



August 2019

Issue
No. 606

CIRCULAR OF THE ENTOMOLOGICAL SOCIETY OF NEW SOUTH WALES Inc

Next Meeting of the Entomological Society of NSW Inc

The next meeting of the Entomological Society of NSW is yet to be scheduled. In the meantime, the Society will again be in attendance at the Wild Flower Art and Garden Festival, Ku-ring-gai Wildflower Garden, Richmond Avenue off Mona Vale Road, St Ives on Sunday the 25 August 2019. All members of the Society are encouraged to participate on the stand or at least try and pay a visit. Additional support from members other than the Council would help both the work of the day and improve social connections between Society members. If you wish to help out at the Society's stall please contact Bob Ryan by email to robert.ryan.consultant@gmail.com.

ENTOMOLOGICAL SOCIETY of NSW INC.

COUNCIL and COMMITTEE MEMBERS elected at the Annual General Meeting of 13 March 2019;

Dear Members,

Secretarial confirmation of the Honorary Officers and other Committee members elected for 2019 are as follows;

President: Mr Robert Ryan; email Robert.ryan.consultant@gmail.com Ph: Mob. 0458 296 730.

Vice-President: Assoc. Prof. Nigel Andrew; University of New England.

Hon. Secretary: Nomination subsequently declined; Robin Parsons & Barbara May will assist in Secretarial duties until a post AGM nomination is accepted.

Hon. Treasurer & Public Officer: Mr Robin Parsons; email robinp2@bigpond.com

Hon. Business Manager: Ms Gitte Strid-Nwulaekwe;

Hon. Editor: Dr Robin Gunning; email rgunning@bigpond.com

Hon. Circular Editor: Mr Garry Webb; email garrywebb1@outlook.com Ph. 0419160517

Councillors: 1) Ms Barbara May;
2) Mr Stephen Fellenberg;
3) Dr Bernie Dominiak; DPI Orange
4) Vacant

Other volunteer roles:

Web Manager: Mr Graeme Smith; Web site: www.entsocnsw.org.au:

Myrmecia (AES) Correspondent: Dr Dinah Hales;

Prepared by Robin Parsons (Treasurer; assisting Secretary) on behalf of Mr Robert Ryan, President, 20 June 2019.

NEWS FROM YOUR COUNCIL

The following matters continue to be under discussion by Council;

1. An association with Macquarie University's Biological Science's Students is still being encouraged by Council members since the Society General meeting held there in August 2018. A similar approach is being attempted through the University of New England, Armidale NSW. The Council's view is that progress in this area may produce new membership and activity options.
2. Members (and their associates) are encouraged to contribute Drawings (for the G&AE Journal cover), Papers for 'Peer Reviewed' publication in G&AE and less formal articles/pictures for the newsletter (Tarsus).
3. Preprint papers from the society journal General and Applied Entomology will be made available to society members prior to compilation of the printed volume. There remains some difficulties surrounding preprint availability of taxonomic papers which will be resolved in time. The journal is the effective mouthpiece of the society and members and associates are encouraged to support the journal.
4. Society attendance at the Wild Flower Art and Garden Festival, Ku-ring-gai Wildflower Garden, Richmond Avenue off Mona Vale Road, St Ives has been accepted for Sunday the 25 August 2019 (last Sunday of August each year); Member participation on the Society's stall has for a while been only attended by the same 7 (mainly Council) members. Additional support from a few other members would help both the work of the day and improve social connections between Society members. The stall could also benefit from contribution of teaching/presentation skills and theme development; but for this, extra assistance is needed. If you wish to help out at the Society's stall please contact Bob Ryan by email to robert.ryan.consultant@gmail.com.

NOTE FROM ESNWS WEB MANAGER ON JOURNAL PREPRINTS

Dear Member,

At the last AGM, the ESNWS Council decided to publish papers in the society's journal as soon as they were ready rather than the authors having to wait until the annual print publication. You will still receive a print copy in the mail once the whole volume is complete.

During July we have posted the first two such "preprint" papers on to our website. These can only be accessed by members who will need to log in to our website (<https://www.entsocnsw.org.au/>). When you log in using the boxes in the bottom left corner, another couple of menu items will open up on the left hand side. One of these takes

you to Volume 47 and links to pdf files of the two papers. If you've forgotten your log in details, please email me at this address and I will reset you username and password.

Unfortunately INFORMIT, are not yet able to upload preprints, so papers will only be able to be purchased via INFORMIT once the whole journal is printed (later this year).

We now include the abstract of each paper on the public page of volume 47 and (with permission) the lead authors email address, suggesting that copies can be requested from the author.

After another year we make all volume 47 papers freely available to all via our website.

The Council hopes that this new initiative will be of benefit to members.

Graeme Smith

On behalf of the Entomological Society of NSW Inc

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The first two preprint articles are:

Olive fruit (*Olea europaea* L.) as a host of Queensland fruit fly (*Bactrocera tryoni* (Froggatt) in south eastern Australia. Bernard C. Dominiak, Linda Semeraro, Mark J. Blacket, Adrian C. Englefield, and Alicia Mellberg

Expansion of Sycamore Lace Bug *Corythucha ciliata* (Say) (Hemiptera: Tingidae) in New South Wales, Australia, between 2008 and 2019. Bernie C. Dominiak, Peter Worsley, Bernard Millynn and Angus J. Carnegie

Stevie's Story



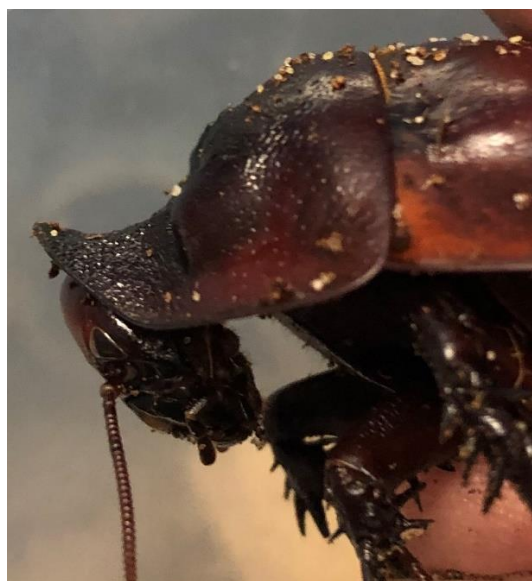
Most members of the society know Stevie as the society mascot. What you may not know is that Stevie is actually a girl, and a lonely girl at that. Thankfully Stevie has found a new home together with an adult male and another adult female together with 5 young ones of various ages. Hopefully Stevie might become a mother herself in the future.

The anatomical differences between male and female giant burrowing cockroaches (*Macropanesthia rhinoceros*) is not always apparent to the naked eye, particularly when you are looking at only one

sex. The species name “rhinoceros” gives it away because the male has a pronounced upwardly curved pronotum.

Macropanesthia rhinoceros is native to Australia and mostly found in arid and semi-arid areas of NSW and Queensland. They are the world's heaviest species of cockroach and can weigh up to 35 g and measure up to 8 cm in length. They can live for up to 10 years. Unlike some other cockroaches, they do not have wings and are not considered pests. The cockroach plays a vital part in the ecosystem by consuming dead leaves, eucalyptus in particular, and recycling other matter. True to their name, they may burrow down in soil to a depth of about 1 m, where they make permanent homes. The pronotum serves as a shovel and the heavily spined legs are used to eject soil from the burrow. They grow by moulting up to 12 or 13 times before reaching full size after around 3 years.

Stevie on the left and her new boyfriend on the right



Giant burrowing cockroaches live in small colonies which may vary in composition depending on the presence of young. Adult females with young are particularly aggressive towards other adults. The species is ovoviviparous which is a “hybrid” state between oviparous (egg laying) and viviparous (live-bearing). Giant burrowing cockroaches appear to produce live young but this is not technical correct as the female simply retains the egg sac (ootheca) internally until the eggs hatch. Most cockroaches produce ootheca which are deposited in suitable locations but in some primitive cockroaches, the ootheca may be extruded, rotated and then resumed and the young hatch internally. Giant burrowing cockroaches are at the extreme end of this spectrum and the ootheca is maintained internally the entire time.

Further Reading:

1. Rentz D. (2014). A guide to the cockroaches of Australia. CSIRO Publishing, Melbourne. 318pp.
2. https://en.wikipedia.org/wiki/Giant_burrowing_cockroach
3. <https://www.bushheritage.org.au/species/giant-cockroaches>

Garry Webb

New silverfish species from Lord Howe Island and Balls Pyramid - expect the unexpected

Graeme Smith

In 1942 Herbert Womersley described a new species of silverfish from Lord Howe Island which he called *Heterolepisma howensis*. The type specimens were held in the Australian Museum. In 2014 I described some new species of *Heterolepisma* from eastern Australia and thought, based on Womersley's original description, that one of them (*Heterolepisma sclerophyllum*) might be closely related to *H. howensis*. So I had a look at a couple of more recently collected specimens in the Australian Museum collection (but not the types) and found them to be quite similar, differing most obviously in the more truncated urotergite X (the most posterior dorsal plate that covers the bases of the terminal filaments). I thought they might be slight variants of the same species.

In 2013 I collected silverfish near Rainbow Beach in Queensland and initially thought that they were also closely related to *H. sclerophyllum* because they had the same arrangement of styli and shape of the thoracic sternites, among other characters. However Dr Andrew Mitchell (Australian Museum) carried out some DNA studies which said they were not at all closely related. Very detailed morphological, morphometric and molecular work eventually showed that the characters I considered important were nowhere near as important as characters that previous workers had ignored, namely the presence or absence of macrochaetae along the anterior margin of the head and the type of scales on the femora (round versus lanceolate). The Queensland species was recently described as *H. cooloola* (Smith et al, 2019).

In 2017 the Australian Museum conducted a survey trip to Lord Howe Island and Balls Pyramid and collected some more silverfish material. I assumed it would all belong to *Heterolepisma howense**. Boy was I mistaken! There were two species on Lord Howe Island; *H. howense* collected under bark with characters that placed it closer to *H. cooloola* than *H. sclerophyllum* and a new species, described as *H. milledgei*, collected in leaf litter accumulations. Andrew and I redescribed *H. howense* using both the type material and new material and we described *H. milledgei*. To complicate things even more, a couple of specimens collected by Alice Wells and Lawrence Mound on Norfolk Island were found to be morphologically indistinguishable from the *H. howense*. Is this a natural distribution or has this species has been accidentally transported by man. I could imagine this happening if firewood with bark was taken on board ships that plied between these islands in the 1800s.

Just as surprising was the fact that two species of *Heterolepisma* were collected on Balls Pyramid. This is a mighty volcanic tower rising 56 metres out of the ocean some 20km to the south of Lord Howe Island, but only 0.3 square kilometres in land area. One of the species was only collected as juveniles, but DNA evidence confirms it belongs to *H. milledgei*. Slight morphological differences and limited DNA differences suggest the Balls Pyramid and Lord Howe Island populations have been separated for quite a long time. It was *H. milledgei* that I had looked at in 2014 when I thought *H. howense* might be close to

H. sclerophyllum. Finally a single adult female of yet another new species, described as *H. pyramidum*, was collected. It's nearest relative appears to be the New Caledonian species *H. rouxi* Silvestri. There is also a species of *Australiatelura*, the small golden inquiline genus that has been collected with ants on Lord Howe Island. It's just something else I need to work on at some stage.

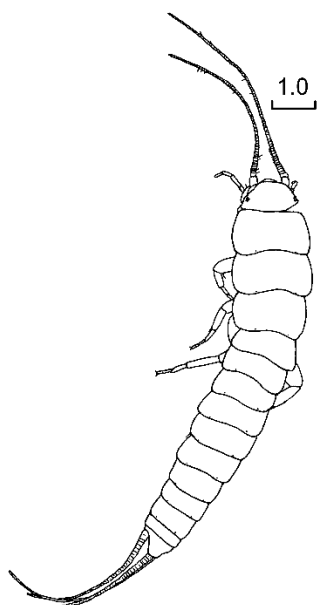
So the moral of the story is "Never assume anything!". Early descriptions do not always give enough information. One needs to re-examine the types and to keep an open mind that characters you think are important may not be as important as you think.

*Yes the name has changed from *howensis* to *howense*. It's a complicated story to do with the rules of the International Commission on Zoological Nomenclature and a grammatical of Linnaeus when he described the first silverfish. If you think that taxonomists could have better things to do than confuse the scientific literature read about it in ICZN (2018). In the long run it will hopefully stabilise names -short term pain for long term gain.

References

- ICZN (2018). Opinion 2427 (Case 3704) – *Lepisma* Linnaeus, 1758 (Insecta, Zygentoma, Lepismatidae): Direction 71 (1957) reversed. *Bulletin of Zoological Nomenclature* **75**: 290-294.
- Smith, G. B. (2014). Two new species of *Heterolepisma* (Zygentoma: Lepismatidae) from eastern New South Wales. *General and Applied Entomology* **42**: 7–22.
- Smith, G. B., Mitchell, A., Lee, T.R.C. & Espinasa, L. (2019). DNA barcoding and integrative taxonomy of the *Heterolepisma sclerophylla* species complex (Zygentoma: Lepismatidae: Heterolepismatinae) and the description of two new species. *Records of the Australian Museum*. **71**(1): 1–32.
- Smith, G. B. & Mitchell, A. (2019). Species of Heterolepismatinae (Zygentoma: Lepismatidae) found on some remote eastern Australian islands. *Records of the Australian Museum*. **71**(4): 139–181.
- Womersley, H. (1942). A new species of silver-fish from Lord Howe Island. *Records of the Australian Museum* **21**: 116–117.

Heterolepisma milledgei



Heterolepisma pyramidum

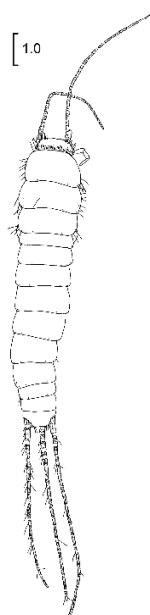


Photo Corner

All Society member are encouraged to submit any entomological photographs of interest together with a short (or long) description of your observations.

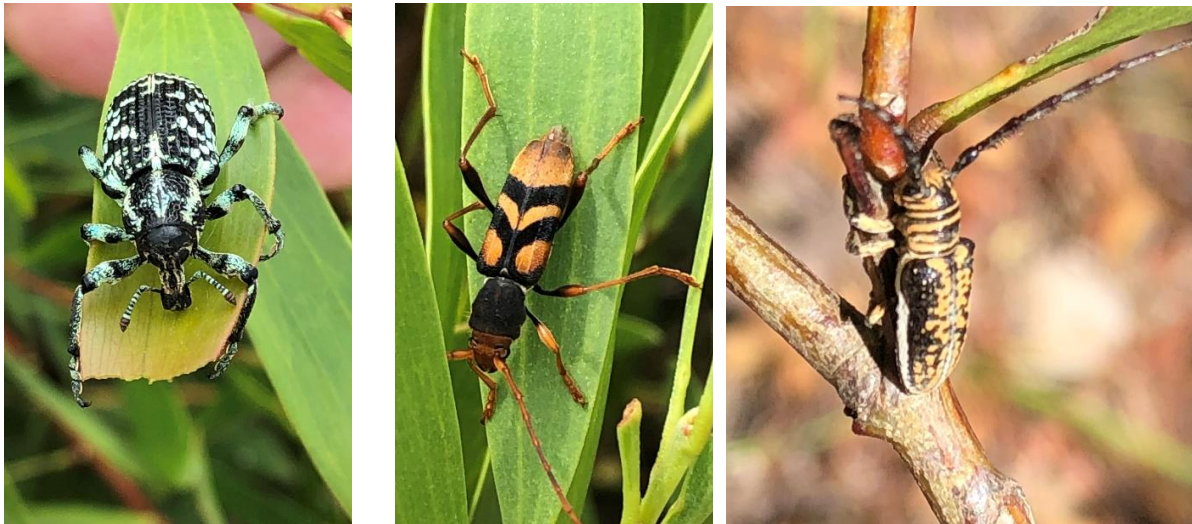
Harlequin bug (*Tectocoris diophthalmus*) on Norfolk Island Hibiscus (*Lagunaria patersonia*) (23 March 2019, Sylvania, NSW). Clockwise a. Male and female on seed pod b. Female attending egg cluster c. newly emerged juveniles clustering on leaf d. spent egg cluster on adjoining twig. (Garry Webb)



Praying mantis on *Lomatia silaifolia*. *Angophora hispida* foliage in the background. (21 March 2019, Menai, NSW). (Garry Webb)



Some common insects on *Acacia longifolia* a. *Chrysolophus spectabilis* (F). b. *Arideus thoracicus* (Donovan) c. *Rhytiphora albocincta* (Guérin-Ménéville) (February 2019, Wanda sand dunes, NSW). (Garry Webb)



<u>SOCIETY POSTAL ADDRESS</u>	<u>MEMBERSHIP FEES 2019</u>
C/- ENTOMOLOGY DEPARTMENT THE AUSTRALIAN MUSEUM 6 COLLEGE STREET SYDNEY NSW 2010	ORDINARY MEMBERS \$50 (\$45 if paid by AGM 2019) COMPANY ASSOCIATES \$60 STUDENT MEMBERS \$25 (\$20 if paid by AGM 2019) CORPORATE MEMBERS \$50

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HON TREASURER	Mr Robin Parsons
HON EDITOR	Dr Robin Gunning
HON BUSINESS MANAGER	Ms Gitte Strid-Nwulaekwe
HON CIRCULAR EDITOR	Mr Garry Webb
COUNCILLORS	Dr Bernie Dominiak Mr Stephen Fellenberg Mrs Barbara May Vacant

Non-council positions

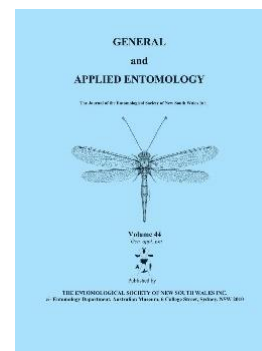
AUSTRALIAN ENTOMOLOGICAL SOCIETY CORRESPONDENT	Dr Dinah Hales
PUBLIC OFFICER	Mr Robin Parsons
WEB PAGE MANAGER	Dr Graeme Smith

GENERAL and APPLIED ENTOMOLOGY

**Page charges are not levied for the Journal
where the first author is a member of the Society**

**Preprints of all papers will be made available to members on
the website ahead of the printed version
(at the moment excluding taxonomic papers)**

Please send any manuscripts to Robin Gunning
(rgunning@bigpond.com) as soon as possible



Articles, from volumes 23 & 27 to 46 are freely available from the Society's website.
Members can access new preprint articles from Volume 47.

(www.entsocnsw.org.au)

All articles from volumes 10 to 45 as well as the most recent complete issue (Volume 46) can also be purchased on-line from Informit for just a few dollars each at

<https://search.informit.com.au>