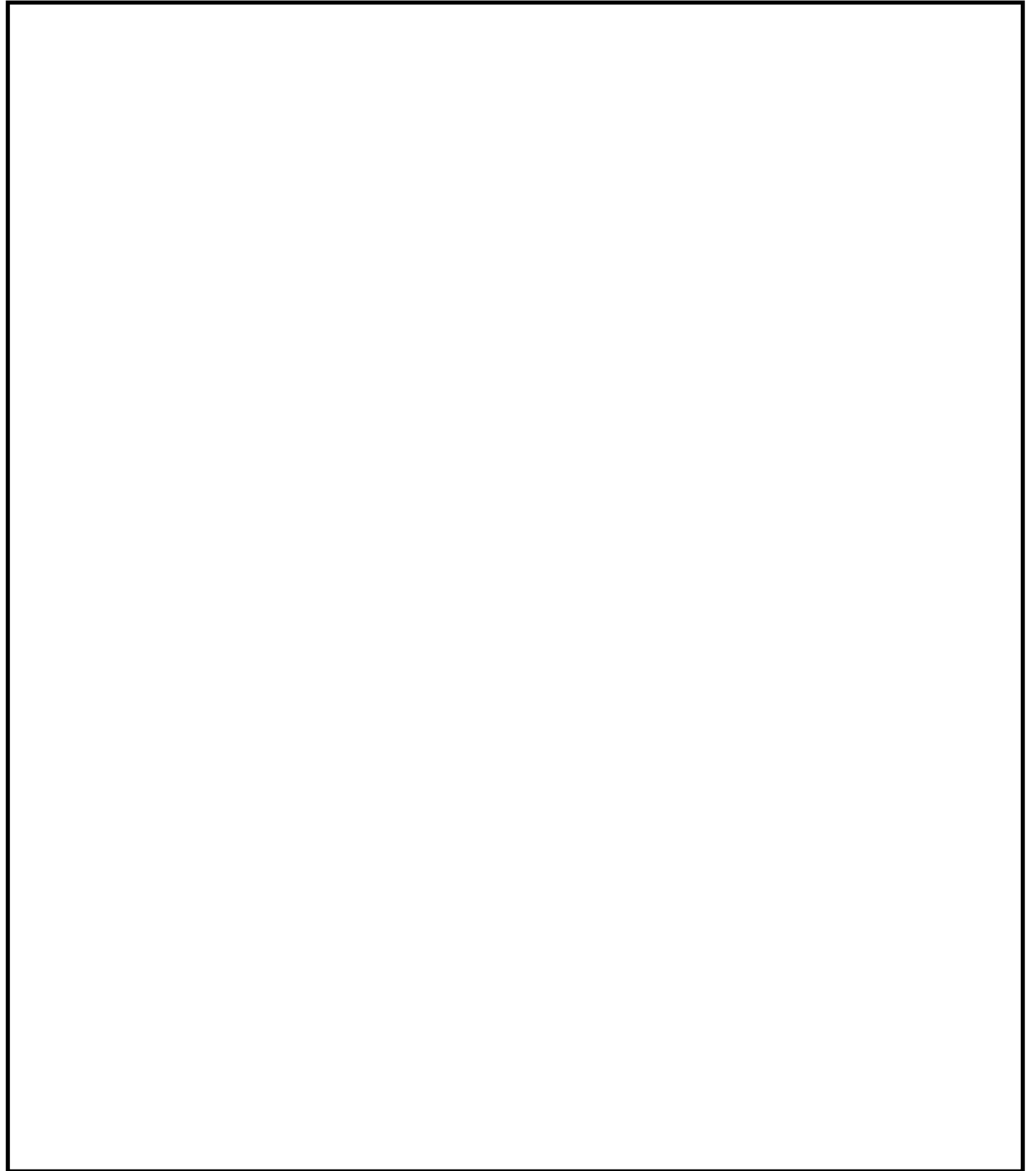


INDIGENOTES



Waterbuttons, *Cotula coronopifolia*.

Some comments on Nick Romanowski's article in Indigenotes 7(11), November 1994.

Petrus C. Heyligers

My comments centre around three different points, which are, firstly, the status of this species in Australia, secondly, the capability of plant 'pieces to float indefinitely across oceans' and, thirdly, whether all introduced plants can be 'branded ... as ... exotic weed [s]'.

1. Native or introduced?

Robert Brown's record from Port Jackson, although the earliest for Australia, was mentioned by Bentham in his *Flora Australiensis* vol. 3 of 1866 without a date. The list of 29 species noted by Brown as introductions during his visits to Sydney, 1802-4, only became known to the botanical community at large when it was published by the editor of the *Journal of Botany*, who had found it among Brown's miscellaneous papers preserved in the British Museum (Natural History) (Britten 1906). *Cotula coronopifolia* is one of two species in this list which are prefixed with a question mark. One of the points made by the editor in this short introduction is that '*C. coronopifolia* is well represented [among Brown's herbarium specimens]'. This gives the impression that it must have been fairly common in the Port Jackson area. However, Brown's use of a question mark could mean either that he was not sure that the species was introduced, or that he was uncertain about its identity. In the latter case, I presume, he would have collected more specimens than he otherwise would have and thus his collections may give a wrong impression about abundance.

Kloot (1984, p. 70) writes: "Mueller (1868) listed a number of species which, he stated, were from southern Africa but introduced into Australia since settlement. Because they were so fully naturalised he 'admitted them to the vegetation of Australia' [Kloot's translation from Latin] and subsequently listed them as part of the continent's flora: '*Papaver aculeatum*, *Heliophila pumila*, *Cotula coronopifolia*, *Cotula filifolia*, *Cryptostemma calendulaceum*, *Lobelia anceps*, *Grammototheca erinoides*, *Cyperus minimus* et alia stirpes Austro-Africanæ' Later writers misinterpreted Mueller's listing to mean they were native. This

misunderstanding led to errors." When Kloot (l.c., p. 76) lists *C. coronopifolia* as 'native of South Africa' he quotes Mueller (1968) as evidence.

Romanowski states that 'this species occurs on many continents and car islands, and long has been recorded as native to New Zealand, parts of South America and even Europe'. This may be so for Southern Hemisphere occurrences, but in Europe it is regarded as one of the 'very few [plants] from the Southern Hemisphere [which] are introduced and naturalised in the Northern ... It is spreading, although not rapidly, along the coasts of both the north Atlantic and north Pacific Oceans. In Europe it was first found close to Emden in 1739.' (Hulten 1971). (Emden is a harbour town, situated at the mouth of the River Ems in northwest Germany.) Hence, European as well as North American floras treat *C. coronopifolia* as an introduction from South Africa.

Kloot (1984) recognises three groups of species in the flora of an area, namely:

1. The alien flora. Species that usually reached the location in active or passive association with Man, and usually in the historical period.
2. The acquired flora. Species that originated elsewhere and moved by non-human ('natural') methods of spread and dispersal to the location in question.
3. The native flora. Consists of species that evolved locally ..."

Kloot goes on to point out that the introduced flora combines 'aliens' and 'acquisitions', while the indigenous flora consists of the autochthonous flora and the species evolved from introductions.

So, what is the status of *C. coronopifolia*? Only detailed taxonomic research can shed light on this matter, but for the time being I regard it as acquired or, given the evidence of introduction to Europe during the time the Dutch were settling in southern Africa, a very early alien species which has not yet evolved an identity of its own. In the next section the dispersal capabilities of *C. coronopifolia* will be discussed to underpin this conclusion.

2. How did *Cotula coronopifolia* reach Australia?

Romanowski explains the wide distribution of *C. coronopifolia* by presuming that the salt tolerance of this species 'means that it would be perfectly possible for pieces to float indefinitely across oceans'. Although he remarks that 'pieces put roots out readily while floating', he does not state any evidence that they can 'float indefinitely'. From my own and others work on alien strandplants of our southern coasts, it is clear that the species involved, which are well-adapted to dispersal by ocean currents (Heyligers 1983, 1984, 1993), have never been able to reach Australia before European colonisation. *Arctotheca populifolia* is probably the most telling species in this context, as it is widespread on the beaches around southern Africa. The vagaries of being exposed to the mercy of winds and waves must be such that the chances of survival, even for hard-coated propagules adapted to floating, are virtually nil when it comes to travelling intercontinental distances. Hence, I very much doubt that *C. coronopifolia* pieces would be able to successfully make such crossings.

The seeds (achenes) of *C. coronopifolia* float at best for only ten minutes (Van der Toorn 1980), but apart from being small (1.5-2 mm long), they bear on one side a cluster of papillae, which become mucilaginous when wet (Ridley 1930). Hence, Ridley (l. c., p. 618) suggests 'that the attachment of its achenes to sheep's wool may have played a part in its distribution', an idea taken up by Kloot (1986), who refers to introduction as a fleece contaminant as a possible explanation for its occurrence in Australia.

Given the habitat, a more likely means for long distance dispersal of *C. coronopifolia* is by migratory or wandering waders and other waterbirds. The seeds can stick to feathers and muddy feet and thus can be conveyed over large distances (Ridley 1930, Kloot 1984). In Europe it has also been suggested that seeds are spread internally by geese incidentally taking in fruitheads while grazing. Van der Toorn (1980) found a high percentage of seeds to be viable after a passage through the gut of 7-15 hours.

My feeling is that birds were instrumental in the dispersal of *C. coronopifolia* to Australia. That is why I regard it as an acquired species, like *Phragmites australis*, *Isolepis cernua*, *Lobelia alata* and so many other plants in marshy habitats (see Kloot 1984, Appendix 1). On the other hand, the possibility that it is an alien species which arrived here with early sea-faring explorers or traders, or, at the latest, with the First Fleet, cannot be excluded. Spread of alien species, once established,

can be remarkably rapid. Romanowski mentioned that in the time of Mueller the distribution was already 'much the same as it is today' and asks why it had not spread further after that time, 'if it was such a fast-spreading weed'. My answer is that it had reached its ecological limits and thus could go no further.

3. Is *Cotula coronopifolia* a weed?

When it comes to defining a weed, I do not think you can better the definition given by Kloot (1987, p. 82): 'A pejorative, non-biological term expressing the user's perception that the plant concerned has no good properties or possesses deleterious properties'. Please note that this definition makes no distinction between native, acquired or alien species.

Romanowski states that *C. coronopifolia* plays an important role in aquatic ecosystems, as it provides 'shelter for many breeding frogs, fishes and invertebrates, and that the plants and their seeds are fed upon by many birds and probably a variety of other animals too', which clearly shows that it is desirable rather than a deleterious species. Even if it could be unequivocally proven that *C. coronopifolia* is an alien species, this would not change it into a weed, as it fits harmoniously into the local ecosystem, a circumstance it shares with quite a few other introduced species, whether acquired, such as *Lythrum salicaria*, or alien, like *Hydrocotyle bonariensis*. On the other hand, and I have hardly to mention this to the readership of *Indigenotes*, there are native species which, once they were taken out of their natural habitat, proved to be unwelcome invaders, i.e. weeds, when they escaped into their foreign surrounds. Examples such as *Acacia baileyana* and *Pittosporum undulatum* spring readily to mind.

Acknowledgments

Bob Parsons, of La Trobe University's Botany Department drew my attention to Romanowski's paper and suggested that I comment on it. I thank him for his encouragement and for commenting on the draft of my paper. Jeremy Bruhl of the University of New England and colleagues at the Australian National Herbarium owe my thanks for discussions on this subject.

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P. C. Heyligers is plant geographer by training, holding a Ph. D. in Biology from the University of Utrecht, The Netherlands). He is retired from CSIRO, I am now an Honorary Research Fellow with the Division of Wildlife and Ecology. His main research interests at present concern the ecology and plant geography of coastal foredunes.

Bungalow Available in Indigenous Garden in Research

My landlady has a charming bungalow, "everything but a laundry", available in a nice area in Research in the northeastern suburbs. It is in a small bit of suburbia but the garden is beautiful with indigenous lawn, many Red Boxes and other plants coming along. The bungalow is one of three dwellings on the block, including a house and a small unit. She wants \$65 a week or \$60 a week if you'll work on the garden. If you're interested give me a ring.

Lincoln Kern (03) 9481 4682

Snippets

National Community Environmental Monitoring Team

This is a government project, run through the ACF, that is gathering background on groups who monitor the environment. These groups monitor all sorts of phenomena: from water quality and toxic sites through to the distribution of plants and animals. Groups keep the results in places ranging from the bottom drawer to sophisticated computer networks. Data is used for purposes such as baseline studies, ongoing management or to harass recalcitrant politicians, often with spectacular success. A register of groups and projects will be published at the end of the project.

Terry White, coordinator of the project, has a long history with community monitoring, from the early days of the Saltwatch program to more recent initiatives such as Waterwatch. Community monitoring projects, which are a reflection of the community's interest in the environment, are growing in number and scope. These include friends groups, school programs, Landcare, Field Naturalists and so on.

There is also a proposal to combine environmental data to produce an idea of what initiatives are succeeding on the one hand, and areas where development needs to be curtailed on the other. This would be compiled and implemented by the community, with some funding, data and support from participating government bodies. From the point of view of IFFA, monitoring species and habitat would be a critical part of this process.

If you or your group keep data, and you would like to be on the register or establish some contacts with wider networks come to the meeting in on May 30th or get in touch with Terry on 9416-1166.

Wetland Information Required

Is your local wetland internationally significant? In the lead up to the international Ramsar convention to be held in Brisbane next year, Dr. Margie Beilharz of Deakin University is coordinating the production of a status report of all Victorian Ramsar wetlands. If you have any information on one or more sites and will fill in a questionnaire contact Margie on (03) 9244 7102 or Fax (03) 9244 7480.

Coming Events:

For IFFA events see back cover

Conferences/Workshops/ Talks

- 24 Wed May 8pm. "Who needs the Barrier Reef?" As part of the Geology Group meeting (Field Naturalist club of Victoria), Dr Jonathan Clark from the Western Mining Corporation will present a talk on the cold Water Limestone of Southern Australia. Venue: Herbarium Hall, Birdwood Ave, South Yarra. Contact Doug Harper (03) 9890 0913 for details.
- 28 Sun May 10am - 4pm. "Growing wild foods, fibres and medicines". A Greening Australia seminar focusing on the range and availability of indigenous species suitable for cultivation and harvesting, opportunities for establishing a network of growers, and identifying potential markets for indigenous plant products. Cost \$35, concession \$12, GAV members \$8. Contact (03) 9654 1800.
- 6 Tue June 8pm. The Platypus. Melody Serena will present a talk on the platypus as part of the Fauna Survey Group's Meeting of the Field Naturalists Club of Victoria. Venue: Herbarium Hall, Birdwood Ave, South Yarra.
- 8 Thu June 8pm. FUNMAP - Mapping scheme for Australian fungi. Tony May will present a talk to the Botany Group Meeting of the Field Naturalists Club of Victoria. Venue: Herbarium Hall, Birdwood Ave, South Yarra.
- 16 Fri June 8pm. The invertebrate biodiversity of central Australia. Most of the world's animals are invertebrates. Dr Alan Yen, Senior Invertebrate Curator at the Museum of Victoria, has recently surveyed the insects of the outback - and no, they're not all bushflies. This illustrated talk will focus on the enormous variety of insect life in this spectacular region, and outline the techniques used in a thorough invertebrate survey. Venue: Bairnsdale Neighbourhood House, in Dalmahoy St (up the road from Dahlsens Mitre 10 behind the railway station). This talk is part of a series of free monthly seminars hosted by the Bairnsdale and District Field Naturalists Club.
- 18 Sun June 2pm. General FNCV meeting. An Environment Victoria representative will give an update on the quality of water in the Melbourne area and Port Phillip Bay. Contact Noel Schleiger on (03) 9435 8408 for details.
- 19 Mon June 8pm. "Growing Hibbertias". An illustrated talk presented by Kerry Davis hosted by the Society for Growing Australian Plants. Venue: National Herbarium Hall, Birdwood Ave, South Yarra. Contact Enid Bowman (03) 9882 5297.
- 20 Tue June 7.30 - 9.30pm. "Wildlife Corridors and revegetation Techniques". Find out about wildlife corridors and how to make them work, with Darcy Duggan, Land Planner for Yarra Bend Park Trust. Hosted by the Friends of Merri Creek. Venue: Harry Atkinson Centre, Lake Grove, Coburg. Contact Ray Radford (03) 9419 3613.
- 22 Thu June "Parrots of the dry country" 8pm. A talk presented by Graeme Hosken hosted by the Bird Observers Club. Supper will be provided at the end of the session. Venue: BOCA library, enter from the rear of 183 Springvale Rd, Nunawading. Cost \$10 or \$5 for members. The money raised helps to fund our conservation efforts. Booking essential. Contact (03) 9877 5342.
- 25 Sun June "Getting it done". A project coordination training session led by local expert followed by a Winter Solstice dinner, BYO drinks. \$5 fee. Hosted by Earthcare/Naturelinks. Contact Co-ordinator Neil (03) 9534 9341 for information and bookings. Location: Corner Blessington and Herbert St, St Kilda (Mel 58 B11).
- 25 Sun June "Indigenous horticulture - where to next?" A Greening Australia Victoria seminar focusing on latest developments in indigenous plant propagation, current research into indigenous plant propagation and future industry directions. Lunch included. Cost \$35, GAV members \$8, concession \$12. Contact (03) 9654 1800.
- 27 Tue June 8pm. "Birds of the Yarra Valley - Steels Creek". Steve Sadlier will present a talk on birds of the local area. Hosted by the Yarra Valley Tree Group. Venue: Steels Creek Community centre. Contact Steve (03) 9730 1517 or Jackie (03) 9730 1268.
- 5-8 February 1996 CONSERVATION OUTSIDE NATURE RESERVES: a conference to look at nature conservation in landscapes managed primarily for other uses. The closing date for paper abstracts is November 31st, 1995. Conference Secretariat: Centre for Conservation Biology, University of Queensland, Q 4072. Ph. (07) 93652527, Fax (07) 93654828.

Excursions, Field Trips, Surveys, Monitoring etc

- 3 Sat June Kinglake Lyrebird Survey. 9am. Organised by the Kinglake Lyrebird Survey Group. Meet at the Information Centre at the Masons Falls section of the park. If anyone has any questions about the survey contact Natalie Smith on (03) 9459 3282.
- 4 Sun June 10.30am. Fungi at Kinglake. Join in on the Field Naturalists Club general excursion to the FNCV property at Kinglake. Meet at the Kinglake property gate, McMahon's Road (approximate Melway reference is 254 P11). Contact Dorothy Mahler on (03) 9435 8408 for further details.
- Fri 9 - Mon 12 June Fauna Survey Group's Queen's Birthday Weekend Camp at Wilson's Promontory. Join members of the FNCV on their camp to monitor the New Holland Mouse. Contact Russell Thompson on (03) 9434 7046 for further details.
- 13 Tue June Koala Count at Phillip Island. Organised

by the Friends of the Koala group. The koala counts are held at the Koala Conservation Centre on the 2nd Tuesday of each month. For further information about this group write to the Friends of the Koalas Inc., PO Box 231, Cowes 3922, or phone (059) 522 407.

Restoration Activities

June

- 2 Fri 1pm - 3pm. Earthcare/Naturelink Community Nursery. Learn Propagation skills at Port Phillip's indigenous plant production powerhouse. For further details contact co-ordinator Sandra on (015) 058 405. Location: Adventure playground, Neptune St, St Kilda Melway 58 A9. Other propagation days to be held in June include every Friday & Saturday on the following dates: 3rd, 9th, 10th, 16th, 17th, 23rd, 24th and 30th. On Fridays nursery activities will be from 1pm - 3pm and on Saturdays 12pm - 3pm.
- 3 Sat Phillip Island Habitat Day. This month's activity will be weed control in the Newhaven Swamp. Habitat days are held by the Phillip Island Conservation Society on the 1st Saturday of Each month. Details of where to meet and the planned activities will be displayed on local notice boards. For more information about this group write to PO Box 548, Cowes 3922, or contact Jim Blackney (059) 567 214.
- 3 Sat Yarra Valley Tree Group. 9 - noon. Planting day at the "Coldstream Kennels", Killara Rd, Coldstream. Contact Steve (03) 9730 1517 or Jackie Hamlet (03) 9730 1268.
- 4 Sun 10am. FO Merri Creek Litter Blitz - Broadhurst St to Queens Pde. The Litter Removal group aim to keep Hall Reserve and it's surrounds litter free all year to demonstrate how beautiful the valley can be when it's not degraded by human laziness and apathy. Further litter blitzes will occur on the first Sunday of every month, as the enthusiastic bunch works their way Southwards down Merri Creek. But they need YOU! Join in the fun, and help clean up the Merri Creek Valley. For further information contact Paul on (03) 9489 5062 or Harold Mackerell on (03) 9481 5946.
- 4 Sun 11am - 2pm. Earthcare/Naturelinks planting day at Balaclava railway. Involves planting the railway embankment with River Red Gum community plants. The original plantings are now 3 years old with hundreds of well established plants. Location: Nightingale St, Balaclava Melways 58 D11. For more details contact co-ordinators Graeme (03) 9531 8886 and Rob (03) 9534 3154 or (015) 865 027. Another planting day will also be held on Wed 14th from 9am - 12pm.
- 7 Wed 9am. - 12pm. Planting day at Woodgate Street, South Melbourne. A remarkably successful revegetation site planted on a rocky railway siding. Contact Rob (03) 9534 3154. Another planting day also on the 21st of June. Melways reference 2J G1.
- 17 Sat FO Werribee Gorge & Long Forest Mallee 9.30am. This month's project is "Rabbit Control day". Meet at the Happy Valley Car-park. Contact co-ordinator Janet Leversha (053) 674 229.
- 18 Sun Yarra Valley Tree Group. 10 - 1pm. Activities include follow up work as required on the late May's planting day at Tarrawarra Abbey, Tarrawarra. Meet at farm sheds. Contact Steve (03) 9730 1517 or Jackie (03) 9730 1268.
- 25 Sun Healesville Common Revisited - one year after planting. 10am. Come and help fill in the gaps and see the transformation! Healesville Common - Rivendell, Badger Creek Road, Healesville. BYO tools, bucket, lunch etc. Contact Lou Sbalchiero (059) 62 5714.
- 25 Sun Sandridge 11am -2pm. Beach Project day. Local residents and a LEAP crew have begun improving this interesting area with weeding, litter collection, planting and a boardwalk. Location: Cnr Todd Rd & The Boulevard, Port Melbourne (Mel 56 J8). Contact Leanne (03) 9646 8570.
- 28 Wed 9am - 12pm. Planting of the Fraser St. Dunes. Enhancement of an existing sand dune plant community. Just next door to West Beach. Location: Beaconsfield Pde, opp Fraser St (Mel 57 H8). Contact Rob (03) 9534 3154.

Visitors/participants are welcome to all events listed in Indigenotes.

Don't forget that World Environment Day is coming up on Monday the 5th of June!

Earthcare/Naturelinks now have a calendar of all their projects in the Port Melbourne to Elwood region. For copies please phone (015) 865 027 or (03) 9209 6475.

Thank you to all the people who contact us regarding on-coming events their groups are organising. If you wish to have your events covered, or you can see corrections that need attention please get in touch with Elissa Kerassitis on (03) 9596 8127.

Coming Events Cont.

Regular Restoration Activities

1st Saturday of the month:

Greenlink Box Hill - also every Monday and Tuesday at 10am. Minette Russell-Young (03) 9898 1364.

FO Gellibrand Hill State Park - 9.45am. Mark Corr (03) 95572783

1st Sunday of the month:

FO Evans Street Grasslands - 9.30am. Helen Graesser (03) 9744 4097 (Mel 113 B10)

2nd Saturday of the month:

Wurundjeri Garden - 10am. Dorothy Sutherland (03) 9818 4706 (Mel 45 A11)

FO Timber Reserve - 2 - 3pm. Brian Phefley (03) 9844 2659 (Mel 35 G3)

2nd Sunday of the month:

URAGE (Upwey Regional Action Group for the Environment) - 10am. Robert Stephen (03) 9751 2407 (Mel 74 K12)

Greenlink Camberwell - 3pm. Diana Burgess (03) 9809 2092 (Mel 60 E7)

Friends of the Yarra - 10am. Also Wednesdays. Judy Rutherford (03) 9347 2252 (Mel 2D D7)

FO the Wandering Brogil - Joy Hildebrand (03) 9844 2638 (Mel 23 D8)

Gad's Gang at Stony Creek - Mark Gardner (03) 9844 3799 (Mel 23 C9)

3rd Saturday of the month:

FO Bradshaw Park - 10am (9am in Nov & Dec). Dave Bainbridge (03) 9580 5992 (Mel 87 E10)

3rd Sunday of the month:

Men of the Trees - 10am. Minette Russell-Young (03) 9898 1364 (Mel 2D D6)

Meander (Menzies Creek & Emerald Tourist track) - 10am. Kate Forster (059) 685 828 (Mel 125 F12)

Brunswick Tree Group - 10am. Eric Ward (03) 9388 2123

FO One Tree Hill - Diane Silveri (03) 9710 1331

Osborne Peninsula Landcare - Margaret Dimech (03) 9844 3812 (Mel 23 J9)

FO Pigeon Bank Creek - 2pm. Linda Bromilow (03) 9844 2541 (Mel 23 J6)

FO Tindals Wildflower Reserve - 11am. Kim Docwra (03) 9876 3807 (Mel 35 A3)

Last Saturday of the month:

FO Organ Pipes National Park - 10am. Carl Rayner (03) 93312810

Last Sunday of the month:

Friends of Royal Park West - 10am. Mick Arundell (03)

9380 8075 (Mel 29 C12)

Week day activities:

FO Warrandyte State Park nursery activities - every Thursdays at 10am. Margaret Burke (03) 9844 1060.

From the Editor

I hope you have all noticed some changes to Coming Events this month. Elissa and I were rather bored with the old format and felt it wasn't really conveying information very well, either. So, Elissa has restructured it into a form that we hope is more interesting and includes more information that is easier to access.

The first section, Conferences, Workshops and talks, hasn't really changed but we certainly hope to keep this section explicitly for educational and networking activities that are mostly about people talking.

The second section, Excursions, Field Trips, Survey, Monitoring etc., is meant to include any outdoor activity that is educational, hands-on and/or involving people in monitoring flora and fauna and our environment. These are the things where you go see things and possibly count them.

The third section, Restoration Activities, has changed dramatically. It will only include hands-on working bees and special events that are one-offs or particular interesting and unique. It is meant to highlight different groups at different times or interstate events.

The new section is Regular Restoration Activities. The sections are divided into the regular days of the month and each entry only includes the name of the group, the time and a contact for specific information. This is not meant to limit advertising as much to include more groups in each issue with the flexibility to put more or less information in each month. Any special events can be put in Restoration Activities while a regular event can be consistently included in the Regular column. There isn't many entries here now, but we would like it to fill up as appropriate.

So, if you have any complaints or comments on this new structure for Coming Events please contact us. And please keep information about any events coming in, we need them.

Finally, the flow of written material and graphics is slowing down. Please keep the information flowing if you appreciate this newsletter.

Lincoln Kern

IFFA activities:

IFFA (Vic)

Meeting venue:

RAOU Headquarters, 415 Riversdale Road
Hawthorn East, Melways 45 H 12.

Next meeting:

Tuesday 30 May, 7:30 pm at the RAOU. Terry White, of the National Community Environmental Monitoring Team will speak about the compilation of a national register of environmental groups who monitor the environment. It is a government-funded project, run through the ACF. For more info see page 4.

Everyone welcome!

General Meeting for June 27:

Fiona Young and Michele Arundell will speak on the Flora Information System, CNR's flora database at Arthur Rylah Institute meeting room, 123 Brown St., Heidelberg at 7:30. They will cover what the database is, what info is available and how to lodge records and much more.

Committee meeting:

The Committee meeting is now the second Monday of every month. The June meeting is on the 12th and is at Geoff Carr's house, 75 Heller St., West Brunswick.

SPIFFA

Contact Mark Adams (059)851122.

NSW activities:

Next meeting:

In the Maiden Theatre, Mrs Macquaries Rd, Royal Botanic Gardens Sydney. Contact Sally Fisher (02) 9706486 (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
Membership 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 April
8th.**

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