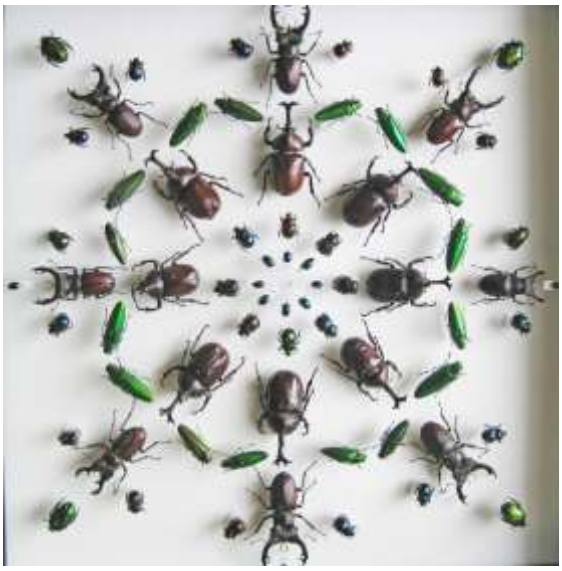
March 2020

Issue No. 609

CIRCULAR OF THE ENTOMOLOGICAL SOCIETY OF NEW SOUTH WALES Inc

In this edition of Tarsus we give you a teaser for an important up-coming article in General and Applied Entomology. Dr George Bornemissza was an eminent entomologist during the mid to late 20th century, instrumental in the development of the dung beetle program in Australia. George passed away in 2014 but left a large legacy which his wife Jo and close friend Michael Bouffard still continue to bring to fruition. After his retirement to Tasmania George collected a vast array of Coleoptera and embarked on a program to visualise not only the beetles of Tasmania, but the beetles of the world. His aim was to display his insects in both a scientific and artistic way. His early work is on display at both the Tasmanian Museum and Art Gallery in Hobart and the Australian National Insect Collection in Canberra.



This month we provide the various financial and other reports for the society:

1. President's Report
2. Minutes of the 66th Annual General Meeting on 13 March 2019
3. Honorary Secretary's Report for 2019
4. Statement of Income and Expenditure for the year ended 31 DECEMBER 2019
5. Honorary Treasurer's Report
6. Council and Committee Members Elected at the Annual General Meeting of 11 March 2020

This months member spotlight is Dr George Hangay, who like George Bornemissza, is of Hungarian descent. The two Georges were friends and spent time collecting together and George Hangay has contributed specimens towards the completion of the great work that Jo Bornemissza and Mike Bouffard are undertaking.

Finally, we continue providing hyperlinks to entomological stories and research that may be of interest to members and some interesting photos of insects.

Kind Regards

Garry Webb

Circular editor

President's Report

Dear Members,

Another successful year for the Entomological Society of NSW (ESNSW). The 67th AGM will be held on Wednesday 11 March 2020 at the Ryde -Eastwood Leagues Club; West Ryde. The ESNSW membership is dispersed around NSW and includes Council members in Tamworth (Dr Robin Gunning), Armidale (Professor Nigel Andrew) and Orange (Dr Bernie Dominiak).

ESNSW continues its efforts encouraging the profession ("General and Applied Entomology" Journal - all papers and three book reviews for Vol 47 have now been uploaded to the ESNSW website) and community interest in entomology (ESNSW is an exhibitor at the Annual Wildflower Art and Garden Festival, St Ives, NSW).

ESNSW primary focus is to support our journal, "General and Applied Entomology" (G&AE) which gives contributors the opportunity to add to the science and knowledge of entomology and allied subjects. The honorary editor of "General and Applied Entomology", Dr Robin Gunning continues to assist contributors and ensure continuity in the publications of new journals (Volume 47 is finalised and prospective contributors for Volume 48 should contact the Editor: rgunning@bigpond.com). Past issues of the "General and Applied Entomology" journal are available online. I again remind members to take advantage of the Council ruling of no charge for papers published in G&AE journal if the lead author is a financial member of the ESNSW.

Upgrade of G&AE Journal is a continuous process focusing on improved online availability and early publishing of digital versions (Vol 47 has been uploaded onto the ESNSW website). I wish to note the extraordinary efforts of Dr Robin Gunning (Hon Journal Editor), Dr Graeme Smith (Web Manager) and the Editorial Support team who have ensured the continued publication and success of the G&AE Journal.

A dedicated group of members continue the long-time tradition of arranging the ESNSW exhibit at the Ku-ring-gai Wildflower Art and Garden Festival, St Ives (the exhibit includes hand-on contact with live insects which is very popular with the young patrons who crowds the tables waiting their turn). The popular trio include "Stevie" a giant burrowing cockroach (*Macropanesthia rhinoceros*); freshly collected multicoloured harlequin bugs and Goliath Stick insects (on loan from Braxton Jones). "Stevie" (on loan from Gary Webb) has survived another year of enthusiastic attention from the flower-show visitors. The giant cockroach as always was especially popular with children but not quite so much with their parents.

The end of the year Entomological Society of NSW Dinner traditionally arranged by Mary-Lynne Taylor continues with Mary-Lynne and help from her friends. In 2019 the dinner was held at the Epping RSL Club and enjoyed by members, partners and friends. The attendees cannot escape being tested on their entomological knowledge with the Quiz conducted by Prof Dinah Hales – competition is fierce because of the highly sought after winner's prize.

The EntSoc Council current members have indicated commitment to again serve the ESNSW in 2020. Current Council members include Professor Nigel Andrew, Robin Parsons, Dr. Robin Gunning, Gitte Strid-Nwulaekwe, Barbara May, Stephen Fellenberg, Dr. Bernie Dominiak. Country members on the Ent Soc Council include Professor Nigel Andrew (UNE Armidale), Dr. Robin Gunning (Tamworth) and Dr. Bernie Dominiak (Orange). I must record the

extraordinary efforts of Robin Parsons who has “many hats” (Secretary’s functions with assistance from Barbara May and Treasurer). Finally a special thankyou to ESNSW Tarsus Circular Editor (Garry Webb) and his support team for the professional and attractive Tarsus productions.

I hope you all have an enjoyable 2020 and I encourage you to spread the word of the benefits of being involved with the Entomological Society of NSW.

Yours sincerely,
Bob Ryan

Minutes of the 66th Annual General Meeting

of The Entomological Society of New South Wales Inc.

held in the 'Turner Room' at Ryde-Eastwood Leagues Club, West Ryde on 13 March 2019

Opened: 7.10pm

Attendance: Members: Howard Greening, Dinah Hales (AES Rep), Barbara May, Robin Parsons (Treasurer), Bob Ryan (Chair/President), Graeme Smith (Web Manger), Gitte Strid-Nwulaekwe (Business Manager), Garry Webb, Non-member/visitor: None. All members present were financial and Quorum requirements met.

Apologies: Nigel Andrew, Bernie Dominiak (Councillor), Stephen Fellenberg, Robin Gunning (Editor), George Hangay (retired from Council), Swami Thalvaisundaram (Secretary).

Minutes of the 65th AGM of 2018 as transcribed in Tarsus 605 of February 2019 was proposed for acceptance as a true record by Dinah Hales subject to ratification by the current gathering as a quorum for the2018 meeting was short by one member. All present supported the acceptance of these minutes as a true and acceptable record. A copy of these minutes was subsequently verified and signed by the President.

The Business Manager (Gitte) not having attended the 2018 AGM commented on the suggestion in its minutes; (that she needed to be provided with assistance) by stating the only assistance required was that currently provided in postage of journals and Invoices. There was no further comment on the matter and no changes made to the current arrangements.

65th Report of the Council presented by Hon. Secretary; provided by Robin Parsons as published in Tarsus Issue No. 605; unanimously accepted by all present and a copy was signed by the President.

65th Report by Hon. Treasurer: The Financial Statements /membership statistics for year ended 31 December 2018 as published in Tarsus Issue No. 605 February 2019 was unanimously accepted by all present. The statements being previously audited and endorsed at the Council meeting on 13 February 2019 by Bob and Graeme.

Bank account signatories were updated in September 2018 to add Swami (Secretary) as a signatory along with Bob and Robin. An on-line banking facility was created at the same time.

An external accounts audit was not carried out for the year ending 2018.

Contracted accountant services were not requested as all statements were prepared by Robin. However, an external audit may yet be required in the next year or two.

Only one member of the 48 required was unfinancial at the 31 December but was paid in January 2019. Four memberships were lapsed, one resigned and six new memberships added.

Membership total at 31 December 2018 was 49 compared to 41 at 31 December 2017.

Society fees for 2019 were invoiced and issued on the 09 January 2019.

Financial members for 2019 as at 28 February 2019 was 32.

65th Report by Hon. Editor: Bob reported on behalf of Dr Robin Gunning (not present) that vol 46 was published in October 2018 and distributed in late November 2018. Papers were required (Garry Webb is working on submissions) for the pending Vol 47 of G&AE for 2019 and she (Dr Gunning) is prepared to continue in the role of Editor for 2019. This was accepted by all present.

65th Report by Hon. Business Manager: Gitte Strid-Nwulaekwe submitted a report as printed in Tarsus 605 of February 2019. The report noted that the majority of 'hard copy' journal stock was stored by the Business Manager (at her home) with their fate yet to be decided.

Gitte advised that the previous Business Manager (Mark Stephens) had handed over to her meticulously sorted binders of documents relating to his time in that role. There are at present about 15 subscribers and additional agents are also being sought.

Presidential address: Given by outgoing President Bob Ryan as published in Tarsus Issue No. 605 of February 2019; emphasizing the importance of the Journal (to the Society and Entomological education) its improved on-line availability but still requiring modernization. Also noting the extraordinary efforts of the Editor; Dr Robin gunning and the Editorial Support team.

Election of the Council for 2019:

POSITION	NOMINEE	NOMINATED by	SECONDED by
Hon. President	Bob Ryan	Gitte	Robin
Hon. Vice President	Prof. Nigel Andrew	Dinah	Bob
Hon. Secretary*	Dr Swami Thalvaisundaram (not present)**	Robin	Bob
Hon. Treasurer	Robin Parsons	Barbara	Howard
Hon. Business Manager	Gitte Strid-Nwulaekwe	Robin	Graeme
Hon. Editor	Dr Robin Gunning	Dinah	Graeme
Hon. Public Officer	Robin Parsons	Dinah	Graeme
Hon. Circular Editor	Garry Webb	Graeme	Bob
Hon. Councillors (3 of 4 filled)	Bernie Dominiak Barbara May Stephen Fellenberg Fourth vacant	Graeme Graeme Graeme --	Garry Garry Garry --
Website Manager	Graeme Smith	Bob	accepted by all
Australian Entomological Society - Correspondent	Dr Dinah Hales	Bob	accepted by all

*Barbara and Robin will assist with the Secretary's duties should he not be available.

(**Subsequent to this meeting Swami declined (via email confirmation) his nomination as Secretary. Consequently, secretarial duties will be carried out primarily by Robin and Barbara until the position is filled.)

The Society exhibition mascot (Ms Stevie) was transferred to Garry Webb's care as offered by Graeme.

Selection of Society Emblem for 2019:

Dinah's Ladybird (Coccinelidae) drawings may be used again as the Society Emblem and to illustrate the Journal Vol. 47 cover. Alan Westcott has previously approved of his drawings being used.

General Business:

- **A review at his meeting following the 2018 AGM's withdrawn motion to close the Society;** agreed that as long as the Journal could continue to be produced and published the Society would be continued.
- **Ted Taylor Memorial Prize:** Nothing further has been heard from Andrew Beattie et al at WSU on this matter**.** Bob suggested looking for an 'industrial contribution' to supplement the society's contribution as a Trust to finance a regular prize. Though this needed to be done before too long. Deferred for later Council meeting.
- **contribution for Macleay Museum to purchase books:** Not addressed at this meeting.
- The Society representation at **2019 Ku-ring-gai Festival of Wildflowers** was agreed to.
- **A motion was passed** to increase the overseas subscriber charge for GA&E from $50.00 to $60.00 per copy. This is to accommodate the significant costs in overseas postage. Motion proposed for acceptance by Graeme and seconded by Gitte with support of all present.
- **Editor's request to publish papers immediately as pdf on website;** A motion was passed by all present that all (except taxonomic) papers would be published ahead of the Journal only on the website behind it's member paywall.
- **Journal; reduction of hard copy print;** The Treasurer recommended that the print run be reduced by 20 copies ie from 100 to 80. This was based on combined subscriber/member requirements of 70 copies plus 10 for promotional and new member/subscribers arising during the year. Robin will obtain unit costs from the printer for varied print runs.
- **It was noted that Bryce Peters** had retired from the UTS Sydney and that the UTS no longer had an Entomology unit.
- **Show and Tell:** Robin presented a dead specimen of a dragonfly identified as a male Common glider (Tramea loewii), Libellulidae (from The Complete Guide to Dragonflies of Australia by G Theischinger & J Hawking); with distinctive brown patches at the bases of its hind wings. Dinah presented a specimen of ginger rhizome with 'ginger Borer', moth caterpillar inside it.

Closed: 8:36pm

This document assembled from AGM minutes by Mr Robin Parsons; Hon. Treasurer, for the now vacant position of Secretary on 12 November 2019, Signed as a True and Accurate Record: _____

Verified as a True and Accurate Record by,

Mr Robert Ryan, Hon. President: _____
_____/_____/_____

HONORARY SECRETARY'S REPORT for 2019

The 66th Report of the Council of the Entomological Society of New South Wales Inc. for 2019

1. **The Council for 2019 was:**

Honorary President	Mr Bob Ryan
Honorary Vice –President	Assoc. Prof. Nigel Andrew
Honorary Secretary	Robin Parsons/Barbara May
Honorary Treasurer/Public Officer	Mr Robin Parsons
Honorary Business Manager	Ms Gitte Strid-Nwulaekwe
Honorary Editor	Dr Robin Gunning
Honorary Circular Editor	Garry Webb
Councillors	Dr Bernie Dominiak Ms Barbara May Mr Stephen Fellenberg

Non-Council Officers

Web Site/ Page Manager	Mr Graeme Smith (volunteer)
Australian Ent. Soc. Correspondent	Dr Dinah Hales

2. **Membership** as at 31 December 2019: Please refer to the Hon. Treasurer's report for statistics. The Treasurer provides updated membership lists indicating only current financial members and their email and postal addresses. Except for five members all members have valid email addresses.

   From 2019 the incoming Circular Editor has been maintaining his own mailing details and posting Tarsus were required. Treasurer, Circular Editor and website Manager keep each other up to date with address changes as and where they arise.

3. **Council members & meetings**: Seven of the eight Officer positions were filled for the full year (2019); (Secretary's position being vacant) and three of four Councillor positions were filled. The Secretary's functions were carried out principally by Robin Parsons with assistance from Barbara May.

   The first scheduled Council meeting for 2019 was on the 13th February 2019; primarily for council to inspect the Treasurer's end of year (2018) accounts and review items outstanding from the general/Council meeting of the 08 August 2018.

   The next meeting was the AGM of the 13th March 2019 at which it was concluded that the society would continue as long as the Journal was viable.

   Council met again for the last time in 2019 on the 19 June at which 14 matters were reviewed; a number particularly relating to the Journal.

   The Council meeting will then be followed by a meeting in February 2020 then AGM in mid or late March 2020.

   The President and Treasurer have met informally at the Treasurer's residence during the year. Other follow up business/discussion has again been conducted by members of council by email (mainly) or phone.

4. **Society General meetings and events:** The only informal gathering/event this year was the Wild Flower Art and Garden Festival at St Ives on Sunday the 25 August 2019 and the Annual Dinner held on the 07th December 2019. The only formal gathering was the 66th AGM of 13 March 2019.

5. **The Wild Flower Art and Garden Festival 25 August 2019** (see separate Article & photos in TARSUS 607 of Nov 2019)**:** Bob, Gitte (& partner), Stephen (& partner) and Barbara attended. Stevie the Giant Rhinoceros Cockroach again fulfilled his role as exhibit mascot and member Braxton Jones, again adorned our stall with some of his Goliath Stick insects.

   Though the members attending have not changed we have again found the resources to continue contributing to this important social and educational event.

6. **The 66th AGM** was held at the Ryde –Eastwood Leagues Club at West Ryde on Wednesday the 13th March 2019 (See AGM minutes).

7. **Volume 47 of General and Applied Entomology** was not published in 2019 as expected with publication pending for 2020. Please refer to Business Manager & Editor's reports.

   However individual papers as they pass the editorial process are being posted to the Society's website and so are available to members. Notices have or will be sent to members and contributors when such papers are available either by general email or via the Website.

8. **Circulars/web-page:** Tarsus finally had a full time nominated Circular Editor (Mr Garry Webb) for 2019. A total of three issues have been produced in 2019. Thank you to Garry Webb and Dinah Hales for seeing the Tarsus through the year and giving it a facelift.

9. **Society Emblem:** The emblem for 2019 as shown on the front cover of Volume 46 remains as varieties of the Coccinellid beetle Coelophora inequalis by Artist: Betty Thorn, School of Biological Sciences, Macquarie University for Dinah Hales. Council is looking out for other sources of drawings, so if any member can assist with this please contact Council via the President.

10. **The Annual Society Dinner** for 2019 could not be held at its' traditional venue as the Italian restaurant 'Giovanna's' in Kingsford has closed. So, the dinner was held at the Epping Club (RSL) on the 07 December 2019. It was attended by members, partners and friends. Dinah again devising a challenging quiz. Prizes provided by Mary-Lynne Taylor were much appreciated. Thank you to Mary -Lynne and Dinah again for arranging the meal, decorations and quiz.

Robin Parsons, Hon. Treasurer / Relief Secretary)

08 February 2020

STATEMENT OF INCOME AND EXPENDITURE FOR THE YEAR ENDED 31 DECEMBER 2019

GENERAL FUND – INCOME		
Subscriptions paid in 2019 (up to & including 2020)	2021.00	
Plus Subs pd in advance of 2020 in prior year	00.00	
Less Subs paid in advance of 2020*	00.00	
Subscriptions Receivable (arrears @ Year End 2019)	0.00	
Less previous year Subs Receivable arrears	-45.00	
Bank interest (+ Term Deposit int $0.00)	24.56	
Donations (Dr J Anderson)	200.00	2,200.56
- PAYMENTS		
Room Hire	-101.00	
Public Liability Insurance 28 Jun 2019 to 28 Jun 2020	-826.01	
Website hosting-decompression - 2019	-132.00	
Website Domain renewal 2019 (2yrs paid in 2018)	0.00	
Members payment to Publication Fund	-0.00	
DFT Incorporation Annual lodgement fee 2019	-45.00	
Stationary & Postage less payment dr in 2018 statement chq200416 of 30.95	-107.32	-1,211.33
Result for 2019		**989.23**
PUBLICATION FUND - INCOME		
Journal Income Received	546.38	
Journal Income Receivable (arrears)	700.00	
Less Journal Income Receivable Credited prior year	-700.00	
Bank Interest	2.66	
members payment to Public'n Fund (G Strid-Nwulaekwe part subs 2019 deposit	19.00	
Closing Journal Stock 31 Dec 2019 (-$750 for 15,(v46x12) issued, vol47not publ'd	2,400.00	
Advances to be Recovered	150.00	
Less supported claims against Advance(s)	0.00	3,118.04
LESS: PF Expenses = Costs of Journal		
Opening Journal Stock 01 Jan 2019	-3150.00	
Postage & Stationary Less payment dr in 2018 statement chq200416 of 157.95	-203.80	
Printing Costs (Arrowprint) Journal Vol 47 not published within 2019	0.00	
Advance-Business Manager Float 05 June 2017	-150.00	-3503.80
Result for 2019		**-385.76**

BALANCE SHEET AS AT 31 DECEMBER 2019

ACCUMULATED FUNDS; Balance to 31 December 2018			30,251.17
Results for the year 2019	General Fund	989.23	
	Publication Fund	-385.76	603.47
Balance to 31 December 2019			**30,854.64**
REPRESENTED BY: Cash at Bank	General Fund	24,674.23	
	Publication Fund	2,930.41	
	Term Deposit	0.00	27,604.64
Journal Stock-Committee's valuation			2,400.00
Debtors; Members Subscription arrears		00.00	
Journal Payment arrears		700.00	
Advances to be recovered		150.00	850.00
Less CURRENT LIABILITIES Members Subscriptions in advance (>2020)*		0.00	
Uncleared cheques (0), Contras/expenses 2019 paid in 2020 (0)		0.00	0.00
Total Assets at 31 December 2019			**30,854.64**

Prepared & reconciled by Mr Robin Parsons; Hon. Treasurer 21 Feb 2020; sgn

HONORARY TREASURER'S REPORT
THE ENTOMOLOGICAL SOCIETY OF NEW SOUTH WALES Inc.
MEMBERSHIP at the 31 DECEMBER 2019

CATEGORY	FINANCIAL	UNFINANCIAL	TOTALS
Honorary Life	1 - n/a	n/a	1
Ordinary	37	0	37
Special (eg retired)	7	0	7
Student	3	0	3
Company Assoc.	1	0	1
Totals	**49**	**0**	**49**

Resigned Members
Nil
(NB Mr Rolfe W Drueke resigns effective 01 Jan 2020)

Lapsed Members
Mr Zhongmin Liu-June 2019

New Members
Nil
(NB Ms Elizabeth A Frost joined 29 Jan 2020)

Likely to Lapse
Nil

Prepared by Robin Parsons Hon. Treasurer
09 February 2020

COUNCIL and COMMITTEE MEMBERS elected at the Annual General Meeting of 11 March 2020;

Dear Members,

Secretarial confirmation of the Honorary Officers and other Committee members elected for 2020 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**: No nominations or acceptances; Robin Parsons will continue managing principal duties with alternating handovers to Gitte Strid-Nwulaekwe & Barbara May will assist with minute taking.
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
Councillors: 1) Ms Barbara May;
2) Mr Stephen Fellenberg;
3) Dr Bernie Dominiak; DPI Orange
4) Mrs Mary-Lynne Taylor
Other volunteer roles:
Web Manager: Mr Graeme Smith; Web site: www.entsocnsw.org.au:
Australian Entomological Society – (AES- Myrmecia): **Correspondent**: Dr Dinah Hales;

Prepared by Robin Parsons (Treasurer; assisting Secretary) on behalf of Mr Robert Ryan, President 23 March 2020.

Member Spotlight

George Hangay

Early life: I was born in Budapest, in the year when Hungary declared war on the U.S.A. Not a lucky decision...I was baptised as a Roman Catholic and I got the name George after King George VI. - as my parents were dyed in the wool anglophiles and they hoped for a victory by the Allies. Despite of the miserable years of war, I enjoyed myself tremendously, watching the night raids from the window of our weekender in the hills above Budapest, the aerial battles, the exploding bombs, burning and crashing of the aeroplanes. Obviously, I didn't understand the true nature of the war. When the Red Army stormed our small house, my mother prepared to die. Instead, when the first Russian entered the house, he stuffed handfuls of banknotes in my jumper. They loved children - I was lucky. After the war I was introduced to entomology in a rather rustic way. My grandmother loved gardening and she taught me how to discover and capture caterpillars, grasshoppers and other insects. She also showed me how to preserve them. Soon I had a small, but ever growing collection. I expanded it and by the age of 9 my collection included apart from insects, vertebrate animals too. I started to learn taxidermy by pestering the world-renown taxidermist Béla Hüttler at the Hungarian Natural History Museum. I hung around the preparation department of the museum as much as I could. I soon got an air rifle and it helped me to get some specimens for my taxidermy practice. It sounds nasty now but it was acceptable then.

Later: My family's business was hospitality and we had a restaurant and bar. I loved it and made many friends amongst the patrons. They usually drank themselves into a stupor, trying to come to terms with a lost war and communism. In the mid 50s our life changed. The restaurant was "nationalised" - meaning stolen from us by the communist government. We got to know poverty. After finishing 8 yrs of school, I became a waiter's apprentice. I hated this job and to compensate myself, I spent all my free hours with my beetle studies. The great Dr. Sebő Endrődi and later his son Dr. Sebastian Endrődy- Younga mentored me in Coleopterology. Following Dr. Endrődi's footsteps I started to focus on the Dynastinae. I must have been the weirdest waiter in Budapest, who spent all his free time collecting beetles and copying old German coleopterology books in the museum's library, by hand! No photocopier or word processors in those years! I also had to learn German to be able to understand what I was copying!

Much later: By 1965 I had enough of communist Hungary. I was 24 and I realised that it was time to do something worthwhile. I gave my collections to the Hungarian Natural History Museum and left the communist block in Germany by simply walking through Checkpoint Charlie from East to West Berlin. To cut the long story short, after a few months service in

the U.S. Army, I migrated to Australia. But on the way, I jumped ship and joined a German expedition to Panama. It was like a dream came true to see a tropical jungle, its fantastic wildlife and collecting insects in a real rainforest.

Australia: I followed my dream in Australia. I made a living by hunting feral animals and the prepared (taxidermy) specimens I sold to gun shops. I lived on Mt. Coricudgy, near Kandos in an abandoned Forestry house for nearly a year then moved to North Queensland to hunt saltwater crocodiles. When the crocs became fully protected by law,I came back to Sydney. My wife finally managed to get permission to leave Hungary and re-joined me. In 1972 I gained employment at the Australian Museum as a Preparator. Later I became the Chief Preparator and I held this position until my retirement in 1994. In the meantime I enrolled in the Sydney College of the Arts and got a Post.Grad. Dip. in visual arts (sculpture). I continued my studies at University of Wollongong (UOW) where I completed my sculptural studies resulting in a Master of Creative Art Degree and a Doctorate of Creative Arts. Coleopterology remained my main private interest and with my wife or with colleagues we travelled and collected widely not only in Australia but also in every continents except Antarctica. For about 10 years we worked as guest entertainers on cruise ships where I gave talks and Power Point presentations about natural history and art. Through entomology I made a number of great friends. Amongst them was Dr. George Bornemissza, who lived in Tasmania, but was born in Hungary. No need to introduce him here, as everybody who is interested in entomology would know him and his great achievements of introducing dozens of dung beetle species, mainly from Africa and Europe. He also had extensive knowledge of the Lucanidae and maintained a valuable collection. I learned quite a lot from him of the Tasmanian beetle fauna.

George on a collecting trip in Sarawak, Borneo

Entomology: All through these years I collected and studied beetles, mainly the Scarabaeoidea or Lamellicornia, as it was known earlier. I have built up a large private collection which I eventually donated to various museums and universities (Australian Musum, South Australian Museum, Macleay Museum at Sydney University, Newcastle University and others). I have written a number of books and articles, sometimes with co-authors, about museum preparation techniques, Australian insects, beetles, stag beetles, etc. I also published 12 books in Hungarian about adventure travel, collecting and beetles. Presently, I am working with Dr. Ottó Merkl (Hungarian Natural History Museum, Coleoptera Dept.) on a book discussing the World's fauna of Lucanidae and Dynastinae. When I find time and energy, I try to curate my untidy collection of Scarabaeoidea.

New Entomological Research

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

How Much Do You Know About Fleas?

If you have any furry pets at home, such as cats or dogs, then you may have had to deal with fleas at one time or another. Fleas are incredibly irritating insects that nestle themselves deep inside of a pet's furry coat and then sustain themselves by biting the host for its blood. Apart from their itchy side-effect, one thing fleas are known for is their long-distance jumping capabilities. This is ultimately what makes it so easy for fleas to land on you or your pets, even when they're on the ground initially. As it turns out, fleas manage this incredible leap with the help of their springy legs and compressible proteins that, in one fell swoop, release a ton of energy that launches the insect high into the air.

Why tiny ants have invaded your house, and what to do about it

It's nigh on impossible to calculate with accuracy how many ants are on Earth, but estimates put the number at about ten billion billion. And sometimes, it can feel like a good proportion of those ants are marching through our homes. Ants usually come indoors in search of food or nesting habitat. Even small amounts of food, like pet food crumbs, can attract hordes of industrious ants. Despite ants' ubiquity, people can still be surprised, or even horrified, to see a line of ants crawling along their kitchen bench. So should you get out the insecticide, or learn to live with them?

How the humble dung beetle engineers better ecosystems in Australia

Dung beetles play an important role helping clear up all the dung left by other animals in an environment. In Australia there are approximately 475 native species of dung beetle. But there's a problem. Most of them are adapted to deal with marsupial dung. When British colonisers brought livestock down under, they introduced an entirely new type of dung that the native dung beetles were ill-equipped to handle. Cattle dung is wet and bulky. It is very unlike marsupial dung – which is typically small, dry pellets – and so the native dung beetles largely left it alone. As a result, large deposits of cattle dung accumulated in the Australian agricultural landscape. Besides fouling the land, the dung was an excellent breeding site for bush flies and other nuisance insects, as well as internal parasites that plague the digestive tracts of livestock. So CSIRO embarked on an ambitious plan to introduce into Australia many dung beetles that were adapted to livestock dung. Starting in 1966, it imported and released 43 species of dung beetles over 25 years.

Evolution of life cycle of parasitic worm that takes over 'zombie ants'

It could be the plot of a B-horror movie: microscopic parasitic worms invade the brains of ants, and use mind control to make the "zombies ants" do their bidding. Sounds a little over the top, perhaps, but it is, in fact, the true-life story of the ingenious parasitic flatworm, *Dicrocoelium dendriticum*, which is found in increasing numbers in livestock and wildlife in the Cypress Hills region of Alberta and Saskatchewan. Exactly how this parasite has evolved to manipulate the ant to ensure it is eaten by a grazing animal has been a head scratcher for researchers.

Research looks to beneficial insects for pest control

A Texas A&M AgriLife Extension Service entomologist is studying how a combination of beneficial insects can help control the pests in greenhouses. Erfan Vafaie, AgriLife Extension program specialist in Integrated Pest Management, Overton, just wrapped up the second year of a three-year study looking at the use of predatory beneficial insects—mites and wasps—to control sweet potato whiteflies in commercial settings. Vafaie's study is for his doctorate dissertation under the supervision of Kevin Heinz, Ph.D., a senior professor in Texas A&M University's Department of Entomology at College Station.

Dragonflies are efficient predators: They consume hundreds of thousands of insects in a small area

A study led by the University of Turku, Finland, has found that small, fiercely predatory damselflies catch and eat hundreds of thousands of insects during a single summer -- in an area surrounding just a single pond. In terms of weight, this equates to a total prey mass of just under a kilo. Dragonflies mostly catch different kinds of midges, but also large numbers of other insects. Who keeps numbers of insect in check during the summer? This has been debated for some time, but a clear answer has remained elusive, as it has been difficult to monitor the numbers consumed by different insect predators. A new study now sheds light on the role of dragonflies that occur in large numbers.

This Fungus Kills Flies in an Unusual Way

If you're a fly, then you'd do good to hope you never come in contact with a type of fungus known by its scientific name *Entomophthora muscae*. This fungus kills flies slowly and gruesomely – its spores infiltrate the host fly's skin, and afterward, they grow and develop inside the fly's body. In time, typically three to five days, the fly begins to exhibit unusual behavior. It begins with a twitch and is followed by aimless wandering. Eventually, the fly crawls to the top of a high place, a behavior known as summiting.

How changes in weather patterns could lead to more insect invasions

Outbreaks of insect pests and insect invasions are on the rise on the African continent. Currently, several African countries—including Kenya, Ethiopia and Somalia—are dealing with the one of the most devastating outbreaks of desert locusts. This comes after recent fall armyworm invasions which affected more than 44 African countries. Countries also grapple with more localised pest invasions of insects like the South American tomato moth and maize stem borers. Insect-pest related crop losses and pest invasions are projected to increase as the climate changes. Projected changes include changes in temperature—with many regions becoming warmer – and the amount of precipitation. Insects thrive in warmer temperatures.

These Insects Blend in with the Leaves They Cling to

There are a lot of animals on Earth that use camouflage to blend in with their surroundings, but perhaps one of the better examples of this in action is the humble leaf insect, which can look exactly like the very plants that it clings to and eats as it evades predators.

The ability to look exactly like your surroundings as you evade predation is known as protective resemblance, and the leaf insect does it very well. Even down to the smallest details, the leaf insect looks just like an actual leaf – from the veins running across its body to the brown crinkly parts at the ends. The only conspicuous parts of the insect might be its eyes and antennae, which stick out like a sore thumb. On the other hand, the insect uses careful stillness to its advantage to avoid getting noticed, and this method seems to work rather well.

Melting properties determine biological functions of cuticular hydrocarbon layer of ants

As social insects, ants are particularly dependent on optimizing their communication in order to ward off enemies and to recognize individuals from their own colony. They must also protect themselves against desiccation. Their bodies are covered with wax-like substances known as cuticular hydrocarbons (CHCs) that serve both purposes -- communication and protection against desiccation. However, while recognition of other ants requires the CHC layer to be not too solid, making it easier for other ants to sense the chemical signals in the layer, desiccation protection requires it to be as solid as possible. To resolve this conflict between the needs of communication and waterproofing, this layer is composed of CHCs with special physical properties, as biologists have now discovered.

Deaf moths evolved noise-cancelling scales to evade predators: Scales shown to be more efficient than today's sound engineering technology

Some species of deaf moths can absorb as much as 85 per cent of the incoming sound energy from predatory bats -- who use echolocation to detect them. The findings, published in *Royal Society Interface* today [25 February], reveal the moths, who are unable to hear the ultrasonic calls of bats, have evolved this clever defensive strategy to help it survive. Bats hunt at night using echolocation. The technique, which is also known as biological sonar, first evolved around 65 million years ago and enables bats to search for and find prey putting huge predation pressure on nocturnal insects. One defence that many nocturnal insects evolved is the ability to hear the ultrasonic calls of bats, which allows them to actively evade approaching bats.

Fifteen years & 20 million insects: Sweden documents its insect fauna in a changing world.

The Swedish Malaise Trap Project (SMTP) was launched in 2003 with the aim of making a complete list of the insect diversity of Sweden. Over the past fifteen years, an estimated total of 20 million insects, collected during the project, have been processed for scientific study. Recently, the team behind this effort published the resulting inventory in the open-access journal *Biodiversity Data Journal*. In their paper, they also document the project all the way from its inception to its current status by reporting on its background, organisation, methodology and logistics. The SMTP deployed a total of 73 Malaise traps -- a Swedish invention designed to capture flying insects -- and placed them across the country, where they remained from 2003 to 2006. Subsequently, the samples were sorted by a dedicated team of staff, students and volunteers into over 300 groups of insects ready for further study by expert entomologists. At the present time, this material can be considered as a unique timestamp of the Swedish insect fauna and an invaluable source of baseline data, which is especially relevant as reports of terrifying insect declines keep on making the headlines across the world.

How do we protect our unique biodiversity from megafires?

This summer's devastating Australian fires and their continuing impact on biodiversity serve as a stark reminder of the challenges in nature conservation as we head into an increasingly volatile future driven by climate change. It is no longer sufficient to protect land areas as part of a national reserve system in the hope that these areas can protect the rare and vulnerable species within them and maintain overall biodiversity. Megafires destroy vast tracts of land and are now occurring at a frequency and severity that prevents natural ecosystem recovery processes. The Australian alpine region has historically experienced a major fire every 50 to 100 years. In the last two decades alone, we have witnessed four significant fires in 2003, 2007, 2009 and 2019, with some areas burnt more than three times since 2003.

The wicked risks of biosecurity: Invasive species in Australia

Invasive species have the potential to damage our economy, change our way of life and impact our wellbeing. We have seen this in previously introduced pest species like cane toads, which are highly toxic to both domestic pets and native species, and are a common nuisance in recreational areas like swimming pools. Currently, a pest at the forefront of many people's minds is the tramp ant—a diverse group of invasive ant species which have become established widely across the globe. This includes the red imported fire ants that are currently undergoing eradication in Queensland. Their effect on livestock, native insects and marsupials would be devastating, sending more species to the brink of extinction and increasing farmers' production costs. They are also a major human health concern in backyards and playgrounds, as their sting can cause a fatal anaphylactic shock in some people, similar to wasps and bees. And hot off the press, the fall armyworm, a potentially devastating pest that isn't actually a worm but feeds in large numbers on leaves and stems, has just been detected in the Torres Strait.

FIGHTING EXOTIC ANT INCURSIONS

Australia takes incursions of new exotic ant species seriously. Over the past ten years, approximately $400 million has been spent attempting to eradicate several exotic ant species from Australia. Just recently another $400 million has been dedicated (over the next 10 years) to a single program alone – the red imported fire ant (*Solenopsis invicta*) eradication program in Brisbane. This program is now the second largest eradication program in Australia's history, trailing the successful Brucellosis and Tuberculosis Eradication Program that ran in northern Australia in the 1980s.

Although Australia's ant eradication programs are publicly known, and have high levels of local public engagement, they aren't necessarily well known to the wider Australian population. So here is a summary of what is happening.

THE FIGHT AGAINST INVASIVE ANTS

Australia is an ideal environment for the introduction and establishment of invasive animals and plants. As an isolated island continent, Australia abounds in ecological niches that invasive species can take advantage of – look no further than feral rabbits, cats, foxes, pigs, deer, camels and even the iconic brumby. But these are the big ticket species. Think a little smaller and we have just as many problems from invasive agricultural pests to something of interest for professional pest managers. We don't think twice about it but most of the common pests we deal with, such as American and German cockroaches, cat fleas and a range of other species are invasive insects – they don't originate here in Australia. The good old coastal brown ant (aka African big-headed ant) has been here for over 100 years and we call it our own.

Mosquito virus threat increased by NSW rains flooding

Eastern Australia welcomed a deluge of rain, easing the bushfire threat and filling dams, but the wet weather could also boost mosquito numbers as the pernicious insects flock to floodwaters to breed. The latest mosquito monitoring report from NSW says "very high" numbers are concentrated in Sydney's western suburbs, including Parramatta and in the Georges River at Bankstown and Illawong. Large numbers were also recorded on the coast at Port Macquarie and on the Queensland border while in inland areas, populations are low. However, recent heavy rainfall could trigger dormant mosquito eggs to hatch and swarm flooded regions.

Medical entomologist Cameron Webb, of NSW Health Pathology, says more mosquitoes are to be expected as the rain fills up wetlands and flows into bushland.

This Wasp Turns Cockroaches Into Zombies for its Larvae

We can't think of anyone that likes cockroaches, but one insect in particular seems to scout them out specifically for its own bizarre reasons. The emerald cockroach wasp, also sometimes called the jeweled cockroach wasp because of its colorful body that shines like that of a jewel, goes out of its way to seek out a viable cockroach host that it can use to ensure the survival of its larvae. Upon locating a viable specimen, the emerald cockroach wasp slowly approaches the cockroach and delivers a number of stings. The first prevents the cockroach's front legs from moving, while the second disables the insect's flight response. After the venom sinks in, the cockroach begins grooming itself relentlessly while the wasp waits at a safe distance. After the wasp determines that the cockroach is no longer a threat, it closes in again and severs its antennae. The wasp then drags the cockroach into its burrow, where it lays an egg on the insect's body. Then, the wasp exits the burrow and seals it off, ensuring that its offspring can feast on the cockroach's remains when it hatches.

Eco-friendly way to stop mosquitoes: Researchers devise an eco-friendly way to eradicate a buzzing, biting pest

It has long been the dream of infectious disease researchers around the world to create a safe, non-toxic way to kill mosquitoes. University of New Mexico scientists may have found a way to do just that with a simple hack that uses ordinary baker's yeast and orange oil to kill mosquito larvae before they grow into the buzzing, biting scourge of humanity. In a paper published this month in the journal *Parasites & Vectors*, they report their method is effective against Aedes aegypti mosquitoes, which transmit dengue, chikunguya and Zika. Essential oils from plants like orange oil have known insecticidal properties, said Ivy Hurwitz, PhD, a research associate professor in UNM's Center for Global Health. "Plants use it to protect themselves against predators," she says, "so we're just using it in a different way." Simply put, Hurwitz and her collaborators have found a way to inject orange oil into yeast cells. The oil kills the yeast, but tiny droplets of oil remain contained inside the yeast's tough cell wall.

Fossilized insect from 100 million years ago is oldest record of primitive bee with pollen

Beetle parasites clinging to a primitive bee 100 million years ago may have caused the flight error that, while deadly for the insect, is a boon for science today. The female bee, which became stuck in tree resin and thus preserved in amber, has been identified by Oregon State University researcher George Poinar Jr. as a new family, genus and species. The mid-Cretaceous fossil from Myanmar provides the first record of a primitive bee with pollen and also the first record of the beetle parasites, which continue to show up on modern bees today. The findings, published in *BioOne Complete*, shed new light on the early days of bees, a key component in evolutionary history and the diversification of flowering plants.

Orb-weaver spiders' yellow and black pattern helps them lure prey

Researchers from Australia, Singapore, Taiwan and the UK placed cardboard cut-out models of the golden orb-weaver, *Nephila pilipes*, onto real webs in the field. Testing different combinations of colours and patterns they discovered that both the yellow colour and the black and yellow mosaic pattern are essential for luring prey during the day. The webs of *Nephila pilipes* also capture prey during the night, and the experiments demonstrated that the yellow colour alone was very effective at luring nocturnal insects. Orb-weaving spiders are found in different light conditions, and comparisons between many different species revealed a link between light environments and orb-weaver body colour patterns.

Expert panel says 113 species need urgent attention after Australia's bushfires

The Kangaroo Island dunnart, the northern corroboree frog and the Blue Mountains water skink are among 113 species that need urgent attention after the bushfire crisis, according to a government analysis. Nineteen mammals, 13 birds, 20 reptiles, 17 frogs, five invertebrates, 22 crayfish and 17 fish species have been identified as the animals most in need of assistance in coming weeks and months. The list comes after the environment minister, Sussan Ley, convened an expert panel to analyse which species required short-term assistance and long-term recovery work in the coming weeks and months. The list is based on consideration of how imperilled a species was before the fire crisis, how much of its distribution area has burnt, and what its likely response to fire would be.

Natural wonder: Millions of baby red crabs begin migration onto Christmas Island

Tens of millions of baby crabs have begun their long journey from the depths of the Indian Ocean to the tropical shores of Christmas Island. Measuring less than 5mm - these baby crabs' arrival on the tiny territory off the Australian mainland is a sight to behold. Smaller than half a fingernail, the tiny crabs resemble a giant, wiggling red carpet as they move in massive groups across jetties, rock faces, roads and pebble-covered beaches. Their migration to the small island spans approximately nine days and is a treacherous journey. In fact, most of the minuscule critters will not make it to land. But each year, as the high tide turns between the last quarter and new moon, their arrival is celebrated and vigorously protected among locals and tourists. Roads are closed, rangers from the Cocos (Keeling) Islands fly over to help, and locals pitch in to watch over the millions of crabs as they march into the jungle. Their arrival follows the annual migration in October or November or sometimes as late as December or January - marked by the first rainfall of the wet season.

Of ants and men: Ant behavior might mirror political polarization

Could the division of labor in an anthill be driven by the same social dynamics governing the gap between liberals and conservatives? That was the surprising question tackled by Princeton biologists Chris Tokita and Corina Tarnita. "Our findings suggest that division of labor and political polarization—two social phenomena not typically considered together—may actually be driven by the same process," said Tokita, a graduate student in ecology and evolutionary biology. "Division of labor is seen as a benefit to societies, while political polarization usually isn't, but we found that the same dynamics could theoretically give rise to them both." In a paper published today in the *Journal of the Royal Society Interface*, Tokita and Tarnita examined two forces known to drive political polarization and added them to an existing model for how division of labor arises in ant communities. They found that a feedback between these two forces simultaneously resulted in division of labor and polarized social networks.

'Trumpapillar': Fluffy Caterpillar Looks Just Like Donald Trump's Hair

New photos have revealed a bizarre, big-haired beast lurking deep in the Peruvian Amazon, and scientists noticed that the odd creature bears a striking resemblance to a certain U.S. presidential candidate's famous (or perhaps infamous) hairdo. The flannel moth caterpillar (*Megalopyge opercularis*) sports fluffy, orange tufts that look suspiciously similar to Donald Trump's hair. As such, the researchers who encountered this creature have dubbed it the "Trumpapillar," after the Republican presidential candidate.

Photo Corner

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

The pink ground pearl (*Eumargarodes laingi*) (Hemiptera: Coccoidea, Margarodidae) is a primitive, subterrestrial relative of the widely recognized, above-ground armored scale insect group (Diaspididae). Pink ground pearl is an increasing problem in cultivated turf, particularly golf courses. If you would like to read more check these sites:

https://issuu.com/agcsa/docs/atm_20.3_e-book
https://www.agric.wa.gov.au/biosecurity/ground-pearls-insect-pests-lawns-and-turf

Pink Ground Pearl at Cronulla Golf Course, Sydney (adults, late stage egg and damage to turf) (Garry Webb)

Your worst nightmare - American cockroaches (*Periplaneta donaldtrumpi*) living under your refrigerator.

Luckily not – this was a posed photo for a commercial display (Garry Webb)

The value of maintaining insect collections is often lost on politicians and the general public. It's when we come to times like these with land-clearing, drought, fire and climate change impacting on ecological diversity that such collections are a sobering reminder of what we have or in some cases what we had. The original NSW Forestry collection continues to be actively integrated into the NSW DPI collection at Orange. Here is a selection of Buprestidae from the combined collection (Garry Webb).


CASTIARINA
octomaculata
Sound.


CASTIARINA
vicina
Sound


CASTIARINA
spinolae
Id. by H. J. Carter


CASTIARINA
subpura
Blkb.

Rhytiphora solandri **commonly infests the flower spikes of** ***Xanthorrhoea*** **(grass trees). Around Sydney this is common in** ***Xanthorrhoea resinosa.*** **The larvae girdles the stem around 0.5m high which often snaps off in the wind. Larvae can either tunnel upwards into the flower spike proper or downwards towards the green leaf whorls (Photos Garry Webb). Slipinski and Escalona (2013) recently synonymized a raft of historic Lamiine genera into** ***Rhytiphora*** **and Lauren Ashman is in the process of ratifying these changes in her PhD through ANU. (Note the tiny cerambycid [not** ***R. solandri***] **alongside the pupal plug in the 3rd photo which I did not notice at the time the photo was taken).**

Slipinski and Escalona (2013) Australian longhorn beetles (Coleoptera: Cerambycidae) Vol. 1. Introduction and subfamily Lamiinae. CSIRO Publishing, Melbourne.

Rhytiphora solandri **(Photo Garry Webb).**

Xxxxxxxxxxxxxxxxxxxx

A most impressive jewel beetle (*Cyrioides imperialis*) (Photo Garry Webb November 2019). A recent report from Tasmania by Karen Richards and Chris Spencer in 2018 describes the life history of *Cyrioides imperalis* if you are interested.

https://www.researchgate.net/publication/329718457_Exploitation_of_sapling_Banksia_marginata_by_Cyrioides_imperialis_Fabricius_1801_Coleoptera_Buprestidae_in_Tasmania (you will need to cut and paste this web address into your browser as ResearchGate does not allow access directly from a PDF)

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