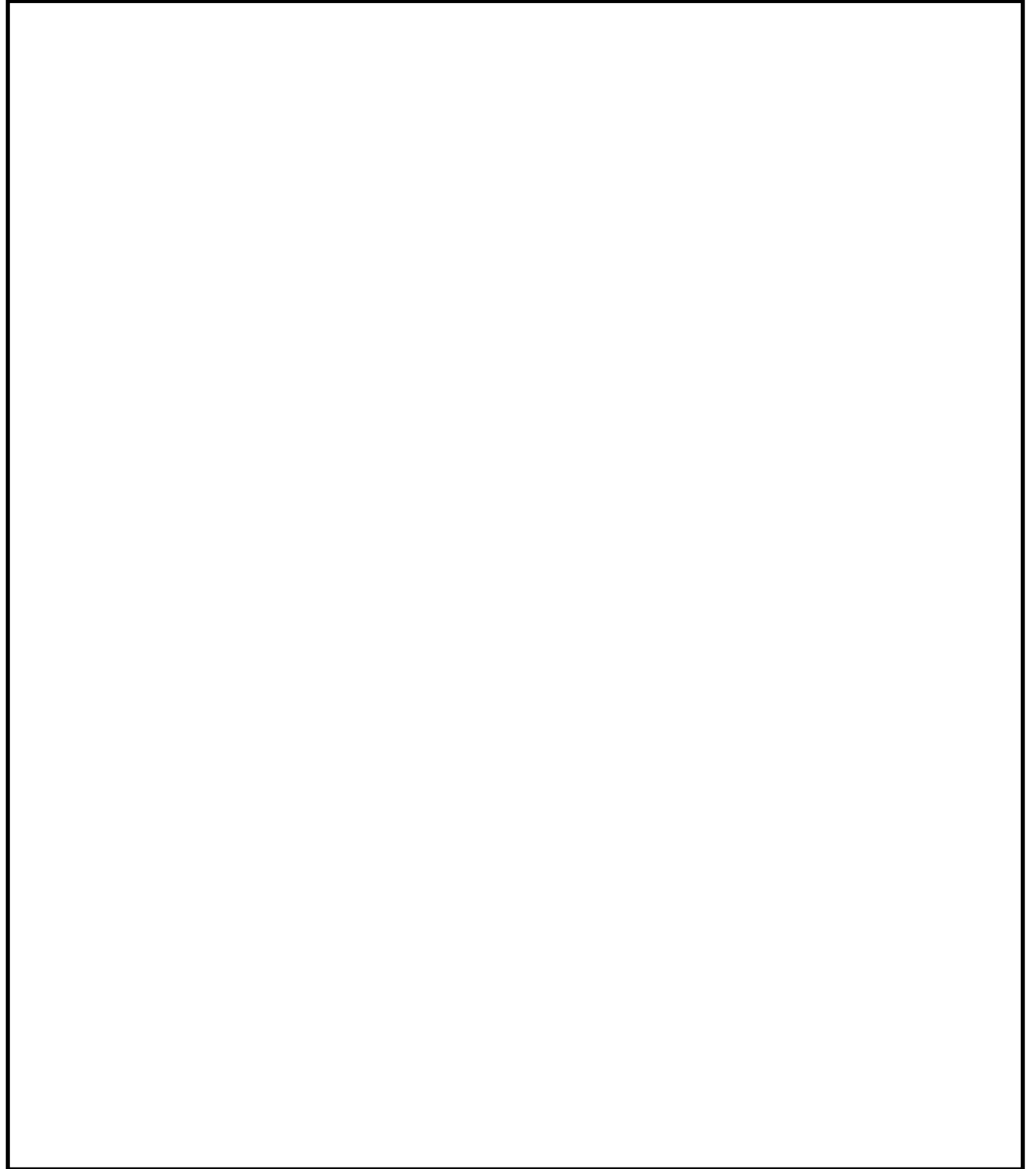


INDIGENOTES



Weed Notes:

Ligustrum lucidum (Oleaceae),

Chinese or Glossy Tree Privet;

Its characteristics, weed status and use as food by birds and insects

by Ian Faithfull *

The Chinese Privet or Glossy Tree Privet, *Ligustrum lucidum*, is a feature of older gardens of the eastern suburbs of Melbourne, including Hawthorn, Camberwell, Kew and Box Hill, where it has become one of the dominant woody weeds. Although it has various desirable characteristics from the horticultural point of view, it is in the gardens of the horticulturally ignorant where it is present in largest numbers.

In the home garden it is often seen as a juvenile consisting of a straight, upright main stem without side branches, large alternate leaves a few centimetres apart, and a straight tap root as long as the stem. It grows into an evergreen small tree with dense upright branches and a rounded canopy. The shade beneath is dense and growth of other plants is suppressed. The broad, glossy acuminate leaves are mostly about 10 cm long. The largest specimen with which I am familiar, in the Burnley Gardens, has multiple fused trunks with largest diameter approaching 1 metre, is about 12 metres high and continues to throw up vigorous sucker growth from the base of the trunk.

The abundant small white flowers, in 25 cm panicles, appear in summer. In 1992 the first flowers opened in early January, full flowering occurred in mid to late January and many flowers had browned off by the end of January. In 1993 flowering was delayed by about two weeks. In odd locations flowering may occur in the autumn. The flowering period roughly approximates that of *Bursaria spinosa*. The pollen of privets is often blamed for attacks of "hay fever".

The initially green fruit, a berry-like drupe, is produced in great abundance and at Burnley most fruit are purple by mid May. Fruiting continues through winter. By early July much of the fruit on the higher, more exposed parts of the plant has been eaten, or knocked to the ground by birds and usually most fruit has fallen or been eaten by late August.

At 30 Prospect Hill Road Camberwell a 5.5 metre

* 7/20 Adam Street, Burnley, Vic., 3121

tall specimen perhaps 20 years old in the back yard had evidently taken root where water drained off the corrugated iron roofing of a garage. This plant grew on a thin soil layer over an old asphalt surface underneath which was a layer of building rubble. No vegetation survived beneath the canopy except a feeble blackberry, although a wide variety of grasses and weeds occupied similar ground away from the tree. Privet is a "gross feeder", but "it will live in poor soil and withstand drought well" (Brunner, no date).

According to Macoboy (1986) *Ligustrum* species are declared noxious weeds in many countries. The genus is medium sized and includes mostly evergreen small trees, many of which are found from China through south-east Asia, but also with species in Europe and Africa. *L. lucidum* is native to China and Korea and grows to 10 metres (Macoboy, 1986). Privets are probably most familiar as hedge plants although privet hedges have been out of fashion since the 1960s and many have been removed in the eastern suburbs of Melbourne. Sargeant (no date, but ca 1950) stated that the hedge privet "is intensely disliked by many people of good taste, but while formality continues to be favoured it will retain its popularity". He noted that in the suburbs of Melbourne there was "a monotonous uniformity of hedges, mostly Cypress, Privet and Salt-bush, varying only in their height and treatment". Several varieties were recommended including, *L. vulgaris*, the Common or Evergreen Privet with deep green foliage, *L. ovalifolium*, the Golden Privet, a semi-evergreen with golden foliage in the summer but which loses its colour in the winter, *L. ovalifolium elegantissima* (syn. *aureum*) the Californian Golden Privet or Japanese Variegated Privet, also semi-evergreen with green and yellow leaves, and *L. lucidum aureo-marginatum*, with yellow-margined foliage (Brunner, no date; Sargeant, no date).

It has not yet been acknowledged as a naturalised species in Victoria (not mentioned in Willis, 1972, Costermans, 1983 or Forbes & Ross, 1988 **check**

more recent refs.), although it should be. In suburban gardens it establishes freely and persists well. It is recognised as an environmental weed at Yarra Bend (Yarra Bend Park Trust, 1990) and I have weeded small plants from Wattle Park, Burwood, the Gardiners Creek reserve in Box Hill South and the remnant veg site beside Heyington Station. European Privet, *Ligustrum vulgare*, “sometimes persist(s) by sucker on old garden sites or former fence-lines” (Willis, 1972), but it does not establish by seed to a major extent like *lucidum*. In suburban gardens Chinese Privet seems to establish more often close to brick walls, possibly as a result of dispersal in the droppings of birds. The root stock is exceptionally vigorous and the trunk strong. Plants that are cut back shoot readily from the stump at any age. The seed persist in the soil for years (Macoboy, 1986)

The sweet perfumed flowers are used by a variety of insects. The few I have noticed include honeybees, various flies, the day-flying native Vine Moth, *Phalaenoides glycinae*, native butterflies including the Doublespotted Lineblue *Nacaduba biocellata*, the Common Brown butterfly *Heteronympha merope*, the Dispar Skipper, *Dispar compacta* and various mainly nocturnal noctuid moths such as Armyworm moths, *Mythimna* and *Persectania* and the Bogong Moth, *Agrotis infusa*. The perfume appears to be much richer and more powerful on warm humid nights.

Fruit of unidentified *Ligustrum* are eaten by the Silvereye, *Zosterops lateralis* and the Pied Currawong, *Strepera graculina* (Barker & Vestjens, 1990) while the King Parrot, *Alisterus scapularis*, is known to consume fruit of European Privet, *Ligustrum vulgare* (Barker & Vestjens, 1989). Fruit of *L. lucidum* are eaten by House Sparrows, *Passer domesticus*, Blackbirds, *Turdus merula*, Spotted Turtle Doves, *Streptopelia chinensis*, Common Mynahs, *Acridotheres tristis* and Common Starlings, *Sturnus vulgaris*, all introduced species, and the native Silvereye (inner eastern suburbs of Melbourne, Vic., 1991-2). At Burnley Gardens in July 1992 all of these species except the starling were feeding at the same time in the same large tree. The variety of Spotted Turtle Dove which occurs in most of Australia is a hybrid of two races, the Indo-Malaysian or South East Asian form (*tigrina*) and the Chinese form (*chinensis*) (Blakers, *et al.*). It would appear likely that Chinese Privet is a natural food plant of *chinensis* in its native haunts and the Australian hybrid spends considerable time consuming these fruit in Melbourne.

At Wangaratta in July 1992 the fruit were also eaten by Yellow and Eastern Rosellas (*Platycerus elegans flaveolus* and *P. eximius*) which extracted the pulp and seed and left much of the purple skin. Small flocks (up to eight) of Yellow Rosellas may be found in a single bush. They are messy feeders, lopping the panicles and dropping much uneaten fruit to the ground. It seems likely that the seed requires passage through the digestive tract in order to germinate but I have done no experiments which might provide real evidence for this.

Control is generally achieved by pulling seedlings and cutting back large plants and digging out their roots. Severely pruned plants shoot readily from the old wood. Privets are propagated by cuttings.

Chinese Privet seems to be a plant which could take a dominant position on neglected sites in the suburban landscape. Suitable replacement plants might include Sweet Bursaria, *Bursaria spinosa*, flowers of which are used by a great diversity of native insects, but which has dry fruits not known in the diet of birds (Barker & Vestjens, 1990), native Coprosmas, such as the Prickly Currant Bush, the sweet fruit of which are probably used by a much wider range of birds than has been recorded, the parasitic *Exocarpos cuppressiformis*, which also has attractive fruit and the Tree Violet, *Hymenanthera dentata*, which Aston (1992) has recently identified as an important bird food plant.

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Interpretation in natural urban areas: the example of Waverley Flora Park.

By Phil Watson*

Abstract.

Waverley Flora Park, 84 hectares of rare grassy woodland community is located two minutes from the G.P.O. of Hobart's major eastern shore city.

The success of recent urban bushland management activities such as the city of Clarence's natural areas program incorporating bushland regeneration/ rehabilitation activities at Waverley Flora Park provide evidence of the rapidly expanding awareness of the values associated with these remnants. Interpretation provides the key to this success. However interpretation techniques require close scrutiny for their effectiveness and impact. This short paper alludes to potential avenues that can be used to relate the complexities of woodland communities in a simple but interesting way.

The Need For Interpretation

Cities and towns are orderly and tidy landscapes. The underlying aesthetics of a natural grassland area complete with its rusty hues of Kangaroo grass, *Themeda australis* and maze of colourful, herbaceous wildflowers permeating below the canopies of gnarled, character filled trees requires some time to absorb and appreciate their inherent beauty.

The essence is the need to explain what is happening not by a simple "Official" notice which often satisfies the converted but via a more subtle approach. The importance of explaining the ecological basis for the natural communities provides the key. This approach has been utilised through the agency of a "Save The Bush" grant to facilitate an information brochure and interpretation trail at Waverley Flora Park.

An Alternative Approach.

Interpretation needs to go further to engender public enthusiasm and gain support. It is necessary to capitalise on the community's affection for certain prominent native floral and faunal components.

Promoting Rare Insects

Butterflies are found to be attractive due to their wonderful colours and harmonious movements through the landscape. Some are particularly rare and or endangered such as the "Hair Streak

Butterfly", *Psuedalmenus chlorinda*. This species has an intriguing life history involving a symbiotic relationship with the ant, *Iridomyrmex foetans* that protect the larvae from preying birds and guide them from the silver wattle, *Acacia dealbata* to the white gum, *Eucalyptus viminalis* where they pupate. The reward for the ants is a sweet exudate from the larvae.

Waverley Flora Park offers suitable habitat for this species which adds to the natural laboratory of opportunities for nature study projects. By promoting the link between these beautiful adults and their less popular caterpillars (whose larval food comes from the foliage of local indigenous plants) emphasis is placed on the total ecosystem. This enables the justification for the removal of exotic flora which may be out-competing the local native plants. As a consequence, the ethic of revegetation using local provenance species in domestic gardens and public parklands can also be logically understood.

Focus on Beautiful Birds.

Waverley Flora park contains potential habitat for up to 52 bird species. Many examples can be highlighted showing inter-relationships between the easily recognized birds, the more hidden insect populations and the vegetation which supports them. Some frequently encountered birds include:

- 1 the rare Forty-spotted Pardalote, *Pardalotus quadragintus* which live in the *Eucalyptus viminalis* communities;
- 2 the Swift Parrot, *Lathamus discolor* which rely on *Eucalyptus globulus*;
- 3 the Eastern Rosella, *Platycercus caledonicus* and Green Rosella, *Platycercus eximius* which are attracted to the native groundsel;
- 4 the fascinating but cruel Butcher Bird, *Cracticus torquatus* which hangs its prey in the forks of trees;
- 5 the visually unique Tawny Frogmouth, *Podargus strigoides* with its nest of young precariously perched in hollows of old gum trees, still surviving from the onslaught of firewood collectors and budding target shooters;
- 6 the graceful but much maligned Brown Falcon, *Falco berigora*;
- 7 the various cuckoos and Black-faced Cuckoo-shrike, *Coracina novaehollandiae*.

These examples provide interpretive links in the education process of understanding our maltreated urban remnants.

Highlighting the Marsupials.

Continued on page 8

* Parks Supervisor and Natural Areas Manager, City of Clarence.

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for Flora of Vic/ Plants of
western NSW.**

Coming events:

Conferences/Workshops/Talks

- 25 April. **Managing fire for human priorities and nature conservation in the Dandenongs.** A community information day with speakers from the CFA and Ecological Horticulture. \$10 per person/\$8 Greening Australia Vic members/\$6 concession. GAV (03) 654 1800.
- 30 April, Fri 8pm. **Current research in grassland restoration at VCAH Burnley** - an illustrated talk by John Delprat. Scientists at VCAH Burnley have carried out a comprehensive program of research into native forbs. Organised by the Friends of Organ Pipes NP. Information Centre, Organ Pipes National Park. Carl Rayner (03) 337 4936.
- 30 April, Fri. **Fauna Impact Statements - setting the standards.** With the advent of the Endangered Fauna (Interim Protection) Act in 1991 and further legislation for threatened species being developed, the need for Fauna Impact Statements (FIS) or similar documents is here to stay. State and local government agencies, private consultants, scientists, developers and community groups all have a stake in the future of FIS. At this conference, essential questions will be addressed in the first review of FISs, since the controversial inception of the Endangered Fauna Act. At the Hallstom Theatre, Australian Museum, Sydney. Enquiries: Kim Brebach (02) 241 1438, or contact the Endangered Species Network, Shop 2, Cloucester Walk, 88 Cumberland St, Sydney.
- 3 May Mon 6pm. **Development of a computer based key to Australian Tropical Rainforest Trees** by Trevor Whiffin, Department of Botany, La Trobe University. Seminar held by the Australian Systematic Botany Society. National Herbarium, Sth Yarra. Tom Entwisle (03) 655 2313.
- 4 May Tues 8pm. **Design, construction and revegetation of wetlands:** by Steve Yorke, Botanist from Coolart on the Mornington Peninsula. Organised by Fauna Survey Group. Herbarium Hall, Birdwood Ave. Felicity Garde (03)808 2625.
- 6 May, Thurs 10am-3pm. **Use of herbicides for weeds in and around water.** Eildon Rural Water Commission. Weed Science Society (Vic). \$10 members, \$15 non-members (this includes BBQ lunch). For further information contact Ann-Marie Tenni (03) 412 4171.
- 13 May, Thurs 8pm. **Salt Marshes with special emphasis on the Barwon Estuary** by Jeff Yugovic. Botany Group of FNCV. National Herbarium, Birdwood Ave. Contact Joan Harry (03)850 1347.
- 17 May, Mon 8pm. **Growing rainforest trees** by Rob Hall. Accompanied by display of specimens. Organised by the Society for Growing Australian Plants - Victoria. National Herbarium Hall, Birdwood Ave. Contact Enid Bowman (03) 882 5297.
- 29 June - 2 July. **Conserving biodiversity - the threats and solutions.** Organised by the NSW

National Parks and Wildlife Service. Topics include habitat loss, degradation and pollution of water resources, weeds and feral animals, commercial use of native biota, changes to fire and climate and can government solve the problems. At the University of Sydney. Registration fee: \$225, includes all sessions and copies of proceedings, \$135 full-time students. Contact Lynda Wild, Conference Coordinator, NPWS, Ph: (02) 585 6417, Fax: (02) 585 6544.

23&24 September. **Partnerships for Change - environmental practice in the 1990's. 1993 National Conference.** Environment Institute of Australia. Looking towards environmental management and partnerships which achieve sustainable development. Sydney Convention Centre. Direct enquiries to (02) 357 2600.

6-9 December. **Australian network for plant conservation 1993 conference.** Papers and workshops covering endangered species, germplasm storage, databasing, funding and education. Contact Australian Network for Plant Conservation, Australian National Botanic Gardens, PO Box 1777, Canberra, ACT, 2601.

Excursions and field trips

- 24 April, Sat. **Walk, Talk & Gawk: Yarran Dheran.** A bushland haven on the Mullum Mullum Creek developed with the aim of restoring the area to something approaching its natural state by indigenous planting. Leader: Paul Ryan (03) 877 2960.
- 25 April, Sun. **Bat survey with FO Warrandyte SP.** For more details contact Margaret Burke (03)844 1060.
- 1 May, Sat. **Walk, Talk & Gawk: Kinglake NP.** Different types of eucalypt forest are well represented and there are waterfalls and vistas worthy of a national park. Leader: Naturalist, Jane Calder, Bookings: W. Branagan (03) 818 6102.
- 2 May, Sun. **Fungi at FNCV block at Kinglake NP.** with Tom May. General excursion of Field Naturalists Club of Victoria. Annual, ongoing survey to understanding fungal occurrences in the area. Must book early. Contact Dorothy Mahler (03)435 8408.
- 8 May, Sat. Fauna Survey Group (of FNCV) **Lead-beater's Possum Stag Watch.** Ray Gibson (03) 874 4408.
- 8 May, Sat. **Walk, Talk & Gawk: Kananook Creek.** The Kananook Creek Reserve and Seaford Foreshore contain some of the best preserved dune woodlands around Port Phillip Bay. A pleasant half day ramble. Christine Kenyon (03) 803 3495.
- 15-16 May. **FO French Island** survey weekend. contact Fay or Clive (03) 772 9668.
- 16 May, Sun. **Walk, Talk & Gawk: Fern Tree Gully.** Part of the Dandenong Ranges NP, beautiful Fern Tree Gully has been reserved since 1882 and has remained one of Melbourne's most popular parks. K. Mullet (03) 877 2960.
- 22 May, Sat. **Walk, Talk & Gawk: Valley Reserve.** This shady picnic area at Mt Waverley is surrounded by five distinct vegetation zones and there are pleasant easy walking tracks. W. Telcher

(03) 481 3882.

- 29 May Sat. **Fungi or ferns** - will depend on season, with Hilary Weatherhead. Botany Group excursion of FNCV. Win Bennet (03) 435 1921.

Restoration Activities

April

- 24 Sat 2pm. **FO Sherbrooke Forest**. Project afternoon at Pound Ck Spur site. Pulling up ivy, digging up asparagus and drilling hollies. Meet behind Micawber Park Tavern (Melways map 75, ref G7). Other FOSF activities include a visit to the FO Langwarrin Flora & Fauna reserve on the 2nd May, where they will assist with track clearing; 9th May is mapping survey and two other project days are on the 12th & 22nd of May. Vivien Freshwater (03) 754 3093.
- 24&25 Sat&Sun. **Mount Eliza Association for Environmental Care** Reserves project days. Call Anne on (03)787 2034 on the evening prior to the project day for details of proposed activity, venue and equipment required. Also on the 22nd 23rd May.
- 25 Sun 10am. **FO Wildlife Reserves** - La Trobe Uni. George Paras (03)479 2871.
- 25 Sun 11am-4pm. **FO Royal Park West**. Direct seeding grasses in select areas and some hand weeding. Adam Muyt (03) 481 4682.
- 25 Sun 10am-1pm. **FO Braeside Park** working bee. Also on Sun 9th May. Ron Pearson (03) 584 7443.
- 28 Wed, 10am-3pm. **FO the Yarra** Galatea Pt, Mel 2D, D7. Judy (03) 347 2252. Also on Sun 9 May.
- 29 Thurs. **FO Warrandyte SP** propagation day. This event takes place every Thursday. Other revegetation activities on weekends. Ian or Margaret Burke (03) 844 2659.
- 29 Thurs 10am-12noon. **Sandringham Community Nursery** - volunteers propagation activities. Sandringham Council Depot, enter Reserve Rd or Talinga Rd. This is on every Thursday and Saturday.

May

- 1 Sat, 10am. **Green Link Box Hill** activity day. These events are also held every Monday and Tuesday morning, with Monday being Nursery work. Council Nursery in Nelson Street, Box Hill, further details, contact Minette (03) 898 1364.
- 1 Sat. **FO Gellibrand Hill Park**. Jenny Caddaye (03) 744 6093.
- 1-2 Sat-Sun. **FO French Island**. Our first work weekend, we will be staying at the Rangers Depot. Our work will entail cleaning up the track to the Pinnacles, building steps to the top and assessing the erosion situation. Fay or Clive (03)772 9668.
- 2 Sun 9am. **FO Buckley Falls**. South Barwon lower car park. Planting the river banks and slopes at the east end of the park. FOBF also have a planting (Manna Gums and Wattle Woodland on the 16th of May) Tony Woolford (052) 43 6340.
- 2 Sun, 10am. **FO the Helmeted Honeyeater**, works group activity day. Meet at the Yellingbo store.

Mark Ashby (059)66 2681. FOHH also hold nursery activity days on the 5th & 19th of May. For these, meet at the Healesville Sanctuary main entrance at 10am. For further details on nursery activity days contact Pat Madeley on (03)727 2359.

- 8 Sat. **FO Dandenong Ranges NP**. Contact Graham Barstow (03) 758 6935.
- 9 Sun 10am. **Meander**.....a group caring for the Menzies Creek and Emerald Tourist Track Inc. Weeding and other work in the creek reserve. Meet at A'vard Picnic Ground, Emerald (Melways map 125, ref E12). Kate Forster (059) 68 5828.
- 9 Sun 10am. **URAGE** (Upwey Regional Action Group for the Environment). Weeding to restore indigenous vegetation along Ferny Creek. Meet at cnr Dean & Morris Rd. Rob Stephen (03) 754 3792.
- 9 Sun 2-5pm. **Green Link Camberwell**. Natural Heritage Walk at 2pm followed by a planting at 3pm. Meet at the corner of Dion St & Welfare Pde; Melways map 60, ref E7. Dianna Burgess (03) 809 2092.
- 15 Sat 9.00am. **FO Organ Pipes NP**. Meet at the Park Office. Robert Bender (03)499 2413.
- 15 Sat 1-4pm. **Wildlife Watch**. Planting and weeding at Butterfield Reserve, Emerald, followed with BBQ, walk & spotlighting. Melways map 125, ref E6. Robert Steven (03) 754 3792.
- 15 Sat, 10am. **FO Bradshaw Park** weeding. For details on meeting location contact Dave Bainbridge (03)580 5992.
- 16 Sun. **FO Avalon Dunes**. Restoration of native plant communities at Avalon Dunes. This involves removal of bitou and other weeds and planting. Marita Macrae (02) 918 3368.
- 16 Sun 10am. **Men of the Trees**. Deep Rock, Yarra Bend Park; Melways map 2D, ref D6. Minette Russell Young 898 1364.
- 16 Sun. 10am-12noon. **Brunswick Tree Group** Moonee Ponds Ck. Eric Ward (03) 388 2123.
- 16 Sun 1.30pm. **Darling Mills Bush Regenerators (NSW)**. Meet at the corner of Westmore Drive & Range Rd, West Pennant Hills. No previous experience necessary, just enthusiasm! Robyn Becket (02)872 4510.
- 22 Sat 9.30am. **FO Werribee Gorge & the Long Forest Mallee**. Project day: Long Forest - tree planting, tree guard maintenance and fence removal. Janet Leversha (053) 67 4229.
- 30 Sun. **FO Warrandyte SP** Whipstick Gully Family planting day with guest speaker: Bruce Bence: "Whipstick History". Margaret Burke (03)844 1060.
- The **Australian Trust for Conservation Volunteers** activities, contact ATCV: (053) 33 1483.
- For other **Victorian National Parks Association** activities, call (03) 650 8296.
- A large range of activities such as bushwalks and "Friends" activities are published by the **Victorian National Parks Association** in their newsletter. For details contact VNPA on (03) 650 8296.
- Visitors/participants are welcome to all events**

Interpretation in natural urban areas:
(continued from page 4)

Endangered and common marsupials have an inherent attraction which can be channeled into an appreciation of the rapidly diminishing grasslands and grassy woodlands. Bandicoots both the Brown, *Isoodon obesulus*, and Eastern Barred, *Perameles gunnii*, offer exciting study opportunities with their ability to disturb and turn over vast areas of natural grassland. This provides a major mechanism for maintaining the biodiversity of the local flora as disturbance is integrally linked with the regeneration of the inter-tussock space forbs such as the endangered and beautiful *Velleia paradoxa*, Spur Velleia. It is estimated that each year 5% of an area is turned over, which extrapolates to a total ploughing of the area in twenty years. However as an isolated remnant the park is plagued by domestic pets as well as the completely feral kind. Dense patches of bush provide the only cover and refuge for the bandicoots and the scarce Potoroo, *Potorous tridactylus*, and Echidna, *Tachyglossus aculeatus*. Also of habitat significance is silver wattle which springs up in large numbers after fire. It provides a sustaining subterranean root fungus which is a major food source for the Bettong, *Bettongia gaimardi*. These are extinct on the mainland succumbing to the predations of the introduced fox. Bettongs remain one of the uncommon, seed burying marsupials in existence carrying on a process essential for maintaining the biodiversity of the woodlands. Through the agency of our marsupial population, management issues can be introduced to the public. These include weed, track, fire, erosion and re-vegetation management all of which impact directly on these prominent species. The issue of balance between bushland recreation activities and conservation of these species often provides for stimulating debate with those exposed to the issues for the first time.

Conclusion.

These inter-relationships must be recognized and interpreted. Signboards, information panels, brochures and interpretative trails are excellent but often limited in scope. By far the best way to enthuse people about our native bush and wildlife is by enlightened human interpreters communicating with people within the accessible areas of natural bushland.

The employment of natural areas rangers/wardens within local government and/or facilitating the training of volunteers will ensure that the ongoing stimulus of interpretation remains a priority. This will in turn enable children in particular to develop and foster a strong affinity with the natural environment, which is often seen as alien to their computer aged/ urban life style.

Plant list of Ferny Creek in the vicinity of Thompson Rd, Upwey.

Overstorey trees

Eucalyptus cypellocarpa	Mountain Grey Gum 30m
E. obliqua	Messmate 30m
E. radiata	Narrow Leaf Peppermint 25m

Understorey trees

Acacia melanoxylon	Blackwood 20-25m
A. dealbata	Silver Wattle 20-25m

Large shrubs

Olearia argophylla	Musk Daisy Bush 8m
Polyscias sambucifolius	Elderberry Panax 5m
Pomaderris aspera	Hazel Pomaderris 8m
Prostanthera lasianthos	Victorian Christmas Bush 3-8m
Rapanea howittiana	Muttonwood 5-8m

Medium shrubs

Acacia verticillata	Prickly Moses 3m
A. leprosa	Cinnamon Wattle 3-4m
Cassinia aculeata	Common Cassinia 3-4m
C. longifolia	Shining Cassinia 3-4m
Coprosma quadrifida	Prickly Currant Bush 3m
Goodia lotifolia	Golden Tip 3m
Olearia lirata	Snowy Daisy Bush 3m
Pimelea axiflora	Bootlace Bush 3m

Small shrubs

Goodenia ovata	Hop Goodenia 1-2m
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Herbaceous

Gonocarpus tetragynus	Common Raspwort 30cm
Lagenifera stipitata	Common Stipitata 20cm
Rubus parviflorus	Small Leaf Bramble Scrambler
Senecio linearifolius	Fireweed Groundsel 1m
Stellaria flaccida	Forest Starwort Scrambler
Stylidium graminifolium	Grassleaf Trigger Plant 30cm
Wahlenbergia quadrifida	Sprawling Bluebell
W. stricta	Tall bluebell 50cm

Lilies, Rushes, Sedges.

Carex appresa	Tall Sedge 60cm0-1m
Dianella tasmanica	Tasman Flax Lily 1m
Gahnia sieberiana	Red Fruited Saw Sedge 1.5m
Juncus sp	Rush 1m
Lomandra longifolia	Long Leaf Mat Rush 60cm
Lepidosperma elatius	Tall Sword Sedge 1m

Grasses

Danthonia penicillata	Slender Wallaby Grass 30cm
Poa ensiformis	Purple Sheath Tussock Grass
1m	
Tetrarrhena juncea	Forest Wire Grass

Groundcovers

Acaena anserinifolia	Bidgee-Widgee
Dichondra repens	Kidney Weed
Geranium solanderi	Austral Cranes Bill
Hydrocotyle hirta	Hairy Pennywort
Oxalis corniculata	Yellow Wood Sorrel

Climbers

Clematis aristata	Austral Clematis
Glycine clandestina	Twining Glycine
Pandorea pandoreana	Wonga Vine

Ferns

Adiantum aethiopicum	Common Maidenhair Fern
Blechnum cartilagineum	Gristle Fern
Culcita dubia	Common Ground Fern
Histiopteris incisa	Bats Wing Fern
Hypolepis sp	Ground Fern
Polystichum proliferum	Mother Shield Fern
Cyathea australis	Rough Tree Fern

The majority of these plants are available at the Sherbrooke Nursery— Shire Offices Upwey. Open Mondays or by appointment.

IFFA (NSW) meeting report:

Biological Resources

Report from Sally Fisher

Professor Andrew Beattie from the School of Biological Sciences at Macquarie University spoke on "Exploring the Resources of our Indigenous Flora and Fauna" at the February meeting of IFFA (NSW).

Andrew is an Evolutionary Biologist and has been researching issues in biodiversity, bioresources and conservation biology.

He spoke to us of the new field developing in Australia, which looks at natural biodiversity and applies the principles of evolutionary biology in order to identify those species or habitats which are likely to be commercially productive.

Andrew explained that when talking of "Biological resources", we usually think of organisms and products often domesticated for thousands of years such as coffee, rubber, sheep, bees, and fish. There is a second set becoming thought of as biological resources, such as nutrient cycles, soil fertility, natural pest control, pollination, degradation of pollutants, photosynthesis and the evolutionary processes which give us our gene pool. These are "ecosystem services".

Andrew stressed that knowledge of natural history is as important to the economy as any branch of science, as it is basic to finding new biological resources. He then spoke in more detail about a topic he is researching - antibiotics.

Pharmaceutical companies obtain bioactive compounds such as antibiotics by "screening". This involves taking specimens of thousands of different types of plants and fungi and through an elaborate and expensive set-up, screening them for suitable compounds - a major cost of pharmaceutical research and development.

Andrew demonstrated that Natural Historians can forecast where suitable compounds can be found and greatly reduce the screening process. He is interested in new sources of antibiotics and asked the question "how would you expect antibiotics to have evolved?".

One answer may be nectar which is a highly nutritious food source attractive to bacteria and fungi. Another answer would be where contagious disease is going to be important in the lives of animals, for instance social animals such as bees and ants. Research on bull ants at Macquarie University has shown that they produce antibiotics from special glands on their heads. There are

5,000 to 10,000 species of ants in Australia alone, each with a potential chemical resource.

A European ant that lives in rotten wood has been found to produce a very effective termiticide. Italian wood ants are exported as a biological control as predators of Canadian Spruce Bud Worm in plantations.

Andrew then spoke of other projects involving bioresources such as:

- biomonitors of water, soil and air;
- new sources of adhesives that are instant setting, anti-corrosive and resistant to high pressure from deep sea vent worms, and velvet worms which use glue to catch prey;
- spiders venom for use in micro-surgery, and silks as energy absorbing, super-strong, lightweight fibres;
- use of bacteria for biological mining and pollution control;
- medical research on nervous systems, using the very simple structures of nematode worms and sea slugs.

He convinced the enthusiastic audience that the potential applications for bacteria, fungi, worms, nematodes, flies, beetles, ants, spiders and other little regarded species were endless.

Andrew also stressed the importance of Natural Historians' study of organisms, their growth rates, fertility, habitat requirements, interactions with other species, biogeography, and the evolutionary processes that have produced these. I think we left the meeting with a new understanding of our indigenous flora and fauna as a source of products and biological resources, and a new sense of purpose and importance in our study of it.

Thank you Professor Andrew Beattie.

Letters:

Tradescantia

In a recent copy of *Indigenotes* one of the activities listed in "Restoration Activities" included pulling up ivy and wandering jew. May I request that it become editorial policy of *Indigenotes* to replace "wandering jew" with "Tradescantia fluminiensis".

Anti-semitism, even if unintentional is unacceptable in all aspects of our society including conservation.

- Margaret Gottstein

Ed: Apologies for this slip-up. This has been added to editorial policy. Other IFFA members should take note of this also.

Help wanted in alpine shrub germination

I am currently doing a Masters degree at the Victorian College of Agriculture and Horticulture - Burnley. My thesis topic is an investigation of the germination requirements of seven alpine shrubs from seed. The aim of the project is to develop a direct seeding model for the rehabilitation of disturbed alpine areas, using the information I hope to glean from my research. The shrub species I have chosen are colonising species. That is; they are species which establish relatively easily in bare ground and which once established, create a microclimate for native grasses and forbs to germinate in. Whilst the species in which I am interested are colonising species in nature, they have proved very difficult to germinate under nursery conditions.

The species are: *Grevillea australis*, *Acacia alpina*, *Acacia obliquinerva*, *Oxylobium ellipticum*, *Hovea montana*, *Bossiaea foliosa*, and *Pimelea ligustrina*. While there is much general knowledge of the germination of these genera, to date my research has found little specific information on the germination requirements of these shrubs. Alpine shrubs tend to have either physical or physiological dormancies, or both, and require some kind of treatment for germination to proceed. The purpose of writing this small precis is to call on native plant propagators in south eastern Australia to see if they have any experience with the plants I am working on... Any information that is relevant to the germination of these shrubs (from seed), practical or theoretical, would be greatly appreciated. Please write to Elizabeth Macphee, c/o VCAH Burnley, Swan Street, Richmond, Victoria 3121, or phone (03) 810 8800 and leave a message and I will get back to you.

- Elizabeth Macphee

Snippets:

IFFA information/publicity/liason group

At an IFFA(Vic) meeting earlier this year, Dale Tonkinson spoke of the need to form a group of people within IFFA which would meet and liase with the various political parties, government departments, allied interest groups (VNPA, ACF etc), local government and business with the idea of creating an awareness of IFFA's point of view. The recent grasslands conference that IFFA ran in conjunction with the VNPA did much to raise the Association's profile. The establishment of this group with its various functions would do likewise it is hoped. It would also remove some of the load on other individuals who up till now have been putting IFFA's viewpoint across.

The group would meet and report back to IFFA at its monthly meeting or as required as events unfold creating a two way flow of knowledge and expertise. There are other aspects which the group might want to address and these will be considered when it meets. So if you have good communications skills, established contacts within the aforementioned groups/organizations and/or the desire and skills to be involved in this type of activity, *have we got a job for you!*

Interested people should contact Ross McPherson, phone (03) 499 3586 (a.h.) and a meeting time will be arranged.

Keeping Cats and Wildlife Safe and Happy

A new brochure titled 'Protect your cat, protect your wildlife: keeping your cat happy and safe' is now available free from the Dept. of Conservation and Natural Resources Regional offices. This practical leaflet discusses the management of cats to reduce their impact on wildlife and live a longer and happier life. Did you know that the average lifespan of a cat kept indoors is twelve years while that of a cat allowed to roam at will is just three years! In Melbourne alone over 45,000 cats end up in animal shelters each year. Only 1% are reclaimed by their owners, most are euthanised. Methods of confinement, cat needs and desexing are also discussed. Get a handful of these and pass them out to your neighbors!

Source: Land for Wildlife News Feb 1993

Telling the Rats Apart: Native vs. Introduced

There are many native rats and 'mice' that resemble the introduced, and undesirable, House Mouse and Black and Brown Rat. This guide explains how to tell the 'goodies' from the 'baddies'. The aim is to encourage the protection of native species. Please ensure that native species, which are usually the majority in bush areas, are not harmed by seeking advice from CNR if the identification is in any doubt.

Rodents (which include the introduced rats and mice) are characterised by **one pair of upper and one pair of lower incisors** (large front teeth for gnawing) which typically curve inwards and grow throughout the life of the animal. This distinguishes them from similiar-sized native species with which they could be confused including the native carnivorous marsupials, Dasyuridae (e.g. *Antechinus*) which have many small similiar-sized sharp teeth for capturing and eating live prey. Pygmy Possums (Burramyidae), the other main group of small mammals, have prehensile tails and specialised hind feet, unlike the rodents. Rodents have **separate anal and urino-genital openings** (combined as one opening in other small mammals). The female does not **have a pouch**. The **scrotum** may be evident in the male but it is **not pendulous** in the adult. Note that the **testes** are in front of the penis in marsupials and **behind** it in rodents.

There are twelve species of rat and mice in Victoria. Those rodents, that were in Victoria prior to European settlement are termed 'endemic', and are broadly separated into three groups: the 'old endemics', include the Broad-toothed Rat *Mastacomys fastis*, Mitchell's Hopping Mouse *Notomys mitchellii* and Smoky Mouse *Pseudomys fumeus*; water-rats (e.g. Water Rats *Hydromys chrysogaster*); and more recent arrivals from Asia (e.g. Bush Rat and Swamp Rat). Female 'old endemics' have four nipples (which are not easily seen unless lactating) and the young are very precocious. In many species the tale is dark above and pale below. We have only a single species of Water Rat and it is quite distinctive, having red-brown or rich grey fur, a long white-tipped tail and webbed hind feet. Bush Rats are generally uniform in colour, especially the tail. Females have six nipples.

However, the most recent arrivals (Black Rat, Brown Rat and House Mouse) are distinguished by **sleeker, denser fur, generally long tails which are uniform in colour, prominent ears and females having ten nipples**.

If the animal has these rodent characteristics and is **small (less than 25gm)** the animal is a House Mouse *Mus musculus* (be careful not to confuse with juvenile native species). House Mice have notched (on the inner surface) incisor teeth (not notched in native 'mice'), darker, shorter and broader feet than similar natives and a musky odour (a major characteristic i.e. **if it smells like one it is one!**).

There are four large (>100gm) Victorian rats in the genus *Rattus*. If the **tail is shorter than the head and body** and the rat **weighs more than 200gm** with brownish-grey fur, it is the introduced Brown Rat *Rattus norvegicus*. Native Swamp Rats *Rattus lutreolus* have similiar short tails but grizzled brown and black fur and weigh less than 200gm (their dark brown feet are a good field character). If the **tail is much (50%) longer than the head and body** it is the introduced Black Rat *Rattus rattus* (Note that fur colour is rarely black and can range from pale grey to brown to black. The belly is often whitish or cream.). Native Bush Rats *Rattus fuscipes* are similiar but the tail is about the same length as the head and body length, the fur colour is always grey/brown and they are far less robustly built. One very good clue, if the rat is captured in a live trap, is that Brown and Black Rats are usually on the move, while native rats (Bush Rat) are likely to just sit in the corner.

The Black Rat has been recorded throughout most of Victoria but is absent from the arid north-west. Like the Brown Rat, it is most common near human habitation but is also found in native vegetation where it eats a great variety of food including underground fungi. An expert climber (it can be mistaken for a possum), it may also be seen swimming. Brown Rats do not climb but are good swimmers. They prefer cellars, warehouses, city streets and sewers and are occasionally found along creek banks and in farm buildings. Brown Rats are aggressive when cornered, launching themselves at their captor, unlike the Black Rat and native rats.

Reference: Strahan, R. (1988) The Australian Museum Complete Book of Australian Mammals. Angus and Robertson.

Source: Land for Wildlife News February 1993

IFFA activities:

IFFA (Vic)

Next meeting:

Tuesday 27 April at 8 pm at the Herbarium Hall, Birdwood Ave, South Yarra (Melways map 2G ref 12A).
Subject: to be announced. All welcome.

Committee meeting:

Tuesday 4 May venue to be determined. 6.30pm onwards. Contact Michele for details.

SPIFFA

Mon 3 May Waterfall Gully Citty Centre, Cnr Bayview Rd and Nixon St, Rosebud South at 7.30 pm. **Subject: to be announced** Contact Mark Adams (059)851 122.

Indigenous Nurseries Network:

27 April Tuesday 6.30pm. (before main IFFA meeting).
Subject: to be announced Contact Murray Ralph (03) 419 3040 or Sue Mills (03) 383 2937.

NSW activities:

Next meeting:

Monday 7 June, 7.30 - 10.00pm at the Maiden Theatre, Mrs Macquaries Rd, Royal Botanic Gardens Sydney.

Hopping Mad. Australias frogs are coming under increasing pressure from loss of habitat, pollution, intense predation and ozone depletion. Martyn Robinson, Education Officer from the Australian Museum will speak on how we can reduce our impact and assist in their conservation. Contact Sally Fisher (02)9706486 (work), Penny Brown or Andrew McGahey (02)9133681 (work)

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 30 April.

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