

BETLES IN BAT DUNG*R.H. Green*

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Beetles of the genus *Ptinus* (PTINIDAE) are well known as pests in food stores, feeding on dry materials of animal and vegetable origin. They range in length from 2-5mm and may occur in considerable numbers.

One species, *Ptinus tectus* Boieldieu, is about 2mm long and was originally described from Tasmanian specimens. It is believed to be more or less cosmopolitan, feeding on store products and the dung of non-ungulates (pers.comm. John F. Lawrence). It was recently found infesting a dung deposit beneath the roost of a colony of the Little Forest Eptescius (Bat) *Eptesicus vulturinus*.

The presence of bats in the wall cavity of an old wooden house at Underwood, Northern Tasmania, was discovered when the owner was carrying out renovations.

Twenty-one bats were collected from the site on 6 May, 1987 and were

BOOK R**Ferns and Allied Plants of Victoria, Tasmania and South Australia**

By Betty Duncan and Golda Isaac

Melbourne University Press, Melbourne, 1986 258pp.

Retail price approx \$26.00

Reviewed by David Ratkowsky

This 18cm x 25cm hardback book is *the* definitive work for anyone interested in ferns and fern allies (forkferns, clubmosses, quillworts and selaginellas) of Tasmania (and Victoria and South Australia). This wonderful book contains a wealth of information on all the species that are known in those three states and a multitude of beautiful photographs by Bruce Fuhrer, Australia's leading "academic" plant photographer. In addition, there are numerous drawings and diagrams indicating the salient features that help distinguish a species from its close relatives.

The first chapter gives a useful introduction to "What is a fern?" and to the life cycle of these vascular plants. Chapter 2 is an illustrated key to the genera of ferns and fern allies, which make it possible to find the right genus for any specimen. Chapters 3-21 are the heart of the book and deal with all the species, based on the families to which the species belong. The final chapter on propagation and cultivation by C.J. Goudey and R.L. Hill provides any persons interested in growing ferns with the appropriate information on how to collect spores, prepare the growth medium, get the spores to germinate, and how to transplant the developed fronds and their attached prothalli.

found to include two post-lactating females, 12 subadult females and seven subadult males, suggesting that the site had, in the previous few months, been occupied by a greater number of bats comprising a maternal colony.

On a ledge beneath the clustered bats dung had accumulated to a depth of about 15cm, certainly the result of some years occupancy. Much of it had been reduced to a fine powder, only the surface layer containing whole pellets. A casual search failed to reveal the presence of insects, so about one litre of this material was collected for further study.

Upon closer examination small, white, hairy grubs, about 2mm long were found, some of which were forming frail cocoons and commencing to pupate. The first adult beetle was found on 14 July. A simple trap was set up to catch and remove the adults as they emerged. Their numbers gradually increased, reaching a peak between mid September and mid October. The appearance of newly emerging adults then sharply declined and had ceased by the end of October. A series has been lodged in the collections of the Queen Victoria Museum.

As these insects are known to feed on stored food products, the presence of a bat colony in the vicinity of such material, not suitably protected, may lead to its infestation.

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For each species, detailed distribution maps are given for Victoria only, although the known occurrences in other Australian states and outside Australia are reported. Rainfall is the key factor in determining whether ferns will occur in a given area. Queensland is by far Australia's leader in terms of number of species of ferns and allied plants, with a hefty 350 in contrast to only 50 from South Australia. Tasmania, with 94, and Victoria, with 118, have modest numbers. The authors consider the 700mm isohyet to be the dividing line between the wet and dry parts of Victoria. This means that, except for a few isolated pockets, most of Victoria west and north of Melbourne have few fern species, whereas most of the state east of Melbourne abounds with them. In Tasmania, virtually only the dry Midlands would have a scant fern flora, using that criterion.

The tabular key to the genera, between pp.14-15, focussing on the characteristics of the spore-bearing structure, the sorus, and its covering, the indusium, is clearly intended for the professional, indicating that this book serves both amateur and professional botanist alike. It succeeds well at both levels. At a retail price of about \$26, it is a good buy and an indispensable addition to the library of any naturalist with a general interest in plants of all kinds. The numerous illustrations make it pleasurable to read through the book from cover to cover, even if one is not trying to identify any particular species.

No academic affiliation is given for the authors Betty Duncan and Golda Isaac of this scholarly work, other than the information that they are Associates of the Department of Botany at Monash University. Although it is obvious from their Acknowledgements section that they went about the project in a very professional way, one presumes that they are gifted amateurs who are being recognised by Monash University for their contribution to botany. How well they deserve that recognition, if one judges by this magnificent book alone!