
VICTORIAN

ENTOMOLOGIST

VOL. 47 No. 2

April 2017

Print Post publication number 100018680

Price: \$ 4.



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 'Discovery Centre', Lower 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	\$30 (overseas members \$32)
Overseas Member with printed bulletin	\$65
Country Member	\$26 (Over 100 km from GPO Melbourne)
Student Member	\$18
Electronic (only)	\$20
Associate Member	\$ 7 (No News Bulletin)
Institution	\$35 (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. R. Field, D. Holmes, T. New, K. Walker.

Cover design by Alan Hyman.

Cover photo: Angular-wing Lacewing - *Periclystus circuiter* at the Basin, near Ferntree Gully on 5th March 2014, photo by Leuba Ridgway

**Minutes of the Entomological Society of Victoria General Meeting,
Tuesday, 21st February 2017 19:45 Melbourne Museum**

Attendance: Linda Rogan, Peter Carwardine, Garrad Flint, Angus Norman, Marcelle Tiller, Steve Williams, Helen Tillotson, Peter Muller, Mackenzie Kwak, Emily Crick, Wendy Moore, Gordon Ley, Carol Page, Roch Desmier de Chenon, Ian Endersby, Josh Grubb, Melissa Van De Wetering, James Buxton, Julia McCoey, Ken Harris, Laura Levens, Peter Marriott, Linda Rogan, Glenise Moors.

Apologies: Ray Besserdin, Patrick Honan

Guests: Sebastian Steel, Joseph Schubert, Emily Grubb, Nicole Coggan.

The general meeting was opened and all were welcomed by Peter Carwardine.

Previous Minutes

Minutes from 18th October 2016 as published in VIC. Ent. Page 46, Number 4, pages 69-76.

M: Joshua Grubb S: Marcelle Tiller

Treasurer's Report - Joshua Grubb

No treasurer's report conducted.

Editor's Report - Linda Rogan

The series on Neuroptera will continue for 3 more issues (thanks Ken) this year and there will be another 3 issues on Parasitids, (thanks Martin). Thank you to all who have been contributing to the Bulletin. I would urge all members to consider what they can contribute in the future, be it an article, observation or snippet or indeed perhaps a series on your favourite entomological taxa.

Editor's apologies that the coloured gold strip was omitted on the back cover of the February Bulletin.

M: Joshua Grubb S: Julia McCoey

New Members:

Joseph Schusters - M: Ken Harris S: Joshua Grubb

James Neave - M: Peter Marriott S: Ken Harris

Peter Carwardine welcomed and introduced each of the post graduate speakers.

Mackenzie Kwak: The tick fauna (Acari: Ixodidae) of Herald's Beacon Islet, Australia.

Mackenzie's talk was based upon the above-named paper that he co-authored with Kate Mintram. This study on the ticks of the Herald's Beacon Islet began when Kate Mintram asked his assistance in identifying some ticks for her. Mackenzie said that he has not stepped foot on Herald's Beacon Islet, instead Kate Mintram brought him samples and he worked mostly from the lab.

The Herald's Beacon Islet is a tiny sand islet located off shore from Mackay Queensland. It is a popular nesting site and stop-off for sea birds and migratory birds and is increasingly visited by humans. Kate also recorded the seabird fauna during the time she was there and was able to add a new bird species to the list for the islet. It is the seabirds that are the hosts for the ticks.

Specimens were collected in May 2016 and by sampling for ticks along a 50m transect line (over two 20 minute periods). The bird observations were made along 50m transect line (over two 10 minute periods).

The two tick species recorded were the *Ornithodoros capensis* (Fig. 1) and *Amblyomma loculosum*. From different families the *Ornithodoros capensis* is a soft tick with no hard outer shell and the *Amblyomma loculosum* (Fig. 2) has a hard shell with a metallic sheen (visible in the photos).

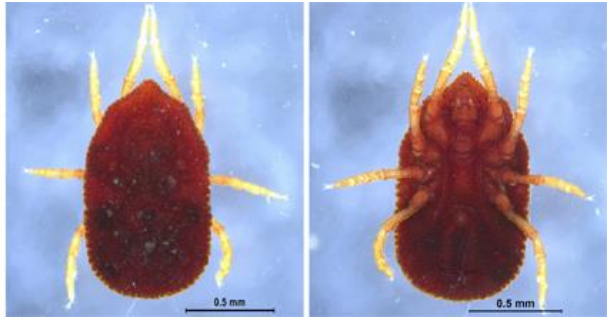


Figure 1 *Ornithodoros capensis* male from Herald's Beacon Islet

It is important to know about these ticks on the islet as their presence is related to seabird movement patterns. Many tick-borne diseases are known to be vectored by *Ornithodoros capensis*.

This includes organisms such as *Bartonella* sp. which is a gram-negative bacterium that is associated with Lyme disease.



Figure 2 *Amblyomma loculosum* female from Herald's Beacon Islet

Possible future directions for Mackenzie and Kate may be to screen the ticks of the islet for pathogens or carry out faunal and floral surveys of Australia's offshore islands.

Mackenzie who has his degree from Melbourne University, is a research Associate at Agri-Bio.

Nicole Coggan: The Extinction Problem: Attempting to observe the effect of host decline on an invertebrate assemblage

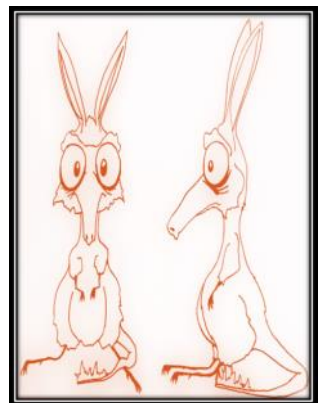
Nicole has completed her PhD in Ecology at Latrobe University and she presented some light-hearted insights from her thesis. She proposed to study her host subject, the greater bilby and its interactions with termites and coprophilic invertebrates (insects that consume and digest the faeces of large animals).

The bilby is an animal that was the regionally extinct and has been reintroduced to sanctuaries. (See Nicole's line drawing) It is a digging 'engineer' and its diet is opportunistically insectivorous/omnivorous.

Nicole started with some interesting and sobering facts about Australia (see illustration).

Her question was 'Did the regional loss of bilbies affect coprophilic invertebrates?'

In literature she found that there is some evidence to suggest that



The greater bilby (*Macrotis lagotis*)
Illustration by Nicole Coggan



Fun Facts about Australia

- Highest rate of modern mammal extinctions
- Fifth-highest record of modern species extinctions
- Heavy impacts on smallish species in arid habitats
- Regional declines include:
 - Major digging species
 - Insectivores
 - Omnivores

Illustration by Nicole Coggan

mammal declines have influenced the community structure of invertebrates in North America and Europe.

Host declines like that of the Bilby are more likely to affect specialised invertebrate species which are obligate consumers of dung (eg. dung beetles). Her study of invertebrates included those that are obligate consumers of dung ie. must have access to dung in order to complete their life cycle. This study was complicated by the fact that most dung consumers may change hosts or use alternate resources.

A huge challenge for Nicole was a lack of historic records of invertebrate populations. The question was, 'How do you observe the effects of extinction if historic records don't exist?'

The solution she used was to compare invertebrate populations in sanctuaries with reintroduced bilbies against an area of remnant bilby population. She expected greater activity and diversity of obligate bilby dung specialists and presence of bilby-exclusive species in the remnant area. In the areas with reintroduced bilby populations she expected few obligate bilby dung specialists and no bilby-exclusive species.

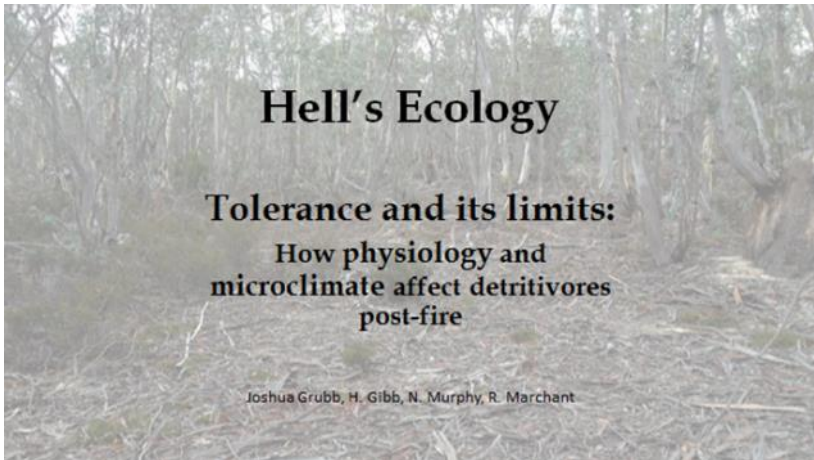
In addition, she compared the invertebrate activity and composition of the invertebrate population attracted to the dung of kangaroos which had a more stable population and plentiful supply of dung, against the same attracted to bilby dung.

The conclusion was that they found no significant effect of bilby declines on invertebrate composition at the family level.

However activity from some groups (carcass scavengers in particular) on bilby dung suggests a positive response to the addition of resources from reintroduced species in sanctuaries. It is possible that the specialised species may already have been lost from modern coprophilic invertebrate population but since no data exists on these populations prior to host decline, there is no way to prove this hypothesis.



Supervised by H. Gibb & M. Hayward
 Funding from Holsworth Wildlife Research Fund, APA, Australia and Pacific Science Foundation
 In partnership with Australian Wildlife Conservancy, Arid Recovery, Central Land Council, La Trobe University
 Slaves: Melissa van de Wetering, Duncan, Blair Grossman, The Maggot, The Bucking Bilby



Josh presented his talk from a paper entitled '**Tolerance and its limits, How physiology and microclimate effect detritivores post fire**' co-authored by J Grubb, H. Gibb, N. Murphy and R. Marchant.

The direct impacts of fires will kill the insects but it was unclear what the long-term impacts of changes in microclimate and detritivores physiology would be.

The hypothesis was that the burnt sites would be hotter and drier than the unburnt site and that the physiology will differ with specimens of the burnt sites having a higher CT max (temperature at which insects lose motor function), prefer a higher temperature and a lower humidity.

Over a 9 month period in two seasons of autumn and spring 2016 his target species were Amphipoda, Diplopoda and Isopoda.

The methods for capturing the data were to place loggers at 30 sites, a direct search of logs, litter, soil samples and Tullgren funnels.

After field collection Josh stored the specimens at 16 degrees and ran tests the next day in spring. To test their preference for temperature the specimens were placed in a temperature gradient and a humidity gradient, the aim of which was to observe which temperature/humidity they chose. CT max was determined by ramping the temperature up in a heat block and noting when the specimens lost motor functioning.

Based on their choices it became clearer to estimate how their physiology may have changed as a result of their adaption to the environment.

The conclusion was that the microclimate did not differ between burnt and unburnt forest however some species from the burnt sites were behaviourally less selective, that is they had a broader preference range of humidity. For the same species, the sensitive individuals appear to have been lost after fire, while the survivors had good adaptive capacity.

Although microclimate didn't vary, physiology of the detritivores did.

Joshua Grubb is doing his PhD in Bushfire ecology at Latrobe University.

Meeting Closed.

**Minutes of Entomological Society of Victoria Council Meeting
Tuesday March 21 2017 Melbourne Museum**

Attendance: Peter Carwardine, Linda Rogan (minutes), Peter Marriott, Joshua Grubb, Julia McCoe, Marcelle Tiller

Apologies: Patrick Honan, Ray Besserdin

Meeting was opened by Vice President Peter Carwardine

Previous minutes: Minutes of the previous council meeting held on Tuesday 17 January 2017 were published in Vic.Ent. 47.1 February pp.20-22. M: J. McCoe S: P. Carwardine

Correspondence:

Email correspondence was received from Rosalind Clark of the National Library of Australia suggesting that we may use their edeposit service for any publications that are available in digital form and are subject to legal deposit obligations. L. Rogan will register.

Email correspondence was received from Kelvyn Dunn on the 17th February regarding decisions made in the September Council meeting. This was discussed and Council notes that correspondence was sent to Kelvyn Dunn after the September meeting and re-sent after the February email correspondence.

Email correspondence from International Congress of Odonatology being held at Clare College Cambridge UK on July 16-20 2017. Notice will be included in the April Bulletin and the secretary will also send out email information as some closing dates are 31 March 2017.

Regular correspondence tabled from:

Australian Entomological Society including Austral Entomology and Myrmecia.

Treasurer's Report:

Jan 2017

Account Balances:

General: \$2924

Le Souëf: \$7935

Publishing: \$24080

Feb 2017:

Account Balances:

General: \$2987

Le Souëf: \$7935

Publishing: \$24557

Treasurers report accepted. M: J Grubb S: L Rogan

Joshua presented the annual accounts to council which will be printed in the April Bulletin and the required form was signed for presentation at the AGM.

Annual accounts accepted. M: J Grubb S: L Rogan

Membership:

Total non-institutional: 144

Unfinancial: 61

Institutions: 9

New Member to be welcomed to the Society:

Thelma Joan Hales, interested in Beetles and 'anything else I see'

M: L Rogan S: Julia McCoe

(Continued on page 39)

Victorian Neuroptera - Part 6 Myrmeleontidae - Antlions (section 1)

Ken Harris kennedyh@iinet.net.au

This sixth article on the Victorian Lacewings only covers part of a family. The Myrmeleontidae, generally known as antlions, is the largest family of lacewings. There are about 2000 species world-wide, 258 in Australia and 31 species have been recorded in Victoria. There are three sub-families of Myrmeleontidae in Victoria and 27 species are in the large sub-family Myrmeleontinae. That subfamily is further divided into four tribes and this article will cover two tribes of the Myrmeleontinae, the Myrmeleontini and the Dendroleontini. The rest of the Victorian Myrmeleontinae will be covered in a subsequent article with the other two sub-families.

Family: Myrmeleontidae - Antlions

This is the largest family of lacewings and also the largest in Australia, having 258 known species. Thirty-one species have been recorded in Victoria.

They are frequently known as antlions, but this name really belongs to their larvae (Figure 1). The antlion larvae are fierce predators, with proportionally large clasping jaws. Many species build a conical pit in sandy soil and hide at the base of the pit (Figure 2). Prey, including ants, slip down the steep sides of the pit and are then clasped and consumed by the antlion. The family name Myrmeleontidae means ant lion, from the Greek Myrmex (an ant) and Leo (a lion). They are known as antlions in various languages in many countries around the world. The adults vary in size from quite small to among the largest lacewings. They have long slender abdomens and long narrow, mostly translucent, net-veined wings. They have fairly short antennae and these distinguish them from their closest relatives, the owlflies in the Ascalaphidae. Owlflies have long slender antennae, with bulbous tips. Antlion adults can be mistaken for dragonflies and damselflies. I made that mistake myself when I first saw one on my window. Three sub-families occur in Victoria; Myrmeleontinae (27 species), Acanthaclisinae (3 species) and Stilbopteryginae (1 species).

The following key based on New (1985a) separates the sub-families and tribes of the Myrmeleontidae. It is rather technical and requires knowledge of the terminology of wing venation:

- 1 Vein 1A in hind wing with 5 or more branches; antennae short, strongly clubbed (very large species) Stilbopteryginae
- Vein 1A in hind wing never with more than three or four branches; antennae if short, not ... strongly clubbed or species smaller 2
- 2(1) Femoral sense hair not present on hind leg (usually not densely hairy); one-six presectoral crossveins in hind wing, if more than two, fore wing costal cells simple except (rarely) immediately before pterostigma; legs usually slender, spurs and claws various (Myrmeleontinae) ...3
- Femoral sense hair present on hind leg (large densely hairy); more than four presectoral crossveins in hind wing, fore wing costal cells partially or wholly biareolate; legs short and stout, spurs and tarsal claws very strongly arched Acanthaclisinae
- 3(2) Fore wing vein 2A clearly separable from 1A at base; 2A and 3A linked by crossvein or meeting at a point Dendroleontini
- Fore wing vein 2A close to 1A at base; 2A and 3A closely associated along central length 4
- 4(3) Hind wing vein Rs arising opposite or beyond medial fork; usually four or more hind wing presectoral crossveins Myrmeleontini
- Hind wing vein Rs arising well before medial fork; one (rarely two or more) hind wing presectoral crossveins5

- 5(4) Fore wing veins CuA2 and (CuP+1A) elongated, parallel to CuA1 and hind margin of wing for considerable length (fore wing costal cells sometimes partially biareolate) Protoplectrini
 Fore wing veins CuA2 and (CuP+1A) not as above, short (fore wing costal cells simple) Distoleontini

Sub-family: Myrmeleontinae, Latreille , 1802

This is the largest sub-family in Australia, with at least 185 described Australian species, 27 of which have so far been recorded in Victoria. This large sub-family has been further divided into tribes, four of which are found in Australia, with members of all four tribes known in Victoria.



Figure 1. Antlion larva at Maffra on 9th November 2013 Photo by Duncan Fraser



Figure 2. Antlion larval pits at Maffra on 18th November 2013 Photo by Duncan Fraser

Tribe: Myrmeleontini

These are perhaps the typical Myrmeleontidae, carrying the name of the family. There are 23 Australian species in about five genera of which four species in one genus are apparently known from Victoria.

Genus: Myrmeleon Linnaeus, 1767

This is perhaps the oldest genus in the Myrmeleontidae, giving its name to the family, sub-family and tribe. There are currently at least 180 species in the genus world-wide, with 22 species known from Australia. Four species are known from Victoria. The wings are very similar, but the faces are useful for separating the species.



Figure 3. Faces of *Myrmeleon* species: a) *M. acer*, b) *M. diminutus*, c) *M. houstoni*, d) *M. commoni*

Common Antlion – *Myrmeleon acer* Walker, 1853
(Figures 3a, 4)

Synonyms:

Myrmeleon inopinus Walker, 1853

Myrmeleon hostilis Walker, 1853

Myrmeleon uniseriatus Gerstaecker, 1885

This is perhaps the commonest and most widespread antlion in Australia. It is found in all states and territories. There are at least 47 Victorian records, which are scattered across the state. It is on the wing throughout the summer and early autumn. It is a very plain animal, with no markings on the wings, except for a distinctive black and white pterostigma. The animal is predominantly black and is the only black *Myrmeleon* species in the region. It is a moderately large lacewing with a wingspan of about 43 mm.



Figure 4. Mating pair of Common Antlions – *Myrmeleon acer* in the Brisbane Ranges on 1st February 2016 photo by Cathy Powers

Myrmeleon diminutus Esben-Petersen, 1915
(Figures 3b, 5)

This is a common species in the dry parts of Australia being found in all mainland states. There are 18 records from the NW of Victoria. It has been recorded on the wing in November, February and May. It is moderately large with a wing span of about 46 mm. It is a pale lacewing, mainly tawny-yellow in colour with distinctive markings on the pronotum and a distinctive pattern on its face (Fig 3b).



Figure 5. *Myrmeleon diminutus* ex Flinders Ranges S.A. collected by M.S. & B.J.Moulds



Figure 6. *Myrmeleon houstoni* ex Bogan River N.S.W. collected by J. Armstrong

Myrmeleon houstoni New, 1985 (Figures 3c, 6)

This species was originally described from Western Australia, but has more recently been found in New South Wales and Victoria. There is only one Victorian record, which was from Wyperfeld National Park in December. The species is mainly black, with pale yellow markings. Its wings are unmarked and it has a wing span of about 42 mm. Its face (Fig 3c) is useful for separating it from other *Myrmeleon* species.

Myrmeleon commoni New, 1985 (Figure 3d, 7)

This is a slightly smaller, and very slender lacewing, with a wingspan of about 37 mm. It has a near black abdomen. It has distinctive pronotal markings, with a broad black median stripe, with anterior angles and lateral margins pale yellow. There are only three records and these all come from Victoria, from the Little Desert in February 1956. Again its face (Fig 3d) is useful for separating it from other *Myrmeleon* species.

Tribe: Dendroleontini, Banks 1899

This is the largest tribe of Myrmeleontinae in Australia, with 83 described species in 18 genera. It includes some of the largest and most spectacular antlion species. Twelve species from eight different genera have been recorded in Victoria.

Genus: *Periclystus* Gerstaecker, 1888

This genus has three Australian species, two of which have been recorded in Victoria. They are large spectacular lacewings with strong dark markings on the wings, which are strongly indented on the outer posterior third.

Angular-wing Lacewing - *Periclystus circuitei* (Walker, 1853) (Figures Cover, 8)

Original designation:

Myrmeleon circuitei Walker, 1853

Synonym:

Periclystus callipeplus Gerstaecker, 1888

This is a very spectacular lacewing and is the second largest lacewing recorded in Victoria and among the largest species in Australia. It has a wingspan of about 85 mm and it has a clear indentation of the outer third of the posterior edge of both fore and hind wings. The wings are also strongly marked with large brown to black patches. The body is dark and appears varnished when fresh (Cover Figure). Victorian records are all from the eastern half of the state and the species is also known from New South Wales, Queensland and the Northern Territory. Victorian specimens were on the wing in summer and autumn.



Figure 7. *Myrmeleon commoni* (Paratype) ex Little Desert 12th February 1956 collected by I.F.B.Common



Figure 8. *Periclystus circuitei* in Bunyip State Park on 3rd February 2007 photo by Peter Marriott



Figure 9. *Periclystus aureolatus* in Murray Sunset National Park on 25th January 2010 photo by Shaun Winterton

Periclystus aureolatus Tillyard, 1916 (Figure 9)

This is another spectacular but somewhat smaller lacewing. It has a wingspan of about 70 mm and shares the angular shape of its wings with *P. circuiter*. Its veins are mainly whitish, giving the appearance of white wings, but there are many spots of gold to dark-brown scattered across the wings. There are only two Victorian records, both from the extreme north-west of the state, both in January. The species is also found in New South Wales, South Australia, Western Australia and the Northern Territory.

Genus: *Austrogymnocnemia* Esben-Petersen, 1917

This is a large genus (18 species) endemic to Australia and occurring throughout the country except for Tasmania. Identification of the genus is difficult based mainly on microscopic features, but the three species recorded from Victoria are all identifiable by distinctive wing markings and wing venation.

Austrogymnocnemia bipunctata (Esben-Petersen, 1915) (Figures 10, 11)

Original designation:

Gymnocnemia bipunctata Esben-Petersen, 1915

Synonym:

Austrogymnocnemia australis Esben-Petersen, 1923

This is a moderately large lacewing (wingspan about 60 mm). It has a large brown spot on each hind wing and only small marks on the fore wings. It has only been recorded in Victoria twice, but is also recorded throughout mainland Australia. The Victorian records were in December and February and were in mallee areas in the west of the state.



Figure 10. *Austrogymnocnemia bipunctata* in Long Forest NCR on 14th February 2015 photo by Marilyn Hewish



Figure 11. *Austrogymnocnemia bipunctata* ex Emerald, Queensland on 20th December 1916 collected by E. Allyn

Austrogymnocnemia maculata (Tillyard, 1916) (Figure 12)

Original designation:

Gymnocnemia maculata Tillyard, 1916

This is a slightly smaller lacewing with a wingspan of about 44 mm, which is also widespread throughout mainland Australia. There are only three Victorian records, all from the Western half of the state, in January and February. It is a generally tawny colour, with a distinctive pattern of brown spots across the wings.



Figure 12. *Austrogymnocnemia maculata* ex Yunta, S.A. in February 1943 collected by M.W. Mules

Austrogymnocnemia pygmaea New, 1985 (Figure 13)
 This is a tiny lacewing, one of the smallest of the Myrmeleontidae, with a wingspan of just 32 mm. It has a distinctive pattern on the wings, with a large brown spot on each hind wing and a row of small spots back from the leading edge of the fore wings. There are six Victorian records, from the Little Desert and the Big Desert and it has been found on the wing from October to February. It is also recorded from South Australia and Western Australia.



Figure 13. *Austrogymnocnemia pygmaea* in the Little Desert on 29th October 2015 photo by Marilyn Hewish

Genus: *Glenoleon* Banks, 1913

There are 32 species, all confined to Australia, of which five species have been recorded in Victoria. Again identifying the genus is difficult and is based on microscopic characters. Most Victorian species have bold markings on the wings, particularly the hind wings.

Banded Antlion - *Glenoleon pulchellus* (Rambur, 1842) (Figure 14)

Original designation:

Myrmeleon pulchellus Rambur, 1842

This is a medium-sized lacewing with a wingspan of about 57 mm. It has distinctive hind wings with two broad dark bands towards the tip, and a distinctly marked pronotum. There are 17 Victorian records spread around the centre of the state and the species is also found in South Australia, New South Wales and Queensland. It is on the wing throughout the summer.



Figure 14. *Glenoleon pulchellus* near Valencia Creek on 10th January 2013 photo by Duncan Fraser



Figure 15. *Glenoleon falsus* at Blackheath, N.S.W. on 17th January 2009 photo by Donald Hobern

Glenoleon falsus (Walker, 1853) (Figure 15)

Original designation:

Myrmeleon falsus Walker, 1853

This is a slightly larger lacewing with a wingspan of about 62 mm. It is similar to *G. pulchellus*, but has a single dark band across the tip of the hind wing and smaller dark marks on the fore wing. There are 13 Victorian records, spread around the centre of the state and it is also recorded from all Australian states. Flight records range through summer and autumn.

Glenoleon meteoricus (Gerstaecker, 1885)
(Figure 16)
Original designation:
Myrmeleon meteoricus Gerstaecker, 1885

This is a similar-sized lacewing with a wingspan of about 63 mm. It has a single brown spot on the hind wing, rather similar to that on *Austrogymnocytenia bipunctata* (Figure 8), but can be distinguished from that species by different markings on the fore wings. There are 8 records from Victoria spread through the western half of the state and it has been recorded in all Australian states and territories. It has been found on the wing between January and March.



Figure 16. *Glenoleon meteoricus* at Great Western on 27th January 2014 photo by Jenny Holmes

Glenoleon osmyloides (Gerstaecker, 1885)
(Figure 17)
Original designation:
Myrmeleon osmyloides Gerstaecker, 1885
Synonym:
Glenoleon annulicornis Esben-Petersen, 1915

This is a fairly small lacewing with a wingspan of just 45 mm. It has the plainest wings of the *Glenoleon* species, having almost unmarked hind wings, but can be identified by the pattern of markings on the fore wings. There are seven Victorian records all from the north-west of the state and its range extends to all mainland states



Figure 17. *Glenoleon osmyloides* at Ned's Corner on 28th November 2011

and territories. All Victorian flight records have been in

Glenoleon maculatus New, 1985 (Figure 18)

This is an even smaller lacewing, with a wingspan of only 40 mm. The wings are distinctively marked with brown spots on both fore and hind wings. Only one specimen has ever been recorded, the Holotype, which was collected 4 miles N of Pyramid Hill, near the New South Wales Border. The one specimen was on the wing in February.



Figure 18. *Glenoleon maculatus* ex Pyramid Hill on 3rd February 1956 collected by I.F.B.Common

Genus: *Dendroleon* Brauer, 1866

This is a world-wide genus of up to 20 species, four of which are known from Australia. It is the type genus for the tribe Dendroleontini. Only one species has been recorded in Victoria.

Dendroleon longipennis Esben-Petersen, 1915 (Figure 19)

This is a medium-sized lacewing with a wingspan of about 50 mm. It has a distinct pattern of dark-brown marks on the wings especially adjacent to the pterostigma on the fore wings. There are 11 Victorian records ranging from Melbourne to the extreme north-west of the state. It is on the wing through most of the summer and autumn.



Figure 19. *Dendroleon longipennis* in Belgrave on 23rd February 2015 photo by Keith Ealanta

Genus: *Mossega* Navás, 1914

Mossega is a genus of about 6 species occurring in Australia and adjacent areas of SE Asia. Four species are known from Australia and one of these has been recorded in Victoria. Most *Mossega* have hind wings longer than the fore wings.

Mossega indecisa (Banks, 1913) (Figure 20)

Original designation:

Glenoleon indecisus Banks, 1913

Synonym:

Mossega reticulata Navás, 1914

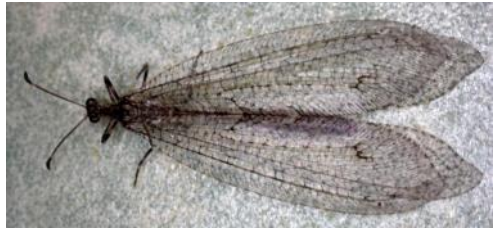


Figure 20. *Mossega indecisa* in Tyers Junction on 13th March 2016 photo by Peter Marriott

This is one of the larger lacewings with a wingspan of about 68 mm. It has fairly plain wings, but a w-shaped mark on the outer fore wing aids identification. The hind wings are clearly longer than the fore wings. Eight specimens have been recorded in Victoria. Victorian specimens are all close to Melbourne, apart from one in the far east of the state. The species is known from all over Australia. It is on the wing through the summer and autumn.

Acknowledgements

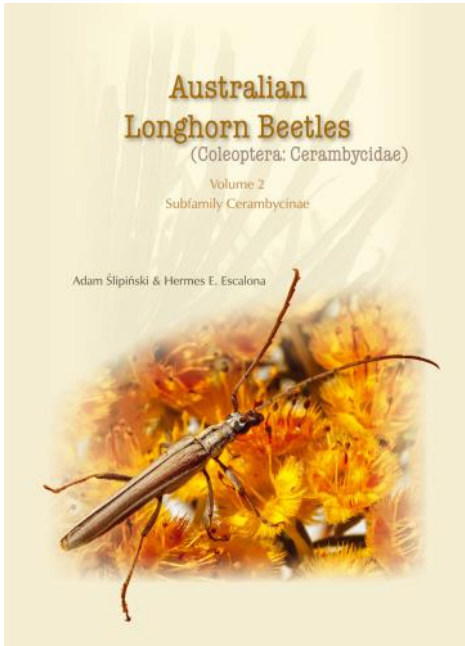
I wish to thank Museum Victoria, A.N.I.C in Canberra and the Australian Museum in Sydney for access to their collections of Neuroptera specimens. Thanks to Tim New for his expert knowledge of the Neuroptera, particularly the Myrmeleontidae and to Leuba Ridgway, Duncan Fraser, Cathy Powers, Peter Marriott, Shaun Winterton, Marilyn Hewish, Donald Hobern, Jenny Holmes and Keith Ealanta for permission to use their photographs. Thanks also to You Ning Su of A.N.I.C. for photographing specimens for Figs 3d, 7 and 18, these images are © Commonwealth Scientific and Industrial Research Organisation, 2016.

References

- New, T.R., 1992: The Lacewings (Insecta Neuroptera) of Tasmania. Papers and Proceedings of the Royal Society of Tasmania, 126. pp. 29-45
New, T.R., 1985a: A Revision of the Australian Myrmeleontidae (Insecta: Neuroptera), I. Introduction, Mymeleontini, Protoplectrini. Aust. J. Zool. Suppl. 104 1 - 90
New, T.R., 1985b: A Revision of the Australian Myrmeleontidae (Insecta: Neuroptera), II. Dendroleontini. Aust. J. Zool. Suppl. 105 1 - 170

Web Sites

- Atlas of Living Australia <http://www.ala.org.au/>
Australian Biological Resources Study Australian Faunal Directory <https://biodiversity.org.au/afd/taxa/MYRMELEONTIDAE>
Bowerbird <http://www.bowerbird.org.au/>
Morwell National Park Online <http://morwellnp.pangaean.net/browser/invertebrates.html#Neuroptera>



**Australian Longhorn Beetles
(Coleoptera: Cerambycidae),
Volume 2, Subfamily Cerambyci-
nae.** By Adam Slipiński and Hermes
E. Escalona. Hardback 613 pp.

This landmark book is the second highly anticipated volume in the *Australian Longhorn Beetles* series, covering the subfamily Cerambycinae. It follows the publication of Volume 1 (Lamiinae) in 2013.

In the introductory sections the authors remark that the Cerambycinae is the largest subfamily of longhorn beetles in Australia, containing 142 genera and 1250 species, with most of the diversity found in the southern part of the continent. Cerambycinae larvae have chisel-like mandibles so they are able to feed on hard compact woody material. Indeed, some exotic species in this subfamily such as the European house borer (*Hylotrupes bajulus*) and the Teak trunk borer (*Stromatium barbatum*) are serious pests of seasoned timber used in building construc-

tion. Cerambycinae adults are often diurnal and these species can be found on the flowers of trees and bushes feeding on pollen and nectar, and many species are mimics of ants, wasps, lycid and cantharid beetles.

Before this book was published anyone wanting to attempt an identification to genus of these relatively large and conspicuous insects generally needed to spend considerable time consulting the literature, visiting specialists and reference collections. The authors have therefore done a wonderful job in bringing together the diagnosis and description of the 142 genera, including the description of 13 new genera, while they note that many that are apparently new remain to be described because only single specimens were available for study. Furthermore they did not have the time to treat taxa that required the review of more widespread generic complexes. This book, like the preceding volume are therefore important reference works that will serve as the basis for future taxonomic revisions.

The book is arranged with a short introduction followed by a section on biology and economic importance, then a longer section on diagnosis of the subfamily (both larvae and adults) with excellent illustrations depicting the various morphological characters. Following this there is a section on classification where the various tribes and component genera are listed alphabetically.

The key given to the genera of the Cerambycinae is excellent, and although it may seem daunting at 166 couplets, each page of text is complemented by an opposing page of beautifully illustrated colour figures and annotated drawings that help make the key much more user-friendly than it would otherwise be, and the key is one of the best aspects of the book and worthy of the purchase price alone. The genera are reviewed in alphabetical order in the 200 pages following the key, with a short taxonomic section followed by Diagnosis, Description (with subheadings: Length, Head, Antennae, Prothorax, Pterothorax, Elytra, Legs, Abdomen and Male Terminalia), Remarks, Biological Data, Distribution and a list of Australian species.

The next 240 pages are the Cerambycinae figures, consisting of high quality colour photographs

(showing both entire beetles and dissected parts), and black and white SEM images. In addition, the authors have included images of almost all of the primary types of Australian Cerambycinae. Many of these types are held in overseas institutions and the images of them have been published for the first time. Again, like the key, the illustrations are excellent. It is worth noting here that the illustrations do lack scale bars, which means having to go back to the relevant genus in the review section to confirm what the body length should be. A scale bar next to each dorsal habitus image would be a useful addition, or alternatively perhaps the body length information could be noted in the figure captions.

The authors and staff at the Australian National Insect Collection (CSIRO) have done a fantastic job in bringing together this beautiful and informative book which should be on the bookshelf of students, amateur and professional entomologists, and anyone else who is interested in this fascinating group of insects. I will very much look forward to the future publication of Volume 3, the final volume on the Subfamily Prioninae.

Reviewed by Adam Broadley
Operational Science Services
Science Services Group
Department of Agriculture and Water Resources
Melbourne Airport

(Continued from page 29)

Editor's report:

New books for reviews are being sent to the Editor who requests Council's assistance in recommending appropriate reviewers.

The April Bulletin is nearly complete except awaiting for some last minute information.
M: L Rogan S: Julia McCoe

Publications report:

P. Marriott presented a 12 page booklet to the Friends of Braeside Park and the ranger. It contained identified photos of some of the interesting moths that were found by the group on 26 November 2016. This was very much appreciated and received with enthusiasm.

General Business

1. Programs for the rest of the year were discussed. The August winter excursion is generally indoors. A list is being made up of past and possible future venues for example last August was AQIS.
2. Closure of the Discovery Centre will mean some changes in access to the meeting venue for April, June and October. Simon Hinkley will work out the best alternatives and report back to P. Marriott.
3. Membership data base and mailing list. J. Grubb and M. Tiller believe they have worked out the immediate problems with maintaining this data base.

Meeting Closed.

Field notes on the behaviour and adult food plants of some butterflies in the Glenbrook area of the Lower Blue Mountains, New South Wales

KL Dunn & TJ Hawkeswood

Abstract: A snapshot survey of a small reserve situated between the adjoining suburbs of Lapstone and Glenbrook in the Lower Blue Mountains, NSW, provided a shortlist of 17 butterflies – which ranked as 50% of the species known to occur in that small area from this and earlier visits. A number of nectar sources are reported for various species, some of which may be newly reported. Notes on behaviour of selected species are given. A discussion of butterfly trapping behavior by the Asclepiad vine *Araujia sericifera* is given, adding another incident to the list of ill-fated insects reported by others; those records from Australia are reviewed.

Introduction

In December 2009 the authors teamed up for some casual bushwalking with the intent of learning a little more about the foraging habits of particular butterflies in the Sydney region. The secondary author, who had earlier published details of butterfly behaviour in the lower Blue Mountains, NSW (Hawkeswood 1980), followed by a species inventory with ecological notes (Hawkeswood 1981), and who is familiar with the local flora, suggested a follow-up survey in the Glenbrook area. This account provides a list of the butterflies seen during our snapshot survey, and records foraging activity at flowers as the focus of the species accounts. All 17 species seen are well known from the Sydney bioregion, an area extending from the Hawkesbury River southward to the Illawarra district, which has been surveyed historically (Nikitin 1964). We had hoped to see the Rock Ringlet, *Hypocysta euphemia*, a rather localised and intriguing satyrine that favours sandstone cliffs and escarpments in the Blue Mountains and Sydney Basin, for which no host plants have been identified with certainty. Our search about rocky areas and ledges where adults might be lingering, however, found no evidence of it, and it had not been seen on previous visits by the second author. The species may be present there as a rare event in seasons or years more suited to its range expansion from elsewhere in the broader region. A number of other localised species were seen and we noted too that the rock ledges, which *H. euphemia* would haunt if resident, served as perch sites and roosting areas for a couple of satyrines during the rising heat of late morning. Nikitin (1964, 1971) recorded 72 species for the Sydney Bioregion across all seasons, and other workers have reported additional species as incidental records over the years since. Our brief survey suggests that the fauna of that Glenbrook-Lapstone reserve may be limited by regional comparison, or at least was during that particular month in 2009. No doubt, across seasons and years – local sampling has not been done in autumn, winter, or spring – many other butterflies would be present regularly or intermittently as larval host plants boom and bust. The spring and early summer of 2009 was not a favourable one for butterflies and adults of various species were in low to moderate numbers, many being worn or aged on that visit.

Key information

Site: 'Glenbrook Ammo Tunnel area', an unnamed bushland reserve about 1 km east of Glenbrook, situated on the north side of Explorers Road and extending from the eastern end of Lucasville Road through to near the Lapstone Station, NSW, Australia. **Date:** 19 December 2009; **Time:** 1000-1350 h (Australian Eastern Daylight Time - AEDT). **Habitat:** Riparian forest gully with woodland and dry sclerophyll forest buffer areas. **Weather:** 'Sunny and hot', ranging from 22 to 28° C during the survey. **Ratings:** Adult abundance (during nearly 4 hours observations): Scarce: 1-4; Uncommon: 5-9; Common 10-15; Abundant 16 or more adults. **Identification means and support:** V-voucher; P-photo; O-unhandled observation. Recognition of those butterflies that were not netted or photographed was based on visual evidence; a sufficient number of wing characteristics having been seen for each individual to enable certain identifications. **Nectar sources:** These were mostly identified by the secondary author and hinge on his field experience as a broad-spectrum naturalist in the Sydney region. **Taxonomy and sequence:** Taxonomic placement to subspecies for particular species is not

considered useful for the purposes of this field note; these placements can be sourced in Braby (2016). The inventory follows the sequence in Braby (2000) which stands as a contemporary source of essential biological information of the Australian butterfly fauna and from where most workers will seek that information; the spelling of species' epithets is in accordance with that work. We respect that some may prefer the sequence offered, and the modified gender endings of epithets as provided in the recent field guide by Braby (2016), which is based for the most part on contemporary studies, but either approach is acceptable as both books are in usage and familiar to most workers.

Figures: All photos were taken by KLD at this location during the field survey (none of the adults were handled or modelled in captivity to enhance the images); each illustrates activity described in the species accounts.

Species Accounts

Hesperiidae

Taractrocer a papyria (Boisduval, 1832), White-banded Grass-dart

Scarce (O). One adult appeared to be feeding at a flower of *Araujia sericifera* Brotero (Asclepiadaceae). This small skipper, which we had to approach very closely to document its activity, departed before we could confirm that its proboscis had been extended into the corolla for more than three seconds. The underwing patterns on the hindwing, visible upon landing, made its recognition easy.

Ocybadistes walkeri Heron, 1894, Green Grass-dart

Scarce (V). Both sexes fed at flowers of *Verbena bonariensis* L., and at the eastern end of Lucasville Road, several foraged at *V. officinale* (Verbenaceae). An adult (sex not recorded) visited flowers of *Geranium molle* L. (Geraniaceae) in a weedy area in a gully (one pair vouchered), and a male was seen feeding at flowers of *Coreopsis lanceolata* L. (Asteraceae). A female suffered a trapped proboscis (Figs. 1 & 2) in the corolla of a flower of *Araujia sericifera* Brotero (Asclepiadaceae). *A. sericifera*, referred to in some historic butterfly literature under the synonym *A. hortorum* Fourn. (see Forster & Bruyns 1992), is recognisable by its distinctive white flowers. These are streaked with light purple (features that serve as guiding lines for would-be pollinators as the species requires foraging insects to enable its reproduction) but which lack ultraviolet reflectance (Coombs & Peter 2010). However, because its flowers emit scent day and night they attract and occasionally trap both diurnal and nocturnal lepidopteran visitors (Coombs & Peter 2010). The female skipper found secured to a flower was retained to underpin the species' identification as other similar looking skippers occur in the Sydney Basin, some females being difficult to distinguish; the specimen is in the Australian National Insect Collection.



Figure 1



Figure 2

Papilionidae

Papilio aegeus Donovan, 1805, Orchard Swallowtail

Scarce (O). Two males were seen flying just below canopy height along a gully; they were likely patrolling the broader area, which was close to residences where *Citrus* would be present in garden landscapes. The adults did not pause to feed.

Pieridae

Pieris rapae (Linnaeus, 1758), Cabbage White

Uncommon (O). Adults were seen feeding at flowers of *Centaurium erythraea* Rafn. (Gentianaceae) and *Cirsium vulgare* (Savi) Ten. (Asteraceae).

Nymphalidae

Ypthima arctous (Fabricius, 1775), Dusky Knight

Uncommon (O). None was seen to feed.

Hypocysta metirius Butler, 1875, Brown Ringlet

Uncommon (P). Adults were localised to a moist gully and did not venture far into the drier forests (Fig. 3); none was seen to feed.



Figure 3

H. adiante (Hubner, 1831), Orange Ringlet

Scarce (and localised) (V). Two adults were caught settled on a boulder after being seen patrolling a boulder above their perch sites; none was seen to feed.

Geitoneura acantha (Donovan, 1805), Ringed Xenica

Uncommon (V, P). Adult showed the paler hindwing underside characteristic of the upland sandstone regions, a local form with its focus in the Blue Mountains and which extends southwestward to the Jenolan Caves. Some adults of both sexes were seen sheltering under rock ledges from time to time (Fig. 4); none was seen to feed.



Figure 4

Heteronympha merope (Fabricius, 1775), Common Brown

Common (O). Both sexes were present in similar numbers. Some adults were seen flying along bases of sandstone cuttings whilst females were settled amongst leaf litter where they remained quiescent and camouflaged, being detected when disturbed. None was seen to feed.

Acraea andromacha (Fabricius, 1775) Glasswing

Scarce (V, P). This species is infrequently seen in the Sydney region, with repeated sightings only in favourable years (Nikitin 1964). There were no patrolling males; their presence is a feature of resident populations where adults of both sexes are usually common. This singleton was evidently a vagrant, having likely bred beyond the reserve, and which had honed into to an area of *Passiflora foetida* L. (Passifloraceae) growing along a walking trail near the base of the cutting. The female flew about the area for over 15 minutes, persistently fluttering around this introduced



Figure 5

species which serves as a larval host (Braby 2016). She landed on leaves and stems as part of her repeated inspections of foliage to determine the general health of the plants. She was soon seen to lay eggs on foliage a number of times and would bask momentarily between the bouts (Fig. 5). She was not seen to feed at the flowers of *Verbena* and those of other introduced plants growing nearby (which other butterflies were then visiting), having probably fed prior to the commencement of her egg-laying activities.

Junonia villida (Fabricius, 1787), Meadow Argus
Uncommon (O). One adult fed at the flowers of *Cirsium vulgare* (Savi) Ten. (Asteraceae).

Danaus plexippus (Linnaeus, 1758), Monarch
Scarce (O). One worn adult, seen flying westward up the gully at 1230 h, was evidently a vagrant, having likely bred beyond the reserve. None was seen patrolling open areas, a behavior of the adults in areas where host plants are present and where resident populations thrive. It did not pause to feed.

Lycaenidae

Paralucia pyrodiscus (Doubleday, 1847), Fiery Copper
Scarce (V). An aged female fed at flowers of *Verbena bonariensis* L. (Verbenaceae). No others of this species were seen, despite a focused search. This female was not in close proximity to the colony of *P. aurifer*, being present as a singleton in a drier area of the reserve, near the base of the cutting. She may have been a wandering example having bred farther afield, and was probably seeking outlier areas of host plants for her remaining egg batch. The absence of any males in the area, which are normally present where a population is established, supports this belief.

Paralucia aurifer (Blanchard, 1848), Bright Copper
Uncommon (P). Adults in moderate to worn condition were flying around and occasionally landing on leaves of small plants of *Bursaria spinosa* Cav. (Pittosporaceae), a well-known larval host (Braby 2016) growing at the edge of a high point of the gully (railway cutting). It seemed that one or more females were ovipositing at times, but no eggs were found during our quick inspection in the close vicinity of where they had landed. The females then rested on low herbage including seed heads of grasses where they were suitably camouflaged (Fig. 6). One aged adult fed at the flowers of *B. spinosa* at 1300 h, but the males remained in territorial activity, having likely fed earlier in the day.



Figure 6

Jalmenus evagoras (Donovan, 1805), Imperial Hairstreak
Scarce (O). Two adults were seen flying at a moderate height (about 6 m) around tall plants of *Acacia decurrens* Willd. (Mimosaceae) growing from the sides of a gully. The heights of these wattles were not measured but the adults were flying about two thirds up the trees. A search of several small saplings (two to three metres in height) in the broader area revealed no juvenile stages; the larvae and pupae are usually easy to find given the abundance of ants they attract and so were not overlooked by us. Dunn (2016) reported a similar situation in the Jenolan Caves reserve based on observations during that same month and year; that paper reported a perched male sighted many metres above ground in the tree canopy, which was diagnosed to species using a zoom lens of a videocam. Its perch elevation at Jenolan Caves was 16 metres or more above ground (from memory) and the several adults seen in its vicinity were flying and perching at a similar height (KLD pers. obs.). Reports of this species patrolling high up about tall wattles are few; neither are there many reports of the presence of juvenile stages on these. The butterfly usually breeds on saplings up to about three

metres high (Smiley et al. 1988) but on two occasions Braby (1988, 1998) has found colonies on wattles variably six to seven metres high in Victoria. Braby (1988) reported hundreds of larvae and pupae on the trunk, within one metre of the ground – not amongst the upper foliage on that occasion. The vertical distribution of the juveniles in the later encounter (Braby 1998) was not stated in the paper, but Braby (pers. comm.) clarified that they “were distributed on foliage over the entire tree”; this presents as a remarkable exception to the usual behavior of the species. Taylor (2014), who studied the sister species in NSW, hypothesized that the attraction of the attendant ants to small wattles (or larger ones that have foliage available close to the ground), was because of the ease of access by the ground-dwelling ants to that lower foliage.

Although the attendant ants will ascend to the higher foliage of tall wattles to forage, the ant numbers decline significantly higher up in larger trees and farther afield (Smiley et al. 1988) which appears to be the limiting factor in the ants’ local distributions. In these circumstances then, they may be too dispersed to attract gravid females of the butterfly, except as rare events. Smiley et al. (1988) gave experimental evidence that when pupae of *J. evagoras* were strategically placed at heights above three metres they were usually not detected by the ground-dwelling attendant ants during foraging excursions in the local area; hence, even when found by the ants, these pupae may receive an inadequate guard to guarantee their survival. These authors concluded that “the local distribution and host tree selection by *J. evagoras* is dependent upon the distribution, patchiness and foraging behavior of the host ant...” (p.416), thus it would follow that small plants are the focus of the gravid females likely because of the higher numbers of ants present and, by corollary, the increased probability of their detection by the butterflies which hone into to these aggregations and inspect them prior to oviposition along the ant runs (KLD pers. obs.).

The species’ rare choice of patrolling taller trees (at heights considerably above three metres) may be more frequent in the Blue Mountains as both reports involved that region. Dunn (2016) hypothesized that arboreal nests may supply the attendance of, and a guard for, the larvae foraging in taller trees. Arboreal nests would enable herbivory at a much higher stratification, where the adults perched and patrolled, and from where they did not descend to inspect low saplings (all of which were without ants). That opportunism could provide a secondary niche in mature open forests, and offer a strategy that may enable the species’ local continuity during less favorable breeding seasons, including times of prolonged drought – a frequent occurrence in Australia. Regrowth is limited or may not occur in adverse seasons, and wattle recruitment from an earlier wetter period may no longer be ant-occupied to a suitable density. This may also be caused by lowered numbers of treehoppers or scales at such times, and so the plants may not be suitable for use by this butterfly. At this site during December, the season seemed less than optimal but was not poor.

Candalides xanthospilos (Hubner, 1817), Yellow-spotted Blue

Scarce (O). A female fed at flowers of *Centaurium erythraea* Rafn. (Gentianaceae). The same female subsequently oviposited on *Pimelea linifolia* R.Br. (Thymelaeaceae) growing close by. No males were seen.

Zizina otis (Fabricius, 1787), Common Grass-Blue

Abundant (O). Adults in varying numbers fed at flowers of: *Verbena bonariensis* L. in semi-cleared areas in a gully; *V. officinale* (Verbenaceae) at the eastern end of Lucasville Road; *Hypochoeris radicata* L. (Asteraceae) in a weed patch; and *Geranium molle* L. (Geraniaceae) in a weed patch.

To be continued in the next issue.

Second Notice of Annual General Meeting 2017

Please be advised that the Annual General Meeting of the Entomological Society of Victoria Inc. will be held on Tuesday 18th April 2017 at 7:45 pm at the Discovery Centre, Melbourne Museum. The purpose of the meeting is

- to confirm the minutes of the previous Annual General Meeting;
- to receive and consider the annual report of the Council on the activities of the Association during the preceding financial year; and the financial statements of the Association for the preceding financial year submitted by the Council in accordance with Part 7 of the Act;
- to elect the members of the Council; and
- to confirm or vary the amounts of the annual subscription.

The positions of President, Vice President, Honorary Secretary, Honorary Treasurer, Editor, and up to eight other Councillors are open and nominations are invited.

A member is eligible to be elected or appointed as a Council member if the member is 18 years or over; and is entitled to vote at a general meeting.

Nominations, in writing and signed by the proposer, seconder and the nominee, must be in the hands of the Council seven days prior to the Annual General Meeting.

Nomination forms are available from the Secretary, secretary@ensocvic.org.au

Notice of motion to vary amounts of the annual subscription:

In response to increased expenses, particularly postage costs, the Treasurer would like to propose a \$5 increase to all subscriptions at the upcoming AGM (April), excluding international, associate and electronic subscriptions. New subscription rates would be Ordinary Members \$35, Country Members \$31 and Student Members \$23 and Institutions \$40. At current membership, this will cover current costs, with a small surplus.

Any questions or concerns should be sent to treasurer@entsocvic.org.au or raised at the AGM.

Special Speaker will be Dr Don Ewart

Dr Ewart is teaching at Melbourne Polytechnic with updated classes covering the Australian pest management competencies and specialist termite management skills. He has recently set up a webpage called Dr Don's Termite Pages: to boldly explain termites.
<http://drdons.net/>

A number of people have been informally meeting at Michelinos Trattoria Restaurant prior to the general meetings.

Any member's who would like to meet at Michelinos -at around 18:00 are welcome to join us for a pre-meeting chat/food. Please RSVP to secretary@entsocvic.org.au or by message to 0415909166 if you wish to join us there.

Sad news:

Alan Yen, one of our long-time members
has passed away on Monday morning 20 March 2017.

THE ENTOMOLOGICAL SOCIETY OF VICTORIA INC.
STATEMENT OF RECEIPTS AND PAYMENTS
FOR THE YEAR ENDED 31 DECEMBER 2016

GENERAL ACCOUNT

INCOME

Subscriptions				
Member	2016		2,777	
Institute	2016		277	
Donations			88	
Interest			114	
Back issues			10	3266

EXPENDITURE

Journal Costs				
	Printing	3011		
	Postage	1197	4207	
Corporate Affairs Fees			54.40	
Domain Name			0	
Postage			19	
CBA Merchant Fee			41	4322

SURPLUS/(DEFICIT) FOR YEAR	(1056)
Add balance brought forward from 2015	(2053)
Balance carried forward to 2017	(3109)

LE SOUEF MEMORIAL FUND

INTEREST INCOME

Commonwealth Bank Fixed Deposit			110	
Less				
Award Expenditure		0		
Science Talent Search		100	100	
SURPLUS/(DEFICIT) FOR YEAR			10	
Add balance brought forward from 2015			2925	
Balance carried forward to 2017			2935	

PUBLISHING ACCOUNT

INCOME

Book sales			
	(Moths of Victoria part 1)	516	
	(Moths of Victoria part 2)	699	
	(Moths of Victoria part 3)	493	
	(Moths of Victoria part 4)	624	
	(Moths of Victoria part 5)	773	
	(Moths of Victoria part 6)	1750	
	(Moths of Victoria part 7)	2085	
	(Collecting & Sampling Insects)	218	
Postage		635	
Donations		14	
Commonwealth Bank Fixed Deposit		<u>221</u>	8025

EXPENDITURE

Book printings		4566	
CSI reimburse- ment		93	
Postage		521	
Credit Card Fees		138	<u>5318</u>

SURPLUS/(DEFICIT) FOR YEAR

			2707
Add balance brought forward from 2015			<u>10194</u>
Balance carried forward to 2017			<u>12900</u>

STATEMENT OF ASSETS AT 31 DECEMBER 2016
GENERAL ACCOUNT

Bank Account	-3109
Commonwealth Bank Fixed Deposit	<u>5000</u>
	<u>1891</u>

LE SOUEF MEMORIAL FUND

Bank Account	2935
Commonwealth Bank Fixed Deposit	<u>5000</u>
	<u>7935</u>

PUBLISHING ACCOUNT

Bank Account	12900
Commonwealth Bank Fixed Deposit	10000
Value of Inventory	<u>12641</u>
	<u>35541</u>

1. One expense (CSI reimbursement) was incorrectly attributed to the general account last year - the annual accounts correct this by moving it to the publications account

2. The general account deficit was \$1056 for 2016. This is up \$873 from 2015. This is primarily due to many 2016 subscriptions being received in 2015, and few 2017 subs being received in 2016, as expenses were lower in 2016. Based on current membership, and the average expense of 2015-16, the deficit for this year should be no more than \$401, and will likely be around \$300. With the increase in subscription price, we should have a surplus of \$300-\$400 next year.



**International Congress of Odonatology,
co-sponsored by the Worldwide Dragonfly Association.**

<http://www.ico2017.org/>

Location: Clare College, Cambridge UK

Date: July 16-20, 2017

Three special sessions are planned: Dragonfly vision; Dragonfly flight; and Ten Years since Philip Corbet

Registration is now open but closes **31 March 2017 after which a late fee applies.**

Submission of paper proposals with abstracts will be by 31 March 2017.

As always ICO 2017 is open to all, affiliated or unaffiliated to WDA. A limited number of scholarships are available for students.

WORLDWIDE DRAGONFLY ASSOCIATION



Grants are available:

"The Worldwide Dragonfly Association (WDA) announces that applications are now being accepted for Conservation and Research Grants for 2017. The applicant must be a member of the WDA and the value of each grant is usually capped at 1000 Euros. For full details on how to apply for the grant, go to our website (http://worlddragonfly.org/?page_id=15). For details on how to become a member of the WDA (with an option to subscribe to the International Journal of Odonatology, and special rates for students), please see our website (http://worlddragonfly.org/?page_id=141) or write to us via the WDA Secretary at: wda.secretary@gmail.com. Sponsored memberships are also available."

OFFICE BEARERS

- PRESIDENT:** Patrick Honan, c/- Live Exhibits, Melbourne Museum
POBox 666 MELBOURNE 3000. phonan@museum.vic.gov.au
- VICE PRESIDENT:** Peter Carwardine, 5/154 Grange Road, Carnegie 3163.
ph. 9571 8958
- HON SECRETARY:** Marcelle Tiller, ph. 0415909166 secretary@entsocvic.org.au
- HON TREASURER:** Joshua Grubb, 61 Meakin St. Watsonia North 3087 Vic. ph.0417381109
treasurer@entsocvic.org.au
- HON EDITOR:** Linda Rogan, 16 Marden Dr Briar Hill 3088 ph 9435 5806
editor@entsocvic.org.au

OTHER POSITIONS

- EXCURSIONS SEC:** Peter Carwardine, 5/154 Grange Road, Carnegie 3163.
ph. 9571 8958
- WEBMASTER and FACEBOOK:** Vivienne and Steve Curle, webmaster@entsocvic.org.au
- COUNCILLORS:** Ray Besserdin, Steve Curle, Maik Fiedel, Peter Lillywhite, Julia McCoy,
Peter Marriott, Marcelle Tiller.

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.

Items printed must not be reproduced without the consent of the author and acknowledgement of the Entomological Society of Victoria Inc.

Contributions may *preferably* be E-mailed to Internet address: editor@entsocvic.org.au, 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 8 point, *Book Antiqua* font (please do not use fixed point paragraph spacing). The deadline for each issue is the third Friday of each odd month.

Notice to contributors to ESV Bulletin regarding the EBSCO database. All Bulletins backdated to 2010 will be listed in the EBSCO database. Also future Bulletins when they reach sufficient age. If for reasons unforeseen, in part or in full, any contribution does not meet an author's approval for inclusion, please notify council so we may block your work from appearing in the EBSCO database.

The Society's Home Page on the World Wide Web is located at:

www.entsocvic.org.au

ADVERTISING

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

CONTENTS

	Page
Minutes of the Entomological Society of Victoria General Meeting Tuesday 21 st February 2017 at Melbourne Museum	25
Minutes of Entomological Society of Victoria Council Meeting Tuesday March 21 2017 at Melbourne Museum	29
Harris K Victorian Neuroptera – Part 6, Myrmeleontidae - Antlions (part 1)	30
Book review: Australian Longhorn Beetles (Coleoptera: Cerambycidae), Volume 2, Subfamily Cerambycinae	38
Dunn KL Hawkeswood TJ Field notes on the behaviour and adult food plants of some butterflies in the Glenbrook area of the Lower Blue Mountains, New South Wales	40
Statement of Receipts and Payments of the Entomological Society of Victoria for the year ended 31 December 2016	46

DIARY OF COMING EVENTS

Next Meeting
Tuesday 18th April – AGM
Speaker Dr Don Ewart see page 45.

Note 7:45 pm start

General Meetings:

<i>Month</i>	<i>Date</i>	<i>Planned event</i>	
June	20	General meeting	Members' presentations
August	15	Excursion	Options being explored.
October	18	General meeting	Members' presentations
December	TBA	End of year excursion in late November or early December	is being arranged

Council Meetings are held at the Museum Victoria at 5pm
on the following Tuesdays in 2017
16 May, 18 July, 19 September, 21 November

Scientific names contained in this document are *not* intended for permanent scientific record, and are not published for the purposes of nomenclature within the meaning of the *International Code of Zoological Nomenclature*, Article 8(b). Contributions may be refereed, and authors alone are responsible for the views expressed.