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## **BONESEED - AN INTRODUCED PLANT WHICH THREATENS TASMANIA'S NATIVE PLANT SPECIES**

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*Chrysanthemoides monilifera*, a member of the daisy family Asteraceae, was introduced into Australia in the mid-19th century from South Africa, where it is native in the Cape Province. The earliest specimens were reported in Sydney in 1852, in Melbourne in 1858 and in Adelaide in 1892. The species was favoured by the settlers because of its ability to bind together sandy soils, thus preventing erosion along beachfronts. The people who advocated its introduction into Australia because of this property, and because of the plant's attractive yellow flowers, did not anticipate that it would spread out of control, posing a threat to Australia's native vegetation. As so often happens when a species is introduced into a totally different environment which lacks the predators that keep it under control in its native habitat, the species has spread in an uncontrolled fashion, and is now declared to be a noxious weed in Victoria, Queensland and South Australia.

*C. monilifera* occurs in six known subspecies, of which two are naturalized in Australia. Subspecies *rotundata* occurs in New South Wales and southern Queensland, where it is usually called bitou bush, and tends to be difficult to control, because it is very invasive and not easily pulled up. Subspecies *monilifera* occurs in Tasmania and other southern Australian mainland states, is generally known as Boneseed, because of its hard seed contained in a fleshy fruit known botanically as a drupe (such as a peach or plum). The seeds are spread by birds and other animals.

Boneseed has become widespread in Tasmania, and although restricted to coastal areas at the present time, it is said to have the potential to colonise higher altitudes such as the Central Plateau. In northern Tasmania, it occurs along the north coast solidly from a little east of Burnie to east of Sulphur Creek, and thereon spasmodically to Turners Beach. Boneseed has not been reported between Devonport and Port Sorell, nor through the Asbestos Range National Park from Port Sorell to Greens Beach. There is a significant amount of Boneseed at Greens Beach itself, growing right down to the high tide mark. Boneseed was common at Bridport, but a determined community effort has virtually eliminated it from that area. Other concerted efforts by concerned community groups have been made in Ulverstone and in Scottsdale. There is also a considerable infestation at Bicheno around Lookout Rock, through the town and in the vicinity of the Sea Life Park. A community effort was started there last year in an attempt to make inroads into the population level. It was also reported at Coles Bay, but apparently that has been eliminated through the combined effort of National Parks and Wildlife and the Department of Agriculture.

In the Launceston area, it is not uncommon in the Tamar Valley from Kelso down to Launceston, occurring in the Cataract Gorge, predominantly on the south side from the cliffs above the Penny Royal Gunpowder Mill complex up to the First Basin and up to the Trevallyn Dam. In Hobart, it is well entrenched in the Domain, and can also be found in the hills behind Glenorchy, Hobart and the eastern shore suburbs. The Channel Highway from Lower Sandy Bay to Kingston, Tinderbox and Margate have thick infestations, as do other parts of the Derwent Estuary, such as Dodges Ferry. There is also a large population in the area between Cradoc and Wattle Grove south of Huonville. Here, Boneseed is doing very well in disturbed wet forests.

Although Boneseed is an invasive plant tending to form monocultures, it can be eliminated by concerted community action. Young seedlings can easily be pulled out by the application of gentle pressure. Nevertheless, the species is difficult to control, because even if all plants in an area are pulled out, there usually remain large quantities of viable seeds that germinate in subsequent years. Because of this, ongoing pullouts are needed over periods of decades to ensure that no new seed source eventuates. Alternatively, fire may be used, as even a light burn destroys mature plants and seedlings alike and stimulates germination of seed in the soil. However, fire is a dangerous instrument which may even be misused by trained firefighting personnel. One instance of incorrect use was an attempt to reduce top growth of a grass along sand dunes in a beach area which resulted in the destruction of, or severe damage to, Banksias growing in the area. As a result, Boneseed bushes germinated near the base of many of the destroyed trees and have, to a large extent, pushed out the native vegetation. Nevertheless, when used properly, fire can be an asset in Boneseed control. Community groups can take advantage of fires by following up and pulling the seedling flush.

Boneseed occurs both on public and private lands, and education of the public about the threat posed by this species is essential. Another form of control can be



Boneseed (*Chrysanthemoides monilifera*). Drawing by Dennis Morris, and used with the permission of the Tasmanian Department of Agriculture.

effected by the use of safe chemicals. Big plants of Boneseed may be cut through the main stem and the cut cross-section painted immediately with 'Round-up' or some other proprietary chemical. The chemical travels down to the roots, killing the plant completely and thereby preventing resprouting.

The Bridport community experience in virtually eliminating Boneseed from their area should serve as an encouragement to other communities wishing to rid their surroundings of this potential scourge. Information as to how to go about attacking this problem on a local community level may be obtained by writing to or telephoning the Department of Agriculture or the National Parks and Wildlife Service. A leaflet on Boneseed has been prepared by the Department of Agriculture and is now available at Department of Agriculture offices throughout the State.

### **Acknowledgements**

The authors wish to thank Tasmanian Department of Agriculture Weeds Officers Brian Hyde-Wyatt and Wayne Watson for much useful information.

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The World Congress of Herpetology announces the

## **FIRST WORLD CONGRESS OF HERPETOLOGY**

11 - 19 September 1989  
at the University of Kent, Canterbury (U.K.)

This international congress will be the first of a series occurring at regular intervals around the world. Such a meeting will enable all persons interested in herpetology to meet and exchange information to promote the advance of knowledge and the conservation of the world's amphibians and reptiles. The congress will consist of topical symposia, poster sessions, plenary speakers, workshops, displays, excursions, and meetings of ancillary groups. Subjects and moderators of symposia will be announced well in advance so that potential participants can volunteer. The meeting will be open to all persons. Registration will begin 1 January 1988.

**For further details and mail listing, write:** Dr. Ian R. Swingland, World Congress of Herpetology, Rutherford College, University of Kent, Canterbury, Kent CT2 7NX, United Kingdom.

**Sponsoring organizations and individuals are welcome. For further details write:** Dr. Marinus S. Hoogmoed, Rijksmuseum van Natuurlijke Historie, Postbus 9517, 2300 RA Leiden, The Netherlands.

## BREEDING RECORD OF THE DELICATE SKINK *LEIOLOPISMA DELICATA* IN SOUTHERN TASMANIA

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On 14 February 1986 we collected 53 eggs of the Delicate Skink *Leiopisma delicata* from an area of 2x1m next to the oval of Blackmans Bay Primary School. The eggs were in at least 11 clusters containing 3-5 eggs each. The nests were found exposed when large chunks, about 1 m high, of the bank of a storm water creek had cracked off after heavy rain. The nests were about 20cm above the level of the creek and about 1.5m away. The bank was almost pure clay and hard. Near some of the nests the clay was moist and softer.

Most of the 53 eggs collected were entirely dried out but 18 were still firm and full. Egg lengths varied from 0.9 to 1.3cm with their shape differing from elongated to more round. A few were cut open and the contents thought to be Three-lined Skinks *Leiopisma trilineata* because of their dark sides.

At the time of collection, about 2.30pm, no *L. delicata* or *L. trilineata* were seen near the next site although some skinks, believed to be Metallic Skinks *L. metallica*, were observed.

The eggs were placed in a small aquarium on an electric pet blanket, in moist soil kept at 26-33°C. Five of the 18 good eggs hatched and were confirmed to be *L. delicata*. The first two hatched on 22 February 1986, the next two on 6 March 1986 and the final one on 8 March 1986. The eggs after the lizards had hatched had a small hole in the shell with some liquid coming out when squeezed.

The lizards were uniform brown above with the tail being darker. The sides were also darker fading into light to medium grey underneath. Their lengths at birth were about 32mm. They were fed a variety of small insects scooped from tall grass with a net. By 16 June 1986 two had grown to 45 and 48mm respectively. A third had not grown so fast and lost part of its tail, measuring 32mm only. The remaining two hatchlings could not be found and had probably died.

By 16 June 1986 it was clear that we could no longer find enough food for the lizards, so they were killed and submitted to the Queen Victoria Museum in Launceston, and allocated Reg. No. 1986/3/41.

Green (1981) described the known distribution of *L. delicata* in Tasmania, and gave Hobart as the southernmost known record. The breeding site at Blackmans Bay (43°00' 147°19') thus becomes the most southerly recorded locality for the species.

### Acknowledgement

We thank Mr. David Rounsevell of the Tasmanian National Parks and Wildlife Service for confirming the identification of the 3 specimens.

**References**

Green, R.H. 1981. Distribution of the Delicate Skink.  
*Tasmanian Naturalist* 68:8.

**BOOK REVIEWS****Sex in Nature**

by Chris Catton and James Gray

Published by Croom Helm, London and Sydney, 1985, 224pp.

Recommended Retail Price \$32.50

*Reviewed by D.A. Ratkowsky*

This profusely illustrated book, containing excellent colour and black-and-white photographs, provides a good introduction to the role that sex plays in the reproduction of species in the natural world. Although the book is heavily biased towards animal sexual behaviour, plants and 'primitive' life forms do get a mention. The book is divided into ten chapters, the first of which deals with asexual reproduction which is characteristic of amoebae, algae, bacteria and other simple organisms. The multifarious ways sperm and egg can unite is the subject of the second chapter. Chapter 3 is devoted to the various ways natural creatures hunt for a partner, utilizing sight, sound and smell, and Chapter 4 deals with the mechanisms that have evolved to improve their chances of finding a mate. The fifth chapter considers the development of self-fertilisation, hermaphroditism and parthenogenesis which render unnecessary the search for a mate. Ritual courtship and mating success is the subject of the sixth chapter. In Chapter 7, one finds a section on fighting amongst males for dominance, and a description of the various ways males try to maximise their reproductive success. The eighth chapter considers the female point of view, detailing the means at their disposal for trying to guarantee that their genes will be passed on to the next generation. The relatively length Chapter 9 deals with parenthood, and the final chapter is devoted to human sexuality.

Australian content in this book includes photographs of the fawn-breasted bower bird, red kangaroos fighting, the superb lyrebird and drawings of Aboriginal rock paintings.

The description on the jacket maintains that the book, "although aimed primarily at the amateur interested in natural history, should also prove useful to more serious students". Anyone who has wondered why some animals produce lavish numbers of eggs when others are sparing, why some plants and animals are brilliantly coloured whereas others are drab, why some animals exist in large family groups whereas others are solitary, will find answers to these questions in this book.

## **The Oxford Dictionary of Natural History**

Edited by Michael Allaby

Published by the Oxford University Press, Oxford, 1985

Recommended Retail Price \$50.00

*Reviewed by L.E. Wall*

This book is exactly what its title says - A dictionary of natural history. It contains over 12,000 entries, written by a team of experts in all fields of natural history, and its coverage is worldwide.

I quote from the fly-leaf: "It will be of value to students as well as to those who derive pleasure from the wildlife around them, or even from well-tended gardens, and who wish to support personal observations by reading and watching films, but need ready access to authoritative explanations of unfamiliar expressions."

A further quote from the Foreword by that eminent biologist, David Attenborough, sums it all up. "Here, for each of many thousands of scientific terms, are those few words of definition that will enable you, whether scientist, naturalist, or both, to understand the word and the sentence in which it is embedded. The entries have been assembled and defined by over fifty experts from a dozen different disciplines. I know of no other compilation that is so up-to-date and so comprehensive....I am delighted - and relieved - to have at last a volume at my elbow that will illuminate my way through the fascinating literature of natural history, no matter where it may lead me."

It is a very valuable reference work for all serious naturalists, whether amateur or professional.

## **Birds and Other Vertebrates of South West Tasmania**

by Gary White

Published by the author, Sydney, 1985, 58pp.

Paper Cover, Recommended Retail Price \$4.95

*Reviewed by D.G. Hird*

Despite the worldwide renown of the South West as an area of scenic beauty and natural value, the region is still poorly known from the natural history viewpoint. In its emphasis on coastal environments, this volume follows the author's previous work, *Islands of South-West Tasmania*. While small and of checklist format, this book is one of the first dedicated to the fauna of the area.

Checklists serve to stimulate the interest of visitors as well as providing regional benchmark data for more serious studies. For an area as physically challenging as the South West, visitors initially attracted by this aspect often return with a thirst for more detail. Another benefit is the timeliness value of accurate checklists in documenting changes in range and perhaps abundance of species. For example, the exotic blackbird, first released from Hobart Zoo in 1923 (Eric Guiler, pers. comm.) has its recorded range extended from that recorded in the Bird Atlas of Tasmania.

While the veracity of its information has not been comprehensively checked, the only production fault detected was a font error on page 23. It is pleasing to note the adoption of South West which, without a hyphen, conforms with the Nomenclature Board recommendation.

Birds and Other Vertebrates of South West Tasmania is commended as a contribution towards an eventual comprehensive natural history of Tasmania's characteristic and endemic environments.

### **The Natural History of Otters**

by Paul Chanin

Published by Croom Helm Ltd., London, 1985, 179pp.

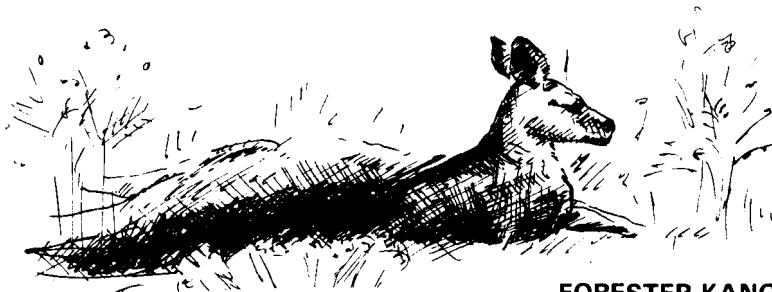
Paper Cover, Recommended Retail Price \$19.95

*Reviewed by D.G. Hird*

In the context of Australia's mammal fauna, perhaps the question of most direct relevance with respect to otters is why didn't they become established here? Three species are indigenous to the Indonesian archipelago, including the Eurasian otter familiar to those having seen Hugh Miles' Scottish TV documentary on otters. With an abundance of Australo-Papuan habitat apparently suited to otters, our aquatic mammals might have been extended beyond the platypus and water rats had otters been able to transcend the moat of Wallace's Line.

The Natural History of Otters is nonetheless a laudable exposition of its particular aspect of modern popular mammalogy. Evolutionary relationships, distributions, ecology and behaviour are elucidated in a rigorous yet readable style. A salutary chapter covers otters and man; as with the platypus and Australian water rats, otters have been intensively hunted for the fur trade. The resultant decline, together with habitat alteration, has left otters rare to locally extinct in much of Western Europe.

The Natural History of Otters is a volume in the Croom Helm Mammal Series, published in conjunction with the (British) Mammal Society. It is to be hoped volumes of this quality and detail may soon become available on Australian mammals.



**FORESTER KANGAROO**

Original drawing by Janet Lane.