Central North Field Naturalists

CNFN the Natural News

Nov-Dec 1999

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Walks and Events

January 16, 2000 – Cradle Mt. NP. Meet at Dove Lake Car Park at 10am. Dick Burns will show us some of the endemic flora in this area, especially the Epacrids. Bring lunch and clothing for montane conditions. Park fees or passes apply.

February 13, Meet at 11am on the road into Ulverstone somewhere shortly after exiting Bass Hwy. This will be a Tide Pool exploration near Goat Island. Low tide is 12:30, so we will follow it out. Lunch afterwards.

March 5, Meet at HABITAT Nursery, Lilly at 9:30am. Sally & Herbert will show us around the nursery, and talk about propagating native plants. Then we can have a look around the immediate area where there are some interesting natural features.

AGM ELECTION RESULTS

President, Ron Nagorcka
ice President, Martyn Ewings
Secretary, Jim Nelson
Treasurer, Sarah Lloyd

Thanks to the retiring treasurer, Claudia Nelson, for her efforts. May she regain health soon.

Bumble bee sightings? by Andrew Hingston

Many of you will be aware of some horticulturists' aspirations to import European bumble bees to the Australian mainland and to have further introductions to Tasmania to increase the genetic diversity of this population. Fortunately, an application for further introductions made in 1997 was rejected by Environment Australia on the grounds that feral populations are likely to cause environmental harm such as increasing seed production in weeds, decreasing seed production in native plants, and competing with native animals for nectar and pollen. However, the proponents have not given up hope on receiving approval for further introductions and are arguing that bumble bees do not spread into native vegetation more than 8 km from gardens or agricultural areas. Hence it is very important that any sightings of bumble bees in more remote areas are recorded and published. If any of you see bumble bees in remote areas (or in any native vegetation more than 50 km from Hobart) could you please record the following: location; date; number of individuals; castes (workers and drones are 8-22 mm long and difficult to differentiate, but queens are distinctly larger at 30-35 mm); the species of plants they are feeding on; and most importantly whether they are collecting pollen (if collecting pollen they will have lumps of pollen on their hindlegs which are visible to the naked eye). This data is best collected on an individual bee basis, e.g. *Hartz Mts, 3 Feb 2000, worker or drone, feeding on leatherwood, not carrying pollen.* If anyone records such information, could they please let me know, and then I can arrange for all data collectors to get together and write a brief paper for publication. Bumble bees are starting to become established in the north of the state, with recent anecdotal sightings at Sheffield and Waterhouse. Thanks in advance, Andrew

Dialect, Repertoire and Imitation: The Language of Birds.

by Sarah Lloyd

Listening to birds is not just one of the great pleasures of life, it can tell us much about what is going on around us. In the early 1900's, when scientists realised that many birds are sedentary, having only a small home range, more serious studies of vocal communication were undertaken by ornithologists who began to think of birdsong as language rather than just a form of self-expression. (Armstrong 1963)

Advances in recording technology and the ability to do detailed analysis of recorded bird song using complex computer programmes has led to a rapid increase in the knowledge and interpretation of avian communication and in many instances this has led to a deeper understanding of human communication also.

The following is a brief look at the subject based on my own observations.

During the Wildlife on Farms Project, conducted from Spring 1998 until Autumn 1999, I visited seven properties in the northwest of the state four times a year to survey bird populations.

As their colourful plumage and elaborate displays indicate, visual signalling plays an important role in avian communication. However visual signals have many disadvantages, especially in low light or at night. By contrast, sound does not rely on a clear view between sender and receiver and it can travel around objects and in all directions. Sounds containing large amounts of information can be delivered rapidly over long distances to a wide audience. (Catchpole 1995)

Monitoring birds, therefore, especially in eucalypt forests with a dense understorey and closed canopy, is much more about listening than watching.

Fortunately, birds are obvious to us because they tend to vocalise within the same frequency range – although generally higher pitched – that we use for language and music. (Catchpole 1995) This relative ease of detection and their value as indicator species means that compiling lists of birds that occur in an area can tell us much about the health or otherwise of an environment.

Dialects

I have become familiar with the calls of the birds at Black Sugarloaf having surveyed them for the past ten years, so I was interested to tune in to the different dialects or regional variations when monitoring birds at other locations. Examples of this can be heard in some common, widespread species such as the Grey Shrike-Thrush or the Yellow-Throated Honeyeater and people who have become familiar with the songs of resident birds will quickly detect "variations on a theme" when encountering these birds elsewhere.

The most striking examples of dialects I heard during the surveys were in the calls of the Olive Whistler, illustrating the strong influence local environmental and geographic conditions can have on vocalisations. (Armstrong 1963)

At Black Sugarloaf, a quiet bush environment, the "tew-wit-tew" call with descending last note is relatively quiet. At West Frankford, just 20 km away, the Olive Whistler sounds quite different with a much louder last note – perhaps to compete with loud traffic noises on the nearby Frankford Highway. At Northdown, another 20 km west, the final note of the call sounded like a person whistling a dog, and just as I was pondering this, a large Labrador bounded out of a nearby house!

During a recent trip to Three Hummock Island, the Olive Whistler call had me stumped for several days. The initial notes sounded familiar and had that distinctive whistler quality, but the addition of several notes at the end made it sound like the closely related Golden Whistler. When these birds co-exist in an area they usually occupy

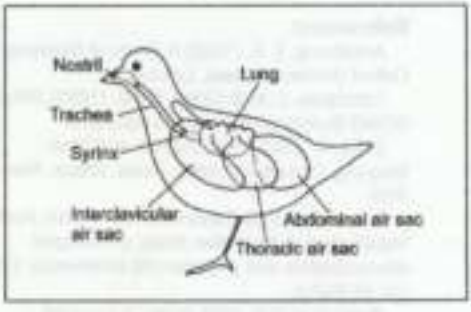
different niches, the Olive preferring wetter understorey, the Golden occupying the mid to high canopy – this separation is an aid to identification – so sighting the two birds together, having just heard the call only added to the confusion. I eventually saw the elusive bird utter the sound.

This similarity in calls is known to occur between closely related species living in sympatry, such as thornbills and some honeyeaters. The alarm calls of the congeneric New Holland and Crescent Honeyeaters are almost indistinguishable in the field. (Jurisevic & Sanderson)

Conversely, isolated populations of birds such as Satin Bowerbirds are known to develop dialects that are unrecognisable by conspecifics in other isolated patches to the extent that they cannot communicate and thus don't breed. (Science Show. ABC Radio 28/11/1998) This has obvious implications for populations of birds that are geographically isolated because of habitat fragmentation.

Syrinx

Unlike the larynx, the vocal apparatus of humans and other mammals, which is situated at the top of the trachea, the equivalent organ in a bird, the syrinx, is situated at the bottom of the trachea, near the junction of the bronchial passages. A sound



producing membrane in each bronchial tube, along with complex muscles gives song birds (passerines) the ability to produce sounds of great complexity. One of the great mysteries is that, whereas some species employ this ability to the fullest and have extensive repertoires of hundreds of songs, others have a limited repertoire of just one song. (Kroodsma 1996)

Perception of Sound

Complex calls are not restricted to passerines. The noisy sounds produced by colonial nesting seabirds such as gannets or penguins may all sound the same to us, but they contain enough information to enable parents to recognise their offspring amongst many thousands on similarly sounding birds. This suggests that birds perceive sound differently to humans. As well as being able to locate sounds with incredible accuracy, they can detect minute differences in pitch, and are about ten times better than us at accurate separation of sound arriving in rapid succession – sounds that we hear as single notes but are actually a sequence of separate sounds can be perceived by birds in this way. (Jellis1977)

The Nature of Sound

Sounds fade over distance, are distorted by features of the environment such as leaves and branches and are masked by environmental noise such as the sound of wind or water. Temperature and humidity also affect sound transmission. (Catchpole (1995)

Sounds travel differently depending of their frequency. Low frequency sounds generally travel better because their long wavelengths are able to bend round objects. Low frequency sounds are particularly good at travelling at ground level, and ground dwelling species such as Brush Bronzewings, Painted Button-quail, Bitterns and Emus have a low booming call which can travel many kilometres.

The leaves, twigs and branches in a forest have a disruptive effect on the transmission of sound, so birds in these habitats often use pure tones that transmit well in such environments. Trills are more likely to be uttered by open country birds where there are no features to distort these complex sounds. (Catchpole 1995)

Several forest birds, such as the Bassian Thrush, Olive Whistler and the Spotted Quail-thrush emit a high, far-carrying "seeep". This is an alarm call, similar to that of several northern- hemisphere passerines, and is very difficult to localise – a desirable quality if you want to alert neighbours of possible dangers without being seen yourself. (Catchpole 1995)

Other alarm calls, such as the mobbing calls of honeyeaters possess properties that are not easily distorted by environmental factors such as wind or solid objects and so are easily detected. In such cases the distressed bird wants its whereabouts to be immediately known so that other birds can come to its assistance.

Non-avian inhabitants of an area may also respond to bird calls. At Black Sugarloaf recently,

Luigi (the resident dog) alerted me to the plight of breeding Dusky Robins when he quickly responded to their alarm calls. Unfortunately the large tiger snake which had its head in their nest devouring their newly hatched young was not distracted by the distress calls or the broken wing act.

The ventriloqual nature of some calls is often simply a result of the bird moving its head from side to side as it utters its call and may be another strategy to confuse the observer.

Imitation

In late autumn/winter, birds vocalise less than at other times and so are more difficult to locate during a survey. As well, juvenile birds must practice their songs, and it may take a while before they can produce a recognisable call. Many birds will imitate at this time of year. This imitation is not on the grand scale of the notorious Lyrebird, but is often heard in the small flocking birds such as Silvereyes and Thornbills which incorporate the calls of other birds in their community into their subsong. This vocal mimicry could be a means of maintaining social contact without communicating a particular message such as alarm, courtship or aggression and could be an important element in the survival of the social group. (Robinson 1991)

Repertoire

Birds develop signals that work best in their particular environment and ecological circumstance and many species have different calls and songs depending on the time of day or year, the presence of potential rivals, potential mates or predators, or what message they are trying to convey in their locality.

As song production is closely correlated with the level of the hormone testosterone and thus with the breeding cycle, early spring is the peak time for vocalisation in many passerine species. The song of male birds in early spring probably serves the dual function of proclaiming territory to potential mates or rivals.

Birds demonstrate their vocal skills by singing an extensive repertoire. Golden Whistlers, for example, will sing many variations on its usual theme. Sometimes it will change its song by lowering the pitch, sometimes by slowing it down, at other times it will truncate the call. A sudden switch in song type may indicate the presence of an intruder into its territory. I experienced this recently when slowly approaching a singing Whistler at Mount William National Park. It repeated its familiar song many times but as soon as it became aware of my presence it changed song and flew off.

Wind in leaves makes many sounds difficult to hear, and it is best to avoid such conditions when surveying birds. However, one call of the Golden Whistler seems to be used in just such conditions. It is unlike the usual rich tones of the whistlers, sounding more like the tinkling call of the Superb Fairy-wren. The fact that I had been at Black Sugarloaf for several years before I heard the call demonstrates that unless you know what to listen for you won't hear the birds! This may sound like a contradiction, but once you have "tuned-in" to birds to the extent that you can't not hear them, you may soon realise that they are more entertaining than many humans.

Habitat fragmentation and destruction is leading to the decline and local extinction of many bird species formerly perceived as common. An increase in the numbers of the introduced Starling or some native species such as the Noisy Miner and Sulphur-crested Cockatoo that are favoured by inappropriate land management practices are further threatening woodland and forest birds. With one in eight bird species worldwide in danger of becoming extinct in the next century, (Wingspan Vol.9 No.4 December 1999) and 150 of those in Australia, the "Silent Spring" predicted by Rachel Carson is fast becoming a depressing reality.

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The Hidden World of Passalid Beetles

Reprinted from INVERTEBRATA*

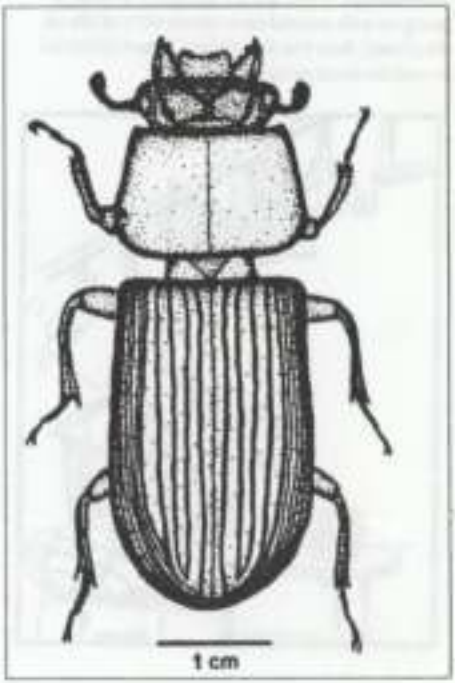
The human observer, aware of the diversity of life, sees trees and shrubs, ferns and mosses, fruiting fungi in numerous forms, birds and insects of all kinds, spiders and crustaceans, and so on. However, even the keenest eye often misses a significant portion of the life that surrounds us: the incredible 'hidden biodiversity' of symbiotic organisms. Indeed, if every metazoan has a symbiotic species specific to it (e. g. a species of protozoan or nematode), estimates of global biodiversity could be doubled (May 1994). A spectacular example of this hidden biodiversity is the passalid beetle (Coleoptera: Passalidae).

Passalid beetles are not obvious. These creatures spend most of their lives tunnelling in rotting timber, leaving only to colonise new logs. The adult beetle is quite attractive, most species being 25-50 mm long, glossy black (teneral adults are tan-coloured), and have elytra with numerous longitudinal grooves (see illustration). Over 500 species have been described, primarily from the world's wet tropics. Australia has about *35* described species, mostly from the east coast of Queensland, and only one species, *Pharochilus politiei* (illustrated), is known from Tasmania. Sadly, the state of our understanding of Australian passalid beetles is atrocious. Little taxonomic work has been done (Dibb 1938), and we are shamed by the *amount* of work currently being carried out on passalid beetles in Japan and the Americas.

The life histories, at least of the American species, are fascinating. Passalid beetles are among the most social insects outside of the Hymenoptera and Isoptera. One beetle (of either sex) arrives at a log and begins tunnelling; another beetle that will complete the pair arrives later. The paired beetles defend the tunnel from other passalid intruders, and are monogamous for at least the duration of development of their first brood. The larvae are unable to feed directly from wood, their main food source being a combination of adult faeces and powdered wood fragments, suggesting a gut-flora exchange (Valenzuela-G. 1993). Metamorphosis takes place within a pupal chamber constructed by conspecific beetles, usually the parents or their offspring. Passalid larvae and adults communicate with sound signals. Larvae make sounds by rubbing their highly reduced third pair of legs against a file on the mid-coxa. Adults make a sound by rubbing a plectrum on the hindwings on a *pars stridens* on the dorsal surface of the abdomen. Adult beetles give out a particularly noisy alarm call when picked up.

Another feature of passalid beetles, world-wide, is the amazing diversity of life associated with them. Twenty-five families of mites are associated with passalid beetles, living a variety of lives on the exterior of the beetle or under the beetle's wings. Some of the mites are phoretic, some are parasites, and some seem to use the beetle as a mating ground. Further, passalid beetles, and some of the mites that live on them, are host to an unusual group of parasitic fungi called the Laboulbeniales. Again, this diverse group of fungi is virtually unknown in Australia. The gut flora of passalids is also (unsurprisingly by now) diverse. A dissection of the gut will always reveal a healthy population of nematodes and numerous growths of another diverse group of fungi, the Trichomycetes.

My own work has focused on the mites and, to a lesser extent, the Laboulbeniales associated with



passalids and their mites (see Weir & Bakes 1995). Should anyone find passalid beetles in Tasmania, I would be extremely interested in looking at them, either alive (make sure you put a little wood in for the beetle) or dead (killed in alcohol — most of the mites run off the beetle in a killing jar). Considering the lack of knowledge regarding the biology of Australian passalid beetles, I expect to find many new species of mites. Only one passalid-associated mite has been described from Tasmania, but I have four species in my limited collections thus far!

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*INVERTEBRATA is published by the Queen Victoria Museuem and Art Gallery and edited by Bob Mesibov, PO Box 101, 134 Main Rd., Penguin 7316; ph. (03) 6437 1195; email mesibov@southcom.com.au.

INVERTEBRATA is Tasmania's invertebrate newsletter and publishes all manner of material on invertebrates. If you are not interested in what is going on with invertebrates (about 90% of life on the planet), then you should be! Contact QVMAG to enquire about subscriptions.

Double Haiku

His own reflection
Pierced by his stabbing beak.
Old Nog, the heron

He lifts his slow weight
Greyly into the young day.
No room in his crop.

I am like a heron

Singular.
And solitary.
I walk preoccupied
In silent pools of being.

From those that would lay hold on me,
I remain inviolate.
Unjostled.

And yet, as if to disconfirm my distancing,
Some force, unchosen, so informs
my sudden blood
That I must strike at life
Dagger-quick!

To freeze abruptly. Unavailable.
Self-absorbed.

After the bushfire

Coven of trees
Racked with third-degree burns.
The headland forest
Ravished.
Cinder-black.

The hornets have survived.
Their hard-baked ziggurat
Busy with purpose
Coming and going.
Going and coming.
Relentlessly.

Bright-blue seed-pods
Shout their promise
From a thin, tough stem.

Peter Bamford

The SAC of Tasmania
by John Hayward

Islands, because of their insularity, are renowned for producing bizarre creatures such as blood-sucking finches and giant lizards. Tasmania, as producer of over half the nation's woodchip exports from less than 0.9% of its land area, has its own special survival pressures. It was not all that surprising, then, to discover that Tasmania's scientists may be evolving into something very different from those found elsewhere.

The discovery was a piece in The Tasmanian Naturalist called "Delineation of Critical Habitat for Threatened Species" by the Scientific Advisory Committee (SAC) to the Threatened Species Unit. At first glance it seemed to be that most ordinary type of scholarly sludge, the definitional quibble. A closer look, however, revealed a radical departure from conventional models of the scientific process.

The article introduces itself as describing the "logical and scientifically justifiable process" that the SAC uses to determine critical habitat for threatened species, a concept which thereafter disappears. It cites with disapproval the standard definition used in Victoria and elsewhere, which is that critical habitat is the areas where a threatened species lives as well as any other areas necessary to the maintenance of appropriate conditions in the actual habitat. The problem? This definition "*ignores meta-population dynamics and does not allow for the potential of recovery*". The second element of the Victorian formula seemed to me to accommodate the meta-population issue pretty well. The bit about "potential for recovery" is hard to fathom. Can a critical habitat declaration not be revoked , s. 24 of the Tas Threatened Species Act notwithstanding? Does such governmental support weaken the moral bootstraps of a threatened species? Have a look at the Tas Act's definition of critical habitat : "*an area of land defined on a map under s.23 which the Director determines as a critical habitat of a listed taxon of flora or fauna*". Better? Would Humpty Dumpty have put it any differently?

The article proceeds to rule out a declaration of critical habitat in any situation where a species is threatened by anything other than destruction of habitat, i.e. hunting, fishing, predation by feral animals, disease, and, one presumes (though it is not mentioned), poisoning. So, if a pocket of thylacines turned up, they would find the SAC with hands scrupulously tied.

About twenty potted case studies of Tasmanian threatened species are surveyed, to no apparent purpose other than to demonstrate that no two are the same and that many need a lot more research. But then comes the concluding recommendation: "*...that critical habitat normally only be defined when it is the most appropriate mechanism for ensuring the future survival of the species*". The penny drops. It starts to look a lot like one of nature's time-honoured survival strategies, the corporate precautionary principle, deployed elsewhere by such taxa as DDT manufacturers, tobacco companies, acid rain generators, and, of course, emitters of greenhouse gases. Under this principle, regulatory measures can be avoided over dozens of annual reports while the absolute facts of an issue are painstakingly sought. So what is the threatened corporate taxon here? Well, the SAC chairman is from Forestry Tasmania, which has recently grafted the brains of the Forest Protection Society as consultants in a "Community Forest Agreement". If you were in the woodchip business you wouldn't want to see any critical habitat stains on your maps, would you?

What we may be seeing here is the evolution of the SAC into a hardier type of scientific body, one well adapted to survive in the ethically and intellectually inhospitable environment of Tasmanian government.

Further Reading:
The Tasmanian Naturalist Number 121, 1999
Published by Tasmanian Field Naturalists Club Inc., Edited by Robert J. Taylor

BIG STYX BIG WASTE!

by Martin Ewings

We drove from the north, heading to see the by now much anticipated tallest hardwoods in the world which grow in the southern Derwent catchment along the Styx River valley. After turning left past the South-West National Park toll gate we headed south over the Maydena Range and finally down into the vast Styx valley. A wet sclerophyll forest with towering *Eucalyptus regnans* dwarfing the rainforest understorey which consisted of *Acacia melanoxylon* (blackwood), *Phyllocladus aspleniifolius* (celery-top pine), *Atherosperma moschatum* (Sassafras), *Nothofagus cunninghamii* (myrtle), *Anopterus glandulosus* (native laurel in full bloom at the time), *Dicksonia antarctica* (man fern) and other rainforest species. The most notable aspects about this forest are the *E. regnans*, some reaching to a height of 90m or more with many of these trees first branches starting at an estimated 40-50 metres above the ground. The tallest tree which is conveniently located just 10m off the logging access road is 13m in circumference at the base and 85m tall (a recent storm has pruned it back from 95m). There must be a high probability of even taller trees being out there given the many hectares of these giants amongst the gullies and hill sides of the Styx valley. But with recent clear felling activity now visible the future for taller trees out there is bleak. Although the South-West WHA lies just atop the adjacent snowy range, this magnificent tract of land is mostly unprotected with only a small percentage of the forest being protected along the river margin and a 15 hectare reserve around the tallest tree.

Although Tassie has many wilderness attractions, I am astounded that what may be the gene pool of the tallest trees in Australia is not protected. Surely the opportunity to see the tallest plants in the southern hemisphere must be a feature of this state which could readily be promoted to tourists. I know that WA for example heavily promotes its magnificent southwestern Karri and Tingle forests, including the "Valley of the Giants" to tourists. Why isn't Tassie promoting this great spectacle of the tallest trees in the southern hemisphere only two hours drive from Hobart? With these trees being at the absolute pinnacle of current world evolution in terms of height reached by a flowering plant, surely this is reason enough to protect them from human exploitation for wood products.

Wilderness Society Visits to the Secret Giants of the Styx Valley

This summer TWS will take people to see the magnificent threatened forests of the Styx valley.

These are the tallest hardwood trees on Earth. The tallest trees in the Southern Hemisphere. The world's tallest flowering plants. There are whole forests of trees taller than Hobart's Wrest Point Casino.

Yet these 80-meter giants are being clearfelled and woodchipped. Despite their proximity to Hobart, they are virtually unknown amongst locals and tourists alike. That's because the logging industry has controlled access to the Styx.

TWS plans to open this valley up to public inspection. We plan to advertise tours and run three trips a week.

Ring TWS on 6234 9366 for information about public inspections.

BETWEEN TASMANIAN TIDE LINES A FIELD GUIDE

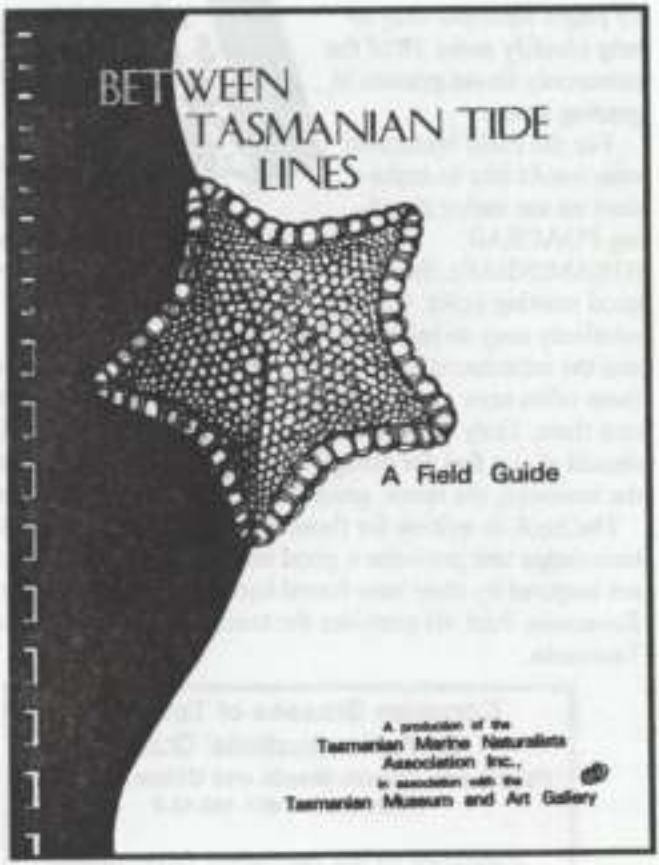
by Tony Aliano

If you have ever walked on a beach and wondered about any of the myriad shells, seaweed and creatures found washed up by the waves, or living in intertidal zones and wanted to know more, then this book is a must. It has an easy key to invertebrates with excellent drawings and descriptions of each species. Not only will you know if you have a crustacean, an echinoderm, a worm or a mollusc, but you will have a name and description. For merely $10 this field guide will provide innumerable hours of pleasure and discovery. But wait, there is more! It also contains a very detailed description of common seaweeds, so now not only will you know if you have a green, brown or red algae, but you will know its name.

And that's not all! This book also contains the most likely chordates you are likely to come across in intertidal zones, such as tunicates, sea-horses, sea-dragons and even fish that may be encountered in small pools. Just for good measure, there is also a small section giving information on some egg masses laid by molluscs, the egg cases of sharks, and other unusual treasures found under the heading of "flotsam". It is amazing how much knowledge can be obtained for so little outlay.

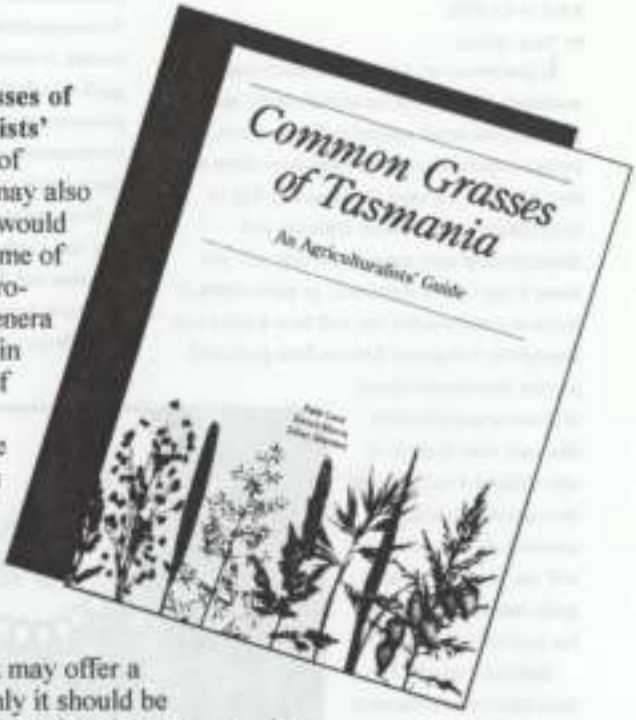
In the past, intertidal zones were my main passion and obsession, and what I have seen of Tasmanian shores, which unfortunately has been limited, is extremely well covered by this field guide. No doubt that this book enhances our pleasure and understanding of the rich and diverse environment of intertidal zones and even adds much fun to beach combing.

Produced by the Tasmanian Marine Naturalists Ass. Inc. in association with the Tasmanian Museum and Art Gallery. 116 pages, with drawings on almost every page. $10. Get your copy before our February tide pool excursion!



Book Review

by Jim Nelson



The book **Common Grasses of Tasmania An Agriculturalists' Guide** in addition to being of interest to agriculturalists may also be of interest to those who would like to know more about some of our common native and introduced grasses. Of the 77 genera and 250 species of grasses in Tasmania, this little book of 83 pages attempts only to help identify some 38 of the commonly found grasses in grazing areas.

For the Field Naturalist who would like to make a start on the rather daunting POACEAE (GRAMINEAE), this book may offer a good starting point. Certainly it should be relatively easy to learn the introduced pasture species and the introduced weed species from this book, and since these often turn up in all sorts of habitats it is important to recognise them. Only eight native pasture grasses are covered, but they should give a feel for recognising several important groups such as the tussocks, the spear grasses and the wallaby grasses.

The book is written for those who have little or no botanical knowledge and provides a good introduction to grasses. For any who are inspired by their new-found knowledge, *The Student's Flora of Tasmania*, Part 4B provides the taxonomic details of the grasses in Tasmania.

Common Grasses of Tasmania
An Agricultualistis' Guide
Peter Lane, Dennis Morris and Gillian Shannon
$14.95 ISBN: 0-909-160-18-X

Published by the Tasmanian Environment Centre

******NEW BOOK******

Deadly Disclosures
Whistleblowing and the Ethical Meltdown of Australia

Three years in the making, *Deadly Disclosures: Whistleblowing and the Ethical Meltdown of Australia,* ***Dr William De Maria*** is now on sale.

Deadly Disclosures is a provocative analysis of the degeneration of public interest in Australia. Dr William De Maria's attack on institutional wrong-doing is carried on the wings of case studies of Australians who have blown the whistle in order to improve ethical standards and suffered terribly for their efforts. His book paints an alarming picture of organisations and workplaces where managers and employees alike turn a blind eye to wrong-doing and victimise the minority who rock the boat.

The author details the 'big picture' of whistleblowing in Australia and then takes a closer look at eleven recent case studies. The subjects are a medical practitioner, a veterinary pathologist, a Presbyterian minister, three academics, a TV & radio producer and commentator, a union official, a fisherman and two senior Commonwealth public servants.

Deadly Disclosures is available at all good booksellers.

Peter Motton Takes a Lyrical Look at Lizards

When Peter Motton told me he was photographing lizards, I offered to supply him with a blue-tongue. He didn't seem at all enthusiastic, and when he sent me some copies of the photos, I realised that a blue-tongue didn't exactly lend itself to lyricism. Once again he has shown me a new way of looking at things I thought I knew well. *Jim*

Peter Motton was named the top photographer in Who's Who In Black and White Photography in 1996 and 1998 based on international competitions.

THE
CENTRAL NORTH FIELD NATS
WOULD LIKE TO WISH
ALL MEMBERS AND FRIENDS
LOTS OF INTERESTING
Y2K BUGS IN THE
NEW YEAR