Issue 08 - January 2009

Wombat Forestcare Newsletter

Hello again members and friends. Thank you for your patience, I know the last newsletter was some time ago now, but I do trust you will find this one was worth the wait. Alison Pouliot has another fascinating article for us about some of the lesser known creatures in the Wombat Forest; we introduce you to one of our more common birds, the Tawny Frogmouth, and suggest a great walk for you to try out near Lyonville. There is also an update on Basalt and friends at the Hepburn Wildlife Shelter, so read on... Tibor Hegedis *(editor)*

Mysterious Myxomycetes of the Wombat Forest

By Alison Pouliot

Sporangium-producing phase of Fuligo septica, commonly known as the dog vomit slime mould. *(photo by Alison Pouliot)*

Australia is renowned for the evolution of some extraordinarily curious creatures. The isolation of our island continent, its geodiversity and myriad of ecological niches among other factors, have resulted in a remarkably diverse biota. The Wombat Forest is home to many of these and among some of the most enigmatic of all, are the Myxomycetes, also known as slime moulds (or, colloquially speaking, myxos).

The German naturalist, Heinrich Link first coined the term, Myxomycetes, in 1883, myxa meaning slime and myketes meaning fungi. The 'mould' moniker is a little unfortunate as they are typically harmless creatures, unlike some true moulds that you may encounter redecorating your refrigerator or running shoes. Myxos are among the least known groups of terrestrial organisms, due to their cryptic behaviour and the near non-existence of myxo scientists. There is virtually no myxo fossil record (as they produce few persistant structures and typically inhabit environments with low preservation potential), but they're thought to have been slurping around the planet for about a billion years.

Extra-terrestrial aliens?

For centuries, botanists, mycologists, evolutionary biologists, systematists and taxonomists alike have been perplexed as to which taxonomical basket to allocate them. During this time they've been thought to be animals, fungi, protozoans, extra-terrestrial aliens and dog vomit. Finally with the help of RNA, DNA and amino acid sequencing, they've been assigned to the kingdom Protocista. This is a fascinating kingdom, a kind of 'curiosity cabinet', which also accommodates other strange organisms including protozoa and algae.

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The translucent white Ceratiomyxa fruticosa sporangia clustered on rotting wood. *(photo by Alison Pouliot)*

or damp soil, engulfing microorganisms (such as bacteria, yeasts, green algae and occasionally even practicing cannibalism) by the process of phagocytosis.

When environmental conditions change or the plasmodium runs out of tucker, it enters a reproductive phase and miraculously transforms into a sporangium – essentially a spore container, sometimes delicately located atop a stalk, featuring striking variations in form and colour.

However, there is still much uncertainty about myxo classification, which is in itself an evolutionary process. Scientists have recently proposed that some myxos are sufficiently unique to be granted their own kingdom. No doubt the debate will continue as their clandestine lifestyles and quirky characteristics are gradually unravelled.

Bright red plasmodium of Dictydiaethalium plumbeum. *(photo by Alison Pouliot)*

The Wombat Forest is the perfect environment for a myxo rendezvous, as the greater majority of the 1000 or so documented species prefer to inhabit temperate forests. You'll find them creeping around in leaf litter, sprawling about on rotting logs and prowling beneath the leafy laminae of liverworts. They are often quite conspicuous owing to their characteristically bright colouration, for example, coral red, hot pink and sunflower yellow. Colouration is believed to be influenced by environmental factors such as temperature and pH, as well as the nature of ingested substances.

So what exactly are myxomycetes? While sharing features of both fungi and protozoans, they are actually not closely related to any other group of creatures. There are two groups of myxos, cellular and plasmodial, which differ in their complex life cycle processes. Plasmodial slime moulds are actually a single membrane-bound cell, a kind of 'supercell', or a big bag of multinucleate cytoplasm, called a plasmodium. They spend their time lurking about on the forest floor, amongst the crevices of rotting wood, on animal faeces

Speedy, intelligent and famous

In recent years slime moulds have been subjected to the time-keeper's watch and have been recorded travelling at speeds of up to 2.5 millimetres per hour! They creep about by the process of amoeboid movement, some leaving a "slime track", a little like that of a slug or snail.

However, not everyone is so admiring of myxo abilities and aesthetics and various beetle species (commonly known as slime mould beetles) quite fancy a myxo feast, some with mandibles modified especially for myxo consumption. Furthermore, some recently discovered slime mould beetles have suffered the unfortunate indignity of being named after the last American president, G.W. Bush.

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In a recent experiment at Southampton University, researchers built a six-legged robot whose movement was controlled by a myxo of the genus Physarum. The myxo apparently directed the robot into a darkened corner, similar to its own preferred natural environment, which some scientists claim to be a form of 'primitive intelligence'. Myxos have also occasionally slid their way into art and literature, however usually with undesirable associations and have sometimes being accused of engulfing entire cities such as in The Blob and Nausicaä of the Valley of Wind. Their curious habits, remarkable colours and unbecoming name certainly seem to have sprung from the imagination of Dr Seuss.

Spunky spores

For those interested in peering down the microscope, observing myxo spores is another whole amazing adventure into a fascinating wonderland. Spore size, shape and ornamentation are important myxo diagnostic features. Most myxo spores are ornamented to varying degrees, from verrucose (warted), to reticulate (covered by a network of ridges), to echinate (spiny).

So next time you're prowling about the forest, keep an eye out for these intriguing creatures. They are actually more common than you might expect, even if a little overlooked and misunderstood. Myxos are yet another enchanting inhabitant of the endlessly mysterious Wombat Forest, and the more you look the more you'll discover. ■

Alison Pouliot is a scientist and photographer and was quite possibly a myxomycete in a past life. www.alisonpouliot.com

Ecological Vegetation Classes of the Wombat Forest

By Murray Ralph

The types of native vegetation that occur across Victoria vary significantly. This variation reflects differences in geology, soil type, aspect, climate, altitude and position in the landscape. Depending on these environmental conditions, particular plant species and groups of plants will tend to grow together. These distinct native vegetation types are called Ecological Vegetation Classes (EVCs). Within the Wombat Forest approximately 30 different EVCs have been mapped.

Riparian Forest (EVC 18)

Riparian forest is scattered throughout the forest as narrow strips along the banks and alluvial terraces of (usually) perennial rivers and streams. Soils are fertile, well-drained and a constant supply of moisture supports a tall, multi-layered, species rich forest.

The overstorey is patchy in cover. It is dominated by Messmate *(Eucalyptus obliqua)* and Manna Gum *(Eucalyptus viminalis)*, with Narrow-Leaf Peppermint *(Eucalyptus radiata)* also occurring. The understorey tree layer includes Blackwood *(Acacia melanoxylon)*, Victorian Christmas Bush *(Prostanthera lasianthos)* and Hazel Pomaderris *(Pomaderris aspera).*

Shrubs include Prickly Currant-bush *(Coprosma quadrifida),* Hop Goodenia *(Goodenia ovata),* Prickly Moses *(Acacia verticillata)*, Snowy Daisy Bush *(Olearia lirata)* and Austral Mulberry *(Hedycarya angustifolia)*. The groundflora layer consists of a diverse range of ferns, grasses, rushes and herbs. Ferns include Fishbone Water-fern *(Blechnum nudum)* and Hard Water Fern *(Blechnum watsii).* Grasses and rushes include Common Tussock Grass *(Poa labillardierei)*, Forest Wire Grass *(Tetrarrhena juncea)* and Spiny Headed Mat Rush *(Lomandra longifolia).* Native herbs include Tasman Flax Lily *(Dianella tasmanica),* Bidgee Widgee *(Acaena novae-zelandiae),* Prickly Starwort *(Stellaria pungens)* Kidney Weed *(Dicondra repens)* and Cinquefoil Cranesbill *(Geranium potentilloides).*

Due to a history of past disturbance in many riparian areas and the moist, fertile soils, weed invasion by species such as Blackberry *(Rubus fruiticosus)* and Yorkshire Fog-grass *(Holicus lanatus)* may be high in some areas. In the Wombat Forest, the predominant threats to this EVC includes habitat fragmentation, weed invasion, fuel reduction burning, hydrological alteration, recreation and road construction/ maintenance. ■

Riparian Forest near Bullarto South. *(photo by Tibor Hegedis)*

Tawny Frogmouths

By Gayle Osborne

Tawny Frogmouths *(Podargus strigoides)* are common in our area and many locals report resident frogmouths on their properties. They spend their days perched on a tree limb, mimicking a broken branch; their mottled feathers resemble weathered wood and provide perfect camouflage.

Frogmouths are not owls but share some adaptations, binocular vision and quiet flight. They catch their prey with their wide frog-like beak unlike owls which use their talons and tend to wait for their food to come to them, remaining still on a branch and dropping onto prey on the ground. Although usually seen in this sit and wait position they are also expert at catching insects on the wing.

They hunt at night, usually just after dusk and before dawn for insects, frogs, little mammals and ground birds, which must be small enough to be swallowed whole. Our resident frogmouth plucks large moths from our windows.

Birds and bats play a critical role in pest control. Tawny Frogmouths eat beetles, moths, wasps, ants, spiders, centipedes, scorpions, snails and slugs and are one of the few birds that can eat Christmas Beetles. These beetles can cause widespread defoliation of eucalyptus trees and are indigestible and sometimes poisonous to many birds.

Tawny Frogmouths build a rough, loosely constructed nest of branches and twigs lined with a few leaves on the horizontal fork of a tree. The nest can be up to 30cm in diameter. They breed between August and December, usually laying 2 to 5 pure white eggs with both parents sharing the incubation.

The bond between partners is very strong and they may pair for life. Their territory is 20 - 80 hectares and is not shared with other Tawny Frogmouths. Their life span is not known, one specimen in captivity is 14 years old and it should be noted that Magpies live 25 to 30 years; Galahs can live 80 years and Sulphur-crested Cockatoos 100 years.

Recently a noise like a Brush-tailed Possum hissing and screaming caused us to rush outside with a torch and we caught a frogmouth in the beam. They will make a growling, hissing noise in threat or defence. A feather was found on the ground the next day.

Professor Gisela Kaplan has written a wonderful and informative book on the Tawny Frogmouth (available from CSIRO Publishing) which includes observations of wild and hand-raised frogmouths and detailed anatomy; a description of how their eyes work and how their feet differ from owls. This book gives us much insight into the unique role this species plays in the Australian environment. ■

These young Tawny Frogmouths *are being looked after at the Hepburn Wildlife Shelter. (photos by Tibor Hegedis)*

Take a Walk in the Forest

By Anne Dobbs and Judy Weatherhead

Lyonville Springs to Coliban Springs
(Located at Melway Map 609 D10 or Vic Roads 59 E8)

Try this easy walk (approximately 8 kms) along forest road and walking tracks through tall eucalypts.

Turn off the Daylesford/Trentham Rd at Lyonville (signposted to Lyonville Springs) and travel 2 kms to the Lyonville Springs picnic ground. Park here. Taste the mineral water at the Springs as it is considered by many to be the best in the Spa Country.

Walk starts at Lyonville Springs. *(photo by Tibor Hegedis)*

Begin the walk along the road in a northerly direction with the river on the left. Ignore a left turn over a bridge and continue uphill to the right for about 1 km to a small cleared area. There is a fire access track on the right and an unmarked walking track going down hill towards the river. Follow the walking track with noticeable trail bike activity. On the left is a large clump of musk daisy bush. When you reach the river note there is a stream entering on the right. Cross over the stream and join the track again going uphill in a NNW direction. At a T intersection keep to the left and follow the river to a giant saw dust heap (this heritage listed site is the remains of early sawmilling operations dating back to the late 1800's). Follow the heap to the left and head towards the river where a large log has fallen over. To the right you will see a broken terra cotta pipe in the river bed – all that is left of the Coliban Spring.

After exploring the area take the rough vehicular track uphill away from the river. Stay on the main track ignoring other tracks entering and walk uphill to the road. Follow the road downhill to the right. At the bend you cross over a creek which heads downhill to join the river. Continue down the road back to the Springs (approximately 3.5kms). Always take plenty of water, especially if the weather is hot, rest as neccessary, and enjoy the walk. ■

Protecting Biodiversity On Your Property

By Murray Ralph

What is biodiversity and Why is it so important?

Biodiversity is short for biological diversity, and includes all plants, animals, microorganisms and the ecosystems that support them.

All life, including humans, depends on healthy and functioning ecosystems to provide:

▷ a stable climate that ecosystems, and in particular plants, help to maintain clean air, clean water and healthy soils

▷ protection from devastating and costly land degradation, such as salinity

▷ natural pest control and pollination for agricultural crops

▷ food, medicines, timber and recreation

What are the main threats to biodiversity in this area?

▷ climate change
▷ clearing and habitat fragmentation
▷ overgrazing by pest or introduced animals
▷ weeds
▷ inappropriate fire regimes
▷ loss of hollow bearing trees
▷ loss of wetland habitats

What can you do to protect and enhance biodiversity on your property?

Individual landowners can contribute to protecting biodiversity in the local landscape in a variety of ways:

▷ Avoiding or minimising the clearing of native vegetation
▷ Fencing remnant vegetation to protect from grazing by livestock
▷ Controlling weeds, such as blackberry, broom and gorse, that invade bushland
▷ Expanding or improving the quality of existing native vegetation by planting indigenous plants
▷ Controlling feral pests such as rabbits, foxes and cats
▷ Ensuring that domestic pets, such as cats and dogs, do not kill or injure wildlife
▷ Leave fallen logs, large dead standing trees and rocky areas as they provide habitat for native animals

Landowners also have legal responsibilities regarding the management of native vegetation and fauna on their properties. Under the Planning and Environment Act 1987 and Victorian Planning Provisions 1996, a planning permit is required to destroy, remove or lop native vegetation on private land (some exemptions apply). All native animal species are protected. ■

Basalt and Friends at the Hepburn Wildlife Shelter

By Tibor Hegedis

Several months have passed since I last visited Gayle Chappell and Jon Rowdon at the Hepburn Wildlife Shelter, so it was time to say hello again and follow up on Basalt, the young injured wombat that they and Pauline Lily (from the Koorweinguboora Wildlife Shelter) have had in their care since early July last year.

Basalt's mother died as a result of being hit by a car, but Basalt survived in the pouch and was taken to the shelter for treatment. He'd sustained some head injuries and was badly bruised, so he needed fairly constant and intensive care for the first few weeks He was on pain killers and anti-inflamatory medication and had difficulty eating, but he's recovered remarkably well and is now a healthy young wombat.

Basalt when he first arrived at the shelter (top) and then again in early October at 6 months old (bottom).

Basalt was only about three months old when he came to the shelter, so now he's about 10 months old. His weight has increased tenfold, going from 500g to 5kg, he's also gone from being pink with hardly any fur to having a nice shiny light grey coat, and he's become very boisterous. It took him a little while to get going but now there seems to be no stopping him. According to Gayle, he is energetic and loves playing with the other three wombats, Onyx, Feldspar and Silica. Basalt is the youngest of the four by about a month, but they are all of similar age and that makes for lots of fun and games.

It is highly desirable for wombats in care to have other wombats to socialise with; otherwise they can become attached to their human carers, which makes it more difficult for them to "go wild" once released.

Gayle Chappell with Basalt, a very healthy and content young wombat (top), and his three friends (bottom). *(all photos by Tibor Hegedis except "pinky" Basalt by Gayle)*

Basalt and his friends still have two bottles of milk a day. In the wild, wombats are usually weened when they are around 12 months old, but may take a little longer in captivity. These young wombats will stay at the shelter until at least next spring, when they'll be old enough to be released into the nearby forest, look after themselves and establish burrows of their own.

In the meantime, they use the "burrow" that Jon has constructed for them. With an entrance inside the house, a nice comfortable dark area under the floor and an exit through a hole in the wall to the yard outside, the wombats "den" is where they go to rest and sleep.

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To help start the young wombats with learning to dig their own burrows, Gayle described how a concrete pipe is half buried into the side of a mound or hill, allowing the wombats to go partially down the pipe to the exposed earth surface where they can continue digging on their own. The pipe gets them accustomed to going safely underground, then they do what comes naturally, they dig.

I also noticed that there were many birds at the shelter and Gayle said that summer was one of the busiest times of the year for injured or orphaned birds. Magpies sustain injuries near roads when hit by cars, young Rosellas fly into windows and suffer from concussion, Corellas and Tawny Frogmouths fall out of nests and often end up with broken legs or wings. Many birds can only build makeshift or flimsy nests, as suitable trees for nesting are difficult to find due to habitat loss. The scarcity of larger trees and hollow bearing trees increases the risk of predation for young birds and also makes them more susceptible to falling from their nest, especially from smaller trees in windy conditions.

Singing for his supper? No, but this grubby looking little Red Wattle Bird has been playing in it's bowl of food.

With almost forty birds in care, looking after them can be time consuming and difficult, as birds require a special diet and they often need to be force-fed when they first come in.

Prolonged periods of extremely hot weather can put animals under terrible stress. A young female koala had just arrived at the shelter suffering from the heat, was very dehydrated and in shock. She was found at the base of a tree and could not climb back up, so was obviously unwell and if left there would also be vulnerable to attack by dogs or foxes. Even though the koala seemed placid, Gayle sedated her for safety before shaving some fur off, and then used an intravenous drip to rehydrate her as she was too ill to drink on her own. Another patient to monitor...

Jon pointed to the whiteboard on the wall which listed the animals in their care and any special requirements for them. It was a long list with 38 birds, 21 kangaroos (including 2 "pinkies"), 2 adult wombats, 4 baby wombats, several possums, a phascogale, a wallaby, a koala and on it went. No wonder Gayle was having her lunch at ten past seven in the evening.

Gayle and Jon certainly put in the many hours required to run the shelter but also pointed out that it couldn't be done sucessfully without the many volunteers that come to help and the donations from generous people. Jon said the shelter has a several long term volunteers, and a few new ones, but there is always a need to have more trained volunteers as people do come and go, so if you are willing to help out, please contact the shelter.

More information at www.hepburnwildlifeshelter.com or call 03 5348 3932. ■

Catherine, one of the volunteers at the Hepburn Wildlife Shelter, helps with the preparation of formulas to feed the many hungry animals.

For help with orphaned or injured animals, please call the 24 Hour Wildlife Emergency Number on **13 000 WILDLIFE** (that's **13 000 94535**) or Hepburn Wildlife Shelter on **03 5348 3932**

Arm Chair Activism

By Angela Halpin

Armed with a computer and a will to help the forest, you too can be a frontline forest defender...

It's hot, dangerously hot. Here in Victoria, Tasmania and South Australia we sizzle like never before in living memory. Perhaps the 'Big Fry' of climate change has arrived in Australia? A once in a century heatwave is now once in a decade?

Cyber travel is now the only cool option. I logged on to my favourite green discussion forums to see what's out there. Currently, forests and biodiversity are hot topics, up there with the weather and the economy. In the United States, the new President Barack Obama, has an opportunity to show his green credentials, hopefully by raising the preservation of the Earth's forests to a high priority.

The Obama administration at least acknowledges the benefits that ecosystem conservation brings to the economy. Maintaining a healthy and intact forest ecosystem costs vastly less than restoring a destroyed one.

Hang on a minute? What about Australia? Here we have some amazing areas of rainforests that stretch from the top of Far North Queensland all the way South to Victoria and Tasmania. They contain the most extraordinary diversity of plants and animals, and are unique treasure houses of fragile living systems.

Wow! Our forests should be considered with the same reverence as the great Amazon Forests. What is our Government doing about protecting our forests and biodiversity? What am I doing about it?

I needed to talk to someone – ask for help for our collapsing environment. I responded to an article I read on the BBC's *Green Room* website: 'Reality check for deforestation debate'. Two days later I saw they posted my letter in full (http://news.bbc.co.uk/2/hi/science/nature/7848200.stm). Thanks BBC! Somewhere on the other side of the world, somebody else is interested in Australia's rainforests too.

The good news is that out in cyber-space, there are a staggering number of helpful, intelligent and motivated people who would really like to know all the nitty-gritty, on-ground facts occurring today in Gondwana land. Spread the word ...

Here are two of my favorite websites:
http://news.bbc.co.uk/2/hi/in_depth/sci_tech/green_room/default.stm - BBC's The Green Room.
www.stri.org - Smithsonian Tropical Research Institute. ■

Newsletter articles (and suggestions) are always most welcome. Please limit articles to about 500-800 words and send a selection of photos if it's appropriate for the article. Material for the next issue is required by 15th of March 2009. For more information please contact **Tibor Hegedis** by emailing to **newsletter@wombatforestcare.org.au**

Wombat Forestcare (Inc.) Membership

Wombat Forestcare Inc. is dedicated to preserving the biodiversity and amenity of the Wombat State Forest by utilising the skills and resources of the community. It will monitor activities affecting the forest and will work with government departments and their officers to improve or correct procedures which may impact on it. By becoming a member you will have input into our activities and projects, and give support to caring for our forests. For memberships and further information contact Gayle Osborne, phone: 03 5348 7558 or email: info@wombatforestcare.org.au - Membership Fees are only $10 Single and $15 Family.

Pictures from a Picnic...

Here are a few photos from our well attended picnic at Swabys Lane last October. It was a fun and informative Forestcare gathering. Come along... *(photos by Tibor Hegedis)*