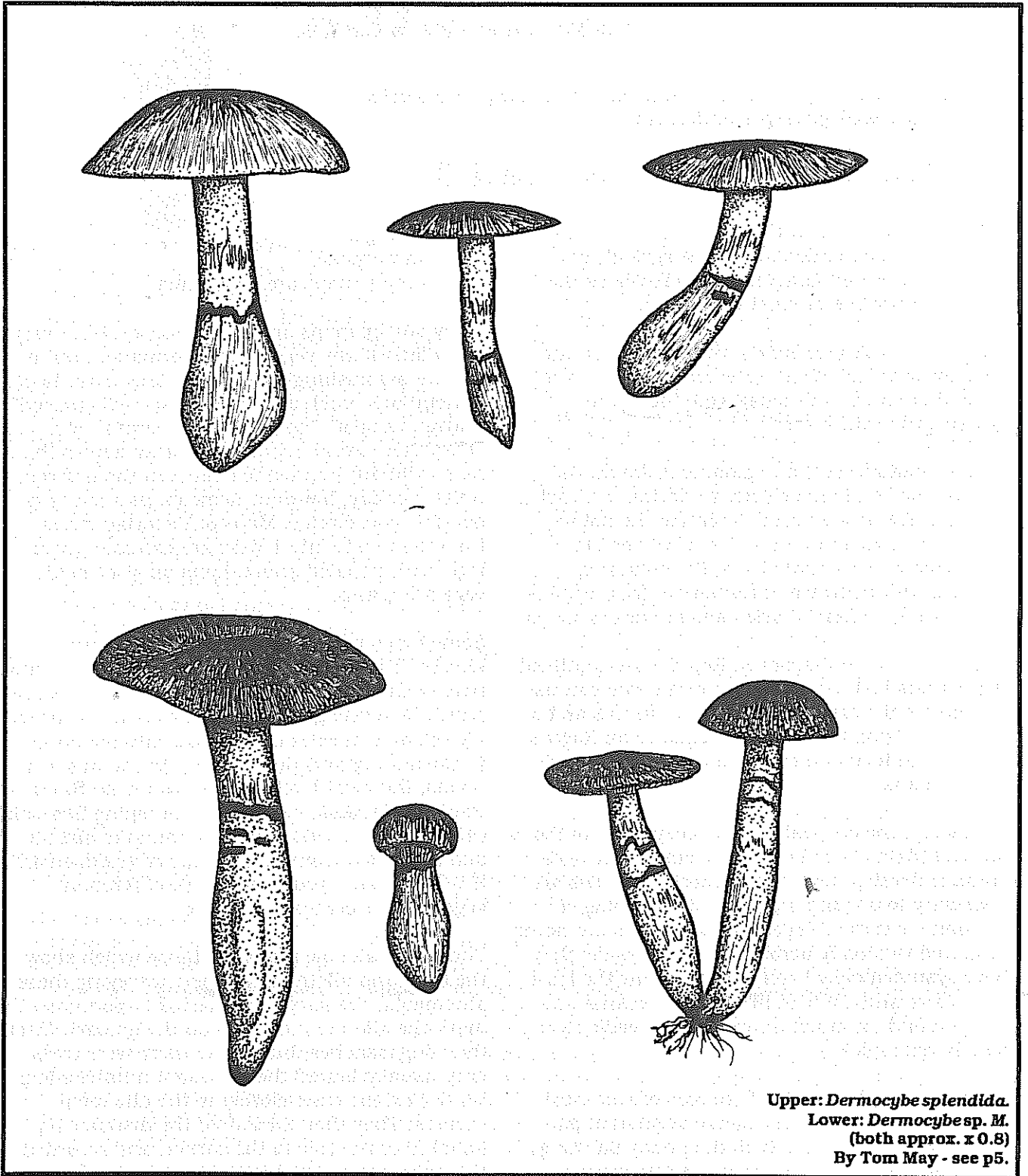
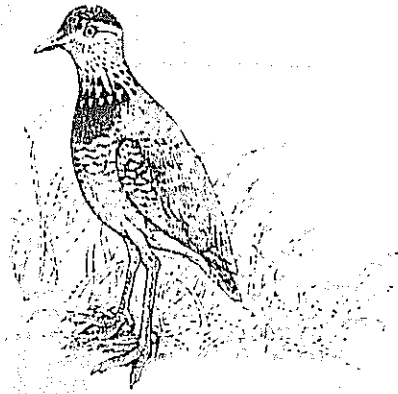


INDIGENOTES



THE PLAINS WANDERER



A regular series by botanist Ian Lunt on endangered native grasslands and grassy woodlands*

MAPPING THE PLAINS - part 1

When driving through the wheat-fields, sheep farms and dairy paddocks on the agricultural plains, it takes an imagination as fertile as the soil to picture the original vegetation.

Where were the grasslands, the woodlands, the shallow swamps? What were the common trees (were there any, how dense were they), the grasses, the wildflowers?

In most instances, the original grasslands and grassy woodlands have been so decimated, that it is impossible to accurately recreate the native vegetation from remnants alone. We need to supplement our knowledge of the remaining patches with historical information, from explorers' reports, settlers' diaries and surveyors' maps.

In September's Indigenotes, Roger Jones outlined the various historical sources which one can use to recreate the original vegetation¹. In this and a following Plains Wanderer, I'll expand on Roger's article, and focus on one valuable source - early survey maps.

Invariably, the original grassy ecosystems of the lowland plains have been so decimated by agricultural development, that historical studies are necessary to acquire a good understanding of existing remnants. Vegetation remnants are never scattered randomly across the countryside; they have systematically been left in usually the least productive sites. Where in Victoria, or Australia, can you find an intact remnant on a fertile river flat, for example?

There are a wide variety of sources of historical information from which original vegetation patterns can be recreated, including early paintings and lithographs, surveyors' maps and reports, settlers' and explorers' diaries, etc. In re-creating a lost landscape, one essentially wants to know two things: (1) what was there, and (2) where was it, i.e. where were the boundaries between the different vegetation types? Early diaries, reports and illustrations often give the best accounts of what an area looked like, but they rarely provide detailed information on where the vegetation

types changed. For that purpose, early survey maps are invaluable.

Early survey maps are an eclectic lot. Most maps carry little if any vegetation information, but a few are astonishingly detailed. Many carry brief annotations, such as "good forest, well grassed", "barren ranges", "open plain", "morass", etc. Often these annotations are written across the maps without boundaries between the different units. Luckily, however, some maps show very detailed boundaries. Maps of Victorian rivers from the mid to late 1800's are extremely accurate, with detailed annotations on streamside vegetation also.

Some maps name the dominant trees and shrubs. The most common annotation is a simple note such as "open forest, honeysuckle, oak and gum". Depending on your study area, this probably refers to species of *Banksia*, *Allocasuarina* [= *Casuarina*] and *Eucalyptus*. On the western plains, the most likely species would be Silver Banksia (*Banksia marginata*), Drooping She-oak (*Allocasuarina verticillata*, = *Casuarina stricta*) and River Red Gum (*Eucalyptus camaldulensis*). It is here that a good knowledge of remnant vegetation becomes invaluable.

The most valuable maps are those which show the first land allotments. When surveying these allotments, the surveyors needed to permanently mark the allotment corners on the ground. Often they dug trenches, but where there were trees they usually blazed the allotment numbers (e.g. VII, IX) on the trees closest to the allotment corners. They then measured the distance (in links) from the tree to the corner, and recorded this information on the survey map. Such maps include a list which shows the distance to the closest tree from each allotment corner, as well as the tree species (in common names, e.g. gum, box, honeysuckle).

Such information is invaluable for recreating the original tree patterns, and with it, you can do three things. Firstly, you can calculate the relative abundances of different tree species in the

* Botany Department, LaTrobe University, Bundoora, 3083

area, e.g. 50% red gum, 30% oak, 15% box, 5% honeysuckle. Usually, these ratios will differ considerably from those of surviving trees, even in intact remnants, due to differing longevities, mortality and recruitment rates between species.

Secondly, you can accurately calculate the original density of trees (i.e. how many trees per ha) using the distances from trees to the allotment corners. The method is based on a simple forestry technique for estimating tree densities, and the calculation is relatively simple - the slowest part is converting imperial "links" to metric metres. Interestingly, this technique was invented not by a forester, but by an ecologist trying to calculate tree densities from old survey maps of oak woodlands². Thirdly, if you really want to, you can go out in the paddocks and plant trees in exactly the same spot as they grew over a century ago!

Early survey maps provide perhaps the most detailed information available on the distribution and tree composition of the original grasslands and grassy woodlands. Usually, many such maps need to be compiled to give a comprehensive vegetation map, and this can get rather tedious. I compiled over 80 maps to map the original grasslands and grassy woodlands of the Gippsland plains, but the result was well worth it. In a later Plains Wanderer column, I'll describe how I combined old survey maps and recent soil maps to recreate the original vegetation of the Gippsland plains.

References

1. Jones, R. (1991). Historical searches. *Indigenotes* 4(9), 9-10.
2. Cottam, G. (1949). The phytosociology of an oakwoods in south-western Wisconsin. *Ecology* 30, 271-287.
3. Cabena, P., McRae, H. & Bladin, E. (1989). *The Lands Manual, A Finding Guide to Victorian Lands Records 1836-1983*. Royal Historical Society of Victoria, Melbourne.

About the Central Plan Office...

A note of caution for anyone planning to search for old maps at the Central Plan Office in Treasury Place, Melbourne.

The office contains two collections of old maps: the main collection and a smaller collection called the "Put Aways". The main collection holds the bulk of the maps and should be searched first. As Roger related earlier¹, the system is very well organised and is easy to use. After using the main collection, ask for the index to the "put away" series. This series contains many

of the oldest maps available, and many of these contain more information on the original vegetation than do the later maps in the main collection.

When the maps were used in the 1800's, they were continually updated with new information on landholders, subdivisions, etc. When a map got too cluttered, the base map was copied and the additional information was added to the new map. The old map was stored in the "put away" collection. In copying the old

maps, some of the original information was often omitted from the later versions. The vegetation descriptions were often omitted, perhaps because the vegetation had already been destroyed when the new maps were made. In searching for vegetation information, make sure you check both map collections, and you'll get a lot more useful data. A valuable guide to historic collections is available from the Royal Historical Society of Victoria³.

Melbourne's horticultural cringe continues

The Melbourne City Council again is looking to ignore its Australian environment, and has been planning to plant European deciduous trees in the newly pedestrianized Swanston St, now known as Swanston Walk. An unexpected ally for our cause has turned up in the Tramways Union. They apparently find that the leaves of the deciduous trees make the tram tracks slippery, and have stated their opposition to the deciduous trees in no uncertain terms. The thought of a tram skidding down the tram tracks with its brakes made ineffective by autumn leaves is a frightening prospect indeed.

Anyway, here's an opportunity to put some pressure on for indigenous plants instead. How about writing to the Melbourne City Council, Melbourne Town Hall, Swanston St Melbourne 3000 plugging for indigenous trees?

Seed crops can ease pressure on remnants

By John Delpratt*

Keith McDougall has written of the threat to indigenous grasslands from the collection of seed for 'research, revegetation and profit' (Indigenotes, Jan, 1992).

One alternative to the collection of large quantities of seed directly from remnant populations is to cultivate species specifically for seed production. If due regard is given to the taxonomy and provenance of the species being grown, it may be that seed can be produced quickly and efficiently from cultivated crops, with only occasional recourse to remnant populations.

Research being undertaken at the Victorian College of Agriculture and Horticulture - Burnley, is investigating the establishment of seed crops for a number of grassland species.

Small but representative seed collections were made from thirty species of grassland and grassy understory perennial forbs during the summer of 1990/91. The seed was sown in autumn and the seedlings grown in a greenhouse through winter. Most species were relatively easy to propagate and maintain. Grown under nursery conditions, all but seven species flowered in their first season (Table 1).

During this coming autumn, these established plants will be transplanted into field beds. New seedlings of the same species are being produced and will be transplanted into the field beds in late autumn and again in spring. Survival rates, growth and reproductive development of each species will be recorded along with seed yields.

A small number of plants of each species will be grown in containers under nursery conditions. The survival rates and productivity of these plants will be compared to the field crops. Our experience so far, is that a number of these species grow and flower profusely for as long as they are provided with adequate moisture, nutrition and warmth. Others retain a strong seasonal pattern of growth and dormancy.

Our observations suggest that, for most of these forbs, it will be possible to produce high quality seed in the first season. This offers the dual benefits of:

- (a) a reliable source of seed for particular species of known provenance;
- (b) much reduced reliance on wild collected seed.

Deliberate or inadvertent selection during cultivation may lead to genetic shift and to a loss of some of the genetic variability of the wild populations. We plan to investigate the breeding systems of the species under study and to compare the progeny of cultivated plants with seedlings of wild plants from the same provenance.

In the mean time, returning to wild populations every few years as the seed source for cultivated seed crops, could be an appropriately conservative strategy.

Table 1

Species' under investigation for seed production - V.C.A.H. Burnley.

Species	Flowered in first season
Dicots	
<i>Brachyscome dentata</i>	Yes
<i>Brunonia australis</i>	No
<i>Calocephalus citreus</i>	Yes
<i>Convolvulus erubescens</i>	Yes
<i>Craspedia chrysantha</i>	Yes
<i>Craspedia glauca</i>	Yes
<i>Eryngium ovinum</i>	Yes
<i>Goodenia sp.</i>	Yes
<i>Helichrysum apiculatum</i>	Yes
<i>Helichrysum scorpioides</i>	Yes
<i>Hypericum gramineum</i>	Yes
<i>Leptorhynchus squamatus</i>	Yes
<i>Leptorhynchus tenuifolius</i>	Yes
<i>Microseris lanceolata</i>	Yes
<i>Pelargonium rodneyanum</i>	Yes
<i>Podolepis jaceoides</i>	Yes
<i>Ptilotus macrocephalus</i>	Yes
<i>Rutidosia leptorrhynchoides</i>	Yes
<i>Stackhousia monogyna</i>	Yes
<i>Stylidium graminifolium</i>	Yes
<i>Velleia paradoxa</i>	Yes
<i>Wahlenbergia sp.</i>	Yes
Monocots	
<i>Bulbine bulbosa</i>	Yes
<i>Burchardia umbellata</i>	No
<i>Caesia sp.</i>	No
<i>Dianella revoluta</i>	No
<i>Dichopogon strictus</i>	Yes
<i>Patersonia sp.</i>	No
<i>Wurmbea dioica</i>	No

Species added summer 91/92

Dicots

Calocephalus lacteus
Calotis scabiosifolia
Helipterum albicans
Linum marginale
Ranunculus lappaceus

*VCAH Burnley, Swan St, Richmond 3121

*Collected under permit Nos. 1/18/91/003 and 1/70/91/0031.

Letter:

Keilor Plains flora

I have been thoroughly enjoying Ian Lunt's articles "The Plains Wanderer" in issues of *Indigenotes*. The September issue "The fencing imperative" was a classic.

That article encouraged me to lobby the Friends of Organ Pipes and the Keilor Plains Group of SGAP to make a submission for funds from the Community Grants Scheme to fence and signpost the St Albans railway site and a couple of railway sites near Organ Pipes. Unfortunately the funds we received have been cut from what we requested by 55% however I am hoping we can obtain some extra funds so we can still do a major part of the project.

It was interesting to note that 50% of grasslands in the Ballarat area have been destroyed in the last 5 years. The Bendigo line from Tottenham to Riddell has fared much worse in the last 10 years. I estimate that the destruction of grasslands would be approaching 80% plus all the surviving areas being partly damaged so they have lost their rich diversity. I believe this destruction is fairly common for the Keilor Plains as the endangered *Rutidosus leptorhynchoides* survived at many railway reserve sites on basalt ten years ago but now only about 30 plants survive at one railway site.

At the present rate of destruction, unless sites are adequately fenced, signposted and managed there will be nothing left on railway reserves on the Keilor Plains in five years. The flora desperately requires naturalists to take an active interest in its protection.

If any members are interested in being actively involved in protection of Keilor Plains flora please give me a ring and we may be able to coordinate our efforts to save the remaining remnant sites.

- Carl Rayner (03) 337 4936 (Home)

Cover illustration

Dermocybe splendida

Dermocybe splendida Horak occurs commonly in eucalypt forest in south-east Australia and is also known from Western Australia and New Zealand. It is a most distinctive agaric, immediately recognisable by the vivid orange-red gills. The cap is dark blood-red and the stipe is yellow, flushed from the apex with red. As in many local species of *Dermocybe*, there are often dark zones on the stipe in the region where the fibrils of the veil collapse onto the stipe surface.

Dermocybe sp. *M* has not been formally described; it may be identical to the South Australian *Cortinarius umbonatus* Cleland & Harris. It occurs in similar habitats to *D. splendida* but is less common. The gills are a relatively dull yellow-brown, the cap is dark brown and the stipe is yellow. The main distinguishing character is the bright red stipe base, from which often arises thin, root-like, bright red mycelial threads.

The bright yellow and red pigments present in these two species have been isolated and chemically characterised - some of the pigments have high anti-bacterial activity.

Like most members of *Dermocybe* (and the closely related genus *Cortinarius*) both these species are presumed to form mycorrhizas. A mycorrhiza is a mutualistic partnership between a fungus and a green plant (in this case probably *Eucalyptus*, *Melaleuca* or related genera) where fungal hyphae form a covering to the fine roots of the plant. It is likely that both fungus and plant benefit by exchange of nutrients. Mycorrhizas may also provide protection to plants against attack by pathogens.

- Tom May, c/o National Herbarium of Victoria

free advertisement

Wine lovers!

The Conservation Council is having a wine offer for our members and members of our affiliated groups.

We can offer you:

Yarra Valley Pinot Noir (retails at \$13.95 a bottle or \$165 a doz) available to you at only \$62 a dozen.

Yarra Valley Sauvignon Blanc (retails at \$10 a bottle or \$120 a doz) available to you at only \$62 a dozen.

As you can see these superb wines are fantastic value and by purchasing them you will have the satisfaction of helping conserve Victoria's environment.

Some people missed out last time - so don't be late. Orders must be in to the Conservation Council of Victoria by **Thursday 21 May 1992**, so call Lindy or Ailsa at the CCV today on (03) 654 4833 for more details!

Coming events:

Folk Music Night with Hildebrand and Greg O'Leary A fundraising night organised by the Friends of Warrandyte State Park to assist with the printing of the book "Discover Warrandyte" Editor in Chief: Pat Coupar. At the Warrandyte Community Centre, Yarra St, Warrandyte. Sunday May 3, 6 to 8 pm. \$5 or \$12 family. Further enquiries: Margaret Burke (03) 844 1060.

ARBOR WEEK: 11 - 17 MAY

SPRING PLANTING FESTIVAL 12 & 13 September.

Lectures/Talks

- 24 April Friday, 8pm. **South African insect fauna with potential for biocontrol of Boneseed & Bitou bush in Australia**, by Robyn Adair. Organised by the Entomological Society of Victoria. Clunies Ross House, 191 Royal Parade, Parkville. Ross Field (03) 785 0111 (BH), 754 2085 (AH).
- 27 April Monday, 8pm. **The Cranbourne Annexe of the Royal Botanic Gardens** by Steven Forbes. Organised by the Society for Growing Australian Plants Vic. Herbarium, Birdwood Ave, Sth Yarra. Enid Bowman (03) 882 5297.
- 5 May Tuesday, 8pm. **Studies on the Rabbit Haemorrhagic virus as a means of Biological Control of Rabbits**, by Harvey Westbury. Fauna Survey Group. National Herbarium, Birdwood Ave, Sth Yarra. Felicity Garde (03) 808 2625.
- 11 May Monday, 8pm. **River of Sand and Channels of Clay** by Helen Aston. An illustrated talk covering parts of the Hay River, eastern Simpson Desert and Georgina River area of SW Queensland, with a special focus on plants, birds and history. Organised by the Field Naturalists Club of Victoria. Ed Grey (03) 650 8661 or 435 9019 (H).
- 14 May Thurs, 8pm. **Botany of Tasmania** by Trevor Blake. Botany Group meeting of FNCV. Win Bennet (03) 435 1921.
- 18 May Monday, 8pm. **Parks, Plants & People**, by Jane Calder. Organised by the Society for Growing Australian Plants - Victoria. National Herbarium, Sth Yarra. Enid Bowman (03) 882 5297.
- 29 May Friday. **Revegetation field day St Kilda** - more details next issue. Rob Scott

Excursions and field trips

- 2-3 May. **Wilson's Promontory post-fire study**, Fauna Survey Group. Anne Casey (03) 380 8290.
- 3 May, Sunday. General excursion of the Field Naturalists Club of Victoria. Friends of **Tootgarook Wetland** will conduct a tour before lunch. Followed by a visit to the property of David and Nola Stewart to see their large collection of fossils and display of insects. Dorothy Mahler (03) 850 9379 or 435 8408.

- 9 May. **Leadbeater's Possum Survey**, Fauna Survey Group. Ray Gibson (03) 874 4408. Also on 30 May.
- 10 May. Sunday. **Mapping Survey with Friends of Sherbrooke Forest**. Meet at 9.30 am at Ridge Track entrance gate (Melways map 75, ref E5) with pencil, compass, clipboard. "Why not give it a go today? We visit some magical off-track forest gullies and glade & learn lots too."
- 23 May. Botany Group of FNCV excursion to **Picnic Hill, Wandin North and La-La Falls, Warburton, with a focus on Ferns and Related Botany**. Leader: Cecily Falkingham. Win Bennet (03) 435 1921.
- 23-24 May. **Yellow-bellied Glider survey at Mt Cole**. Fauna Survey Group, Laurie Conole (03)481 4926.
- 31 May, Sun 10am. **Bird Walk** with Joy Pagon of the Bird Observers Club. Followed by bird box construction at 11am. Organised by Friends of Diamond Creek. Melways map 21, ref J7. (If you would like to make a bird box, and would like materials supplied, contact Sue at the Living & Learning Centre, Eltham by 20 May). Sue (03) 439 1175.

Restoration Activities

April

- 25 Sat. **Botany Group (FNCV). Boneseed pulling at Seawinds** with Stephanie Rennick and afternoon at Green's Bush. Joan Harry (03) 850 1347.
- 25 Sat 2pm. **Friends Of Sherbrooke Forest**. Weeding. Vivien Freshwater (03) 754 3093. Also on Wed 13 May, 9.30am & Sat 23 May 2pm.
- 26 Sun 9.30am. **FO Warrandyte SP**. Track maintenance on Jumping Creek Nature Trail. Mark Gardner (03) 844 3799 (H), 844 2659 (W).
- 26 Sun 10am-12noon. **Friends of Diamond Creek**. Tree planting at Wingrove Park Eltham. Melways map 21, ref J8. Sue (03) 439 1175.
- 26 Sun 10am. **FO Wildlife Reserves - La Trobe Uni**. George Paras (03)479 2871.
- 26 Sun 10am-1pm. **Friends of Merri Merri Park**. Weedmat removal. Melways map 30, ref C9. Barb Miles (03) 482 1618.
- 26 Sun 10am-4pm. **Dandenong Valley community planting - Koomba Park**. All are invited to help reach the target of planting 30,000 trees by the end of autumn '92. Terry Atkinson (03) 561 4522, between 8am & 4pm.
- 26 Sun 11am-4pm. **FO Royal Park West**. Mel 29, C12. Preparation of planting beds. Adam Muyt (03) 386 7491.
- 26 Sun 2 pm. **FO Victoria's 1st Settlement site - Sorrento**. Stuart Sherrin (059) 84 1953.
- 30 Thurs. **FO Warrandyte SP propagation day**. This event takes place every Thursday. Other revegetation activities on weekends. Ian or Margaret Burke (03) 844 2659.

May

- 2 Sat. **FO Gellibrand Hill Park.** Jenny Caddaye (03) 744 6093.
- 2 Sat. **FO French Island.** Fay or Clive Gordes (03) 772 9668.
- 2 Sat 10am. **FO Kinglake National Park.** Meet at Masons Falls picnic area for plantings. Una Klaver (057) 861 395.
- 2 Sat 10am. **Green Link Box Hill.** Working activities day. These events are also held every Monday and Tuesday morning. Council Nursery in Nelson Street, Box Hill, but confirm with Minette (03) 898 1364.
- 3 Sun 10am-4pm. **Dandenong Valley community planting - Nortons Park.** All are invited to help reach the target of planting 30,000 trees by the end of autumn '92. Terry Atkinson (03) 561 4522, between 8am & 4pm.
- 3 Sun 10am-1pm. **FO Braeside Park.** Meet at visitors centre, car park no. 1. Working bees every 1st & 3rd Sunday. Andrew Graystone (03) 551 1640.
- 5 Tues 9.30am. **FO Buckley Falls.** Preparations for planting of Manna Gum & Wattle woodland, west of Bannockburn Canoe Pamp. Tony Woolford (052) 43 6340.
- 10 Sun 10am-3pm. **FO the Yarra Galatea Pt, Mel 2D, D7.** Judy (03) 347 2252. Also Wed. 27 May.
- 10 Sun 10am. **FO the Helmeted Honeyeater** work group. Meet at the Yellingbo store. Mark Ashby (059) 66 2681.
- 10 Sun 9.30am. **Stony Ck weeding group.** Mark Gardner (03) 844 3799 (H), 844 2659 (W).
- 10 Sun 10am. **URAGE** (Upwey Regional Action Group for the Environment). Weeding to restore indigenous vegetation along Ferny Creek. Rob Stevens (03) 754 3792.
- 10 Sun 10am-12noon. **City of Heidelberg community revegetation day.** Banyule Flats Reserve; Melways map 32, ref G2. Caroline Falkingham 490 4253.
- 10 Sun 3-5pm. **Green Link Camberwell.** Planting - Meet at the corner of Dion St & Welfare Pde. Dianna Burgess (03) 809 2092.
- 10 Sun. **FO Brisbane Ranges N.P. & Steiglitz Park.** Nola Haines (052) 29 6388.
- 11-15 Sun 10am-12noon. **City of Heidelberg community revegetation day - for school groups.** Wilson Reserve, Melways map 31, ref F10. Caroline Falkingham 490 4253.
- 12 Tues 9.30am. **FO Buckley Falls.** Planting of Manna Gum & Wattle woodland, west of Bannockburn Canoe Pamp with Fyansford Primary School. Tony Woolford (052) 43 6340. Also on 17 May.
- 16 Sat 9-9.30 start. **FO Organ Pipes.** Planting, rare & endangered species. Robert Bender (03) 499 2314.
- 16 Sat. **FO Churchill N.P. & Lysterfield Lake Park.** Neal Smith (03) 873 2635.
- 16 Sat. **FO Bradshaw Park.** Weeding day. 580 2573.
- 17 Sun 10am **Men of the Trees.** Deep Rock, Yarra Bend Park. Minette Russell Young 898 1364.
- 17 Sun. 10am-12noon. **Brunswick Tree Group** Moonee Ponds Ck. Eric Ward (03) 388 2123.
- 17 Sun 10am-1pm. **Friends of Merri Merri Park.** Planting day. Melways map 30, ref C9. Barb Miles (03) 482 1618.
- 17 Sun 12-3pm. **Earthcare StKilda.** Planting wetland saltmarsh & dune plants Approx 3500 plants West Beach StKilda West beach. Neil or Rob (03) 536 1490 (W).
- 17 Sun 10am-12noon. **City of Heidelberg community revegetation day.** Wilson Reserve, Melways map 31, ref F10. Caroline Falkingham 490 4253.
- 23 Sat 9.30am. **FO Werribee Gorge & the Long Forest Mallee.** Long Forest planting at Old House block. Janet Leversha (053) 67 4229 or Judy Douglas (053) 67 2672.
- 24 Sun. **FO Eltham Copper Butterfly.** Elaine Braby (03) 9015.
- 24 Sun 10am-1pm. **Nunawading Indigenous Plants Project.** Nunawading Council Horticultural Centre, 82 Jolimont Rd., Forest Hill. Margaret Witherspoon 878 5998.

The Australian Trust for Conservation

Volunteers coordinate plantings and other restoration activities throughout most of Australia. They take place throughout the week and on week-ends, usually a specified number of volunteers is required and most plantings are indigenous. For further information contact ATCV:

National Headquarters in Ballarat: (053) 33 1483.

State Offices:

Melbourne (03) 532 8512. Bendigo (054) 41 6666.

Wodonga (060) 241 061

NSW (02) 411 4254

South Aust. (08) 207 8748

ACT (06) 290 1756

Tasmania (003) 41 5413

Queensland (07) 210 0330

NT (089) 812 848

Queensland

Toohy Forest Protection Society. Meets first Monday of the month. Confirm details with Shirley Walton (07) 848 1036.

Thank you to all the people who contact us regarding on-coming events their groups are organising. If other people wish to have their events covered, please get in touch with Dimi Bouzalas, (03) 386 0264.

Visitors/participants are welcome to all events listed in Indigenotes

Snippets

Feral animal furore continues

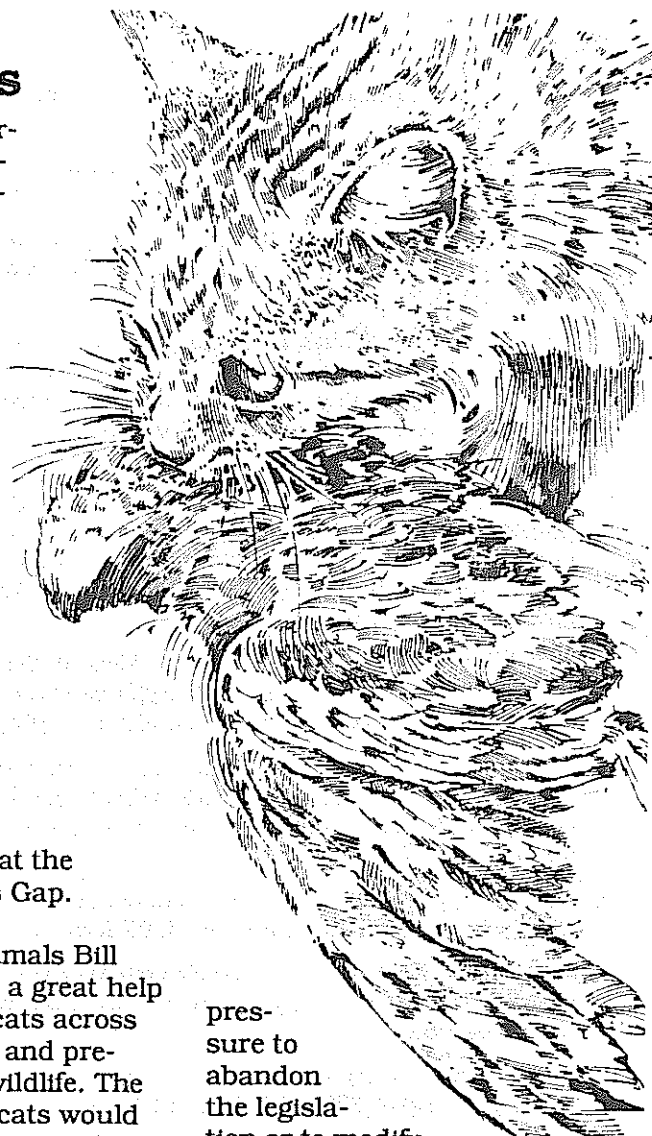
The debate over the need to control introduced predators in Australia seems to be escalating. The first drawing of prizes for the Foxlotto was recently held; it seems that the Victorian government thinks gambling is one way to get people more involved in the eradication of foxes. The Companion Animals Bill is also being debated in the Victorian Parliament; more on that later.

Scientists around the country are saying we would be better off spending money on killing introduced predators, especially foxes, as opposed to more research programs on the causes of small mammal extinctions. Dr. Jack Giles of the Taronga Zoo makes some compelling points: "Enough research and evidence is available to start taking action against the fox [and cat]. Most extinct Australian mammals were in the 50g-5kg range and lived in mainland Australia below the tropics. Foxes do not live in Tasmania and are absent from much of the tropical north and the fauna is virtually intact in these areas. I am prepared to bet that foxes are the final solution to several endangered species in Australia. More effort should be directed into research, development and field application of methods of fox management than into individual studies of small macropods, bandicoots, dasyurids, native rodents and groundnesting birds. Getting rid of foxes may save a lot of native wildlife quicker than any other action."

Other people are working out some solutions on their own. Remember John Walmsley, the man who started feral-free Warrawong Sanctuary in South Australia, who was recently in the news for wearing a feral "cat-hat" to accept a conservation award? He's creating two

more such sanctuaries in South Australia to protect indigenous mammals, one area of 1100ha is already fenced and another of 6000ha is planned. Andrea Cooper of Deep Lead near the Grampians has another tactic. She owns and operates Vermin Furs and makes hats, coats and mittens out of cat and fox furs and goat skins; they're good sellers at the Green Shed in Halls Gap.

The Companion Animals Bill could potentially be a great help in controlling feral cats across the state of Victoria and preserving our native wildlife. The section applying to cats would require owners to register them and allow councils to set registration fees for them, as the new law in the Shire of Sherbrooke already requires. The bill has the support of the main animal welfare organisations yet there is significant opposition from pet-food companies, the State Opposition and various citizens' group. The bill is labelled as "draconian" by opponents who say cats will become a "luxury" because of exorbitant registration fees and that jobs will be lost in the pet food industry. Animal welfare agencies say there is an urgent need for the legislation because of huge increases in cat populations. The issue ignored in the debate is the catastrophic effect of domestic and feral cats on native wildlife. Meanwhile, the Minister for Food and Agriculture, Mr. Ian Baker, is under



pressure to abandon the legislation or to modify it. If the bill is passed in its present form it could pave the way for much more effective feral cat control. Compulsory registration and associated fees are likely to reduce the dumping of cats and increase the proportion of desexed domestic cats in the community which means less strays. The bill also gives managing authorities greater powers to controls cats and dogs in reserves and gives councils the option to implement tighter controls in critical areas. The Minister deserves a letter supporting this issue and broadening the debate.

Source: The Australian Magazine 28-29 March 1992, Wimmera Mail-Times 24-12-91 and The Age 4 April and 9 April 1992.

Survey of food of Pied Currawongs

A debate has been spawned in NSW about the eating habits of the Pied Currawong. Apparently their population has doubled in the last 30 years in Eastern Australia and according to one study in the Armadale, NSW area small native birds have shown 90% breeding failure in recent years with local extinctions imminent. The author of this study, Dr. Harry Recher, blames predation by the Pied Currawong and says that its population increase, and subsequently more predation on smaller birds, is due to exotic plants providing winter food sources that have drastically reduced juvenile mortality. He has proposed a mass poisoning program but the Bird Observers Club of Australia wants to gather more information first. They plan to conduct a food survey, both plant and animal, of the bird over Autumn/Winter 1992. If anyone is willing to help the one-page survey form is available from: BOCA, 183 Springvale Road, Nunawading, Victoria, 3131.

Fungus: largest living thing

Scientists believe they have found the largest and oldest living thing on earth in northern Michigan, USA. It is a specimen of *Armillaria* sp. that is growing underground across an area of at least 15 acres. Samples taken across the whole area indicate that it is, genetically speaking, all the same individual. They estimate that it is probably tens of thousands of years old.

More books on invertebrates:

We introduced some books on invertebrates last month but we thought that more texts might help spread some understanding of this often neglected group of fauna:

Australian Freshwater Life: The Invertebrates of Australian Inland Waters, Williams, W.D., (1980) MacMillan.

The Insects of Australia (2nd Ed.), CSIRO Division of Entomology, \$225, 1200 pp, New edition 2, volumes.

Butterflies of Australia, Common, I.F.B. and Waterhouse, D.F., (2nd Ed. 1981) CSIRO, \$40 682 pp.

The Australian Dragonflies: A Guide to the Identification, Distributions, and Habitats of Australian Odonata, Watson, J.A.L., (1991), CSIRO Division of Entomology. \$60 290 pp.

Australian Insects, An Introductory Handbook, McKeown, K.C., (1945), Roy. Zoo. Soc. NSW.

Insect Ecology, Matthews, E.G., (1976), Uni. of Qld. Press.

Living Insects, The Australian Naturalist Library, Hughes, R.D., (1974), William Collins.

Australian Insects in Colour, Healy, A. and Smithers, C., (1971), Reed.

Source: Land for Wildlife News Feb. 1992

Simple bat identification

Whilst the echo-location calls of most bats are made at frequencies that are inaudible to the human ear this is not the case with the White-striped Mastiff Bat. This is the only species of Victorian bat which you are likely to hear making its high-pitched call. The sound is made at regular intervals during flight as the bat searches for prey. When the bat locates a potential prey item the rate increases rapidly. You can even tell if the hunt is successful by listening for an abrupt halt in the echo-location call. It flies at canopy height and it is common throughout Victoria, even in the suburbs of Melbourne.

Source: Land for Wildlife Newsletter Feb. 1992

New Books

Frogwatch: Field Guide to Victorian Frogs by Jean-Marc Hero, Murray Littlejohn and Gerry Marantelli (DCE) RRP \$15.00

"Calls of Victorian Frogs" (cassette) by Murray Littlejohn (Dept of Zoology, Uni. of Melbourne) RRP \$11.00

This book and cassette is meant to help involve the public in DCE's Frogwatch Program. Frogs appear to be in decline around the world and the program aims to help find out why. The book has everything needed in a field guide, including a straightforward key, distribution maps, breeding data and good colour photos. The tape makes fun listening and eases ID.

The Snakes of Victoria: A Guide to Their Identification by John Coventry and Peter Robinson (DCE) RRP \$15.00

This book is small and easy to fit in a pocket, good for beginners and for those who want more scientific detail. It includes clear photographs and distribution maps, biological information and first aid advice. Source: Parkwatch March 1992

Snippets:

Write to the new Minister!

We welcomed the new Minister for Conservation and Environment, Barry Pullen, a couple of issues ago. He reversed one of his infamous predecessor's decisions straightaway, the restructuring and scattering of DCE was cancelled. It's been relatively quiet since then but there are several other decisions made by Steve Crabb that should be cancelled. These issues deserve a letter to the new Minister (c/o Parliament House, Melbourne 3000, who professes to be more consultative.

1. Logging is still allowed in Sites of Significance for Rainforest and in mixed forest. The Dept., under Steve Crabb, adopted a definition for rainforest that excludes anything with a eucalyptus overstory. This simple deletion is still endangering much of Victoria's rainforest and the ecological definition put forward by the DCE scientists must be accepted and implemented before any more rainforest is destroyed.

2. Recently, Pullen refused to

sign an agreement between Victoria and the Federal Gov't. for **resource security** in the Southeast Forests (NSW and East Gippsland). He needs to be supported for this action and asked to abandon the so-called "value-adding" programs that allow good saw-logs to be chipped and sent to Japan.

3. Action to protect Victoria's native grasslands and grassy woodlands has still not materialized. The lack of action is threatening sites at Derrimut, Sunbury and Campbellfield while the gov't has decided to allow development at one of Victoria's most significant sights, the William Angliss Grasslands.

4. The level of wilderness protection in Victoria may have already been decided by Cabinet but a letter supporting stronger legislation might still be effective. The LCC Wilderness recommendations to the gov't. were a major step forward but some of the highest quality areas were still excluded.

Source: Parkwatch March 1992, Potoroo Review March-April 1992 and VNPA Newsletter Feb. 1992.

Melbourne Water park staff demoralized

Steve Crabb is still Minister of Water Supply and he continues to be controversial for some of the things going on in his department. Open Space 2000 appears to be a great new program to help preserve Melbourne's open space, if you believe the glitzy TV ads. There is money for various new projects but essential staff are steadily being cut at some of the most important open space reserves, Melbourne Water Parks and Reservoirs. Staff at Cardinia Reservoir, in the Dandenongs, is down to five or six rangers from 13 two years ago. At Brimbank Metropolitan Park on the Maribyrnong six rangers are left

out of a former staff of 24 and they've had to stop work on important long-term projects such as native grassland re-establishment because the money has disappeared. These are not isolated examples, many Melbourne Water Parks are becoming chronically understaffed.

Open Space 2000 has recently sponsored a grant scheme for community groups and wholeheartedly supports Friends groups but these activities cannot replace the crucial work done by an adequate number of trained and dedicated rangers in all Melbourne Water Parks.

ParkCare: successful and expanding

Dandenong Ranges Parkcare Officer, Di Ward, has been busy over the last year. She's run six training workshops for volunteers since last July and 20 Neighborhood Information Days in residential areas around the Park boundaries. She's gradually informing and educating local people about the problems that the Park faces, primarily exotic weed invasion and problems associated with domestic pets.

Open Space 2000 money has even allowed the project to expand. The Pines Reserve in Frankston and Warrandyte State Park both have ParkCare Programs now. They will follow the example set in the Ranges and "encourage the local community to take action on park issues on a local scale".

Source: Friends of Sherbrooke Newsletter March 1992 and Friends of Warrandyte State Park Newsletter March 1992.

Microseris germination

Trials conducted by John Delpratt and students at VCAH Burnley on *Microseris lanceolata* (Yam Daisy) have shown that stratification of seeds improves germination rates greatly. If the seed is kept imbibed (allowed to soak up water but not drowned in it) and stratified (kept cold) at 2-4°C for at least 2 weeks, then germination rates should improve from about 5% to 50% of seed.

- Scott Watson (03) 459 2929 (home)

Ferns and The Flora and Fauna Guarantee Act

Tim Harding, the Acting Director of Flora and Fauna in DCE, recently spoke to the Fern Society of Victoria on the subject of ferns and their protection. The talk focussed on both the protection of threatened ferns and the harvesting of "non-threatened" tree-ferns. The objectives of the Flora and Fauna Guarantee Act are to "guarantee all taxa of Victorian flora and fauna...can survive and flourish..." and "to ensure that any use of flora...by humans is sustainable".

Two species of fern have been listed under the Act so far - Cyathea leichardtiana (Prickly Tree-Fern) and Adiantum diaphanum (Filmy Maidenhair). Two further species - Cyathea cunninghamii (Slender Tree-fern) and Adiantum capillus-veneris (Dainty Maidenhair) - have received preliminary recommendations. The latter species is a virtual weed world-wide and probably an escape in Victoria; its listing before other rarer indigenous species was questioned. The criterion for listing is rareness in Victoria and plants can be de-listed later if it is decided that it is an escape. Tim said that one third of the 43 species of fern listed in "Rare and Threatened Plants in Victorian" by Gullan et al have been processed in the last three years.

The Act protects all native flora in Victoria which means that a permit is needed to collect any

plant, especially tree-ferns. Illegal harvesting of tree-ferns is controlled by a law requiring any tree-ferns offered for sale to have a Flora and Fauna Guarantee tag attached to show that they have been collected under a permit in an ecologically sustainable way [is this possible?]. A Flora Harvesting Working Group within DCE is reconsidering the tagging system. It is working with the Tasmanian gov't. (where 80% of the approx. 350,000 tree-ferns sold in Victoria annually originate) to develop a common system and is consulting the harvesting industry and the developing fern propagating industry in the Otways. Recommendations to the Victorian gov't are expected in "early 1992". Other issues came up in question time:

- A system for differentiating propagated ferns from collected ferns is being developed by the Working Group;
- The use of tags will be better enforced and a public education program will be initiated;
- The tagging system only controls ferns offered for sale. There is no controls on ferns harvested on private land for personal use and
- It was suggested that the rarer tree-ferns such as C. cunninghamii and C. marcescens should be better protected from harvesting. Permits are never issued for these but inspectors have difficulty identifying them once they're cut up.

Source: Fern Society Newsletter March 1992

Weedy Word Find

Can you find the weeds in the puzzle below to reveal one of our worst weeds?

B	F	E	N	N	E	L	E	N	I	P
R	R	B	O	N	E	S	E	E	D	U
O	B	I	K	L	L	A	S	C	W	C
O	I	C	A	E	K	R	E	V	I	R
M	O	V	R	R	O	B	L	E	L	E
D	E	R	Y	G	R	R	T	T	L	T
I	O	X	A	L	I	M	S	C	O	T
S	O	U	R	S	O	B	I	H	W	U
N	R	O	H	T	W	A	H	E	S	B
M	U	R	O	P	S	O	T	T	I	P

BONESEED
 BRIAR
 BROOM
 BUTTERCUP
 DOCK
 FENNEL
 GORSE
 HAWTHORN
 IVY
 PINE
 PITTOSPORUM
 SMILAX
 SORREL
 SOURSOB
 THISTLE
 VETCH
 WILLOW

From Marianne J. Henderson (03) 439 9352

IFFA activities:

IFFA (Vic)

April meeting:

Tuesday 28 April, 8 pm at the Herbarium Hall, Birdwood Ave, South Yarra. (Melways map 2G 12a)

A meeting of the **Indigenous Nurseries Network** will be held at 6 pm, before the main meeting starts. Contact Murray Ralph for details on (03) 419 3040 (home)

Southern Peninsula IFFA

May Meeting:

7.30 pm Friday 8 May. Winty Calder will give a talk on "Flora of the Peninsula". At the Shire of Flinders Municipal Offices (Melways map 170 B4) Contact Mark Adams for details on (059) 851 122.

IFFA (NSW)

Next meeting:

Monday 1 June, 7.30-10 pm at the National Herbarium (beside the Maiden Theatre), Mrs Macquarie's Rd, Royal Botanic Gardens Sydney. "**Are you associating with Mycorrhizal fungi?**" A talk by Dr Anne Ashford, School of Biological Sciences, University of NSW. 95% of Australian plant families have an association with mycorrhizal fungi. Anne has been looking at these fungi for over 20 years and will describe how the fungi work, how they benefit plant growth and some of the amazing adaptations of native plant roots. Anne will also discuss the implications for re-vegetation programmes.

Contact **Sally Fisher (02) 970 6486 (work) or Danie Olbrich (02) 953 7461 (home)**

Membership

IFFA membership costs

\$40 for non-profit organizations,

\$50 for corporations,

\$25 for individuals and families,

or \$20 concession.

Membership includes

11 issues of *Indigenotes* per year.

Memberships should be sent to the Secretary.

Include your name, address

and phone numbers,

and a bit about yourself.

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Contributions to *Indigenotes* should be sent to the editors — the deadline for the next issue will be 1 May.

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