Central North Field Naturalists

CNFN

the

Natural News

Jan-Feb 2000

Patron - Dennis Morris

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Walks and Events

Sunday April 9, Mother Cummings Peak
Meet at Meander Community Centre at 9:30. This is a climb of about 1-1.5 hours from Eucalypt up to Montane. Birds, plants, reptiles, butterflies, great views. Bring lunch and appropriate gear for montane conditions.

Friday March 31 to April 2 Federation of Field Naturalists Weekend at St. Helens.
Excursions on Sat. to Blue Tier with a Fungi and an Invertebrate Workshop. Contact Jim for details.

Saturday April 15th. First Outing of the CNFN Bird Study Group
Meet at Jim Hunter's place at 9.30.
Jim lives at 19 Rysavy Road. Rysavy road is off Claude road, 11 km from Sheffield. "Silver Ridge Retreat" is also in Rysavy Road and has a prominent sign at the turnoff.
Phone Jim 6491 1853 or Sarah 6396 1380

Sunday April 23rd, Easter Egg Hunt
Sarah and Ron invite anybody interested to explore Black Sugarloaf on Easter Sunday. Arrive as early as you like or meet at the bottom of their track at 10am. Easter Egg hunt included. Further information ring 6396 1380.

Sunday May 7, Mt. Careless Walk Meet at Frankford store at 9:30 for a walk at Mt. Careless guided by Geoff Dean. Some steep climbing probable.

Shorebirds at George Town Reserve

by Jim Nelson

Sarah and I leapt at the chance to accompany Jim Hunter to look at shore birds at the George Town Reserve. Entering George Town, take a right at the roundabout towards Low Head. The reserve area is marked with signs on the left. Gumboots are required to get around at low tide.

The tide was out when we arrived, and quite a large area of rocky bottom and mudflats was exposed. It was necessary to walk a fair way out towards the river before we began to see interesting birds. A lot of these shore birds can be tricky to identify, and without Jim to show us the discreet details to look for, we would have been struggling. We were particularly interested in seeing some of the arctic migrants that spend summers here before returning to the arctic tundra to breed. Some of these birds begin to show breeding plumage before they return. But we were a little early for this, with only one Golden Plover showing the beginning of their spectacular breeding dress.

There were a number of local birds present such as Black Swans, White-faced Herons, Pelicans, Mountain Ducks, Chestnut Teals, Pied

(Continued on Page 9)

Bugs and Butterflies at Cradle Mountain

by Sarah Lloyd.

Our first walk of the year was to Cradle Mountain, and despite local skies being overcast with the threat of rain, the weather in the highlands was clear and sunny and for most of the day we were sheltered from the cold southerly wind.

Botanist, Dick Burns planned the walk to take us through several different plant communities, and started by succinctly summarising the last several thousand million years of geological history.

The main focus of the walk was to be the many endemic plants found in the area, especially those of the Epacridaceae family, but as is so often the case with field naturalists walks, people there had different areas of interest and expertise so bugs, butterflies, birds, and frogs were also discussed and identified.

A TRUE BUG

For me, a long standing mystery was solved by Herbert Staubmann who plucked from the endemic *Allocasuarina zephyrea* (which looks identical to *A. monilifera*) a structure similar to ones I have seen on two members of the pea family (Fabaceae) *Pultenaea juniperina* and *P. gunnii*.

By carefully cutting the structure known as a gall, a small larval grub could be seen. This has now been identified as a *Cyclindrococcus sp* (see illustration) It is a true bug, (order HEMIPTERA) and belongs to the superfamily COCCOIDEA. The tiny insects in this superfamily (in which the females are wingless, larviform and sedentary and the adult males do not feed and live only long enough to mate) are grouped into three distinct types - scale insects that cover themselves with a waxy scale, mealy bugs that are covered with a waxy flour-like down and gall makers.

The insects belong to the worldwide family Eriococcidae and in Australia species form spectacular galls on endemic plants, the 39 species in the Genus *Apiomorpha* make distinctive woody galls on eucalypts leaves and stems, the species in the Genus *Cylindrococcus* are associated with *Allocasuarinas*.

Galling insects are essentially parasitic and often seem to adversely effect the host plant. The galls found on the *Allocasuarina* and *Pultenaea* sp., however, are intricate structures composed of a series of overlapping bracts and closely resemble other parts of the host. They are caused by the shortening of the internodes, and the ones we saw looked remarkably like an aborted seed case - leading one to wonder about

the possibility of some cooperative arrangement between host and plant.

BUTTERFLIES

Many butterflies were taking advantage of the warm sunny weather. They all seemed to be the same species which Dennis Wild identified as the Leprea Brown *Nesoxenica leprea* which belongs to the genus Nesoxenica, the only butterfly genus restricted to Tasmania. We found the remains of one on the path and were able to observe the patterns on the dorsal and ventral surfaces of its wings.

In this and the vast majority of butterfly species the colours and patterns on the upper surface of the wings have evolved independently from those on the underside.

On the upper surface the colours and patterns have evolved for a variety of functions which include regulation of body temperature, sexual signalling, camouflage (crypsis) and warning (aposematism). Some butterflies are cryptically coloured to resemble such things as leaves or

bark. More often, however they are brightly coloured which serves as a warning to predators such as birds.

Butterflies are truly amazing and beautiful insects. Almost all the food utilised by each insect during its life is eaten by the larva–the adults only need to sip nectar and water. They are very species specific (e.g. the Cabbage butterfly only feeds on species of Brassica) and if the larval food plant contains toxins, these build up in the body of the grub to ensure that it is distasteful and often poisonous to predators such as birds and reptiles. The bright colouring of many butterflies has evolved to advertise this fact. This is known as aposematism and is associated with mimicry–non-poisonous species mimic the toxic ones to avoid being preyed upon.

Lower wing surfaces are coloured for different reasons. In common with other butterflies, the lower surface of the wings of the Leprea Brown are drably coloured. This butterfly closely associates with areas of Myrtle beech *Nofothofagus cunninghamii* under which its larval food plant *Uncinia sp* (Cyperaceae) grows. During cold and wet weather the adults settle on the twigs of the beech where the exposed pattern on the underside of its wings so closely resembles the lichen growing on the trees that they are difficult to see unless disturbed.

Eyespots are another common feature of butterfly wing patterns. Their purpose is twofold. One seems to be to fool small insectivorous birds, as they closely resemble the eyes of predators. The other is to divert the attack from the most vulnerable part of the insect–some eyespots occur on extended wing tips.

Butterfly wings are made up of tiny scales that overlap like tiles on a roof. Like the pixels on computer generated images, each scale has only a single colour so the overall pattern is a fine mosaic of these scales.

The colour in each scale is either due to the presence of a chemical pigment or it's a structural colour. On each scale there are tiny structures such as fine parallel ridges or tubular holes that scatter and deflect light such that some of the most brilliant colours known in nature are produced. All iridescent colours and most of the blues and green are structural colours.

Later in the day I saw a Macleay's Swallowtail *Graphium macleayanum*, perhaps Tasmania's most spectacular butterfly. The larva feed on

Sassafras *Atherosperma moschatum* and the butterflies are strongly attracted to Pimelea flowers. Adult males of this species are territorial and will aggressively defend areas of forest from others. Like many other butterflies, they are known to "hilltop" where large numbers of butterflies aggregate on hilltops, crests of ridges, cliff-tops or any other area that is higher that the surrounding countryside. The reason for this behaviour is not fully understood.

The botany, birds and frogs were interesting too!

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Zborowsky, Paul & Storey, Ross.(1995) A Field Guide To The Insects of Australia. Reed Books, Kew.

Field Naturalising Up The Creek In The Big Smoke

by Ron Nagorcka

I don't much like big cities, but there are times one must cope with them as best one can–especially if one has 3 offspring and 3 brothers in Melbourne. My work takes me there too–and the false dawn of the new millenium found me rehearsing in Parkville. On my way back to my brother's house in Fairfield I quite often visited Alphington Park–along the Yarra behind the Australian Paper Mills–to revive my spirit and observe anything of interest.

Melbournians have truly rediscovered their once despised "upside down" river. The Yarra carves a magnificent valley for itself through the basalt plain with spectacular cliffs only a few kilometres from the heart of the city. Setting out from Fairfield, I can take a wonderful long walk following the river to my other brothers in Collingwood and Fitzroy. I could even detour up the Merri creek and follow it–on foot or by bicycle–all the 10k or so to Coburg. And I might well encounter a Kingfisher on the way! They have returned and the locals celebrate the fact each year with a popular Kingfisher Festival.

The banks of the Yarra were proclaimed a "good spot for a village" by John Batman–a Tasmanian settler who had previously hired mainland aboriginal men to assist in the war against the people of Tasmania. In 1834 he signed a Treaty with some people in Port Phillip–but this was never ratified by any authority. (Ryan 1981) Since then the Yarra has not been treated well. The last great insult was the building of a freeway around 1980 through the centre of the very large Yarra Bend Park–which still contains considerable areas of native vegetation. The freeway noise can be heard loud and clear in Alphington Park–which is actually a small corner of this larger park on the other side of the river.

Nonetheless, it is a peaceful place. What makes the spot special for me is its billabong–which seems to have magically survived the ravages of civilisation. Upstream from the park, there's a fence and a cleared area, then a paddock with a horse in it, then a golf course. The banks there are mostly covered in ivy and introduced elms. But around the billabong and on the riverbank below are magnificent old redgums *(Eucalypt* sp.) and silver wattles (*Acacia dealbata*).

I have been to this spot before and it has been most encouraging to observe the progress being made by local volunteers in conjunction with Parks Victoria to rehabilitate this area and many others in the catchment. The next working bees were advertised on a sign in an area thoroughly mulched with woodchips to kill introduced grasses and then planted with a variety of local natives amongst which I noted *Goodenia ovata* flourishing, as well a fascinating array of grasses.

On my first arrival it was a very hot afternoon–and I descended towards the river reprimanding myself for not bringing a hat. The best option was to find a shady spot by the billabong to watch the birds. The flock of White Ibis feeding there had become aware of me, and some had already flown up to the vantage point of a large dead tree nearby. There they made a magnificent sight–enormous white decorations against bleached grey wood and a vivid blue sky.

Down along the river, you could hear the Bell Miners which sound pretty to us, but to avian ears the keep-well-out-of-here message is clear–and taken seriously by most. At least the Noisy Miners still dominating the trees around the billabong actually sound inhospitable–especially when a Grey Butcherbird flew into their territory! My overall impression however was that the numbers of both miners is lessening as the native understory is reestablished and there were many other species around. My list includes Willie Wagtail, Magpie, Thornbill, Redrumped Parrot, Black-faced Cuckoo Shrike, Bassian Thrush, Purple-crowned Lorikeet, Magpie Lark, White-plumed Honeyeater, Crow sp and Kookaburra.

As I sat quietly near the billabong I gained wonderful close views of Black Cormorants, Woodducks, a Little Grebe feeding stealthily around the edges, and families of both the Dusky Moorhen, and the Purple Swamphen moved warily closer to me.

Another place worth checking out in Alphington is Miller St. near the station–a place with a glorious consensus of overgrown non-lawn front yards (which I would quibble should display more native vegetation) many of which displayed a sign warning anybody with "innapropriate development" in mind that it would be vigorously opposed by the community. Power to the people!

I also had occasion to go well upstream along the Yarra to visit a friend in Eltham, not adjoining the river, but next to a butterfly reserve. This reserve is also due to a victory of people power. The "Eltham Copper" (otherwise known as the "Dull Copper"–*Paralucia pyrodiscus lucida*) gave the local residents a focal point in a battle to save an area of bush–which in the 1980s was actually purchased by the State government to prevent its development, and to maintain the *Bursaria spinosa* on which the Eltham Copper feeds. (D. Wild pers. comm.) This butterfly was featured recently in an excellent article in the Age by Jill, Duchess of Hamilton:

"The first community effort to save an insect was in Eltham, Victoria, in the 1980s with the Eltham copper. When it was thought to be nearly wiped out, two butterfly enthusiasts, Dr Michael Braby and David Crosby, inspired residents to grow its host plant. This, coupled with state government saving pockets of natural habitat, ensured its survival" The Age 8/2/00

This butterfly is closely related to the "Bright Copper" (*Paralucia aurifera*) which occurs throughout Tasmania–and both are interesting because of their close relationship to particular ant species–in the case of the Dull Copper to *Notoncus* species and of the Bright Copper to *Iridomyrex* species. "The larvae [of *P. pyrodiscus lucida*] feed at night on the foliage of *Bursaria spinosa* and are attended by small black ants, *Notoncus* sp. They shelter during the day in the ants' nest at the base of the plant, being found resting chiefly on the stem or main roots. Pupation usually occurs in the ants nest". (Common and Waterhouse 1981)

Unfortunately this reserve is having some problems. As soon as I arrived I heard the large colony of Noisy Miners, and could have described the sickly state of many of the trees without even looking. (Noisy Miners are very aggressive and territorial and exclude other honeyeaters and small birds which control insects on Eucalypts). I spent a hot evening and a dawn in this pretty setting, but did not observe or hear any small birds. With the list I did compile in front of me (Magpie, Noisy Miner, Currawong, Eastern Rosella, Grey Butcherbird, Kookaburra, Bassian Thrush, Dogs, Cats, Trailbikes) it's hardly surprising. Unless there was a lot of thick understorey (and there isn't), it would be suicidal for a small bird to go near the place. It would seem to me that this reserve demonstrates well the problems of small reserves for threatened species–overall ecological imbalance is as big a threat as the developer in the long run.

I also noticed an abundance of skinks sunning themselves on rocks in Eltham. I didn't catch one, but it is probably the Dark-flecked Garden Sunskink, *Lampropholis delicata* ["delicata" means "delicate shining-scale" (Ehmann 1981)].

Back in Tasmania I ponder the ironies–in the big cities they know what they've lost–'cause its gone. They also have enough people to repair some of the immense damage. Meanwhile the rampant clearing of native vegetation for agriculture, forestry, homes, and firewood in Tasmania accelerates. Maybe it is in fact easier to escape from madness in the city after all!

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Dear Minister

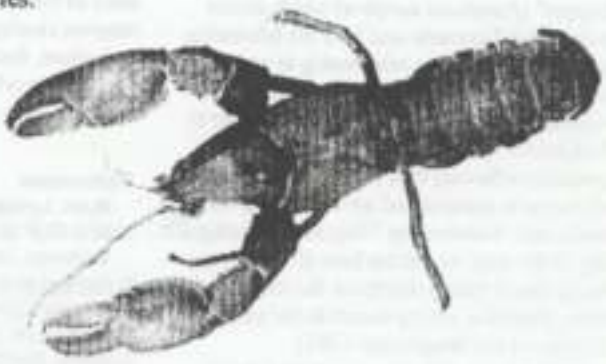
I have been carrying out a research project for the University of Tasmania on temporal vegetation change in a number of Tasmania's East Coast wetlands. One of the main aspects of this project is the ground surveying of these areas. In a recent visit to Rushy Lagoon near Cremorne on South Arm, I noted the presence of the introduced Yabby *Cherax destructor*. As Tasmania has arguably one of the most diverse freshwater crayfish faunas in the world I would expect this species to be of some concern. I notice that on the IFC web page dedicated to the Tasmanian Carp eradication problem in lakes Crescent and Sorell, the potential environmental problems cited for this species were:

1. Destruction of fragile aquatic macrophytes (plants)
2. Increase in turbidity
3. Damage to stream beds, irrigation channels
4. Nutrient enrichment of waterways leading to algal blooms
5. Competitive interactions with desirable fish species
6. Introduction of new parasites and diseases to desirable fish species.

Cherax destructor is also a candidate for causing any of these problems (although I doubt in the Carp example that points five and six pertains to any valuable native species). If these environmental effects warrant eradication of Carp why not the Yabby? As the spread of *Cherax destructor* appears at present to be going virtually unchecked, and the species is now well established in an untold number of localities, I am interested to know how this problem will be dealt with. Rushy Lagoon is listed in the ANCA Directory of Important Wetlands in Australia (1996) therefore if its conservation value is to be preserved something must be done about this pest. I am interested to know if there is some sort of management plan for this species and what sort of measures are to be taken to halt its spread and/or remove it from important sites such as Rushy Lagoon. I note that some measures have been taken regarding this species, concerning import and transport within the state, however these appear to have been less than effective.

Yours truly,

Micah Visoiu
University of Tasmania School of Geography & Environmental Studies
GPO Box 252-78
Hobart, Tasmania, 7001



Bumblebees: update on another exotic organism for Australia

by Andrew Hingston

After the Palearctic large earth bumblebee *Bombus terrestris* (L.) first arrived in Tasmania in February 1992 (Semmens et al. 1993), the Department of Primary Industries and Fisheries (DPIF) actively promoted them as a good insect (e.g. Semmens 1995, Stacey 1997). DPIF staff claimed that this species prefers to forage on introduced plants rather than natives (Semmens 1995, 1996, Stacey 1997), and that it does not compete with other species of bees (Semmens 1995, Stacey 1997). Both of these claims were based on extrapolation of the situation in New Zealand to Tasmania.

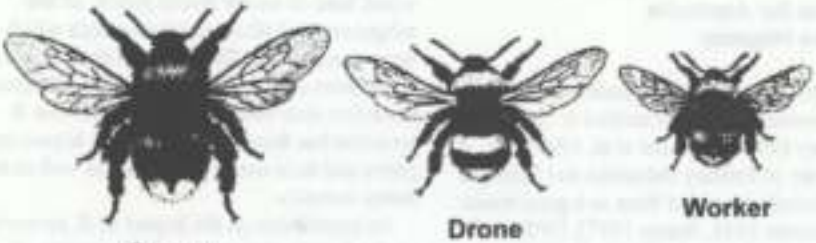
This species was introduced to New Zealand in 1885, but since then has only been recorded foraging on 19 native plant species (Donovan & Macfarlane 1984). This, together with the low densities at which it occurs in New Zealand, led Donovan (1980) to conclude that any competition from *B. terrestris* on native flower feeding animals was negligible. Semmens (1996) compiled a list of forage plants for this species in Tasmania, which also indicated that it foraged predominantly on introduced plants here. However, this list was the result of people telephoning Semmens with their sightings, and was therefore obviously biased towards garden plants because of the greater densities of people in gardens than native vegetation. However, Hingston and McQuillan (1998a) revealed that *B. terrestris* forages heavily on native plants in areas within 5 km of suburbia, with 2150 sightings on 62 species from 20 families. The most heavily visited families, in terms of numbers of plant species, were Myrtaceae, Fabaceae, and Epacridaceae, with *Bursaria spinosa* (Pittosporaceae) and *Banksia marginata* (Proteaceae) also receiving many visits. The broad foraging of *B. terrestris* allowed it to maintain successful colonies in a wide range of vegetation types near Hobart, from coastal heath, through sclerophyll forests, to subalpine shrubbery at an altitude of 1100 m. This foraging profile overlapped with that of all insect families which feed on nectar and/or pollen, all bee subgenera, and all nectarivorous birds which were encountered. This, along with its presence at densities comparable to that of the European honeybee *Apis mellifera* L., indicates that *B. terrestris* has enormous potential to impact on plants and their native pollinators as well as the honey industry.

An experiment on the impact of *B. terrestris* on the foraging behaviour of two species of native megachilid bees on the flowers of *Gompholobium huegelii* (Fabaceae) found that the megachilids visited fewer flowers, and had shorter foraging bouts in the afternoon, in quadrats where *B. terrestris* also foraged (Hingston and McQuillan 1999). Hence, *B. terrestris* was displacing the native bees through resource competition. This may adversely affect the pollination of *G. huegelii*. The megachilids have pollen-carrying scopal hairs on their metasomal sterna which contact the anthers and stigma of the flower when a bee probes for nectar. In contrast, *B. terrestris* is glabrous in this region and is therefore less well suited to transporting pollen of this species.

Evidence of competition with a territorial colletid bee was also discovered (Hingston 1997). This bee, which is smaller than *B. terrestris*, attempted to drive the latter away from flowers of Fabaceae. However, this was largely unsuccessful, resulting in the colletid wasting time and energy in resource defence while also risking physical injury. Hence, the colletid incurred both a loss of resources to *B. terrestris*, as well as a loss in the time and energy available to gather these resources.

The second-most frequently visited flower by *B. terrestris* was *Epacris impressa* (Epacridaceae) (Hingston and McQuillan 1998a). However, it is unlikely to be an effective pollinator of these flowers, due to its habit of piercing the corolla to access nectar, thereby bypassing the anthers and stigma (Hingston and McQuillan 1998b).

Therefore, contrary to claims by DPIF staff (Semmens 1995, Stacey 1997) *B. terrestris* is not ecologically benign in Tasmania.



Queen
30-35mm

Drone

Worker

An application has been made by Gosford Integrated Pest Management Services to import this species to the Australian mainland to enhance pollination of tomatoes in greenhouses. Such an introduction clearly poses a threat to mainland Australian ecosystems. Moreover, recent research indicates that native anthophorid bees are capable of enhancing pollination in greenhouse tomatoes (Hogendoorn et al. in press). In fact, the resultant increase in yield in the presence of the anthophorids (48.5 - 53.4%) (Hogendoorn et al. in press) was greater than that generally achieved in the presence of *B. terrestris* (20 - 30%) (Semmens 1995). Hence, the introduction of *B. terrestris* to the Australian mainland not only involves ecological risks, it may also be economically unnecessary.

References

Donovan B.J. (1980) Interactions between native and introduced bees in New Zealand. New Zealand Journal of Ecology 3, 104-116.

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Stacey E. (1997) Humble bumble bee a welcome hard worker. The Mercury, January 30, p.9.

Please contact Jim Nelson with any sightings of bumble bees more than 50 km north of Hobart in native vegetation. Note: Date, Place, Numbers, castes (see illustration), type of vegetation, and whether pollen is being collected on the hind legs. Send to 68 Dynans Br. Rd. Weegena, 7304 or Ph. 6368 1313,
or e-mail: jcnelson@southcom.com.au

and Sooty Oystercatchers, Masked Lapwings, Silver Gulls, Pacific Gulls and Little Pied and Little Black Cormorants.

Two or three Fairy Terns were performing aerobatics, hovering and diving into the water. A Caspian Tern and a Crested Tern or two were also spotted as they flew past us.

A few Greenshanks (Sandpipers) were seen. These would have been pretty tricky without Jim there to point out their conspicuous white rump and slightly upturned bill. Its green shanks were beyond the ability of our binoculars to determine.

Numerous little Red-necked Stints were running around, minus their red neck breeding plumage. Interspersed with these were some similar sized but stouter Double-banded Plovers, also without their breeding dress of double bands. Also small in size were the Curlew Sandpipers. These were most easily sorted by their longer beaks. We may or may not have seen a Sharp-tailed Sandpiper, or was it a Pectoral?

The Ruddy Turnstones at least were easy to pick. Their conspicuous, shortish red legs coupled with a stocky body and mottled dark and light brown feathers make them an easy medium- small bird to identify.

The Golden Plovers were also easy to identify if you could only see them. Their non-breeding plumage made them practically invisible among the rocks. We soon learned to carefully scour areas that at first glance were vacant, but on closer observation could hold a lone cryptic bird or two.

One bird we didn't see which we were looking forward to was the Bar-tailed Godwit. This is a larger bird (to 45 cm) with a long upturned bill. We speculated on how a bird could get a name like Godwit! This was only the second time in 10 trips to the area that Jim had missed seeing them.

Eastern Curlews which are even larger (to 60 cm) also failed to appear. These have a long down turned bill. There is also a medium sized curlew (to 43 cm.) called a Whimbrel that can be seen here on the right day.

The bills of these intertidal shore birds largely determine what foods they are able to access (see below). Check out George Town Reserve!

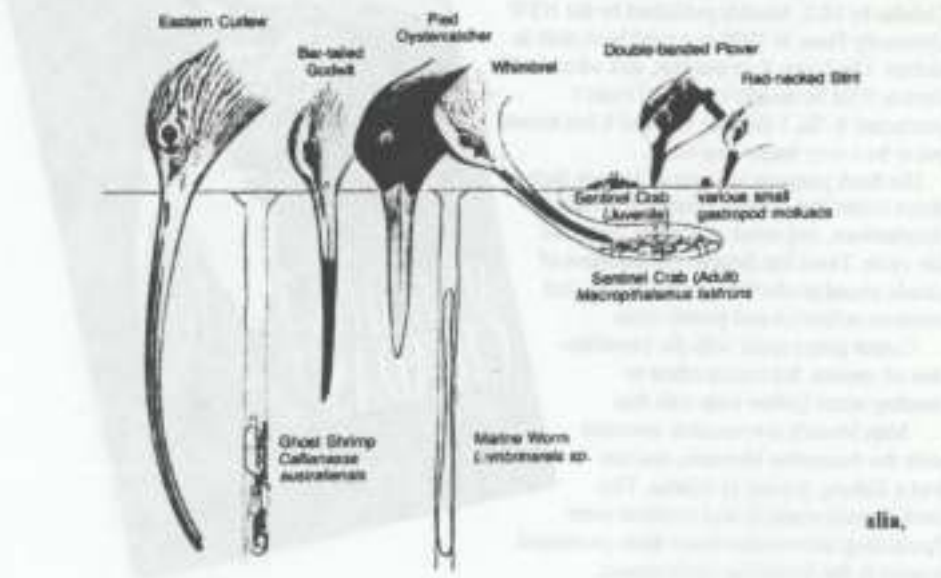
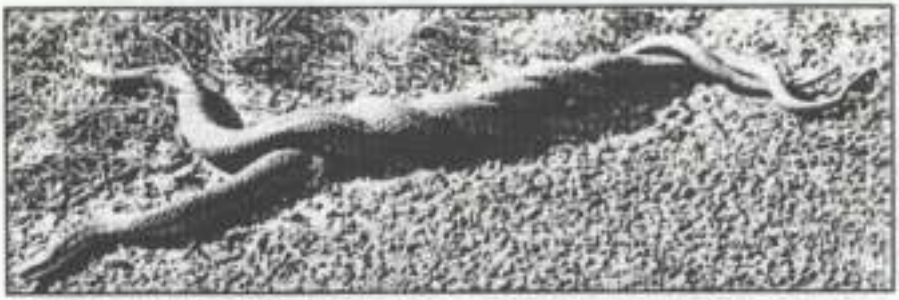


Fig. 2.16. The bill lengths of some intertidal shorebirds in relation to the typical depths of their main prey.

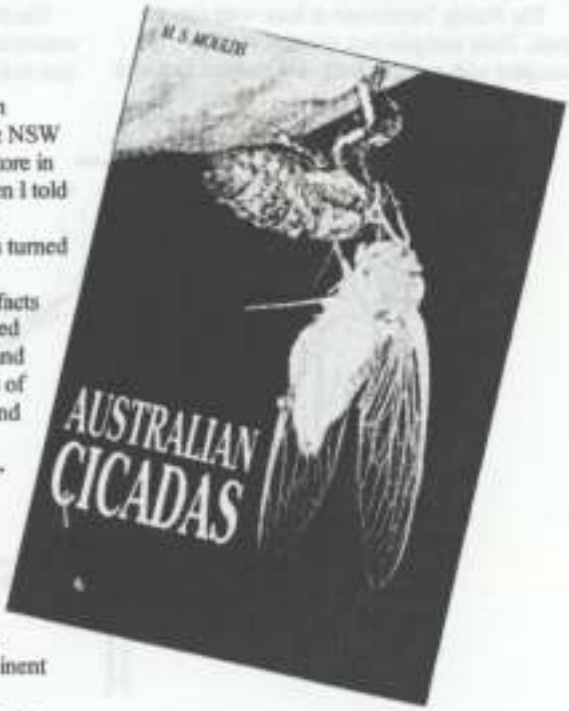


"Let's twist again like we did last summer"

The above photo was provided by Jenny Seaton and Delton Hedges. They came across the two coppeheads mating on the edge of the road, so they stopped to keep them from getting run over. And they, well... watched the snakes carry out their own version of twisted love. They reported that every few minutes the snakes would unwind and leap (still attached) in the air. Without trying to be too anthropomorphic, this leaping seemed to suggest that it was good for both of them.

Book Review

by Jim Nelson



I picked up a pristine copy of Australian Cicadas by M.S. Moulds published by the NSW University Press in 1990 in a used bookstore in Hobart. I had seen it on one trip, and when I told Dennis Wild he couldn't believe I hadn't purchased it. So, I did next trip, and it has turned out to be a very interesting book.

The book purports to cover all known facts about Australian cicadas. There are detailed distributions, and notes on habitat, song and life cycle. There are detailed explanations of cicada sound production, classification, and notes on collection and preservation.

Colour plates assist with the identification of species, but I must admit to needing some further help with this.

Max Moulds is a research associate with the Australian Museum, and has had a lifelong interest in cicadas. This book is quite readable and contains some fascinating information about these prominent insects in the Australian environment.

I am happy to loan my copy to anyone who would like to know more.

Jim & Claudia's 30th Anniversary Aug, 1999

Claudia Louise Nelson
10 July 1948 - 3 February 2000

Do not stand at her grave and weep;
Shes is not there, she does not sleep.

She is a thousand winds that blow.
She is the diamond glints on snow.

She is the sunlight on ripened grain.
She is the gentle autumn rain.

When you awaken in the morning's hush,
She is the swift uplifting rush
Of quiet birds in circled flight.
She is the soft stars that shine at night.

Do not stand at her grave and cry;
She is not there, she did not die.

She will always be alive in our hearts. (Anon.)

Claudia: A Fond Farewell
by Bee Bradshaw & Peter Bamfor

She was tired, so tired
But she fought on.
It is our struggle now
To accept–or try to accept–
She is gone.

Yet it is no effort for me
To bring to mind
The sweet-sad memories Claudia
leaves behind.
Thoughts and feelings...
Pictures in my mind...
All about her–now that she is gone–
So very clear...
All those things about her
I hold dear.
Caring and creative
A special friend
Resilient
Warm.
Bringing people together
With her quiet charm.

And what a fighter!
She knew how to be tough...
Her hardy spirit no way prepared
To cry "Enough!"

Her spirit stays with me now
Balm to my spirit.
A gentle guide
Though she is gone.

Claudia's struggle is over.
Her work is done.

Little Kids'
Nature Study
Field Trips

A gentle introduction to the world of trees, flowers, birds, insects, rock pools and rivers through direct observation, nature walks, games and crafts.

For children aged 2 to 5 -- and the young at heart.
(Bring your baby in a backpack.)

First and third Wednesday in the month

10am - 2pm

BYO Lunch - Please bring a water bottle for walks

Venues include: Fossil Bluff, Wynyard; Warrawee Reserve, La Trobe; Asbestos Range Nat Park; Tasmanian Arboretum; Lake Barrington Nature Walk; Ferndene, Penguin; Sanctuary Park, Railton

First outing: **Don Reserve, Devonport.** Meet at swimming pool car park at 10am. Come rain or shine - bring a raincoat, in case.)

Wednesday April 5, 2000

Children must be accompanied by a responsible adult.

For more information, please contact: Carolyn Gibbs 6423 6737

FOR INFORMATION ON OTHER BURNIE FIELD NATURALIST EVENTS PLEASE CONTACT: Aileen Thorne (President) 6442 1630 (eves) or Barry Dudman (Secretary) 6435 1409.

Activities include: field trips, nature walks, lectures, social gatherings.