The Natural News

Central North Field Naturalists Inc.

No. 62 – December 2015

A FALLEN STRINGYBARK – *Sarah Lloyd*
THE FEATHERED TRIBES OF VAN DIEMEN'S LAND – *Book Review by Jim Nelson*
LESSER WANDERER – *Hazel Britton & Alison Parks*
TINY WORLDS – *Sarah Lloyd*
SUE'S GARDEN – *a painting by Jo Lawrence*
HERBICIDES FOR ROADSIDE MANAGEMENT – *Herbert Staubmann*
CHANGES AT CNFN INC.

A fallen stringybark

Sarah Lloyd

In early April 2014 I heard the loud crash of a tree falling down the hill. The origin of such sounds is difficult to pinpoint but a week or so later when visiting Thismia Gully I discovered its source. A massive 30 metre tall stringybark (*Eucalyptus obliqua*) that had been dead for some time had fallen across the gully. The base of the tree is close to the bed of an ephemeral creek and had no living roots to hold it in place in the waterlogged soil.

Access to three sections of the trunk is possible without having to do too much clambering over the numerous dogwood (*Pomaderris apetala*) and musk (*Olearia argophylla*) the tree had brought down with it.

While still standing, the stag (upper branch) of the tree had emerged from above the canopy of blackwood (*Acacia melanoxylon*) and had lost most of its bark. In places it was soft and spongy and covered in a white, toothed resupinate fungus. Fortunately, its spongy nature and convenient height made collection and observation relatively easy.

A large lower branch about mid way along the trunk is reasonably easy to access except for some small upper branches of dead dogwood and musk.

(The main trunk is beyond reach at this point which can be frustrating if any of the larger myxos—e.g. *Stemonitis*—are visible.)

Inspecting the lower end of the trunk doesn't require much clambering and I have been checking it regularly since the tree fell.

My first collection from the stag end, *Physarum virescens*, is dated April 8 2014. The fruiting bodies are clustered, greenish-yellow stalked and sessile (stalkless) sporangia with the peridium mostly intact. This is the first record for Australia according to the Atlas of Living Australia (ALA) which also records only two collections from New Zealand. The same species appeared at the same place on January 21st 2015. It has not appeared elsewhere.

Alongside the *P. virescens* was *Paradiacheopsis rigida*, a tiny 1–1.5 mm high fruit body that appeared in extensive colonies after each bout of rain between April and June 6th, the date of the last collection. I have tried to collect equally tiny species from newly fallen trees many times, but these trees can be extremely hard making collecting undamaged specimens almost impossible. Intermingled with the *P. rigida* was the maypole-like *Enerthenema papillata*, which also reappeared after rain. This species was common in 2014 and collected from numerous substrates in different locations. Before 2014 I had only collected it once and I have not seen it since—such is the unpredictable nature of slime moulds.

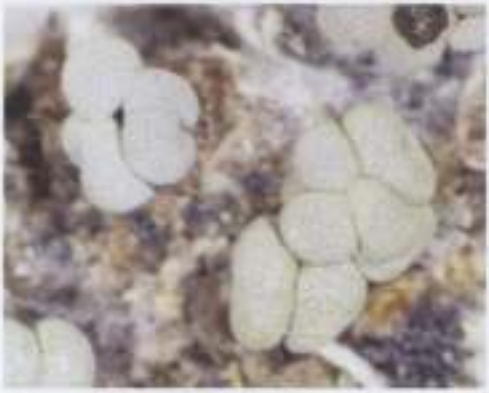
Physarum viride was common on the stag in 2014. It was also very common in other locations when I started collecting but it only appeared twice in 2015 and was the only myxo I collected from the stag in 2015.

Also collected from the trunk in 2014 were *Arcyria riparia*, *A. globosa*, *Physarum album*, *Comatricha alta*, *Trichia botrytis*, *Crihraria stellifera*, *Stemonitis* sp. and *Lycogala epidendrum*.

In September/October 2015 the stag end, being off the ground, was dry and unproductive. The root end, which is also off the ground but in a shaded location above the ephemeral waterway, had extensive colonies of numerous different species at various stages of maturity including *Metatrichia floriformis*, *Trichia affinis*, *Trichia decipiens*, *Diderma* sp. *Comatricha* sp, *Ceratiomyxa fruticulosa* and the beautifully iridescent *Elaeomyxa cerifera* on the wettest mossiest part of the log.

Clastoderma debaryanum, at only 0.9–1 mm high, is one of the smallest species likely to be seen in the field. I have found it several

Fallen stringybark (Eucalyptus obliqua) in Thomas Gully



Physarum viridescens

Comatricha alta

Paradiacheopsis rigida

times on decayed litter on the ground so was interested to find it on the log. It has a distinctive oval swelling approximately ⅔ up the stem and it was this that initially caught my eye. On close inspection I noticed that the bark was covered in tiny fruits probably numbering in the thousands.

C. debaryanum, like other members of the order Echinosteliales to which it belongs, produces protoplasmodia, believed to be the most primitive type of plasmodia. Protoplasmodia remain microscopic throughout their existence, they form no veins and have slow irregular streaming rather than the rapid, reversible streaming of the other types of plasmodia. Furthermore, each plasmodia only produces one or several fruiting bodies rather than the thousands that can arise from other plasmodia. There's a lot going on in this stringybark log!

Since starting my research I have noticed that newly fallen dead trees can be rich in slime moulds for about a year after they fall. The fallen stringybark is a particularly productive substrate, possibly because of its large size, thick absorbent bark and its location in a shady part of the forest.

http://www.disjunctnaturalists.com/slime-mould-log/log8.htm

Cribraria fruticulosa & Metatrichia floriformis

Arcyria ferruginea

Clastoderma debaryanum

Elaeomyxa cerifera on moss at the base of the log.

Book Review

The Feathered Tribes Of Van Diemen's Land by Sarah Lloyd, Tympanocryptis Press (2015) pbk, 110 pages (ISBN 978-0-646-94414-2) Reviewed by Jim Nelson, Weegena.

Birds are for the most part welcome companions in our lives. They play important roles in the ecosystem, while their presence and song can give us pleasure. It is not their purpose to enrich our lives, but they certainly can play such a role. Their absence would be a disaster ecologically as well as aesthetically. Nevertheless, for most people birds tend to just blend into the background of our busy daily lives.

Bird enthusiasts always seem to have an eye or ear at the ready no matter where they might be. Generally, the interest is not an obsession that takes over their lives, but is simply an appreciation for the richness that birds can bring. The wonders of birds stem from their incredible range of songs that fill the air (often seemingly with a sense of joy), to the great diversity of colours and flights to catch our eyes. Who among us has not wondered what it might be like to swoop through the air with such grace and ease?

In Tasmania, the term 'Birdos' is used for those with particularly strong interests and knowledge concerning birds. While many of us are happy enough to be able to identify our birds by sight and sound, the more dedicated are concerned with conservation issues, and devote time to regular monitoring to keep a close eye (and ear) for changes in populations. Thus, the level of interest can range from casual observer to dedicated involvement.

Whatever the level of involvement with birds, it is always useful to have a good reference at hand. These can range from a book with every bird known in Australia, to local guide books. Most bird enthusiasts have a number of books, and may carry a few with them when out bird watching. Larger books can be a nuisance when identifying birds in a particular area, where often one just wants a quality picture that makes the process quick and easy.

So, what might be required of a bird book other than an appropriate size to carry and good photos for a quick identification? Well, Sarah Lloyd's latest publication *The Feathered Tribes Of Van Diemen's Land* answers this question. This is not simply an identification book on Tasmanian birds, but also a tribute to their beauty and a guide to understanding them.

Sarah's wonderful photographs not only make for great identification of the bird in question, but also takes bird photography into the realm of art. Many of the photos in this book are so stunning in their capture of the subjects as to make the book a pure aesthetic pleasure beyond mere identification. One can only wonder how many photos it took to select these images. For birds do not pose like

models, but must be captured in the moment. Sarah has done some wonderful capturing, presumably over a lot of moments.

And Sarah's love for her subjects is similarly demonstrated in her descriptions of their habits and habitats, including fascinating details about their feathers, food, roosting sites, and how and why and in what order they sing in the dawn chorus.

Additionally and most importantly, Sarah provides sobering information relating to the variety of threats to birds. A lot has been packed into this book to make it much more than the usual reference. It functions fine for identifying birds, but its particular value is that it also passes on Sarah's knowledge and advice about how and why we need to look after them with good ecological practices and common sense. There are lessons and information here for us all.

The Feathered Tribes of Van Diemen's Land is available from Fuller Bookshop in Hobart; Petrarchs, Volume 2 (formerly Fullers) and QVMAG in Launceston; and the Devonport Bookshop.

Lesser Wanderer

Hazel Britton and Alison Parks

This lesser wanderer (*Danaus chrysippus*) was photographed on Buttons Beach, Ulverstone on 6th October 2015 after strong northerly winds. The flight period in Tasmania is more usually December to March so presumably their early arrival is related to early high temperatures in Victoria and changing climatic conditions.

Lesser wanderer (Danaus chrysippus)

Tiny worlds

Sarah Lloyd

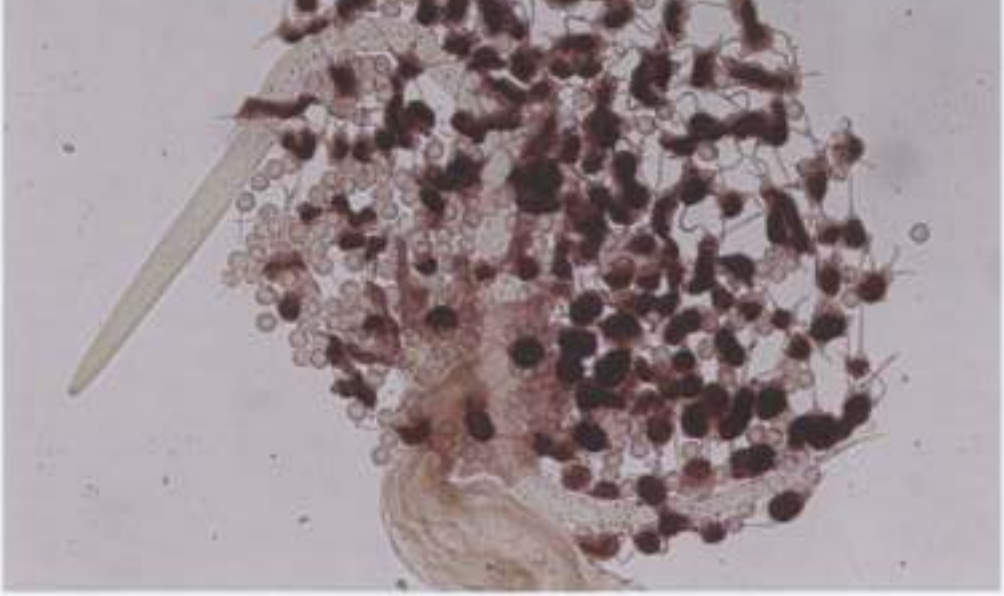
Slime mould identification involves looking at spores and other parts with a compound microscope. Many other organisms inhabit the same microscopic world and are often seen during examination. The nematode pictured below was woven through the peridial net of a *Cribraria stellifera*.

In the 1914 edition of the Yearbook of the United States Department of Agriculture, the American parasitologist Nathan A. Cobb wrote:

If all the matter in the universe except the nematodes were swept away, our world would still be dimly recognizable, and if, as disembodied spirits, we could then investigate it, we should find its mountains, hills, vales, rivers, lakes and oceans represented by a thin film of nematodes. The location of towns would be decipherable, since for every massing of human beings there would be a corresponding massing of certain nematodes. Trees would still stand in ghostly rows representing our streets and highways. The location of the various plants and animals would still be decipherable, and, had we sufficient knowledge, in many cases even their species could be determined by an examination of their erstwhile nematode parasites.

Thanks to Dr Tom May (president of Fungimap and senior mycologist at the Royal Botanic Gardens, Melbourne) for identifying the animal as a nematode and sending the quote. Tom remarked that he often finds nematodes when looking at mushroom tissues.

http://blog.sciencemusings.com/2009/09/and-speaking-of-worms.html



Nematode woven through the 0.2 mm wide peridial net of Cribraria stellifera (400x).

Sue's Garden - by Jo Lawrence

Herbicides for Roadside Management—how far should we go?

Herbert Staubmann

The following draft discussion paper for natural resource managers and others is meant to raise an issue with people who work in or are interested in natural resource management i.e. works managers/supervisors, environmental officers/engineers, NRM officers, weeds officers, farmers, people interested in water quality, road users (for recreation or otherwise), tourism operators and tourists.

Our road managers have decided to use herbicides to 'control' (kill) a wide strip of vegetation along most of our roadsides.

They are not targeting specific weeds or difficult to slash areas but have adopted the practice of 'clearing'—with herbicides—a one to two metre wide strip of vegetation from the sealed edge. This is regardless of what plants are growing there, whether there is a drainage obstruction or a visibility/safety issue. This practice has been added to the long standing practice of mechanical shoulder grading and slashing to maintain our roadsides.

As a horticulturist/ contractor working in the vegetation rehabilitation industry (including roadside vegetation) for the last 25 years, I have noticed and question this practice.

I have briefly questioned a Municipal Council about the practice and their reply suggests a narrow focus (see page 13). They are not alone, as this practice has become commonplace in the last 6–12 months. Basically, it is probably done this way because it is easy, cheap and convenient. I also think it hasn't been thought through sufficiently.

In an attempt to take a holistic look, here are **seven reasons not to do it**:

1.) Pollution from road surface:

A strip of healthy grass along the road-verge and dense vegetation in the adjoining table drains act together to trap pollutants that are washed off the road before they reach the drains and flow into our creeks, rivers, estuaries and finally the ocean.

This long strip of vegetation acts like an artificial wetland. Particles of plastic, oil, grease, rubber, heavy metals, and dust are washed off the road surface and get trapped in this vegetation filter (where biological break-down occurs) before polluting our watercourses.

The US Environmental Protection Authority for example, specifically recommend keeping healthy vegetation along roadsides for treatment of stormwater runoff from the road infrastructure. (Fig. 1)
http://www.epa.gov/owow/NPS/roads.html.

2. Erosion from road-verges:

A healthy strip of grass binds soil and dust particles on the road embankments, preventing the erosion of gravel and soil during heavy rain events. Once eroded and in suspension these fine particles move with water through table drains – creeks – rivers and finally end up in the Tamar Estuary. Very expensive (federally funded) dredging work is then employed to deal with this 'silt problem' in the estuary. Silt and pollutants are either removed or flushed further down the estuary. Between source (the road sides) and final destination (in this case the Tamar River) these fine suspended particles greatly reduce the water quality of our creeks and rivers. (Fig. 2)

3.) Pollution from chemicals used:

Q: What is used to kill the green grass?
A: Glyphosate and Brush-Off® (according to one Municipal Council).

According to the National Pesticide

Information Centre's Fact Sheet Glyphosate has relatively low toxicity and once in the environment has a half-life in soil of 2 to 197 days and in water the median half-life varies between a few days and 91 days. (http://npic.orst.edu/factsheets/glyphotech.pdf.)

Brush-Off® herbicide contains 600g/kg Metsulfuron Methyl. The herbicide label, under Protection of Wildlife, Fish, Crustacea and Environment states: DO NOT contaminate streams, river or waterways with the chemical or used containers.

These roadside drains are the fine arteries of our drainage systems. The runoff is directed into our natural streams.

Q: How much chemical is used?

A: To get a figure we would have to ask each council and the State Government how many kilometres of road they are spraying and at what rate the herbicides are applied.

Meander Valley Council (MVC) advised that they are spraying approximately 350 km of road in April 2015. (Public Notices, Examiner, Sat. 11/04/2015)

A 'back of the envelope' calculation: 350 km x 1.5 m wide strip x 2 (both sides of the road) = 105 ha sprayed with herbicide. At the Label recommended rate of 10g/ha Brush Off® (600g/kg Metsulfuron Methyl) and 4.8 l/ha glyphosate (450g/l glyphosate) that would be 1kg of Brush Off® and 500 litres of glyphosate used in one application of roadside spraying by MVC. Add to that the chemicals used on state roads in the municipality.

According to the Australian Government Department of Infrastructure and Regional Development Web site Tasmania's council managed local (sealed) road network is 6937 km. (http://www.regional.gov.au/local/publications/reports/2003_2004/C4.aspx)

Tasmania's state government managed (sealed?) road network is 3650 km. (http://www.transport.tas.gov.au/__data/assets/pdf_file/0016/20734/Tasmanian_State_Road_Hierarchy.pdf)

It would appear that most of the roads in the north, north east and northwest have been sprayed. If this is done over the whole state, a 'back of the envelope' calculation suggests: 3000 ha sprayed, resulting in about 30 kg of Brush Off® and 14 400 litres of glyphosate used in one application of roadside spraying over the whole state.

Note: Application rates for control of woody and perennial weeds in non-agricultural areas range from 1.2 to 7.2 litres/ha and 10 to 80 g/ha for glyphosate 450 and Brush-Off® respectively. So the 'back of the envelope calcula-

Fig. 1 Road verge and table drain sprayed twice to clear vegetation. Storm water runoff can flush pollutants from road surface directly via drains into our creeks without first filtering through a grassy filter strip.

Fig. 2 Vegetation killed on steep embankments around culvert intakes leads to erosion of soil and gravel, pollution of watercourses by suspended particles and siltation of our estuaries.

tions used above are estimates. The actual rate used would have to be provided by council and state contractors. (Record keeping of spray applications is mandatory under the Agricultural and Veterinary Chemicals (Control of Use) Act 1995.)

4. Weed incursion

Using herbicides to control vegetation without replacing it with some other vegetation or non-vegetation cover (e.g. another crop, mulch, concrete…) does not work unless you keep repeating it at infinitum. That is, short life-cycle plants/weeds will colonise the bare ground created by killing off grass. This can already be observed after the first spray round. To keep the ground clear of any vegetation may take 4 (or 5) repeat sprays per year.

Referring to point 3 briefly, the 'Back of the envelope' calculation with 4 repeat sprays: = 120kg of Brush-Off and 56 600 litres of glyphosate (concentrate) to keep our gravel shoulders clear of greenery. (Fig. 3)

This is an estimate, as actual application is unknown. However even half that amount is a lot of additional herbicides applied right into our storm water drainage system.

Fig 3 Herbicide applied once, from the sealed edge across the table drain. Short lifecycle weeds are starting to dominate on the gravel shoulder. More frequent spraying is required to keep weeds from seeding into the bare area as well as into neighbouring properties.

5. Risk of Herbicide resistant weed development

This point may be technical but anyone with a basic grasp of 'natural selection' can understand it.

The repeated use of the same herbicide(s) increases the risk of the development of herbicide resistant weeds over time. Along the 'edge' or 'boundary' of a sprayed area some plants will receive a sub-lethal dose of herbicide (a few drops on a leaf only – not sufficient to kill the plant). Those individuals that are best able to survive these low doses can reproduce and pass on their genes. This has already happened in cropping situations in Australia and other countries.

The problem is already big enough for manufactures of both glyphosate and metsulfuron methyl based herbicides to give a **Resistant Weeds Warning** on the label.

For example, the label on Wipe-Out® (a common glyphosate containing herbicide) states:

For weed resistance management Wipe-Out 450 is a group M herbicide. Some naturally occurring weed biotypes resistant to Wipe-Out 450 and other Group M herbicides may exist through normal genetic variability in any weed population. The resistant individual can eventually dominate the weed population if these herbicides are used repeatedly.

Of course the statement goes on to insist that the manufacturer, Adama Australia Pty Ltd accept no liability for any losses.

The warning on the Brush Off® label is almost word for word, except that it is an ASL inhibitor (Group B herbicide). The label goes on to say:

some populations of annual Ryegrass and a few broadleaf weeds are already known to be resistant to Brush-Off® … since the occurrence of resistant weeds is difficult to detect prior to use, Du Pont (Australia) Ltd. accepts no liability…

The label goes on to suggest using herbicides

with different modes of action to minimise the risk of resistant weeds occurring and that

Large numbers of healthy surviving weeds can be an indication that resistance is developing. Efforts should be taken to prevent seed set of these survivors. DO NOT make more than one application of ALS inhibitor herbicide to a pasture in any one year. If the user suspects that an ALS inhibitor resistant weed is present, Brush-Off or other ALS inhibitor herbicides should not be used …

Further to that, the Australian Glyphosate Sustainability Working Group was established in 2004 to deal with glyphosate resistance issues. http://www.glyphosateresistance.org.au/ and http://www.glyphosateresistance.org.au/posters/GW%20Poster_roadsides_etc_v6.pdf

The point is that these herbicides are important tools for agricultural production and overuse can compromise the availability of these for the future. Note that manufacturers deny any liability.

6. Remnant native vegetation and threatened species on roadsides.

Some of our roadsides are refuges for native vegetation including rare or threatened species. Over the last 25 years significant tax funds have produced maps and reports and management plans/systems to better manage this valued vegetation. Councils were consulted, contractors and managers attended field days. Some of this is available in book form and on the web. http://trove.nla.gov.au/work/27226797?selectedversion=NBD42407891

http://www.transport.tas.gov.au/__data/assets/pdf_file/0013/12037/EnviromarkUserGuide.pdf

An example where markers signifying important native vegetation / threatened species were ignored by spraying contractors.

7. Not a good look

Green plants on our roadsides actually enhance Tasmania's 'Clean Green Image'. A healthy strip of green grass is appealing to the eye and is one reason why most of us, at least instinctively, like lawns and green fields. It visually softens the road corridor. Watch a bit of the 'Tour de France' to see how the French manage their 'Clean Green' image without making a big fuss. They are not the only ones.

Not a Tasmanian roadside. That's how the French do it - green grass all the way to the edge of the sealed road.

One Municipal Council has given me four reasons why they have to spray:

1. Keep guideposts and bridge approaches visible.
2. Maintain a gravel shoulder for safety reasons.
3. Improve water flow (drainage) from the road surface to the table drains and
4. To complement their annual capital reseal program, i.e. maintaining gravel shoulders until resealing occurs.

Why spray? Is it attractive? Does it save on mowing costs? Unless resprayed several times each year this bare strip will be occupied by short life cycle weeds.

A Tasmanian road corridor. Table drains are cleaned with excavator and sprayed twice to prevent any regrowth. This will need to be done more often as there is already a tinge of green appearing again.

Other reasons could include fire break maintenance and wildlife visibility. However, none of the stated reasons indicates any concern for the natural environment. They are totally engineering and economic concerns.

General replies could be:

1. Guide posts and bridge approaches can be kept visible by slashing or other methods such as steam weeding.
(http://steamweeders.com.au/technology/)

2. Gravel shoulders can be safe when firm and unsafe/slippery when loose or soft. Spraying is not restricted to strip of gravel next to the seal but extends in many cases from the seal down the embankment/shoulder and across the table drain. An indiscriminate strip is sprayed, it appears, from one end of the state to the other.

3. Water flow from the road to the table drains can be achieved by having a gently sloping shoulder, level with the road seal, to allow the water to get off the road. From there it should flow through a dense thatch of grass between shoulder and table drain and then through a well vegetated drain into our creeks.

4. A strip of gravel next to the sealed edge is a normal "shoulder" (say 500 mm wide). There is no logical reason to spray the embankment of the shoulder and the table drains to complement a reseal program.

Council and State road managers may have other reasons why they have adopted this herbicide practice. As mentioned above, it is assumed that it is done because it is cheap, easy and convenient. There are many reasons why the practice should be discontinued. None of the arguments against the practice are described in a fully comprehensive way, but are sufficient to raise the issues for deliberation and discussion. Short term economic cost is probably the principle justification but his does not consider the longer term environmental or aesthetic implications - these all must be taken into account by a professional road manager. Rethinking should result in changing current practices before more serious damage to our road verges occurs.

Please note that residents of the Meander Valley Municipality (and probably other municipalities) can request that the council do not apply weedicides adjacent to their property.

Changes at CNFN Inc.

The AGM of the Central North Field Naturalists was held at Jim Nelson's place at Weegena on December 6th. The positions of president and treasurer were vacated by Phil Collier and Sarah Lloyd. We thank them for their contribution and welcome new president Peter Lawrence and treasurer Martha McQueen. Ron Nagorcka will remain secretary and Sarah Lloyd will continue as editor of *The Natural News*.

Members decided to support the work of three organisations. We will donate $500.00 to the Tasmanian Land Conservancy (TLC) to support the purchase of Panatana on the Rubicon estuary. This land is being jointly purchased by the TLC and the Indigenous Land Council (ILC).

CNFN will donate $1000 towards Fungimap's educational and scientific activities in the Tarkine in May 2016.

Members also voted to apply for membership of the Environmental Defenders Office (EDO) in Tasmania, a non-profit community legal centre advising on environmental and planning law.

We thank our many members who continue to make generous donations. It is these funds that enable us to support the important work of groups like TLC, EDO and Fungimap.

President

Peter Lawrence spent his childhood in Hobart. He studied agriculture at the Waite Institute in Adelaide and gained a PhD in the United States. He worked as a plant breeder for an International Agricultural Research Institute in India and Burkino Faso, established and managed a national seed bank (plant genetic resources) in Australia for tropical field crops and pastures including a national online database for all plant genetic resources in Australia. Peter retired 5 years ago in Wynyard and where he lives with his wife Jo in a passive solar house.

Treasurer

Martha McQueen spent her childhood in northern California and moved to Tasmania 30 years ago, after living in England, Queensland, Victoria, Texas and West Virginia. She now works as library technician and literacy/speech pathology aide at Hagley Farm School where she won the Tasmanian library technician of the year award in 2013. She views taking on the treasurer's position as a way to contribute to a group in which members (including husband Rod) are "much more knowledgeable, but warmly welcoming to the casual bystander in their midst".

A membership form is being included with the newsletter. The new postal address for membership subscriptions is:

Martha McQueen (CNFN Treasurer)
PO Box 131
Westbury 7303
Tasmania

We strongly encourage members to pay subscriptions electronically or, if they do not have internet banking facilities, to visit their local Bendigo Bank or branch and pay directly into the CNFN account:

Account: Central North Field Naturalists Inc
BSB 633000
Account 151729407
Bendigo Bank Deloraine Community Bank Branch

We wish all members and friends a happy festive season and best wishes for 2016.

Walks and other events

January 2nd, Rat's Castle: A great place to see alpine plants, especially cushion plants. Meet at 10.00 at the small carpark at the start of the walking track to Rat's Castle. The turnoff to Rat's Castle is 12 km south of the Pine Lake Carpark. (Attendance record: Ron Nagorcka)

February 14th, Penguin Shelf: Meet at 10.00 near the model train at Johnsons Beach, the westernmost beach in Penguin. (Head west from the shops on the Penguin waterfront, turn right into Johnsons Beach Road immediately before the railway crossing.) Low tide is at 11:30, which is an ideal time to check out the abundant life in the rock pools. (Attendance record: Rod McQueen)

March 6th, Narawntapu NP: A number of migratory wader species spend the summer in Tasmania including at Narawntapu NP. Meet at 10.00 at the visitors centre. Bring binoculars and spotting scope if you have one. (Attendance record: Hazel Britton)

April 3rd, Oura Oura Bush Heritage Reserve at Liffey: Oura Oura Reserve was donated to Bush Heritage in 2011 by Bob Brown and Paul Thomas to mark the 20th anniversary of Bush Heritage. The cottage in the grounds has played an important role in the Australian conservation movement. Meet at 10.00 in the car park on the south side of Gulf Road (C513), approximately 4 km to the west of Liffey village. The car park is clearly marked with the Bush Heritage Oura Oura sign. The Bush Heritage website (www.bushheritage.org.au/get-involved/visit/oura-oura) has two maps showing the location of the Reserve. (Attendance record: Patricia Ellison)

11-14 March 2016 The Launceston Field Naturalists Club is hosting the next Federation Weekend at Gowrie Park on the long weekend in March. In keeping with Federation Weekend tradition the evening meals will be: Friday - BYO and self cater. Saturday - Barbecue, BYO meat with a salad or desert to share. Sunday - the local restaurant or BYO and self cater.
Evening talks will be as follows:
Friday - Introduction to the weekend program with member talks.
Saturday - Guest speaker Bob Mesibov and introduction to the Sunday program.
Sunday - Member talks with introduction to the Monday program.
(either the Saturday or Sunday field trip will be in the area of one of the caves. The day will finish early with an option to join a regular cave trip, join us on a short field trip or have an hour off before the meal) Noel Manning (03) 6344 2277 or 0458 030 767.

Contributions to the newsletter are welcome. Please email articles and photos separately to Sarah Lloyd (see below). Deadlines: November 30, March 30, July 30

President: Peter Lawrence / 6442 5428 / petjola@gmail.com
Secretary: Ron Nagorcka / 63961380 / ronald.nagorcka@gmail.com
Treasurer: Martha McQueen / 6393 2121 / martha.mcqueen@iinet.net.au
Newsletter editor: Sarah Lloyd / 6396 1380 / sarahlloyd@iprimus.com.au
Patron: Dr Peter McQuillan