S

August 2025

Issue

No. 641

CIRCULAR OF THE ENTOMOLOGICAL SOCIETY OF NEW SOUTH WALES Inc

This edition you will find the last minutes of the AGM and financial report for 2024.

The Ted Taylor prize for students will be run again this year. Details can be found on page 8. We encourage all current students of Australian institutions who have completed an entomology-based research project as part of an Honours Degree, Postgraduate Diploma, or four-year Undergraduate Degree at a NSW tertiary institution to apply.

In late June-early July some society members attended ICUP2025 in Lund, Sweden. This is the International Conference on Urban Pests which is held every three years in different parts of the world. Previous conferences have been in places like Singapore, Budapest, Oro Preto (Brazil) and other interesting places. See page 9 for details.

Dinah Hales has provided some interesting insight into the orchid or Dendrobium beetle recently infesting her orchids. See Page 10.

A large collection of books, journals and papers of entomological interest has become available and the Society has agreed to assist in the process of advertising these on behalf of the owner. See page 13 for details.

We encourage all members to consider that the society, Tarsus and the journal GAE rely heavily on the contributions of members. We need your input to not only populate the society endeavours but to also encourage others to contribute and become members.

Kind Regards

Garry Webb

Circular editor

Minutes of the 71st Annual General Meeting

of The Entomological Society of New South Wales inc.

Hosted online via zoom by Prof Nigel Andrew Southern Cross University Lismore on 7th May 2024

Opened: 5:30 pm

Attendance: Nigel Andrew (Host & Vice President), Dinah Hales (AES Rep), Robin Parsons (Treasurer), Bob Ryan (Chair/President), Khalid Ahmad (Secretary), Thomas Heddle (Councillor), Stephen Fellenberg (Councillor), Robin Gunning (Journal Editor), Murray Fletcher (Member).

Non-member/visitor: None.

All members present or represented were financial and the quorum met.

Apologies: Robert Martin, Garry Webb, Bernie Dominiak and Kristen Ellis.

Minutes of the 70th AGM of 2023 were presented for acceptance as a true record by Robin Parsons and the motion was accepted by all in attendance as a true record of proceedings.

70th Report of the Council from Hon. Secretary; None presented, refer to other reports.

70th Report of Hon. Treasurer/Public Officer; The Financial Statements /membership statistics for year ended 31 December 2023 were presented by R Parsons and had previously been certified and published in Tarsus 633 of April 2024 and accepted by all present. Account records and Books of Account were previously audited by Bob Ryan via a face to face, meeting with the Treasurer on 19 April 2024.

Funds are at $24,200 but Copyright fines of around $1,500 in March 2024 will affect 2024's balance. Membership at 72 with only 2 unfinancial but some doubts about new members renewing for 2024.

Private subscriber orders reduced by about 5; to be verified with EBSCO.

NB: Early Journals vols 1 to 10 are with Informit but accessed by a different link to other volumes ie;

Informit, G&AE vols 1 to 9: (1969 to 1976) **Payment required for individual papers;**

Journal of the Entomological Society of Australia (N.S.W.) (informit.org) vols 1 to 6

Journal of the Entomological Society of Australia (N.S.W.) (informit.org) vols 7 to 9

G&AE vols 10 onward:

General and Applied Entomology: The Journal of the Entomological Society of New South Wales (informit.org)

70th Report of AES Representative – Dinah Hales: Presented her January 2024 Myrmecia report for the Australian Entomological Society (AES). The issue coming just after Ent Soc NSW's 50th anniversary in 2023. With emphasis on the anniversary dinner, TTP prize winners for 2023 and the need for publishing newsletters and maintain archival access. A reminder also that Councillors and other members discussing matters electronically should ensure Dinah is cc'd into the email discussions.

70th Reports from Editors/Business Manager: Editor verbally reported G&AE volume 51 printed in Feb 2024 and vol 52 open for papers. Business Manager not present; refer to Treasurer's reports for the accounting/invoice/receipts functions for Private Subscribers to volume 51 have or will be completed by the Treasurer.

Election of the Council for 2024: (NB: No written nominations received)

POSITION	NOMINEE	NOMINATED by	SECONDED by
Hon. President	Bob Ryan	Robin P	All
Hon. Vice President	Prof. Nigel Andrew	Bob	All
Hon. Secretary	Khalid Ahmad	Robin	All
Hon. Treasurer	Robin Parsons	Bob	All
Hon. Business Manager	Gitte Strid-Nwulaekwe	Robin P	Bob
Hon. (Journal) Editor	Dr Robin Gunning	Bob	All
Hon. Public Officer	Robin Parsons	Bob	All
Hon. Circular Editor	Garry Webb	Robin G	All
Hon. Councillors (x4)	Bernie Dominiak Barbara May Stephen Fellenberg Thomas Heddle (Co-Editor for Tarsus)	Robin P Bob Robin P Bob	Nigel Gitte Nigel Nigel
Website Manager	Dr Graeme Smith	Robin P	All
Event Co-ordinator (Dinner etc)	Mary-Lynne Taylor	Robin P	All
Representative for Australian Entomological Society (Myrmecia)	Dr Dinah Hales	Bob	All

Westpac Bank Operating Rules; Retention/Addition/Removal of & Rule changes for; Administrators & Signatories as per separate detailed and endorsed Certificate for submission to Westpac Bank, post AGM.

Council approved: Retention of Mr Robert Ryan, Mr Robin Parsons; Addition of Mr Khalid Ahmad and Removal of Mr Swami Thalavaisundaram, as Administrators & Signatories for all three Society accounts; and Rule changes as per Westpac Bank- Certificate of Administrators & Signatories for The Entomological Society of New South Wales Inc. (NB: The results of this motion are to be included in the minutes and published in Tarsus But the separate certificate is not to be placed in Tarsus, and issued to the Bank.

The Certificate (prepared by the Treasurer) is to be signed by outgoing President & Treasurer & Incoming President & Treasurer, post AGM.

General Business:

- The **Annual Dinner for 2024:** Members to be consulted (by Robin P.) and venue at The Epping Club to be referred to Mary-Lynne Taylor for booking & details.
- **Show and Tell/Chit Chat:** None recorded.
- **Next AGM (72nd):** tentative for Wed, 14 March 2025 6:45 pm.

Closed: 6:15pm (NB: Council's General Meeting postponed, Treasurer noting that current Council items requiring attention would be attended to via email by Councillors and /or sub-committee members, as required; closed 6:20pm).

This document assembled on 10 July 2025 from R Parsons' AGM notes & Khalid Ahmad Secretary's email of 12 May 2024;

by Robin Parsons; Treasurer Signed as a True and valid Record:

_____ ; ___/___/____

Verified as a True and Accurate Record by,

Prof Nigel Andrew, Hon. President: _____ _____

_____/_____/_____

THE ENTOMOLOGICAL SOCIETY OF NSW INC

STATEMENT OF INCOME AND EXPENDITURE FOR THE YEAR ENDED 31 DECEMBER 2024

GENERAL FUND (& PAYPAL Account) – INCOME			
Subscriptions pd 2024 (+Tarsus advert fee $240+PayPalcr prior fee 5.10)		2,550.00	
Plus Subs pd in advance of 2024 in prior year		00.00	
Less Subs paid in advance of 2025*		00.00	
Subscriptions Receivable @ YE2024		465.00	
Less previous year Subs Receivable arrears		-90.00	
Bank interest (+ Term Deposit int $377.03)		377.03	
Donations /Misc:		0.00	3,302.03
- PAYMENTS			
TTP Prizes 2023 (paid in Feb 2024)		-1,000.00	
Public Liability & Accident Insurance 28 Jun 2023 to 28 Jun 2024		-1,248.07	
Website hosting-Aptley- 2024		-158.40	
Website Domain renewal Aptlley-2024 to 2025 (**Paid in 2024**) or Upgrades (nil)		-66.00	
Transfers to Publication Fund (Nil) or Term Dep Apr24 (**12K**)		-12,000.00	
DFT Incorporation Annual lodgement fee 2024		-54.00	
Stationary & Postage;(NIL) or Copyright Charges (**1554.00**)		-1,554.00	
PAYPAL Account Receipt &Transfer fees		-5.10	
Misc-Cheque 19 Jul 24 C Birch lost by bank after deposit-stopped & unpresented		-50.00	-16,135.57
	Result for 2024		**-12,833.54**
PUBLICATION FUND - INCOME			
Journal Income Received-royalties 108.87+Page Charges Nil+Priv Subs 470.00		578.87	
Jnl Accounts Receivable; Infmit Royalties 2024 120.94+Priv Sub vol52 170.00		290.94	
Less Journal Income Accounts Receivable Credited prior year 2023		-278.87	
Bank Interest		0.00	
Members' payment (G/F) to Publication Fund		0.00	
Closing Journal Stock 31 Dec 2024 (20%pa deprec'n + Recovery @0.20 to vol47)		2,780.00	
Advances to be Recovered		0.00	3,370.94
LESS: PF Expenses = Costs of Journal			
Opening Journal Stock 01 Jan 2024		-2,700.00	
Postage & Stationary Vol 51		-95.60	
Editorial Software; Adobe AcrobatPro Licence to Oct 2024 not being claimed.		-0.00	
Printing Costs (Arrowprint) Journal Vol 51 published February 2024		-578.06	
Advances o/s		-0.00	-3,373.66
	Result for 2024		**-2.72**
BALANCE SHEET AS AT 31 DECEMBER 2024			
ACCUMULATED FUNDS; Balance to 31 December 2023			27,362.36
Results for the year 2024	General Fund	-12,833.54	
	Publication Fund	-2.72	-12,836.26
	Term Deposit	12,000.00	12,000.00
Balance to 31 December 2024			**26,526.10**
REPRESENTED BY: Cash at Bank	General Fund	9,142.78	
	Publication Fund	1,847.38	
	Term Deposit	12,000.00	22,990.16
Journal Stock-Committee's valuation			2,780.00
Debtors; Members Subscription arrears to 2024		465.00	
Accounts Receivable (Journal Payment arrears)		290.94	
Advances to be recovered		0.00	755.94
Less CURRENT LIABILITIES Members Subscriptions in advance (>2025)*		0.00	
Uncleared cheques (0), Contras/expenses Prior year/paid this yr (0)		0.00	0.00
Total Assets at 31 December 2024			**26,526.10**

Prepared & reconciled by Mr Robin Parsons; Hon. Treasurer 28 June 2025; sgn

ENTOMOLOGICAL SOCIETY of NSW INC

CASH BOOK & LIABILITY DISSECTIONS FOR PREVIOUS YEAR END 2023 & CURRENT YEAR ENDING 31 Dec 2024

PRIOR YEAR ENDED 31 DECEMBER 2023		**CURRENT YEAR ENDED 31 DECEMBER 2024**	
Cash book balance: General Fund	22351.32	Cash book balance: General Fund	9142.78
: Publication Fund	1942.17	: Publication Fund	1847.38
:Term deposit	0.00	:Term deposit	12000.00
: PAYPAL Account	0.00	: PAYPAL Account	0.00
Cash (sub total) **(24293.49)**	**0.00**	Cash (sub total) **(22990.16)**	**0.00**
Plus Non cash Assets: Journal Stock 100% deprec'n / Recovery @0.20 to vol46 + Pro-rata Depreciated Vols 47 to 51	2700.00	Plus Non cash Assets: Journal Stock 100% deprec'n / Recovery @0.20 to vol47 + Pro-rata Depreciated Vols 48 to 52	2780.00
: Member Subscription arrears receivable to 31/12/2023	90.00	: Member Subscription arrears receivable to 31/12/2024	465.00
: Accounts Receivable Journal payment arrears	278.87	: Accounts Receivable Journal vol52=170.00 /Royalties arrears 2024=120.94	290.94
: Advances (floats) to be recovered	0.00	: Advances (floats) to be recovered	0.00
Less Liabilities: Member Subscriptions paid in Advance (>2024)	0.00	Less Liabilities: Member Subscriptions in advance (>2025)	0.00
: Unpresented cheques (0) +Contras/expenses prior year/paid this year (0)	0.00	: Unpresented cheques (0) +Contras/expenses prior year/paid this year (0)	0.00
Formula Count	**27362.36**	Formula Count	**26526.10**
Accumulated Funds balance at **31 December 2023**	**27362.36**	Accumulated Funds balance at **31 December 2024**	**26526.10**

Verification of Variation

Funds current year end 2024	$26526.10	Cash Balance current year end 2024	$22990.16
Less Funds balance prior year end 2023	$27362.36	Cash Balance prior year end 2023	$24293.49
= 12 month variation to Dec 2024	-$836.26	12 month variation to Dec 2024	- $1303.33

Prepared and certified by: Mr Robin Parsons, 27 June 2025

Hon. Treasurer;

Examined & verified by Council: sgnd/dated;

Name(s) Prof. Nigel Andrew

Title: Hon. President

HONORARY TREASURER'S REPORT

THE ENTOMOLOGICAL SOCIETY OF NEW SOUTH WALES Inc.

MEMBERSHIP at the 31 DECEMBER 2024: variations since last December, *(Totals in brackets are for previous year)

CATEGORY	FINANCIAL	UNFINANCIAL	TOTALS
Honorary Life	2 - n/a	n/a	2 (2)
Ordinary	35	9	44 (48)
Special	8	1	9 (6)
Student	13	2	15 (15)
Company Assoc.	1	0	1 (1)
Institutional	0	0	0 (0)
Totals*	**59 (70)**	**12 (2)**	**71 (72)**

Resignations in 2024:

Geoff Monteith (deceased)

Robert Ryan (deceased)

Satoko Rayson

Emily Schroder

New Members from 2024:

Bernard Doube

Rachel Lee

Aspen Luke

Sanjay Pradhan

Members Lapsed at AGM 2025 (excluded from above totals)

Georgina Binns

Prepared by Robin Parsons Hon. Treasurer, 27 June 2025

Ted Taylor Student Prize

The Ted Taylor Prize for students enrolled in a NSW University or TAFE will be offered again this year, with a revised format.

The prize will be open to any student who has completed an entomology-based research project as part of an Honours Degree, Postgraduate Diploma, or four-year Undergraduate Degree at a NSW tertiary institution.

The submission will include:

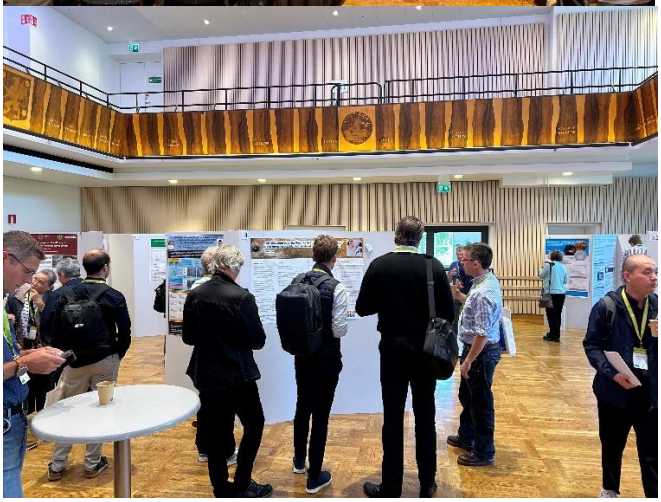
1. The final research project thesis (the version submitted for marking/ examination) will be submitted as a single PDF through the application web portal.
2. A 500-word maximum Research Impact Statement of the research carried out.
3. A short cover letter from the supervisor will also be appended to the submission, confirming details of the student's thesis submission and enrolment.

Eligible students must have submitted their thesis within the 12 months prior to the entry closing date—**30 September 2025**. A cash prize of **$800** will be awarded to one student for the most outstanding NSW entomology-based research project. Submitted Research Impact Statements may be published in *Tarsus.* Submissions will be reviewed by a panel brought together from the Society's Council.
Only one submission per person allowed. Submit via the web portal:
https://www.entsocnsw.org.au/awards/
If you have any issues with submission, please contact Nigel Andrew (Ent Soc NSW President) – nigel.andrew@scu.edu.au

International Conference on Urban Pests (ICUP), Lund, Sweden, 29 June -2 July 2025

A few intrepid Aussies ventured to ICUP2025 in Sweden. The conference was well attended and included a wide range of topics from pest arthropods through to vertebrate pests common in Europe including rats, mice and pigeons. While there was nothing specifically on Australian insect pests and problems, we have many of the same issues as many of the countries represented at the conference. If you look closely in the 4th photo you recognize two long-standing members of our society, Bryce Peters and Peter Miller, who accompanied me on this adventure.

Garry Webb



For a more extensive range of photos **Click here**
At some point in the near future all papers and posters presented at the conference will available on the permanent **ICUP website**.

Orchid Beetle

Dinah Hales

The Orchid Beetle *Stethopachys formosa* Baly (Chrysomelidae) played havoc with my *Cymbidium* orchids in autumn this year. This beetle has recently spread its range from the Northern Territory, Queensland and Northern NSW to include Sydney and points south, beyond the Victorian border. It is a native, and before it was offered cymbidiums by generous non-indigenous gardeners, it fed on native orchids such as *Dendrobium*, and is also known as the Dendrobium beetle. There may be about ten species world-wide. Hawkeswood made observations on *S. papuana* in PNG (Hawkeswood 1991, *Spixiana* **14** 283-291).

At first I thought the damage was being caused by snails, but one cane after another - about 20% of the total - had all its flowers affected. I looked more closely at them, and found a fat white slime-covered larva within each flower. Sometimes more than one larva was in a single flower.

The slime may come from the plant or from the larva - the season was over before I could determine that. The identification was easy enough from websites of indignant orchid growers. I took some of the larvae into custody and several of them successfully pupated within cocoons, remarkable for their decoration with white strands of foam-like material making it look like a fungus, as suggested by a young family member. The following photo was taken on 26 May.

I observed a larva producing bubbles of foam from its mouth - it continued slowly producing them until it had a strand that was then attached the outside of the cocoon.

In this photo you can see the larva's head in the middle, with a mass of bubbles issuing from its mouth. I did not determine the composition of the basic cocoon, but tried to identify the chemical nature of the foam by kitchen bench experiments subjecting it to different solvents, saliva, water, orange oil, methylated spirit. None had any obvious effect, but the results were not conclusive. As expected, the material was hydrophobic (or it might dissolve when exposed to rain). It might contain wax, protein and /or mucins. The latter two are known to be produced by salivary glands of various insects. Larvae that failed to produce a cocoon did not survive.

I obtained five cocoons from larvae on flower remnants and kept them over winter in a loosely-lidded glass jar on an enclosed verandah, thus exposing them approximately to natural photoperiod and temperature. The cocoon decorations did not deteriorate during this time (cf. Hawkeswood's observations on *S. papuana* where the foam strands deteriorated quite quickly in the laboratory.)

Adults began to emerge at the beginning of September, indicating a winter diapause in the pupal stage. Here are dorsal and ventral views of a very active reared adult (14 September 2025). On the same day an adult was sneaking around a cane of *Cymbidium* buds outdoors.....

Online photos (https://inaturalist.ala.org.au/taxa/543936-Stethopachys-formosa/browse_photos) show dorsal pattern variants ranging from no black spots, or no posterior black spots, to conjoined black spots. These patterns may be genetically determined as in the common ladybird *Coelophora inaequalis* (Houston and Hales, 1980 *Aust. J. Zool*. **28**, 669-677.)

It's an example of a native insect that has benefitted greatly from the activities of commercial and domestic gardeners.

NOTICE OF BOOKS & JOURNALS, AVAILABLE FOR DONATION AND PURCHASE

PLEASE SEND EMAIL INQUIRIES TO; Ent Soc NSW c/o Robin Parsons;
robinp2@bigpond.com

Circular Author; Robin Parsons, Hon. Treasurer, The Entomological Society of NSW Inc. with permission of the Books/Periodicals 'Owner'. Expressions of interest on confirmation of membership status will be forwarded to the 'Owner' for negotiation and progression.
As the owner's collection is quite large, not all available titles are listed below; so, inquiries are encouraged for unlisted titles or subjects.
NB: The author of this circular, having obtained some items from the owner (via their original advertisement in another voluntary publication) has found the items, for their age to be in very good condition and packed and posted in an excellent manner.
This circular is a voluntary unpaid service by the Entomological Society of NSW Inc for members and affiliates.

Books available for sale;

General:

1. **CSIRO's,** The Insects of Australia reprint 1973 + Supplement to 1st 1974 and 2nd (1991) edition Vols I & II.
2. A Field Guide to the Insects of Britain and Northern Europe, Michael Chiney 1973. Pages 290-320, 6 black and white drawings of larvae, several colour plates.
3. A field Guide to Insects in Australia, third edition 2010, Paul Zborowski and Ross Storey
4. Insects of Australia and New Zealand, 1926 Tillyard

Spiders:

5. Spiders of the World, Rod & Ken Preston-Mafham. 1st edition 1984
6. American Spiders Second Edition 1979 Willis J. Gertsch, Ph.D
7. Australian Spiders, Keith C. McKeown 1963 1st published by Sirius Books
8. The Silken Web, A Natural History of Australian Spiders, Bert Simon-Brunet. 1st edition 1994
9. British Spiders. The Ray Society Vols. 1, 2 & 3. Vol.1-1951(No.135), Vol.2-1953 (No.137), Vol.3-1974 (No.149).

Ant and Moth Books:

10. The Moths of America North of Mexico, Softcover. 15 Volumes parts 1 – 2 including the Check list of the Lepidoptera of America North of Mexico. 1971-1986. I vaguely remember the series was not completed.
11. Moths of Australia, I.F.B Common, 1st edition 1990
12. Monographs on Australian Lepidoptera, 13 Volumes. Volumes include – Hawkmoths, Splendid Ghost Moths, Olethreutine Moths, Zygaenid Moths.
13. The Hawkmoths of the Western Palaearctic. 1993 1st edition. A.R.Pittaway
14. A Guide to Camponotus Ants of South Australia (2010) by Archie McArthur

15. A Guide to Colobopsis Ants of the World (2012) by Archie McArthur, which is signed by the author.
16. Journey to the Ants, a story of Scientific Exploration 1994. Bert Holldobler & Edward O. Wilson
17. Ants, Workers of the World, 2021. Photographs, Eduardo Florin Niga text by Eleanor Spicer Rice – science writer and entomologist.

Beetles:

18. Australian Beetles Vols.1 & 2 John Lawrence & Adam Slipinski both 1st editions 2013 & 2019, CSIRO
19. Australian Ladybird Beetles, Adam Slipinski
20. The Book of Beetles, Patricia Bouchard
21. Australian Longhorn Beetles Adam Slipinski & HE Escalona **(Volumes 1, Lamiinae 2013 & 2, Cerambycinae 2016 CSIRO/ABRS**)
22. Castiarina, Australia's richest jewel beetle genus, Shelley Barker
23. Beetles of South Australia, parts 1 to 8 by E. G. Matthews, all 1st editions
24. British Beetles Their Homes and Habits, Norman H Joy reprint 1949; $25.00, Jacket showing wear and spine (jacket), front & back pages discoloured. Inscription of previous owner(?) on jacket & inside page with date. Pages and plates very good.

Dragonflies & Butterflies:

25. Dragonflies Behaviour and Ecology of Odonata Philip S. Corbet 1st 1999
26. Dragonflies of Noth America James G. Needham, Minter J. Westfall JR, Michael L. May signed by all authors. Revised edition 2000
27. Damselflies of North America Minter J. Westfall, JR, Michael L, May 1st 1996
28. Dragonflies of the World Jill Silsby 1st 2001 CSIRO
29. A Handbook of the Dragonflies of Australasia with keys for the identification of all species, F. C. Fraser 1960
30. Butterflies of Australia I.F.B.Common D.F.Waterhouse 1st 1972 Angus & Robertson
31. Butterflies of the Australian Region Bernard D'Abrera F.R.E.S, Lansdowne, 1st 1971
32. Butterflies of the Afrotropical Region, Bernard D'Abrera F.R.E.S, Lansdowne, 1st 1980
33. The Butterflies of Australia Albert Orr & Roger Kitching, 1st 2010. With inscriptions by Bert Kalkman inside front page.
34. Other 'Butterfly' books by Bert and Vincent Kalkman.
35. The Dictionary of Butterflies and Moths Allan Watson & Paul E.S.Whalley. Peerage Books 1983

Orchids:

36. A Field Guide to the Native Orchids of Southern Australia David & Barbara Jones paperback 1st 2000
37. The complete Orchids of Australia W.H. Nichols 1st 1969
38. Orchids of Australia John J. Riley & David P. Banks, 1st 2002
39. A Complete Guide to Native Orchids of Australia including the Island Territories David L. Jones 1st 2006
40. Australian Indigenous Orchids Vols.1 & 2 A.W. Dockrill, both copies revised 1992
41. Native Orchids of Australia David L. Jones 1st 1988-Reed Books
42. Field Guide to the Orchids of New South Wales and Victoria Tony Bishop 1st 1996

Items for Donation (but postage not included), are as follows.

1. Proceedings of the Linnean Society of New South Wales.

Volumes 11 (2) parts 1st & 3rd 1877. V1 part 3 1879. V11 parts 1-4 1882/83. V111 part 3 1883. 1X parts 1, 3 & 4

1884/85 and X parts 1, 3 & 4 1885/86. All these volumes have uncut pages.

Plus – Volumes LXX111 1948, LXXV 11950, LXXX11 1957. These volumes are not complete.

Volumes 98 (1973/74) to 131 (2010), 117 is the Australian Quaternary (1997) some volumes not complete.

2. Invertebrate Systematics Journal. Volumes 14 (2000) – 25 (2011), all have parts 1-6.

Journal of the Australian Entomological Society; Volumes 6 (1974) – 36 (1997

New Entomological Research

(**Right Click** on the titles (or **CTRL Right Click**) to see the full articles)

Fire ant fears in central Queensland as dogs detect nests at five mine sites

Specialised detection dogs have discovered new fire ant nests at five mine sites in central Queensland's Bowen Basin. The discoveries, announced on Tuesday, come six weeks after the highly invasive pest was found outside the south-east corner for the first time, when it was identified at the Broadmeadow Mine near Moranbah, more than 150 kilometres inland from Mackay. The National Fire Ant Eradication Program (NFAEP) said in a statement the ants arrived in pallets of bricks that were stored on soil and transported more than 800km from south-east Queensland. The surveillance occurred between August 12 and 14, and was confirmed on Monday. NFAEP operations director Tom Roberts said the ants were discovered at the new sites after the bricks were moved to other mines. "At this point, we believe we've eliminated all known risks, and we're just working with each mine site to confirm they've got all the relevant information in regards to identification," he said.

The Surprising Teamwork Trick Ants Use to Double Their Strength

Weaver ants appear to have cracked a teamwork challenge that has troubled people for centuries: when human groups get larger, individuals usually put in less effort. New findings reported in *Current Biology* reveal that weaver ants do the opposite, with each ant becoming stronger as the group expands. This decline in human effort was first described by French engineer Max Ringelmann in 1913. In experiments measuring students pulling ropes, he discovered that although the total pulling force increased as more participants joined, the individual effort from each person decreased. Ringelmann's observation has since been seen in countless settings, from office committees to sports teams. Yet according to behavioral ecologist Madelyne Stewardson of Macquarie University, who led the recent study, weaver ants improve their cooperative nest-building as more members join the effort.

Ant Queens Produce Offspring of Two Different Species, Stunning Scientists

Some ant queens can produce offspring of more than one species – even when the other species is not known to exist in the nearby wild. No other animal on Earth is known to do this, and it's hard for even scientists to believe. "It's an absolutely fantastic, bizarre story of a system that allows things to happen that seem almost unimaginable," evolutionary biologist Jacobus Boomsma from the University of Copenhagen told Max Kozlov at *Nature*. Some queen ants are known to mate with other species to produce hybrid workers, but Iberian harvester ants (*Messor ibericus)* on the island of Sicily go even further, blurring the lines of specieshood. These queens can give birth to cloned males of another species entirely (*Messor structor*), with which they can mate to produce hybrid workers.

A warm, wet spring means more mozzies. How to protect yourself from the diseases they spread

Mosquitoes kill more people than any other animal. Worldwide, more than half a million people die each year from mosquito bites that transmit malaria parasites. Australia is fortunate to be free of major outbreaks of malaria, though occasional cases do occur.

The most common mosquito-borne disease in Australia is caused by Ross River virus. round 5,000 cases are reported each year and, while never fatal, the illness can be severely debilitating. Symptoms include fever, rash, joint pain and fatigue. Murray Valley encephalitis virus is responsible for very rare but potentially fatal disease. It's detected most years in northern Australia. There has been a resurgence of the virus in southeastern parts of Australia following flooding in recent years. Mosquitoes pick up the virus from waterbirds throughout the Murray Darling Basin before they pass on the pathogen to people. Mosquito and waterbird populations both boom after flooding. Mosquitoes in some coastal areas of Victoria can also pass on the flesh-eating bacteria that can cause Buruli ulcer.

Mutant snails linked to $170 million damage bill in Australia

Invasive snails that are costing Australia's grain farmers $170 million a year have mutated and now have resistance to common pesticides. Researchers from the University of the Sunshine Coast were examining the animals' mucous trails when they discovered an enzyme that can neutralise toxins used in organophosphates. The university's Professor Scott Cummins told Yahoo News it was unclear whether the *Theba pisana* snails, commonly known as the white garden snail, developed resistance to pesticides in Australia, or their native Mediterranean homeland. "It's only been the last few hundred years that we've used pesticides with these chemicals, so the mutation has likely occurred during that period," he said. Snails are a major problem for Australia's grain industry, because not only do they eat the leaves of plants, they also get caught up in processing equipment, contaminating it, and leading to its sale price being downgraded.

Locals tout 'tricky' balance as invasive weed behind 'amazing phenomenon' in Aussie town

It appears spring has arrived early in the town of Nannup in Western Australia, as thousands of orange Monarch butterflies flock to flowering trees and plants. But while their arrival has thrilled locals and tourists, there is thought to be a rather sinister driving force behind their very noticeable presence this year. The swarms of butterflies have been attracted to the area due to the increasing spread of invasive weeds. Butterfly larvae feed on narrow-leaf cotton bush and milkweed, both of which are thriving near Nannup. The butterflies arrived in the town about two months ago, with locals saying they've never seen anything like it. "It's been amazing, it's an amazing phenomenon," Heather Walford, from Nannup Lavender Farm, told Yahoo News. "We always get butterflies but not en masse."

Incredible predator discovery inside remote Aussie island cave with no public access

Deep in a cave on an island off Australia's remote Pilbara, a venomous arachnid has quietly evolved over millions of years to attack and kill prey in the dark. The creatures are a type of pseudoscorpion that was previously unknown to science and have only been found in one place on Barrow Island. Samples of the tiny animals were first collected 35 years ago and then placed in a vault at the Western Australian Museum, but they were not officially described until this month. Like all pseudoscorpions, they superficially resemble scorpions, but they lack an elongated tail with a stinger, and instead attack using venom glands in their long, pincer-like fingers. Dr Mark Harvey co-authored a description of this new species, *Anatemnus capillatus*, in the Australian Journal of Taxonomy. No one has ever seen it alive in its natural environment, but clues to its behaviour can be found by studying similar species.

A Disease That Makes You Allergic to Meat And Dairy Is Spreading Around The World

Hours after savoring that perfectly grilled steak on a beautiful summer evening, your body turns traitor, declaring war on the very meal you just enjoyed. You begin to feel excruciating itchiness, pain or even swelling that can escalate to the point of requiring emergency care. The culprit isn't food poisoning – it's the fallout from a tick bite you may have gotten months earlier and didn't even notice. This delayed allergic reaction is called alpha-gal syndrome. While it's commonly called the "red meat allergy," that nickname is misleading, because alpha-gal syndrome can cause strong reactions to many products, beyond just red meat. The syndrome is also rapidly spreading in the U.S. and around the globe. The Centers for Disease Control and Prevention estimates as many as 450,000 people in the U.S. may have it. And it's carried by many more tick species than most people realize.

Hot water nest injection successfully kills fire ant nests in SE Qld

Professor of Entomology Nigel Andrew validated the hot water injection method for removing Red Imported Fire Ants (RIFA) nests in SE Qld. The method is actively used in the USA to complement targeted chemical treatment methods. Professor Andrew carried out a short-term pilot study in the Logan and Ipswich regions of SE Queensland to identify if the hot water injection method, known as FASO (Fire Ant Soup Operation), is as viable in Australia as it is in the United States in killing all the RIFA nest occupants: queen, winged males, eggs, larvae, pupae and workers. The method's success in the USA has been peer reviewed and published. There, the method was shown to have a 90% to 100% success rate after four treatments. "Direct hot water nest injection is a safe and chemical-free method that works by removing fire ant nests from our local environments. Areas treated can be safely used five minutes after treatment," said Professor Andrew.

Aussies fear losing backyards as $2 billion threat breaches containment lines: 'Going to get worse'

Australian residents impacted by an outbreak of one of the "world's worst" invasive species fear that we are heading towards a "disaster of national and epic proportions". Fire ants currently infest around 850,000 hectares of Queensland land, and despite efforts to eradicate the invasive pest, there have been several breaches outside containment lines recorded across the country in recent weeks. While there are several lines of defence in the nation's fire ant eradication program, those whose homes lie in the outbreak's suppression zone, the final zone in the plan, say they feel "abandoned" by authorities as proactive measures to stop the spread take priority. Concerned local Ian Hession, who lives in Cedar Grove, 40km south of Brisbane, in a zone where fire ants are already established, told Yahoo News that neighbours in the area have been "kicked to the kerb" — with private landowners and local councils left to deal with existing outbreaks.

New 'super-sized' insect species discovered in Qld rainforest

A giant new species of 'super-sized' stick insect has been discovered in a remote rainforest in North Queensland. The insect, weighing around 44g and measuring 40cm long, is believed to be the heaviest ever found in the country. Footage captured of the incredible insect shows its large wingspan displayed across someone's arm, measuring similar to the length of a small bird. The new species has been named Acrophylla alta – a nod to its high-altitude habitat in the Atherton Tablelands. It's roughly the same size as a small barn owl or a wood pigeon, and is 14g heavier than Australia's heaviest insect; the giant wood moth. James Cook University's Angus Emmott and south-east Queensland scientist Ross Coupland searched for

the stick insect after they received a photograph of what they believed was an unknown species. Despite its elusive nature, the pair managed to find a female at an elevation above 900 metres in the Wet Tropics Wold Heritage Area.

The weird fungus that turns animals into zombies and kills them precisely at sunset

It's the horror destroyer of fruit flies – a fungus that emits spores that land on the flies and infiltrate their bodies, says Sheena Harvey. Burrowing into the fly's gut, the cells of *Entomophthora muscae* multiply rapidly and feed on the fly's internal organs. Then they make their way to the brain. This is where the fungus takes control. The common fruit fly (*Drosophila melanogaster*), found all over the world, is powerless to resist as the fungus directs it to climb the nearest tall object and glue its mouthparts to the top. There, exactly at sunset, it dies, overcome by the fungus infection. Following death, it continues to hang there, wings raised, with foam-like projections sprouting all over its abdomen containing hundreds of fungal spores. A few hours after this bizarre birthing process is complete, the spores are cannoned out of the foam to float about in the early morning air until they find another hapless fruit fly to infect.

Mom on the Menu

The planet's 3,000 or so known centipede species don't initially seem like the nurturing type. Some are so big they prey on mice, bats, and songbirds, while others reportedly munch on human corpses. There are those that hiss like snakes, and those that are aquatic, swimming through tropical waters by undulating like eels. All are venomous and prefer the darkness, hiding in caves, basements, or dank leaf litter during the day and emerging at night to hunt. These multilegged arthropods, in other words, are the stuff of many people's nightmares. But for Alex Hyde, photographing this female guarding her newly hatched larvae in Ecuador was a dream. Hyde was leading a group of photographers in Yasuní National Park, a tenuously-protected area in the northwestern Amazon that shelters a dazzling array of biodiversity as well as two uncontacted tribes. He was walking on a trail through the jungle, listening to the hum of insects and screeching of macaws, when he lifted a fallen log and saw this centipede mother cradling her offspring. Altogether, the mass was about the size of an apple. "Many people fear [centipedes], but I found this to be a beautiful moment," Hyde says. While the parental duties of many arthropods cease after egg laying, the females of some centipede species—like this one from the *Scolopendra* genus—are more devoted mothers. They curl their bodies around their eggs to protect them and may continue guarding the babies for days after they hatch. Some centipede mothers even go a step further: They become their babies' first meal. In an act known as matriphagy, the writhing mass of juvenile centipedes will eventually engulf their mother and eat her alive before skittering into the jungle to hunt down other prey.

Millipede Molecules Scramble Ants – And Might Help Heal the Human Brain

Millipedes get a bad rap — their many legs put people off and could classify them as "creepy crawly." But these anthropods' secretions could hold the key to new drug discovery for the treatment of neurological diseases and pain. Chemist Emily Mevers and her team recently discovered a new set of complex structures in millipede secretions that can modulate specific neuroreceptors in ant brains. The newly discovered structures fall into a class of naturally occurring compounds called alkaloids. The Mevers team named them the andrognathanols and the andrognathines after the producing millipede, Andrognathus

corticarius, found on Virginia Tech's Blacksburg campus in Stadium Woods. These discoveries were recently published in the *Journal of the American Chemical Society*.

Scientists Reveal the Ultimate Flower Mix for a Buzzing Backyard

Pollinator-friendly flower strips and seed mixes have grown in popularity as people look for ways to support bees and other essential insects, whose populations are declining worldwide. But among all the options available, which flowers truly make the biggest difference? To find out, scientists from the Natural History Museum of Denmark at the University of Copenhagen teamed up with researchers from the National Botanic Garden of Wales. Together, they launched a scientific investigation to determine which flower combinations are most effective at attracting pollinators. "Much of our knowledge in this area is anecdotal. So, there was a need for a scientific approach, where we systematically test different flowers to be sure how we can best help pollinators, which are extremely important to our ecosystems," says professor and botanist Natasha de Vere from the Natural History Museum of Denmark. The team examined over 400 published studies on the relationship between flowers and insects, then tested how frequently bees and hoverflies visited various commercially available flower mixes.

Many Butterflies Have a Second 'Head' – This Could Be Why

Tropical lizards love to snack on butterflies, but sometimes, they have trouble telling which end is which. That's because many butterflies in the Lycaenidae family have evolved marvelously deceptive wings. A study by two entomologists from the Indian Institute of Science Education and Research Thiruvananthapuram reveals the complex interplay of genes required to achieve such an act of subterfuge. Butterfly wings aren't very good eating: it's the juicy, nutrient-rich body that predators are after. But the 'false heads' seen at the tail-end of more than 900 different species of lycaenid butterflies leave many a predator with a mouth full of dusty hindwing scales, and the bitter aftertaste of deception.

Push for urgent response as tiny insect poses major threat

The cost of a widespread fire ant outbreak could cost the Australian economy two billion dollars each year, according to the Invasive Species Council. From the devastation of the agricultural sector to increased risk of anaphylaxis-related deaths, the threat of these tiny insects is daunting. And yet, the Invasive Species Council says Australia is not responding urgently enough.

- **Guest:** David Littleproud, Leader of The Nationals and Shadow Minister for Agriculture
- **Producer:** Grace Stranger

Aussies warned over invasive super pest found 'chewing' through backyard lawn mower

Australians are being warned their lawnmowers and other garden equipment could be harbouring invasive pests as the threat of fire ants continues to sweep through parts of the country, prompting calls for the federal government to spend more to tackle the spread. The ants pose a catastrophic risk to the environment, and the 'super pests' happily find refuge in gardening devices covered in organic material. This means a long list of tools, such as lawn mowers, whipper snippers, and other outdoor appliances can potentially host a new colony. This was the case last week for a resident in Queensland's Scenic Rim region, when their mower was discovered to be crawling with fire ants. Authorities have since urged

residents to be vigilant of the risk, warning them to do their bit to avoid the spread of the invasive critter.

Aussies urged to stay vigilant as 'super' biosecurity threat spotted spreading over border
Aussies have been urged to stay vigilant after a major biosecurity threat was discovered near the New South Wales and Queensland border. An immature fire ant nest, found on a property in Tweed Heads, was reported by a member of the public late on Wednesday. The discovery prompted an emergency operation to control the spread of the invasive "super pest". Renowned for their painful stings, fire ants can attack people, pets and livestock. It's projected they could slash agricultural output in Australia by 40 per cent if left unchecked. Invasive Species Council's Reece Pianta told Yahoo News they could also create a "huge strain" on our health system, causing up to 650,000 additional hospital appointments.

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