch at Wirilda Environment Park
- Good views of a Yellow-billed Spoonbill, and watching a Black-faced Cuckoo-shrike building its nest, at the Traralgon Railway Reservoir Conservation Reserve
- A young Pied Cormorant at Mathison Park, very uncommon in the Latrobe Valley

Jay Duncan

## WELCOME TO NEW MEMBER

The Club welcomes Brett Whitfield from Traralgon. We wish you a long and happy association with us.

# **Guest speaker for February**

Frank Gigliotti

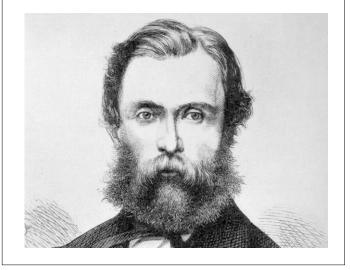
Frank is a feral cat research officer with Phillip Island Nature Parks, facilitating the management of feral cat impacts on the island. He will speak about a domestic cat tracking project designed to challenge community perceptions and build awareness of cat owners regarding the behaviour of their pets when left unsupervised, enabling them to understand their responsibilities.



# Guest speaker for March

Linden Gillbank

Linden is an historian of Australian botany and a University of Melbourne Honorary Fellow. Her talk will feature the work of Ferdinand Mueller, government botanist for the Colony of Victoria in the 1850s, and his expeditions to the Australian Alps to collect, name and describe new species.



*Latrobe Valley Naturalist* is the official publication of the Latrobe Valley Field Naturalist Club Inc. The Club subscription includes the "Naturalist".

Brief contributions and short articles on any aspect of natural history are invited from members of all clubs. Articles, including those covering Club speakers and excursions, would typically be around one A4 side in length, should not exceed 1,000 words, and may be edited for reasons of space and clarity. Photos should be sent as an attachment and be a maximum of 1 megabyte in size.

Responsibility for the accuracy of information and opinions expressed in this magazine rests with the author of the article.

Contributions should be addressed to:

Ms Tamara Leitch The Editor LVFNC Inc. PO Box 839 TRARALGON VIC 3844 Phone: 0438 372 186

Email: tleitch@wideband.net.au

#### Deadline for articles to be considered for inclusion in the next issue (March/April): 25 February 2019

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