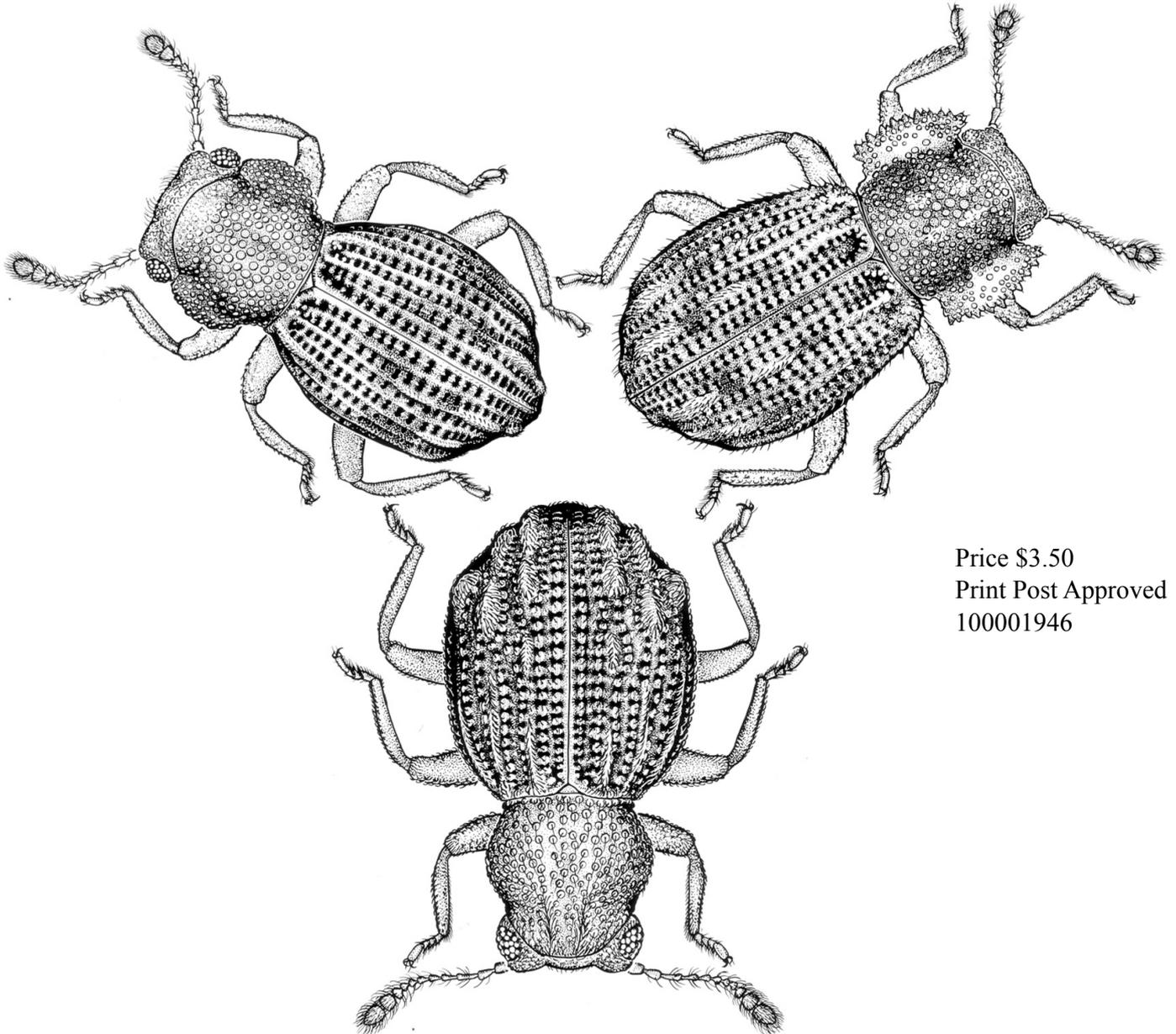


Entomological Society of Queensland

# NEWS BULLETIN



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Volume 43, Issue 5, August 2015

# Entomological Society of Queensland

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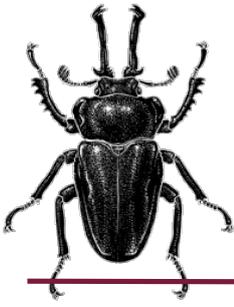
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**Front Cover Illustration:** Three species of recently revised *Enhypon* beetles (Zopheridae). Clockwise from top left: *E. cordicollis* Turco & Ślipiński, *E. costatum* (Carter) and *E. laticeps* Carter. The genus is an Australian endemic with a 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.



# 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.

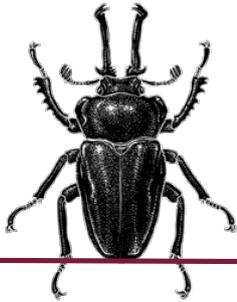
The Society publishes **THE AUSTRALIAN ENTOMOLOGIST**. This is a refereed, illustrated journal devoted to Entomology in the Australian region, including New Zealand, Papua New Guinea and the islands of the South Western Pacific. The journal is published in four parts annually.

**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 General Meeting

---

### Tuesday, August 11th, 2015

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

**Attendance (24):** Brogan Amos, Justin Bartlett, Bradley Brown, Stephen Cameron, K. Dhileepan, Kathy Ebert, Gio Fichera, Manon Griffiths, Andrew Hayes, Susan House, Peter James, Caitlin Jones, Diana Leemon, Gunter Maywald, Geoff Monteith, Helen Nahrung, Bill Palmer, Brenton Peters, Don Sands, Nancy Schellhorn, Mark Schutze, Helen Schwencke, Desley Tree, Ross Wylie

**Visitors (6):** Madaline Healy, John Huth, Lui Lawrence-Rangger, Claudia Schipp, Gagie Vesna, Tara Wheatland, Anton Zbonek

**Apologies:** Gary Cochrane, Stephen Hey, Federica Turco, Pauline Wyatt

**Minutes:** The minutes of the last meeting were circulated in News Bulletin 43[4] June 2015.

*Moved the minutes be accepted as a true record:* Bradley Brown

*Seconded:* Kathy Ebert. *Carried:* all

### Nominations for membership:

The following membership applications, approved by Council, were presented to the members:

1. K. Dhileepan, Taringa, QLD. *Nominated by* Bill Palmer; *seconded:* Andrew Hulthen; *carried:* all.

2. Ethan Beaver, Fulham Gardens, SA. *Nominated by* David Rentz; *seconded:* Max Moulds; *carried:* all

3. Dan Bickel, Entomology, Australian Museum, Sydney, 2010, NSW. *Nominated by* Brenton Peters; *seconded:* Geoff Monteith; *carried:* all.

### General Business:

At council meeting today, we discussed the upcoming AES Conference in Cairns and that the ESQ will have a promotional table, including banners.

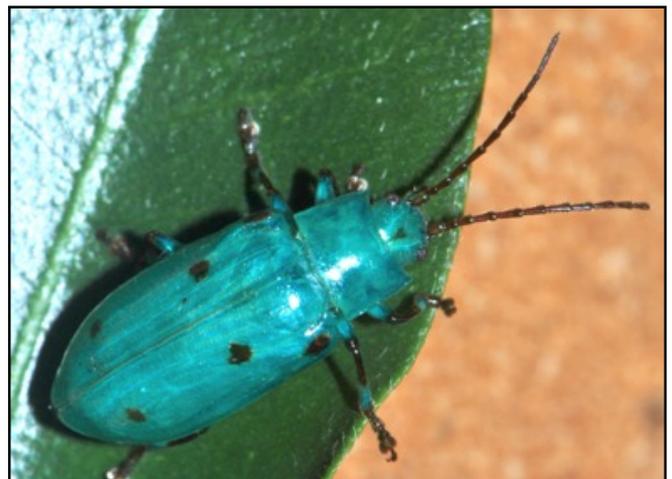
### Main Business:

Our guest speaker was Valerie Debuse (of Qld DAF) presenting a talk entitled "Investigating the drivers of longicorn and cossid wood borers in subtropical plantations in Queensland and New South Wales". A vote of thanks was provided by Ross Wylie.

**Next meeting:** Our next meeting will be Tuesday, the 8th of September 2015, at 1pm, with Dr Max Moulds presenting. At this meeting we will also have a special presentation of Honorary Life Memberships to Max Moulds and Christine Lambkin.

**Meeting closed: 2 pm**

---



*Eulina haematosticta* Lea (Chrysomelidae), from Lamington N.P.  
Photo: F. Turco

## At our next meeting...

### *From museum dungeons to mountain tops: 50 years of entomological adventures* *presented by Max Moulds*

Dr Max Moulds lives today in busy entomological retirement in Kuranda. He began his working life as a teacher but his passion for entomology drew him away. He travelled widely collecting, started the equipment supply company, Australian Entomological Supplies, and later the journal Australian Entomological Magazine (now The Australian Entomologist). At mid-life in 1990 he became the entomology collection manager at the Australian Museum and completed a PhD on cicadas in 1999. He has published widely on cicadas, hawk moths and butterflies.

#### *From Max:*

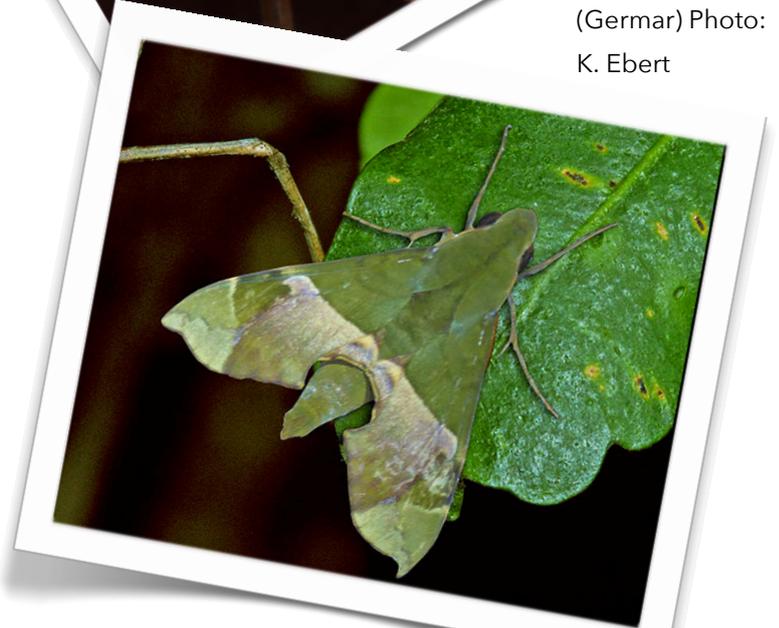
“I have not had a traditional entomological career. Most of it was spent as an amateur before turning professional, mixed with a little business management. My field work has been a highlight for me, taking me to many remote spots in Australia. Much has changed in the past 50 years and I will talk about some early trips to places like Iron Range, the headwaters of the Jardine River, the Simpson Desert, Papua New Guinea and more, some of these very different from the way they are today. Some interesting insects discovered on these trips will be mentioned. In contrast with the past, I will conclude with an overview of my current interests in cicadas and hawkmoths, the diversity and biology of these groups in Australia and their taxonomic problems. “

**September 8th at 1pm  
in the Seminar Room at EcoSciences  
Precinct**

**All welcome!**



*Tamasa tristigma*  
(Germar) Photo:  
K. Ebert



*Angonyx papuana* Rothschild & Jordan. Photo: D. Rentz

# Investigating the drivers of longicorn and cossid wood borer damage in subtropical plantations in Queensland and New South Wales.

Valerie Debuse<sup>1</sup> and Simon Lawson<sup>2</sup>

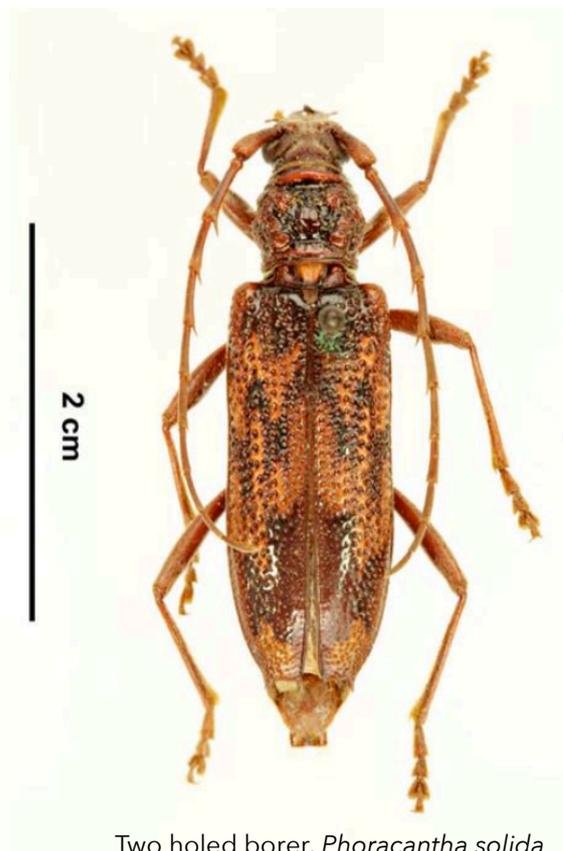
<sup>1</sup>Ecologist, Formerly of the Department of Agriculture and Forestry, Queensland and Adjunct Researcher, Faculty of Science, Health, Education and Engineering, University of the Sunshine Coast, Queensland.

<sup>2</sup>Associate Professor, Forest Industries Research Centre, University of the Sunshine Coast, Queensland.

## Introduction

Stem defects caused by insects and pathogens, and the responses of the tree to these agents, are significant causes of degrade to wood quality, reducing economic productivity in plantation and natural forests around the world. Two insect borer families that cause the most damage in living trees within subtropical Australian plantations are longicorn beetles (Coleoptera: Cerambycidae) and wood moths (Lepidoptera: Cossidae). Damage from cerambycid beetles is primarily caused by three *Phoracantha* species: *P. solida* (two-hole borer), *P. acanthocera* (bullseye borer) and *P. mastersi* (ringbarking longicorn). Damage from cossid moths is primarily by species of *Endoxyla* and a secondary borer *Culama*.

Anecdotal reports by growers suggest significant sawlog value losses and large variability in borer attack among plantations. Despite the perceived economic loss, little research has been done to determine the incidence of borer damage or the environmental drivers of damage. This project aimed



Two holed borer, *Phoracantha solida* (Blackburn). Photo: PaDIL

to determine (1) the incidence and severity of borer damage in subtropical eucalypt plantations and (2) potential environmental drivers of damage, and provide plantation managers with tools that could potentially reduce the hazard.

## Methods

Twenty *Corymbia citriodora* subsp. *variegata* (CCV; spotted gum) and 19 *Eucalyptus grandis* (GRA; flooded gum) sites were sampled in southern Queensland and northern New South Wales. These sites were chosen to cover a broad and representative range of plantation ages and the area of host habitat in the surrounding landscape. For stratification, host habitat area was determined for a circular area with a 6 km radius, which reflected reported dispersal distances for cerambycids, and was analysed using land use, vegetation and foliage project cover mapping. Each vegetation type was assessed for its suitability as host habitat for cerambycids and cossids individually based on the dominance, co-



Valerie with attacked tree.

dominance and density of host trees within each vegetation type. Within each site, borer attack was assessed in 210 trees, which were arranged in 21 plots of 10 trees. Each site was divided into upper, mid and lower slopes and 7 randomly located plots were assigned to each slope position. Plots consisted of a centrally-located tree and the nine closest trees. Incidence of attack, severity and attack height were recorded and assigned to three species of longicorns (*P. solida*, *P. acanthocera*, *P. mastersi*), Giant Wood Moth (GWM), *Culama australis* and 'other' borer species. Severity of attack was not recorded for *P. mastersi* or *C. australis* since the gregarious larval feeding of these species precluded a meaningful measure of severity.

Five to six groups of environmental variables were selected to determine potential environmental correlates of borer damage: plot descriptors, physical soil measures, foliar nutrition (CCV only), plantation management, climate and host habitat area. Plot descriptors included stocking density, tree diameter at breast height (DBH), tree height, vegetation cover, slope and aspect. Soil variables described soil type, colour, depth, pH of A and B horizons, and presence and type of any impeding layer. Foliar nutrition was determined from trees within a subsample of plots and analysed for 20 different nutrients. Plantation management data, which detailed planting methods, initial stocking densities, seed sources, site preparation, thinning, pruning and herbicide

protocols was collected from plantation management companies. Eighteen measures of climate were summarised for different periods and seasons to investigate potential climate influences on borer incidence and severity. Seven datasets of climate data were produced that represented climate effects on tree stress and on insect behaviour. To incorporate host habitat into the modelling, we determined the spatial scale at which landscape may be relevant to longicorn and GWM-associated damage. We calculated a circular area of host habitat for 16 different radii, centred on each CCV plantation centroid: 0.5 km - 30 km using the methodology used for stratification. For *E. grandis* plantations, we calculated the same size landscapes but discarded the data for landscapes > 8 km that contained areas of ocean. Landscape analysis allowed a random selection of multiple sets of



Borer attack on spotted gum.

independent plantations, where dependent sites (those with overlapping landscapes) were excluded from a set. An average correlation coefficient of *P. solida* incidence vs. host habitat area was then calculated across the multiple sets of sites for each landscape radius which was then plotted against landscape radius.

Exploratory analysis was carried out to define potential relationships between *P. solida* incidence and environmental variables. Number of environmental variables was reduced by both excluding variables that showed low counts and variation across plots (e.g. number of dead CCV trees) and variables that were highly collinear with more relevant variables. The importance of the environmental variables in predicting borer incidence was carried out using Boosted Regression Tree modelling.

## Results

### CCV

The average incidence of all borers was  $3.5 \pm 1.2$  %, with attacks from *P. solida* averaging 2.8 % of stems sampled. The incidence of *P. acanthocera* attacks was only 0.07 %, while damage by GWM and *P. mastersi* was rare (0.04 %). Damage from *C. australis* was recorded on 2.2 % of CCV stems and was significantly correlated with *P. solida* incidence at the site-scale. There was large variation in *P. solida* across sites; the greatest incidence (20 %) was recorded at a NSW site and no borers were recorded at nine sites.

Observed severity of attack was 2.8 attacks per tree for all borer species combined. Attack severity was greatest for *P. solida* (2.9 attacks per tree), while mean number of attacks of *P. acanthocera*, GWM and other borers ranged from 1 - 1.3 attacks per tree. Incidence and severity of *P. solida* were positively correlated at the site-scale. Mean attack height was approximately 1 m above ground and did not



Typical two-hole borer (*Phoracantha solida*) attack on spotted gum.

significantly vary among borer taxa.

The incidence of *P. solida* damage showed a negative correlation with the amount of host habitat across landscape sizes of 0.5 - 30 km in Queensland. The trend across landscape scales indicated that the strongest associations between *P. solida* damage incidence and host habitat area was for intermediate scales (4 - 10 km radius). The most negative correlation was for landscapes of a 5 km radius.

The modelling indicated that measures that could potentially be changed by plantation management

contributed most to the model outcome: DBH ratio and foliar potassium to sodium ratio, foliar iron and foliar carbon to nitrogen ratio. DBH ratio was the ratio of attacked trees to the mean DBH within a plot. Results suggested that *P. solida* attacked proportionately larger trees within a plot (approximately 1.2 times the size of the average plot DBH). Proportionately larger trees were only attacked in the NSW sites, where the variation in tree DBH within a plot was much greater than in Queensland and was related to higher stocking densities (c. 750 stems ha<sup>-1</sup> compared to c. 250 stems ha<sup>-1</sup> in Queensland). Borer incidence was predicted to be greater in trees that were more deficient in iron, nitrogen and potassium. Modelling of attack severity by *P. solida* was not reliable.

### *E. grandis*

Half of all attacks were caused by GWM, while the next most abundant borer was the *P. acanthocera*. The incidence of all borers was  $16.6 \pm 1.8$  % (mean  $\pm$  se) across sites. GWM damage was recorded on 10.1% of stems, while damage from *P. acanthocera* was less common, being observed on 3.5% of stems. *P. solida* damage was recorded on 2% of stems. Incidence of stems attacked by cockatoos was  $5.6 \pm 1.2$  %, and was positively correlated to the incidence of GWM. We found borers in all *E. grandis* plantations but there was no consistent pattern in the relative incidences of borer species across sites and were highly variable within a borer species. Greatest incidence of borer attack was 34 % in a plantation in northern NSW.

Severity of attack was  $1.6 \pm 0.1$  attacks per affected tree for all borer species combined. Severity of attack was similar for the three predominant borer species. Incidence and severity of GWM attacks was positively associated at the site-scale and there were also positive correlations between GWM incidence and severity and *P. acanthocera* incidence and severity at the plot-scale. Mean attack height of the three main borer species (GWM, *P. acanthocera*, *P. solida*) varied from 1.5 m (*P. solida*) to 2.0 m for *P.*

*acanthocera*. Attack height was not significantly correlated to either incidence or severity of attack for the three predominant borer species, with the exception of *P. solida* for which attacks were lower down the bole on trees where there were greater numbers of attacks on the tree.

Incidence of GWM damage showed a negative correlation with the area of host habitat across landscape sizes of 0.5 - 8 km, with the strongest relationship being at the 8 km radius scale. In contrast, there was a positive correlation between *P. acanthocera* incidence and host habitat area, for



*Culama* wood moth larva.

which the strongest relationship was at the 5 km radius scale. Both landscape variables at the relevant scales were incorporated into the modelling.

Modelling of GWM incidence indicated that GWM were more likely to attack smaller than average trees (0.9 times the average tree DBH within a plot) and this effect was enhanced where the variation in tree DBH was greater within the plot. As well as DBH ratio, the largest variation in GWM damage incidence was associated with longitude and the variation in tree height and DBH, whereby incidence was greater at more eastern plots with a lower mean DBH and greater tree height variation. The majority of the variation was explained by variables that were related to site management or site selection.

Modelling of *P. acanthocera* incidence suggested that DBH ratio and the east-west plot aspect contributed most to the fit of the model. However, the DBH ratio indicated that *P. acanthocera* attacks were associated with average diameter trees and there was no link with variation in tree DBH. Damage incidence by *P. acanthocera* was associated with plots that had a more easterly aspect, although the magnitude of difference was not large. In addition to DBH ratio, the largest variation in damage incidence was associated maximum slope, where incidence was greater on slopes of  $> 8^\circ$ .

## Discussion

This study suggests that the greatest borer risk to CCV plantations is from *P. solida* and the associated secondary borer *C. australis*. Differences in *P. solida* incidence suggest that there is an elevated risk restricted to a small number of sites in Queensland. The association between *P. solida* incidence and larger than average trees at the NSW sites supports previous work on *P. acanthocera* in Western Australia. This association may have been due to the greater variation in tree DBH within plots, which was significantly associated with stocking densities in NSW. Modelling suggests that tree nutrition might



Bullseye borer, *Phoracantha acanthocera* (Macleay). Photo: PaDIL

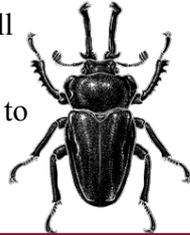
be an important associate of *P. solida* incidence in CCV, particularly in relation to potassium, iron and nitrogen. A previous unpublished study indicates that increases in potassium levels applied as fertiliser reduced borer incidence at a site in Queensland. Modelling could not explain the patterns of attack severity and given that peeling of borer affected trees (results not shown) indicated no strong relationship between severity and volume of internal defect, it suggests that focusing on reducing incidence rather than severity should be the priority in CCV.



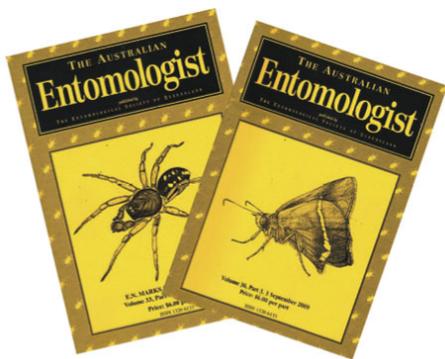
Soil drilling rig in spotted gum plantation.

In contrast to CCV, borer risk to *E. grandis* is more diverse, arising from three species: GWM, *P. solida* and *P.*

*acanthocera*. However, while borer attack was found at each site, the pattern of attack frequency for the three main borer species was not consistent across sites and GWM and *P. acanthocera* responded to environmental variables differently. This suggests that while GWM incidence could be managed by thinning plantations or by improved site selection practices, it is unlikely that overall borer risk could be managed in these plantations and specific borers would have to be managed independently.



*Culama australis* Walker. Photo: D.Hobern, Wikimedia commons



## 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](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.

### *A sneak peak at the Contents of the next edition, Volume 42, Part 3.*

Michael F. Braby. "First record of *Petrelaea tombugensis* (Röber) (Lepidoptera: Lycaenidae) from Western Australia."

S.S. Brown, C.E. Meyer, R.P. Weir and C.G. Miller. "*Tagiades nestus korela* Mabille, 1891 (Lepidoptera: Hesperidae: Pyrginae) from Mer Island, Torres Strait, Queensland."

David L. Hancock. "A review of the tree, fig and fruit-infesting flies of the *Aethiothemara*, *Diarrhegma*, *Dirioxa* and *Themaroides* groups of genera (Diptera: Tephritidae: Acanthonevrini)."

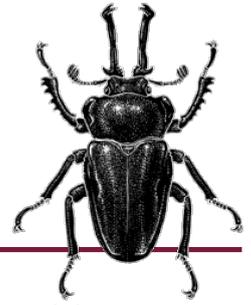
R.B. Lachlan. "Additional polymorphism in females of *Hypolimnas bolina pallelescens* (Butler) (Lepidoptera: Nymphalidae) from the islands of Taveuni and Vanua Levu, Fiji."

C.E. Meyer, R.P. Weir and S.S. Brown. "A new subspecies of *Hasora hurama* (Butler, 1870) (Lepidoptera: Hesperidae: Coeliadinae) from the Northern Territory, Australia."

G.B. Monteith. "Two new records of Australian *Triatoma* Laporte (Hemiptera: Reduviidae: Triatominae)."



# Queensland Entomology News



## Research news



Australian sheep blowfly (*Lucilia cuprina*, Wiedemann) Photo: CSIRO

### Genome sequence of sheep blow fly provides vital information

The genome of the Australian sheep blowfly (*Lucilia cuprina*) has been sequenced by an

international team of scientists led by the University of Melbourne and involving scientists from Queensland Alliance for Agriculture and Food Innovation (QAAFI) and the CSIRO Agriculture Flagship at Queensland Bioscience Precinct. Genome analysis will enable scientists to understand the fly's molecular biology and how it interacts with its host, as well as provide valuable information to help control this major economic pest. To read more about this exciting research published recently in *Nature Communications* see:

<http://www.nature.com/ncomms/2015/150626/ncomms8344/full/ncomms8344.html>

#### Reference:

***Lucilia cuprina* genome unlocks parasitic fly biology to underpin future interventions**

*Nature Communications* 6, Article number: 7344 doi:10.1038/ncomms8344 Published 25 June 2015

**Authors:** Clare A. Anstead, Pasi K. Korhonen, Neil D. Young, Ross S. Hall, Aaron R. Jex, Shwetha C. Murali, Daniel S.T. Hughes, Siu F. Lee, Trent Perry, Andreas J. Stroehlein, Brendan R.E. Ansell, Bert Breugelmans, Andreas Hofmann, Jiaxin Qu, Shannon Dugan, Sandra L. Lee, Hsu Chao, Huyen Dinh, Yi Han, Harsha V. Doddapaneni, Kim C. Worley, Donna M. Muzny, Panagiotis Ioannidis,

Robert M. Waterhouse, Evgeny M. Zdobnov, Peter J. James, Neil H. Bagnall, Andrew C. Kotze, Richard A. Gibbs, Stephen Richards, Philip Batterham & Robin B. Gasser Show

### Characterising glow worm prey-capture silks (Diptera: Keroplatidae)



Silk snares of *Arachnocampa* sp. Photo: K. Ebert

Scientists at the Australian National University, CSIRO and the University of Queensland have recently published a paper on their research

characterising the silk and mucus made by glow-worms (*Arachnocampa richardsae*). Glow-worm larvae use silk strands with sticky mucus droplets to ensnare their prey. The protein structures of the silk and mucus were analysed using X-ray scattering, infrared spectroscopy and amino acid analysis.

*To read more...*

<http://www.ncbi.nlm.nih.gov/pubmed/26006749>

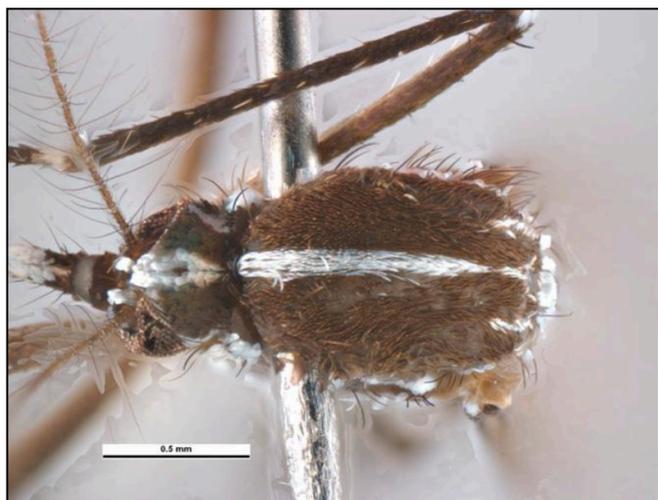
#### Reference:

Walker, A, Weisman, S, Trueman, HE, Merritt, DJ, Sutherland, TD. 2015. **The other prey-capture silk: Fibres made by glow-worms (Diptera: Keroplatidae) comprise cross- $\beta$ -sheet crystallites in an abundant amorphous fraction.** *Comparative Biochemistry and Physiology Part B: Biochemistry and Molecular Biology*. Volume 187, pp. 78-84.



## Tiger Mosquito detected in Cairns

Press releases from the Queensland Department of Health on August 19 reveal the worrying news that monitoring traps at the port area of Cairns detected the Asian Tiger Mosquito, *Aedes albopictus*, on August 12. This is a known vector of many diseases including dengue and equine encephalitis and it breeds in containers closely associated with human habitat. It has spread in modern times from its origin in Asia to most parts of the world including Europe, Africa, North and South America and many islands of the Pacific. It is already established on some of the Torres Strait Islands and has been on the watch list for mainland Australia. It is suspected that the trapped Cairns specimens have originated from cruise ships moored nearby and the Health Department has commenced spraying and intense monitoring of nearby areas to detect and prevent breeding. The mosquito is a very distinctive daytime biter with a bold median stripe on the pronotum. The images here are reproduced from the PaDIL website and more information can be accessed there at <http://www.padil.gov.au/pests-and-diseases/pest/main/136221> If you see this mosquito, yell!



Asian Tiger mosquito : Dorsal view showing the median stripe on the pronotum.

Read more: <http://www.abc.net.au/news/2015-08-18/asian-tiger-mosquito-detected-in-cairns/6705704>



The unwelcome face of *Liriomyza sativae*.

Photo: PaDIL.

## Vegetable Leaf miner arrives in Western Cape York

A vegetable leaf mining fly (Agromyzidae: *Liriomyza sativae*) has been island hopping its way around the world and has recently landed on the Australian mainland. It was discovered by biosecurity officers during a plant health survey in the community of Seisa on the Cape York peninsula. *Liriomyza sativae* has a very short life cycle and can produce as many as 300-400 offspring. The leaf miner larvae damage cucurbits, legumes, onion relatives and ornamentals.

*More information:*

<http://www.farmbiosecurity.com.au/vegetable-leaf-miner-in-the-cape-york-peninsula/>

<http://thebeatsheet.com.au/pests/vegetable-leafminer-new-leaf-mining-fly-now-in-australia/>

<http://www.padil.gov.au/pests-and-diseases/pest/main/136215>

## 2015 Student Award winner, Tom Semple, publishes paper on new *Cystococcus* species

Semple, TL, Gullan PJ, Hodgson, CJ, Hardy, NB and Cook, LG. 2015. Systematic review of the Australian 'bush coconut' genus *Cystococcus* (Hemiptera: Eriococcidae) uncovers a new species from Queensland.

*Invertebrate Systematics*. Vol 29(3)

See:

<http://www.publish.csiro.au/paper/IS14061.htm>

<http://entomologytoday.org/2015/07/28/new-species-of-gall-inducing-insect-found-in-australia/>

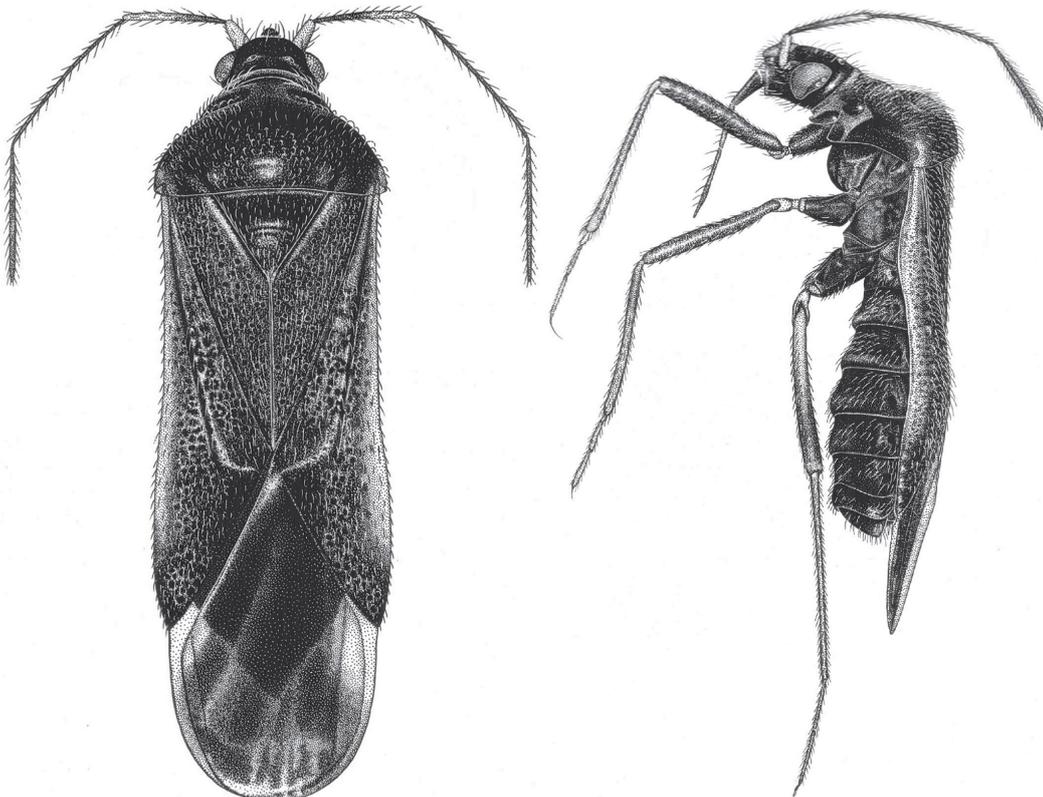


## Spider web bugs in the Wet Tropics – A new family record for Australia

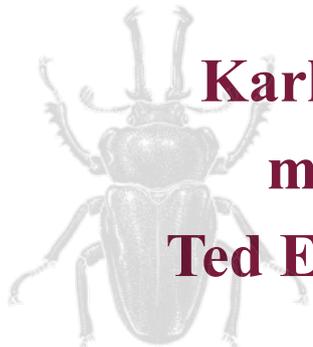
The Plokiophilidae is a strange and very rare family of small predatory Heteroptera which mostly live in webs of spiders, though one genus lives in webs of Embioptera in the Neotropics. They all have one tarsal claw greatly lengthened and curved, and they use this to wrap around and grip the strands of spider web. Another bizarre characteristic is that almost all have copulation in the form of so called “traumatic insemination” where the male has a special piece of armoury which simply pierces the abdominal wall of the female rather than entering via the genital tract. Bed bugs (Cimicidae) do the same. There have been only about a dozen species in seven genera of Plokiophilidae known worldwide, with three genera in the Neotropics, one in Africa/Madagascar, two in SE Asia and one extinct genus known from Eocene Baltic amber in Europe.

Toby Schuh, global Heteroptera guru at the American Museum of Natural History in New York,

and some colleagues, have just described a new genus and species of plokiophilid from the rainforested mountains of north Queensland’s Wet Tropics and his paper can be viewed at <http://digitallibrary.amnh.org/handle/2246/6577> . This is an exciting addition to our fauna. The genus is named *Monteithophila* and is placed in the same tribe as the European fossil genus, *Pavlostysia*, perhaps another indication of the antiquity of some elements of our Wet Tropics rainforest biota. Unlike most other plokiophilids, the new genus does not undertake traumatic insemination, another indication of the inherent good manners of the Queensland fauna. A second species of the genus is described from Fiji, an island group where many enigmatic elements persist. Most specimens of both species have been collected by spraying tree trunks during Queensland Museum surveys. A visiting American behavioural biologist (Charlotte Jander) collected some in spider webs near Cardwell in 2002, thus confirming that the species is a spider commensal. The Queensland species is illustrated in the paper by superb scraper board drawings by the QM’s Geoff Thompson and these are reproduced here.



Dorsal and lateral views of *Monteithophila queenslandana*. Note the long curved tarsal claws which are characteristic of the Plokiophilidae. Credit: G. Thompson



## Karl Jordan medal for Ted Edwards

More congratulations for our ESQ member, Ted Edwards. Ted was the ANIC Lepidoptera collection manager at the CSIRO Canberra for many years and now works busily in retirement there as an Honorary Research Fellow. In June 2012, he received an Order of Australia which we reported in News Bulletin 40(4):55. He has now received probably the most prestigious international award for Lepidoptera research, the Karl Jordan Medal, which is awarded every two years by the international Lepidopterists Society to the nominee who has made the most outstanding contribution to Lepidoptera systematics through published research.

Ted journeyed to Purdue University in West Lafayette, Indiana, to receive the award in person at their banquet conference dinner on August 1 (Fig. 1). The award was presented by Dr Jackie Miller (ex-President of the Society and one of the people who originally set up the Medal award), and the current President, Dr Todd Gilligan. Ted had brought taxonomically appropriate gifts of specimens for some of the dignitaries present and gave a well-received presentation on his work on the incredible moths that live in nests of Australia's termite mound-nesting parrots, and on his work with Niels Kristensen on primitive Lepidoptera. Ted follows his distinguished Australian predecessors Ian Common and Ebbe Nielsen in winning this important award.

The medal (Fig. 2) commemorates the life of Karl Jordan (Fig. 3) who was one of the most productive entomologists in history. Born and educated in Germany, he was employed by Lord Walter Rothschild to work in his private museum at Tring, UK, in 1893 and stayed as Director for 40 years before going back to Germany to continue his work. He published almost 450 papers, described more than 3,000 species, and lived to the age of 98 with his last paper appearing only two years before his death. He became a world authority on many groups of Lepidoptera as well as fleas and anthribid beetles. He is probably best known for some of the Lepidoptera monographs he published jointly with Rothschild and their names are irretrievably linked in the entomological literature. They made a large contribution to early knowledge of Australian hawk moths.

The website of the Lepidopterists Society is at <http://www.lepsoc.org/>



Fig. 1. Ted Edwards (centre) receiving the Karl Jordan Medal from Lepidopterists Society President Todd Gilligan (right) and past President and medal founder Jacqueline Miller.



Fig. 2. The Karl Jordan Medal

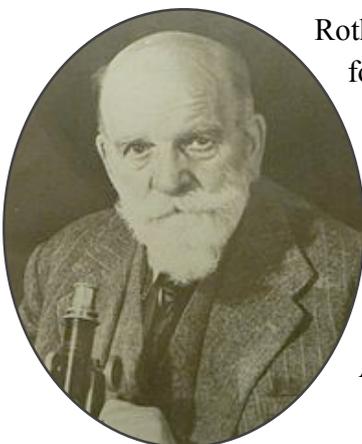


Fig. 3. Heinrich Ernst Karl Jordan (1861-1959).



## Report from the ESQ Archive Project *Documenting Past Queensland Entomologists*

In the last issue of the News Bulletin we included an entry on Joseph Bancroft, one of the earliest entomologists in Queensland. We received the following note from ESQ member Professor David Emery, University of Sydney, saying: *“Wonderful article on Bancroft. Note that the Australian Society for Parasitology has an award in his honour, viz. The Bancroft-Mackerras Medal for Excellence which allows the Society to recognise outstanding contributions of its members to the Science of Parasitology. It is based particularly on work published over the last 5 years and though nominations are called yearly it is only presented when a suitable candidate is recognised. The Medal commemorates the contribution of the Bancroft-Mackerras dynasty to the development of the discipline of Parasitology in Australia from the 1860s to the 1960s.”* David is currently President of the Australian Society of Parasitology.



Fig. 1. The Bancroft-Mackerras medal. Profiles from left to right are J. Bancroft, T.L. Bancroft, M.J. Mackerras (née Bancroft) and I.M. Mackerras.

We’ve gathered some information and an image of this medal (Fig. 1). It is of sterling silver, 50 mm in diameter, and was designed by H.V. Whitlock and sculpted by J. Broome-Norton. The front of the medal shows profiles of, from left to right, Joseph Bancroft, his son Thomas Lane Bancroft, Thomas’s daughter Mabel Josephine Mackerras (née Bancroft) and Josephine’s husband, Ian Murray Mackerras. The last three were members of the Entomological Society of Queensland and Ian Mackerras was President in 1948-49. The reverse of the medal shows images of twelve parasites important to medical and veterinary science in Australia, including five insects and one arachnid. The first person to receive this medal in 1982 was Queensland, Dr R.W.Sutherst, who was President of ESQ in 1983.

There are two other important medals awarded to commemorate members of this remarkable family of medical entomologists, all of whom were based in Queensland for most of their working lives. Every two years the Queensland Branch of the Australian Medical Association hosts a biennial public lecture known as the Bancroft Oration and the speaker is presented with the Joseph Bancroft Medal (Fig. 2). This bronze medal was sculpted in 1927 by Daphne Mayo, the famous Brisbane artist who carved the magnificent sandstone frieze above the entrance columns to the Brisbane City Hall. Her initials are visible on the medal. Ian Mackerras, who married Joseph Bancroft’s granddaughter Josephine, is commemorated by the Ian Mackerras Medal (Fig. 3) which is awarded by the Australian Entomological Society every two years to an



Fig 2. The Joseph Bancroft Oration Medal



entomologist who had demonstrated excellence in research and is under 50 years of age. Ian Mackerras was the founding President of AES. This bronze medal was established in 1984 following an appeal among members and was designed and cast by the Brisbane firm A.J. Parkes & Co. The first recipient of this medal was Dr J.A.L. Watson from CSIRO Canberra. The second recipient in 1986 was Bob Sutherst who thus received two of the three medals during his career.

Biographies and portraits of all 4 members of that Bancroft-Mackerras dynasty have now been completed and put up on the Archive section of our website.

Entries for another 18 people have also gone up since the last News Bulletin as follows: A. C. Arvier, G. Brooks, A. R. Brimblecombe, I. F. B. Common, V. E. Davies, J. J. Davis, E. M. Exley, I. W. Helmsing, M. J. Hobler, K.J. Houston, D. S. Kettle, M. J. Manski, A. W. S. May, W. A. McDougall, E. Mjöberg, H. Standfast, R. I. Storey, D. Wallace. We are very grateful to Neil Heather (retired from DPI) who has been helping with entries on past DPI folk. Please take a look at the Archive at <http://www.esq.org.au/archive.html> and think about entries you might be able to prepare. Contact Geoff if you have any corrections to existing entries.

Geoff Monteith & Kathy Ebert  
Archive Coordinators

## The History Corner...



### Ian Murray MACKERRAS (1898-1980)



Ian Mackerras was born in Balclutha, NZ, and died in Canberra. Grew up in Sydney and after WW1 service (1915-19) studied medicine and science at University of Sydney (1919-24) graduating in both with 1st Class Hons. and Medal in Zoology. Married fellow student Josephine Bancroft in 1925 and they shared a productive scientific life. Ian became the first Linnean Macleay Fellow at University of Sydney (1925-26) studying Nemeritidae and Sydney mosquitos. Joined NSW Health Dept. as microbiologist (1927-28), then CSIR Canberra (1928-47) dealing with veterinary entomology. Served in WW2 as Director of Entomology dealing with malaria, dengue and scrub typhus. After WW2, transferred to CSIRO Lab at Yeerongpilly in 1946, then became first Director of Queensland Institute of Medical Research at Herston in 1948. Led vigorous research programs in many fields, and studied taxonomy of simuliids and tabanids. In 1961, became Senior

Research Fellow at CSIRO, Canberra, to coordinate and edit the 1029pp *Insects of Australia*, published in 1970. Continued tabanid taxonomy and edited the 1974 *Supplement to Insects of Australia*. Retired in 1974 at age 76. President of Ent. Soc. Qld (1948-49), President of Royal. Soc. Qld (1952), Convenor of working group (1964-65) to plan a national entomological society and became first President of the Australian Entomological Society (1965-67), and its first Honorary Member (1969). He is remembered by an annual award, the Mackerras Medal, for excellence in research. A giant of Australian entomology.

**Biographies:** Marks, E.N. 1980. Obituary – Ian Murray Mackerras. *News Bulletin of the Australian Entomological Society* **16(2)**: 50-56. Williams, L. 2000. Mackerras, Ian Murray (1898-1980).

## A NEW BOOK:

# *All about butterflies of Australia*

Written by Garry Sankowsky

Paperback, 167 pp, ISBN: 9781921517433. \$29.99,

available from :

<http://www.publish.csiro.au/nid/18/pid/7532.htm>

ESQ member, Garry Sankowsky, is perhaps the most experienced butterfly person in Australia, not in terms of taxonomic research, but certainly in terms of sheer field experience and practical hands-on knowledge of breeding and handling living butterflies, as well as knowledge of their food plants and the conditions in which to grow them. He started what was probably the first butterfly house for tourists in Australia, at Tamborine Mountain, back in the 1970s, then moved to north Queensland in 1982 where he bought a 5 acre block of practically bare ground on rich volcanic soil near Tolga, on the northern Atherton Tableland. He and his wife, Nada, have since planted this with around 10,000 plants of 2,700 species which have grown to a rainforest that can be seen from the moon (or at least on Google Earth!) The plants include almost every known butterfly food plant and innumerable species breed on the block. Garry worked for a number of years at Australia's biggest butterfly house in Kuranda and then in a plant nursery near Atherton that specialised in natives, especially butterfly food plants. Now retired, he travels widely collecting and observing plants and butterflies and has developed his photographic skills to a high degree.

This beautiful little books draws on that enormous experience of butterflies. It is filled with hundreds of lively photographs of butterflies and their life histories and food plants. Not a dead pinned specimen to be seen. It is filled with snippets of



information about living butterflies, their behaviour, their breeding habits and preferences, their seasonal quirks and

migrations, their mimicry and defences – all drawn from personal experience and lovingly photographed. There's a passionate section on the decline in butterflies that Garry has seen in his lifetime due to factors like clearing of the brigalow belt, decline in dry vine scrubs due to annual burn offs, and, worst of all, the steady invasion of natural habitats by aggressive introduced pasture grasses which are rapidly replacing natural vegetation, including butterfly food plants, throughout Australia.

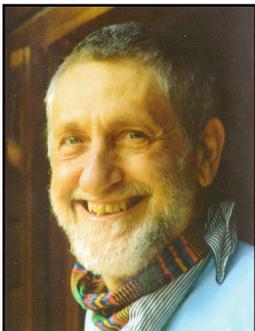
Visit Garry's website at

<http://www.rainforestmagic.com.au/page4.html>

to see more about his activities and the many plant identification products he has developed. Signed copies of the butterfly book are available there.

## ANOTHER NEW BOOK:

# *Tropical Queensland Wildlife from Dusk to Dawn - Science and Art*



*Written by Buck Richardson*

348 pp, 250x300mm,  
hardbound, ISBN  
9780957729018, published by  
LeapFrogOz, Kuranda  
Kreations. Price \$65 (incl.  
postage in Australia).

Available from [http://  
www.leapfrogoz.com.au/LeapFrogOz/  
Tropical\\_Queensland\\_Wildlife\\_from\\_Dusk\\_to\\_Daw  
n\\_Science\\_and\\_Art.html](http://www.leapfrogoz.com.au/LeapFrogOz/Tropical_Queensland_Wildlife_from_Dusk_to_Dawn_Science_and_Art.html)

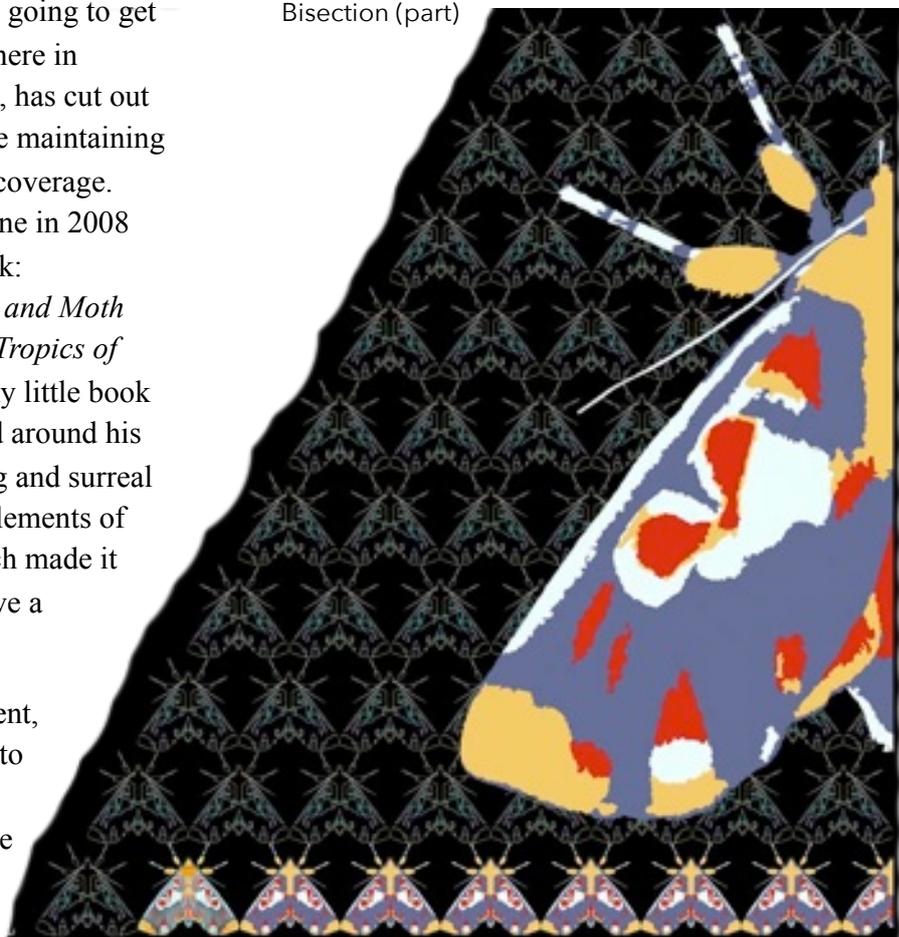
This sumptuous coffee table book is definitely the largest and most glamorous book on moths and other north Queensland nightlife you are ever going to get for \$65 – which includes postage anywhere in Australia. The author, Buck Richardson, has cut out the middle man by self-publishing while maintaining superlative quality of design, print and coverage. Buck burst on the entomological scene in 2008 when he brought out his first insect book: *Mothology: Discover the Magic. Moths and Moth Art from the World Heritage listed Wet Tropics of Queensland Australia*. That was a quirky little book of moths which Buck had photographed around his Kuranda home coupled with astonishing and surreal computer art work using the moths as elements of design, plus clever and quirky text which made it fun to browse. For example it didn't have a "Foreword", it had a "Forewing".

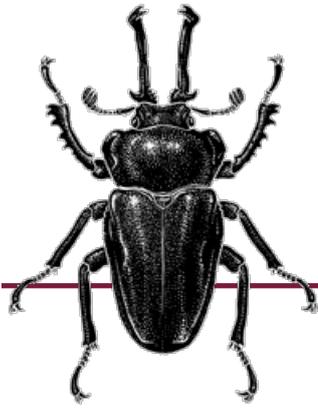
This book caused fellow Kuranda resident, retired ANIC orthopterist David Rentz, to make contact. Since then, they go light trapping together within driving distance of Kuranda about 30 times a year. The new book is very much a product of

those nights in the bush.

Buck is an entrepreneurial ex-engineer, with a magical artistic imagination, a mathematical bent and an immense curiosity about nature. Through David he has made contact with the scientific community, especially moth master Ted Edwards, and this has enabled him to put scientific names to the creatures he works with. The present book is a tour de force with 1500 species of moths plus 100 pages of other animals of the night from beetles, bugs and katydids to snakes, frogs and mammals, all properly identified. They are interspersed with scores of Buck's inimical computer artworks of these amazing creatures. There's also a 4000 word critique of the language that scientists use in discussing evolution and its products. There's something for everyone! There'll be a launch of the book on September 28th at the coming Australian Entomological Society Conference in Cairns.

Below: a sample of Buck's art - *Hypsidian*  
Bisection (part)





# Announcements and Notices

## Student & Early-Career Researcher Workshop at Australian Entomology Society Conference 2015 in Cairns

*Communicating science to influence  
human behaviour*

### About the Workshop

People often have good intentions but fail miserably when it comes to action. How can you communicate your research so that it more likely leads to a change in human behaviour, be it the way others identify insects or the quarantine and pest management practices they use? In this session you will learn about some of the key elements and brain science for communicating for behavioural change then apply them to communicating about your own research. You will have a say in which elements we explore in detail; the high and low roads to persuasion, choosing your messenger, use of prompts and commitments, and/or segmenting your audience. The outcome from the workshop should be a powerful change in the way you communicate about your research!

### About the Presenter

Dr. Louise Kuchel is a lecturer in biology at the University of Queensland, Australia; a biologist who specialises in the teaching and learning of science communication. Louise currently researches ways to



Dr Louise Kuchel, Lecturer in Biology and Science Communication at the University of Queensland

improve communication between scientists and non-scientists as well as how best to teach/learn these skills. For more information about Louise please, see: <http://researchers.uq.edu.au/researcher/796>

### Workshop Details

This workshop is tentatively scheduled for Monday 28<sup>th</sup> September 2015, from 3.15pm to 5.00pm (before the poster presentations). **All are welcome** to attend this workshop (it is not exclusive for students or early-career researchers). It is organized by the AES Board Director for Student Relations, please direct any queries, concerns and suggestions to [Gurion Ang](mailto:Gurion Ang) at 07 3365 2196 or [gurion.ang@gmail.com](mailto:gurion.ang@gmail.com).



THE AUSTRALIAN ENTOMOLOGICAL SOCIETY

# LINNAEAN GAMES

27 – 30 SEPTEMBER 2015, CAIRNS

## Duplicate Reprints/Journal issues available to members at September meeting

The Entomology Section at the QM is consolidating all the various collections of reprints/journal issues we hold. Therefore there are a number of duplicates which we would like to offer to members. At the September meeting these will be on offer free to members if they are interested. Included in this lot are a number of reprints from The Australian Entomologist. Unwanted reprints will be on offer periodically throughout the year but a notice will be put in the bulletin when they will be on offer at an ESQ meeting. If people are particularly interested in a certain taxa or subject then please get in contact with Susan Wright at [Susan.Wright@qm.qld.gov.au](mailto:Susan.Wright@qm.qld.gov.au).

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## Native Bee Keeping Workshops with Tim Heard in Brisbane Area

### **Eatons Hill, Brisbane, Qld, 4 Sep 2015**

*When:* Friday 4 September 9.30am - 3.30pm

*Where:* Yuraba Conference Centre 240 Church Rd Eatons Hill

*What:* native bee workshop. Includes workshop, morning tea, delicious lunch and honey tasting in the afternoon.

*How much:* \$40/person

*To register:* contact Kim [kimp@kumbartcho.org.au](mailto:kimp@kumbartcho.org.au) or 33253492

### **Northey St City market, Brisbane, Qld, 30 Oct 2015**

*When:* Friday 30th October 9am-4pm

*Where:* Northey street city farm, Windsor

*What:* Learn about the importance and uses of native bees and sugarbag honey.

*To register:* <http://www.nscf.org.au/sustainable-living-workshops-brisbane/>

For more workshops and information see <http://www.sugarbag.net/learn-more/>



## \$50,000 in travel funding to support global participation in International Congress of Entomology (ICE) 2016 by non-U.S. students and scientists

The Entomological Society of America (ESA) is pleased to announce a travel funding competition to support global participation in ICE 2016 by non-U.S. students and scientists transitioning into the early years of their careers.

Sponsored by ESA's Student Transition and Early Professionals Committee (STEP), the competition will award a total of \$50,000 to 25-30 participants to support their travel to ICE 2016, along with complimentary registration for the Congress. Awards will be based on criteria such as the scope and importance of the applicant's research to be presented at the Congress, how the applicant's attendance and participation at the Congress will benefit his or her professional development and the science of entomology, and how the applicant's attendance will contribute to the diversity of attendees at ICE 2016.

Eligibility requirements and further details may be found at <http://ice2016orlando.org/esas-student-transition-and-early-professionals-committee-step-travel-funding-competition-for-ice-2016/>

**Deadline for submissions is midnight (U.S. Eastern Time), September 1, 2015.**

# Meetings & conferences



## Entomology Up North & To Asia Beyond - 46th AGM and Scientific Conference of the Australian Entomological Society

27-30 September 2015, Cairns, QLD

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

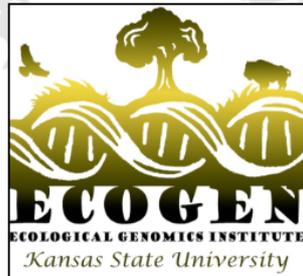
## 13<sup>th</sup> Annual Ecological Genomics Symposium

6-8 November 2015

Manhattan, Kansas, USA

<http://ecogen.k-state.edu/symposia/2015.html>

## Entomology 2015: Joint Entomology



**Synergy in Science:  
Partnering for Solutions**

ASA • CSSA • SSSA • ESA  
**2015 MEETING**  
Nov. 15-18 | Minneapolis, MN

**Society of America (ESA), American  
Society of Agronomy (ASA), the Crop  
Science Society of America (CSSA) and  
the Soil Science Society of America (SSSA)  
conference.**

15-18 November 2015, Minneapolis, MN, USA

<http://www.entsoc.org/entomology2015>

## 5<sup>th</sup> Meeting of Neotropical Lepidoptera: Biodiversity, evolution, ecology and conservation

16-20 November 2015

National University of Tucuman, Tucuman,  
Argentina [http://www.elen5.com.ar/english/  
index.php](http://www.elen5.com.ar/english/index.php)

## Joint meeting of the Society of Australian Systematic Biologists (SASB) and Invertebrate Biodiversity and Conservation Conference (IBCC)

December 6–9, 2015,

Fremantle, WA

<http://sasb2015.org/>



## 5<sup>th</sup> International Conference on Quantitative Genetics (ICQG)

June 12–17, 2016

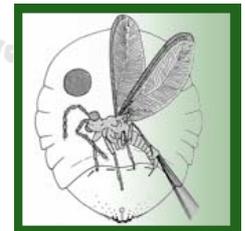
Madison, Wisconsin, USA

<http://www.icqg5.org>

## XIV International Symposium on Scale Insect Studies

June 13–16, 2016

University of Catania,  
Sicily, ITALY



## XXV International Congress of Entomology: Entomology Without Borders

September 25–30, 2016

Orlando, Florida, USA

<http://ice2016orlando.org/>



# Diary Dates for 2015

Meetings held on the second Tuesday  
of the respective month

MARCH 10	Bill Palmer	AGM and Presidential Address: " <i>Weed Biological Control in Queensland - Down Memory Lane</i> "
APRIL 14	Geoff Monteith	" <i>Australian Native Dung Beetles</i> "
MAY 12	Penny Mills & Yen-Po (Paul) Lin	" <i>The Apiomorpha minor species group (Hemiptera: Coccoidea: Eriococcidae)</i> " AND " <i>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>Investigating the drivers of longicorn and cossid wood borers in subtropical plantations in Queensland and New South Wales</i> "
SEPTEMBER 8	Max Moulds	" <i>Museum dungeons to mountain tops: 50 years of entomological adventures</i> "
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

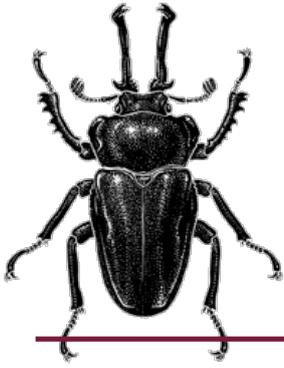
<b>GENERAL</b>	Person who has full membership privileges	<b>\$30pa</b>
<b>JOINT</b>	Residents in the same household who share a copy of the <i>News Bulletin</i> , but each otherwise have full membership privileges.	<b>\$36pa</b>
<b>STUDENT</b>	Student membership conveys full membership privileges at 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>
<b>ELECTRONIC</b>	Individuals/Institutions	<b>AU\$25pa/AU\$30pa</b>

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

[http://www.esq.org.au/pdf/esq\\_subscription2014.pdf](http://www.esq.org.au/pdf/esq_subscription2014.pdf)



# Entomological Society of Queensland



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## NOTICE OF NEXT MEETING

*Tuesday, September 8th, 2015, 1:00 pm*



**Guest Speaker:**

***Dr Max Moulds***

will present

**Museum dungeons to mountain tops: 50 years  
of entomological adventures**

*and*

A special presentation of Honorary Life Membership certificates to  
Max Moulds and Christine Lambkin

**Seminar Room  
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:**

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