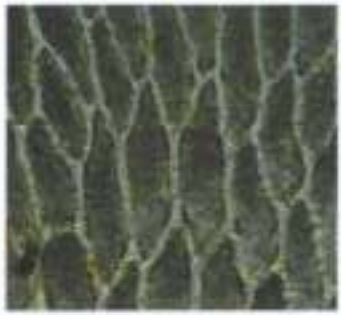
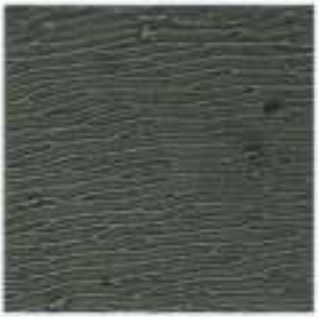




The Natural News

Central North Field Naturalists Inc. (CNFN)

2010 : Number 44



I last visited the Daintree World Heritage Area (WHA) north of the Daintree River in 1990 when the road north of the ferry crossing to Cape Tribulation was a rutted mud track that could only be negotiated with a 4 wheel drive. Given the recent cold and wet Tasmanian Winter, by August my mind went back to that previous escape to a sublime winter climate and all its spectacular natural values. Reasonable flights were available, so Deb and I succumbed to the lure.

The ferry crossing the Daintree River was much the same as I remembered, only much busier, but the road to Cape Tribulation is now sealed, and as a result there is considerable traffic. I began to fear what might lie ahead. Along the road through the southern end there are many private blocks of land. Property developers carved up these "little pieces of paradise" during the 'Bjelke-Petersen years' (Bjelke-Petersen was premier of Queensland from 1968 to 1987 Qld.) before the area became a national park. In Bjelke-Petersen's time the grand plan was to clear the forest near the coast to grow more sugar cane. Over 1000 rural residential blocks of land were created in the early 80's and sold off by entrepreneurs. Governments are now paying millions to buy back some of this land, and to put in minimal impact tourism infrastructure. Unfortunately, many of these blocks have largely been cleared, and a variety of activities now take place ranging from a tea plantation, to tourism ventures, various types of farming and a variety of 'lifestyle' activities, which seem to include free range dogs. Once you get past these, the glory of the Daintree's ancient tropical forest begins to emerge.

The Daintree tropical forest between the Daintree River and Cooktown is the largest surviving tropical lowland rainforest in Australia. Much of the area is jungle clad mountains sloping down to the Coral Sea. The lush vegetation is practically impenetrable in many places without the aid of a track. The backdrop of mountains, often clothed in clouds, with the forest jungle sweeping down towards the shore is

Daintree river ferry

both majestic and intriguing. It has survived short-sighted plans for development because of political activists attracting world attention to its majesty. One of those former activists (Mike Berwick) is now the Mayor of Douglas Shire.

This area is as scientifically interesting as it is scenically stunning. It was discovered relatively recently that the Daintree rainforest is a living archive; its remnants of plants and forest type once covered much of Australia. Some of the current plant species evolved in the Age of Dinosaurs and thus provide a living link with Gondwanan flora.

Trying to get one's head around the incredible diversity of plants in this tropical forest could end up as a lifetime pursuit. I purchased the compact guide to the Plants of Tropical Queensland at the Cairns botanic garden. This informed me that there were over 1000 species of trees alone in the rainforest of the wet tropics, along with an incredible range of understorey plants. The guide could contain only a small number of the plants for the area (485), and was divided into prominent members of the various habitats such as Mangroves, Rainforest, Coastal Forest, Inland Forest, etc. I soon became overwhelmed by this abundant diversity, and gave up trying to identify anything that wasn't particularly spectacular along with readily unique features which might lead me to an answer. I met a retired botanist at the Botanic Gardens (a volunteer at the shop) who informed me that it is almost impossible to learn all the plants of the wet tropics. Even if one were to concentrate only on the Daintree, there are over 400 tree species alone.

The other book I purchased was a bird book for the area, which was somewhat less intimidating in numbers of species, but still very frustrating because of the difficulty of identifying species within such thick, lush vegetation.

Our first exciting bird encounter was with a "modern dinosaur" - a meeting with a Cassowary. This very large flightless bird is quite spectacular. These amazingly strange looking birds, with their dinosaur-like crest, their bright blue head and red wattles, their black feathers that look almost like hair, along with their stout, scaly legs and huge feet do truly suggest the linkage with dinosaurs. It is from the appearance of their feathers that they were named after the Casuarina foliage.

Cassowarys have a reputation for being potentially dangerous, but the one we saw up close was totally intent on eating the blue fruit of the Quondong tree (*Elaeocarpus eumundi*) that littered the ground, and paid little attention to me as I cautiously crept closer for a photo. (We have a relative of the Quondong tree amongst our Tasmanian flora with *Elaeocarpus reticulatus*, (Blueberry Ash) which is found on Flinders and King Islands.)

Our first stop (where we saw the Cassowary) was at the Daintree Discovery Centre at Cow Bay. We wanted to visit the Interpretation Centre there with its extensive platform running several metres off the forest floor. The Centre has won well deserved acclaim, and promotes a strong conservation message, and we found the people running it were willing to share their knowledge of both the wonders and the problems of the Daintree WHA.

After paying an entrance fee, a recorded guided walk is provided through a hand held receiver with a key pad to key in the numbered feature along the platform. This is an excellent introduction to the rainforest for it places you in the canopy where a lot of the action takes place; there are so many

epiphytes and fruiting bodies that grow far above the forest floor, and it is a wonderful opportunity to get close to these. Eventually you reach a tower where you can climb up several levels through the trees. There are platforms at different levels with the top platform overlooking the canopy. This look at all the different levels on the way up allows you close views of epiphytic orchids as well as other flowers, fruits and plants in the canopy. It also lets you view some of the birds that operate at the different levels, along with numerous invertebrates that live in the canopy.

At the first level of the interpretation tower, you can also choose to enter a large information building containing a great deal of interpretive material. You can then exit the building down the stairs to a boardwalk along the forest floor. Your ticket to the Centre allows you to go in and out during the day, and to return the next day if you want. At $33 each, it is good value if you desire to spend the time becoming familiar with the various levels of the forest, and gain understanding along with a unique perspective of the different forest levels. I particularly appreciated an eye level view of the epiphytic ferns, such as the Bird's Nest (*Asplenium australasicum*) and the Elkhorn (*Platycerium hillii*).

Speaking of ferns, a most impressive species is the King Fern (*Angiopteris evecta*). This species is said to be the world's largest ground fern. Its fronds are truly impressive reaching up to five metres long. This is a very primitive fern similar to fossils found in Upper Paleozoic rocks up to three hundred million years old. Giant ferns such as this provided the source of most coal on all continents. Ferns are vascular plants, and the fronds are kept erect by the pressure of the sap ('turgor') in the cells. The King Fern is favoured by wild pigs as a food source.

King Fern *Angiopteris evecta*

From the Discovery Centre to Cape Tribulation the Daintree forest was pretty much as I remembered it. However, there are now some good interpretive tracks leading down to the ocean (where the rainforest really does reach the reef), and these were much appreciated because they allow access through the often almost impenetrable vegetation, and provide information signage along the way. You can see Orange-footed Scrubfowl and Australian Brush-turkey along with the occasional huge mounds they make for incubating their eggs. You walk on platforms through the middle of mangrove species, with their array of

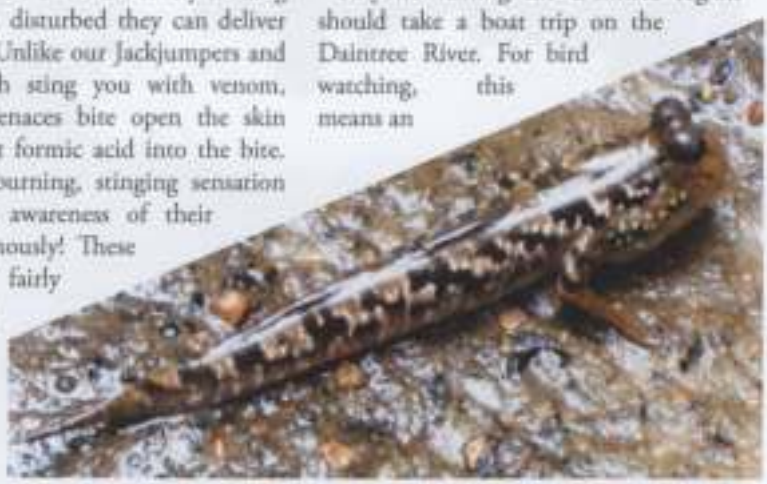
prop roots, and their knee-like breathing roots (rhizophora). The signage informs that "one teaspoon of Mangrove mud can contain around ten billion bacteria", providing a basis of an incredibly rich food chain and thus being an invaluable nursery area for many important fish species. Once the mangroves were cleared and despised, but now they are largely protected.

While walking through an area with mangrove species along the stream, I noticed some movement in the water and quietly approached the water's edge. Whatever it might be was now climbing out of the water onto a rock. Closer inspection revealed several mudskippers in the shallows. Mudskippers are completely amphibious fish and are members of the family Gobiidae (Gobies). (We often see little Gobie fish when looking in tide pools. These are not amphibious, but have very similar looking heads to the Mudskippers). One Mudskipper allowed me to get within about 60cm for a photo. (see page 5)

One particularly common invertebrate inhabitant that needs to be avoided while walking through the forest is the ever-present green ant. These are lovely looking ants, but when disturbed they can deliver a painful bite. Unlike our Jackjumpers and Inchmen which sting you with venom, these green menaces bite open the skin and then squirt formic acid into the bite. The resulting burning, stinging sensation increases your awareness of their presence enormously! These ants form fairly small colonies within curled leaves, and if you happen to brush against these structures you can expect to be bitten. The forming of the nests is rather amazing, because it is accomplished by holding their larvae up and weaving them back and forth as they exude a silk over leaves which are then pulled close together to form the loose nest.

Some Aboriginal clans made their homes in the Daintree rainforests. The Yalanji people lived in the Daintree area for many thousands of years. Conflict between the Aboriginal people and the white invaders became particularly fierce during the years when the Red Cedar (*Toona australis*) was being cut almost to extinction. This tree provided one of the best cabinet timbers in the world, and the subtropical and tropical rainforests of eastern Australia contained huge stands which were ruthlessly cut until the resource was virtually annihilated. This is considered one of the most shameful examples of resource destruction in Australian history, but Tasmania may well be able to match the waste of wonderful rainforest species that is the hidden, shameful result of clearfelling some of our forests for conversion to monoculture.

Anyone visiting the Daintree region should take a boat trip on the Daintree River. For bird watching, this means an



Mudskipper

early morning trip for the best sightings. To see crocodiles, however, it is best to go in the afternoon. We did a late afternoon (4-6pm) trip hoping to see a bit of both, and this was very rewarding. We managed to see a few crocs, and surprised one large male which is the local giant at 5M and weighing several hundred kilos. I have a wonderful photo of the splash he made as he quickly dived from the bank into the water. A 3M female was more cooperative and allowed a few photos before taking to the water.

Viewing the bird fauna on the river was very rewarding. We had found it very difficult to identify birds in thick, tropical rainforest. However, from the boat a number of the birds can be seen more clearly in the foliage at the river's edge, while water birds and raptors are also frequent and visible. The Azure Kingfisher was a particular vision of beauty. But the most spectacular bird was a rare sighting (according to our guide), and that was the large Great-billed Heron. This is an important bird to the ecosystem, being one of the few animals that can prey on small crocodiles. A Darter flew directly overhead with its obvious snake-like neck, otherwise looking much like a cormorant. There was also a brief sighting by the guide of the Little Kingfisher, but the rest of us missed it. This is a Kingfisher smaller than a sparrow, and confined to the tropics. Maybe next trip....

A particularly exciting sight (for me, at least) during the boat trip was a writhing clump of tree snakes on the end of a tree branch hanging over the river. These would have been males clumped around a single female. They were quite intent on their purpose, and allowed us to come in very close for a photo. The guide said they had been on that branch for a couple of days.

This is but a small sample of our 3 days in the Daintree area, and I hope it might encourage others to see this wonderful area. For those interested in natural wonders its

tree snakes

It is a sublime time of year during the 'dry' in August to visit this area which is one of the wettest places in Australia. We never got out of shorts and T-shirts, there were almost no mossies and the temperature was mid 20s. Back home in Tassie in our 'wet' it had rained 450 mm over the 5 days we were away!

abundant richness are perhaps unparalleled in Australia. It encompasses about 1200 sq. kilometres from the Daintree River north to Cooktown and west to the Great Divide. Astonishingly, it is claimed to be home to: 60% of Australia's bat species, 30% of our frog species, 23% of our reptile species, 18% of our bird species and 62% of our butterflies.

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Southern Cassowary

Life on a dogwood log by Sarah Lloyd

In 2005 the Victorian Naturalist published "Bush creatures: animals observed on a Thryptomene shrub", written by naturalist Virgil Hubregtse. It is an account of Virgil's observations of the animals (including 90 species of arthropod and two bird species) that landed on a heath-myrtle, *Thryptomene saxicola* growing next to her house in suburban Melbourne. She observed the shrub, which flowers for most of the year, for one hour each week between September 2003 and August 2004.

I was inspired to do a similar project, but as I'm surrounded by hundreds of hectares of forest, I was spoilt for choice. Should I choose the recently fallen swamp gum (*Eucalyptus ovata*) about 100 metres from the house, the dying prickly moses (*Acacia verticillata*) with protruding moth larvae and ovipositing wasps or maybe the guitar plant (*Lomatia tinctoria*) closer to home whose flowers attract a wonderful array of insects?

In the end the log more or less chose itself. A newly made walking track, cleared in January 2008, is relatively level and I walk

small (20mm) red wasp possible Braconidae

weevil

small (9mm) black wasp

even smaller (14mm) red wasp

it at least once a day. Lying across the track are two large dogwood trees (*Pomaderris apetala*). One had fallen causing the other to lean. The fallen one was dead and pitted with borer holes; the leaning one was alive, but with its roots exposed to the air caused by the fall it subsequently died. I didn't realise at the time that my first observation (an ovipositing wasp) would be the first of many. Rather than making extensive notes numerous photographs document my observations.

In February 2008 I saw several small red wasps (possibly braconids) ovipositing into the dead log and a weevil poking its head out of a hole. In the days that followed, more red braconids and wasps of different species visited the log – some to oviposit, others, presumably males, in search of females. Small bush flies came and went and I saw several case moths grazing on the thin veneer of crustose lichens.

Things slowed down during the winter of 2008 and I didn't observe any invertebrates.

crane fly

case moth

ovipositing red beetle

I did, however, notice that the log had the telltale signs of a visit by Yellow-tailed Black-cockatoos, confirming my suspicions that there was a bountiful food source for the birds hidden deep in the wood.

By the following November the log was crawling with weevils. The weevils would be nowhere to be seen during the morning but by mid afternoon the living log was alive with fornicating fauna! Without wanting to seem voyeuristic I counted over 20 mating pairs, several fighting threesomes and numerous individuals wandering to and fro. If I got too close the weevils would interrupt their activities and fall off the log and hide in the litter on the ground – such is the way of most weevils. The weevil mating frenzy continued for months – I was still taking photographs of amorous couples at the end of January 2009.

In December I noticed that a pair of Pink Robins was nesting in the tangle of small branches and leaves intertwined with clematis (*Clematis aristata*) in the dying crown of the living tree.

In February 2009 I was expecting a return of the wasps I had seen previously, but instead I saw a completely different

mating weevils

spotted beetle

Pink Robin (near the dogwood log)

array of fauna. I did see a similar looking red wasp, but it was smaller and didn't have the bulging white eyes of the ones I had seen in 2008. On several occasions I saw numerous large Ichneumonid wasps so entwined that they were impossible to count. A few days later a solitary individual of the same species oviposited into the log. There was an assortment of beetles, including a reddish longicorn (also ovipositing) and a curious looking spotted one, both of which were present on several consecutive days. There were some chance encounters with a crane fly, jumping spider, stick insect, other beetles and a mosquito.

Then the fungi started! It seemed that the 'damage' caused by the cockatoos provided a foothold for the fungi. First a greyish/white resupinate jelly coated areas of the dead log. Throughout the exceptionally wet winter tiny white *Mycena*, of unknown species, appeared and disappeared; *Bisporella citrina* dotted the underside; *Hypocrea sulphurea*, another resupinate, grew in patches. There were several gilled fungi, including *Panellus stipticus* and a curious looking slime mould appeared fleetingly. And then the log dried out.

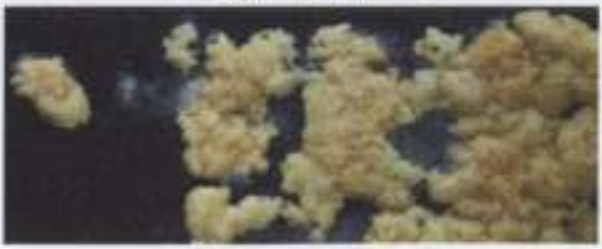
A late November shower has enlivened the fungi and *Stereum ostrea* gleams with fresh growth. I eagerly await the next flush of activity.

grey jelly-like fungus

slime mould

Mycena sp.

Bisporella citrina



Hypocrea sulphurea

During our brief visit to the Daintree National Park Jim and I were fortunate enough to see several Southern Cassowaries (Casuarius casuarius) as it was their breeding season when sightings are more common. Surveys have revealed that there are 60 or fewer cassowaries left between the Daintree River and Cape Tribulation so our chance of a sighting was quite slim. We were then very surprised to find one feasting on the large, blue quandong fruit in the car park at the Discovery Centre.

The cassowary belongs to a primitive Gondwanan group of mostly large, flightless birds known as ratites. This ancient group includes the emu, the ostrich, kiwis, along with the extinct moas from New Zealand and the extinct elephant bird from Madagascar. There are three species of cassowary: the southern cassowary is found in northern Queensland and New Guinea, the northern cassowary (C. unappendiculatus) and the dwarf cassowary (C. bennetti) are only found in New Guinea.

The southern cassowary is a spectacular looking bird, standing up to 2 metres tall with heavy, dense, black plumage. Its bright red wattles on its featherless, brilliant blue neck presumably helps with attracting notice in the dense rainforest. A unique feature of the cassowary is the casque on the head which looks horn-like, but it actually has a hard outer covering over a styrofoam-like substance. There are various theories on why cassowaries have casques. Some say it is used for foraging in the leaf litter or pushing through dense rainforest, others believe it is used to receive the very low frequency humming sound that they use to communicate, or perhaps it just makes them look more intimidating? Another peculiar and interesting feature is its double-shafted, waterproof feathers which appear designed for protection in the very dense rainforest habitat.

Cassowaries are crucial to the survival of the rainforest. They eat the fruit and disperse the seeds of about 150 rainforest plants; many of these seeds are too big to be dispersed by any other birds. Their digestive system allows the seeds to pass through intact and the seeds are deposited in a pile of dung which provides ready fertilizer in the nutrient deprived environment of the tropical rainforest. They are solitary most of the year and tend to be quite territorial. If two Cassowaries are seen together, it is likely to be a male looking after its young offspring. Males tend to be smaller than the females. The birds have a sharp claw in the middle of their three toes and will aggressively defend their patch if threatened; their powerful legs make them fast runners and strong swimmers.

With only about 1200 birds left, the southern cassowary is classed as endangered. Loss of habitat due to clearing of rainforest, dogs and traffic on road crossings are the main threats to their survival. Pressure from developers to put a bridge across the Daintree River and to bring power infrastructure to the area is increasing. If this were to occur it would bring additional pressures to this keystone species of the rainforest.

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www.amazingaustralia.com.au

www.sandigozoo.org

Quondong

Salmonella, silvereyes & sparrows: please DON'T feed birds! by S. Lloyd

In June 2009, reports of dead and emaciated sparrows started coming in from southeast Tasmania (including city and suburban Hobart, Sorell, Midway Point, Penna, Richmond, Lauderdale, Kingston, Blackmans Bay, Leslie Vale, Margate, Coningham & Fern Tree and Neika). People remarked that there were, "no longer any sparrow flocks about". The dead and dying birds were easy prey for cats and dogs.

The dead sparrows were found to have an infection in their gut, inflamed crops and septicaemia. The cause has been identified as Salmonella Typhimurium DT160 and the birds so far affected include numerous House Sparrows (Passer domesticus), one Silvereye (Zosterops lateralis) and one captive Sulphur-crested Cockatoo (Cacatua galerita). It is the first record of significant mortality from this Salmonella type occurring in Australia, and there is concern that this could pose a threat to Australia's native bird fauna.

Sparrows are fairly low (or don't appear) on the priority lists of most people, so there was a general lack of concern when dead and dying sparrows were first reported. Then *Salmonella* started to appear in the human population, and in September 2009 several people became ill.

There have been similar outbreaks of illness caused by Salmonella Typhimurium DT160 in New Zealand, Norway, Sweden, The United Kingdom, North America and Japan.

In New Zealand in 2000, there were incidents of sparrow deaths similar to those experienced this year in Tasmania. The human cases associated with this strain of Salmonella had a high hospitalisation rate, and there was one recorded death of an elderly man. It was found that sparrows were acting as Salmonella-shedders, spreading the organism at food sources such as grain silos, poultry facilities and street-side cafes.

In Tasmania, house sparrows are a potential vector for salmonella infection for caged birds such as commercial poultry, private collections or captive-managed threatened species. Bird feeders, where large numbers of birds are encouraged to come into close contact by the provision of an easy meal, are a source of infection for native birds, as are bird baths.

Dead and dying sparrows also spread the infection (and any other disease-causing pathogens they harbour) when they become prey for domestic and feral dogs and cats as well as for predators such as raptors. Already one (to our knowledge) domestic cat has died as a result of this outbreak.

There are basic hygiene protocols that should be followed when handling dead birds:

- wear gloves when handling dead birds
- wash hands after handling the bird(s) and other animals and before eating
- promptly dispose of carcasses before they are taken by predators
- exclude wild birds from aviaries and poultry runs
- decontaminate water supplies, avoiding faecal contamination wherever possible, and deny wild bird access to spilled seed and other aviary waste.

Don't feed birds!

Ref: Obendorf, D. (2009) Australian Wildlife Health Network: Situation Report September 2009 Salmonella enterica Serotype Typhimurium DT 160 infection causing multiple mortalities of the introduced House Sparrow (*Passer domesticus*) in southern Tasmania.

More on echidnas, beeswax and bees

In the Spring 2009 edition of The Natural News John Wilson (*Will Echidnas save the Prunarra brown?*) reported seeing unusual echidna behaviour. I consulted Jim Nelson and Andrew Hingston because I wondered about John's conclusions. I was also unsure if European wasps made waxy cells.

Jim Nelson:

I too picked up on the idea that wasps might make waxy cells, which is not right. It was interesting that an Echidna was so taken with the bees' wax that it would come lick it off their shoes! However, I don't imagine that relates to anything other than perhaps smelling very attractive and insect-like. It is hard to imagine Echidnas actually ever getting access to a honey bees' nest.

I am in little doubt that the Echidna was after the larvae of the wasps and not the papery cells. I'll bet there was no sign of any larvae left in the destroyed nest! They were very interesting observations, both the licking of the boots and the digging up the nest. I wonder if Andrew Hingston has any takes on this? I'm not aware that any of our Tassie native bees make honey like some on the mainland do, but maybe some do?

Andrew Hingston's reply:

That was an interesting article. I agree that the echidna was almost certainly after larvae (and possibly eggs) in the wasp nest. I don't know why it was attracted to bees wax, but a lot of native bees enclose their eggs/larvae and pollen/nectar reserves for the larvae in wax cells in the soil. These bees often nest in aggregations. Could it be that echidnas are attracted to bees wax as a cue for finding native bee larvae? Jim is correct about no Tasmanian native bees making honey, most simply moisten a ball of pollen with nectar on which they lay an egg. When the egg hatches, the larva eats the pollen and nectar.

Seed on Dianella tasmanica

Help required with seed collecting

This year has been one of the wettest on record in parts of Tasmania. Plants have responded favourably and 2009 is showing signs of being a great year for seed collecting.

The Seed Safe project is jointly run by the Royal Tasmanian Botanical Gardens, Tasmanian Herbarium and DPIPWE. It ultimately aims to have all of Tasmania's seed bearing flora represented in its collections. This season Seed Safe aims to collect over 60% of Tasmania's Rare & Threatened flora but is looking for assistance with collecting more common species which are having a bumper year. Are local populations of Acacias, Peas or Hibbertia doing well this year? Would you like to collect them?

If you feel you'd like to help please contact James Wood (James.Wood@rtbg.tas.gov.au or 6236 3079) or Micah Visiou (Micah.Visoiu@dpipwe.tas.gov.au).

For more on collecting protocols check the Royal Tasmanian Botanical Gardens website http://www.rtbg.tas.gov.au/index.aspx?base=260

Moss Leaves by T. Thekathyil

The photographs on the front cover are from a series of moss micrographs taken by Tom Thekathyil with the CNFN Leica DM LS compound microscope. They were inspired by W.R. Buck. D.H. Vitt & W.M. Malcolm 'Key to the Genera of Australian Mosses' Flora of Australia Supplementary Series, Number 14 Australian Biological Resources Study, Canberra 2002 (out of print).

Identification of mosses is largely by examination of leaf and capsule; cell arrangement is sufficiently distinctive to identify difficult subjects. Magnification refers to microscope objective used.

Front cover photos: Top (l-r) : Cells (x 400) of *Cyathophorum, Brachythecium rutabulum, Rhizogonom distichum* Middle: *Archophyllum.*
Bottom: *Mittenia plumula* leaf x100, *Hyprodendron* cells x 400, *Eurhynchium praelonga* leaf x200

To see more images check out: http://www.disjunctnaturalists.com/articles1/mosses.htm

Engaeus disjunctus

The CNFN website

http://www.disjunctnaturalists.com/

Tom Thekathyil has been developing the CNFN website. The website includes articles from past newsletters, lists of walks and events, order form for Frog CDs etc. It also has more of Tom's exquisite micrographs of moss leaves.

Why disjunct?

'Disjunct' is a term in biology used to describe geographically separated populations of the same species. It also describes the Central North Field Naturalists, centred somewhere vaguely to the west of Launceston in northern Tasmania but with members scattered all over Tasmania, the Australian mainland, not to mention the USA and Norway.

Our more distant members support our efforts to explore, document, better understand and protect Tasmania's natural world. Local members often drive considerable distances to attend our monthly walks. All members appreciate receiving a hard copy of the colourful and entertaining "The Natural News" 3 times a year.

In Northern Tasmania there is a small freshwater crayfish called *Engaeus disjunctus* whose occurrence has been confirmed from the disjunct locations of Holwell, Weetah, Birralee, Granville Harbour and Burnie. The species was described in 1981 and speculation continues about the reason for its distribution. How long has this been so? Is it a result of evolutionary processes or loss of habitat since European settlement?

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Patron: Dr. Peter McQuillan

In this issue:

Walks Program (see insert for more details)

January.....Birralee
February.....Blue Tier
March.....Penguin Shelf
April.....

Beetle swipuating into a dogwood log Photo: S.Lloyd