

December 2012
ISSN: 1836-2761

OBJECT: To foster an interest in nature

MEETING—THURSDAY 6th December
6:30pm Australian National University
Venue details back page

CHRISTMAS PARTY !!



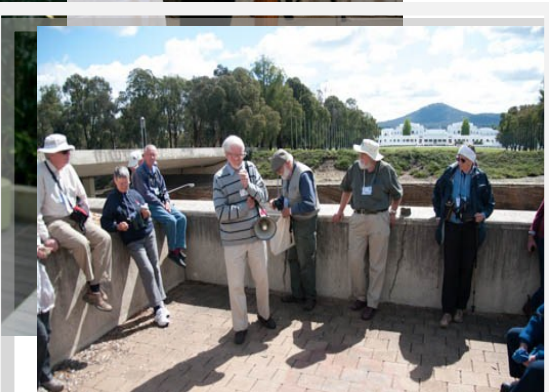
As usual, there is no formal meeting in December but we will get together for a couple of hours for a social Christmas celebration. Bring something to eat and drink and share some Christmas treats.

Please note we will be meeting in Building 44 - next door and downstairs from where we usually meet and at 6:30 pm not 7:30 pm

FIELD NATURALISTS' ASSOCIATION OF CANBERRA INC. GPO BOX 249
CANBERRA ACT 2601

FIELD NATURALIST

Photographs from ANN



Most photos by Pamela Home

CONTENTS

Page 2	Outing; News from the Committee; Lichens
Page 4 & 5	ANN letter; Charles Darwin in Australia
Page 6 & 7	Weed threats in the ACT

OUTING— SATURDAY DECEMBER 8 from 7:30 pm MULLIGANS FLAT— SPOTLIGHTING

Mulligans Flat contains a diverse mosaic of grassland, woodland and forest habitats. We should see possums, gliders and possibly bettongs. (The removal of foxes is helping in making possums more common on the ground.) However, you never know with spotlighting whether you will have a highlight or a disappointment. One drawback at the moment is the length of the grass.

I have been in touch with the ranger (Grant Woodbridge) and they are aware of our excursion plans. He advised that the woolshed and toilets will be closed at that time.

If coming please bring a torch and / or spotlight, plus mosquito protection.

We will meet via the woodland gate off Amy Ackman Street in the suburb of Forde at 7:30pm

Chris Bunn (02 6241 2968 or 0417407 351)

NEWS FROM THE COMMITTEE

More great speakers to look forward to in 2013

Thursday 7th February - Ian Haynes In 2010 and again in 2012 Ian travelled around the UK from south to north exploring its far flung reaches, studying its history and photographing the landscapes.

Thursday 4th April—Tonya Haff—an animal behaviour researcher.

We are also planning for a bird walk around Lake Ginninderra in February.

We have come out on the right side of the ledger with ANN. It was decided to put some of the money towards producing a better FNAC brochure—colour printing, better paper, more detailed information etc. Another idea was to work jointly with Parkcare groups to produce brochures on the natural history of selected nature reserves. HOWEVER the committee would like to hear other ideas from club members. (The total amount involved is around \$3000.)

Individual members of the committee are investigating potential participation in Seniors week; Science week; national bird week and heritage week.

A possibility next year is to have some longer weekend outings. Possibly in April and October. Again the committee is interested in where to go and offers to assist in organisation.

The November outing to Hall provided an handout about Lichens. So apart from seeing some native flowering plants we also had a look at a variety of lichens. *Information extracted from www.anbg.gov.au/lichen/index.html written by Heino Lepp November 2012*

LICHENS

A lichen is not a single organism. Rather, it is a symbiosis between different organisms - a fungus and an alga or cyanobacterium. The non-fungal partner contains chlorophyll and is called the **photobiont**. The fungal partner may be referred to as the **mycobiont**. When looked at microscopically, the fungal partner is seen to be composed of filamentous cells and each such filament is called a **hypha**. These hyphae grow by extension and may branch but keep a constant diameter. Amongst the photobionts there are those that are also filamentous in structure while others are composed of chains or clusters of more-or-less globose cells.

Given that they contain chlorophyll, algae and cyanobacteria can manufacture. By contrast, fungi do not make their own carbohydrates. Every fungus needs existing organic matter from which to obtain carbon. In a lichen some of the carbohydrate produced by the photobiont is 'harvested' by the mycobiont.

Worldwide, over 20,000 species are known and over 3,000 are known from Australia.

Lichens possess structures not formed by either of the partners and produce chemicals usually absent when the fungus or the photobiont are cultivated separately and so lichens are more *than a sum of their parts*. In fact, lichens synthesize over 800 substances, many of them not found elsewhere in nature. Though the fungi that form lichens do not occur in nature as independent organisms, a number of the photobionts can be found in free-living forms.

Lichens show a variety of growth forms and there are terms used to name these forms. The following are three very commonly seen types:

Fruticose lichens are erect or pendulous and markedly three-dimensional.

Crustose lichens are markedly two dimensional and firmly attached to the substrate by their entire

(Continued on page 3)

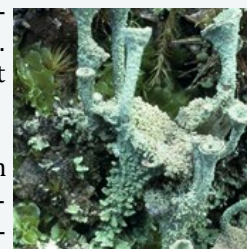
(Continued from page 2)

lower surfaces, making it impossible to see a crustose lichen's under surface. A crustose lichen looks very much like a thin crust on the substrate.

Foliose lichens could be thought of as halfway between crustose and fruticose. Though obviously three dimensional they grow in a more-or-less sheet-like form, but often with a lobed appearance. They are not attached by their entire lower surfaces to their substrates. Some foliose lichens are just centrally attached to their substrates with the rest loose, so making it possible to see both the lower and upper surfaces very easily

Those three growth forms will account for the majority of genera that most people are likely to see.

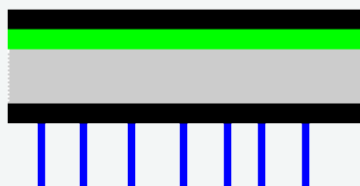
However, it isn't quite that simple. It is also worth mentioning the concept of a **squamulose** lichen since the genus *Cladonia* is very widespread and often shows a squamulose growth form. But the species in the genus also produce upright fruticose structures called **podetia** - sometimes with the appearance of fairly simple stalks, sometimes flared at the apex and so presenting a somewhat trumpet-like form.



In general a particular species will show the same growth form, no matter where it grows.

The bulk of each lichen is called the **thallus**. The thallus is composed of fungal and photobiont cells, so well united as to give the impression that you are looking at just one organism.

Let's concentrate on *Paraparmelia lithophiloides*. The thallus of a foliose lichen is more-or-less flat in form so let's see what the thallus looks like in cross-section. The upper surface is composed of compacted hyphae and this band of compacted hyphae is called a **cortex**. Below the cortex is a band of photobiont cells and below that is the **medulla**, an area of loosely arranged hyphae. It is in the medulla that the fungus stores the nutrients it has "harvested" from the photobiont. Below the medulla is the lower surface of the thallus, composed of compacted hyphae and constituting another cortex. From the lower cortex root-like bundles of hyphae, called **rhizines**, anchor the thallus to the substrate. On the other hand, a crustose lichen lacks a lower cortex. It is meaningless to talk of upper and lower sides in the branches of a fruticose lichen. In such lichens any cortex would constitute the outermost band of each branch, with the photobiont cells typically immediately inward from the cortex and the medulla occupying the central area within the branch. Some species lack rhizines or are without a cortex.



Reproduction, dispersal & distribution

Lichens may reproduce asexually (or vegetatively) by several methods. A fragment broken off from a lichen thallus may grow into a new thallus. This is a means of vegetative propagation, the new thallus being genetically identical to the thallus from which the fragment came. Many lichens are brittle when dry and are therefore easily fragmented, for example by some animal stepping on a dry thallus. Obviously fragmentation is especially easy with the foliose and crustose species. Fragmentation could be described as 'accidental' vegetative reproduction. There are also other, more specialized, means of vegetative reproduction. The surface of a thallus may show minute, powdery granules (called **soredia**), each soredium consisting of a few photobiont cells surrounded by fungal filaments. Also, the thallus may produce tiny, simple or branched spiny outgrowths (called **isidia**), again a mixture of fungal and photobiont cells. The isidia are easily broken and both they and the soredia are easily dispersed and contain everything needed to produce new thalli. There are species which produce neither soredia nor isidia, others produce both and yet others will produce only one of the two.

Only the fungal partner reproduces sexually, with the spores often produced in a long-lived saucer-like structure called an **apothecium**, which is easily visible to the naked eye in many species. Instead of apothecia various lichens produce their fungal spores in perithecia, a **perithecium** being a small, and typically black, hemispherical pustule within which the asci are produced. A group of lichens with striking spore producing structures are the so-called **graphid** lichens, which produce their fungal spores in apothecia that are elongated and narrow and are called **lirellae**. Lirellae look like short scribbles on the thallus and the term graphid is derived from the classical Greek word for 'writing'.

Spores or vegetative propagules may be dispersed by various agents. Fungal spores are quite small and it is easy to understand that, once ejected into the air, they could be easily carried away by even the slightest of breezes. Obviously water is another potential dispersal agent, and animals are a third. For example, migratory birds may pick up vegetative propagules inadvertently and carry them considerable distances.

Various distribution patterns do show themselves. There are endemic Australian species, Australasian species, Gondwanan species, bi-polar species, virtually cosmopolitan species and numerous other patterns.

An important aspect of lichen ecology is the concept of microhabitat. For example some will grow only on bark others on leaves in the same general habitat.

Draft Minutes of 2012 FNAC AGM, Thursday 4 October

The President, Chris Bunn, opened the AGM at 7:45 pm.

Minutes of Previous AGM – there were no minutes available. It was agreed that the minutes would be placed in the next Newsletter (*D/N - yet to be done*)

President's Report – the full report was to appear in the November Newsletter (*in this newsletter*). Chris commented on the wide range of talks and outings that were provided. Although we were a small club, there were many helpers. The club faced a few challenges, but he felt that the club would continue to prosper.

Motion to accept President's Report: Nom. Bob Lehman; Sec. Rosemary Blemings; passed.

Financial Report – circulated by Treasurer, Bob Lehman. Bob thanked Pam for her work with the monthly raffle. He noted a significant donation of \$300.*

Motion to accept Financial Report: Nom. Pam Finger; Sec. Dierk von Behrens; passed.

The Treasurer then provided some information about the forthcoming ANN gathering. There were to be 78 interstate visitors, but after withdrawals this had fallen to 61. There were also 20 locals. The estimated revenue was over \$32,500. This should more than cover estimated expenditure, but more expenditure was anticipated, e.g. for additional buses in evenings. The visitors would be covered by our insurance.

Auditor – finally the Treasurer moved that we appoint the same auditor again. This was seconded by Rosemary von Behrens and passed.

Election of Office Bearers – Dierk von Behrens was appointed as Returning Officer.

Position	Nominee	Nominator	Secunder
President	Rosemary von Behrens	Rosemary Blemings	Warwick Daniels
Vice-President	Chris Bunn	Rosemary Blemings	Bob Lehman
Secretary	Tony Lawson	Chris Bunn	Rosemary von Behrens
Treasurer	Bob Lehman	Tony Lawson	George Heinsohn
Public Officer	Chris Bunn	(appointed)	
<i>Committee</i>			
	Rosemary Blemings	George Heinsohn	Pam Finger
	Pam Finger	Naarilla Hirsch	Shirley Daniels
	Margaret Kalms	Rosemary Blemings	Adrienne Nicholson

Each nomination was accepted and the above constitute the FNAC Committee for the next 12 months.

(Margaret was away, but she has since agreed to be a Committee Member again.) The Committee can co-opt additional members, e.g. Dierk, who could not be nominated as he was Returning Officer.

The AGM closed at 8:15 pm.

It was followed by a general meeting, led by our new President, Rosemary von Behrens, to discuss the forthcoming ANN gathering.

- For the year ending June 2012 the Treasurer tabled a Balance sheet and Income/Expenditure Statement. Members' fund stood at \$16,378 and income exceed expenditure by \$1395.71

ANN 2012 October 13 – 21.

Dear Field Natters,

I would especially like to thank the FNAC Australian Naturalists Network Committee 2012, Chris Bunn, Rosemary Blemings, Tony Lawson, Bob Lehman and Dierk von Behrens for all their help in organizing this year's event and for sticking with it over a two year period. Many hugs of appreciation also to those of you who turned up and guided, helped and met the interstate participants on the various outings. I could not have done it without you all.

We tried to show that Canberra was not just our Federal Parliament and I think we succeeded in that. The visits to the Herbariums (CSIRO and ANBG), CSIRO Discovery, the National Wildlife Collection, Tidbinbilla, Deep Space Complex, Mulligans, Namadgi, National Library, National Gallery, National Botanic Gardens, Geoscience, the Archives, Reptile Sanctuary and our speakers, all showed the generosity of spirit and the expert knowledge held in these places by our public servants, often struggling, it must be said, to do their work in light of financial constraints. We acknowledge and applaud their work. They in their turn, I believe, were delighted at the keen interest

(Continued on page 5)

(Continued from page 4)

shown in their chosen field and the information held by our participants.

The following excerpts are taken from emails I have received since the participants returned home.

THANK YOU:

- to all your other helpers for making the ANN meeting such an enjoyable and stimulating experience. Alan and Hazel
- for making the ANN such a wonderful week. I am still raving about everything. Bev
- I thought it was absolutely fantastic and I really appreciate all the time you gave to make it such an awesome eight days. You selected such an interesting program. ... I returned to school today and everyone asked me what I had been up to and I did not know where to start. We accomplished so much and saw and did so many exciting, interesting things. I had the Year Twos today and we had fun finding where the ACT is and learning all sorts of things about our capital city from Parliament House to wombats and echidnas.
Pam
- to all the members of FNAC who were involved to make the Get-together such a success.... an interesting and enjoyable program. We particularly enjoyed the behind the scenes visit to the Australian National Herbarium and National Library. All the trips into the natural environment were great, the most memorable were Mulligans Flat and Namadgi NP. John & Elaine
- for all the work in making such a great ANN Get-together – so many varied aspects of Canberra to enjoy, we had a wonderful time.
Helen

Sincerely, Rosemary von Behrens.

A NATURALIST'S REFLECTIONS

Charles Darwin

When Darwin visited Sydney, in 1836, as a young naturalist (aged twenty-seven) on H.M.S. Beagle,"he made a journey to Bathurst. On the way he was much impressed by the rugged scenery of the Blue Mountains, and, as this extract from his Journal shows, he saw some interesting creatures by the roadside.

In the dusk of the evening I took a stroll along a chain of ponds, which in this dry country represented the course of a river, and had the good fortune to see several examples of the famous platypus, or *Ornithorhynchus paradoxus*. They were diving and playing about the surface of the water, but showed so little of their bodies that they might easily have been mistaken for water-rats. Mr. Browne shot one certainly it is a most extraordinary animal; the stuffed specimens do not at all give a good idea of the recent appearance of its head and beak; the latter becoming hard and contracted.

A little time before this I had been lying on a sunny bank and was reflecting on the strange character of the animals of this country as compared with the rest of the world. An unbeliever in everything beyond his own reason might exclaim, "Two distinct Creators must have been at work; their object, however, has been the same, and certainly the end in each case is complete." While thus thinking, I observed the hollow conical pitfall of the lion-ant: first a fly fell down the treacherous slope and immediately disappeared; then came a large but unwary ant; its struggles to escape being very violent, those curious little jets of sand, described by Kirby as being flirted by the insect's tail, were promptly directed against the expected victim. But the ant enjoyed a better fate than the fly, and escaped the fatal jaws which lay concealed at the base of the conical hollow.

There can be no doubt but that this predacious larva belongs to the same genus with the European kind, though to a different species. Now what would the skeptic say to this? Would any two workmen ever have hit upon so beautiful, so simple, and yet so artificial a contrivance? It cannot be thought so; one Hand has surely worked throughout the universe.

From an old book (published 1964) Land of Wonder—the best Australian Nature writing. Edited by Alec Chisholm

Geoff Butler & Associates
Environmental & Horticultural Consultancy
38 Birchman's Grove, Wamboin, NSW 2620

ASSESSMENTS OF POTENTIAL WEED THREATS IN THE A.C.T.

The Natural Resource Protection Unit of the ACT Parks and Conservation Service is undertaking a project to assess a sample of weed species which are:

Sleeper weeds

This category covers invasive species that are already naturalised within the Territory but have not yet increased their population size exponentially;

New incursions

This category covers species that have only recently arrived in the Territory but have not necessarily spread widely, and there is a reasonable chance of containment and/or eradication.

Alert species

This category covers species that are known from nearby locations but not yet present in the Territory. They have the potential to become a significant threat to biodiversity if they arrive here and are not promptly contained and/or eradicated.

I have attached an incomplete draft list of species in each of these categories to provide examples.

The reason for this correspondence is to provide an opportunity for you and/or your organisation to: provide a list of any other species in each of the above categories which you believe warrant assessment, and provide any further information on any of the listed species provided. Any further species you wish to provide should not already be on the ACT declared pest plants listing, available at the ACT Government legislation web site: <http://www.legislation.act.gov.au/di/2009-67/current/pdf/2009-67.pdf>.

I am fully aware of the difficulty the Christmas holiday season imposes on consultation processes, especially as it relates to passing on information through community groups and similar organisations. The deadline for your contribution has therefore been set for Friday 11th January 2013, though earlier responses would be greatly appreciated. This project is due to be completed by the end of February 2013.

One of the proposed outcomes of this project will be to put in place procedures for rapid response to either eradicate or contain the spread of these groups of invasive plants.

I strongly encourage you to participate in this worthwhile project. If you require further information, please contact me by landline, mobile or email, the details of which are provided in the letterhead on page 1 of this correspondence.

Yours sincerely



Geoff Butler
27 November 2012

MASTER LIST OF UNDECLARED WEED SPECIES

SLEEPER WEEDS		
Scientific Name	Common Name(s)	Where Observed
<i>Agapanthus praecox subsp. orientalis</i>	Agapanthus, African Lily	
<i>Erigeron karvinskianus</i>	Seaside Daisy	
<i>Eschscholzia californica</i>	California Poppy, Golden Poppy, California Sunlight, Cup of Gold	
<i>Euphorbia lathyris</i>	Caper Spurge	
<i>Gazania linearis</i>	Gazania	
<i>Mahonia</i>		
<i>Nandina domestica</i>	Sacred Bamboo	
<i>Oenothera</i>	Evening Primrose	
<i>Oenothera lindheimeri</i> Syn: <i>Gaura lindheimeri</i>	Velvet-weed, Velvety Gaura, Downy Gaura, Small-flower Gaura, Butterfly Bush, Clockweed	
<i>Olea europaea subsp. europea</i>	European Olive	
<i>Olea europaea subsp. cuspidata</i>	African Olive	
<i>Osteospermum ecklonis</i>	African Daisy, Blue eyed Daisy, Cape Daisy, Freeway Daisy, Pink African Daisy, Seascape Daisy, Shrubby Daisy, Shrubby Daisy Bush, Trailing African Daisy, South African Daisy	
<i>Photinia robusta</i>	Photinia	
<i>Pistacia chinensis</i>	Chinese Pistachio	
<i>Prunus</i> sp.	Flowering Plum CV's	
<i>Viburnum tinus</i>	Laurustinus, Laurustinus Viburnum, Laurestine	
<i>Bidens subalternans</i>	Greater Beggar's Ticks	
NEW INCURSIONS		
Scientific Name	Common Name(s)	Where Observed
<i>Epilobium hirsutum</i>	Giant Willowherb, Codlins & Cream	Gungahlin Ponds
<i>Leucanthemum vulgare</i> Syn: <i>Chrysanthemum leucanthemum</i> <i>Chrysanthemum leucanthemum. var. boecheri</i> <i>Chrysanthemum leucanthemum var. pinnatifidum</i> <i>Leucanthemum leucanthemum</i> <i>Leucanthemum vulgare. var. pinnatifidum</i>	Ox-eye Daisy, Dog Daisy, Field Daisy, Marguerite, Moon Daisy, Moon-penny, Poor-land Flower, Poverty Weed, White Daisy,	
<i>Leycesteria formosa</i>	Himalayan Honeysuckle	
<i>Nassella tenuissima</i> Syn: <i>Stipa tenuissima</i>	Mexican Feather Grass, White Tussock, Fine-stem Needle Grass, Tussock Grass, Pony Tails, Angel's Hair	
<i>Senecio madagascariensis</i>	Madagascan Fireweed	
<i>Sagittaria deltophylla</i>	Delta Arrowhead	
ALERT SPECIES		
Scientific Name	Common Name(s)	Where Observed
<i>Hieracium aurantiacum</i>	Orange Hawkweed	N/A
<i>Hyparrhenia hirta</i>	Coolatai Grass	N/A
<i>Murraya koenigii</i>	Curry Plant	Seen in local nursery



Field Naturalists' Association of Canberra Inc.

Who are the Field Naturalists?

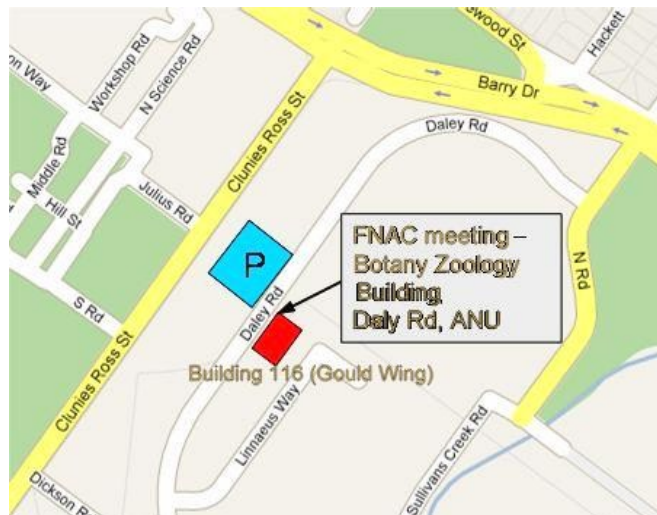
The Field Naturalists' Association of Canberra (FNAC) was formed in 1981. Our aim is to foster interest in natural history by means of meetings and regular field outings. Meetings are usually held on the first Thursday of each month. Outings range from weekend rambles to long weekends away. Activities are advertised in our monthly newsletter. We emphasise informality and the enjoyment of nature. New members are always welcome. If you wish to join FNAC, please fill in the member application below and send it in with your subscription to the FNAC Treasurer at the address below.

President: Rosemary von Behrens pH: 6254 1763

Email: fieldnaturalist@yahoo.com.au

Website: under construction

All newsletter contributions welcome.



Monthly meeting venue: Division of Botany and Zoology, Building 116, Daley Rd, Australian National University. Park (the Xmas meeting is at the adjacent building 44 and will start at the earlier time of 6:30 pm)

Field Naturalists' Association of Canberra

GPO Box 249

Canberra ACT 2601



MEMBERSHIP APPLICATION OR RENEWAL

Family name: First name:

If a family membership, please include the first names of other members of the family:

.....

Postal address:

Suburb: State: Postcode: Home phone:

Work phone: Email address:

Subscription enclosed: \$.....(Single/Family \$25) Donation: \$.....

How did you hear about FNAC? Please circle: FRIEND? OTHER? Please specify: