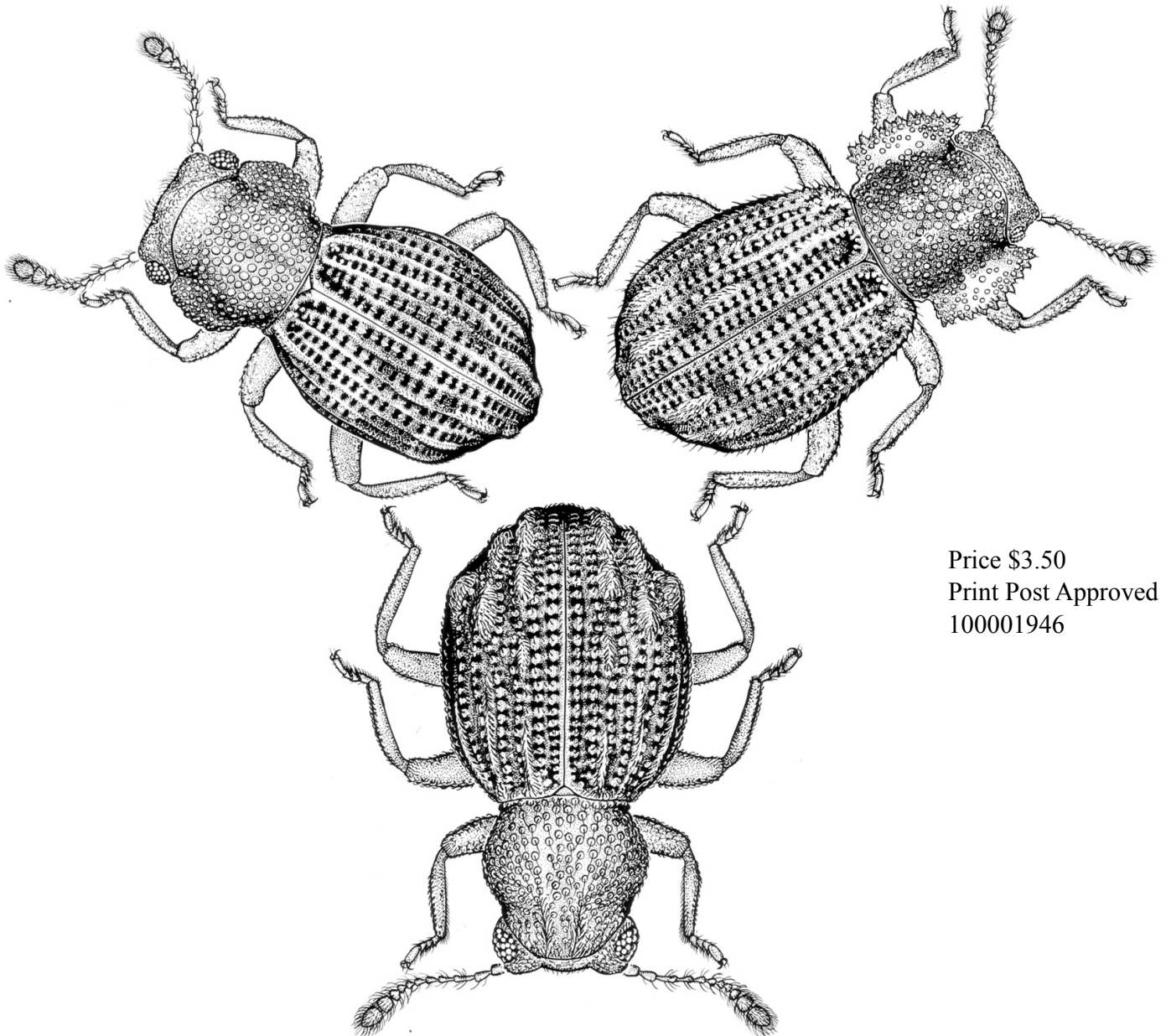


Entomological Society of Queensland

NEWS BULLETIN



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Entomological Society of Queensland

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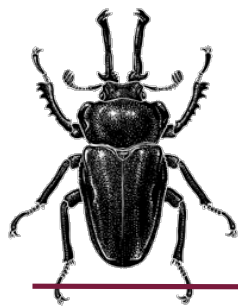
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Front Cover Illustration: Three species of recently revised *Enhypon* beetles (Zopheridae). Clockwise from top left: *E. cordicollis* Turco & Ślipiński, *E. costatum* (Carter) and *E. laticeps* Carter. The genus is an Australian endemic with a hotspot of diversity in Tasmanian forests. These are small cryptic beetles inhabiting forest leaf litter and moss, where they conceal themselves by encrusting a thin layer of dirt over their bodies. The beautiful illustrations are by Sybil Curtis when she was employed as an artist by CSIRO.

ISSN 1037-2989



Entomological Society of Queensland

Table of Contents

Minutes from the General Meeting.....	150
At our next meeting.....	151
Annual Reports.	
President.....	152
Secretary.....	154
Treasurer.....	157
Permit.....	158
Journal.....	160
Bulletin.....	162
Main Business:	
Three glimpses of a green beetle	163
A window into the wonderful world of <i>Cephalodesmius</i>	169
Imaging system upgrade at Queensland Museum.....	172
The History Corner.....	175
Queensland Entomology News.....	176
Stockyard Creek BugCatch.....	181
Insects in Public Art.....	184
New Books.....	186
Notices and Announcements.....	187
Conferences and Meetings.....	188

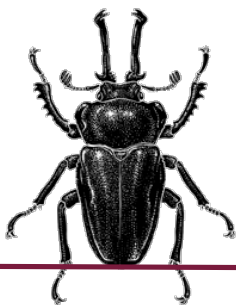
The **ENTOMOLOGICAL SOCIETY OF QUEENSLAND**, since its inception in 1923, has striven to promote the development of pure and applied entomological research in Australia, particularly in Queensland. The Society promotes liaison among entomologists through regular meetings and the distribution of a *News Bulletin* to members. Meetings are announced in the *News Bulletin*, and are normally held on the second Tuesday of each month (March to June, August to December). Visitors and members are welcome. Membership information can be obtained from the Honorary Secretary, or other office bearers of the Society. Membership is open to anyone interested in Entomology.

Contributions to the *News Bulletin* such as items of news, trip reports, announcements, etc, are welcome and should be sent to the News Bulletin Editor.

The Society publishes **THE AUSTRALIAN ENTOMOLOGIST**. This is a refereed, illustrated journal devoted to Entomology in the Australian region, including New Zealand, Papua New Guinea and the islands of the South Western Pacific. The journal is published in four parts annually.

EMBLEM: The Society's emblem, chosen in 1973 on the 50th anniversary of the Society, is the King Stag Beetle, *Phalacrognathus muelleri* (Macleay), Family Lucanidae (Coleoptera). Its magnificent purple and green colouration makes it one of the most attractive beetle species in Australia. Other common names include Rainbow, Golden and Magnificent Stag Beetle. It is restricted to the rainforests of northern Queensland.

The issue of this document does **NOT** constitute a formal publication for the purposes of the "International Code of Zoological Nomenclature 4th edition, 1999". Authors alone are responsible for the views expressed.



Entomological Society of Queensland

Minutes for General Meeting

Tuesday, December 8th, 2015

Held in the Seminar Room, Ecosciences Precinct,
Boggo Rd, Dutton Park

Meeting opened: 4:00pm

Chair: Federica Turco

Attendance (21): Nadine Baldwin, Bradley Brown, Richard Bull, Kathy Ebert, Gary Fitt, Des Foley, Tim Heard, Chris Lambkin, Geoff Monteith, Mike Muller, Bill Palmer, Cate Paull, Brenton Peters, Don Sands, Mark Schutze, Noel Starick, Geoff Thompson, Federica Turco, Jane Royer, Michelle Vine, Richard Zietek.

Visitors (4): Luke Barnett, Mike Barnett, Paul Ebert, Russell Hoodler.

Apologies : Lyn Cook, Julianne Farrell, Steve Frances, Peter Gillespie, Stephen Hey, Ross Kendall, Morris C. McKee, David Merritt, Penny Mills, Nancy Schellhorn, Desley Tree, Fenton Walsh, Susan Wright.

Minutes: The minutes of the last meeting were circulated in News Bulletin 43[8] November 2015. Moved the minutes be accepted as a true record: Don Sands
Seconded: Christine Lambkin
Carried: All

Nominations for membership:

The following new members were approved by council:

1. Cleveland D. Heard (General), Booralite, VIC.
Nominated by Cliff Myer,
Seconded: Steve Brown.

2. Michelle Vine (Student), Southport, QLD.
Nominated by: Mark Schutze,
Seconded: Bill Palmer.

3. David Comben (Student), St Lucia QLD.
Nominated by Kathy Ebert,
Seconded: Mark Schutze.

4. Becky Robinson (Student), Durack, QLD.
Nominated by G.B. Monteith,
Seconded: Kathy Ebert.

General Business:

The next Bug Catch is scheduled for 8-10 January 2016 and will be held in the area of Stockyard Creek in the hills to the SW of Gatton. There's a small community hall that we have access to over the weekend, with facilities and space outside to pitch tents. A buffet lunch will be put on for us by the Citizens of Lockyer Inc. on the Sunday lunch.

Main Business:

Notes & Exhibits presentations:

1. "Three glimpses of a green beetle" with Geoff Monteith
2. "A window to the wonderful world of Cephalodesmius" with Kathy Ebert
3. "Queensland Museum Visionary Digital System upgrade" with Geoff Thompson & Andy Wang
4. "Biogeography of Australian native stingless bees" with Tim Heard

Meeting closed: 5:20pm

The meeting was followed by our Christmas "bbq" from 5-6pm.

At our next meeting...

Presidential Address and AGM

“Not only darkling beetles: a professional and personal journey among Tenebrionoidea beetles”

Federica will take you on her personal and professional journey through tenebrionoid diversity research from the beginning of her career in Italy to her new home in Australia. Meloids (blister beetles), ripiphorids (wedge-shaped beetles) and zopherids have been under her microscope while hundreds of kilometers have been travelled in Europe, North Africa, Middle East and Australia in the pursuit of discovering new species and unravelling evolutionary puzzles.

This meeting will also be our AGM and we will approve council nominations for 2016, ratify the constitutional by-laws and present the annual reports for 2015.

Afternoon tea following. Visitors welcome!

March 8th at 1pm

Seminar Room at EcoSciences



Nominations for 2016 Office Bearers

The following nominations were received by the Secretary before closing date of January 27th:

President: Bradley Brown. *Nominated by* Matthew Purcell, *Seconded by* Andrew Hulthen

Senior Vice President: Tim Heard. *Nominated by* Penny Mills, *Seconded by* Kathy Ebert

Secretary: Mark Schutze. *Nominated by* Bradley Brown, *Seconded by* Geoff Monteith

Treasurer: Brenton Peters. *Nominated by* Mark Schutze, *Seconded by* Penny Mills

Councillor: Penelope Mills. *Nominated by* Yen-Po (Paul) Lin, *Seconded by* Lyn Cook

Councillor: Julianne Farrell. *Nominated by* Federica Turco, *Seconded by* Helen Nahrung

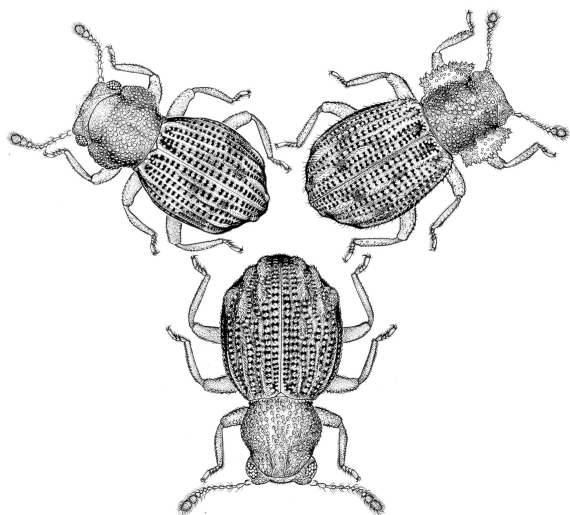
Councillor: Cate Paull. *Nominated by* Andrew Hulthen, *Seconded by* Nancy Schellhorn

News Bulletin Editor: Kathy Ebert. *Nominated by* Brenton Peters *Seconded by* Penny Mills

Australian Entomologist Journal Business

Manager: Geoff Monteith, *Nominated by* Penny Mills, *Seconded by* Brenton Peters

As only one nomination has been received for each position, a ballot will not be required at the AGM, however, the members present at the AGM will vote to approve the nominations. The position of Past President is automatically filled by the previous year's President, and this year it will be Federica Turco.



Entomological Society of Queensland Annual Reports for 2015

President's Annual Report 2015

--Federica Turco

That time of the year has come again when the President is due to draw a line and overview what has happened during the year and how the Society has gone. I am pleased to say that 2015 has been a rather easy-flowing and very positive year!

New members have joined or re-joined our Society, including many students who are always very much welcome to participate, share and grow their interest in Entomology.

Meetings at Boggo Road have seen a very good attendance throughout the year. Two special meetings, in September and November, were characterised by exceptional numbers of attending members and visitors: the presentation of Honorary Life Membership to Christine Lambkin and Max Moulds, followed by a talk by Max himself on his 50 years of entomological adventures; and our biennial Perkins Memorial Lecture given by David Yeates on a new phylogenomic perspective on insect evolution.

Other talks that featured at our General Meetings and the News Bulletin this year were: Geoff Monteith in April on Australian dung beetles; Penelope Mills and Yen-Po (Paul) Lin in May on the genetic diversity of different groups of scale insects; Valerie Debus in August on longicorn and cossid wood borers in subtropical plantations; and Mark Schutze in November on the taxonomy of fruit flies.

As always, our June meeting has included a presentation of their Honours thesis project by the 2015 winner of the Entomological Society of Queensland Student Award. This year the decision panel received 5 equally competitive applications and the 2015 award went to Tom Semple from UQ for his work on the systematics and ecology of the Australian gall-inducing *Cystococcus* (Hemiptera: Coccoidea: Eriococcidae), which included the description of a new species from Queensland.

This year once again we have enjoyed two Notes & Exhibits events, in June and in December as always, with interesting presentations and exhibits by some of our members.

I would like to take the opportunity of this annual report to personally thank all the presenters that have put a lot of effort in preparing their talks and providing related contributions to the News Bulletin in a professional and timely manner.

I would particularly like to thank Geoff Monteith for promptly making himself available in April to give a presentation for the Society at short notice, to cover for an unexpected absence of the planned speaker.

As mentioned above, this year we have also had the pleasure to celebrate two special members who were voted last year as Honorary Life Members for their outstanding service to Entomology and to our Society, Christine Lambkin and Max Moulds. Honorary membership certificates were presented to Christine and Max by Bill Palmer (Past President) and myself on behalf of the Society during our General Meeting in September. I wish Christine and Max to enjoy this special membership for a very long time!

During the last couple of months, two long and enjoyable BugCatches in interesting locations in the Greater Brisbane region were organised: a long

weekend at Crohamhurst, W of Peachester (13-16 November 2015), coordinated by ESQ (Kathy Ebert and Don Sands) and DEHP (Brent Smith); and another weekend at Stockyard Creek, SW of Gatton (8-10 January 2016), coordinated by Geoff Monteith, Rod Hobson and Kathy with the support of Citizens of Lockyer Inc., an enthusiastic and resourceful local community group.

Another highlight for this year, from “behind the scenes”, is the review of the Society’s By-Laws that the Council have updated, following the changes to the Constitution made last year and approved at our AGM in March 2015. The revised By-Laws will be uploaded on our website as soon as final Council approval is given.

Coming to an end I cannot help making another remark and congratulate Kathy for the outstandingly beautiful and information-rich News Bulletin that she has put together this year. Many of our members have already sent their words of appreciation through to her and that is very much deserved and appreciated. Really well done, Kathy!

More on the Society’s publications, this year again our flagship journal *The Australian Entomologist* has published four high quality issues. I am personally very proud to be part of the Publication Committee since 2008 and I would like to thank here David Hancock (Editor) and Geoff Monteith (Business Manager) for their tireless work in the management of the journal. This year the Committee has grown with the inclusion of two new Assistant Editors, Greg Daniels and Lindsay Popple, who are very much welcome and bring with them their wealth of experience and knowledge.

Another important event this year has been the opportunity for ESQ to sponsor the 2015 Conference of the Australian Entomological Society (Cairns, 27-30 September). We were present with sachel inclusions and a display table to promote our Society’s mission, activities and publications to attending entomologists. Geoff Monteith and Penny Mills from Council as well as David Hancock from

The Australian Entomologist Committee, represented us at the table during the event.

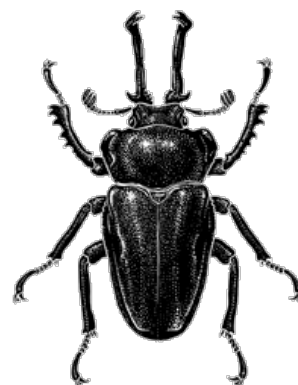
One last and very important point I want to highlight to you all for this year is the inauguration and building of an online Archive of Past Queensland Entomologists, organised and managed jointly by Geoff Monteith and Kathy Ebert. Members are warmly invited to assist in the building of the archive by compiling biographies on past entomologists of their choice, following the guidelines presented in our website and coordinating with Geoff to avoid duplicates. Currently 42 entries are displayed (<http://www.esq.org.au/archive-intro.html>) with about 30 being prepared to go online in due course. The archive is an invaluable account of the history of Queensland Entomology as well as a legacy to all current and future entomologists in Queensland and beyond. I would like to thank Geoff Monteith for the time, knowledge and space (in his own house!) that he reserved to this much-cherished project.

Finally I wish to thank immensely the other members of the ESQ Council for their work and assistance in achieving such a fantastic year. In particular, I want to thank our Past President Bill Palmer, who is leaving Council in 2016, for his ongoing input and support to Council over the last three years.

Thank you all!

Best wishes,

Federica





Secretary's Annual Report 2015

Attendance at Council Meetings:

The 2015 Council met nine times from the March AGM to December. One more meeting will be held in February prior to the March 2016 AGM. Attendance by council members (Mar-Dec) is provided in Table 1.

Table 1. Attendance record for ESQ Council Members in 2015 (March-December)

Position	Name	Attendance
President	Federica Turco	8
Vice President	Bradley Brown	8
Past President	Bill Palmer	8
Retiring Junior Vice President	Simon Lawson	1
Secretary	Mark Schutze	5
Treasurer	Brenton Peters	9
Australian Entomologist Business Manager	Geoff Monteith	9
New Bulletin Editor, stand-in Secretary April-July	Kathy Ebert	8
Assistant News Bulletin Editor and Councillor	Penny Mills	8
Councillor	Nancy Schellhorn	4
Councillor	Cate Paull	4

Membership

Council received and approved 28 (14 general; 13 students; one joint) new membership applications between January and December 2015.

Student award

There were five entries submitted for the 2015 Student Award, which was decided on in May. The judging panel selected Tom Semple for his thesis on “Systematics and ecology of the Australian gall-inducing insect genus *Cystococcus* (Hemiptera: Coccoidea: Eriococcidae), including a description of a new species”. Tom presented his work at June’s General Meeting.

General Meetings were held at the Ecosciences Precinct in Dutton Park. As ever, the presentations were varied and provided a fascinating overview of entomological interests and research. Speakers, titles, and attendance records are listed in Table 2. Average member attendance was higher than 2014, increasing from 23 to 27; similarly for visitors, increasing from 5 to 7. The standout meeting for the year was September at which Max Moulds presented a remarkable overview of his life's work; 38 members and 16 visitors attended this meeting (total = 54) representing the largest audience since at least 2009.

Table 2. Details of 2015 ESQ General Meetings, including month, type of presentation (if different from general presentation), speakers, titles, and attendance records for ESQ members and visitors.

Month		Speaker	Title	Members attended	Visitors attended
Mar	Presidential Address	Bill Palmer	Queensland's weed biocontrol - down memory lane	22	1
Apr		Geoff Monteith	Native Australian Dung Beetles	31	5
May		Penelope Mills	The <i>Apiomorpha minor</i> species group (Hemiptera: Coccoidea: Eriococcidae)	21	5
		Yen-Po Lin	The triptych of asexuality, chastity and cryptic diversity in <i>Parasaissetia nigra</i> (Neitner, 1861) (Hemiptera: Coccidae)		
June	Student Award	Tom Semple	Systematics and ecology of the Australian gall-inducing insect genus <i>Cystococcus</i> (Hemiptera: Coccoidea: Eriococcidae), including a description of a new species	21	3
	Notes and Exhibits	Gurion Ang	Update on <i>Trichogramma chilonis</i> work in Samoa; insight into Linnean Games for 2015 AES conference		
		Geoff Monteith	Introduced new web archive for Qld Entomologists; short memoir about life member, Morwenna Jean Harslett		
Aug		Valerie Debuse	Investigating the drivers of longicorn and cossid wood borers in subtropical plantations in Queensland and New South Wales	24	6
Sept		Max Moulds	Museum dungeons to mountain tops: 50 years of entomological adventures	38	16
Oct		Mark Schutze	Tephritid taxonomy: new solution for old problems	29	10
Nov	Perkins Memorial	David Yeates	New phylogenomic perspectives on insect evolution from transcriptome sequencing	37	10
Dec		Geoff Monteith	Three glimpses of a green beetle	21	4
	Notes and Exhibits	Kathy Ebert	Window into the wonderful world of <i>Cephalodesmus</i>		
		Geoff Thompson and Andy Wang	QM Visionary Digital System Upgrade		
		Tim Heard	Biogeography of Australian native stingless bees		

Other activities: Kathy Ebert was instrumental in promoting collecting trips in 2015, by leading ESQ participation in the UQ collection trip held on October 10 at the Gold Creek Reserve, located past Brookfield west of Brisbane. There was a following Bug-Catch weekend held from November 13-16 at Crohamhurst located north of the Glasshouse Mountains, which was organised by Don Sands with the assistance of DEHP Ranger Brent Smith, who provided accommodation and facilities at the site; 18 people attended. Geoff Monteith, Penny Mills and David Hancock attended the 46th Annual Conference of the Australian Entomological Society (Cairns, 27-30 Sept), where they promoted the ESQ at a sponsor's table with banners, brochures and information. Penny Mills did the ESQ proud by winning the Linnean Games.

Acknowledgements: I sincerely thank all Council members for their support in my first year as Secretary with the ESQ. Thanks Fede for luring me into the role. I am particularly grateful for Kathy's guidance and for nobly 'holding the fort' as acting Secretary from April to June while I was on an overseas Fellowship. Thanks also to Bradley for acting as Secretary when I was away in November.

Mark K. Schutze
Honorary Secretary
8 January 2016

Treasurer's Report for 2015

During 2015 the society saw a small membership nett increase of approximately 4% to 313 paying members and 7 Life Members. The cost of printing the News Bulletin was slightly lower in 2015 (\$3,164.70) than the previous year (\$3,733.50) due to more members opting to receive the News Bulletin via email. The trading profit of \$931.71 was up from a loss last year of \$1,386.90. In June a term deposit matured and \$16,602.60 was reinvested to help generate a higher interest rate for the society's funds. A small number of members are still yet to pay their 2015 subscriptions. I thank members who promptly pay their subscriptions at the beginning of the year. If any members would like to receive their News Bulletin by email rather than the postal service please contact me to arrange this. Please notify me of change of postal- or email-address. Subscription renewals were due 1st January 2016.

Brenton Peters, Honorary Treasurer



ESQ on ABC radio

Mark Schutze and Kathy Ebert were heard live on the Radio ABC Drive Gold Coast "Critters" feature this week. The program started with a bit about the Society followed by some basic mosquito facts, then they were given an opportunity to advocate *Toxorhynchites* as a beneficial mozzie. The host, Matt Webber, was very open to encourage his listeners to appreciate insects and, in his own words, to 'think before you swat'.

We hope to continue doing a regular monthly feature on the radio program.



ANNUAL REPORT 2015
FINANCIAL STATEMENT FOR THE ENTOMOLOGICAL SOCIETY OF
QUEENSLAND -
1st JANUARY TO 31st DECEMBER 2015

ASSETS	\$	LIABILITIES	\$
CBA chq A/c 00901185			
Closing balance	3886.02	Subs in advance (2016-17)	775.00
CBA term A/c 417850113582			
Closing balance:	16,602.60		
Cash on Hand	9.57		
TOTAL	<u>\$20498.19</u>	TOTAL	<u>\$775.00</u>

EXCESS ASSETS OVER LIABILITIES: **\$19,723.19**

INCOME	\$	EXPENDITURE	\$
Subscriptions	7,570.00	Printing costs, News Bulletin	3164.7
		Postage costs, News Bulletin	1375.62
Interest (CBA 00901185)	1.54	Stationery	597.36
Interest (CBA 417850113582)	359.77	Monthly merchant card fee	302.22
		Auditor's honorarium	300.00
Payment auditor honorarium	150.00	Student prize	500.00
		Web Registration/Hosting	95.40
		Sub mispayments	18.00
		PO Box rental	115.00
		Christmas Party	205.00
		ESQ Insurance	370.00
		Petty Cash Float	50.00
		Sundry	56.30
TOTAL	<u>\$8081.31</u>	TOTAL	<u>\$7,149.60</u>

NET TRADING **PROFIT**/LOSS: **\$931.71**

2015 Paying Members at Dec 31:

QUEENSLAND MEMBERS	228 (179 General, 11+11 Joint, 27 Student)
INTERSTATE MEMBERS	74 (64 General, 4+ 4 Joint, 2 Student)
OVERSEAS MEMBERS	11 (11 General, 0+ 0 Joint, 0 Student)

TOTAL MEMBERS 313 + 7 Life Members

I certify this is a true and accurate financial statement of the ENTOMOLOGICAL SOCIETY OF QUEENSLAND for the period 1 January 2015 to 31 December 2015.

Rebecca Keys
Independent and Honorary Accountant

5th January 2016



Stockyard Creek BugCatch, Jan 2016. Photo: J. Wright

Collecting Permit Annual Report 2015

In mid December 2015 I sent out a request for annual reports outlining locality information for specimens collected and identified by December 2015 to the **81 members endorsed on the ESQ collecting permits** for National Parks WITK15549915 and State Forests TWB/02/2015 and CYPAL WITK15793015 for the 224 protected areas (National Parks, Conservation Parks, Regional Parks, State Forests, and Forest Reserves) as of January 2016. Most members submitted null returns. 27 members reported on specimens collected, indicating that a third of those endorsed are actively collecting on the permit.

The 2015 amalgamated annual Wildlife Data Return and Report to DEHP and QPWS covers over 2,600 invertebrate specimens with **Beetles (326)** including native dung beetles (38), Carabidae (24), Buprestidae (7), Coccinellidae (11), (Curculionidae) (18), Cetoniidae (28), Staphylinidae (71); Bugs mainly **Cicadidae (23)**, Cockroaches (48), Flies (99) including **Asilidae (28)**; Lepidoptera (2009) including **1364 butterflies** Hesperiididae (154), Lycaenidae (395), Nymphalidae (451), Papilionidae (120), Pieridae (264), and **Sphingidae (42)**, **Geometridae (79)**; **Orthoptera (29)**, **Thrips (46)**, and **Ants (57)**. Several members reported that numbers seen and collected were reduced even more in 2015.

The ESQ permits, WITK15549915 and TWB/02/2015, with an extended list of protected areas included, arrived in mid-January 2015 and were endorsed and sent out to those who had reapplied.

Those permits did not allow access to many of the **Cape York Reserves**, such as Cape Melville NP, Kutini-Payani (Iron Range) NP, Oyala Thuotanga NP, Rinyirri (Lakefield) NP or Kulla (McIlwraith Range) NP. I continued to negotiate for permission to include cover for these reserves, aided by QPWS and DEHP, and several members who live in northern Queensland and had established good working relationships with both Rangers and Indigenous Managers. A permit for CYPAL (Cape York Peninsula Aboriginal land) National Parks (WITK15793015) for Cape Melville NP, Kutini-Payani (Iron Range) NP, Oyala Thuotanga NP, and Rinyirri (Lakefield) NP but NOT INCLUDING KULLA (McIlwraith Range) NP was received in March 2015 while I was on leave. Fede Turco was extremely helpful in asking permit holders whether they needed this permit, and

endorsing and sending out those permits. Currently 27 members hold the CYPAL permit, and 9 of those members reported on specimens collected in 2015.

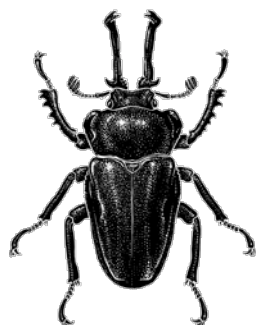
Again there are **conditions attached to our ESQ collecting permits**, including a requirement that prior to commencing work in protected areas in Queensland, the ESQ member endorsed on the Entomological Society of Queensland Collecting Permit must complete a separate on-line form for each park or reserve to be entered at least 7 days before.

Also special access restrictions apply to some particular parks. In particular, additional and quite restrictive requirements are in place for permit holders who wish to collect in the **CYPAL parks**, including:

1. you have to contact relevant Land Councils at least 2 months prior to your visit;
2. you have to provide seat/s in vehicles for someone from Land Council to accompany you during your fieldwork;
3. you may have to give a presentation to Land Council on the work you are carrying out.

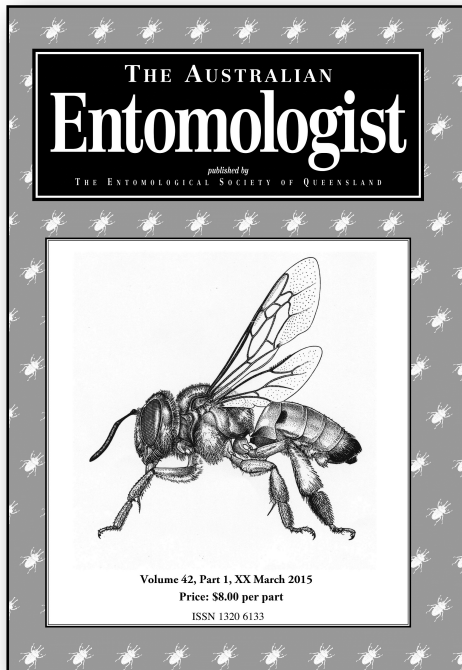
Specimens collected under this permit have been recorded in the following **publications**, several including descriptions of new species:

- Moeseneder, C.H., Hutchinson, P.M. & Lambkin, C.L. (2014) Revision of the genus *Metallesthes* Kraatz and description of *Metallesthes anneliesae*, a new species of Cetoniinae (Coleoptera: Scarabaeidae) from Queensland and New South Wales, Australia. *Zootaxa* **3881**, 301-327.
- Ewart A, Popple LW, Marshall DC. (2015) New species of *Simona* Moulds, 2012 and *Chelapsalta* Moulds, 2012 cicadas (Cicadidae: Cicadettinae: Cicadettini) from Australia: comparative morphology, songs, behaviour and distributions. *Zootaxa*. **4001**(1):1-65. doi: 10.11646/zootaxa.4001.1.1.
- Rentz D (2015) A range extension for an Australian katydid, *Zaprochilus australis* (Tettigoniidae; Zaprochilinae). *Zootaxa*. 4057(4):583-4. doi: 10.11646/zootaxa.4057.4.8.
- Jane E Royer (2015) Responses of fruit flies (Tephritidae: Dacinae) to novel male attractants in north Queensland, Australia, and improved lures for some pest species *Austral Entomology* (2015) **54**, 411–426
- D.P.A. Sands and M.C. Sands (2015). Review of variation in *Acrodipsas cuprea* (Sands, 1965) and *A. aurata* Sands, 1997 (Lepidoptera: Lycaenidae), with descriptions of a new subspecies of *A. cuprea* and a new species of *Acrodipsas* Sands from inland southern Queensland *Australian Entomologist*, **42** (4): 197-218
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The Australian Entomologist Journal Report for 2015



Four parts of Volume 42 of *Australian Entomologist* were published during the year, totalling 268 text pages with 76 pages in colour. Part 4 was a large, 108-page, perfect-bound issue of butterfly papers dedicated to the memory of the late lepidopterist Stephen Johnston. All issues were mailed out within normal circulation deadlines. Issues included 30 original papers. Thirty-one new manuscripts were received during the year and there are currently 12 manuscripts in hand to be carried forward for 2016 issues of the journal. An illustration of a bee by Anne Hastings, Australian National Insect Collection, was used as the 2015 cover image.

Subscribers rose very slightly from 238 to 240 during 2015, the first year in a decade that numbers have not fallen. The distribution of subscribers is as follows: ACT 22, NSW 35, NT 4, QLD 96, SA 6, TAS 8, VIC 21,

WA 7, and overseas 41. Of these 61 are library and other institutional subscribers. Thirty-four (14%) of subscribers have opted for the electronic version.

During the year all back issues were digitised by our electronic distributor, INFORMIT, at a cost of \$966 and papers back to commencement of publication in 1972 (5468 pages) are now available for paid download from their site at <http://search.informit.org/browseJournalTitle;res=IELHSS;issn=1320-6133> at the price of \$4.40 per download. The site is also a useful place to search for authors or particular papers in the journal.

The *Australian Entomologist* shared a stand with the Entomological Society of Queensland at the Australian Entomological Society conference in Cairns in September at a sponsorship cost of \$385.

Our financial statement indicates a trading loss of \$4204 for 2015 but this is explained by: the carry over of \$2518 of expenditure (unpresented cheques) from year 2014 which showed a profit of \$2771, coupled with the one-off expenditures for digitising of back issues (\$966) and the AES conference sponsorship (\$385). Our financial resources enable us to manage these annual perturbations well.

During 2015 ESQ Council revised the By-Laws pertaining to the journal management as part of a comprehensive review of the By-Laws. The main change involves rescinding the position of Manuscript Coordinator and allocating those duties to the Business Manager. Two new Assistant Editors were appointed. Current composition of the Publication Committee is as follows: Editor: David Hancock (beginning his 21st year); Business Manager: Geoff Monteith; Assistant Editors: Greg Daniels, Geoff Monteith, Lindsay Popple and Federica Turco.

The Publication Committee would like to thank the many people (subscribers, authors and referees) who contribute to the *Australian Entomologist* and help to keep it as a vital part of the Australian entomological scene.

Geoff Monteith
Business Manager
Australian Entomologist

ANNUAL REPORT 2015
FINANCIAL STATEMENT FOR *THE AUSTRALIAN ENTOMOLOGIST* –
JANUARY 1 TO DECEMBER 31, 2015

ASSETS	\$	LIABILITIES	\$
CBA chq A/c 00908915			
Closing balance	\$2,493.66	Subs in advance (2016)	1919.15
		Cheques not presented	00.00
Bank Australia term accts			
Closing balance: 307023174	9983.19		
307023175	8096.28		
138340573	6804.00		
Subscriptions owing 2015	25.00		
Stationery (printed envelopes)	50.00		
Unsold past issues <i>Aust. Entomol.</i>	1556.25		
2075 @ \$0.75 ea			
TOTAL	<u>\$29008.38</u>	TOTAL	<u>\$1919.15</u>

EXCESS ASSETS OVER LIABILITIES: **\$27,089.23**

INCOME	\$	EXPENDITURE	\$
Subscriptions	6762.45	Printing costs, Vol 41(4)42(1-4)	9380.80
Page charges	2280.00	Postage	2025.65
Interest (CBA 00908915)	0.45	Stationery	119.95
Interest (MECU 307023174)	451.16	Monthly merchant card fee	247.18
Interest (MECU 307023175)	273.79	Digitising back issues	966.90
Interest (MECU 138340573)	230.09	Auditor's honorarium	150.00
Back issue sales	\$35.00	Graphic layout costs	\$967.00
Postage received	\$5.00	AES Conference sponsorship	385.00
TOTAL	<u>10037.94</u>	TOTAL	<u>14,242.88</u>

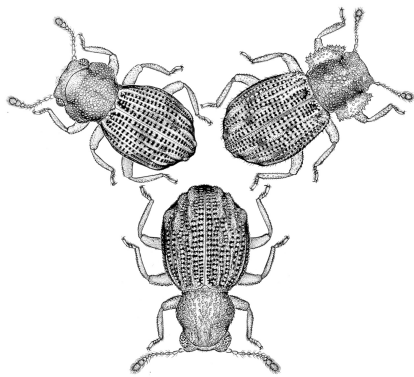
NET TRADING PROFIT/LOSS: **\$4,204.94**

2015 SUBSCRIPTIONS at Dec 31:

AUSTRALIAN SUBSCRIPTIONS	199 (26 institutional, 4 complimentary)
OVERSEAS SUBSCRIPTIONS	41 (35 institutional, 3 complimentary)
TOTAL SUBSCRIBERS	240

I certify this is a true and accurate financial statement of the *Australian Entomologist* for the period 1 January 2015 to 31 December 2016.

Rebecca Keys
Independent and Honorary Accountant
5 January, 2016



News Bulletin 43 - Annual Report

The monthly News Bulletin is a fundamental part of our society as it communicates news of insects, people, research, projects, books, meetings, conferences and other happenings in Queensland to all of our members. As many of our members don't have the opportunity to attend our monthly meetings, the News Bulletin is their only contact with the Society, so a quality publication is imperative.

This year, we have continued to print a high quality, full colour, hardcopy version, as well as an electronic version. Volume 43 will have nine issues totalling 188 pages. It was decided at the November council meeting to eliminate the publication of a December issue due to difficulties of putting it together around holiday time. This will allow us to replace it with a double issue in February which will feature the December meeting news and articles along with the usual annual reports.

This year we added a regular column called "The History Corner" where we were able to feature some of our past Queensland entomologists.

Our beautiful hard copies were requested by over half of our members, while the electronic version was sent out to everyone with an email address. A significant number of bulletins are posted to our members who are interstate or international. We also posted bulletins to 25 institutions and libraries. We are very grateful to our printers, Rocklea Printing, for their efficient turnaround, low prices and friendly service.

Kathy Ebert, as Editor, managed content, layout and printing, while Penny Mills, as Assistant Editor, skillfully managed the logistics of bulletin mailout and provided proofreading. Bill Palmer and Geoff Monteith also provided valuable proofreading over the year.

It was great to have more members contributing content to the bulletin this year and we thank everyone who provided articles and/or photos. We urge members to use the News Bulletin to communicate ideas, images and information to their fellow members so that it continues to be a vital and interesting source of information to all. Looking forward to another great year!

Kathy Ebert
News Bulletin Editor



Photo: G. Walter

Australian Lepidoptera Research Endowment Grants

We are pleased to announce initial grants of up to \$4500 from the Perpetual Foundation - Australian Lepidoptera Research Endowment (ALRE) for the financial year July 2016 to 2017, and are inviting applications. Any lepidopterist, amateur or professional, working on the Australian fauna, is

eligible to apply for any of the activities considered for support listed on the ALRE website:

<http://www.australianlepidopteraendowment.com/> The application form can be found on the ALRE website and should be submitted by **1 April 2016** via email to Marianne.Horak@csiro.au

Three glimpses of green beetles

*presented by Geoff Monteith
Queensland Museum, Brisbane,
QLD*

I was recently sent a spectacular picture of polished green beetles swarming on the inflorescence of golden cane palms at Cape Tribulation (Fig. 1). It was taken in December 2013 by Neil Hewett, proprietor of a

nature tourism property on the banks of Cooper Creek about 12 km south of Cape Tribulation proper. He has a beautiful nature website about his property at <http://coopercreek.com.au/>

The beetle is a cetoniine scarabaeid called *Ischiopsopha wallacei* (Fig. 2). It can be quite common in the wet season in North Queensland and New Guinea but this was a particularly striking image with the polished, enamelled beetles set among the clear yellow stems of the



Fig. 1. Nectar feeding flower chafers (*Ischiopsopha wallacei*) swarming on the inflorescence of golden cane palms (*Dyopsis lutescens*) near Cape Tribulation, Dec 2013 (Photo: N. Hewett).



Fig. 2. Side view of *Ischiopsopha wallacei* showing the characteristic flattened dorsum of flower chafers and the excised side of the elytra to allow hind wings to be slipped out quickly for action (Photo: N. Hewett).

Fig. 3 (right). Katie Pollard beside the grave of Alfred Russel Wallace (inset, left) in Poole, Dorset, UK in August 2014. Katie worked in the Queensland Museum entomology section in 1999 and now lives in Poole. The grave bears a fossil tree trunk probably collected by Wallace on nearby Portland Island in Dorset. Inset right shows the original drawing of Wallace's chafer specimen from Thomson's 1857 paper (Main photo: G. Monteith).



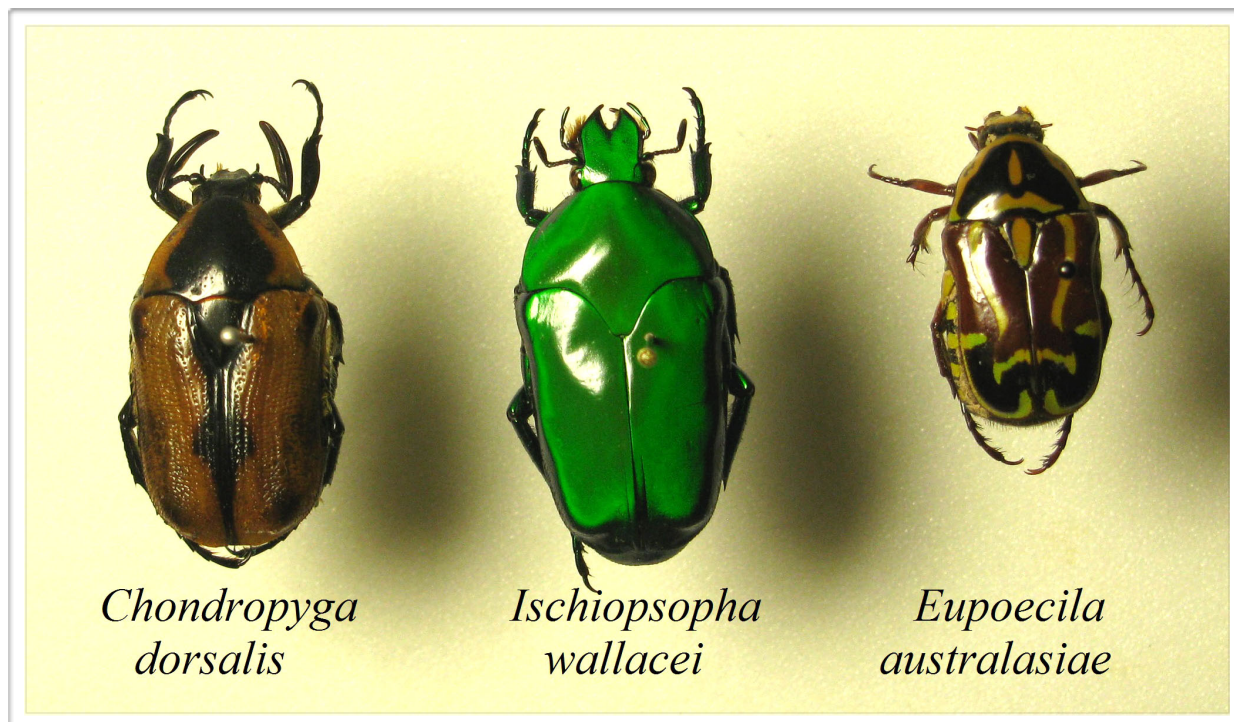


Fig. 4. *Ischiopsopha wallacei* (centre) with the two flower chafers which breed commonly in Brisbane compost heaps. Left is the “cowboy beetle” in reference to its wild erratic flight and right is the “fiddle beetle” because of its violin-like markings.

palms flowers as they slurped up the nectar. The species was first collected by the legendary naturalist traveller, Alfred Russel Wallace, whose grave I visited in England last year (Fig. 3). The grave had been recently refurbished to mark the 2013 centenary of his death. Orthopterist George Beccaloni at the Natural History Museum, who organised the grave restoration, has set up a fabulous website on all things Wallacean at <http://wallacefund.info/>. Wallace collected his specimens in the Aru Islands in 1857, and, despite Aru being on the other side of the world in a time of slow boat travel, specimens arrived in Europe in time for James Thomson to name it after its famous discoverer in the same year (Thomson, 1857). It was one of the prize species to be illustrated by a colour plate in Thomson’s paper (Fig. 3, right inset), an exception for that era. Thomson was a wealthy American entomologist who lived most of his life in Paris and probably purchased special beetles directly from Wallace. This would explain how they appeared in print so rapidly.

Beetles of the subfamily Cetoniinae have the common name of “flower chafers” because the adults feed on nectar or on the fermenting juices of fruits and sap flows. They are the best fliers among the Coleoptera and the dynamics of their flight is greatly improved over other Coleoptera because they do not have to lift their elytra to bring the hind wings into action. The hind wings simply slip out sideways through slots exposed by the concave side margins of the elytra which are visible in Fig.2. The larvae live and feed in decaying plant material and are easily separated from other scarab grubs in those situations because they wriggle along on their back with undulating movements. Two common species which breed in backyard compost heaps in Brisbane are *Chondropyga dorsalis* and *Eupoecila australasiae* (Fig. 4). The Australian expert on the group is ESQ member Chris Moeseneder in Brisbane and he has been doing nice work progressively revising the genera.

Seeing Neil Hewett’s memorable photos, reminded me of two other notable encounters I’ve had with *Ischiopsopha* cetoniines in Cape

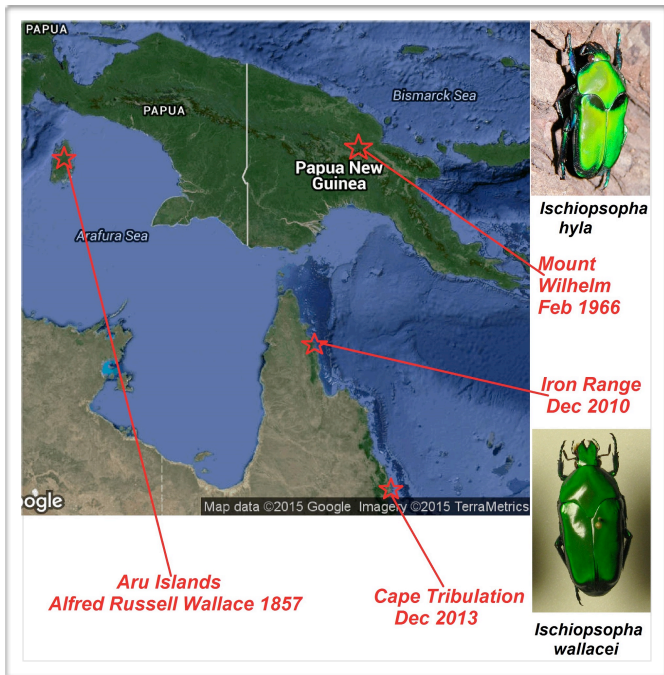


Fig. 5. Map of northern Australia and New Guinea, showing localities mentioned in the text and the two species of *Ischiopsopha* discussed.

York Peninsula and Papua New Guinea. The tales are worth telling and the localities are shown in Fig. 5.

The last time I was at Iron Range in the Peninsula was in December 2010 when an early wet season meant many insects were active quite early. A giant cauliflorous fig tree (*Ficus nodosa*) near Gordon Creek was in full fruit along its trunk from ground level to the canopy about 20 metres above. Many of the golf-ball sized fruit were ripe and squishy. The tree made its presence known by the sound of shrieking, flapping flying foxes by night and the heavy buzz of thousands of *Ischiopsopha wallacei* by day. In fact, I could navigate to the tree from fifty metres away by the steady hum of circling beetles, all trying to land on the most fermenting fruit which usually already had a dozen beetles in possession (Fig 6). High up were giant clusters of beetles fighting over prized fruit. Every now and then one of these beetle-balls became so heavy it would fall off and separate in mid air into brilliant green flying beetles which parted company, like an up-side-down fireworks display, and zoomed back to the fray on



Fig. 6. Trunk of *Ficus nodosa* at Iron Range with numerous *Ischiopsopha wallacei* feeding on the ripe bunches of figs which stretched from ground to canopy along its trunk. Inset shows a zoom shot of a tight cluster of beetles high up the trunk (Photo: G. Monteith).



Fig. 7. Close view of low figs and beetles on the tree in Fig. 6. Many specimens of the common rhinoceros beetle, *Xylotrupes ulysses*, are visible with the cetonines (Photo: G. Monteith).

the tree trunk. Close examination of low down fruits showed they were also inhabited by dozens of big black common rhinoceros beetles (Fig. 7) which burrowed into the fruit and kept a lower profile by NOT falling off. Interestingly, the same fig species is probably host to Australia's largest longicorn beetle which occurs, in Australia, only in these mid-Peninsula rainforests of Iron and McIlwraith Ranges.



Fig. 8. The original illustration from Thomson's 1857 description of *Batocera wallacei* (Cerambycidae).

Its body length reaches 8.5 cm and its antennae span 40 cm. Its name is *Batocera wallacei* and its provenance is

identical to that of the flower chafer. It, too, was first collected by Alfred Wallace in the Aru Islands and it was described and figured (Fig. 8) by Thomson in the same 1857 paper in which he described the green flower chafer. Unfortunately, I wasn't lucky enough to see those two famous Wallace species on the same tree trunk!

My second memorable encounter with *Ischiopsopha*, this time a species with dark patches on its shoulders called *Ischiopsopha hyla* Heller, was on the flanks of Papua New Guinea's highest mountain in February 1966, almost exactly 50 years ago. I was 24 and worked then as "collector/curator" in the UQ Entomology Department. This normally meant I collected the hedge grasshoppers around St Lucia

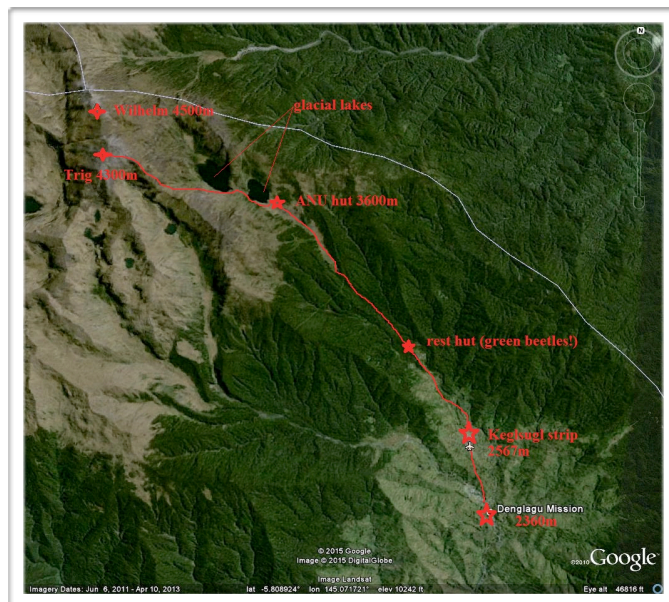


Fig. 9. Map of the Mt Wilhelm area showing route from the Keglsugl airstrip to the summit.

suburbs for the students to dissect, and the granny cloak moths from the storm water pipes under the campus for them to practice pinning on. But someone was needed to go to New Guinea to collect fireflies for a PhD student's project, and Mr Perkins sent me off by myself for six weeks. PNG was then a benign, peaceful country with culture strong, population low, village life paramount, and intact rainforests everywhere. In six weeks I made flights to Port Moresby, Wau, Lae, Rabaul, Kavieng, Wewak, Madang, Goroka, Keglsugl and Popondetta. At each place I would find accommodation, rent or

borrow a little car, drive out of town, and then walk for hours through forests and friendly villages collecting fireflies. Twice, once through getting bogged and once through a landslide, I had to sleep in the car in the bush for the night and missed my flight the next morning. Life was simple then, no mobile phone, no GPS, no risk assessment, no OHS, no daily reporting to HQ, no

Fig. 10 The patrol box at the "half way hut" on its way from Keglsugl to the ANU hut (Photo: G. Monteith).



worries. UQ knew not where I was on any given day, no one panicked, and the vials filled with fireflies.

PNG's highest mountain is Mt Wilhelm at 4500m with the tree-line about 3300m. I had a boyish dream of collecting there. I was aware that ANU had a vacant hut used for research visits on a glacial lake at 3600m. I'd rung ANU before I left Brisbane and they said I could use the hut if I got there. When I arrived in Goroka (1600m), the nearest town (45 air-miles) to Mt Wilhelm, I went to see the local administrator next morning. He said he could lend me a patrol box to put my gear in, then I could charter a small plane to an empty strip called Keglsugl, where I could probably hire some men to carry my gear up to the ANU hut. I said: "When?" and he said: "Now". I ran down to the Goroka airstrip at the end of the main street and the little charter office there said they had a plane that could go in an hour. I ran to the trade-store and bought some food, threw it into the patrol box with my gear and went back to the airstrip. At 12.30 the little 4-seater plane took off with me and my box in the back. In front were the pilot and a young woman trainee. The pilot taped some newspaper across the windscreen because the trainee had to fly there using instruments and no visual. We crossed a wild 3000m range, then a deep valley, and landed 30 minutes later on an empty grass strip on a narrow, ridge-top at 2500m, then the highest landing strip in PNG (Fig. 9). As we landed, the pilot pointed out Denglagu Catholic Mission down in the nearby valley. Promising to return in 5 days, the plane flew off leaving me alone with my box,. I ran down to the mission, found a local teacher in a classroom and asked if there were some men who would "carry cargo" for me for 5 days. He took me to where some chaps were doing some pick and shovel road work. Three of them cheerfully downed tools and came back with me to the airstrip. They cut a bush pole, slipped it through the metal loops of the patrol box and hefted it to their shoulders at 1.45pm. We walked through freezing rain up 1100m of altitude to the ANU hut at 3600m, arriving at 6.30pm. We took



Fig. 11. The lower glacial lake (Lake Pinde) at 3600m with the summit zone of Mt Wilhelm behind. The upper rocks are flecked with ice patches (Photo: G. Monteith).

one 30-minute break on the way to light a fire in a thatched "half way hut" to warm up (Fig. 10). At the ANU hut ice was visible on the higher rock faces above the lake. It had been a big day.

We spent three nights at the top camp on the banks of the lake (Fig. 11). On one clear day we made a dash for the summit past a crashed WW2 American plane and got to a 4300m trig point within 200m vertical of the top before fog settled and sent us back. At that point we found flightless *Mecyclothorax* carabids under the stones that Harvard's P. J. Darlington had collected a few years earlier. In tree-lined moss forests below the hut I collected many of a large, coloured, brachypterous leafhopper that proved

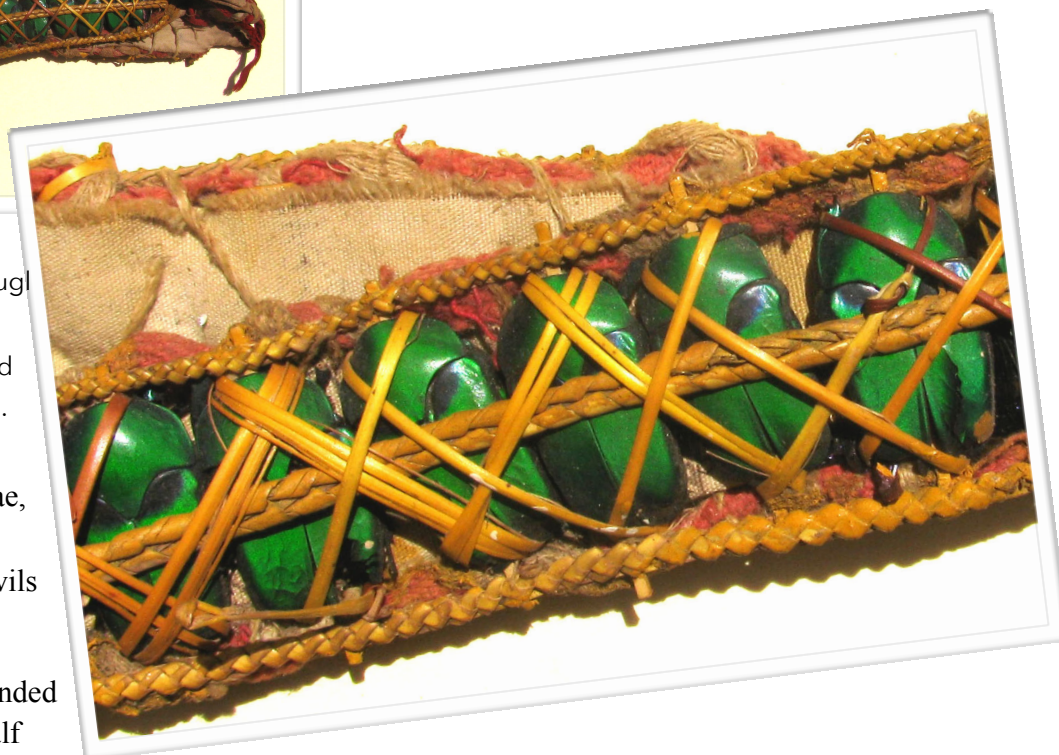


Fig. 12. The PNG ceremonial beetle headband from Keglsugl incorporating the cetoniine beetle, *Ischiopsopha hyla*, and flattened yellow orchid stems.

to be a new tribe of Ulopinae, as well the large, lichen-covered *Gymnopholus* weevils that Lin Gressitt studied.

On the fourth day we descended to camp the night in the “half way hut” so as to be able to rendezvous with the plane the next morning. Here was where I had my second brush with *Ischiopsopha* green beetles. Waiting at the hut was a village man called Demkana who was traditional owner of the area and he was a little unhappy that he had not been properly consulted about my visit. To redeem myself he gave me the opportunity to buy some objects from his accompanying relatives. One is often offered poorly made artifacts in New Guinea, but in this remote area, these were the real McCoy! I happily bought a drum, a woven string bag and a pig-tusk necklace. But the absolute prize was a ceremonial headband incorporating a row of brilliant green *Ischiopsopha hyla* beetles (Fig 12). The heads of the beetles had been removed and each was carefully impaled on a yellow sliver of bamboo. The skewered beetles were all held in place by woven and plaited golden stems of an orchid which is often used for this purposed in decorative ornaments in PNG (Fig. 13). The brilliant yellow contrasting with the enamelled green beetles gave exactly the same

Fig. 13. Detail of beetle headband showing headless specimens impaled on slivers of yellow bamboo.



stunning effect as those related green beetles on the yellow palm stems in Neil Hewett’s photograph (Fig 1). That night Demkana sent the others, including my carriers, back down the mountain and insisted on staying alone in the half way hut with me. Next morning the carriers returned and got my patrol box down to the strip in time for the plane to take me and my green beetles back to Goroka and thence to Brisbane. Customs cleared the beetles, pig tusks, lizard-skinned drum, and many, many fireflies without question and Mr Perkins required no forms reconciling risk with cost or productivity outcomes. But everyone admired the green beetles.

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A window into the wonderful world of *Cephalodesmius*

presented by **Kathy Ebert**

PhD student

School of Biological Sciences,

The University of Queensland, St Lucia, QLD

Earlier this year, I thought I had a basic general knowledge of dung beetles and their behaviour. I knew that some would tunnel into the dung, some would burrow under it or some would take a piece of dung and roll it to a safer place, all in order to feed their larvae. I was aware of the big CSIRO project where they imported dung beetles into pastures around Australia to control flies as the native dung beetles weren't able to cope with the amount and type of dung that cattle produce. I also knew that dung beetles were important to the environment as far as nutrient recycling.

However, in April, when Geoff Monteith presented a talk at our meeting (ESQ News Bulletin 43(2), April 2015), I discovered how little I really knew about dung beetle behaviour and what an astonishing diversity of behaviours were present in our own native Australian dung beetles.

One native dung beetle in particular especially intrigued me: the genus *Cephalodesmius*. These are the beetles that have dealt with the intense competition at the dung pat by making their own dung substitute out of composted materials. This behaviour is unique among dung beetles. They are even more unique in that both parents continue to work together to make this composted material to feed the young larvae as they grow. Biparental care is quite rare in insects which makes these beetles pretty special.

I wanted to learn more about them so I read the comprehensive paper by Geoff Monteith and Ross Storey recounting their studies of these beetles (Monteith & Storey, 1981), but beyond that there wasn't much else in the literature on them aside from



Fig. 1. *Cephalodesmius* habitat in the rainforest at Cunningham's Gap, Main Range NP.

an ecology paper (Dalglish & Elgar, 2005) and an interesting paper on their gut morphology. Lopez-Guerrero, 2002, discovered the hind gut of the *Cephalodesmius* is different from other dung beetles in that it has an enlarged colon which may be similar to a fermentation chamber as seen in phytophagous beetles.

All of these things were very intriguing. I had so many questions forming in my mind about these beetles that I wanted to find out more. I wanted to have a closer look at these beetles myself.

But first, I would have to find them. Luckily, the three described species of *Cephalodesmius* all occur in southeast Queensland in rainforest (Fig.1) or vine



Fig. 2. The burrow entrance of *C. quadridens*. Dwyer Scrub Conservation Park.

thicket (dry rainforest). Yet, they are small and cryptic, with the smallest, being half the size of my little finger nail (appx 5mm). I was a bit worried at first that they would be impossible to find, but with some excellent advice from Geoff Monteith and a few tips on what to look for and where, I managed to find some burrows (Fig. 2).



Fig. 3. A small *C. quadridens* pair and their compost ball in the nest chamber next to a rotting log.

Careful burrow excavation might reveal a nest chamber, if you are lucky. And if you are really lucky, the nest chamber might have something in it, hopefully a beetle pair and their compost ball (Fig. 3).

The next challenge was to see if I could create an artificial environment where the beetles would exhibit their interesting behaviours. Following the nest box design from Monteith and Storey (1981), I constructed several nest boxes with windows at the front so that behaviours could easily be observed and photographed or video recorded.



Fig. 4. *C. armiger* constructing a compost ball out of clover flower, mushroom and leaves in a nest chamber of plaster of paris.

When the beetles were presented with an assortment of compostable items like clover leaves, bits of mushroom, flowers, and inner banana peel, they began making balls of compost (Fig. 4). They also added their own dung to these compost balls (Fig. 5).

They were able to incorporate material into a ball rather quickly. Within 24-48 hours, everything looked uniformly composted.

After the beetles had prepared a reasonable sized compost ball, I began to see egg ball production. The female would tear a piece of compost off the



Fig. 5. *C. laticollis* adding its own faeces to the compost ball.



Fig. 6. *C. quadridens* constructing egg balls. You can see the ball on the far left has a hole hollowed out of it.

main ball and manipulate it into smaller balls, then hollow them out to lay an egg within.

Cephalodesmius quadridens is the one species that Monteith and Storey did not look at in detail, so I was able to verify that *C. quadridens* does the same behaviours as *C. armiger*. Mating was observed several times, always during egg ball construction.

Once the egg balls were constructed, they need to be continuously provisioned and maintained by the parents as the larvae grow. The male forages around the burrow entrance gathering flowers, berries, leaves, bits of moss or other organic matter and takes them down into the burrow to the female, who then works them into the compost ball to maintain material to feed the growing larvae.

There are still lots of questions that come to mind and I am very much looking forward to studying these beetles further as part of my PhD research.



Fig. 7. *C. armiger* adding new layers to the egg balls.

References:

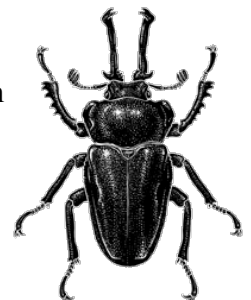
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Entomological Society of Queensland \$500 Student Award 2016

This is an award by the Society to encourage entomological research. Honours, Diploma and 4th year Degree students who received their qualification from any Queensland tertiary education institution in 2015 or 2016 may submit their entomology-based thesis or report for consideration. Entrants need not be Society members.

These reports can be directed to the society’s Vice President at the address listed on the entry form. However, please note, a hard copy of your thesis/report does not need to be submitted, and the submission of a PDF version is encouraged. This should be emailed together with a signed copy of the completed entry form to Bradley Brown at Bradley.Brown@csiro.au

Closing date for submissions is Friday, April 8th, 2016.





L. to R.: Geoff Thompson, Roy Larimer and Les Walkling having lunch at Brisbane City Markets during installation week. Photo Andy Wang.

Imaging system upgrade at Queensland Museum: New Dun Inc. microscope, camera lift and cameras

*presented by Geoff Thompson
& Andy Wang
Queensland Museum, Brisbane QLD*

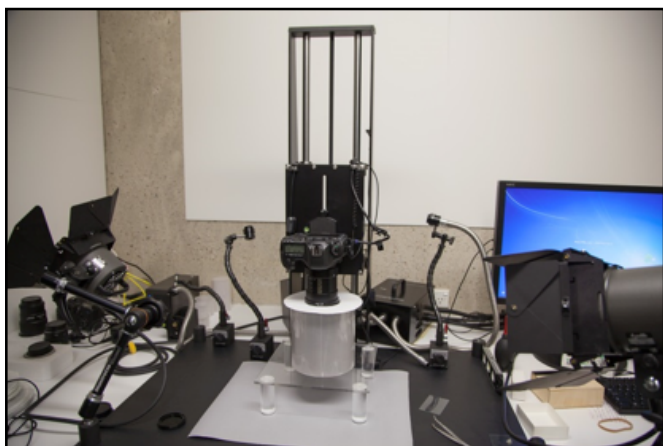
Last September Roy Larimer visited Auckland Museum to install a new imaging system there. He was able to also visit Queensland Museum and install an upgrade to our Visionary Digital system that he originally installed back in 2011, with funding then provided by the Atlas of Living Australia (ALA).

Roy was able to use parts we had bought to upgrade the computer, which we had previously budgeted to replace. The computer now is overclocked to 4.6 GHz and has a 1 terabyte Samsung, solid-state, primary image drive with Magician software, producing extremely fast read-write speeds; essential for processing focus stacks of many large images.

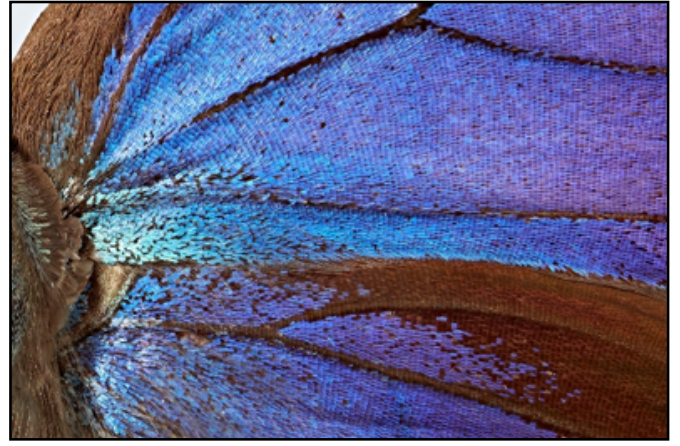
In addition, Roy advised Queensland Museum Electronics Technician Hue Luong how to repair and upgrade the LED modelling lights in the system's fiber-optic flash module.

The money saved paid for significant upgrades in camera quality, stacking ability, resolution and magnification.

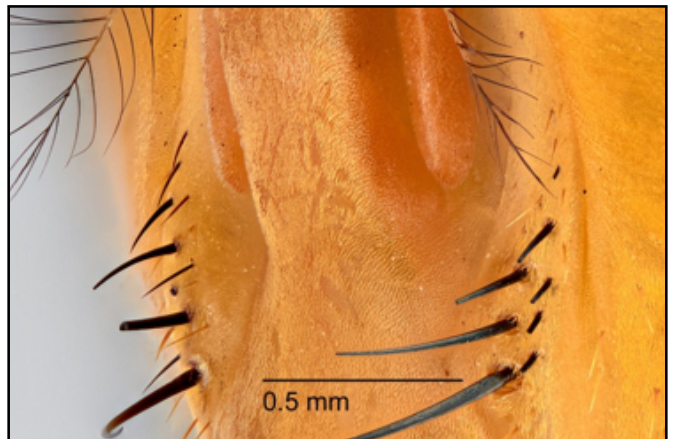
We now have a 50-megapixel, Canon 5DS camera for use with our Canon lenses, a new motorised camera lift capable of moving the camera accurately in steps as small as 0.5 microns, and a new Dun Inc. microscope attachment (designed and built by Roy) with amazing Mitutoyo objectives. <http://www.duninc.com/dun-inc-microscope.html>



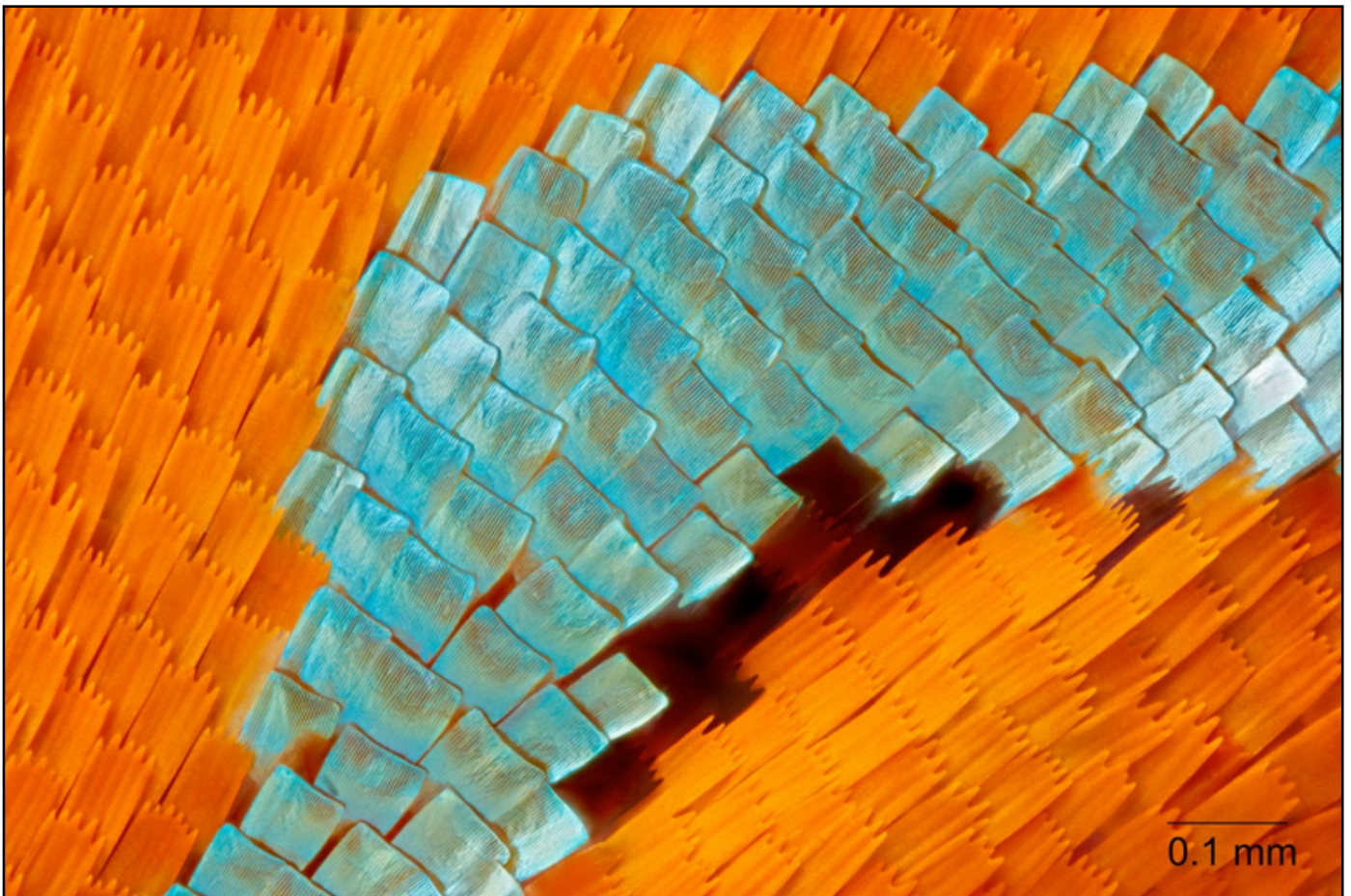
Queensland Museum's upgraded Visionary Digital BK-Plus imaging system. L. to R. 1. Overview. 2. Canon 5DS with Canon MP-E 65mm 1:2.8 1-5x macro lens. 3. Canon 7D MkII with Dun Inc. microscope and 10X Mitutoyo microscope objective.



Focus stacked images and cropped details taken with the Canon 5DS 50-megapixel camera. Upper images: Dorsal view of a female Purple Oak Blue, *Arhopala centaurus*, taken with Canon 100mm f2.8 L Macro IS USM macro lens at 1:1.5X magnification. Lower images: Three-quarter view of the face of a Yellow Faced Blowfly, *Amenia* sp. taken with Canon MP-E 65mm 1:2.8 1-5x macro lens at 4X magnification.



Focus stacked image and detail crop of a three-quarter view of the face of a similar specimen to the one above of a Yellow Faced Blowfly, *Amenia* sp. taken with the new Dun Inc. microscope using a 5X Mitutoyo microscope objective. Details such as striations in setae are now visible.



Focus stacked images of a ventral view of *Hypochrysops apelles apelles*. Upper images: Whole butterfly and cropped detail taken with Canon 5DS using Canon MP-E 65mm 1:2.8 1-5x macro lens at 1X magnification. Lower image: small area of scales (visible in centre of upper right image) taken with the new Dun Inc. microscope using a 20X Mitutoyo microscope objective. The whole field of view is about 1.1mm across.

The real star of the upgrade is the new microscope with a new Canon 7D MkII camera attached and those amazing 5X, 10X and 20X Mitutoyo objectives. The 20X can resolve down to 0.7 microns and has a field of view only 1.1mm wide. Some of the images make you think you're looking

at full colour SEM photographs.

Bryan Lessard visited from ANIC during installation week and was blown away by images we took of a purple soldier fly he selected from our collection. He had never been able to see the sensors in stratiomyid

antennae, let alone that there were two different types. His initial reaction was very gratifying!

Melbourne photographer, Les Walkling, who had advised ALA on imaging, was able to visit one day during the installation week too. We were all very grateful for his input.

Les suggested trying Capture One Pro software instead of Lightroom when we realised we would have to go to the subscription, Creative Cloud version of Lightroom to be able to integrate the Canon 5DS into the system. As a bonus Capture One Pro has a feature which enables the use of all four cores of the computer's CPU (central processing unit). Since we sometimes need to export hundreds of source images for a focus-stacked image, this makes a huge difference in processing time.

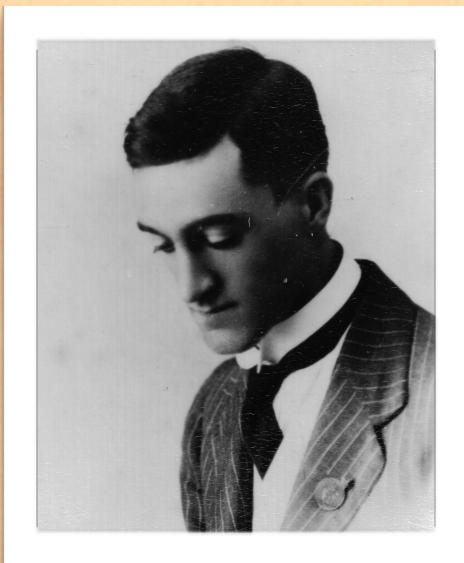
Later visitors included John Tann and Paul Flemons from Australian Museum, along with Nicole Fisher from ANIC and Celia Symons from UNSW. All were impressed by the results and it is hoped ANIC will soon purchase a similar upgrade for their system.

We are grateful to Roy Larimer and Les Walkling for their generous help.



Focus stacked image and cropped detail of a three-quarter view of the face of a purple soldier fly, *Antissa* sp. from Lamington NP taken with the new Dun Inc. microscope using a 5X Mitutoyo microscope objective.

The History Corner...



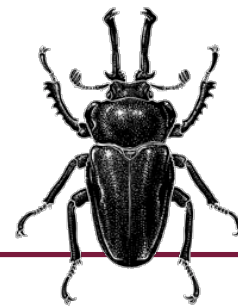
Lancelot Evon COOLING (1893-1924)

Born Brisbane. Employed 1912 as health inspector, Department of Public Health, in charge of mosquito survey of Brisbane. Served 1916-1919 in WW1 in Egypt and France and assisted Australian medical entomologist, E.W. Ferguson, in research at Laboratories of Tropical Medicine in Egypt. In 1921 joined the Australian Hookworm Campaign and conducted mosquito surveys in WA and NT. In 1922 joined Institute of Tropical Medicine, Townsville as Assistant Entomologist then Entomologist in 1923. Conducted mosquito survey of Brisbane metropolitan area in 1923. Published on mosquito biology and life histories with a major mosquito checklist in 1924. Also published on using fish for larval control of mosquitos. Died at age 31 in Townsville.

Obituary: W. H. Bryan. 1926. *Proceedings of the Royal Society of Queensland* 37:1-2.



Queensland Entomology News



Effects of floral odours on aggression in bees

A group of researchers from the Queensland Brain Institute (UQ) along with colleagues in France and Melbourne have recently published an interesting paper on new insights into honeybee behaviour. Honeybees will release an alarm pheromone in order to alert other bees in the hive to an intruder and trigger defensive behaviour. The research group investigated the effects of releasing specific floral odours at the same time and found that they reduced the aggressive response triggered by the alarm pheromone. The researcher stated, "*The fact that honeybees weigh and integrate different olfactory stimuli before taking action provides new insights regarding the possible neural circuitry that regulates aggressive behaviour.*"

To read more about the research see:

<http://www.nature.com/ncomms/2015/151222/ncomms10247/full/ncomms10247.html>

Nouvian, M. *et al.* Appetitive floral odours prevent aggression in honeybees. *Nat. Commun.* 6:10247 doi: 10.1038/ncomms10247 (2015).

Using native habitat to help reduce pesticide use on farms

ESQ member and CSIRO scientist, Nancy Schellhorn and her pest suppressive landscape team were recently selected as finalists in the Environment, Agriculture and Food category of *The Australian Innovation Challenge Awards* (November 2015). While their project on Capturing Production-based Ecosystem Services did not win, it showcased an innovative way to reduce pesticide usage through natural pest control. Conserving or reintroducing

native habitats around farmland

provides an environment that

encourages natural predators which will ultimately help with pest control.

To read more about Pest Suppressive Landscapes see:

<http://www.nipi.com.au/research/pest-suppressive-landscapes/>

Photo: James Dorey



The importance of non-bee pollinators

In a recent paper published in PNAS, Romina Rader from the University of New England, along with colleagues from around the world, including Margie Mayfield from UQ and Saul Cunningham from CSIRO, conducted field studies from five continents to look at the contributions of non-bee insects to pollination. They found that non-bee insects contributed to 39% of visits to crop flowers. Even though non-bee insects were less effective at pollinating than bees, they visited more often and were less sensitive to habitat fragmentation. To read more about the research project see:

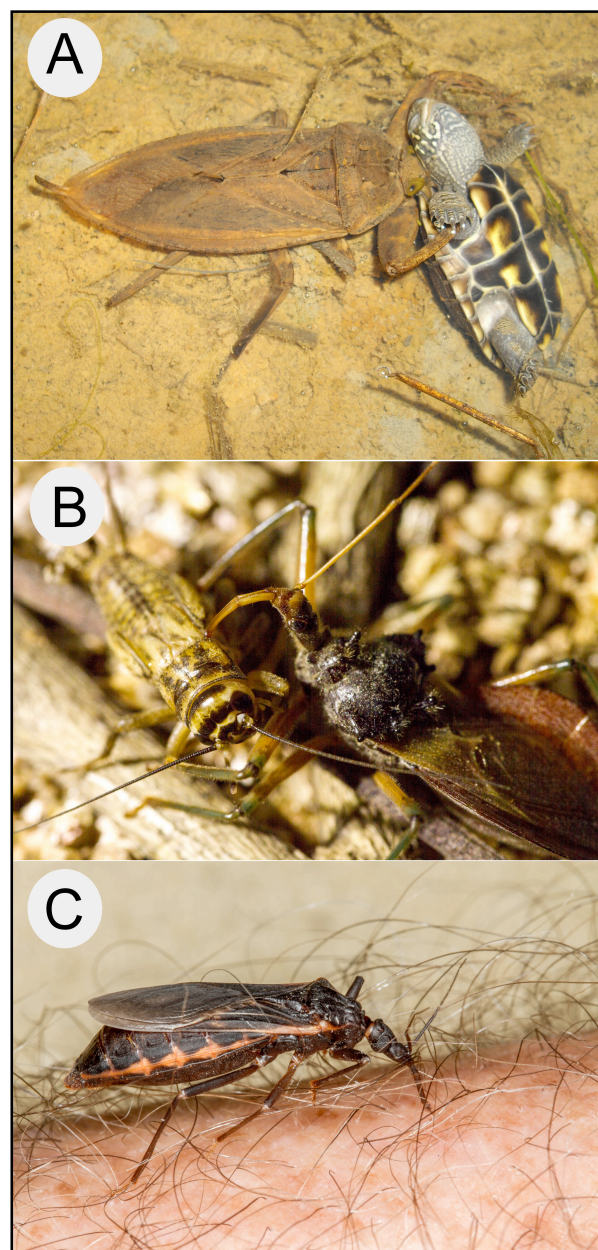
<http://www.pnas.org/content/113/1/146.abstract?tab=author-info>

Note: The corresponding author, Dr Romina Rader, will be our guest speaker in November.

Heteropteran venom discovery project

Andrew Walker and colleagues at The University of Queensland's Institute for Molecular Bioscience are investigating the venoms of predaceous true bugs such as assassin bugs and giant water bugs (Figures A, B, C). Like their relatives the cicadas and stink bugs, predaceous heteropterans have mouthparts that are modified into a proboscis with piercing-sucking mouthparts—but are used to suck up the liquefied bodies of their victims rather than plant juices. The proboscis has another job too, which is to inject venom that both rapidly paralyses the prey and liquefies its internal tissues. To achieve this end the venom contains hundreds of different molecules including enzymes, toxic peptides and toxins that punch holes in the membranes of cells. This research is aimed both at better understanding heteropteran biology and finding molecules that might be useful in biotechnology and medicine. Interested parties are invited to donate any assassin bugs (Reduviidae) or water bugs (Belostomatidae or Nepidae) they may happen to collect for this research project (contact: Andrew Walker on 0419712754 or a.walker@uq.edu.au).

Figure (Right): Venomous heteropterans. (A) An aquatic predaceous heteropteran, the giant water bug *Kirkaldyia deyrolli*, with turtle prey. Photo © Shin-ya Ohba. (B) A terrestrial predaceous heteropteran, the assassin bug *Pristhesancus plagipennis*, feeding on a cricket. (C) A blood-feeding heteropteran, *Triatoma rubida*, feeding on human blood. Photo © Margy Green.



Christmas Beetle Research

Christmas may be over but the effects of many Christmas beetles can still be seen. These pretty, yet somewhat clumsy beetles are renowned for feeding in large numbers on several eucalypt species—and other plant groups. In recent years the number of Christmas beetles appear to be increasing, with the use of fertilisers and agricultural clearing cited as potential reasons for the population growth. As the numbers increase and the traditional food sources



Christmas Beetle, *Anoplognathus* sp. from light trap at the Stockyard Creek BugCatch, 9 January 2016. Photo: Glenda Walter, Toowoomba Field Naturalists

become scarcer it will be interesting to see how dietary specialisation evolves within the *Anoplognathus* genus. Working with researchers at The University of New England, we intend to study just that. We will be seeking samples of Christmas beetles and the plant they were feeding on from eastern Australia. For more information please contact:

Dr Jasmine Janes (jjanes@une.edu.au).
Postdoctoral Fellow—Eucalypt speciation
School of Environmental & Rural Science
University of New England

New Generation | Next Generation National Conference 2015

The combined Society of Australian Systematic Biologists (SASB) and 11th Invertebrate Biodiversity and Conservation Conference was held from December 6–9, 2015 at The Esplanade Hotel in Fremantle, Perth. Unusually for the time of year, during the conference the weather was cool (some temperature maximums were in the low 20s) and showery at times.

During my exploration of Fremantle before the conference (it was my first visit to WA), I managed to find a 10m high wall painting of a praying mantis along Queen Street (Fig 1). The street art was painted by the artist with the insignia "Amok Island". Amok Island is an artist originally from Amsterdam, but currently resides in WA.

The welcome reception on Sunday was held at the Maritime Museum and the conference was officially opened by Mark Harvey from the Western Australian Museum.

The conference consisted of three days of speakers presenting under a range of symposia such as: marine connectivity and conservation, from ants to butterflies, from fleas to bandicoots, nextgen systematics: biodiversity discovery across the north, from spiders to beetles, from moths to ostracods, from R to ecology, from crayfish to longnose



Fig. 1. 10m high painting of a praying mantis along Queen Street, Fremantle. Painting by Amok Island.

suckers, dealing with molecular taxonomic nexus: a challenge for the Australian fauna in the 21st century, and the Pilbara biota. Apart from the Kimberley and the Pilbara, the Stirling Range in southern WA was brought up in many talks, particularly its unusual biota. A number of lab groups had organised collecting trips to the Stirling Range either before or after the conclusion of the conference.

There were three keynote speakers who presented at the conference. Jan Strugnell from La Trobe University spoke about using next-generation sequencing to test species boundaries, population structure and phylogenetic relationships from diverse groups of taxa including cephalopods and crustaceans. Michael Rix, who is now based at the Queensland Museum since late-2015, presented on the diversity and diversification of several Australian spider families and the efforts to conserve them. Melinda Moir, from the University of Western Australia, talked about coextinction, with a particular focus on invertebrate parasites, which tend to be overlooked in conservation management. A focus of the conference, as the name suggests, was the up-and coming researchers (students and early

career researchers) and the next generation technology and techniques being used to investigate biological and evolutionary questions. However, there were a number of long-time academics and researchers who also presented at the conference.

The conference dinner was held at the Fremantle Sailing Club, a pleasant 20-minute walk from the main venue. The food was delicious, the local wine was worth sampling, and the DJ took requests from the crowd. The delegates provided their own entertainment, with many dancing and showing off their moves, particularly when the Macarena and Nut Bush City Limits were playing.

The conference was advertised as environmentally-friendly, by being a paper-free conference (the program and book of abstracts was provided electronically). Also, before the conference delegates were encouraged to reuse one of their bags from a previous conference, and a retro bag competition was held. Prizes were awarded for the oldest bag (won by Penny Greenslade), most cryptic bag (won by Bill Humphries) and the most colourful (won by Kirsty Quinlan).

Three prizes were awarded to students for their presentations: Natalie Rosser (genome-wide analyses of *Acropora* corals), Guilia Perina (the biodiversity and distribution of bathynellid crustaceans from Pilbara aquifers) and Liz Milla (the evolutionary diversity of heliozelid moths).

The Society of Australian Systematics Biologists (<http://www.sasb.org.au/index.html>) held their biennial general meeting. What was covered in the meeting will be made available to members in the next Banksia newsletter edition. The new president for the society is Nerida Wilson from the Western Australian Museum, who has been heavily involved in organising the past two SASB conferences. The next SASB conference will be held in 2017 in Adelaide.

--Penny Mills

The Caterpillar Conundrum

My name is Erinn, I'm a PhD student at The University of Adelaide studying parasitoid wasps (Family Braconidae for the hymenopterists!) that lay their eggs in moth and butterfly caterpillars. As part of my project, I'm trying to build up a database of host interactions—basically, I'm trying to match as many parasitoids to their hosts as possible.

One way I'm trying to do this is through a citizen science project, called The Caterpillar Conundrum (<http://thecaterpillarconundrum.org>) where I'm asking the public to rear caterpillars and add photographs of each lifecycle stage to a BowerBird project of the same name (<http://www.bowerbird.org.au/projects/8033>). If someone happens to have parasitoids emerge from their caterpillar or cocoon, I'll send out vials and they can post them back to me for DNA barcoding.

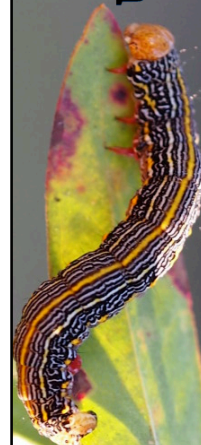
I'm trying to reach out to people that are already interested in insects, who might already be doing some rearing of Lepidoptera! Would you be able to pass this message and my contact details on to anyone who might already be rearing moths and butterflies, and who might keep hold of any parasitoids they happen to come across for me? Also, if you have members that may be interested in participating in the citizen science project, please share it around! You can share the website, or there is also a Facebook page (<https://www.facebook.com/TheCaterpillarConundrum>).

Let me know if I can provide any other details!

Kind regards, Erinn Fagan-Jeffries
erinn.fagan-jeffries@adelaide.edu.au

The Caterpillar Conundrum

A Citizen Science Project



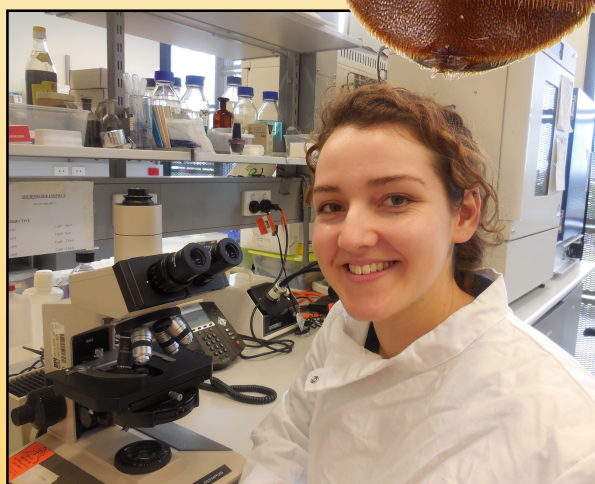
Supporting women in research: Women in STEM Research Prize

In Queensland, our scientists are international leaders at the forefront of many breakthroughs and discoveries that make a difference to the wellbeing of individuals and communities locally, nationally and internationally. To help continue this trend and encourage innovation and collaboration between women in STEM (Science, Technology, Engineering and Mathematics) research, the World Science Festival Brisbane, and the Queensland Government's Office for Women and Office of the Queensland Chief Scientist has launched the **Women in STEM competition**. This competition is open to female researchers and students in the fields of science, technology, engineering and mathematics only.

The Women in STEM competition offers two prizes of \$5000. A panel of accomplished judges will nominate a winner for the 'Jury Award' and the public can vote to select the 'People's choice award' winner. The prize money is to go towards professional development, conference attendance or research project.

One of our ESQ members, Brogan Amos, is applying for this great prize. Read about her project, then cast your vote for the people's choice award!

My name is Brogan Amos and I am undertaking a PhD at UQ and am also a lab technician for the Department of Agriculture and Fisheries (DAF). My focus for the last three years has been the small hive beetle (SHB), *Aethina tumida* which is a serious pest of European honeybees (*Apis mellifera*) in Australia and the U.S as well as being an emerging pest of native Australian stingless bees (*Tetragonula* spp.). My Honours thesis at UQ in 2013 focused on the current control methods for this pest and how they might be improved with a better understanding of SHB behaviour. The current DAF project, co-funded by Queensland beekeeping industry and the Rural Industries Research and Development Corporation (RIRDC), aims to develop an external attractant trap for SHB, the lure for which is based on naturally attractive volatiles and the species' aggregation pheromone. My PhD project was borne out a need to explore SHB biology and ecology in greater detail specifically in relation to its symbionts. The yeast *Kodamaea ohmeri* appears to be carried by the adult beetle into the honeybee hive and has been shown to be associated with the fermentation of hive products during development of *A. tumida* larvae. My work will be used as a model to better understand the role of symbiotic microbes in the evolution of particularly pest insects and their roles in the exploitation of certain niches in ecological systems.



To support her application go to http://www.thinkable.org/vote_competitions/queensland-women-in-stem-research-prize-2016



Rainforest vines in Sawpit Gully. Photo: K.Ebert

Stockyard Creek BugCatch Jan 2016

discovering, researching, educating, inspiring...

We started the year off with a BugCatch weekend event in the beautiful Upper Lockyer Valley, southwest of Gatton. The location was in an interesting area around the drainage of Stockyard Creek. It's an area of sandstone with some basalt caps and supports a great variety of vegetation from ironbark woodlands to rainforest of several types. The area has been little collected in the past and initial surveys by Geoff Monteith and Kathy Ebert have shown a few rainforest species far beyond their previously known range. ESQ member Rod Hobson, who is a National Parks Ranger



Wes Jenkinson, Rod Hobson and Susan Wright catching butterflies in Palm Creek area. Photo: J. Wright

in Toowoomba, knows the area well and helped to organise the event in conjunction with local landowners.

The Citizens of the Lockyer, Inc., organised the local people and kindly arranged for us to use the Stockyard Community Hall as a base camp for all our activities. About 18 ESQ members and UQ students participated, and many local landowners and their families attended the dung beetle trapping workshop conducted by Geoff Monteith. Visitors from the Toowoomba Field Naturalist club also came along to learn more and take photographs.

Specialist collectors Wes Jenkinson and Peter Hendry came to collect lepidopterans. Andy Walker from the Venom



Photos, clockwise from upper left:

Glenda Walter from the Toowoomba Field Naturalists Club photographed lots of interesting insects including this Bostrichid beetle.

Geometrid moths were common at the light sheet. Photo: G. Walter.

View through the light sheet. Photo: N. Baldwin

Above far right: Mantispids lined up on the light sheet to catch a bit of dinner. Photo: K. Ebert

Bottom left: Local landowner, Ken Kennedy, examines his pitfall catch at the microscope. Photo: K. Ebert

Right: Geoff showed the local landowners how to set up dung baited pitfall traps. The landowners were each given their own "kit" to take home and set up overnight pitfall traps. Photo: K. Ebert

Research Unit at UQ came to find potential insects for venom research. Several students from the University of Queensland's summer insect taxonomy course came along with course coordinator, Lyn Cook. Lyn, along with Penny Mills from UQ, collected various interesting scale and gall-forming insects. Pifall traps and light sheets



Geoff Monteith shares some interesting facts about grasshoppers with the kids. Photo: K. Ebert

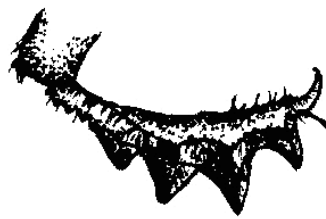
were run over two nights. Malaise traps and FIT traps had been set up in the weeks before. The enthusiasm of the children attending the BugCatch was amazing. They had a great time collecting insects and learning more about them from the more experienced entomologists. The weekend was a big success and enjoyed by all!



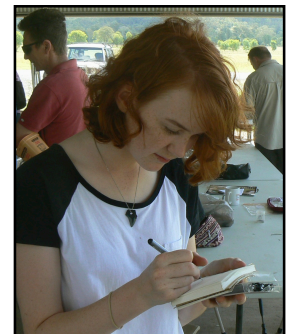
Above: Peter Hendry has an enrapt audience while he pins his moths. Photo: K. Ebert



Above: Students found a *Doratifera* sp. (Limacodidae) with venomous spines for Andy Walker's venom research. Photo: K.Ebert



Onthophagus dandali
♀ foreleg



Intrigued by what she saw under the microscope, this young artist made a quick sketch of the dung beetle's strong foreleg and shared it with us.



Above: Tiger beetle. Photo: G. Walter.

Left: Collecting in the eucalypt forests along Kennedy Road. Photo: J. Wright

Insects in Public Art: Two Queensland towns adopt ant mascots



Fig.1. The meat ant sculpture on its tall post in Meat Ant Park, Augathella.

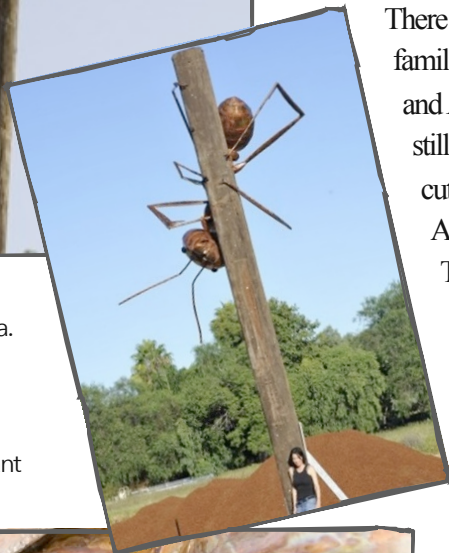


Fig. 2 (Right). Artist Amanda Feher poses at the foot of the giant meat ant installation.



Fig.3. The artist oxy-welding formed copper plates on to the steel framework of the head of the 7.5 metres ant. Above her head is the completed fore coxa and prothorax.

In these days of decline in rural economies, many country towns search for a theme that can attract passing motorists and especially the grey nomads. In Queensland, two towns have adopted ants as their logos and have commissioned public sculptures to catch the eye and tempt the curiosity.

Augathella, in the dry Queensland mid west, north of Charleville, has adopted the meat ant. Meat ants are those ubiquitous ants of Australia which build enormous flat colonies with multiple entrances and the surface decorated with small pebbles gathered by the ants.

There is a complex of species involved and the more familiar ones go under the name of *Iridomyrmex detectus* and *I. purpureus*. Though they are stingless, meat ants are still formidable by sheer force of numbers and powerful cutting jaws. This characteristic caused the local Augathella football team to adopt them as their mascot.

The lads called themselves the 'Mighty Meat Ants' and wore jerseys in the ants' colours of powder blue shorts and maroon jerseys. In 2010 the local

Murweh Shire Council commissioned a sculpture to be made by North Queensland artist, Amanda Feher (Figs1 & 2). She shaped and welded (Fig.

3) an enormous copper and steel ant which was positioned atop a giant wooden pole in Augathella's park for the opening in 2011. The sculpture is 7.5 metres in length and built to detailed accuracy.

Amanda has installed a number of public art sculptures in Australia, most in north Queensland, and some can be viewed on her website at <http://amandafeher.com.au/>

Kin Kin is a small village south of Gympie in the hinterland of the Cooloola Coast. It was a timber town in the old days and in modern times has become centre of a slightly alternative artistic community and a pleasant spot to stop on the rough short cut through to Cooloola and Rainbow Beach. There is some debate about the origin of the name Kin Kin. One



Fig.4. The ant sculpture in the main street of Kin Kin.

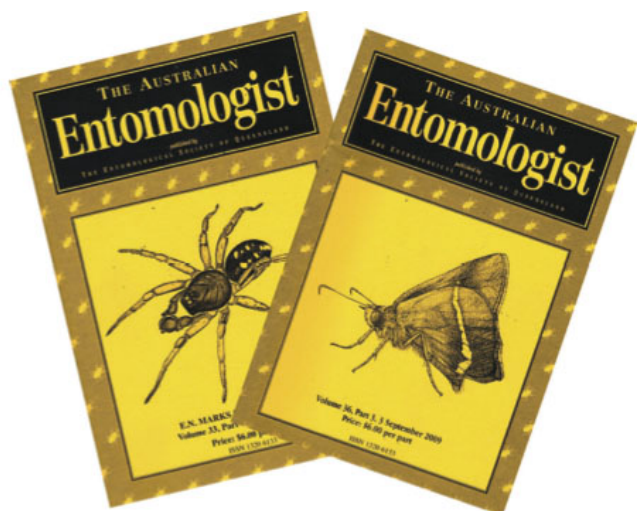
Fig.5 (right). Metal artist, Steve Weis, beside his fantasy ant creation.



school of thought believes it derives from aboriginal words for ‘red soil’ and the other school goes for ‘black ants’, especially shiny black ones which make nests between leaves of trees. This description fits the ‘rattle ant’ species of the subgenus *Cyrtomyrma* of the big genus *Polyrhachis* which have been studied for many years by ESQ member Rudy Kohout. They are common in the Kin Kin area and are one of the insect groups which have moved south with climate change and have become common in Brisbane gardens in relatively recent times. Those who favour Kin Kin as meaning “black ants” are in the ascendancy in the village and the local (and only) store/cafe has become the

‘Black Ant Gourmet’ and local metal artist Steve Weis has built and installed a magnificent ant made from welded gas cylinders on the footpath outside. Steve is the first to admit that perhaps the double node on its petiole places his ant closer to bull ants of the genus *Myrmecia* than to *Polyrhachis*, but hell, who’s counting, it’s Kin Kin! More of Steve’s metal constructions can be seen at <http://lagoonpocket.com/metal-art-of-kin-kin/>

Geoff Monteith
Queensland Museum

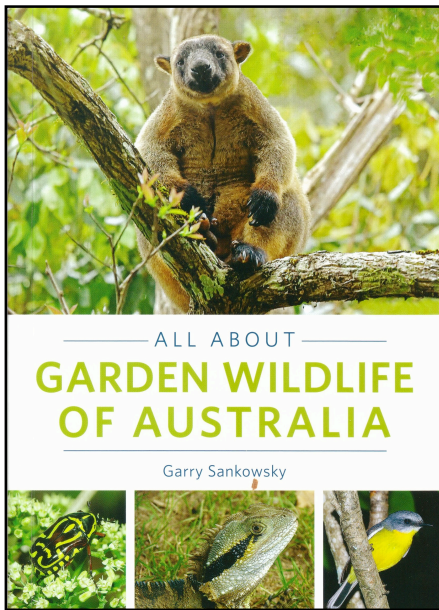


The Australian Entomologist AN INVITATION TO SUBSCRIBE

This journal was commenced in Sydney in 1974 by Max Moulds and is now published by the Entomological Society of Queensland. It is one of the leading outlets for research on native insects in Australia and adjacent areas. It publishes much new information on Australian butterflies with more than 200 papers since inception. It is printed in full colour on quality paper, while the cover features work by Australia's top insect artists.

Annual subscription for individuals is \$33 in Australia, \$40 in Asia/Pacific and \$45 elsewhere. Electronic (pdf) version available for \$25 (Institutions: \$30). To subscribe, send name and address with cheque or money order (payable to *Australian Entomologist*), to Business Manager, Box 537, Indooroopilly, Qld. 4068. To pay by credit card, send email to geoff.monteith@bigpond.com and an email invoice will be sent to you, or use the subscription form at http://www.esq.org.au/pdf/esq_subscription2014.pdf. Ask for a free inspection copy or enquire about our back issue sale at 75c/ copy for pre-2004 issues.

New Books:



All About Garden Wildlife of Australia

By Garry Sankowsky. Paperback, 160 pp, ISBN: 9781921517518. New Holland Publishers, \$29.99, available from <http://newhollandpublishers.com/au/natural-history/2153-all-about-garden-wildlife-of-australia-9781921517518.html>

This new book by ESQ member Garry Sankowsky is a companion from the same publishers of his earlier book *All About Butterflies of Australia* which we featured in the August News Bulletin this year (Vol 43, Part 5). It is another book that has flowed from Garry and Nada's experience developing their extensive bush garden of native plants at Tolga on the northern Atherton Tableland. Garry's website at <http://www.rainforestmagic.com.au/page4.html> gives much background to the project. The new book shows that our backyards form an important habitat

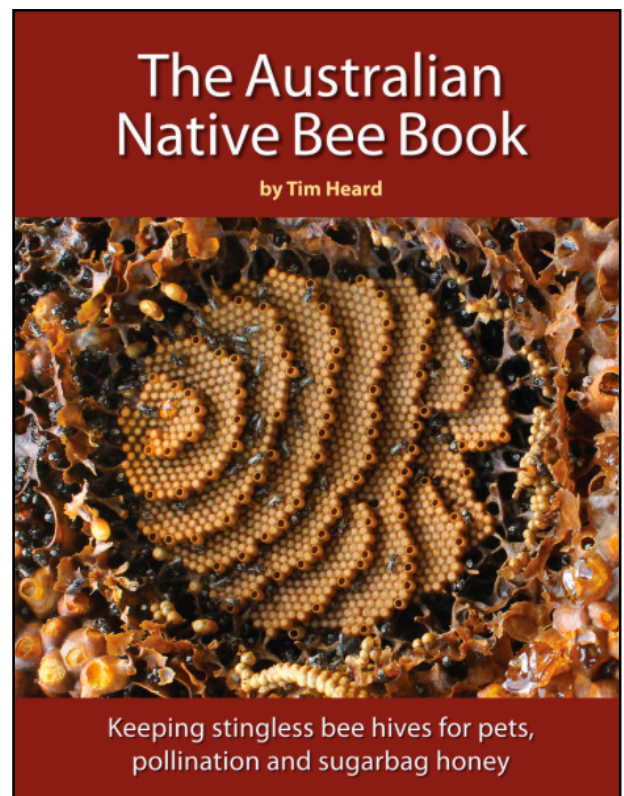
for wildlife, providing food, shelter and a place to live and breed for countless species of birds, mammals, insects, reptiles and amphibians. It has many identification spreads on key species and families of wildlife likely to be encountered. It also looks at ways of improving and enhancing your garden so that it can offer the most opportunities for wildlife and therefore the greatest amount of enjoyment to its owners. All in all it is an essential read for anyone hoping to create a haven for nature on their doorstep. Naturally, given Garry's long-term interest in insects, it has no less than 36 pages of insects with copious photographs and details about how they fit into the garden habitat.

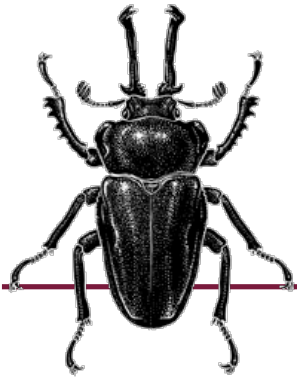
The Australian Native Bee Book

by Tim Heard. Paperback, 246pp. Sugarbag Bees Publishing, \$35, available from <http://www.nativebeebook.com.au/>

This beautifully designed book is a complete guide to keeping Australian native stingless bees. There are over 500 full colour photos, drawings and charts to complement the text. Chapters include understanding bee behaviour, their social life, nesting and foraging; how to identify different native bees; how to build and maintain stingless bee hives and harvest their honey; their uses in pollination and more. The book includes special features on indigenous use of stingless bee resources, and even a few recipes (including one for Tim's Sugarbag and macadamia pie!).

Definitely an informative book highly recommended for anyone interested in our fantastic native bees!





Announcements and Notices

Important hill-topping locations in Queensland: identification for conservation.



The Biodiversity Assessment team in the Queensland Department of Environment and Heritage Protection undertakes Biodiversity Planning Assessments for each of the State's bioregions. These identify biodiversity values in remnant vegetation, e.g. presence of threatened species, locations of species richness/endemism, and are used in development assessments, local government planning and for conservation planning. Currently we are revising the SEQ assessment and finally we are incorporating a broader range of invertebrates within the fauna component.

At an expert panel meeting the issue of hill-tops as significant locations was raised. While a few general sites were identified, our main end products are a map that must as **accurately** as possible define the position and extent of any location and a report that details the reasons for including the location. Consequently I am asking ESQ members with relevant expertise for recommendations. The information I would require includes:

- ☀ a description of the hill-top site (include map: paper or digital, showing extent of important area),
- ☀ a list of the values (e.g. names of significant species dependent on hill-tops) and
- ☀ a suggested level of significance for the site (i.e. either "State": important at bioregion level, or "Regional": important only at sub-regional level).

Our current priority is the SEQ bioregion (Gladstone south to NSW border and west to Main Range–Bunya Mts –Kroombit Tops) but I am willing to receive nominations for anywhere. Because we do revisions for each bioregion every few years, any information provided will be stored for use in future versions. Thank-you for your time and any assistance in the project would be appreciated.

Contact details: Dr David McFarland, Biodiversity Assessment, Department of Environment and Heritage Protection, GPO Box 2454, Brisbane QLD 4001. Email: David.McFarland@ehp.qld.gov.au ; Phone 3330-5913 (working in office Tues, Wed & Fri).

Meetings & conferences

Joint Meeting of the Brazilian Congress of Entomology and the Latin American Congress of Entomology including a Summit of the Americas of the *Aedes aegypti* Crisis

March 13–17, 2016

Maceió, Alagoas, BRAZIL

<http://cbe2016.com.br/>



5th International Conference on Quantitative Genetics (ICQG)

12–17 June 2016

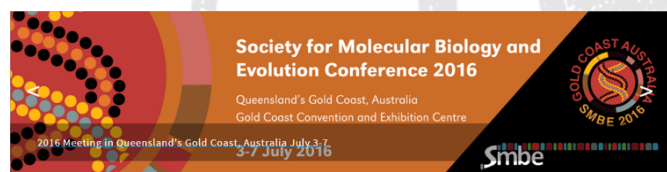
Madison, Wisconsin, USA

<http://www.icqg5.org>

XIV International Symposium on Scale Insect Studies

June 13–16, 2016

University of Catania, Sicily, ITALY



Joint Conference with the Society for Molecular Biology and Evolution and Genetics Society of AustralAsia Conference 2016

July 3–7, 2016

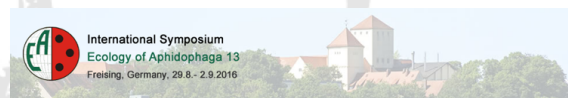
Convention and Exhibition Centre, Gold Coast, AUSTRALIA <https://www.smbe.org/smbe/>

International Symposium on Phlebotomine Sandflies IX (ISOPS IX)

June 28–July 1, 2016

Faculties of Pharmacy and Medicine of the University of Reims, Reims, FRANCE

<http://www.univ-reims.eu/site/event/isops-ix-18817.html>



International Symposium Ecology of Aphidophaga 13

August 29–September 2, 2016

Technische Universität München (TUM), Freising, GERMANY

<http://aphidophaga.de/>



XXV International Congress of Entomology: Entomology Without Borders

September 25–30, 2016

Orlando, Florida, USA

<http://ice2016orlando.org/>

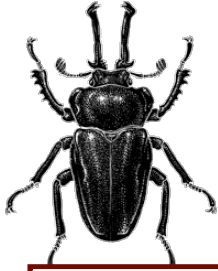


Australian Entomological Society and Entomological Society of New Zealand 47th AGM and Scientific Conference

27–30 November 2016

Melbourne, AUSTRALIA

<http://www.aesconferences.com.au/>



Diary Dates for 2016

Meetings held on the second Tuesday
of the respective month

MARCH 8	Federica Turco	AGM and Presidential Address: “ <i>Not only darkling beetles: a professional and personal journey among Tenebrionoidea beetles</i> ”
APRIL 12	Nigel Stork	“ <i>How many species are there on Earth</i> ”
MAY 10	Michelle Gleeson	“ <i>Little Bug-ers: educating and inspiring the next generation of budding entomologists</i> ”
JUNE 14	Notes and Exhibits	Student Award Presentation/ Notes & Exhibits
AUGUST 9	Kumaran Nagalingam	“ <i>To be announced</i> ” on <i>Fruit flies</i>
SEPTEMBER 13	Julianne Farrell	“ <i>Processionary caterpillars: their ecology and relationship to equine foal deaths</i> ”
OCTOBER 11	Madaline Healey	“ <i>To be announced</i> ” on <i>ACIAR Biocontrol in the Mekong</i> ”
NOVEMBER 8	Romina Rader	“ <i>To be announced</i> ” on <i>Community Ecology</i>
DECEMBER 13	Notes & Exhibits	Notes and Exhibits/Christmas Afternoon Tea

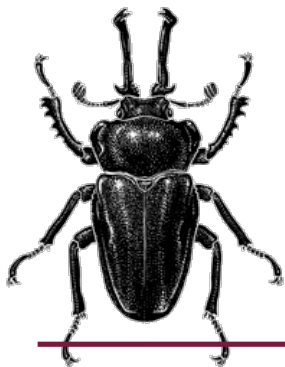
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GENERAL	Person who has full membership privileges	\$30pa
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The Australian Entomologist PO Box 537, Indooroopilly QLD 4068
http://www.esq.org.au/pdf/esq_subscription2014.pdf



Entomological Society of Queensland



Notice of next meeting:

Tuesday, March 8th, 2016, 1:00 pm



Business will include:

Presidential Address by retiring president

Dr Federica Turco

presenting

**Not only darkling beetles: a professional and
personal journey among Tenebrionoidea
beetles**

and the Annual General Meeting Business:

Presentation of Annual Reports for 2015

Ratification of Constitutional By-laws

Election of Council for 2016

All welcome! Join us for tea and coffee following the meeting.

Ground floor Seminar Room

Ecosciences Precinct, Boggo Road, DUTTON PARK

More venue details available at <http://www.esq.org.au/events.html>

Next News Bulletin:

Volume 44, Issue 1 (March 2016)

CONTRIBUTIONS WELCOME - Deadline Wednesday, March 16th, 2016.

Send your news/stories/notices to the editor at: k.ebert@uq.edu.au