

Victorian Entomologist



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

SUBSCRIPTIONS

Ordinary Member	\$35	
Overseas Member with printed bulletin		\$65
Country Member	\$31 (Over 100 km from GPO Melbourne)	
Student Member	\$23	
Electronic (only)	\$20	
Associate Member	\$ 7 (No News Bulletin)	
Institution	\$40(overseas Institutions \$80)	

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

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

Cover and logo design by Ray Besserdin 2017

Cover photo: *Doticus palmaris* Male photographed by Tony Daley in mid November 2018 in Franklin, Tasmania.

**Minutes of the Entomological Society of Victoria general meeting
and notes of back of the house excursion
Tuesday 20 August 2019 19:45
Melbourne Museum**

Attendance: Martin Lagerwey, Lyn Meredith, Linda Rogan, Peter Marriott, Peter Carwardine, Maik Fiedel, Sharon Mason, Joseph Schubert, Stuart Lay, Carol Page, Ian Endersby, Ken Harris, Geoff Hogg, Stephanie Versteegen.

Apologies: Joshua Grubb, Julia McCoey, Sue Bendell, Robin and Gordon, Trevor Kennedy, Ray Besserdin.

This meeting was chaired by Vice President Martin Lagerwey.

Previous minutes:

Minutes of the EntSocVic General Meeting 18th June as printed in VE Vol 49 no. 4 p69.

M: Peter Carwardine

S: Carol Page

A short meeting occurred prior to viewing the live exhibits.

Le Souëf award: Lyn discussed a query received from a potential nominator of recipient for the award. She asked, "is the award open to duo effort? Can a duo be nominated?" All agreed this was a fair and reasonable thing to do.

Moved by Peter M.: The Le Souëf Award be open to duo nominations.

Seconded by Linda Passed ACTION: Le Souëf award details to be updated to reflect this.

Treasurer's report: None

Other business: None

Meeting closed: 7.55



EntSocVic members in the maze of corridors between habitat rooms.

Voyage of discovery behind the scenes of the Museums live exhibits.

Vice President Martin Lagerwey introduced Society member Maik Fiedel, Coordinator of Live Exhibits at the museum. Maik was assisted on the tour by Stephanie Versteegen, Senior Keeper Live Exhibits.

Maik is in charge of all living animal stock and the keepers, both at the Museum and also via various outreach programs such as Backyard Bugs and Aussie Bush. He told us about the area and some of the activities involved in keeping over 100 different species of invertebrates and thousands of individuals necessary to guarantee suitable animals for display. This is a 365 day per year task.

Although feeding all carnivorous invertebrates is carried out primarily on Wednesdays when there are extra staff, a top-up feed is carried out on Sunday for any animals that may be losing condition or gravid. Every enclosure is serviced on a daily basis, providing fresh browse, specially developed orthopteran mix, fruit or vegetables and a mist spray of fresh water. Cleaning the enclosures and monitoring the health of the animals is required on a daily basis. The insects are housed in rooms with different conditions according to their needs. These are the humid invertebrate room, the arid country room and the temperate climate room. The lighting conditions are also controlled for an artificial day and night.

With this background information, the tour began wandering down a maze of narrow concrete corridors to the humid invertebrate room. As we entered, we were hit by the muggy warmth and smell of this tropical environment. This room is located beneath the Living Forest display and the overhead pipe-works of its irrigation system help to keep the humidity high. Here most of the cages were kept without organic substrate as it becomes mouldy very quickly. Exceptions were made for invertebrates that required substrate in order to breed. This included giant rainforest millipedes, giant rainforest snails, king crickets and rainforest centipedes.

In this room the temperature is kept between 24 degrees Celsius at night and 32 degrees Celsius during the day with humidity over 90%. Each animal is numbered and coded for feeding and other requirements.

Animals for display require a perfect appearance however animals which accidentally lose a leg can be kept for breeding. Some species are chosen for display specifically for their ease in breeding. An example of a good breeder is the giant rainforest mantid *Hierodula majuscula*. This



Maik Fiedel holds a mantid. Photo Martin Lagerwey



Giant rainforest mantid *Hierodula majuscula* photo Carol Page

is one of the largest mantid species in the world. It lives in tropical Queensland and breeds well in captivity and can be easily handled. These characters make it a good choice for display purposes.

Not all the animals displayed are bred on site as some grow to exhibition size too slowly and are also long-lived so it makes more sense to purchase them as required. For example, the large grey whistling spider or Australian tarantula from the Theraphosidae family. These individuals can be collected periodically as required from northern Queensland under a specific permit.

Giant centipedes, require substrate for breeding. This was one animal that cannot be handled due to its painful venomous bite. The photograph was taken through the side of its enclosure for safety. These centipedes can often be found eating road killed reptiles or frogs, when driving the roads during warm and wet summer nights.



Enclosures in the humid room. Photo Maik Fiedel

Occupants of the humid invertebrates room.

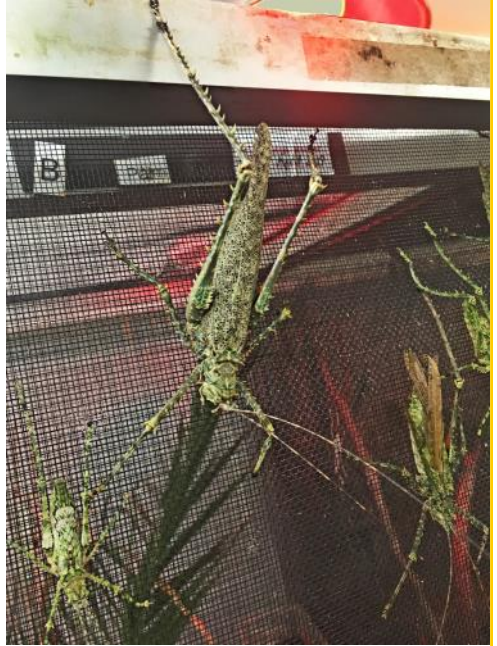


Australian Tarantula
Selenocosmia crassipes B9075 (0.0.1)

C



Giant millipede Rhinocricidae family



Rainforest katydids, *Phricta spinosa*
Photo Lyn Meredith



Giant centipede

Palm katydids, *Segestidia queenslandica* totally devour a palm leaf in a short time and have a nasty bite and so they, also, were not handled. More amiable were the spiny looking rainforest katydids, *Phricta spinosa*.

Giant millipedes, Rhinocricidae family, are quite spectacular but very slow to grow. The ones we saw were about 4 years old and only 50% of their adult size. Smaller species breed up quickly but the largest one requires years to get to its most impressive size.

Perhaps the most charming of the humid area insects was the walking leaf *Phyllium monteithi*. The female in particular has a thin abdomen which can curl up over its back in exquisite imitation of a thin rainforest leaf.



Walking leaf *Phyllium monteithi* female (left) male (right)
Photo Carol Page

The second room entered was the arid room which held desert animals from the Mallee to much further north. Temperature here was kept about 32°C. Maik stated that the population in this room was somewhat reduced at this time because the staff are currently simulating a short diapause with reduced daylight hours and temperature, before increasing both parameters to trigger breeding behaviour.

Many of the taxa are subject to boom and bust cycles where various triggers will stimulate mass breeding events. For example giant grasshoppers, *Valanga irregularis* live in desert conditions where breeding is triggered by rainfall. For these the substrate can be flooded with

water periodically to stimulate breeding. This can be done several times, perhaps more frequently than would occur in nature, but often after a few generations the number of young produced are reduced. In these cases, it is necessary to introduce just a few new breeding adults which Live Exhibits replenishes during the fieldwork season every year.



Maik, Ian, Ken, Martin (obscured) and Sharon above plus Joseph on the right, all enjoying the relative comfort of the arid room.
Photos Carol Page

An example of this happening is the spur-throated grasshopper in the family Acrididae. It is able to occur in plague proportions and can produce three generations per year. Without the dilution and addition of new genetic reproductive material, populations burn out quickly and the species can crash and won't recover, having no breeding animals left.



The third and last room on this level was the temperate invertebrate room. Perhaps the most interesting occupants of this area were the thriving colony of Lord Howe Island stick insects *Dryococelus australis*. Many shiny black adults were seen feeding on the leaves of Moreton Bay fig. Younger ones were still a bright green colour. Staff observed when the cage surrounds were painted black, the young began their transition to olive then black at an earlier stage.



Lord Howe Island stick insects
Dryococelus australis Juvenile
Photo Carol Page

Although on Balls Pyramid these insects feed only on one plant species, at the museum they happily feed on a range of plants including *Baloghia* sp., *Ficus* sp., *Pittosporum* sp. and tree Lucerne *Cytisus proliferus*. Their highest preference for food plant is Moreton bay fig, the lowest preference is for Lord Howe Island melaleuca, this is why this food plant species was deleted from our list.

The tour finished with a look at the live exhibit, Bugs Alive. Included here was a remarkable display of the green ants which needed to be surrounded by a moat of moving water in order to make sure they didn't escape and spread throughout the exhibit area.



Food plants of Lord Howe Island stick insects *Dryococelus australis* Photo Martin Lagerwey



Lord Howe Island stick insects *Dryococelus australis* Adults
Photo Carol Page

Overall this was a fascinating evening and for some this was their first look behind the scenes at the museum. Those of us who had visited before found much of interest as well.

Many thanks to Maik and Stephanie for sharing their knowledge of the living invertebrates which are kept in the museum.

Notices

The 2nd Australian Native Bee Conference will unlock the potential of native bees, a valuable but under-utilized natural resource.

This event, to be held in Brisbane on 5-7 December 2019, is the one and only national meeting of this growing activity. Organizers expect several hundred beekeepers, farmers, enthusiasts, industry leaders, educators and researchers to attend. Register by 13 Oct for Early-bee discounts. To register, find out more about prices, associated events, contact us, or get more details, go to: <https://australiannativebeeconference.com.au>.

AUSTRALIAN ENTOMOLOGICAL SOCIETY

50th AGM & Scientific Conference

Understanding the Australian biota in a changing world






in association with the:

SOCIETY OF AUSTRALIAN SYSTEMATIC BIOLOGISTS
and
AUSTRALASIAN ARACHNOLOGICAL SOCIETY

1-4 Dec 2019
Brisbane Convention
& Exhibition Centre





**EntSocVic end of year excursion
Saturday November 30th
Together with Friends of
Yarran Dheran Nature Reserve**



The Yarran Dheran Nature Reserve Advisory Committee is a voluntary committee and its members are a particularly active organizing many working bees and nature events. We are very pleased to be welcomed to their patch of superb bushland including Riparian, Valley Grassy and Valley Heathy Forest vegetation communities. This urban bushland corridor adjoining Parks Victoria reserves and is bound to reveal great entomological diversity.

We will be announcing the Le Souëf Memorial award winner at the excursion.

3.00pm - Arrive at the Yarran Dheran Information Centre

3.30pm (until approx.5pm) The invertebrate search will depart from the Information Center. Join the Yarran Dheran friends and the Entomological Society group members for a walk through the reserve. We may cross the Mullum Mullum Creek to the Parks Victoria sections as well. We will compile a list of invertebrates and we are likely to spot many birds in this beautiful bushland setting.

6pm – 7pm BYO everything for your twilight evening meal, a BBQ is available.

Light sheets will be operated from dark (about 9pm) until late.

Light refreshments, tea and coffee will be provided.

BYO - torch , snacks, and a fold out chair may be handy.

RSVP to secretary@entsocvic.org.au to let us know your arrival time, or phone Lyn 0477 888 949

The main entrance to the Reserve is at the end of Ashburton Drive in Mitcham (Melways 49B6). Enter through the car park.

The Reserve is also accessible by foot from Quarry Road and from Schwerkolts Cottage in Deep Creek Road



Butterfly Feeding

Kerri-Lee Harris kerrilee.harris@gmail

It's early Spring and there are more insects appearing every day now.

The *Leucopogon* flowers continue to pump out nectar, filling the air with the scent of vanilla and attracting a range of butterflies, bees and wasps.

Yesterday I watched on as a beautiful male Bright Copper butterfly male clambered about on a *Leucopogon* bush. This was our first sighting of Bright Coppers (*Paralucia aurifer*) for the season. Although these butterflies are relatively small, their brilliant colours and iridescence make them impossible to overlook.

The butterfly probed first one flower and then another with his long 'tongue'. His proboscis would flex and straighten. The two sides of it were clearly visible, yet the whole structure remained intact. He could tip it forward and back, changing the angle at which it projected from the front of his face. And occasionally he seemed to flex it to one side or the other (Figure 1-4).

Clearly, I thought, this is much more than a simple tube. It made me wonder what was responsible for the movement ... hydraulic pressure or muscles? And to what extent was he using it to sense his environment?



Figure 1-4 *Paralucia aurifer* male feeding on *Leucopogon*. Note mobility and 'elbow' of proboscis.

And then he really put on a show! He flew a short distance away from the bush and alighted amongst the leaf litter (taking full advantage of his camouflaged underwings). In an elaborate series of movements I've never seen before, he proceeded to groom.

He first wiped the tip of the proboscis against a piece of bark. Next, he brushed it clean by wiping it between the tibia and tarsus, which was folded back to form a V-shape. Finally, he re-coiled the tube and flew off.

So this morning I decided it was time I learned a bit more about the amazing butterfly tongue. A quick search delivered an excellent paper describing the structure and function in detail (Krenn, 2010 - <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4040413/>). Here is a summary of what I discovered:

An elaborate drinking straw

The proboscis is formed by the stitching together of two strap-like structures, 'galea', which are extensions of the maxillae (see Figs.2,3 in Krenn, 2010). (Butterflies have 3 mouthparts - the labrum at the front, followed by a pair of maxillae and the labium. Being liquid feeders, they have dispensed with the mandibles, a fourth pair of mouthparts between the labrum and maxillae, which are present in many other insects that chew solid food.)

Each galea is concave along its inner surface and so when water-tight connections join them together they form a long sucking tube. The dorsal seam toward the tip has gaps that allow fluid intake. There is a pumping mechanism in the head, and so ultimately the proboscis does work like a drinking straw. A very elaborate one.

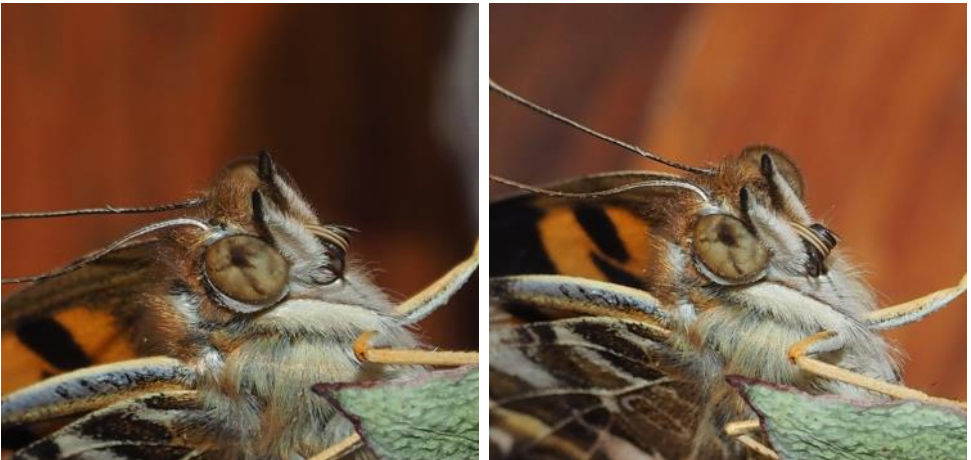
Given what we've learned about how the proboscis works, it's clear that a butterfly must be fastidious with its cleaning and maintenance. The tiniest bit of debris in the gaps in the dorsal seam will block the uptake of fluids.

The proboscis can taste and feel

The galea are complex organs, complete with nerves, sensory structures, and intrinsic muscles. The butterfly can taste liquids, gauging the sugar content. It can locate by feel, determining the depth and width of a floral tube. And it can move it sideways, flexing the muscles of one galea or the other.

Stitching together happens early and only once

When the insect first ecloses from the pupal case, the galea are separate. They are joined together by surface structures that interlock before the cuticle fully hardens, and they then remain joined throughout life. On reading about this process, I realised we had previously witnessed the interlocking process in action ...



Figures 5-6 *Vanessa kershawi* showing early stages of the proboscis stitching together.

These images show a *Vanessa kershawi* butterfly newly emerged from its pupal case. We watched as the wings slowly expanded and hardened, the insect eventually able to walk strongly and then fly off. What we had not appreciated at the time was the other transformation that was underway – the pair of galea gradually coming together from the base toward the tip, to ultimately form a functional proboscis. Fortunately we had captured this in a couple of photos. It is not something we are likely to see often.

Uncoiling and coiling

The proboscis doesn't appreciably change in length when it is 'extended' or 'retracted'. Rather, it is simply flattened and packed away as a tight coil when not in use. Fig.4 in Krenn, 2010 shows the coiling/uncoiling process.

Uncoiling is largely a hydraulic process and occurs in a series of steps:

- 1) Dorsal muscles at the base of the proboscis contract, swinging the coil up and forward. This releases the mechanism that was holding the coil secure and tucked in against the head.
- 2) The elasticity of the cuticle helps to unravel the coil into a loose 2-3 loops.
- 3) Other muscles in the head rhythmically contract, pumping body fluid into each of the two galea. The cuticle of the galea is flexible and elastic, accommodating the increased internal pressure by further uncoiling.

Recoiling is a little different, with more muscles involved:

- 1) The hydraulic 'valve' is released, allowing the pressurised body fluid to flow back out of each galea.
- 2) The elasticity of the cuticle recoils the proboscis into a loose coil of 2-3 loops. The images above of the Bright Copper grooming show the second step in the recoiling process - the hydraulic pressure released but the intrinsic muscles yet to rewind and flatten the coil.
- 3) The ventral intrinsic muscles of the galea contract to fully tighten the coil, squeezing most of the remaining body fluid out and flattening the proboscis again.
- 4) The entire coil is lowered through the action of other head muscles, returning it to the resting position tucked down against the head.

The proboscis has an 'elbow'

About a third of the way along there is an area with a different pattern of elasticity. Small changes in hydraulic pressure therefore enable the insect to 'flex' the proboscis at this point. You can see this happening in Figures 2-4. And this bend has functional significance. It enables butterflies to be quite generalist in their nectar-feeding. They can drink from flowers with floral tubes of various depths by bending the proboscis at the elbow.

But what about those other parts of the face?

In many butterflies the proboscis is flanked by a pair of large, upwardly pointing structures covered in hairs, which are particularly obvious in Figures 5-6.

These 'palpi', which are lateral extensions of the labium, house a range of sense organs. In at least some moths and butterflies that have been studied in detail, sense organs on the palpi can detect carbon dioxide concentrations in the air and the insects can use this as a cue to find flowers. They can even use relative carbon dioxide levels to detect the most nectar-productive flowers. Extraordinary!

(A different version of this article was first published in September, 2017 on our website Life in a Southern Forest - www.southernforestlife.net)

Reference:

Krenn, H.W. (2010) "Feeding mechanisms of adult Lepidoptera: structure, function and evolution of mouthparts." *Ann. Rev. Entomol.* 55: 307-327. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4040413/>

Then and now: *Doticus palmaris*

From Wings and Stings Volume 1 number 1 August 1965 p. 20

NOTES ON THE APPLE BEETLE

By J. Barnes

Apple Beetle was the name given by Mr. C. French to *Doticus palmaris*. This odd little insect was quite common in the orchard country of our metropolitan area in the early days of this century.

I have observed it on quite a number of occasions in mummified fruits; my last encounter with this quaint little fellow was some twelve years ago in shrivelled, diseased loquat in the Mount Waverley district. Its long, paddle-like front legs make it appear as though it should be related to the water beetles. However, it is not--it belongs to the family Anthribidae.

I wonder if any of our Coleoptera fans have met up with it recently?



Doticus palmaris male showing the male's "paddle-like" front legs.
Photo (left) by Kristi Ellingsen December 2012 on *Acacia* Photo right Tony Daley
See also cover photo.

What could be learnt about *Doticus palmaris* now, beyond it being a beetle in the Anthribidae family.?

A search led me to an excellent website *Insects of Tasmania*. Here I found excellent photos of this weevil (see also front cover) and along with permission to use some of them and I was pointed to further information in Zimmerman (1994).

A fascinating story unfolded. In late 1890s Charles French, the first Victorian government entomologist, had supposed this weevil was a serious pest, "a new destroyer of apple crops". "His observations were based upon information submitted to him by a Mr. Stiggants, orchardist in Warrandyte. However Froggatt 1902:708 corrected this information: "I have frequently bred this beetle out of shrivelled apples left hanging over winter in orchards around Sydney. But never knew it to do any damage to green or ripe fruit." It turns out its host plants include a range of fungus and wasp galls on *Acacia* and *Exocarpus* sp. a range of native seeds and mummified fruit, amongst other dead plant material.

In September 2019 *Doticus palmaris* is listed for 90 occurrences including 39 in Victoria, mostly around the Melbourne area. It is not considered to be a pest to apple crops.

Daley, A. & Ellingsen, K., 2012. *Insects of Tasmania: An online field guide* (September 2019) <<https://sites.google.com/site/insectsoftasmania/home>>

Zimmerman, E.C. 1994 *Australian weevils (Coleoptera: Curculionidae) I: Anthribidae to Attelabidae: The Primitive Weevils Volume 1*. CSIRO publishing

Interesting public enquiries received at Melbourne Museum.

The good, the bad and the ugly.

Simon Hinkley Collection manager, terrestrial invertebrates
askus@museum.vic.gov.au

One of the challenges of an identification service for insects and invertebrates is managing peoples' expectations. It is lovely that people think the museum has all the answers but it's tough when someone rings and says "I've found a beetle, what is it?" You then explain that there are literally tens of thousands of beetle species in Australia and that it is very hard to go to species level from a verbal description alone. This conversation is sometimes followed up with "Oh okay, so it has 6 legs and it's brown."

The advent of mobile phone technology means many of the population can take good quality images anywhere in the world at anytime. Requests to know the identity of insects, spiders, scorpions, ticks, millipedes, etc. usually number somewhere between 700 and 1,000 each year. We tend to have peaks and troughs with enquiries booming in summer and decreasing in winter reflecting the natural cycle of invertebrate populations. The reasons that people contact the museum are many and varied. For insects like butterflies and moths it is often an interest coming from a positive angle along the lines of what is this beautiful insect (unless it's a Clothes Moth or Indian Meal Moth). The advantage of working in a museum is having access to a huge and important collection but also a range of expertise. We are lucky to have on tap the knowledge of Peter Marriott, Marilyn Hewish and Cathy Powers to assist with the myriad moth identifications we receive.

Invertebrate queries

For invertebrates such as spiders, there is a very definite fear factor that comes with the majority of the enquiries we receive. The enquiry may be an image of a squashed spider or a letter with bits of a spider, and the question, what is (or was) this and is it dangerous to my family. We spend quite a bit of time reassuring the public of the benefits of spiders and the fact that there are no species of spider that actively seek out people to bite. Happily there are an increasing number of people who recognise how amazing and beautiful spiders can be.



Emperor gum moth, *Opodiphthera helena*. Image: Patrick Honan.

One intrepid young naturalist Gio Fitzpatrick who first started coming to the museum with specimens as a child was investigating the shoreline at Elwood in 2013 when he found a small spider with large jaws in the intertidal zone. He contacted the museum and our curator sent the images to an expert in Sydney who identified it as *Desis kenyonae*, a species of spider that hadn't been seen in Victoria since its scientific description in 1902. The fact that someone can find something like this near the centre of a city of 5 million people gives hope that many more native species are not just hanging on unnoticed but are still to be discovered. One of the challenges in trying to preserve invertebrates is the sheer diversity of species and accompanying effort required to identify and establish their distributions. In excess of 90% of all lifeforms on Earth are invertebrates. People who say they don't care much about insects or invertebrates



Desis kenyonae, Elwood. Image: Gio Fitzpatrick.

often soften their attitude when you say if you want echidnas, lyrebirds, frogs, blue whales etc you need their food source which is invertebrates.

One of our most 'popular' summer identifications is ticks. In Australia if you have been bitten by a tick it is important to know whether you have been a host for a paralysis tick such as *Ixodes holocyclus*. It is also important for the doctor to verify that they have removed all parts of the ticks' mouthparts or hypostome from the patient. You can see in the image below how serrated the hypostome is. Recently we have received a number of ticks that have been removed from people who have been on holidays in Europe. These particular European ticks can carry Lyme disease so it is



Hypostome of *Ixodes holocyclus*. Image: Simon Hinkley & Ken Walker, Museums Victoria.

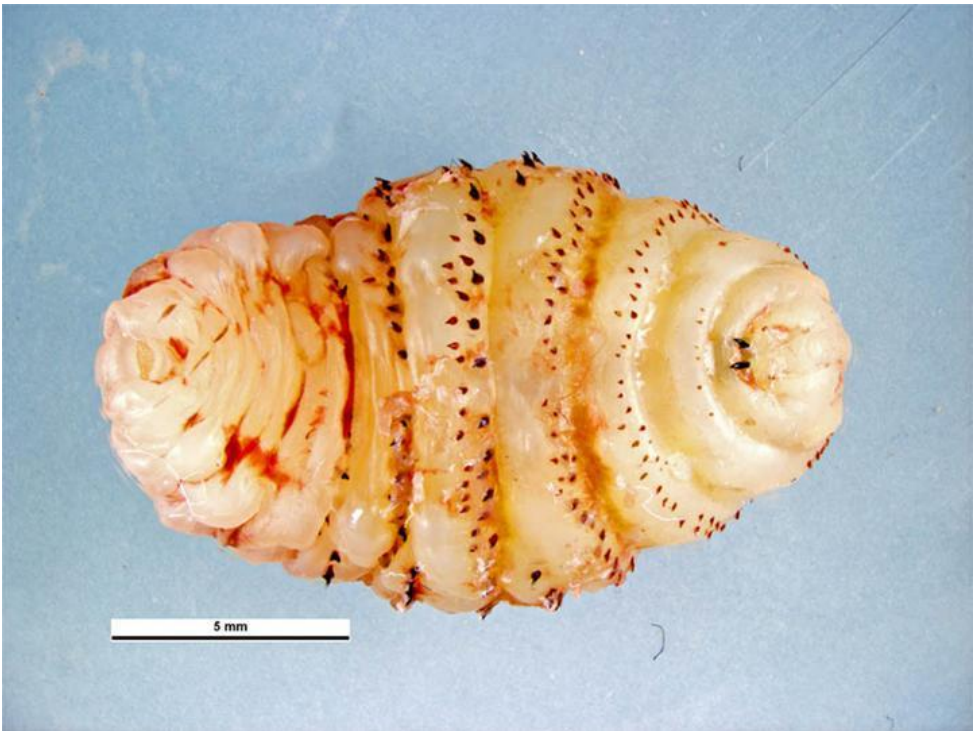
important for people to have an accurate identification as they may need to be monitored for symptoms of the disease.

Interesting ugly

(ugly as in the process of having a maggot feeding in your body, the actual maggot is an ingenious feeding machine covered in hooks).

One of the most interesting insects we get that always has everyone crowding around the microscope for a closer look is the immature form of either the commonly named bot fly or tumbu fly. The bot fly (*Dermatobia hominis*) is from South America and the tumbu fly (*Cordylobia anthropophaga*) from Africa. These amazing insects are both known to use humans as hosts for their young. However, they don't lay their eggs directly on people. In the case of the bot fly, the adult female captures another invertebrate such as a tick or biting mosquito and lays her eggs on it. The carrier is then released and if it lands on a human the eggs hatch and the maggot burrows into the skin where it commences feeding and begins to grow.

Someone who has holidayed in parts of the world where these flies occur may return home to wonder what the weird lump on their body is. The gruesome reality is a growing maggot (there is plenty of footage online of bot fly removal, but be warned it's not for the squeamish). The maggot feeds until it reaches a stage where it emerges from the host and drops to the ground to pupate. The image below shows a *Dermatobia hominis* maggot ringed with rows of hooks allowing it to anchor itself in the host.



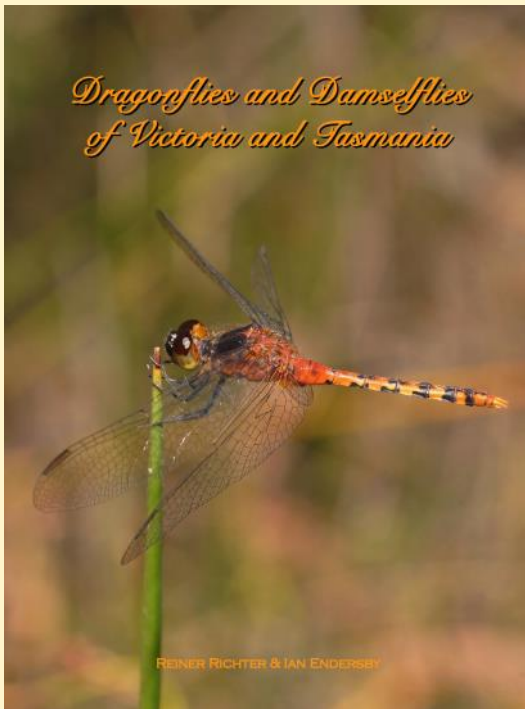
Bot fly (*Dermatobia hominis*) larva
Removed from male patient returned from Costa Rica in June 2009 to Melbourne.
Image: Ken Walker, Museums Victoria

A positive aspect to the identification service is that the public can act as thousands of sets of eyes in parts of the state that we don't have the resources to visit. This can be important in getting early detection of pest species such as the introduced fire ant (*Solenopsis invicta*). Many people have seen the reports on efforts to prevent this species reaching and establishing itself in Victoria. Fortunately, all the ants sent to us as potential fire ants to date have been native species. If the fire ant does reach here our best chance of getting rid of it is early detection before multiple populations become established.

If you have an insect or invertebrate you would like identified please feel free to contact us at the museum at askus@museum.vic.gov.au

We can't always get to species level but we will do our best.

Exciting new book available!



Dragonflies and Damselflies of Victoria and Tasmania by Reiner Richter and Ian Endersby

It's always exciting to get a new book on insects where beautiful photos are matched with excellent information on how to look for key features for identification. This publication has a double page spread for every species of Odonata found in Victoria. It also covers every species found in Tasmania (with 5 endemic species). Additional notes indicate if the species is found elsewhere in Australia or overseas. For each of the 26 damselflies and the 55 dragonflies there is an image of a male and a female on one page. On the facing page there is information about behaviour and habitat.

Maps show records where each species has been recorded and graphs showing when adults are known to fly.

Additional images may show teneral (newly emerged) adults where colours and

patterns may be paler. For some there are images of mating pairs or parts of the adults where the significant point of identification has been highlighted. In other cases perching behaviour or the nymph stage are shown.

See pp 110-111 for sample pages

Reiner will be launching the book at our October meeting and people can purchase a copy for a special members' price of 25.00. Details and order forms will be available on the society web page shortly.

Peter Marriott

Goulburn River, Jamieson VIC



♂

Aberfeldy River VIC



♀

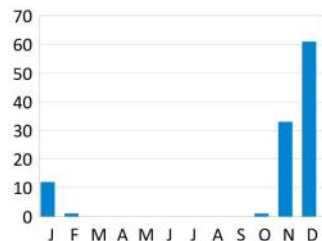
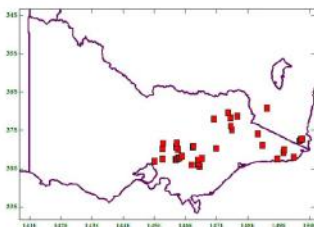
Lestoideidae

These are large, robust damselflies that are strong flyers and the males are vibrantly blue. Both species that occur in south-eastern Australia inhabit rocky rivers and streams and can be found at the same time. Male *Diphlebia* joust by hovering in flight facing each other until one is chased away.

Diphlebia lestoides

Whitewater Rockmaster

Males may or may not have white bands near the outer edge of the wings – I have observed unbanded males chasing banded males away so I'm not sure if it is a maturity feature or it is just variable. Females appear similar to those of *Diphlebia nymphoides*. Males will perch on emergent rocks, logs or vegetation near breeding sites. Mating is quite quick, lasting only a few seconds. Females deposit into decaying plant material in water (such as bark and logs) and may completely submerge themselves for over 10 minutes while doing so.



Meet your council members continued..

Martin Lagerwey-Vice President



My name is Martin Lagerwey. I studied a bachelor of science in applied biology a lifetime ago and worked in church related activities including teaching and youth services for most of my life. Now that my children are adults, I have returned to my first love which is my interest in nature. I think like an evolutionary biologist and am fascinated by ecology and taxonomy, the sorting of species into their neatly fitting boxes. Although I have a general interest, I have noticed that many insect families already have their field guides and their experts. I have focused my interest on one group of beetles that are rather incompletely understood, the Eucalyptus leaf eating beetles, in Chrysomali-nae. These paropsines are particularly photogenic and have become my speciality.

Peter Marriott-Immediate Past-president



Being a farm boy on the edge of a developing suburb, I had the best of both worlds and I always had a passion for the bush and creatures therein. My interest in moths though began in 1989 when I became fascinated by the diversity and the numerical immensity of the order Lepidoptera. I began visiting the Museum collection in school holidays and began working on the moths, particularly in the collection of David Holmes when he donated it to the Museum. He and I became friends and I joined the EntSoc in 2000 when I became a part time teacher and began visiting the Museum on a Tuesday. The committee of the time recognised a sucker when they saw one and after a year or so I became President and with a great team we developed a

strong society with an excellent magazine and enthusiastic membership.

As my studies in Lepidoptera developed it became apparent that nothing was really available for people in Victoria wishing to identify the moths in the state and so the Moths of Victoria project developed in manageable sections that developed into the series we are progressively publishing. The challenges of finding new things and publishing information about the moth fauna continues to the present And the council is in very good hands with Julia and the rest of the team supporting a great organisation.

Sharon Mason-Council Member



I like to be in wild places, small or large, native or weeds. I am interested in these landscapes for their visual qualities and the life they support. Perhaps this aesthetic originated from a childhood living near mullock heaps and bushland in various Bendigo locations. Also staying often with my grandparents in a log hut at 'the camp' near the Murray in Perricoota State Forest (they made charcoal from wood) has had a big impact. I have spent 29 years working in bushland reserves. Presently I work in bushland remnants in Manningham and Maroondah. The animals I most often encounter as I work are insects and spiders. A year ago, I started carrying a camera which has allowed me to appreciate more fully the shapes, colours and the way these small creatures move or don't move and made me much more aware of these amazing animals. I joined the committee because I like the people and the

club. My major interest is that our diverse insect fauna has space to live.

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

CONTRIBUTIONS TO THE VICTORIAN ENTOMOLOGIST

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

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Contributions may *preferably* be E-mailed to Internet address: editor@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 of back of the house excursion Tuesday 20 August 2019 19:45 Melbourne Museum	93
Harris, K. Butterfly feeding	102
Then and now: <i>Doticus tasmanicus</i>	105
Hinkley, S. Interesting public enquiries received at Melbourne Museum. The good, the bad and the ugly.	106
Review of new book: <i>Dragonflies and damselflies of Victoria and Tasmania</i> by Reiner Richter and Ian Endersby.	109
Meet your council members continued..	112

DIARY OF COMING EVENTS

Next Meeting Joseph Shubert
Australia's peacock spiders and their close relatives
Reiner Richter will also launch *Dragonflies and Damselflies of Victoria and Tasmania*
which will be available for purchase.
15 October 2019
Please arrive at 19:35 for a 19:45 start.

General Meetings:

<i>Month</i>	<i>Date</i>	<i>Planned event</i>
November	Saturday 30	End of year excursion Yarran Dheran Nature Reserve details on p. 101
February 2020	Tuesday 18	TBA

Council Meetings are held at the Museum Victoria at 17:00
on the following Tuesdays
19 November and 21 January 2020



The Society's Home Page on the World Wide Web is
located at:
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Also find us on facebook.



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.

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