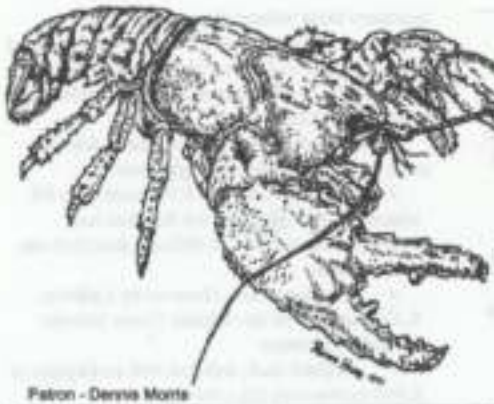
Central North Field Naturalists

CNFN

the Natural News

Spring 2001



Patron - Dennis Morris

Editor - Jim Nelson

Contacts

Ron Nagorcka, President
Ph. 6396 1380
E-mail: Ron_Sarah@vision.net.au

Jim Nelson Secretary
Ph. 6368 1313
E-mail: jcnelson@southcom.com. au

Program and Events

September 21, 22 ,23 Field Naturalists Federation Meeting Sponsored by CNFN. See back page for more information.

October 7, 9:30 am Narawntapu NP (formerly Asbestos). Meet at the entry booth car park. The park should be beautiful in October. This is our second attempt this year after being rained out in August. Lots to look at, from Forester Kangaroos, to bird hides, to flowering plants. Bring lunch and the usual gear. Let's hope for good weather and a great walk in the Park.

November 11, 9:30 am Launceston Gorge Meet at Duck Reach Power Station upper carpark - take the Westbury Rd. to the Prospect roundabout. Turn left on Stanley St. (if going towards Launceston), and follow to the T- junction where you turn right on Outram, and then take the next left on Corin and follow this to the carpark.

The track follows the river down to the Gorge and will be a lovely walk this time of year, with plants in flower, and birds, lizards, frogs etc. along the way. Bring a lunch to eat in the Gorge before walking back up the trail. The Gorge has a number of interesting and rare species.

December 1, 2, Rocky Cape Meet at the Burnie Field Naturalists Shack in the National Park. Come Sunday or stay overnight on Saturday night either in the shack bunks or bring your tent. There is electricity at the shack with a fridge, hot water and a stove. There is also an assortment of cutlery and dishes. Bring your own bedding or sleeping bag to use on the mattresses. There are wonderful walks in the Park to Aboriginal Caves, over the heathland hills or along the beach or coast. Everything will be in full flower in December, and the orchids should be in abundance. This is one of our favourite spots that we try to get to once a year.

January 6, Mt. Arthur To be confirmed in the next Bulletin. We would like to organise a stay overnight in the Mt. Arthur Centre near Lilydale.

AGM & Social Evening

Saturday October 13, 4:30 pm

at the Weegena Hall

Nominations for all positions
are now being accepted

Please come and bring a plate for a pot luck meal afterwards

Dennis Wild
will present a slide show on
ART, Life, Nature
after the meal

Friday Sept 7, Environment Protection and Biodiversity Conservation Act Presentation by Environment Australia – Community groups and other interested parties 12.30 – 2.00pm at the Tram Sheds, Inveresk, Launceston. Important Legislation!!

Birds with Altitude

by Jim Hunter

At over 8,700 metres, Mt. Everest is tall enough to poke into the jet stream, a high altitude river of wind that blows at speeds of more than 300km per hr. Temperatures at this altitude can be low enough to freeze exposed flesh instantly and there is only one-third the oxygen available at sea level. Kerosene can not burn here, helicopters cannot fly here, yet every spring flocks of bar-headed geese, the world's highest altitude migrants, fly from their winter feeding grounds in lowland India through the Himalayan range to their nesting grounds in Tibet. (They were noted directly above Everest by Hilary and Norgay at the culmination of the first ascent.) Every fall they retrace their route to India covering the 1500 km in a single day.

These geese weigh about 2.27 kilos and stand 610 cm tall with a 1.8 metre wing span. Powerful flappers (not soarers) they are able to take advantage of powerful tail winds rather than be tossed about by them—they can fly over 75 km per hr. on their own power. Able to gauge and correct for draft they can even fly in crosswinds without being blown off course. The same powerful and unremitting flapping that helps propel them over the mountains also generated body heat which is retained by their down feathers. This heat, in turn, helps keep ice from building up on their wings.

Birds, in general, are built for particularly efficient oxygen uptake. Among the special features of the avian breathing system are several sacs that temporarily store inhaled air that has passed through the lungs and then send it back through the lungs before it is exhaled. Thus birds circulate inhaled air through their lungs twice, increasing their opportunities for capturing oxygen. Birds can also pant for prolonged periods without constricting the blood vessels in their brains. So even when physically taxed they keep their wits about them. By contrast, prolonged panting in people reduces blood flow to the brain, which primes them for bad decision making.

As well, bar-headed geese have a special type of haemoglobin that absorbs oxygen very quickly when the birds are at high altitudes—as a result they can extract more oxygen from each breath of rarefied air than other birds can. Once their blood is stoked with oxygen it rushes through capillaries that penetrate particularly deep into the muscles and thus energised they have seemingly inexhaustible vigour. Other migratory birds without the superior flapping, respiratory and circulatory power of the bar-headed goose, fly close to the ground. Most songbirds fly between 150 - 610 metres, and most waterfowl stay between 60 - 1200 metres.

But bar-headed geese are not alone—here are some other high flyers and high livers:

- jumping spiders, at 6,705 metres on Mt. Makulu—the highest known full time land dwellers—remarkably no different than their sea level cousins
- whooper swans, observed by a pilot at 8,230 metres over the Atlantic Ocean between Iceland and Europe
- mallard duck, collided with an airplane at 6,400 metres over Elko Nevada
- bar-tailed godwits at almost 6096 metres (we will return to this one)

and the grand champion, Rüpells griffon, a vulture with a 3 metre wing span sucked into a jet engine at 11,552 metres over the Ivory Coast in West Africa (the damaged plane landed safely—the vulture was probably less fortunate).

The high flyer of this elite group relevant to us in Northern Tasmania is the bar-tailed godwit which has added length to height and migrated from Alaska to N.Z. (11,000 km) in a single flight (Gill, 2000). This has only been discovered in the last few years but already a pattern of extraordinary feats is emerging among the tundra breeding shorebirds that winter (our summer) here.

Flight of the Godwits

Until recently, it was thought that virtually all the godwits and other northern hemisphere migrants that reached Australia were Asian birds—no great problem, there was always land or islands under them where they could stop and refuel or take refuge from unfavourable weather. Whether or not they actually used, or even could use, the land under them was not considered. Most of the staging areas (where the birds come together in flocks before migrating) and the transit areas are on the muddy estuaries of large rivers, the only places that can provide sufficient rich feeding. Efforts are being made to find and protect these areas throughout the flyway—not an easy task in places like Indonesia due to poverty or Japan due to hostility!

However, not all the migrants follow this route. It has been known for about 10 years that bar-tailed godwits of which over 100,000 reach N.Z. each year, were American birds from Alaska. Simple banding revealed this much, but when they started putting

Bar-tailed Godwit

coloured flags on the upper legs it became possible to follow the movements of shorebirds without capturing them. And in 1998 godwits flagged in Australia turned up on the breeding grounds in Alaska. They are seen in Kamchotha and Japan going North, but no Alaskan bird has been recorded in Asia going South. Careful checking of weights revealed that SE Australian and N.Z. birds were smaller and lighter than their outwardly identical compatriots in NW Australia—they were in fact Alaskas. The same pattern has turned up with golden plover and turnstone birds that have identical looking populations both sides of Bering Strait, suggesting that those in SE Australia may also be American. (Those in NW Australia are Asian).

The Eastern Bar-tailed Godwit (*Limosa lapponica baueri*) is now thought to nest exclusively in W. Alaska where over the core part of its range, arrival is correlated with percent snow melt. Godwits nest both in coastal wet meadows, such as occur throughout the Yukon Delta and in gently rolling montane areas of NW Alaska, East to the central Brooks Range. On the core Yukon Delta nesting area the bulk of the birds arrive the second week of May, and clutches are usually completed between the 3rd week of May to the 2nd week of June. Throughout its range the Godwit seldom nests in densities of more than a few pairs per sq. km. The 4 egg clutch is incubated by both adults and within a couple of days of hatching the chicks are able to follow the adult over several hundred metres of tundra to areas, usually on mountain ridges, where other adults have moved their broods. Here they form loose aggregations guarded by a few adults, the other adults having departed for the coastal staging grounds. By early August the juveniles will have joined the adults there.

On the staging grounds the diet of both adults and juveniles shift from mostly insects during nesting to marine invertebrates, especially small clams. The extensive intertidal mud flats of the Yukon Delta and Alaska Peninsula estuaries become the Godwits home for the next 2 months while they begin body moult and fatten for migration. During this period it is common for birds to double their body weight with over 50% of this gain being fat. R. Gill (1999) reports "Before migration starts a birds internal organs atrophy—e.g. gut, kidney and liver—to make room for the storage of fat." Just one more reason to come straight South non-stop. These fat loads are the highest recorded for any migratory bird and are adequate for an unassisted flight from Alaska to N.Z. But the birds do better that that—they use the winds of the Aleutian Storm Front which forms in the Gulf of Alaska at this time of year, which rotating clockwise provides a southerly tail wind of 60-90 km per hr. for up to the first 3000 km.

The best information we have on how shorebirds use the wind to their advantage comes from studies of the Western Sandpiper, the abundant but tiny (30 gm) stint that nests on the same area of tundra as the Godwit, but migrates down the West coast to winter in Panama. They have several suitably spaced estuaries for refuelling along the way, but when some were given small radio transmitters to carry it was discovered they were often overflying them. Going North, with the storm front reversed in spring, birds were flying non stop from San Francisco Bay to the Alaskan tundra, over 3200 km, in less than 40 hours. This is an average speed of 80 kph. for a bird that can only fly 40 kph. With the detailed wind and weather records available for this area, it was possible to factor these in and only then did their impossible feat become possible. And it was revealed they were varying their height up to 6,096 metres—wherever the most favourable winds were—to do it.

Godwits occur in small numbers throughout the Pacific Islands, particularly Fiji, which is directly on the flight path to N.Z., but nowhere are they seen in large numbers, and it appears most come straight through. At a weight of 350 gms, they carry enough fuel to do just that, and just like in an airplane, it would be a great disadvantage to carry unneeded

fuel. In the last year, several departures from Alaska were correlated with arrivals in N.Z. and it appears to take about 5 days. Many N.Z. banded birds turn up in Australia, but it is not certain if our birds are transiting N.Z. or have a separate route.

Of 4 Godwit species, 3 have turned up in Tasmania, but the Bar-tailed Godwit is by far the most common. The Black-tailed Godwit comes from Asia to Australia in considerable number, but only rarely reaches Tasmania. The Hudsonian Godwit is a purely American bird that has a small breeding outpost in the same area of Alaska as the Bar-tailed. Most years a few of these birds manage to get in the wrong flock and wind up in N.Z. instead of Tierra del Fuego. One spent a summer in Tasmania in 1994, and a few others have reached SE Australia.

The easiest place to see Godwits is on the mud flats at the mouth of the Tamar at Georgetown, from about the end of September to the first week of March.

References

Baron, N. 1999, 'Riders on the Storm', *Canadian Geographic* Aug.

Gill, R. 2000 'The Bar-tailed Godwit Primer', *Southwinbird* #3 (OSNZ) Wellington N.Z.

Cameron, M. (Editor) 1998, "Flagged Godwits Reach Alaska", *Aust. Birding Magazine*, Summer 98

Patterson, R.M., W.C. Wakefield, M. Wakefield 1994 "Hudsonian Godwit in SE Tas." *Australian Bird Watcher* Vol 15 #7

Pringle, J.D. The Shorebirds of Australia, National Photographic of Australian Index Wildlife

Sibson, R.B. and Heather, B.D. Wader Studies in N.Z.

Whiteman L. 2000, 'The High Life', *Audubon magazine* Nov/Dec N.Y., U.S.A.

Singing in thin air

by Rene van Peer

Rene van Peer is a Dutch writer on music and sound arts who Ron met on his recent concert tour overseas. Rene has a particular interest in the sounds of nature. The following article is printed with his permission

It was on a cold Sunday morning that a Dutch reed player took a camera crew to the Amsterdam zoo. In a live television programme he was going to demonstrate a phenomenon he had come across: gibbons responded to his music, in such a way that the interaction was reminiscent of duetting. In front of a cage he played all manner of melodies, riffs and sounds. While the apes were less than forthcoming the presenter wondered whether he spotted the response he had come here for: "Ah yes, I believe something is happening now." Later he could be heard conferring with the musician - if what they witnessed now, was comparable to the earlier experiences of the latter; whether the apes perhaps needed time to get used to the camera crew, or to warm up to what was expected from them.

This duo turned what they had intended to be an eye-opener into a classical comedy of confusion. We may safely assume that some sort of sonic interaction had taken place (why else would the musician have been so confident that he wanted to demonstrate it live on television?), but apparently not much thought had been given about what had actually happened when he had first coaxed responses from these animals with his instrument. They had not stopped to wonder what makes gibbons vocalize in the first place, how their calls and songs are structured, but had taken for granted that gibbon songs can somehow be equated with music, that gibbons would take any opportunity to respond to sounds that are in fact alien to them. Possibly the thought had not crossed their mind that an insurmountable difference might exist between human and animal motivations for emitting structured sounds.

A failure to understand, then, on a deep level, with hilarious consequences. A basic misunderstanding, undoubtedly resulting from being rooted in urban life, which has its effects on the perception and understanding of phenomena that have not emerged in response to urban, man-made, environments - and resulting from not being aware of this. The environment humans have created around themselves is intended to function as a life support system, a semipermeable membrane that should ward off potential agents of destruction (or discomfort) and let in what is seen as benevolent - an extension of the skin, so to speak. For our protection and survival we rely on our inventiveness and craftsmanship, and on the resources that we have at our disposal.

In this cultures from all over the world don't differ so much. The difference lies primarily in the resources, which in turn determine the living conditions. In industrial and post-industrial societies there is less of an acute sense of how powers from nature influence our lives on a day to day basis. On the other hand, when all else fails we are more than ready to resort to powers outside the realm of what our knowledge can accomplish. Burning candles, visiting faith healers, invoking the power of numbers - in spite of all scientific progress and the positivist materialistic outlook it has spawned we have evidently retained the belief in superhuman forces.

In societies where people live off the land contacts with natural surroundings are far more immediate and

ritual. Understanding of the daily goings-on there is of vital importance. Paying attention to the slightest detail can mean the difference between life and death. To protect themselves from such overwhelming powers and to get these to work for them, people have had to develop ways to address them. Arguably intensified and concerted modes of activities (rituals that would entail singing, reciting, dance, decoration of the body) could summon and channel the energy necessary to establish contact with those powers.

An example of this is the ritual for fertilizing millet seed, conducted by the Bunun tribe of Taiwan. They plant a grain of millet, then form a circle around it and start to sing at pitches that rise with every round. The overall effect is of a chord that is lifted ever so gently - but if you listen closely, you can hear heterodyning occur. Some of the participants push their tone upward in a long drawn out movement, approaching the others until they are just microtones apart after which they move away again. Thus they create an uncanny throbbing sound that rises and subsides in waves.

The analogy between the rising of the chord and the growing of the plant is of a poetic clarity. Millet being the staple food of these people, this ritual is of vital importance. The heterodyning throb must be intended to add extra potency to the song. The sound is of a staggering intensity to those who produce it. It has the effect of binding the singers together–and it is the result of a concerted effort. Another aspect of the ritual is that according to the Bunun millet has ears. The seed (and, more importantly, the spirit that inhabits it) actually hears what is sung to it. The men are directly addressing this one kernel, and through it all the others they are about to sow. What is more, this song is part of a larger ritual cycle that takes place on various occasions throughout the year.

Evidently these people are on speaking terms with the natural world. The fact that nature lives independently from them and has to be negotiated with, is ingrained in their thoughts and their culture. It is an integral part of their lives. It is an expression of how they view their world. It binds the people together as a community. It identifies them, they identify themselves through it. It springs from an awareness of their position in the web of life. This is an exquisitely sophisticated, integrated complex of art, mythology and life.

Humans may express their relationship with nature in a more intimate way as well. Particularly touching is a little chant intoned by Tuvan herders to re-establish the tie between a newly born animal and its mother, to secure its survival. Even though there are well-defined pitch contours the Tuvans themselves view this as separate from their music. This kind of intoned magic song exists in a category of its own.

Imitation does occur as well. On a recording of Central African music in the Unesco series of Bärenreiter/Musicaphon one can hear how people mimic the sound of drops in a rain dance. There are numerous examples of very convincing imitations of animal calls to lure them in a hunt. For a recording released by Folkways an Indian from the Brazilian jungle gives out an entire series of lifelike calls, hoots and cries. Only the last, the jaguar, is nowhere near the real thing. No explanation is given, but without any doubt the hunter must have thought it wise not to enter on a course that might bring him face to face with the most powerful being in his world.

Mongolian music abounds with galloping rhythms, immediately reminiscent of the horse - the animal that has of old been most important to the Mongols. So much so that a boy was only named (and thus became a man) when he was given a horse. Without the animal he is a nobody. It appears in the major Mongolian instrument, the *morin-khuur*, or horsehead fiddle. A story tells how the horse of a hero was transformed into the first *morin khuur* after its death, when the man stroked the animal out of grief. The sound of the fiddle can indeed be a close approximation of the voice of a horse.

Another level of conversing with nature can be found in Afghan music, if the Taliban government hasn't rooted it out, that is. Rubâb players often take a caged bird with them on stage, preferably a nightingale, but a canary will do as well; from time to time during the concert the bird will sing with the music - a pinnacle of aesthetic and spiritual beauty, according to the audience. The bird is seen as a mediator between humans and the supreme being. Consequently, whenever it starts to sing, prompted by the music, a direct line is established with the powers on high.

Something similar happened in rehearsals of the Maciunas Ensemble, the music group of the Dutch sound artist Paul Panhuysen who has an aviary in his studio, a large space on the second floor of Het Apollohuis, the building where he lives, works, and (until January 1997) presented exhibitions and concert. A recording made of this event was released on CD. In the liner notes to this album Panhuysen describes the circumstances of this sonic coming together. "The studio where the recording is made is the same room where the birds live in their aviary. The birds were so inspired by the sound of the aluminium strips, that they immediately joined the music as improvising musicians and

continued to play with us in an often very loud and competitive way for more than an hour. The birds stopped only after we had stopped. The event was not planned, it just happened..."

However close this comes to the Afghan setup, it does not have its spiritual dimensions. But, in contrast with the wonderful non-event in the Amsterdam zoo, it was based on some knowledge of what was going on, derived from close observation - although, admittedly, chance did play a significant role in it. In fact, we have arrived at a place where music from oral traditions and contemporary Western sound works overlap. Here the expressions are also indicative of human views on their relationship with nature. Sometimes there is evidence of an attempt to fathom what is going on out there, but just as often the product can be the result of ignorance and indifference. Of not wanting to realize that there is something to know there. This field is another matter altogether, waiting to be explored. Before it is too late –and nothing remains to be explored.

Masked Lapwings, Winged Watchdogs!

by Sarah Lloyd

Love them or hate them, Masked Lapwings *Vanellus miles*, with their distinctive appearance and

penetrating call must be among our best-known birds. For me, their call is the most evocative of all our native species. It is reminiscent of my childhood in Hobart where large numbers used to congregate on the playing field opposite my home – just one of the birds that frequented the city and sparked my interest in ornithology.

On talkback radio recently I heard these birds being described as "possums of the air." Puzzled by this description, I thought that perhaps it referred to the number of complaints about the birds to Parks and Wildlife - second only to those received about possums, apparently. Or is it because they, like possums, have benefited by the activities of people and have spread to the extent that they are now a conspicuous component of our wildlife?

Any reason for the complaints escapes me, as these are harmless birds, and their presence at close quarters should be regarded as an opportunity rather than a threat. Indeed, inhabitants of larger mainland cities welcome the presence of this bird and their delightfully camouflaged chicks as a reminder that nature does still exist, even in areas dominated by concrete, glass, metal and traffic.

The Masked Lapwing was uncommon at the time of European settlement, being restricted to the relatively small areas of natural grassland that occurred throughout the state. But as the land was cleared for towns and cities, and pastoral development rapidly increased areas of suitable habitat, there was a corresponding increase in the number of Lapwings. The bird soon found areas such as paddocks, playing fields, school grounds, airfields, roadside verges and backyards to its liking and these days Tasmania is considered the stronghold for the Masked Lapwing.

Known for many years as the Spur-winged Plover, its name was changed to conform to international standards of classification and nomenclature and to better reflect its relationship to Northern Hemisphere Lapwings. Certain elements of the plumage pattern are common to most lapwings; the tail is always white basally and usually has a broad black band distally. The wing always has black primaries and usually a broad white stripe. Characters frequent among lapwings but not found in plovers are a crest, facial wattles and wing-spurs.

Lapwings belong to a family that includes Dotterels and Plovers. In Australia there are seven resident and twelve migratory species, most of which breed in the Northern Hemisphere and undertake remarkable journeys to spend the summer months here. But the resident Lapwing, with its preference for the habitats we have created, gives us the privilege of observing its breeding and complex social system at close quarters.

The nest, a slight depression sometimes lined with grass, twigs, pebbles or dried dung, is usually situated on slightly elevated ground near temporary water. Egg laying can begin as early as June and after an incubation period of about four weeks, the well-camouflaged young are lead to the water edge where they find an abundance of invertebrate food in the form of earthworms and insects, as well as seeds and other vegetable matter. With their exposure to extreme weather conditions at this time, along with the

additional threats of livestock, people, predatory birds, dogs and traffic we should marvel that this adaptable bird has any breeding success at all!

Incubation and guarding the nest and young is shared by both sexes. If an intruder is spotted the familiar strident call is uttered making them one of the most reliable 'watchdogs' you can hope for. If this isn't enough to keep intruders at bay it resorts to dive-bombing passers-by. This is no doubt disconcerting to those being swooped, but I am yet to hear of anyone being wounded by the spur. Actual physical contact is more likely to be the result of people waving their arms around as some sort of defence against the bird which is, after all, considerably smaller than a person.

Instead the spur is probably used to greatest effect on highflying predators like Swamp Harriers or Brown Falcons and spectacular aerial combats can be witnessed when such conflicts occur.

Masked Lapwings live in Indonesia and New Guinea as well as Australia. Two subspecies occur, *miles* in areas north of Townsville, and *novaehollandiae* to the south.

A pair of the southern sub-species *novaehollandiae* self-introduced to New Zealand in 1932 where the population has now reached over a thousand birds. Vagrant birds of the southern subspecies have also reach the southwest of Western Australia and are seen as an occasional visitor to New Guinea indicating that individuals can move great distances. More recently there has been a report of breeding in New Caledonia. It remains to be seen if the population, now numbering about 11, will be viable.

Its ability to expand its range in association with people is fairly unusual in the bird world. One may wonder at the corresponding decrease in the bird species whose habitat was cleared to provide those conditions so favoured by the Lapwing. The ability of the Lapwing to spread also raises other questions about the potential for speciation, and the possible competition with local endemic species.

Masked Lapwings seem to prefer flying long distances at night. This may be because its characteristic erratic jerky flight, to which its name Lapwing alludes, is not strong enough for it to out fly predatory birds. And now that I live in a place that is devoid of any suitable lapwing habitat, it is only when they undertake their night-time sojourns over our house that I hear that beautifully evocative call.

Refrences:

Blakers, M. et al (1984) The Atlas Of Australian Birds. Royal Australasian Ornithologists Union. Melbourne University Press.

Green, R.H.(1995) The Fauna of Tasmania: Birds. Potoroo Publishing. Launceston

Landsborough Thomson, A. (ed) (1964) A New Dictionary of Birds. British Ornithologists' Union. Nelson. London.

Macdonald, J.D. (1987) The Illustrated Dictionary of Australian Birds by Common Name. Reed. Melbourne.

Pizzey & Knight (1977) The Field Guide To The Birds Of Australia. Angus and Robertson. Sydney

Sharland, Michael (1958) Tasmanian Birds. Angus and Robertson, Sydney

Watts, Dave (1999) Field Guide To Tasmanian Birds. New Holland Publishers. Sydney

Wingspan Vol. 10 No. 3 September 2000. Journal of Birds Australia.

Cordyceps gunnii with caterpiller

Cordyceps fungi are insect parasites, and commonly infest the larval stages of moths and beetles. When the available food runs out, they throw up a fruitbody. Carefully dug up, the victim can be found attached.

This specimen was supplied by Sarah Lloyd, and came from near Bangor growing under a Silver Wattle. It was scanned on a flat bed scanner with a box lined with white paper over it. Fungi and many other things such as insects can be recorded this way in full colour and with reasonable depth of field.

Cordyceps are used as aphrodisiacs in Chinese medicine. We are looking for volunteers to try ours. The caterpillar is used!

Spring Field Nats Federation Events

The Central North Field Naturalists are hosting the next Federation meeting to be held at The Arm River Outdoor Education Centre On Friday, September 21st until Sunday September 23rd.

How to get there: Follow the Liena Road from Mole Creek for approximately 13km passing the Marakoopa and King Solomon Caves turn-offs. Continue past the Cradle Mountain turn-off for another 15km on the Mersey Forest Road. At this point you will pass over the Arm River Bridge and the road becomes gravel. Turn right onto Maggs Road, about 500m from the Bridge. The center is located on the right approximately 1km along this road. The drive from Mole Creek to the center will take about 30 minutes.

Facilities: Dormitory style accommodation is available for 40-50 people. Bunks and mattresses are supplied. People will need to bring their own sleeping bags, blankets etc. There is plenty of room outdoors to pitch a tent. Male and female toilets and showers are located on the ground floor of one of the accommodation units.

The Kitchen has a large gas stove with an oven and fridge. Adjacent to the kitchen is a dining room with tables, chairs and a wood heater. Outdoor Barbecues are located within the grounds of the center.

Cooking utensils, including pots and pans, cutlery, plates and cups are NOT provided.

240 V. power is available. There is plenty of fresh water and firewood and there is a phone for emergency use.

Accommodation fees:

Adults $11.00 per night
Students $3.30 per night

Saturday evening meal $18.00 for a sumptuous feast (see below)

To give us an idea of numbers for catering purposes please contact:
Jim Nelson ph: 6368 1313 email jcnelson@southcom.com.au
Sarah Lloyd ph: 6396 1380 email sarahlloyd@iprimus.com.au

Activities: The Arm River area offers a range of possibilities for field naturalizing. This being the case, we have left much of the weekend free for people to explore the area and pursue their own interests at their own pace. As usual, people with expertise in fungi, snails, orchids, birds, invertebrates and botany will be attending and we will provide various microscopes and reference books.

Geoff Shannon, who has been banding birds in the area for the past several years, will show us his methods either on Saturday or Sunday depending on the weather.

Many walking tracks are located within the general area:

- From the centre itself there is the Arm Falls Track which is a short (20 minute return) walk.
- There is a rainforest loop (45 minutes return) which crosses the Arm River at the bridge.
- The Maggs Mountain Scenic Lookout walk (1.5 hours return) provides magnificent views

A short drive will take you to the start of other walks that access the World Heritage area:

- Lees Paddock Track
- Walls of Jerusalem Track
- Arm River Track

Friday 21st September.

- **At 12.00** Members of the Central North Field Naturalists are planning to arrive to light fires etc. (People should make their own arrangements for the Friday evening meal.)

7.30 Danny Soccol will show us his collection of slides mainly of fungi

Saturday 22nd September: Walks

- **5.00** Federation meeting
- **6.30** CNFN member and renowned cook, Mariama Hunter, ably assisted by her daughter Gitangali and husband, Jim will present the Saturday evening meal. Mariama specializes in Indian cooking and has agreed to provide a sumptuous feast in this remote location for an extremely reasonable $18 per person. The CNFN will provide both alcoholic and non-alcoholic drinks.

After dinner Geoff Shannon will give us a brief outline of his bird banding activities.

Sunday 23rd September. Bird banding with Geoff Shannon (weather permitting)