Victorian Entomologist



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News Bulletin of The Entomological Society of Victoria Inc.

THE ENTOMOLOGICAL SOCIETY OF VICTORIA (Inc) MEMBERSHIP

Any person with an interest in entomology shall be eligible for Ordinary membership. Members of the Society include professional, amateur and student entomologists, all of whom receive the Society's News Bulletin, the Victorian Entomologist.

OBJECTIVES

The aims of the Society are:

- (a) to stimulate the scientific study and discussion of all aspects of entomology,
- (b) to gather, disseminate and record knowledge of all identifiable Australian insect species,
- (c) to compile a comprehensive list of all Victorian insect species,
- (d) to bring together in a congenial but scientific atmosphere all persons interested in entomology.

MEETINGS

The Society's meetings are held at the Activity Room Ground Floor, Museum Victoria, Carlton Gardens, Melway reference Map 43 K5 at 7:45 p.m. on the third Tuesday of even months, with the exception of the December meeting which is held earlier in the month. Lectures by guest speakers or members are a feature of many meetings at which there is ample opportunity for informal discussion between members with similar interests. Forums are also conducted by members on their own particular interest so that others may participate in discussions.

SUBSCRIPTIONS

Ordinary Member \$35

Overseas Member with printed bulletin \$65

Country Member \$31 (Over 100 km from GPO Melbourne)

Student Member \$23 Electronic (only) \$20

Associate Member \$ 7 (No News Bulletin)

Institution \$40 (overseas Institutions \$80)

Associate Members, resident at the same address as, and being immediate relatives of an ordinary Member, do not automatically receive the Society's publications but in all other respects rank as ordinary Members.

LIFE MEMBERS: P. Carwardine, D. Dobrosak, I. Endersby, R. Field, T. New, K. Walker.

Cover and logo design by Ray Besserdin 2017

Cover photo: A grey *Endoxyla* species (Cossidae) in the Little Desert against the dawn skyline. Photos by Peter Marriott.

Minutes of the Entomological Society of Victoria general meeting Tuesday 19 June 2018

Attendance members: Julia McCoey, Martin Steinbauer, Denise Deerson, Sharon Mason, Carol Page, Peter Muller, Joseph Schubert, Martin Lagerwey, Maik Fiedel, Ken Harris, Peter Carwardine, Peter Marriott

Apologies: Linda Rogan, Ross Field

Guests: Ayril Steinbauer, Marissa Blunden, Lucyna Kania, Nick Volpe, Jonathan Neumann, Kylie McGenniskin.

Meeting opened at 19:46 by President Peter Marriott. The main business for the evening consisted of presentations from members and a guest from Germany.

Peter Marriott spoke about a find he made on 7th September 2017, in Bentleigh where he lives.



He found a piece of dead buddleia wood where the wood was chewed up beneath the bark. The chewing damage occurred in both dead moist wood and solid wood.



While Peter was sure that the damage was by a moth caterpillar, its identity was uncertain.



On 13^{th} October 2017, caterpillars began to emerge. On the 9^{th} of November, they were still emerging.







The species was identified as *Barea exarcha* (photos above) which is fairly widespread in moist areas of Australia.

Peter Carwardine asked if rotting wood was its normal food, to which Peter Marriott replied that it probably was, because of the efficiency with which it had consumed the wood. Peter Muller raised the possibility that the caterpillars were not eating the wood for food, but were merely digging into it to pupate.

Peter Carwardine then asked if there were suburban records. Peter Marriott replied there are some, but he had not seen it on light sheets. Ken Harris noted that he had had it come to light sheets.

There are 40 species of *Barea* in Victoria alone. There is no preference for indigenous plants for food in this species.

Peter concluded by noting that this species is another piece in the puzzle of the natural break down of dead plant material in forests, which we should consider when planning forest management activities like burning off.

Jonathan Neumann Observations of insects and spiders Berlin vs Melbourne

Jonathan is a visitor from Germany who began his presentation with an Acknowledgement of Country, paying respect to elders past and present.

He then presented a comparison between the insects of Melbourne that he encountered during his stay with those he knew of this native Berlin.

Jonathan collected most of his insects from Graduate House at La Trobe university, where he was staying. His first discovery was not an insect at all, but a *Dolophones* spider, known as a wrap-around spider due to its curious habit of wrapping its body tightly around twigs (Slide 1).



Slide 1 Dolophones sp.

Jonathan regretted that he was not able to photograph any damselflies. Dragonfly nymphs, however, develop in the campus ponds and *Hemicordulia tau* were common, but when he settled here, dragonfly season was mostly over.



Jonathan made a comparison of Melbourne and Berlin bugs.

He was excited to find an assassin bug in the Emesinae subfamily.





Secondly there was a surprise finding of a Parisolabis novaezeelandiae.



In Germany, there is only one species of praying mantis, the *Mantis religiosa*. Therefore it was quite special to be able to depict the *Pseudomantis albofimbriata* feasting on the mosquito fish *Gambusia* which is invasive in Australia.





A *Gryllotalpa australis* was found in the lawn outside Jonathan's accommodation. In Australia, male mole crickets cannot fly, whereas in Germany, both the male and female cricket can fly.



Jonathan then compared an example of winter insects from each country. In Diamond Creek, Australia he found the rain moth *Abantiades atripalpis*. In Germany, he noted, the European gall wasp *Biorhiza pallida* has two generations; the winter generation is parthenogenetic and wingless, whereas the summer generation has both sexes which are winged.





Next the butterflies made an appearance. The Australians he photographed were *Heteronympha merope*, *Junonia villida*, *Jalmenus evagoras* which he contrasted with the widely distributed *Vanessa atalanta* photographed in Germany.

It was a disappointment for Jonathan to discover that insect baiting did not work for him in Australia. He did not find any insects attracted to the sweet smells of the fermenting fruit and sugar mix that works well back home where bait would easily attract moths such as the French red underwing *Catocala elocata* for example. Without the help of bait, he did find a green blotched moth *Cosmodes elegans*, (the appearance of which Jonathan liked very much).





European paper wasp Polistes dominula

Next came a 'pretty queen' European paper wasp (*Polistes dominula*) and a 'handsome king' Common paper wasp (*Polistes humilis*), both fine elegant creatures he remarked.

Jonathan was excited to snap some shots of Myrmecia bullants, *Myrmecia pyriformis* with prey in jaws, and *Myrmecia pilosula*, fighting. The European ant lion species *Eurolean nostras* is very common, but Jonathan did not find many Australian ant lions in his searches.





Jonathan presented the beetles he came across during his stay.

These included the Brown Darkling Beetle (*Ecnolagria grandis*), Tricolor Soldier Beetle (*Chauliognathus tricolor*) and plague soldier beetle (*C. lugubris*).





The final beetle Jonathan presented was the African Black Beetle (*Heteronychus arator*), which Jonathan was surprised to find in Bundoora, Victoria (on 15/3/2018). Jonathan finished his presentation with a quick overview of some of the creatures he encountered on his travel to South Africa.

Highlights from a paper by Tindale on desert Cossids presented by Peter Marriott

Peter Marriott shared with us the detailed drawings of the moths, pupae and larvae made by Tindale in his 1953 paper.

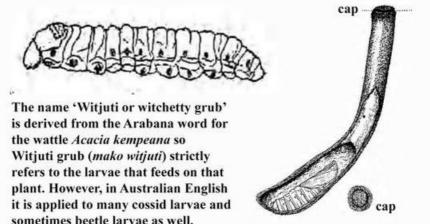
ON SOME AUSTRALIAN COSSIDAE INCLUDING THE MOTH OF THE WITJUTI (WITCHETY) GRUB

By NORMAN B. TINDALE *
[Read 11 September 1952]

595,787 (94)

* South Australian Museum. Trans. Roy. Soc. S. Aust., 76, December, 1953

In the paper Tindale (1953) describes the female and details the larval and pupal stages where the following information was given.



E. leucomochla feed on A. ligulata They live in silk-lined cells adjacent to the roots of the fod plant. 'It would seem that the larva relies, to an extent, on the flow of sap for food, the jaws being principally being used to keep the wounds in the root active and fresh'. After more than one year, at about 80 mm in length, the larva digs a vertical tunnel to the surface, sealing it at the top. The seal is 'neatly cut' when the adult is ready to emerge.

Tindale explains in detail how the people at Ooldea (SA) gathered the larvae and ate them either raw or briefly cooked. He continues:

may not be too much to assume that the aborigines' ability to rear healthy children in the harsh environment of the Western Desert is based to no inconsiderable degree on the wide presence and availability of these larvae.

Multiple moths are described in the paper, including *Xyleutes amphiplecta*.

Tindale noted fishermen would use grubs as bait. Unbroached lids confirm the presence of grubs; the local indigenous people could smell the humidity in the tunnels to detect the presence of grubs

Tindale describes how a flightless female was immediately surrounded by males, in broad daylight. Similarly, males were attracted to a coat that had previously had a female on it, although there were none of the food plants nearer than 'half a mile'.

Tindale's accounts are charming, including a description of an experiment cut short as a mouse ran off with the only female. Tindale is noted for his concern for aboriginal people; his accounts describe the people at Ooldea as healthy, nourished, and yet going to be moved to the coast by well-meaning missionaries.





The mothing team have observed *Endoxyla leucomocha* in the northwest of Victoria (Photos above)

Tindale is also known for having mapped the precise tribal boundaries of indigenous Australians, something mining companies try to discredit.

Peter Carwardine noted that he had copies of the maps and that he met Tindale whose eyes had been damaged by a camp stove.

Peter M concluded that Tindale's description of desert cossids is a treasure. Drawing a picture of the desert country, the account pulls you in, putting the science into context, even though it is couched in the language of the time.

The full paper can be found at:

https://biodiversitylibrary.org/page/41337238

No further business was carried out but the following items were noted:

- No financial report as Joshua Grubb not present
- Linda is always looking for articles, long or short, for the bulletin
- The next meeting will be here at the Melbourne museum but upstairs in the entomology department, with a session in the biodiversity heritage library
- Peter asked those present for thoughts on a plan to make the society's journal available in the biodiversity heritage library. There were no objections, some positive feedback, and some positive but would like to think about it further.
- access to Wings and Stings will be granted. Peter Carwardine notes that 1972 1973 minutes are no longer available.
- it is suggested to give access to current material 5 years after printing

The meeting was closed at 21:40.

Minutes of the Entomological Society of Victoria Council Meeting Tuesday 17 July 2018 Melbourne Museum

Attendance: Peter Marriott, Peter Carwardine, Ray Besserdin, Julia McCoey, Maik Fiedel,

Joshua Grubb, Guest: Sharon Mason

Apologies: Linda Rogan

Meeting opened by Peter Marriott at 17:26.

Previous minutes: Minutes of the previous council meeting held on Tuesday 15 May 2018 were

published in Vic. Ent. 48 No. 3 June 2018 p. 54.

M: Peter Carwardine S: Ray Besserdin.

Treasuer's Report:

 April account balances:
 May account balance:
 June account balances:

 General: \$ 3760.70
 General: \$ 3858.80
 General: \$ 3350.84

 Le Souëf: \$ 7906.44
 Le Souëf: \$ 7906.44
 Le Souëf: \$ 8003.70

 Publishing: \$ 19819.40
 Publishing: \$ 19930.23
 Publishing: \$ 20083.73

Membership:

Total non-institutional: 143

Unfinancial: 26 Institutions: 10

M: Joshua Grubb S: Peter Carwardine

(Continued on page 88)

Two-spined spider Poecilopachys australasia: an odd orb-weaver, and mother of many Kerri-Lee Harris kerrilee.harris@gmail.com

We first noticed this striking little spider in early May this year. It was quite late at night, and we were prowling the sclerophyll forest where we live in the far southeast corner of NSW. Her striking colours shone in the torch light as she hung in her web, less than two metres above the ground.

It didn't take very much investigation to discover her identity. Poecilopachys australasia (Twospined Spider) is distinctive and quite well-studied (Figure 1).

The hunting web

Spiders in this group tend to have very reduced webs and incorporate



Figure 1. Poecilopachys australasia Two-spined Spider. ambush tactics in their hunting strategies. The unusual nature of the spider's web certainly caught our attention. It was horizontal, and composed of just a small number of strands. These extended from the leaves of her home Banksia shrub to the trunk of a tree a metre away. The strands were loose, wafting in the gentle breeze.



Figure 2. Two-spined Spider with horizontal hunting web

The loose web means that when a moth is snagged, the flapping insect tends to hang below the web and so cause minimal damage. The female then performs the usual spider trick of immobilising the prey with venom, and parcelling it up in silk ... all the while suspended beneath her main web (Figure 3).



Figure 3. Parcelling up her prey.

She hunts only at night. Before dawn, she dismantles her prey-capture web (Figure 4), and then hides in her leafy retreat throughout the day (Figure 5).



Figure 4. Dismantling her web at 4 am. Victorian Entomologist 48 (4) 2018

Figure 5. Hiding in her leafy daytime retreat.

The nursery web

A couple of weeks after first sighting her, I noticed that she was a mother! (Figure 6, 7). I can only assume that the egg case was there all along, previously overlooked.



Figure 6. She is a mother.

Figure 6 was taken well after dark (8:40pm). It was a windy night, and she had not built her hunting web. Instead, she was simply hanging from leaves at the edge of the *Banksia*. Behind her, tying together a cluster of leaves, was a meshwork of silk. And suspended in the middle of the mesh, a rather large, brown cocoon ... with a cluster of tiny spiderlings.

I noticed that the tight ball of spiderlings that I'd seen during the day was much more active and spread out at night. It seems that, like their mother, the babies are nocturnal. The nursery web provides effective defence. To reach the babies, a predator or parasite would need to navigate a rather dense mesh. And the web no doubt also provides food, trapping tiny insects that the spiders can feed upon.



Figure 7. Spiderlings spread out at night, alongside cocoon.

Over the following weeks, I noticed some spiderlings leaving the cluster, hanging at the edge of the bush from single threads. It's likely that they were about to disperse, ballooning away on the breeze.

The mother's behaviour gradually changed also. I rarely saw her construct a food web. Rather, she would hang suspended at the opening to her nursery each night, apparently on guard but doing little else. By day she would always return to the same folded-leaf retreat.

On June 17, she disappeared. And there were no babies in sight either. It seems likely that the young had dispersed and the mother had died. I had not seen her feed for weeks. There was no evidence of bird predation – the nursery web and the silk cocoons remained intact.

This coming Spring we will be interested to check the bush and surrounding area for any of the younger ones. It is reported that they mature in Spring, and live for 6 - 7 months.

References

Clyne, Densey. Notes on the web of *Poecilopachys australasia* (Griffith and Pidgeon, 1833) (Araneida: Argiopidae) [online]. *The Australian Entomologist*, Vol. 1, No. 3, Apr 1973: 23-29.

May, B.M. & Gardiner, D.I. 1995. Observations on the Australian "Two Spined" spider *Poecilopachys australasia* in an Auckland Garden. CiteSeer.

Note: this article is based on a blog, 'Spider Nursery', posted on our website 'Life in a Southern Forest' in May 2018. www.southernforestlife.net

Book review – "A Guide to Native Bees of Australia" Terry Houston, 2018 CSIRO Publishing







In the past few years, there has been an amazing rush of Australian bee popular publications. In 2016 there were two publications and in 2018, there have already been three new Australian bee publications. Which all goes to show the high level of public interest in the native bees of Australia.

However, while these publications have been excellent, they have been selective in the information provided. We have all been waiting for Terry Houston's book to provide a holistic, all-encompassing and detailed review of native Australian bees – and, it has been worth the wait.

The book, "A Guide to the native bees of Australia" is divided into two parts (Part 1: 87 pages; Part 2: 159 pages). Part 1 is titled "Overview of bees and their biology" and is designed to introduce the reader to the morphology, evolution, behaviour and ecology of native Australian bees. Part 2 provides an in-depth, key based identification guide to Australian bees as well as wealth of information about members of each Family.

I very much enjoyed reading Part 1. The "Form and Function" chapter introduces the reader to what Terry calls the "bee's tool-kit". It provides an explanation for the many anatomical structures important to bee identification. Unlike many similar taxonomic character guides, Terry has included 12 images that are photographs of real body parts (eg. head, body, mouthparts, legs, wings and male genitalia) rather than the usual line diagrams. The detail is absorbing and informative. Terry combines these images with discussion on separation of the sexes and functional use of body parts. A fundamental taxonomic and functional divide in all bees is whether they possess a "short or long" tongue. These two tongue shapes are imaged and functionality ascribed to each tongue type. Terry then refers back to the uses of different tongue lengths through the remainder of the book.

Terry's interweaving of form and function provides the reader with an alternative means for bee identification using what is termed "Traits analysis". Rather than relying solely on morphological characters to effect an identification, bees can be identified through a range of ecological or behavioural traits that can lead to its Family or genus or even species names. For example, Terry explains that *Verticordia* plants have oily pollen held in place by a ring of hairs. Few bees can harvest this oily pollen except for species of *Euhesma* which lick the pollen from the styles and swallow. Each species of *Verticordia* has its own specific species of *Euhesma* so knowing the species of *Verticordia* will provide a species identification its *Euhesma* bee visitor.

I have always said that Terry has a "knack" for finding bee nests when in reality it is his combination of experience and patience that has delivered this "knack". His intricate, experienced and detailed knowledge of the complex patterns of bee nesting across the five bee Families will open up a new world of bee biology for many readers. Understanding can lead to appreciation which can lead to conservation. Leaving bare patches of earth in a garden or park is essential to provide bee nesting spaces.

Other sections in Part 1 include: Importance of native bees; Bee life cycles; Sexing bees; About males and mating; Stings; Colour patterns, mimicry and crypsis; Sociality; Nests and nesting behaviour; Cuckoo bees; Seasonality; Associated organisms; Conservation of bees; Historical account; Collecting and preserving bees; to name but some of these intriguing sections.

Part 2 is an identification guide to the five Families and 58 genera of Australian native bees – although many of the common and unusual species are discussed and illustrated. A unique aspect of this book is the "key" to the five bee Families as it is not in the usual dichotomous key format but rather is spread across two pages in a 12 characters x five Family matrix. The benefit of such a character/Family matrix is that the reader can directly compare the same character across all five Families at the same time. The reader can also choose the character(s) they are most comfortable and confident to use. Even getting to Family level identification provides so much information about your bee.

The remainder of Part 2 goes through each of the five Australian bee Families and provides taxonomic, dichotomous keys to all known bee genera except for the Family Stenotritidae which has only two easily distinguishable genera. Keys are based on Michener 2007 with some modifications.

Necessarily, to use these keys will require the user to be able to view the specimen under a microscope or hand lens and to have a good working knowledge of the morphological characters that were originally imaged and explained in Part 1. These keys are not for the faint hearted or the casual observer but with experience and if used correctly, then the identification of all Australian bee Families and genera (even many species) is possible with this book. Under each Family, Terry provides comprehensive taxonomic, ecological and behavioural information for Subfamilies, Tribes, genera and many species. Etymologies, the Greek or Latin derivations for many of the scientific names, are provided as well as a guide on how to correctly pronounce these names. Terry lists the number of species within each genus and any known floral or nesting preferences.

This book is superbly illustrated with only a few black and white line diagrams, a number of images of set specimens (especially used to show close-ups of diagnostic characters) but the majority are live images which show many behavioural bee characteristics. I did a quick count and found about 450 images (Part 1 – 140; Part 2 – 350). Of these images, I found only 3 or 4 images that were at least half page size. Most images are smallish, sometimes 6 or more images per page. While the bee is visible in these smaller images, the usefulness for identification purposes is reduced. Some images I would like to have seen as a full page image. For example, the Laurence Sanders image of a leaf cutter bee (*Megachile macularis*) carrying a piece of cut leaf about to enter an underground burrow where a sizeable wolf spider was sitting at the entrance of that burrow (p. 53). This discovery was the first to show a cohabitation of a bee and potential predator – why didn't the spider attack the bee? This image deserves a half or full page to allow the reader to appreciate the significance of the photo.

Finally, there is an extensive glossary of scientific terminologies used in the book.

I would thoroughly recommend this book to curious naturalists and all the way to seasoned melittologists like myself. Everyone will learn something, perhaps many new things, from Terry's 50 years of "simply messing about with bees".

Dr Ken Walker Museums Victoria July 2018

Michener, CD 2007. The Bees of the World. 2nd edn. John Hopkins University Press, Baltimore.

(Continued from page 81)

Prior to General Business Peter Carwardine was presented with a certificate to recognise his honorary life membership.

General Business:

Morwell National Park moths publication - P. Marriott proposed this publication that is supported by The Latrobe Valley Field Naturalists Club and the Friends of Morwell. National Park. Cheques have been received of a total of \$3,750 and a printing quote have been recieved for this purpose.

Dragonflies and damselflies of victoria publication -P. Marriott reported on correspondence with Reiner Richter. Reiner has spoken with Ian Endersby about the publication of one or two books on dragonflies and damselflies of Victoria, in a similar format to Moths of Victoria. Material is prepared for publication on damselflies and the material on dragonflies will be about twice as much. The books will include photos, maps, identification and family information. There is no coverage of nymphs.

Maik raised the possibility of Richard Martin taking images of freshwater invertebrates and potentially supplying images of life stages for the dragonflies and damselflies of Victoria.

- P. Marriott to discuss this with Reiner and as well as discussing the binding options with the printers.
- P. Marriott will seek a grant from the Wettenhall Foundation or another organisation, but the decision to publish the publication was unanimously supported by council. Richter will be first author, Endersby will be second author.

MoV

MoV 10 is in preparation.

MoV is currently advertised for sale on mailing lists and a few places online. To increase future sales and accessibility of the publications, the proposal to replace the CD with access to an online resource was discussed.

Website and Social Media manager: P. Marriott reported that Steve Curle has been in discussion with Justin Finighan who has offered to become the society's next website and social media officer.

All present were in favour of the digitising of Wings and Stings by the Biodiversity Heritage Library.

Items for next meeting:

- * Peter Marriott to bring Memorandum of Understanding with Museums Victoria that still needs signing.
- * Advertising the fundraising wine, a classifieds section in the Victorian Entomologist

Meeting closed at 7:08 pm

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COUNCILLORS: Ray Besserdin, Steve Curle, Maik Fiedel, Julia McCoey.

Thanks to Ray Besserdin, Carol Page and Ian Endersby for assistance in producing the *Victorian Entomologist*.

CONTRIBUTIONS TO THE VICTORIAN ENTOMOLOGIST

The Society welcomes contributions of articles, papers or notes pertaining to any aspect of entomology for publication in this Bulletin. Contributions are not restricted to members but are invited from all who have an interest. Material submitted should be responsible and original. The Editor reserves the right to have articles refereed. Statements and opinions expressed are the responsibility of the respective authors and do not necessarily reflect the policies of the Society.

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Contributions may preferably be E-mailed to Internet address: editor (or posted to the Hon. editor in Microsoft Word for Windows with an enclosed hard copy. Tables should fit an A5 page with 1 cm borders i.e. 12.5cm width x 18cm height as a maximum size and complex tables should be in .pdf format. Preference will be given to articles with 5 or fewer pages of solid text and articles longer than this will be returned to the author for reconsideration. The main text of the news bulletin is prepared in 9 pt font Source Sans Pro (please do not use fixed point paragraph spacing). The deadline for each issue is the third Friday of each odd month.

ADVERTISING

The charge for advertising is \$5.00 per half page. The *Victorian Entomologist* is printed at ImpactDigital

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DIARY OF COMING EVENTS

Next Meeting Behind the scenes at Melbourne Museum

Tuesday 21 August 2017 Note 7:45 pm start

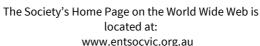
General Meetings:

Month	Date	Planned event
October	17	Speaker: Dr. Martin Steinbauer speaking on insect herbivory of eucalypts
December	02	Saturday End of year excursion Organ Pipes NP details to follow.



Council Meetings are held at the Museum Victoria at 5:15 pm on the following Tuesdays in 2017:

19 September and 21 November





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