The Natural News

Central North Field Naturalists Inc.

No. 54 – April 2013

Common potoo, Leadbeater Photo S. Lloyd

What shall we call them?

by Phil Collier

Sun orchids. Almost the best we can do sometimes, but it's not nearly good enough. Most people who walk in the bush in spring time will be familiar with the blue flowers that are sometimes there and more often not. Flowers only open in warm conditions before this or after that; in fact when they prefer to open is not always easy to pin down. When sun-orchid flowers do open, most are plain blue, many are also spotted and some boldly striped. The few flowers that are not blue are pink or creamy yellow. In summary, there are more-or-less five obvious groups, with all of the groups having at least two named species. And this is where accurate identification starts to become difficult.

Those of us who study sun orchids create an annual set of images during each spring and summer. Later, we try once again to place them in named species or groups and find the right name for each. Just naming the common species is difficult enough, but of course we all seek the bragging rights that are earned by finding the rarer species.

Thelymitra mucida

At Rubicon Sanctuary we have up to 20 different species of sun orchid, or *Thelymitra* spp. We have long-standing problems with naming several "groups" of spotted and plain blue species. But we will avoid the complex story that could be written about these and focus on our new find this year.

Thelymitra sparsa

Robin has a knack of spotting key features of sun orchids that can rapidly raise my level of interest. A few years ago, Robin announced "yellow hairs", which set me off in a hurry to inspect a flower, later identified as a single specimen of the plum sun-orchid, *Thelymitra mucida*. This is a threatened species with few recent confirmed records in Tasmania.

This year Robin announced that she had found a spotted flower with no hairs, which set me off in a similar frenzy. This specimen proved to be one plant in a scattered group of five all with similar flowers. This was a much better start than the initial *T. mucida* find, where a single specimen might just be an aberrant or "peloric" form, to which orchids seem to be especially prone.

This time, though, the response has led to much head scratching. The best matching species is the wispy sun-orchid, *Thelymitra sparsa*, but this is known with certainty only from higher altitude mostly in the south east, with one stray lowland record from Three Hummock Island. There is an obvious relationship with the common spotted sun-orchid, *Thelymitra ixioides* and large-spotted sun-orchid, *Thelymitra juncifolia*, both of which we consider to be present at Rubicon Sanctuary, although even this is subject to "informed" debate.

Of course, as we are not taxonomists, all we can do is match groups of specimens to the best name we can find. So we have added *Thelymitra sparsa* to our list of species, but with the question mark in the background about whether this is just a sparsely hairy form of one of the other spotted sun-orchids. Given that there are only 14 currently known observations of the wispy sun-orchid (Atlas of Living Australia on 17 March 2013), it is puzzling that the species is not listed as threatened; maybe other people are also waiting for more certainty.

Thelymitra carnea

Thelymitra arenaria

Thelymitra ixioides

Thelymitra juncifolia

Platypus health and conservation research in the Inglis River Catchment

by James Macgregor

In the December 2011 edition of the Natural News I described a platypus health and conservation research project that I had just started in the Inglis River Catchment in northwest Tasmania. And in March 2012, I was fortunate to be able to describe the early stages of the work to a number of CNFN members who came to a field day at Frenchs Road Nature Reserve near Wynyard. The fieldwork for the project has now been underway for 19 months and to date we have performed health examinations on 134 wild platypuses from sites spread throughout the catchment. Each platypus was captured using fyke nets, was examined under anaesthesia in the field to minimise stress, and was released at the site of its capture without ever being removed from its natural environment. The health examinations have included a physical examination, a full health screen on blood samples, serological testing for certain infectious diseases, examination of blood and excreta for parasites, examination of excreta for bacterial infections, ultrasound of reproductive organs and ultrasound of tail fat stores.

In general, the platypuses we have examined have been in good health. We have observed a few minor infections but these did not appear to be affecting the individuals involved. However, in order to investigate whether any of these infections or other health parameters are associated with higher than normal mortality rates we are monitoring the survivorship of a proportion of the platypuses we have captured using a remote monitoring technique that we have successfully trailed. Our remote monitoring involves the use of instream microchip antennas placed in creeks to detect

fyke nets set in a creek

A platypus captured in a fyke net

Checking the remote monitoring technique by comparing the findings of two microchip reader systems in the same creek.

Ultrasound of the tail fat (the anaesthetised platypus is on its back)

the microchips that are routinely used to identify captured individuals. These microchips are almost identical to those used in domestic animals. When a microchipped platypus passes an antenna, its number and the time at which it passed is recorded in a decoder on the creek bank. Each antenna and decoder is powered by a solar panel system meaning that once installed the set-up is self-sufficient and can be visited every week or so to check that everything is in place and to download data from the decoder to a laptop. In addition to investigating the effects of disease, this remote monitoring will help us gather important ecological information relating to habitat use, longevity and long-term migration. For instance, some platypuses have been observed to move passed the antennas at very regular times, either every 24 hours or every 48 hours, whereas other platypuses move less regularly. One platypus was detected 8km from the site of its capture one month previously, and four platypuses have been detected at the site of their capture 5 years previously in our smaller scale project.

We are currently performing a survey of public sightings of platypuses to gain insights into platypus distribution and population density. It would be very helpful to this project if anyone who has seen a platypus in the Inglis River Catchment (Wynyard, Yolla, Takone, Oldina, Calder, Lapoinya, Moorleah, Boat Harbour, Sisters Beach, Sisters Creek and Myalla areas) could contact James Macgregor at

platypusproject@hotmail.com

to receive a copy of the survey questionnaire.

This project is being performed with the generous financial assistance of the following organisations/grants: Central North Field Naturalists, Winifred Violet Scott Estate, Caring for Our Country Community Action Grant, Holsworth Wildlife Research Endowment, National Geographic Society, Cradle Coast Natural Resource Management, Tasmanian Alkaloids, Australian Geographic Society, Universities Federation for Animal Welfare, The Forestry Practices Authority, Weston Fernie Research Fund. Equipment for the project has also been provided by the Forest Practices Authority and the Department of Primary Industries, Parks, Water and the Environment. My supervisors are Dr KristinWarren, Prof Ian Robertson, Dr Carly Holyoake and Dr Trish Fleming at the School of Veterinary and Biomedical Sciences, Murdoch University, Western Australia, Dr Sarah Munks at School of Zoology, University of Tasmania/Forest Practices Authority, Hobart, and Joanne Connolly, School of Animal and Veterinary Sciences, Charles Sturt University, NSW. We also have formal collaborations with Assoc Prof Kathy Belov, Australian Wildlife Genomics Group, University of Sydney, and Dr Rebecca Lonsdale, Diagnostic Veterinary Imaging, Western Australia.

Platypus swimming after release

Fungus at Jackeys Marsh

As late summer has been dry this year we saw only a few early season fungal species during our April field trip to Richard and Stevie Cooper's place at Jackeys Marsh. These included a *Scleroderma* species, *Marasmius* sp. and a few unidentified resupinate or paint splash fungi on dead wood.

A strange object (right) found under some rotting wood had us mystified for some time. - was it animal, vegetable or mineral? The thin strands were too numerous to be legs and it didn't look anything like a plant part. Eventually after a more thorough inspection it was agreed that there were some hairy legs present and the cream coloured strands were fungal. We had in fact found representatives of two kindgoms in one object: a spider with a fungal infection—definitely the fungal find of the day!

We enjoyed the company of members of the Launceston Field nats who joined us for the excursion and extend our sincere thanks to Richard and Stevie for allowing us to explore their beautiful property on the southern side of Quamby Bluff.

Dancing craneflies

by Sarah Lloyd

CNFN members spent the weekend of February 2nd and 3rd 2013 at the Iris Farm Nature Reserve, the beautiful property of John Wilson and Peter Sims on the Iris River. Members have visited Iris Farm on a number of occasions, and while there we always try to add to the already extensive species list. As it was World Wetland Day one of the aims of the weekend was to start documenting the plants growing in the several areas of wetlands which, unlike this time last year, were crispy dry during our visit.

Certain invertebrates, especially leeches and large flies, were particularly noticeable as were the dancing craneflies in the outside loo at the Trapper's Hut. As these large flies are a common and conspicuous feature of outside places (including our dunny) during summer in Tasmania, I had consulted Tony Daley who identified the flies from my photographs.

The dancing 'daddy longlegs' that congregate in the shadowy corners of many outside buildings in summer are craneflies in the fly family Tipulinae; their elongated palps and forewings without discal cells are characteristic of the genus *Dolichopeza*. There are nine recognised *Dolichopeza* species in Tasmania, of which at least half are endemic. The flies are very sensitive to light and spend the day resting in dark protected places with the different species preferring different haunts. It is quite common to find more than one species in the swarms.

Craneflies range in size from 2-3 mm to over 60 mm in body length. They belong to the fly family Tipulidae, the largest family of Diptera with about 15,000 species worldwide. The three subfamilies, Tipulinae, Limoniinae Cylindrotominae appear in fossils from the Upper Cretaceous, upper Triassic and the Eocene respectively.

Adult craneflies feed on liquids of plant and animal origin; larvae feed on rotting organic matter and soil organisms.

The following excerpt is taken from a paper about North American *Dolichopeza* by George W. Beyers:

> *Certainly the most spectacular activity of adults of Dolichopeza is their peculiar dancing flight. This is most easily observed in species of the obscura group because, somewhat restricted to certain niches by their reaction to the intensity of outside light, they will leave their darkened shelters by day only when greatly alarmed. Dropping from its resting position, the fly moves in a rather elliptical path, first downward and backward, then rising and forward keeping the head oriented more or less toward the original point of suspension. This cycle is repeated with such rapidity that the fly seems almost to fade from view, although the dance is limited to about a three-inch ellipse.*

Physarum album (1.2 mm)*

Physarum flaviconium (1.4 mm)*

Physarum globuliferum (1.1 mm)*

Stemonitopsis typhina (4.2 mm)*

Trichia spores on beetle

Tubifera bombarda (4.3 mm)*

Lamproderma sp. (2.6 mm)*

Lamproderma sp. (2.5 mm)*

Cribraria sp. with collembola (*Acanthamura* sp.)

Paradiachea caespitosa (2 mm) with beetles

Paradiachea cylindrica (2 mm)*

Hemitrichia intorta (2 mm)*

Physarum viride (2.2 mm)*

Stemonitis sp. (5.5 mm)

Stemonitis sp. (11 mm)*

Trichia botrytis (2.4 mm)*

Arcyria sp. (1.3 mm)

Arcyria denudata (2 mm)*

Fuligo septica (30 mm)*

Cribraria cancellata (1.9 mm)

Calomyxa metallica (1 mm)

This is a selection of the myxomycetes (slime moulds) that are included on an A2 poster featuring 88 of the approximately 100 species found so far at Black Sugarloaf, Birralee.

The numbers in brackets indicates the approximate size of the fruiting bodies. Species marked thus * have been lodged at the National Herbarium of Victoria (MEL).

The invertebrates depicted are often observed. Several collembolan species feed on plasmodia or immature fruiting bodies; two species of beetle are frequently observed feeding on the spores of mature fruiting bodies and appear to have a close association with myxomycetes.

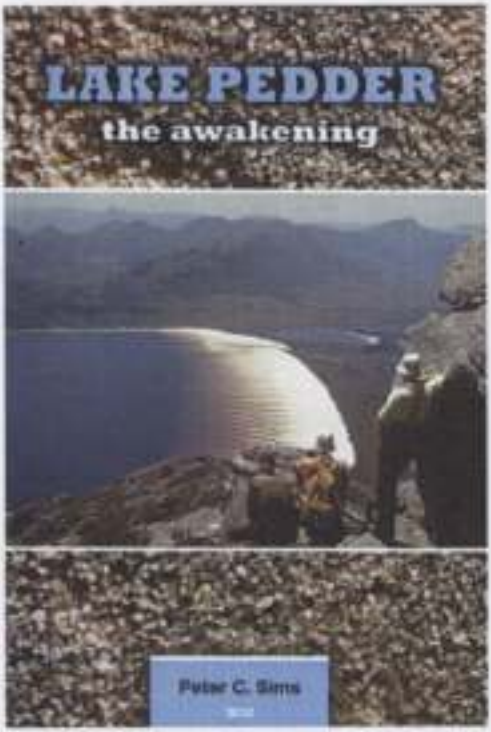
If anyone would like a copy of the poster please send payment to Sarah. ($30.00 incl. postage)

Please save your empty matchboxes!

www.disjunctnaturalists.com/slime-mould-log

Book Review

By Jim Nelson



LAKE PEDDER the awakening
By Peter C. Sims OAM
2013 Self Published
ISBN 0 646 20321 5 (paperback)

Peter Sims has written a book that tells the full story of the Lake Pedder conservation campaign that many have long wanted to hear. He first takes the reader through his own journey that led to his love of the quite special, pristine wilderness lake that was Lake Pedder. The book then details his and many other peoples' exhausting efforts to stop the vandalism that was proposed, all in the name of 'progress' of course. Even after all these years the tragedy of losing such a magnificent part of Tasmania is difficult to accept.

Lake Pedder, located in southwest Tasmania, became a National Park in 1955. Less than ten years later a Federal Government funded 'development road' was pushed into the southwest. This road into pristine wilderness eventually led to the flooding of Lake Pedder for a hydro scheme in 1972. But not without a determined battle that was waged by a dedicated and gradually growing group of conservationists focused on saving what was known as 'the jewel of Tasmania' from being dammed.

I had only recently arrived in Australia at the time, and was living in NSW where the news of the conservation battle was pretty sketchy. Nevertheless, all conservation minded people I knew were supportive of the efforts that were being made to save this special, pristine lake in the wilderness from such an ugly fate. We followed the campaign through the nightly news and in newspapers, and felt outrage at the smug politicians and the typically blind establishment support for the project. When the conservation campaign was eventually lost, we were devastated because we knew something very special would no longer exist, and that small, unimaginative minds had won the day.

After I moved to Tasmania, I met some of the campaigners for Lake Pedder and felt their bitterness as I heard stories of persecution and division. There had even been divisions within the conservation movement itself during the campaign. It was probably the eventual ironing out of some of those differences during and after the campaign that resulted in the foundations of a stronger conservation movement in Tasmania, along with an awareness of the need to make governments more accountable and representative.

A significant national icon was lost when Lake Pedder was flooded. However, the 'Save Lake Pedder National Park' campaign raised the national consciousness, and informed politicians that conservation issues were now

part of the national agenda. No longer would thinking people just accept that governments could run rough shod over treasured areas.

At the end of his book, Peter asks 'has anything really changed today, almost 50 years on?' Certainly, the Gordon below Franklin Dam campaign owed much to the experience gained from the Pedder campaign regarding getting people involved and organised. However, that campaign was finally won on what appeared to be the whim of a somewhat iconoclastic Prime Minister wanting to be popular; otherwise the result might have been very different.

The life of a conservationist is not an easy one. Peter Sims has gone on to achieve a great deal in his life, usually by being quietly persistent, wonderfully organised and totally dedicated. His OAM (Order of Australia Medal) is richly deserved as his conservation achievements have been outstanding. I was impressed by his Lake Pedder book, and am grateful to have finally heard the story of the campaign told personally and in detail by someone who was at the heart of it.

I believe the book almost immediately sold out. Hopefully there will be another printing.

Peter writes:

I can recall carrying three packs to ease the load for some during their walk across the buttongrass plains to Lake Pedder. We generally made good time. Stopping off on the way for a rest and for lunch, we'd arrive at the beach in good time to spend the afternoon to rest, explore and enjoy the surroundings. For some people, this was all a new experience, as they had never camped out before.

Lake Pedder the awakening contains many of Peter's beautiful photos along with copies of posters, newspaper articles, cartoons, maps and paintings.

The Common Potoo and Tawny Frogmouth

by Sarah Lloyd

It is not often that we get the opportunity to observe the behaviour of nocturnal birds. John Wilson's delightful story about Owl (issue 53) gave us an insight into the behaviour of a southern boobook, a widespread but cryptic species. We have been at Black Sugarloaf for over 20 years and although we often hear southern boobooks in the crepuscular hours we have never seen one here.

In contrast, tawny frogmouths are regular visitors that come to feed on the insects attracted to our house lights. They roost on an outside structure and keep a close watch as we approach. When we get too close they look skyward with eyes narrowed and adopt their branch-like pose.

The common potoo is a bird guide's dream bird! This nocturnal species, restricted to the forests of South America, always uses the same diurnal roost—usually a standing dead tree—whose colour is identical to the soft greys and browns of the bird's mottled plumage. We were shown one in the cloud forests of Ecuador (see front cover) and another in the flooded forest of Amazonia. Its camouflaged stance is similar to that of the tawny frogmouth, but because they are currently believed to be distantly related (this may change as taxonomists work on this tricky group of birds) it is debateable if this is a case of 'convergent evolution', a process whereby unrelated or distantly related species adopt similar external morphology or behaviour as each adapts to a similar way of life.

Tawny frogmouths and potoos belong to families in the order Caprimulgiformes: potoos are members of the Nyctibiidae, one of the many bird families confined to the Neotropics; frogmouths, the largest of the caprimulgiformes, are members of the Podargidae that occur in Malaysia, Papua New Guinea, the Solomon Islands and Australia.

While strikingly similar in appearance and habits, there are some noticeable differences.

Tawny frogmouths have massive ossified (i.e. hardened like bone) bills surrounded by a forest of rictal bristles. (Rictal bristles are stiff, modified feathers that are thought to protect the eyes of insectivorous birds from the scales of moths and other invertebrate prey.) They have short legs and weak feet and they pounce from a perch on non-flying animal prey of invertebrates, small reptiles, rodents and the occasional small bird which they take in their strong bills. Prey is softened by bashing before being swallowed whole. They build a scanty stick nest on a horizontal forked branch or they appropriate an old nest of a cuckoo-shrike, chough or magpie.

Common potoos have a relatively tiny bill (without rictal bristles) that opens wide into a huge gape. Their mostly solitary life is spent perched vertically on lookouts from which they sally after large insects. Like frogmouths, their cryptic colouring means they usually go undetected. If seen, they stretch their head upwards and remain motionless. Potoos don't build a nest but use a small depression in a horizontal branch.

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Convergent evolution

by Sarah Lloyd

The physical characteristics of birds such as bill shape, colour or the structure of their feet were once used to classify them. But similar features don't necessarily indicate a close relationship because birds (and many other animals and plants) evolve similarities in morphology, behaviour and/or ecological characteristics to cope with similar lifestyles, a process known as convergent evolution. In aquatic habitats dolphins (mammals), sharks (fish) and ichthyosaurs (extinct reptiles) are examples of convergent evolution.

There are many examples of convergent evolution in the bird world including swifts and swallows, nuthatches and sittellas, loons and grebes and cattle egrets and cowbirds.

welcome swallow

tawny frogmouths - adult and young

Swifts and swallows are remarkably similar in appearance: they both have streamlined bodies, long pointed wings and short bills for capturing insects as they fly through the air. But that's where the similarities end. Swallows are passerines so they have a more complex syrinx (vocal organ similar to our larynx) than swifts and they have the typical passerine foot structure of three toes forward and one back; swifts have four toes forward. Their wings, although long and pointed, are also different: swallows' wings are long as a result of the long radius and ulna (in the forearm or antebrachium) whereas the long wings of swifts result from an elongated manus (hand).

The white-breasted nuthatch of North America is similar to the varied sittellas of Australia.

Varied sittellas (family Pachycephalidae) are widespread on the Australian mainland but are absent from Tasmania. Anyone who has watched birds on several continents will know that they bear an uncanny resemblance to the nuthatches (Family Sittidae) of Europe and North America. Both forage by hopping head first down tree trunks while searching for invertebrates by probing tree crevices and under bark with their wedge-shaped bills.

Loons and grebes were once thought to be closely related because of their similar appearance and lifestyles. It is now known that grebes are not related to loons—or to any other group of birds.

red-throated loon of northern Europe

The hoary-headed grebe of Australia

The very different looking cattle egret and brown-headed cowbird evolved on different continents but both have converged on the same foraging strategy: they accompany large animals whose movements disturb insect prey.

Cushion plants are a great example of convergent evolution from the plant world. Three hundred plant species worldwide have evolved a cushion-like form to withstand the harsh climatic conditions of sub-alpine, alpine, arctic and subantarctic regions.

Each cushion plant is a mound of closely-packed stems that grow at the same rate. The resulting smooth round form allows a high rate of absorption of solar radiation so that below the green surface of tiny leaves the interior retains a fairly constant temperature. The mounds are also aerodynamically suited to minimise transpiration loss and to ameliorate the damaging effects of ice-laden winds.

Cushion plants are composed of different species from different families including Asteraceae, Epacridaceae, Cyperaceae and others.

Ants, seeds and stick insect eggs

The seeds of approximately 1500 Australian plants (e.g. wattles and peas) have a special surface structure called an elaiosome that secretes and stores oil and is particularly attractive to ants. Ants collect the seeds, carry them to their colony and feed the elaiosome to their larvae. The seed is occasionally eaten, but more often it is simply discarded, remaining in the ground until conditions are suitable for germination.

stick insect (Phasmatidae)

It is believed that seeds collected by ants have a better chance of germinating and surviving than those not collected because they are often placed in the ants' refuse piles, which are nutrient-rich and sheltered. Furthermore, many seeds require some heat to trigger germination but need to be buried slightly to avoid being burnt. And, being close to aggressive ants means they are less likely to be attacked by seed predators.

In yet another example of convergent evolution, the eggs of stick insects closely resemble seeds with elaiosomes, and are also taken underground by ants. Stick insects feed high in the foliage of trees and simply drop their eggs on the ground while feeding. Because the eggs take from one to three years to hatch they are extremely vulnerable to both fire and predation during this period. Transportation by ants to the safety of their underground colonies ensures the survival of the next generation of stick insects.

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Walks and other events

Walks are on the first Sunday of the month and start at 10.00 unless otherwise stated. Bring hand lens, notebook, food, water, appropriate clothing etc.

May 4th (NB Saturday) **Rubicon Sanctuary, 241 Parkers Ford Rd. Port Sorell.** Dr Genevieve Gates will lead a fungi walk. Please park on the roadside outside the gate and make sure your shoes are clean.

June 2nd Winter get-together at Jim Nelson's place at 68 Dynan's Bridge Road Weegena. Jim will bake pizzas and prepare the pastry. Please bring toppings to share.

July 7th Sykes Reserve, Railton. Turn off turn the Railton Main Road just opposite the Railton Primary School (into Sunnyside Road). Drive 500m, Sykes Sanctuary is on the left. Walk on pathway 100m to Monument Area.

August 4th Aboriginal Heritage and Albatross at Mersey Bluff, Devonport. Meet in the carpark at the lighthouse at the top of the Bluff. We will be joined by Paul Docking, Chairman of the Six Rivers Aboriginal Corporation, who will show us the Aboriginal heritage at the Bluff. Hazel Britton will be setting up her spotting scope to look for albatross.

September 8th Greens Beach. Meet at the Greens Beach shop for a walk out to West Head.

September TBA Monitoring *Spyridium obcordatum* **at Hawley Nature Reserve and Hawk Trap Hill, Port Sorell.** A small number of people are needed to assist with our annual monitoring. Please register interest with Phil Collier at phil@rubicon.org.au or 0438122110. A date will be organised in the second half of September with those people who are interested. For further information see 'Latest additions' at http://www.disjunctnaturalists.com/articles.htm

October 11–13 CNFN Inc is hosting the next Federation of Field Naturalists weekend. There will be various interesting activities and field trips to Rubicon Sanctuary, Narawntapu NP and other places near Port Sorell.
Accommodation: Camp Banksia, Corner of Pitcairn and Anderson Streets, Port Sorell
Bunk room accommodation - $26 per person per night
Some limited camping permitted - $20 per person per night.
RSVP to Robin Garnett, email robin@rubicon.org.au or phone 0438 002 615
Closing date for bookings – Tuesday 1 October

Please see CNFN website for more details

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