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Entomological Society
of Victoria

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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.

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 and logo design by Ray Besserdin 2017

Cover photo: *Cryptoptila australana* (Tortricidae). Collected by Louise Durkin in alpine ash forests, photographed by Peter Marriott

Minutes of the Entomological Society of Victoria General Meeting and Notes from the Excursion.

Tuesday 17 October 2017 at Centre for AgriBioscience on the LaTrobe University Campus

It was a warm evening and the welcome the EntSocVic members received from Mali and his team of scientists at the AgriBio was equally warm. We were ushered into a theatre room for the first part of the evening.

Attendance: Mali Malipatil, Mackenzie Kwak, Geoff Hogg, Linda Rogan, Roch Desmier de Chenon, Sue Bendel, , Kelvyn Dunn, Gordon Ley, Peter Muller, Peter Marriott, Peter Carwardine, Carol Page, Julia McCoe, Joshua Grubb, Joseph Schuters,
Guests: Cameron Barth, Jackson Magdic, David Magdic, Emily Grubb, India Wedge

Apologies: Ray Besserdin,

Peter Marriott opened the brief general meeting once all were seated in the theatre. Peter reminded all members of Saturday 25th November when VicSocEnt will be presenting the Great Aussie Insect Hunt to 30 excited Manningham residents, and the combined BBQ and light trapping evening with Friends of Warrandyte State Park on the same day. Both are to be held at Pound Bend Reserve in Warrandyte. Details were included in the October Bulletin and a reminder will be sent by email shortly before the day.

Treasurer's Report was presented by Joshua Grubb as below:

SEPTEMBER

Account Balances:

General: \$2093

Le Souëf: \$7835

Publishing: \$25077

Membership:

Total non-institutional: 135

Unfinancial: 0

Institutions: 9

There were 2 prospective new members and as they were present, Peter welcomed them.

M: Joshua Grubb S: Linda Rogan

Editor's report: Linda encouraged members to consider sending in contributions for the December Bulletin or other future Bulletins.

Pollinator week: Mackenzie Kwak told us about the increasing profile of National Pollinator week in Australia which is 12-19 November 2017. He is organising a pollinator day on either the Saturday or Sunday of that week for the Society and requested other members who would like to assist with this project to contact him after this meeting.

Peter closed the official part of the meeting and handed over to Mali who had kindly agreed to host the Society for the evening. Dr. Mallik (Mali) Malipatil welcomed all to the AgriBio Centre. Although he seldom is able to attend a meeting of EntSocVic his membership



Dr Mallik (Mali) Malipatil, our kind host for the evening at AgriBio. Photo by Carol Page

goes back many years and he and his team have been working very hard over the years to help progress the interests of the Society and Entomology. Mali's position is a joint appointment with Agriculture Victoria and the La Trobe University overseeing work with agricultural insects. His special research interest is in Heteroptera.

He introduced the rest of his staff as listed below:

Mark Blacket - diagnostics; projects (details later); fruit flies

Linda Semeraro - diagnostics; leafhoppers

Isabel Valenzuela - diagnostics; projects; aphids

Karen Brown - databasing, mosquitoes

Li Xin Eow - psyllid and fruit fly projects

Mackenzie Kwak - hon. associate; ticks

The Centre for AgriBioscience a.k.a. AgriBio is a joint venture between the Government of Victoria and La Trobe University. The state-of-the-art and purpose-built facility was completed in 2012 and it brings together research and training in plant biosciences, animal biosciences, soil sciences, biosecurity and bioprotection, including taxonomy and diagnostic functions and it houses some important collections including the Victorian Agricultural Insect Collection.

Information about Invertebrate Diagnostics / Taxonomy and Collections at AgriBio was presented via a PowerPoint presentation.

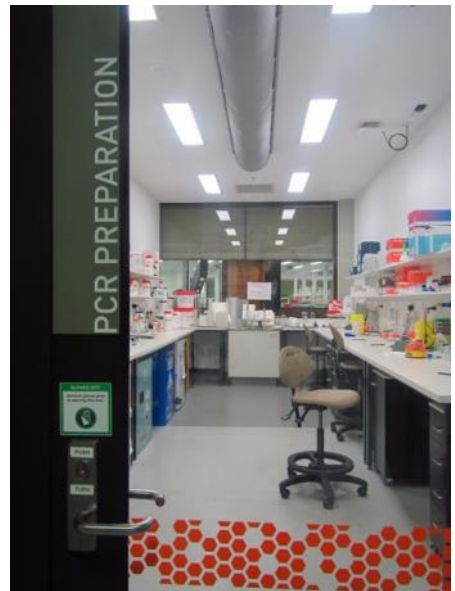
The purpose of the Centre is to enhance bio-protection; secure Victorian food products in global market and biosecurity in Victoria.

The scope of their work is broad and includes identification of pests and other invertebrate taxa. This can be a complex process and may involve the following:

- Preparation of specimen
- Preserving, fixing,
- Dissecting if necessary
- Mounting, labelling
- Identification
- Examining under microscope
- Observing and interpreting diagnostic characters
- Using resources: descriptions, keys, protocols,
- Using reference specimens in collection,
- Using experience, etc.



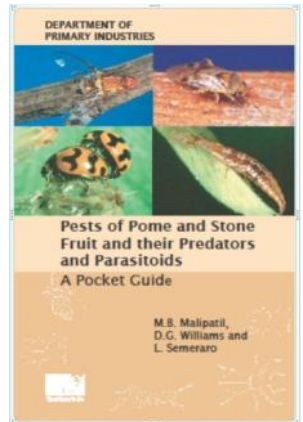
Mark Blacket demonstrated the sharp colour images possible by with the Leica microscope and auto montage of 20 images.
Photo: Julia McCoey



The PCR preparation room is a 'clean room' we observed only through the glass door.
Photo Carol Page

Once identified these specimens are databased for access via Australian Plant Pest Database and are added to the reference collections. DNA bar coding is also utilised especially where morphology is problematic such as for eggs and larvae. Only a small proportion of species have been bar coded thus far. Within insects approximately 168,700 spp [out of a likely one million spp] were bar-coded as of 2016.

An important aspect of their work is the development of diagnostic resources that are useful for non- specialists. An example is *Pests of pome and stone fruit and their predators and parasitoids : a pocket guide*, a 96 pp. illustrated book revised in 2009.



Much taxonomic and diagnostic research is carried out. Amongst a long list of such projects recently completed is the taxonomic revisions of a number of Heteropteran bug groups, including descriptions of one new family, one subfamily, one tribe and several genera and species.

An interesting Lygaeoid bug from the Ghat region of India has been described that is an ant mimic, lives in the rainforest canopy and is not a predator. This is *Indopamphantus makutaensis* shown in photo right.



Recently described
Indopamphantus makutaensis

Some current studies include:

- Taxonomic revisions of two Heteroptera bug groups, Holoptilinae (Reduviidae) and Mirinae (Miridae). Mostly alpha taxonomy.
- Pest *Carpophilus* (Nitidulidae) beetles
- Fruit flies
- Several molecular diagnostic projects involving fruit flies, aphids, psyllids, etc.
- Ticks (Mackenzie Kwak)

Mali's team are also involved in training members of ASEAN countries in order to (a) enhance the capacity of ASEAN countries to identify plant pests and diseases; (b) promote regional networking of this capacity (ARDN); and (c) stimulate the adoption of new, diagnostic techniques.

An example of this was the Scale Insects (Coccoidea) of Southeast Asia Diagnostics Workshop Kuala Lumpur.

Linda Semeraro showed us how the Collections data base works.

Mark Blacket shared some of the particulars of important current projects. Impressive was the Invertebrate Molecular Identification of Mosquitoes using DNA bar-coding. Multiple mossies within a single container can be tested at once and a list of species present obtained. This is most helpful as more than 100,000 mosquitoes are collected each year. If necessary, individual specimens from the vial can be examined later for their morphology.



Mali guides EntSocVic members and guests in lab coats. Photo: Julia McCoe

A highlight for the group was being taken through the security doors and up into the team's work area where diagnostics and research is carried out and where the collections are held.

Here all, including visitors, don white lab coats to protect the area from any inadvertent contamination that might be carried on our clothing (photo previous page).



Emily and Josh Grubb enjoy the Lepidopteran collection. Photo Julia McCoe

It was noticeably cool when we were ushered into the Collections room. This room is specifically climate controlled and designed to prevent contamination of the collection.

Agriculture Victoria at AgriBio holds the most comprehensive reference collection of plant pests and pathogens in Victoria. [Museum Victoria holds the biodiversity collection]. It is of immense scientific value as a repository for our knowledge of plant pests and pathogens in Victoria. It contains verifiable records of all plant pests and pathogens present in Victoria, as required by the World Trade Organisation, and underpins taxonomic, genetic, agricultural and ecological research and provides reference material for Australian Department of Agriculture and Water Resources, Biosecurity Victoria and Diagnostic Services and Crop Health Services. In addition it is a valuable resource for scientists involved in plant health and Integrated Pest Management and research.



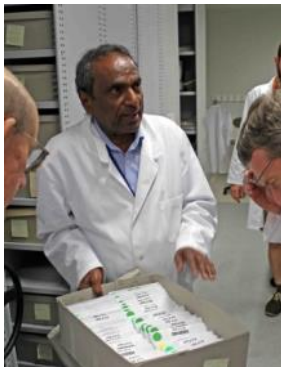
Sue Bendel and Carol Page inspect items from the Charles French collection. Photo: Julia McCoe

The Collections include the Victorian Agricultural Insect Collection VAIC that had its origin around 1889 when Charles French Sr. was government entomologist (1889-1911). Currently it holds about 200 000 specimens of insects, arachnids and other invertebrates. About 80 000 of these are databased and accessible via Australian Plant Pest Database and Atlas of Living Australia so far. Specimens include pest species, beneficial species (including biocontrol agents of weeds and invertebrate pests; also specimens of interest to agricultural ecosystems, forestry, parasites of animals and vectors such as mosquitoes. Also held here is the Victorian Agricultural Insect Tissue Collection VAITC.

The Animal Parasite and Pathogen Collection is now at AgriBio, comprising ectoparasites (insects, ticks, etc.) and endoparasites (nematodes, cestodes such as tapeworms, trematodes)



Mackenzie Kwak shows some items from the endoparasites collection. Photo: Julia McCoey



Mali displays some specimens from the national collection. Photo Julia McCoey

common in livestock and wildlife in Victoria. There are about 10 000 specimens including slides of endemic diseases seen in Victoria and some slides of exotic diseases from around the world that have been eradicated from Australia. Mackenzie rolled out a trolley of some of these for our inspection.

The Plant Parasitic Nematode Collection is also housed here. This comprises about 10 000 slide mounted and 5 000 unmounted specimens.

The Victorian Plant Disease Herbarium is one of three herbaria that comprise the National Collection of Fungi and also contains bacteria and viruses. There are 40 000 preserved specimens and also 2 000 living cultures of fungi and bacteria.

Most specimens in the previous two collections are databased and accessible via the Australian Plant Pest Database.



Isabel Valenzuela with the cabinet that contains the aphid collection. Photo: Julia McCoy



Linda Semeraro demonstrates the detail that can be seen via the electron Microscope. Photo: Julia McCoy



Details of insect shown on the Scanning Electron Microscope. Photo by Carol Page.

A highlight for Joshua Grubb was learning about the robots in the clean lab that help load PCR plates (used in synthesizing DNA), a job that he has spent many hours doing in La Trobe. Loading each plate can take a while, as there are 96 wells in each! Also, it helps keep the reactions from being contaminated. The separation of different labs, for different stages in DNA synthesis, would make DNA synthesis less susceptible to contamination and certainly help workflow. Altogether, the labs were well designed and looked like a good place to do DNA barcoding. Of great interest to many of us was a 2mm insect viewed through the Hitachi electron microscope. It was most impressive zooming-in past the gross morphological features to see the minute individual punctations on the exoskeleton each with a single minute bristle protruding. Although these images lack colour the structural detail is impressive.

Mali has invited any interested members of the EntSocVic to volunteer to help with the collections. A potential project would be to create an annotated list of beetle specimens from Charles French Snr (and Charles French Jnr) Collection. This would involve examining specimens held in our collection, as well as in Melbourne Museum collection, for a publication in Victorian Entomologist or another publication. He said that any assistance would be most appreciated.

Many thanks are due to Mali and his staff for taking the time to show us around their impressive work place and the collections and then treating us to coffee, tea and biscuits. So much of interest had been stirred up it was hard to take our leave for the evening. Thanks also to Julia, Carol and Peter C. for taking photos on this excursion.

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

Attendance: Peter Marriott, Maik Fiedel, Ray Besserdin, Peter Carwardine, Steve Curle, Linda Rogan
Apologies: Joshua Grubb

Previous Minutes of the council meeting held on 19 September 2017 (reported in October 2017 Vic. Ent 47 (5) p. 113-114.

M: P. Marriott

S: R. Besserdin

The treasurer's report for July and August ,not previously included in Bulletin, are below:

JULY	AUGUST
Account Balances:	Account Balances:
General: \$3266	General: \$2582
Le Souéf: \$7835	Le Souéf: \$7835
Publishing: \$24902	Publishing: \$25094

End of year event at Pound Bend on 25 November

Details of this event were discussed. Peter Muller will reveal local ants, Maik will present aquatic invertebrates along with Ian Endersby, Linda Rogan will search for and discuss the Imperial Blue Butterfly colonies. Peter Carwardine, Julia McCoe and P. Marriott can lead groups as they move between the designated areas and search for additional insects. Additional ESV members will join in various groups as they arrive.

Publications Report

MOV 8 is now available; MOV 9 is about half way to completion and MOV 10 is underway. The Moths of Victoria series has become the authoritative reference on this topic and is widely recognised both locally and overseas. Around 1500 copies of MOV 1 have already been sold.

There is a need to find an alternative to the CDs that are currently included in the back of each book. This may be some sort of cloud access. The books without the CD would cost about \$6 plus cost of cloud service.

There is also a 'Biodiversity Heritage Library' established by the Smithsonian Institute with a branch operating from the Melbourne Museum. Peter Marriott is looking into these two items and has the council support to do so.

Gippsland Lakes Lepidoptera has been completed. The East Gippsland Lake Catchment Area grant for \$2200 means that this will be able to be supplied to appropriate groups for free. This would include Parks Vic, local schools, the aboriginal community, local shires and Museum Victoria. Council fully supports Peter M. in approaching Parks Vic about other possible areas to be featured such as the Otways.

M: Peter Marriott S: Julia McCoe

A motion of thanks and highest commendation to Peter Marriott and the MOV team was offered.

M: Peter Carwardine S: Ray Besserdin Carried unanimously.

Future meetings and locations

As it appears that the museum venue may not be available early in 2018, Peter Marriott is investigating alternative arrangements. Members will be notified as soon as venues are known.

20 February will be a members' presentation night.

17 April is the AGM and a potential speaker is being approached.

Officers and Council Members for 2018

At the Annual General Meeting members are invited to nominate as council members. Patrick Honan has informed us that he is not returning to Melbourne permanently and will not reapply for the president's role. The position of secretary is currently vacant. An email will be sent to members and a flyer will be inserted in the February bulletin.

Online Forum for EntSocVic

This will be discussed further by Julia and Steve.

Goodwill Wines Ray has full support of council to push the artwork to completion including any foreseeable costs.

Meeting closed.

Notes on the life cycle of *Cryptoptila australana* (Tortricidae), the Elderberry Panax Leaf Roller Moth, in Victoria's Central Highlands

Louise Durkin (LD): Ecologist at Arthur Rylah Institute for Environmental Research (ARI)
louise.durkin@delwp.vic.gov.au
Peter Marriott (PM): Entomological Society, Melbourne Museum
tric-pete@bigpond.com

Since the spring of 2014, a team of ecologists and arborists have been using arboreal camera trapping to survey for Leadbeater's Possum (*Gymnobelideus leadbeateri*) throughout its range in Victoria's central highlands. Over 400 sites have been surveyed, amounting to many months in the field for the observers. In addition to the ten mammal species detected by the cameras, other patterns in the annual rhythms of the forest are observed. In spring and summer each year Louise noticed a conspicuous feature in the Alpine Ash (*Eucalyptus delegatensis*) forests – in some areas almost every individual of the common understorey shrub Elderberry Panax (*Polyscias sambucifolia*: Araliaceae) supported silken web structures, up to ~ 20 cm across, of live leaves bound together by the silk of moth larvae, which communally inhabited the rolled leaf shelters (Fig. 1).

Curious about these remarkable silken structures and the identity of the larvae, in January 2016 photos were sent to Ken Walker at Museums Victoria, who advised the collection of larvae for identification once grown to the adult stage. Alas, by the first week of February, not a single larva could be found in the disused, collapsed remains of the shelters on host plants in the same area.

Louise's curiosity was shelved until the following spring, when in October 2016 she observed tightly-bound, smaller (~ 50 mm long) rolled leaf shelters on the terminal branchlets of Elderberry Panax. Prising these open revealed groups of at least 12 larvae, ~ 8 mm in length (Fig. 2). Throughout the field season, the growing larvae in their silk web shelters were observed across the Central Highlands, particularly in Alpine Ash but also Mountain Ash (*E. regnans*) forests and in mid-December Louise collected several shelters, the larvae by then ~ 20-30 mm in length, and forwarded them to Peter Marriott for identification.

Larvae were at various stages of development, dispersed in the container and concealed amongst kitchen paper. One immediately entered the prepupal stage (Fig. 3) then pupated in a finely woven silk shelter (Fig. 4). The others continued to develop (Fig. 5) and progressively pupated (Fig. 7). The first emergence, on 2 January 2017, was a parasitic wasp (Fig 6) early in January, apparently from the first pupating individual.

Four adult males emerged between 18th and 19th of January 2017 (Figs 8 - 10). The adults were then identified as *Cryptoptila australana* (Lewin, 1805) the Elderberry Panax Leaf Roller Moth. These were set and placed in the Museum collection (Fig. 11).

While Peter monitored the progress of the collected larvae, Louise continued to observe *C. australana* in the field. When first noticed in October, the rolled-leaf shelters each contained at least 10 larvae. By December, the silken structures were expanded (~ 20 cm across) and the larvae roamed throughout (evidenced by their frass suspended in the silk). By January, the larvae had abandoned their communal habits, and each of several dozen shelters examined in the field, without exception, contained a single larva only, now grown to a length of ~ 30 mm. This progression is apparently typical for *C. australana* (Common, 1990). Newly created shelters of fresh green leaves in January each accommodated one mature larva, 'preparing to pupate' (Fig 3). Larvae also appeared to be sensitive to disturbance and, if brushed against or approached by human hand or camera, would vigorously writhe out of their self-constructed homes and drop to the forest floor - presumably a predator escape response.



Yarra Ranges - 11 November, 2015



27 October, 2016



**Pre pupal stage
21 December, 2016**



21 December, 2016



Emerged 2 January, 2017



8 January, 2017



Yarra Ranges NP (Vic)
-37.55947 145.8743
18 Jan 2017
L. Durkin, P Marriott
x larva
Flora and Fauna permit
10007340

Wingspan: 27 mm

The emergence of the parasitoid wasp from the *C. australana* pupa collected on 18 December 2016 indicates it had been parasitised at least 15 days prior, and that the parent wasp had deposited eggs directly into the body of the larva. The precise length of the wasp's pupal stage within the host is unknown. That there were still many full-sized *C. australana* larvae present in the field until at least mid-January allows for more than one generation of wasps to parasitise the moth larvae. This natural population control would reduce the numbers of *C. australana* reaching adulthood each summer, though it is not known by how much. It is also unknown whether the parasitoid wasp is specific to *C. australana*.

One association that is clear is the relationship between *C. australana* and its host plant, Elderberry Panax, to which it may be specific (Common, 1990). The plant is locally common in cool wet Eucalypt forest, and is particularly abundant in Alpine Ash forest along the eastern and northern boundaries of Yarra Ranges National Park, where it is rare to encounter an individual that does not support several silken leaf shelters of *C. australana*. Potentially of note are the browsing impacts by the introduced Sambar Deer (*Rusa unicolor*), which has an increasing population in Victoria (Forsyth et al. 2012). In areas with frequent deer sign, Elderberry Panax appears to be heavily browsed (S. Smith pers. comm, L. Durkin pers. obs.). While Elderberry Panax is not thought to be a preferred food plant of Sambar (Bennett 2008, Forsyth and Davis 2011), individual plants may still be heavily affected (A. Bennett pers. comm.). The effect of increased Sambar browsing on the survival of *C. australana* at specific localities may warrant further study.

In February of 2016 and 2017, *C. australana* larvae and pupa were absent from the rolled leaves of Elderberry Panax. The empty shelters with their residual silk break down and are replaced by new growth. Notably, close examination of Elderberry Panax through April and May 2017 in the Cathedral Ranges and south of Marysville revealed groups of up to 27 new *C. australana* larvae, ~ 3 mm in length, sandwiched between two leaves joined with silk (Fig. 12). Evidently, this species exists on the host plant as larvae from at least April until at least January, with the adult form emerging around late January.



The opportunity to observe two annual cycles of *Cryptoptila australana* has been a satisfying exercise in curiosity and education for Louise, who looks forward to following further generations of this interesting Tortricid moth in Victoria's forests.

References

- Bennett, A. (2008) The impacts of sambar (*Cervus unicolor*) in the Yarra Ranges National Park. PhD thesis. University of Melbourne.
- Common, I.F.B. (1990) Moths of Australia. Melbourne University Press, Carlton, Victoria.
- Davis, N.E., Bennett, A., Forsyth, D.M., Bowman, D., Lefroy, E.C. Wood, S.W., Woolnough, A.P., West, P., Hampton, J.O. and Johnson, C.N. (2016) A systematic review of the impacts and management of introduced deer (family Cervidae) in Australia. *Wildlife Research* 43: 515-532.
- Forsyth, D.M. and Davis, N.E. (2011) Diets of non-native deer in Australia estimated by macroscopic versus microhistological rumen analysis. *Journal of Wildlife Management* 75(6): 1488-1497.
- Forsyth, D.M., McLeod, S.R., Scroggie, M.P. and White, M.D. (2012) Modelling the abundance of wildlife using field surveys and GIS: non-native sambar deer (*Cervus unicolor*) in the Yarra Ranges, south-eastern Australia. *Wildlife Research* 36: 231-241.

The Naming of Australia's Dragonflies



Ian Endersby, Heinrich Fliedner
Busybird Publishing, Eltham,
Victoria, Australia ©2015
Reviewed by Richard Rowe

Who would want to read a book titled
The Naming of Australia's Dragonflies?

If you appreciate fine, educated, writing, and meticulous scholarship, then likely you would. Whereas the title fairly bristles with warning signs for turgid dusty prose, promising a tour of the minutiae of worn, lichen-covered, headstones in an ancient cemetery, actually opening the volume and casting an eye across the text releases a new world.

The writing is good. Spare and to the point with barely a wasted letter, yet eminently readable with a natural flow.

This is unashamedly a work of scholarship. But this mustn't put you off.

The volume is organised logically, and smoothly, with an introduction to the history of the science: accurate, readable, and stopping just where it should; this followed by a concise, accurate, summation of things you suspect you should know, but for which you likely need a refresher.

(Continued on page 130)

(Continued from page 129)

There follows a series of pen portraits of the scientists who have named our fauna, prominent among which was a Belgian Senator, as well as the usual crowd of professional and amateur scientists. That Frederick Fraser attended executions in his role as medical superintendent of prisons is not mentioned, but was the source of a nick name he acquired from a certain Cambridge set. The vast bulk of the volume, which follows, is devoted to the etymology of the names.

This work is thorough, with text cited in the original language of the describer of the taxon, followed, where needed, by a translation into current English. This, as someone who has tried to get some of these works translated, is no easy task. Mid nineteenth century literary Belgian French is a challenge to current speakers of the language. It is a pleasure to have this task done for you.

There are characters to be celebrated. Can you see your bank manager spending all his spare hours in the pursuit of insects, as the redoubtable Mr Billingham of the Union Bank Branch at Alexandria, and later Bacchus Marsh? Eponyms selected for much of our fauna celebrate a diversity of scientists and collectors, many of whom devoted countless hours to the science of entomology, often at considerable personal sacrifice and in the face of some discomfort. And unlike his fellow bank managers, Farncombe Billingham has a perpetual, living, memorial.

There are some points of issue, likely left as traps to check the thoroughness of the pedantic reviewer ... For one: Robin Tillyard was only known by that name to family and colleagues, but seemingly was christened 'Robert', a name he abandoned at school. I think there are a couple of others, perhaps debatable ... but these are left as an exercise for the reader.

As a reference work this is exceptionally readable, and the thoroughly researched reference list provides an essential bibliography to the taxonomy of the Australian Odonata. For that alone the authors are due our gratitude. Researching, and tying down, ancient and sometimes obscure literature, often only found in the stack rooms of old libraries, is a task for public spirited experts, not your average scholar.

In any civilised country every Order of insects would be treated to a volume of this nature. The Australian dragonflies have one.

This collaborative effort by Ian Endersby and Heinrich Fliedner is remarkable in yet another way. It is available free of charge by request to Ian Endersby, an extraordinary act of generosity. Editor

Contact Ian Endersby by email :

ian.endersby@bigpond.com

Range Extension Records for Various Butterflies throughout Australia

Frank Pierce, PO Box 121, Kangaroo Ground, VIC 3097. Email: jmandfp@bigpond.com

Introduction

In recent years the author recorded 12 butterflies (six species) outside their normal range as indicated in Braby 2016. Photographs of adequate quality to confirm identification were taken in most cases.

These records occurred on touring-camping trips from Melbourne to Far North Queensland. These records are additional to the 109 records, previously published by the author in the Victorian Entomologist in 2008, 2010 and 2012, which were incorporated into distribution revisions in Braby 2016.



Broad-banded Awl *Hasora hurama* Chilli Beach Eichhorn's Crow *Euploea eichhorni* Mclvor River

Methods

Most butterfly sightings were opportunistic. When a butterfly was seen it was photographed, if possible. The images were then used to identify the species from Braby 2004 or 2016. A large magnifying glass was often used for detailed inspection of the images in the field guide. Trip lists were kept for all butterflies seen each day and 'out-of-range' sightings were noted on these lists. No attempts were made to catch any butterflies by netting or any other means.

Photos were taken with a hand held Canon Powershot SX50-HS compact digital camera, generally set at x50 optical, (which is equivalent to a 1200mm lens for a 35mm film) at a distance of 1300mm minimum.



Orange Swift *Parnara amalia* Lake Mitchell

Indigo Flash *Rapala varuna* Scrubby Creek

Results

Details are listed in Table 1, with approximate 'out-of-range' (OoR) distance (km) and direction from the closest edge of the range shown in Braby 2016. One record is outside the indicated temporal distribution being the first known sighting for August.

Discussion

Record photos were taken except where indicated by # in Table 1.

The *E. tongura* ID (rather than *E. walkeri*) is based on geographical criteria (M Braby pers. comm. 29/05/17)

In 2017 *Acraea terpsicore* was seen many times from Mt Carbine to Townsville. The records for Iron Range and Weipa are included as they may be significant due to their remote northern location.

All common names are as used in Braby 2016.

Thanks to Michael Braby for encouraging me to publish these and my initial findings some years ago.

References

Braby, M. 2016. The complete field guide to the Butterflies of Australia. CSIRO Publishing, 384 pages.

TABLE 1

SPECIES	LOCATION	DATE	LAT.	LONG.	OoR
Broad-banded Awl <i>Hasora hurama</i>	Chilli Beach Iron Range NP	13/07/2015	12° 37'49"	143°25'41"	130s
Orange Swift <i>Parnara amalia</i>	Lake Mitchell ~22k n of Mareeba	9/08/2013	16°47'55"	145°21'40"	t
Eichhorn's Crow <i>Euploea eichhorni</i>	McIvor River ~43k nnw of Cooktown	25/07/2008	15°7'10"	145° 4'30"	220sw
Eichhorn's Crow <i>Euploea eichhorni</i>	Keatings Lagoon 5k sw of Cooktown	22/07/2014	15°30'27"	145°13'43"	250sw
Eichhorn's Crow <i>Euploea eichhorni</i>	56k s of Coen	8/07/2015	14°23'44"	143°21'42"	50s
Eichhorn's Crow <i>Euploea eichhorni</i>	1.5k se of Isabella Falls	23/07/2016	15°18'20"	145° 0'58"	230sw
Eichhorn's Crow <i>Euploea eichhorni</i>	McIvor River ~43k nnw of Cooktown	5/07/2017	15° 7'10"	145° 4'30"	220sw
Eichhorn's Crow <i>Euploea eichhorni</i>	Keatings Lagoon 5k sw of Cooktown	8/07/2017	15°30'27"	145°13'43"	250sw
Indigo Flash <i>Rapala varuna</i>	Scrubby Creek 14k nw of Cooktown	17/07/2014	15°25'23"	145° 7'54"	110n
Pipeclay Pearl-white <i>Elodina tongura</i>	5k n of Karumba	9/07/2016	17°26'25"	140°50'35"	160e
Tawny Coster <i>Acraea terpsicore</i>	Iron Range NP	22/06/2017	12°44'44"	143°16'36"	-
Tawny Coster <i>Acraea terpsicore</i> #	Weipa	23/06/2017	12°35'18"	141°53'39"	-

- No photograph for this record

t - Outside indicated temporal range



Tawny Coster *Acraea terpsicore* Iron Range NP



Pipeclay Pearl-white *Elodina tongura* Karumba

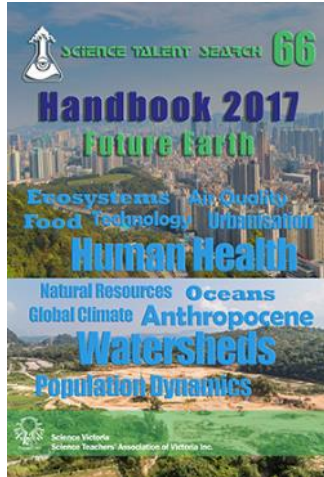


Moths of Victoria - Part 8

Just published is the second of the noctuid books. This one covers some of the more well known noctuid moths including the black and white day flying agaristines and the large catocalines. All up about 160 more Victorian moths taking us to about 1200 species. With a team of photographers and researchers we now have all the specimens pinned and over 80% photographed in natural positions. There are also 25 life cycles detailed with the usual distribution and flight time data. Member price is still \$10.00 and the order form is available on the society web page (http://entsocvic.org.au/?page_id=52).



The Science Talent Search 2017



The **Science Talent Search** (STS) is an annual, science based competition open to all primary and secondary students in Victoria, Australia. Each year the Victorian Entomological Society makes a small contribution to the Science Talent Search competition. The two students who won the bursaries in 2017 have sent us thank you notes that are shown below:

Dear Mr Grubb,

My name is Troy Ma in year Two at Doncaster Gardens primary school

Thanks for the bursary award.

its a big surprise for me and my family is very proud of me. My grandpa said that he used to play with ants when he grew up in Africa and is interested in this too.

My experiment was sugar ants vs red back spiders. You have to be careful with red backs because they're dangerous

Because I got bursary ,I want to join next years ceremony so I will learn more about ants and spiders.

from Troy Ma (Sirui Ma)

Dear Mr. Grubb,

I would like to thank you for sponsoring my poster 'What if the bees went extinct' in this year's Science Talent Search. I really appreciate that you thought my poster was eligible for Minor Bursary worth \$40.

Once again thank you very much,

Urmika Nandwani

Mount Waverley Secondary College- Junior School

If the letters alone aren't enough to prove the worth of this small investment, I recently learned that Julia McCoe, one of our Council Members, first learned of the society as a bursary winner in 2003. I call that getting our money's worth. ~Editor

Index of the Victorian Entomologist Volume 47 (2017)

Bryne, C. Hill, L. Castor caterpillar moth in Tasmania	89
Dunn K.L., Petrie E. Arrival of the Tawny Coster butterfly in the Bowen region, Queensland	109
Dunn, K., Woodger T. Arrival of the Tawny Coster butterfly in the Townsville region, Queensland	87
Dunn, K., Hawkeswood T. - Glenbrook butterflies continued from April Issue	70
Dunn, K., Hawkeswood T.J. 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
Durkin, L., Marriott, P. Notes on the life cycle of <i>Cryptoptila australana</i> (Tortricidae), the Elderberry Panax Leaf Roller moth, in Victoria's Central Highlands	125
Harris K, Victorian Neuroptera – Part 6, Myrmeleontidae - Antlions (part 1)	30
Harris, K. Additional Victorian Lacewings	107
Harris, K. Victorian Neuroptera – Part 7 Myrmeleontidae - Antlions (part 2)	57
Harris K Victorian Neuroptera – Part 8, Sisyridae – Sponge-flies, Nevrorthidae, and Coniopterygidae – Dusty-wings	99
Lagerwey, M. Leaf Beetles <i>Calomela</i> and <i>Dicranosterna</i> CHRYSOMELIDAE Subfamily Chrysomelinae	83
Lagerwey, M. Leaf Beetles Genus <i>Peltoschema</i>	66
Lagerwey, M. An Introduction to leaf beetles Part 2 Paropsisterna Section 2 <i>Chrysophtharta</i>	9
Marriott, P. Bush Blitz 2017 Croajingolong P79'	
Notes from Entomological Society of Victoria Excursion to Braeside Park	1
Pierce, F. Range Extension Records for Various Butterflies throughout Australia	131
Queen's Birthday Honour for Allen Michael Sundholm OAM	17
Rogan, L. The beginning of wisdom is to call things by their proper names	23
Rogan, L. Last hope for Green Carpenter Bee <i>Xylocopa (Lestis) aeratus</i> bees in south east Australia?	14
Vale Alan Louey Yen	63

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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@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 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.

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CONTENTS

	Page
Minutes of the Entomological Society of Victoria General Meeting and Notes from the Excursion. Tuesday 17 October 2017 at Centre for AgriBioscience LaTrobe University Campus	117
Durkin, L. Marriott, P. Notes on the life cycle of <i>Cryptoptila australana</i> (Tortricidae), the Elderberry Panax Leaf Roller moth, in Victoria's Central Highlands	125
Book Review: <i>The naming of dragonflies</i>	129
Pierce, F. Range Extension Records for Various Butterflies throughout Australia	131
Winners of our bursaries from the Science Talent Search 2017	135
Index of the Victorian Entomologist Volume 47 (2017)	136

DIARY OF COMING EVENTS

Next Meeting: Members' presentations
20 February 2018
7:45 start

Members' presentation nights are a popular way to communicate your entomological interests and projects to other members. In general presentations are brief allowing as many as possible to be presented on the night. Please notify secretary@entsocvic.org.au as to what you will present.

Watch the email for the announcement of new location

General Meetings 2018

Month	Date	Planned event
April	17	AGM with speaker and location to be announced.
June	19	General meeting
August	21	TBA
October	16	TBA
November or December		End of year event watch this space

Council Meetings are held at the Museum Victoria at 5:00 pm
on the following Tuesdays in 2017:
16 January, 20 March, 15 May, 17 July, 18 September and 20 November

The Society's Home Page on the World Wide Web is located at:
www.entsocvic.org.au



Also find us on facebook.



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