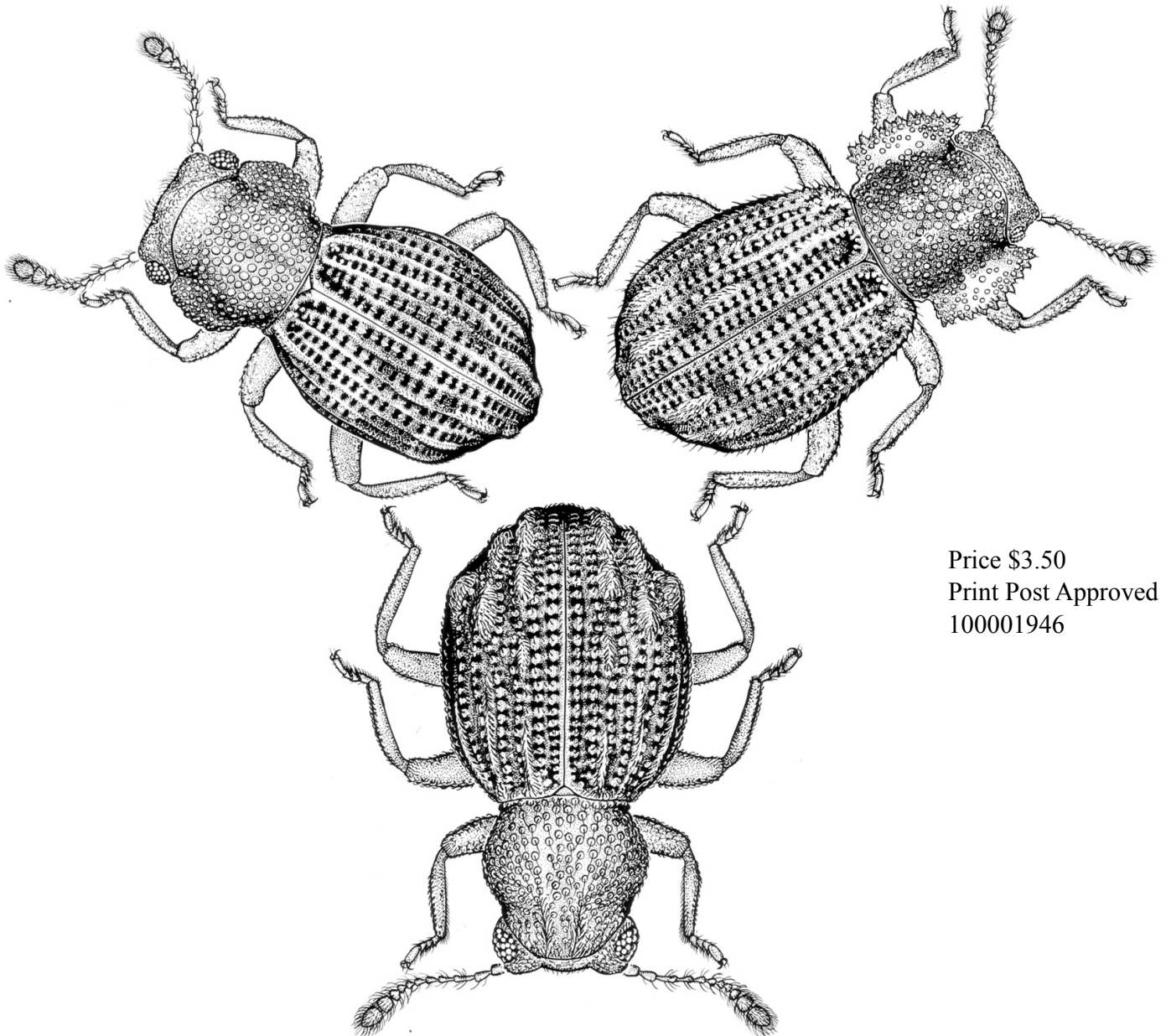


Entomological Society of Queensland

# NEWS BULLETIN



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# Entomological Society of Queensland

Website: [www.esq.org.au](http://www.esq.org.au)

Address: PO Box 537, Indooroopilly QLD 4068

## President

Dr Federica Turco  
Ph: (07) 3840 7690  
Fax: (07) 3846 1226  
Email: [federica.turco@qm.qld.gov.au](mailto:federica.turco@qm.qld.gov.au)

## Vice President

Bradley Brown  
Ph: (07) 3833 5695  
Email: [bradley.brown@csiro.au](mailto:bradley.brown@csiro.au)

## Past President

Dr Bill Palmer  
Ph: (07) 3255 4469  
Email: [bill.palmer@daff.qld.gov.au](mailto:bill.palmer@daff.qld.gov.au)

## Secretary

Dr Mark Schutze  
Email: [m.schutze@qut.edu.au](mailto:m.schutze@qut.edu.au)

## Treasurer

Dr Brenton Peters  
Ph: (07) 3376 4342  
Email: [petersbc@tpg.com.au](mailto:petersbc@tpg.com.au)

## News Bulletin Editor

Kathy Ebert  
Email: [k.ebert@uq.edu.au](mailto:k.ebert@uq.edu.au)

## Permit Information Officer

Dr Christine Lambkin  
Ph: (07) 3840 7699  
Fax: (07) 3846 1226  
Email: [christine.lambkin@qm.qld.gov.au](mailto:christine.lambkin@qm.qld.gov.au)

## Councillors

Dr Nancy Schellhorn  
Ph: (07)3833 5710  
Email: [Nancy.Schellhorn@csiro.au](mailto:Nancy.Schellhorn@csiro.au)

Dr Cate Paull  
Email: [cate.paull@csiro.au](mailto:cate.paull@csiro.au)

Penny Mills  
Ph: (07) 3365 1864  
Email: [penelope.mills@uqconnect.edu.au](mailto:penelope.mills@uqconnect.edu.au)

## Honorary Life Members

R.A.I. Drew  
D.L. Hancock  
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R.P. Kleinschmidt  
G. B. Monteith  
D.P.A. Sands  
C. Lambkin  
M. Moulds

## THE AUSTRALIAN ENTOMOLOGIST

### Editor

Dr David Hancock  
Ph: (07) 4053 1574  
Email: [davidhancock50@bigpond.com](mailto:davidhancock50@bigpond.com)

### Business Manager/Assist. Editor

Dr Geoff Monteith  
Ph: (07) 3371 2621  
Email: [geoff.monteith@bigpond.com](mailto:geoff.monteith@bigpond.com)

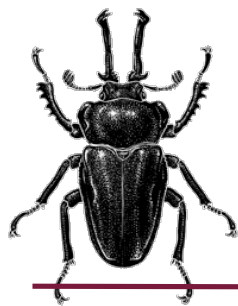
### Assist. Editor/Manuscript Coordinator

Dr Federica Turco  
Ph: (07) 3840 7690  
Email: [federica.turco@qm.qld.gov.au](mailto:federica.turco@qm.qld.gov.au)

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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

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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.

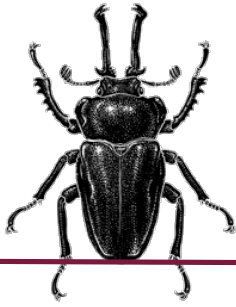
The Society publishes **THE AUSTRALIAN ENTOMOLOGIST**. This is a refereed, illustrated journal devoted to Entomology in the Australian region, including New Zealand, Papua New Guinea and the islands of the South Western Pacific. The journal is published in four parts annually.

**EMBLEM:** The Society's emblem, chosen in 1973 on the 50<sup>th</sup> 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.

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

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# Entomological Society of Queensland

## Minutes for Annual General Meeting

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**Tuesday, March 10, 2015**

Held in the Seminar Room, Ecosciences  
Precinct, Boggo Rd, Dutton Park at 1pm

**Attendance:** Nadine Baldwin, Mike Barnett, Bradley Brown, Gary Cochrane, Michael Day, Kathy Ebert, Graham Forbes, Stephen Frances, Andrew Hayes, Helen Nahrung, David Hughes, Simon Lawson, Penny Mills, Geoff Monteith, Bill Palmer, Cate Paull, Brenton Peters, Don Sands, Mark Schutze, Geoff Thompson, Federica Turco, Pauline Wyatt

**Visitors:** Perry Bennion

**Apologies:** Lyn Cook, Julieanne Farrell, Christine Lambkin, Mike Muller, Noel Starick, Susan Wright

**Minutes:** The minutes of the last AGM were circulated in News Bulletin 42[1] March 2014.

*Moved the minutes be accepted as a true record:* Geoff Monteith

*Seconded:* Bradley Brown *Carried:* all

### **Nominations for membership:**

The following nominations for membership were recommended by council and approved at the general meeting:

#### **General memberships:**

1. Chris Ryan, Oakhurst, Q. *Nominated by* Gary Cochrane, *Seconded:* Brenton Peters. *Carried:* all.

#### **Student memberships:**

2. Kara Dal-Cin, Annerley, Q. *Nominated by* Kathy Ebert, *Seconded:* Federica Turco. *Carried:* all.

3. Liam O'Dea-Jones,

Stafford Heights, Q. *Nominated by* Robert Whyte, *Seconded:* Greg Anderson. *Carried:* all.

### **General Business:**

1. Geoff Monteith presented a dossier in support of an Honorary Life Membership for Max Moulds. *Moved to present Life Membership:* Geoff Monteith, *Seconded:* Don Sands. *Carried:* all.

2. Federica Turco presented a dossier in support of an Honorary Life Membership for Christine Lambkin. *Moved to present Life Membership:* Federica Turco, *Seconded:* Kathy Ebert, *Carried:* all

3. The Society's Annual Reports and Financial Statements were published in the News Bulletin 42[10].  
*Moved the Treasurer's report be accepted:* Brenton Peters; *Seconded:* Bradley Brown; *Carried:* all.

*Moved the Business Manager's report be accepted:* Geoff Monteith; *Seconded:* Simon Lawson; *Carried:* all.

*Moved the secretary's report be accepted:* Kathy Ebert; *Seconded:* Penny Mills; *Carried:* all.

*Moved the News Bulletin report be accepted:* Kathy Ebert; *Seconded:* Penny Mills; *Carried:* all

*Moved the Presidents' report be accepted:* Bill Palmer; *Seconded:* Federica Turco; *Carried:* all

4. Changes to the constitution were presented to all members with News Bulletin 42[9].



*Move to accept all changes:* Bill Palmer,  
*Seconded:* Bradley Brown. *Carried:* all.

5. Election of 2015 Council: The following nominations for council positions were put forward to the general assembly for approval:

**President:** Federica Turco. *Nominated by* Christine Lambkin, *Seconded:* Susan Wright

**Vice President:** Bradley Brown. *Nominated by* Gio Fichera, *Seconded:* Matthew Purcell

**Secretary:** Mark Schutze. *Nominated by* Stephen Cameron, *Seconded:* Li-Xin Eow

**Treasurer:** Brenton Peters. *Nominated by* Bill Palmer, *Seconded:* Kathy Ebert

**News Bulletin Editor:** Kathy Ebert. *Nominated by* Bill Palmer, *Seconded:* Brenton Peters

**Councillor:** Penelope Mills. *Nominated by* Lyn Cook, *Seconded:* Tom Semple

**Councillor:** Nancy Schellhorn. *Nominated by* Andrew Hulthen, *Seconded:* Matthew Purcell

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

### ***Australian Entomologist Journal Business***

**Manager:** Geoff Monteith, *Nominated by* Susan Wright, *Seconded:* Christine Lambkin

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

All nominees were approved.

### **Main Business:**

Federica Turco thanked Bill Palmer for his work as President in 2014, and introduced his presentation on "Queensland's weed biocontrol - down memory lane."

**Next meeting:** April 14th, 1pm with Michelle Gleeson, BugsEd Director and Presenter. This meeting will be held in the library.

**Meeting closed: 2:05pm**

## **ESQ 2015 Council members**



**2015 ESQ Council members:**

Back, L to R: Mark Schutze, Penny Mills, Federica Turco, Kathy Ebert.

Front, L to R: Geoff Monteith, Bill Palmer, Nancy Schellhorn, Bradley Brown, Cate Paull, Brenton Peters.



Bill Palmer opening the IOBC-ABRS Symposium in Canberra 2014. Photo IOBC.

This afternoon I present a brief history of weed biocontrol in Queensland and try to indicate that this discipline has played its part in the pantheon of Queensland's entomology.

Our story starts off shore. Biological control is not a new concept of course and has been practised in some form or other for millennia. However the practice of classical biocontrol as a scientific discipline was greatly influenced by Charles Valentine Riley. Riley was an Englishman and insect illustrator who emigrated to the USA and ultimately became a very early government economic entomologist, first in in Missouri and later in the United States Department of Agriculture. He wanted a biological control for the cottony cushion scale *Icerya purchasi* (Monophlebidae) devastating the Californian citrus industry and eventually sent a German entomologist Albert Koebele to Australia. In 1888, Koebele found and shipped back the vedalia beetle *Rodolia cardinalis* (Coccinellidae) which was spectacularly successful. This success put the discipline of biological control on the map and of course Australia had played a part.

Riley and Koebele eventually fell out and Koebele left USDA employment. However he was soon hired by the Hawaiian sugar growers to search in

# Weed Biological Control in Queensland - down memory lane

*Presidential Address by Bill Palmer*

Mexico for biocontrol agents for lantana, *Lantana camara*. He found six promising insects which were released and some gave significant relief. This is probably the first full scale weed biocontrol project with the elements of foreign exploration, shipments, consideration of host specificity, rearing and distribution.

Lantana was also a serious weed in Queensland. It had been introduced as an ornamental and had become a big problem in the cane fields and other coastal areas. However the most serious problem in the early 1900s was the rapid spread of the 'green octopus', the prickly pear *Opuntia stricta*. This Texan plant first became weedy in the 1870s and by the time it reached its zenith in the mid-1920s it had taken over 25 million hectares and was spreading at the rate of 0.5 million hectares per year. From the 1900s people started to think biological control after the successes against cottony cushion scale and lantana in the United States.



*Lantana camara*. Photo: Zeynel Cebeci, Wikimedia commons



The first big push came in 1912 when Henry Tryon and Harvey Johnson, to be known as the “prickly pair”, were sent around the world to find suitable agents for prickly pear and lantana. Tryon was the government entomologist and vegetable pathologist who had already given his name to the Queensland fruit fly, *Bactrocera tryoni* (Tephritidae). He was a rather irascible character quite capable of rubbing colleagues up the wrong way. Johnson, a microbiologist, had just been appointed lecturer-in-charge of the biology department at the new University of Queensland. They brought back several insects for these weeds.



Photo: CSIRO SciencelImage 2101 Prickly Pear.

*Dactylopius celonicus* (Dactylopiidae) for another prickly pear and *Ophiomyia lantanae* (Agromyzidae) for lantana were successfully reared but most notably they failed to rear the moth *Cactoblastis cactorum* (Pyralidae) in Queensland laboratories.

After the World War 1 greater effort was put into controlling prickly pear and the Commonwealth Prickly Pear Board, funded by the Commonwealth, Queensland and NSW governments, was set up in 1920 with headquarters at Sherwood and with Harvey Johnston as the Scientific Controller. By this time he had been appointed Professor of the Biology Department. Our Society's founding president (1923-29), Prof. E. J. Goddard\* joined the Board in 1926 as its scientific Member. Although Harvey Johnson, John Hamlin, and W. B. Alexander, Leith Hitchcock, Frederick H. S. Roberts\*, Ronald Mundell, and A. N. Burns had significant involvement this group eventually morphed into the age of Alan Dodd\* and John Mann\*, the two scientists now most associated with the programme. Dodd a brilliant entomologist with strong personality and character assumed leadership of the prickly pear programme in 1925 and in ensuing years led a team containing several, later to become eminent entomologists. He had recollected *C. cactorum* in

Argentina and this time it was brought back to Australia successfully where Mann played a role in its rearing and distribution. Both these men learned their entomology on the job with minimal university training by today's standards. Both had been mentored to outstanding entomologists. Dodd was mentored by his father Frederick Parkhurst Dodd, the hymenopterist A. A. Girault and the pest ecologist J. F. Illingworth. Mann was mentored in his youth by Athol Waterhouse in Sydney. After the success of the prickly pear biocontrol the Board was disbanded in 1939 and the group and its facilities at Sherwood were taken over by the Queensland Government. Dodd remained as its director until his retirement in 1962 and was succeeded by Mann until 1970.

Bill Haseler\* became director of the Sherwood group, now known as the Biological Branch of the Lands Department, in 1970. About the same time Ken Harley\* was developing a group at CSIRO Long Pocket. The 1970s saw an expansion in the weed biocontrol effort from both groups with new big projects such as parthenium *Parthenium hysterophorus*, Harrisia cactus *Harrisia martini* and several water weeds such as water hyacinth *Eichhornia crassipes*, water lettuce *Pistia stratiotes*,

salvinia *Salvinia molesta* and alligator weed *Alternanthera philoxeroides*. The 1980s saw peak activity in the discipline (Table 1) but the next two decades were also very productive thanks to the formation of cooperative research centres and national programmes and the recognition of weeds of national significance. Today the Queensland effort is very much diminished with about 3 scientist full-time equivalents.

Table 1. Research scientists working on Queensland weed problems during the 1980s.

Lands Department, Sherwood	CSIRO, Long Pocket	Overseas Field Stations
Paul McFadyen*	Ken Harley*	Alec McClay (Mexico)
Rachel McFadyen*	Wendy Forno*	John Winder (Brazil)
Brian Willson	Peter Room	Bill Palmer* (Texas)
Clyde Wild	Mic Julien	Cesar Garcia (Brazil)
Graham Donnelly	Don Sands*	Jennifer Marohasy (Madagascar)
Allan Tomley	Tony Wright	John Gillett (Mexico)
		B.Mohyuddin (Pakistan)
		Bill Woods (Arizona)

I would like to just touch on a few of the interesting projects.

We have all heard something of the very famous text book classic, prickly pear. This weed was really causing a crisis in Queensland as it was taking over our good agricultural lands and forcing farmers off their land. *Cactoblastis cactorum* is generally regarded as the miracle agent but the scale *Dactylopius opuntiae* also played a significant role as did various plant pathogens. Quite recently Raghu and Craig Walton have suggested that because of the tremendous numbers of insects released, some 2 billion egg sticks of *C. cactorum* were released between 1926 and 1930, perhaps this was more an inundative release programme rather than a classical biocontrol project.

Harrisia cactus was a major problem in central Queensland and border areas around Goondiwindi.

Rachel McFadyen\* found a mealybug *Hypogeococcus festerianuus* (Pseudococcidae) in Argentina while the civil war still raged. She made only one very small shipment of this insect and this provided all the material for further culture and future releases and thus providing a good example that one doesn't necessarily need large quantities of insects to provide a sufficient gene pool for a successful agent. The mealybug was a poor disperser so weed inspectors who had previously been employed spraying the weed were now reemployed spreading the agent throughout all infested areas. This is a good example of why it is



Parthenium weed. Photo: Steve Wilson, Wikimedia Commons

important to examine programs carefully to see whether some manipulation of a classical biocontrol is required.

Parthenium burst onto the weed scene in the 1970s. Central Queensland properties were drought affected and overgrazed. When the rains finally came, the parthenium was first away and extensive monocultures and human health issues resulted and led to thirty years of biocontrol research before being thought an eventual success. Although now much less of a problem in Queensland, parthenium is fast becoming a major problem in Africa and Asia. The good work done in the Queensland project is now being very much appreciated elsewhere with our agents being introduced into other regions.



Serendipitous result occurred with ragweed, *Ambrosia artimisiifolia*, which is very closely related to parthenium. This weed is also a major human allergen and established in coastal areas in the heavily populated area from Brisbane to Lismore. Insects collected from ragweed in North America were largely ineffective because of climate differences but several of the parthenium insects were effective and largely solved this problem. This is a very rare instance where the fauna of one weed have been able to be utilised by another weed of a different genus. The phenomenon also produces a great cost/benefit result!



CSIRO SciencelImage 1109 *Cyrtobagous salviniae*

Salvinia was one of several successes against the water weeds and made the front cover of *Nature* (Room et al. 1981). The success depended on the recognition that there were actually two very similar weevil species involved. One species *Cyrtobagous salviniae* (Curculionidae) was very effective while the other was not. Don Sands\*, here today, did this work. The successful work undertaken for Australia on water weeds was utilised by several international projects in Africa and Asia and demonstrated that weed biocontrol can be very effective international aid.

Lastly, groundsel bush *Baccharis halimifolia* on which I had the pleasure of working. This was a major weed in south-eastern Queensland particularly

when we had a dairy industry. It was also a great biocontrol target as there are no closely related plants in Australia and it also belonged to a large genus of hundreds of species spread over much of North, Central and South America. The project commenced in the 1960s and over time involved field stations in Texas, Florida and Brazil. Ultimately, 13 insects and a rust were released and probably solved the problem. I say probably because it is again so difficult to prove over large spatial scales, with changing industries, urbanisation and indications of climate change. This project is one of very few successful projects where benefits may not have exceeded costs.

Let's follow this thought and look at the economics of some of Queensland's successful projects. A quick look at data developed in 2004 showed that most of our successful projects have generated considerable benefits for Queensland (Table 2).

Table 2. Economic evaluation of some successful Queensland projects (after (Page and Lacey 2006)

Weed	Years of research	Total Investment (\$m in 2004\$)	Net Present Value (\$m in 2004\$)	Benefit: Cost ratio
Prickly pear	35	21.1	3100	312:1
Rubber vine	21	3.6	232.5	108:1
Annual ragweed	7	0.6	52	103:1
Water weeds	20	5.1	76.5	27:1
Harrisia cactus	5	1	18.6	23:1
Giant Sensitive Bush	11	1.7	20.2	18:1
Groundsel bush	33	3.1	2.1	0.7
Lantana	64	13.6	2.5	5.6
Parthenium	29	11.0	33.3	7.2

These very good results are now a bit at odds with our current investment in weed biocontrol in Queensland and things are no better on the national

scene. Australia, once a leader in the discipline, is in a quite parlous state.

Table 3. Estimated annual scientist 'Full Time Equivalents' employed by Australia's agencies on Australian weed biological control projects (after Palmer *et al.* (2014).

Entity	Greatest capacity (1980s to early 1990s)	Present (2014)
CSIRO	13	2.0
Queensland	9	1.5
Victoria <sup>a</sup>	8	2
Tasmania	1	0
New South Wales	2	0.5
Northern Territory	2	2
Total	33	8.0

<sup>a</sup>Victoria's technical staff has reduced from 15 people to none at present

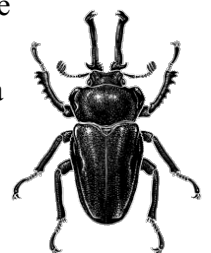
There are several reasons why funding investment for the discipline has shrivelled in recent years and some of these are common to other branches of science. We are certainly not alone on this. These reasons for weed biocontrol include the global financial crisis and government deficits, the election of conservative governments, loss of the Cooperative Research Centres (CRCs), the winding back of the National Weed Strategy, disinvestment in the Weeds of National Significance, the retirement of several scientists, almost no retention of young scientists from CRCs, less familiarity with biocontrol by federal approving agencies, fewer attractive large projects and less enthusiasm for environmental projects. In the future we may see Australia tackling fewer projects and possibly sharing projects between the significant agencies both within Australia and elsewhere.

I might touch on the loss of biocontrol skills which are largely the skills of the entomologist, botanist and plant pathologist. Quite apart from the loss experienced when scientists of say 40 years standing retire, there is also an issue of whether these basic skills are still readily available in replacement people.

The universities are no longer producing many, what we might call "classical entomologists" and Australia no longer has any stand-alone entomology departments as are still extant in other countries. Our entomology is nowadays subsumed within larger biology or agricultural departments. It is perhaps no coincidence that "retirees" are now a significant group of insect collectors both within weed biocontrol and more generally. I have not been in particularly close contact with our university colleagues but I do know that some are wondering whether we should consider a coursework Masters of Science, and perhaps this should be given more consideration. Of course any solution such as this depends ultimately on there being attractive career paths for those who undertake the study and this is a serious issue.

In conclusion I hope I have demonstrated that weed biocontrol has played a significant role within the development of Queensland's entomology. At least a dozen presidents of this Society have had association with this particular discipline and many others have made significant contribution to the society in other capacities. The discipline has also made commensurate contribution to scientific entomological knowledge in ecology, taxonomy, host preferences and other areas as well as its economic successes.

On that happy note I will conclude and thank all for the opportunity to be president in 2014 and for support during that year. It has truly been a pleasure.



\* *Past Presidents of the Entomological Society of Queensland*

### Further Reading

Dodd A. P. (1940) *The biological campaign against the prickly-pear*. Commonwealth Prickly Pear Board, Brisbane, Australia.

Johnston T. H. & Tryon H. (1914) Report of the prickly-pear travelling commission. p. 131, Brisbane.

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Perkins R. C. L. & Swezey O. H. (1924) The introduction into Hawaii of insects that attack lantana. *Bulletin of the Experiment Station of the Hawaiian Sugar Planter's Association*. **16**, 1-83.

Raghu S. & Walton C. (2007) Understanding the ghost of *Cactoblastis* past: Historical clarifications on a poster child of classical biological control. *Biosc.* **57**, 699-705.

Room P. M., Harley K. L. S., Forno I. W. & Sands D. P. A. (1981) Successful biological control of the floating weed *Salvinia* Nat. **294**, 78-80.

Winston R. L., Schwarzländer M., Hinz H. L., Day M. D., Cock M. J. W. & Julien M. H. (2014) *Biological Control of Weeds: A World Catalogue of Agents and Their Target Weeds, 5th edition*. USDA Forest Service, Forest Health Technology Enterprise Team, Morgantown, West Virginia.



**BINGO (Breeding Invertebrates for Next Generation BioControl) searches for 13 ambitious PhD students to participate in dynamic European network of excellence - [www.bingo-itn.eu](http://www.bingo-itn.eu)**

BINGO develops innovative research training to improve the production and performance of natural enemies in biological control by the use of genetic variation for rearing, monitoring and performance.

BINGO is a Marie Skłodowska-Curie **Innovative Training Network**, and invites applications for **13 Early Stage Researcher positions (PhD student)**. BINGO is funded by the EU Horizon 2020 programme and involves 12 partners from academia, non-profit organizations and industry located in the Netherlands, Germany, France, Spain, Czech Republic, Austria, Switzerland, Greece and Portugal. BINGO's approach is multidisciplinary, encompassing a broad range of scientific disciplines, including the application of state-of-the-art population genomics.

**The programme combines integrated training workshops and internship opportunities across the network, with career opportunities in academia, public or the private sectors.**

Deadline March 31st, 2015

Application web page: [www.bingo-itn.eu/en/bingo/Vacancies.htm](http://www.bingo-itn.eu/en/bingo/Vacancies.htm)



# Introducing the new President for 2015, Dr Federica Turco



Fede collecting leaf litter near Flinders Peak, SE Queensland

Dear fellow ESQ members,

Many of you already know me, more or less directly, thanks to my involvement in the ESQ Council over the last seven years, my contributions to the News Bulletin, my editorial work with the Australian Entomologist and my work as a postdoctoral fellow at the Queensland Museum.

Still, most of you don't know me at all or know very little of my "previous life". Now that I have been honoured with your trust and voted to be the ESQ President for 2015, an introduction and a short biography (yes, I'll make it short!) seems to be appropriate.

I graduated and then completed my PhD in Biology at the University "Roma Tre" in Rome, Italy, where I come from. My degree thesis was about the "Sexual and cleaning behaviour and related morphology in the genus *Cerocoma* (Coleoptera, Meloidae)", whereas my PhD dissertation focused on a "Multidisciplinary research on the phylogenetic reconstruction of the tribe Cerocomini (Coleoptera,

Meloidae)". So, my first years of entomological life were centred on different aspects of the biology, morphology and evolutionary history of the family Meloidae, also known as blister beetles (Coleoptera: Tenebrionoidea). This led to the publication of several scientific papers, as well as the co-authorship of a chapter on meloids along with Prof. John Pinto (University of California, Riverside) and Prof. Marco Bologna (my supervisor at "Roma Tre" University). This chapter was included in the Handbook of Zoology (Handbuch der Zoologie), Coleoptera II, edited by Rich Leschen, Rolf Beutel, John Lawrence and Adam Ślipiński, and published by de Gruyter in 2010.

Among all insects, I find beetles particularly fascinating and over the years I have had the chance of studying and working also on other Tenebrionoidea families. While still in Europe I have worked on and compiled part of the FaunaEuropaea project dealing with the family Ripiphoridae (<http://www.faunaeur.org>), another biologically intriguing beetle family. Ripiphoridae in fact, as well as Meloidae, are characterised by a complex life cycle with a triungulin first-instar larvae (in some cases phoretic) and parasitic secondary larval stages.

I moved to Australia at the beginning of 2007 and started working at the Queensland Museum the same year in August. During the first couple of years I could continue my journey in meloid taxonomy focusing on Australian fauna. This work resulted in a comprehensive revision of Australian blister beetles, including the description of two new genera (*Australozonitis* and *Pulchrzonitis*) and a new tribe (Palaestrini) in collaboration with my friends, mentors and international meloid experts John Pinto and Marco Bologna (Fig. 1).





Fig. 1. *Palaestra smaragdina* (Waterhouse)

My work on tenebrionoid beetles has continued from 2009 with a new challenging project, funded by ABRS, dealing with the taxonomy of Australian Zopheridae in collaboration with Christine Lambkin (QM) and Adam Ślipiński (CSIRO). Zopherids now include what used to be called Colydiidae and comprise about 40 genera with more than 100 species currently described from Australia (Figs 2-3). They are mainly fungi-eaters of small size (usually not more than 15 mm long), with the noticeable exception of the tribe Zopherini that can reach about 35 mm. Zopherini are represented in Australia by one single species that many bushwalkers might have spotted sometimes crawling on tree trunks, *Zopherosis georgei* White also known as ironclad beetle (Fig. 3).

As stated above, I started my Australian entomological path at the Queensland Museum in 2007, as a brand new permanent resident, and I still work in what I think is an invaluable asset to Queensland and its people. It has been a varied journey under the supervision of Christine Lambkin, from working as Assistant Collection Manager to Postdoctoral Fellow. Moving to the other side of the world has been for me a great challenge and I found myself in a place I chose and love, but at the same time a place to me very unfamiliar, landscapes, habitats, flora and fauna! Nonetheless, I have been ‘blessed’ with the best mentor I could have hoped for, Geoff Monteith. We have worked in the field together many times and travelled around, especially during the years of my ABRS grant (2009-2012). He showed me and taught me so much about Australia’s



Fig. 2. *Pristoderus spinosus* Turco & Ślipiński

nature, history and people that I feel like I know and I have seen this country more than many 'Australia-born city-dwelling Australians'! I would like to take this opportunity to express my eternal gratitude to the two people I owe the most from a personal and professional points of view since I left my home country and family, Christine Lambkin and Geoff Monteith.

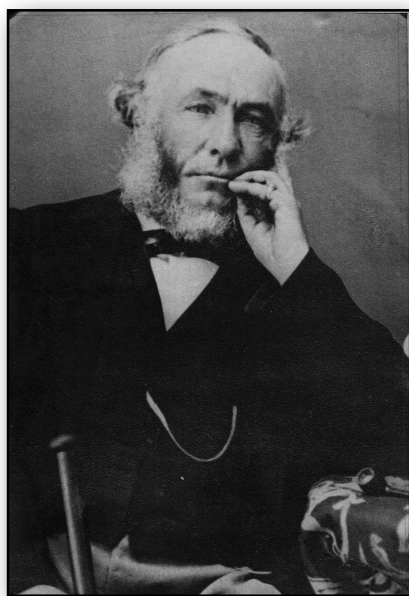
Since the early stages of my life in Brisbane my friends and colleagues at QM introduced me to the Entomological Society of Queensland, which I joined in July 2007. I have served in the ESQ Council since 2008 but my involvement with the Society has been reinforced by my inclusion in the Editorial Committee of our own scientific journal, the Australian Entomologist. Since September 2008 in fact I have been one of the Subject Editors and since May 2010 also Manuscript Coordinator.

It has been a terrific experience so far and, as I said during our last AGM, I am very much honoured to be President this year and I want to thank all members once more for accepting my nomination.

*Federica*



Fig. 3. *Zopherosis georgei* White



## The History Corner...

**Silvester DIGGLES** (1817-1880)

Silvester Diggles was the pioneer entomologist of Brisbane and the first resident collector. Born in Liverpool, England, he came to Brisbane in 1854 and made a living as a piano tuner and teacher of drawing and music. A leading intellectual of the young colony, he was instrumental in founding both the Queensland Philosophical Society (now Royal Society of Qld) and the Queensland Museum. He collected many Lepidoptera and Coleoptera and sent them to the British Museum for description by Francis Walker. He first recorded the immigrant North American Monarch butterfly (*Danaus plexippus*) from Australia in 1871. He mentored the young Roland Illidge in entomology and his own Queensland collection passed via Illidge to the South Australian Museum.

**Biography:** Marks, E. N. (1963) *Qld. Nat.* **17**: 15-25.





# Queensland Entomology News



## Research news

### Evolution of Silk weaving in *Polyrachis* ants

ESQ members, Corrie Moreau (University of Chicago) and Rudy Kohout (Queensland Museum) have recently published a paper with Simon Robson from James Cook University and Andrew Beckenbach from Simon Fraser University on the evolution of nest-weaving in *Polyrachis* ants where workers incorporate larval silk into the nest structure. To read more about it see:

*Evolutionary transitions of complex labile traits: Silk weaving and arboreal nesting in Polyrachis ants*

Simon K. A. Robson, Rudy J. Kohout, Andrew T. Beckenbach, Corrie S. Moreau  
Behavioral Ecology and Sociobiology  
March 2015, Volume 69, Issue 3, pp 449-458  
<http://link.springer.com/article/10.1007/s00265-014-1857-x>

### Malaria Vectors in the South Pacific

Researchers from the University of Queensland, James Cook University and the Australian Army Malaria Institute (Brisbane) have recently published a review paper about the major malaria vectors in the Southwest Pacific. The paper discusses the group of mosquitoes known as the *Anopheles punctulatus* group and the differences in biology between species with directions for future research. To read more see:

*Anopheles punctulatus* Group: Evolution, Distribution, and Control

Nigel W. Beebe, Tanya Russell, Thomas R. Burkot, and Robert D. Cooper  
Annual Review of Entomology  
Vol. 60: 335-350, January 2015  
DOI: 10.1146/annurev-ento-010814-021206

### Three new millipede species from Tasmania

ESQ member, Robert Mesibov, with the help of two local Launceston naturalists, Wade and Lisa Clarkson, has recently described three new millipede species from Tasmania, including the tiny *Tasmaniosoma anubis*, which is only one centimeter long. To read about this new species and two others see:

Mesibov R (2015) Three new species of *Tasmaniosoma* Verhoeff, 1936 (Diplopoda, Polydesmida, Dalodesmidae) from northeast Tasmania, Australia. ZooKeys 488: 31-46.  
doi: [10.3897/zookeys.488.9460](https://doi.org/10.3897/zookeys.488.9460)  
ZooBank: [urn:lsid:zoobank.org:pub:744E44D0-5655-48D8-A824-3FBB5ED6B95D](http://urn:lsid:zoobank.org:pub:744E44D0-5655-48D8-A824-3FBB5ED6B95D)

### A sumptuous beetle

Student visitors from Lewis and Clark College, Portland, Oregon, were delighted to find this colourful beetle while learning about invertebrate sampling techniques at Lamington National Park recently. The beetle was identified as *Spilopyra sumptuosa* (Family Chrysomelidae, Subfamily Spilopyrinae). These splendid beetles feed on *Guoia* trees in the rainforest and their larvae have yet to be discovered!

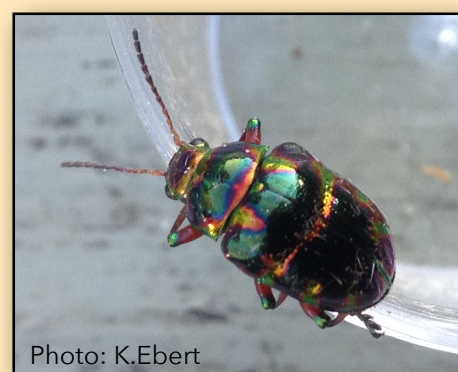
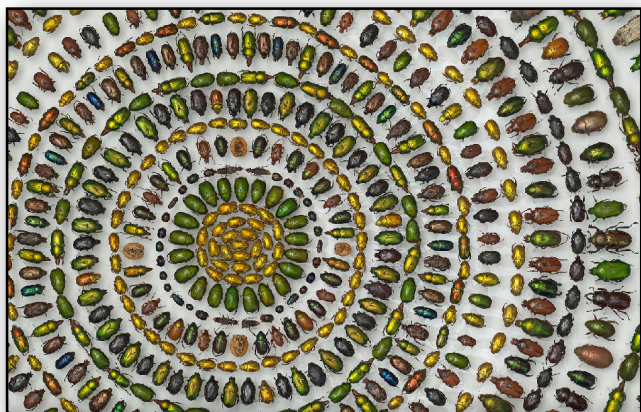


Photo: K.Ebert

## Other News...



© Queensland Museum, Geoff Thompson

## Queensland Museum contributes to Google Cultural Institute Online Exhibits

--Geoff Thompson, Collection Imager, Queensland Museum

Queensland Museum was invited by Google Cultural Institute to contribute to its online exhibitions.

There is currently a link to an exhibit on The Dodd Collection on their homepage.

Here is a direct link:

<https://www.google.com/culturalinstitute/exhibit/the-dodd-collection/KALSjjRMfGL4IQ>

If you search for the Queensland Museum on Google Cultural Institute, you find links to individual cases that allow a wide-view zoom on what were originally Hasselblad 200-megapixel images.

<https://www.google.com/culturalinstitute/collection/queensland-museum-network>

There are also a couple of my focus-stacked images of larger insects taken with the Hasselblad.

<https://www.google.com/culturalinstitute/asset-viewer/a-jewel-butterfly/qwGiQmZXgFNZ7Q>

<https://www.google.com/culturalinstitute/asset-viewer/a-parasitic-tachinid-fly/wAEdj0EbZE2cNQ>

We plan to create new exhibits featuring individual insects soon.

## Fly Documentary showing on ABC in April

At the Mt. Mee BugCatch in March 2014, we were joined by a film crew from 360 degree films working on a segment for their fly documentary. Christine Lambkin, from the Queensland Museum, features in the film and shares a bit about the importance of flies.

A message from 360 degree films:

*We are reaching out to you regarding our documentary, THE GREAT AUSTRALIAN FLY. It's set to air on the ABC on Tuesday April 7 at 8:30pm. Part social history, part scientific study, THE GREAT AUSTRALIAN FLY introduces the people who devote their lives to flies through science, criminology, medicine, as breeders, and for love. Exploring why we might need to stop swatting and start embracing the fly!*

*If you are enthusiastic about the macro world around us, then this one is for you. Please share with your friends and family, from fly-phobic to fly-enthusiast! Head on over to the Facebook page and give it a 'like.' You'll find excerpts from the film and also a few behind the scenes videos on the 'making of.'*

<https://www.facebook.com/pages/The-Great-Australian-Fly/212845885568562>

*For your interest, here is a link to the trailer:*

<https://www.youtube.com/watch?v=aDoUF7G4QDc>

*The 360 Team*





# Entomological Society of Queensland 2015 \$500 Student Award

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 2014 or 2015 may submit their entomology based thesis or report for consideration. Entrants need not be Society members. Entries are judged by a panel of entomologists appointed by the President of the Society. The winner will be announced at the May General Meeting and is then invited to present a summary of their research at the June Notes and Exhibits meeting of the Society. These reports can be directed to the Society's President at the address listed on the entry form. However, please note that 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 Federica Turco at [federica.turco@qm.qld.gov.au](mailto:federica.turco@qm.qld.gov.au).

Closing date for submissions is Friday 10th April 2015.

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## Entomological Society of Queensland 2015 Student Award Entry Form

Name: \_\_\_\_\_

Title of thesis or report: \_\_\_\_\_

\_\_\_\_\_

Degree: \_\_\_\_\_

Supervisor: \_\_\_\_\_

Date of Examiners report or grading: \_\_\_\_\_

Return address for thesis/report (if applicable): \_\_\_\_\_

\_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

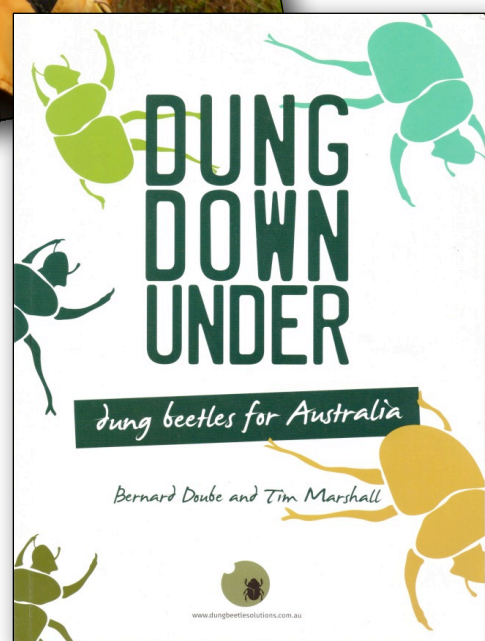
Send in thesis/report with a signed and completed entry form to: Federica Turco, (email: [federica.turco@qm.qld.gov.au](mailto:federica.turco@qm.qld.gov.au)), OR President, The Entomological Society of Queensland, PO Box 537, Indooroopilly Qld 4068 Australia

# Dung Down Under: Dung Beetles for Australia.

By Bernard Doube and Tim Marshall, published by  
Dung Beetle Solutions, ISBN 9780992432904,  
2014, A4, 116 pp, numerous photos and figures,  
price \$33 plus p.& p., available from [http://  
www.dungbeetlesolutions.com.au/buy-dung-down-  
under/](http://www.dungbeetlesolutions.com.au/buy-dung-down-under/)

Bernard Doube was one of the entomologists who worked in the CSIRO unit which assessed and introduced a suite of African dung beetles to Australia in the 1970s and 1980s. He is well remembered in Queensland because he was based at both Rockhampton and the CSIRO Long Pocket Laboratories in Brisbane for long periods, as well as serving as OIC of the collection/assessment lab in South Africa for 7 years.

When Meat Research Council funding for that program ceased in 1986, Bernard went back to his native South Australia and eventually started a private dung beetle supply company in 2003 called Dung Beetle Solutions. It services the rich winter-rain pastoral district south of Adelaide called the Fleurieu Peninsula and supplies dung beetle starter colonies to farmers across the southern Mediterranean zone of Australia. Bernard is a great ambassador for the benefits of the soil enriching and pest control qualities of dung beetles and has conducted a number of extensive field trials in the Fleurieu region to produce some of the first quantitative demonstrations of these benefits. He has now teamed with Tim Marshall, a local guru of sustainable farming practices, in producing this delightful book. It is full of information presented in an almost magazine style with lots of photos, diagrams and quirky fact and figures about dung beetles and why they are great. It examines the ecological, environmental and production benefits of dung beetles, and provides a non-technical analysis of their value and potential role in increasing soil



carbon storage. There is also a novel section on the use of dung beetles in vineyards and orchards to improve soil health without disrupting root systems. Factors limiting dung beetle abundance, distribution and activity are examined and gaps are identified. The need to fill these with further beetle introductions is emphasised. Recent introductions to New Zealand are also considered.

As one rural reviewer wrote: *“It’s the opposite of a traditional technical book where the goodies are hidden away in slabs of text. It will seduce the casual reader to dip into the details. It is just the right size and proportions to fit under a farmer’s pillow.”* Let’s see it under a few ESQ members’ pillows.



**At our next meeting...**

## **“Little Bug-ers: educating and inspiring the next generation of budding entomologists”**

*with Michelle Gleeson, Director of BugsEd*

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Michelle Gleeson (*nee* Larsen), is known around South East Queensland as ‘the bug lady’ – no matter how she introduces herself! She is an entomologist and the director and co-founder of Bugs Ed., an educational company that presents a range of hands-on insect workshops throughout Queensland. She is also an Adjunct Industry Fellow at The University of Queensland’s School of Biological Sciences, collaborating on biological science outreach programs in remote schools and working on various field research projects.

Michelle completed a Bachelor of Science majoring in Entomology at the University of Queensland and later went on to receive first class Honours in Entomology. Rather than continuing on the traditional path of academia, Michelle decided to pursue her passion for educating those around her, especially children, about the amazing world of insects.

### ***Talk summary:***

Michelle will share her interesting journey from bug-crazed toddler to passionate insect educator and will talk about her incredibly diverse career, from working with indigenous kids in the outback, discussing the finer points of *The Very Hungry Caterpillar* to a class of preschoolers, to working on set with the likes of Sir David Attenborough. She will share her experiences on the highs and lows of the perilous job of working

simultaneously with both children AND animals and will touch on various subjects such as ‘how to excite and engage moody teenagers’, ‘encouraging squeamish vegetarian biology students to partake in an insect collection’ and ‘dealing with teachers who are petrified of grasshoppers’. In conclusion, Michelle will share her thoughts and tips on how we can all educate and inspire the next generation of budding entomologists.

**April 14th at 1pm  
in the Library at EcoSciences Precinct**

**All welcome!**



Michelle Gleeson with an adult female Goliath stick insect, *Eurycnema goliath* (Gray, 1834)





## Assassin bugs needed

Andy Walker at The University of Queensland is collecting assassin bugs for a project looking at the biochemistry of their venom. He has suitable collections of common assassin bugs (*Pristhesancus plagipennis*) and red tiger assassin bugs (*Havithus rufovarius*) but other

assassins can be exchanged for a bottle of wine by

contacting him on

0419712754 or at

[a.walker@uq.edu.au](mailto:a.walker@uq.edu.au).



There is a great page with pictures of many

assassin bugs at [http://](http://www.brisbaneinsects.com/)

[www.brisbaneinsects.com/](http://www.brisbaneinsects.com/)

[brisbane\\_assinsinbugs/index.html](http://www.brisbaneinsects.com/brisbane_assinsinbugs/index.html).

## ESQ \$500 Student Award

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 2014 or 2015 may submit their entomology-based thesis or report for consideration.

These reports can be directed to the society's Senior 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 Federica Turco at [federica.turco@qm.qld.gov.au](mailto:federica.turco@qm.qld.gov.au)

Closing date for submissions is Friday, April 10th, 2015.

Forms available at <http://www.esq.org.au/awards.html>

# Announcements and Notices



## Love Insects?

Looking for casual work with flexible hours??



Bugs Ed. provides in-school interactive insect workshops throughout South East Queensland.



We are looking for people to present our insect workshops to students of all ages (4-17 years).



Candidates must have excellent communication skills, be enthusiastic & skilled public speakers, and be confident in speaking to and working with children of all ages.



Candidates must hold a current Queensland driver's license, have their own car to travel to schools throughout the Greater Brisbane area and be eligible for a Blue Card.



Prior completion of entomology based subjects is desirable and excellent general knowledge in this area is essential.

Applications can be made via email to:

Michelle Gleeson

Email: [michelle@bugsed.com](mailto:michelle@bugsed.com)

Website: [www.bugsed.com](http://www.bugsed.com)

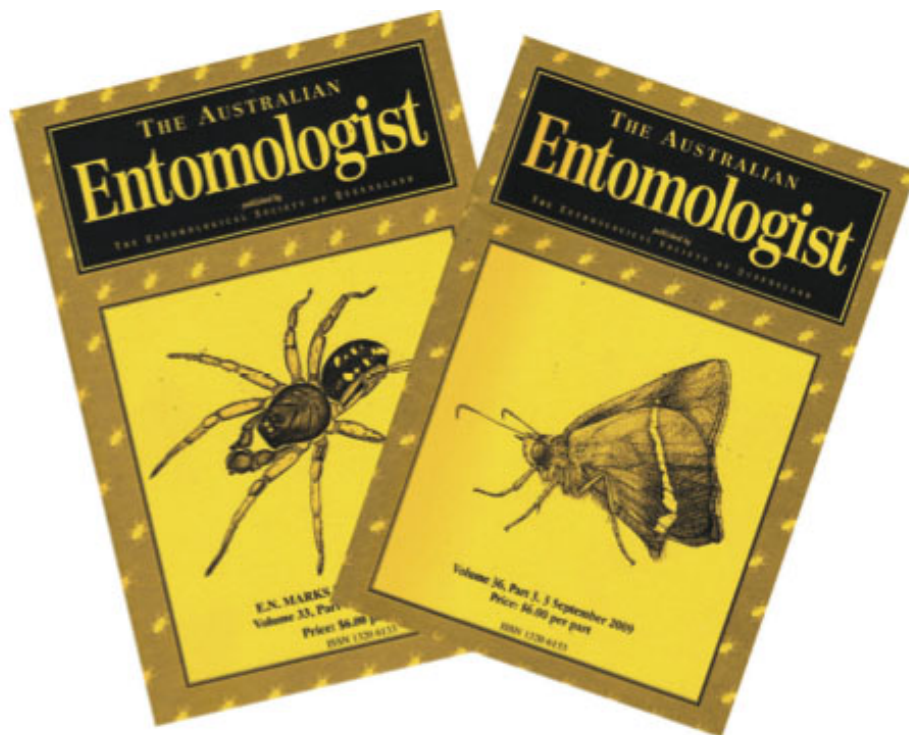


Interactive insect workshops for all ages



# THE AUSTRALIAN Entomologist

A quarterly, full-colour magazine of original research on insects of Australia and the southwest Pacific



## 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. 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](mailto: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](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.

# Meetings & conferences

## **Biology of Tephritid Fruit Flies**

April 2, 2015

Hawkesbury Institute for the Environment,  
University of Western Sydney, Sydney,  
AUSTRALIA

[http://www.uws.edu.au/hie/events\\_and\\_seminars/biology\\_of\\_tephritid\\_fruit\\_flies](http://www.uws.edu.au/hie/events_and_seminars/biology_of_tephritid_fruit_flies)

## **Perspectives in Environmental and Systems Biology**

April 13–15, 2015

University Grenoble Alpes, Grenoble, FRANCE

<http://www.beesy2015.com/>

## **Species delimitation in the age of genomics (Centre for Biodiversity Analysis Conference: 2015 CBA conference)**

April 28–30, 2015

Australian National Botanic Gardens, Canberra,  
AUSTRALIA

<http://cba.anu.edu.au/news-events/species-delimitation-age-genomics>

## **ICFAE Conference 2015 – 1<sup>st</sup> International Conference in Funerary Archaeoentomology & 12<sup>th</sup> meeting of the European Association for Forensic Entomology**

May 6–9, 2015

University of Hyddersfield, West Yorkshire,  
UNITED KINGDOM

icfae2015@hud.ac.uk; eafe2015@hud.ac.uk



## **XII International Symposium on Neuropterology**

May 12–15, 2015

Mexico City, Mexico

<http://neuropterology.unam.mx>

## **9<sup>th</sup> Arthropod Genomics Symposium + Insect Genetic Technologies Research Coordination Network (IGTRCN)**

June 17–19, 2015

K-State Alumni Center, Kansas State University,  
Kansas, USA

<http://igtrcn.org/arthropod-genomics-symposium-igtrcn-in-2015/>

## **2015 Society of Systematic Biology conference**

June 26–30, 2015

Casa Grande Hotel Resort, Guaruja,  
BRAZIL

<http://www.evolution2015.org/>



## **Society for Molecular Biology and Evolution**

July 12–16, 2015,

Hofburg Palace, Vienna, AUSTRIA

<http://smbe2015.at/>



## **15th Congress of the European Society for Evolutionary Biology (ESEB)**

August 10–14, 2015

University of Lausanne,  
Lausanne, SWITZERLAND

<http://www3.unil.ch/wpmu/eseb2015/>



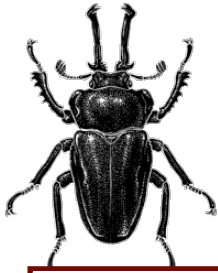
## **6th International Barcode of Life Conference**

August 18–20, 2015

University of Guelph,  
Guelph, Canada

<http://dnabarcodes2015.org/>





# Diary Dates for 2015

Meetings held on the second Tuesday  
of the respective month

MARCH 10	Bill Palmer	AGM and Presidential Address
APRIL 14	Michelle Gleeson, Director of BugsEd	<i>"Little Bug-ers: educating and inspiring the next generation of budding entomologists"</i>
MAY 12	Penny Mills & Yen-Po (Paul) Lin	<i>"The Apiomorpha minor species group (Hemiptera: Coccoidea: Eriococcidae)" AND "Cryptic diversity in the parthenogenetic pest, Parasaissetia nigra (Nietner, 1861) (Hemiptera: Coccidae) and its implications for biosecurity"</i>
JUNE 9	Notes and Exhibits	Student Award Presentation/ Notes & Exhibits
AUGUST 11	Valerie Debuse	<i>"Boring into borer ecology: patterns of damage and potential drivers in eucalypt plantations"</i>
SEPTEMBER 8	Max Moulds	TBA
OCTOBER 13	Mark Schutze	<i>"Tephritid taxonomy: new solutions for old problems"</i>
NOVEMBER 10	David Yeates	Perkins Memorial Lecture: <i>"New phylogenomic perspectives on insect evolution from transcriptome sequencing"</i>
DECEMBER 8	Notes & Exhibits	Notes and Exhibits/Christmas BBQ

## SOCIETY SUBSCRIPTION RATES

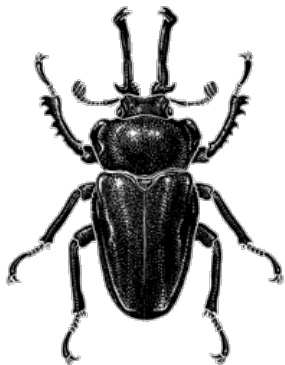
<b>GENERAL</b>	Person who has full membership privileges	<b>\$30pa</b>
<b>JOINT</b>	Residents in the same household who share a copy of the <i>News Bulletin</i> , but each otherwise have full membership privileges.	<b>\$36pa</b>
<b>STUDENT</b>	Student membership conveys full membership privileges at a reduced rate. Students and others at the discretion of the Society Council.	<b>\$18pa</b>

## THE AUSTRALIAN ENTOMOLOGIST SUBSCRIPTION RATES

<b>AUSTRALIA</b>	Individuals/Institutions	<b>AU\$33pa/AU\$37pa</b>
<b>ASIA/PACIFIC</b>	Individuals/Institutions	<b>AU\$40pa/AU\$45pa</b>
<b>ELSEWHERE</b>	Individuals/Institutions	<b>AU\$45pa/AU\$50pa</b>

Subscriptions should be sent to the Business Manager,  
*The Australian Entomologist* PO Box 537, Indooroopilly QLD 4068





# Entomological Society of Queensland



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## NOTICE OF NEXT MEETING

*Tuesday 14th April 2015, 1:00 pm*

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**Guest Speaker:**

**Michelle Gleeson**

**Director of BugsEd**

Michelle will share her interesting journey from bug-crazed toddler to passionate insect educator and will talk about her incredibly diverse career, from working with indigenous kids in the outback, discussing the finer points of *The Very Hungry Caterpillar* to a class of preschoolers, to working on set with the likes of Sir David Attenborough.

**Library**

**Ground Floor, Ecosciences Precinct Boggo Road, DUTTON PARK**

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

**ALL WELCOME!**

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## NEXT NEWS BULLETIN

Volume 43, Issue 2 (April 2015)

**CONTRIBUTIONS WELCOME**

**DEADLINE - Wednesday, April 22th, 2015.**

Send your news/stories/notices to the editor at: [k.ebert@uq.edu.au](mailto:k.ebert@uq.edu.au)