Entomological Society of Queensland

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Entomological Society of Queensland

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Front Cover: A photograph of the saltmarsh mosquito, *Aedes vigilax*. This species is found in coastal saltmarshes and mangroves from the south coast of New South Wales north around the continent and down to the southwest corner of Western Australia, and in the Riverland and Adelaide region of South Australia. Its drought-resistant eggs are laid in the margins of temporary pools that are flooded by peak tides or rain events. On subsequent inundation, these eggs can hatch simultaneously in millions, taking as little as 7-8 days to develop into adults. The adult mosquitoes are renowned for their capacity to disperse over many kilometres. This makes them the worst pest species in coastal Queensland, where the larvae are the target of aerial spraying programs by councils from the Gold Coast to Noosa. *Photo by Stephen Doggett, Department of Medical Entomology, NSW Health Pathology, Westmead Hospital. Used with permission.*

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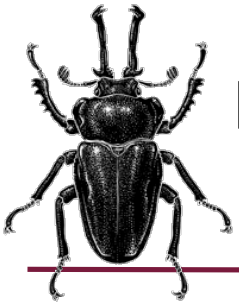

Entomological Society of Queensland

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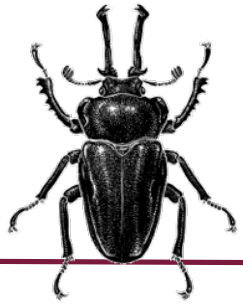
The **ENTOMOLOGICAL SOCIETY OF QUEENSLAND**, since its inception in 1923, has striven to promote the development of pure and applied entomological research in Australia, particularly in Queensland. The Society promotes liaison among entomologists through regular meetings and the distribution of a *News 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 50th anniversary of the Society, is the King Stag Beetle, *Phalacrognathus muelleri* (Macleay), Family Lucanidae (Coleoptera). Its magnificent purple and green colouration makes it one of the most attractive beetle species in Australia. Other common names include Rainbow, Golden and Magnificent Stag Beetle. It is restricted to the rainforests of northern Queensland. Emblem illustration by Sybil Curtis.



Entomological Society of Queensland
Minutes for General Meeting

Tuesday, September 11th, 2018
Held in the Seminar Rooms, Ecosciences Precinct, Boggo Rd, Dutton Park.
Meeting open: 1:00 pm

Attendance (36):

Members (23): Mark Schutze, Mike Muller, Bernie Franzmann, Vivan Sandoval, Kathy Ebert, Chris Lambkin, Tim Heard, Rachel McFadyen, Pierce Clark, Shannon Close, Geoff Monteith, Don Sands, Penny Mills, Susan House, Natalia Medeiros De Souza, Andrew Hayes, Simon Lawson, Brogan Amos, Nadine Baldwin, Lance Maddock, Julianne Farrell, Greg Daglish, David Exton

Visitors (13): Ron Crew, Mena Crew, Kathy Crew, Dean Beasley, Katie Hiller, Catherin Liddington, Tracey Steinrucken, Dennis Gosnell, Maureen Galvin, Marianne Eelkema, Lara Senior, David Hessey, Belinda Walters

Minutes: The minutes of the last meeting were circulated in News Bulletin 46[5] August 2018. Moved the minutes be accepted as a true record: Tim Heard; Seconded: Geoff Monteith; Carried: All.

Nominations for membership approved by council:

General Members:
Nigel Andrew (Univ. of New England)
Student Members:
Pierce Clark (Univ. of QLD)
Joint Members:
Rhys Dockrill & Stephanie Lukas

General Business:
-NONE.

Main Business:
Presentation: *"Zika Mozzie Seeker – exploring Citizen Science as a tool to monitor invasive and urban mosquitoes"* presented by Brian Montgomery.

Mike Muller provided the vote of thanks.

Next meeting: 9th of October: "*Wacky world of cycads: Thermogenesis, volatiles and pollinator interactions"* presented by Irene Terry.

Meeting closed: 14:10

Beetles (mainly Dermestidae) feeding on lily pollen.

At our next meeting...

"Wacky world of cycads: Thermogenesis, volatiles and pollinator interactions"

presented by Irene Terry
Research professor
University of Utah
Salt Lake City, Utah, USA

Cycads are dioecious gymnosperms and are the oldest lineage of extant plants that are insect-pollinated. Australia, being a centre of cycad diversity, offers unique opportunities to study the evolution of pollination mutualisms in these plants. We have been investigating many aspects of the pollination systems of the Australian cycad genus *Macrozamia* from different perspectives. These run the gamut of analyzing the molecular genetics of the pollinator and their plant hosts, determining the changes in the physiology of cone thermogenesis and chemical emissions across plant hosts, and testing the pollinators' responses to these cone behaviors. I synthesise our findings that show how all this comes together to mediate pollinator behavior and how these systems might diversify.

About Irene:
I am currently a Research Professor at the University of Utah. Prior to this, I worked for several years at the University of Arizona on pest management of western flower thrips on several different crops, which included many behavioural studies on their mating behaviors. While on semester leave in 1999, I worked with Laurence Mound, world renowned thysanopterist at CSIRO in Canberra. We established that thrips in the genus *Cycadothrips* were pollinators of Australian endemic cycads, *Macrozamia communis* in southeastern NSW and *M. macdonnellii* near Alice Springs. From the success of this work and because of the great interest by conservationists in these endangered gymnosperms and their specialist pollinators, I have been able to get involved in cycad pollinator studies and surveys in many other countries, including China, Mexico, US, as well as the Pacific Islands. Most significantly, investigations of *Macrozamia* pollination with collaborators at the University of Queensland have revealed how particular cycad cone traits play a major role in mediating pollinator behaviour. The overall goal is to determine the role of pollination systems in the diversification and evolution of both pollinator and host species.

Tuesday 9 October at 1 pm

Seminar Room at EcoSciences. Tea & coffee following.
All welcome!

Zika Mozzie Seeker – exploring Citizen Science as a tool to monitor invasive and urban mosquitoes

presented by
Brian Montgomery
Advanced Medical Entomologist
Metro South Health, Queensland Health

Zika Mozzie Seeker (ZMS) is one of Australia's first health-based citizen science projects. In Queensland there are two invasive species of 'Zika mosquitoes' (*Aedes aegypti* and *Aedes albopictus*) that can transmit Zika, but both are considered absent in South East Queensland (SEQ) and most areas in Australia. Zika mosquitoes exploit water-bearing containers in urban environments and have very limited flight ranges (200-500m)–making it extremely difficult to detect an early localised invasion. The aim of ZMS is to enlist large numbers of citizen scientists to set mosquito egg traps to efficiently expand urban mosquito surveillance networks through extensive geographies. Evidence of Zika mosquito absence will increase confidence that our largest communities are not infested with 'Zika mozzies', as a preventative strategy against Zika outbreaks. Why is this important? The impacts of Zika infection can be profound for individuals, families, communities and health systems. In 2015-16 Zika outbreaks prompted World Health Organization (WHO) to declare a '*Public Health Emergency of International Concern*' following recognition that infection can cause congenital defects due to microcephaly (small skull) and neurological complications (e.g. Guillian-Barré Syndrome) in adults.

Zika Mozzie Seeker aligns with WHO recommendations to develop novel community-based Zika risk management measures and Office of Chief Scientist Australia aims to promote citizen science. Traditional urban mosquito surveillance is transformed by linking citizen scientists to a world first method of rapidly screening large amounts of mosquito DNA for Zika mosquitoes by using highly sensitive polymerase chain reaction (PCR) tests. One *Ae. aegypti* can be detected amongst 5,000 of the local mosquito species. This allows eggs from many (10-25) traps to be combined into each PCR cohort removing the need to individually examine many thousands of mosquito larvae by microscopy.

Education and supportive partnership programs with health authorities can empower individuals and communities to adopt preventative behaviours (e.g. tipping out water-bearing containers each week) to mitigate Zika risk. Zika Mozzie Seeker is a powerful tool for countries and/or regions that are not yet affected by Zika outbreaks to engage communities and confirm the absence of Zika mosquito species. This information is critical to assist health authorities to both ascertain the risk of exotic mosquito-borne disease transmission (when notified of infected travellers importing viruses such Zika, dengue and chikungunya), and to detect an invasion early enough to implement eradication programs. The contribution by each citizen scientist is important–a detection of Zika mosquitoes will trigger a

comprehensive, costly and protracted eradication protocol, as described in a recent economic analysis of *Ae. albopictus* invasion in Brisbane.

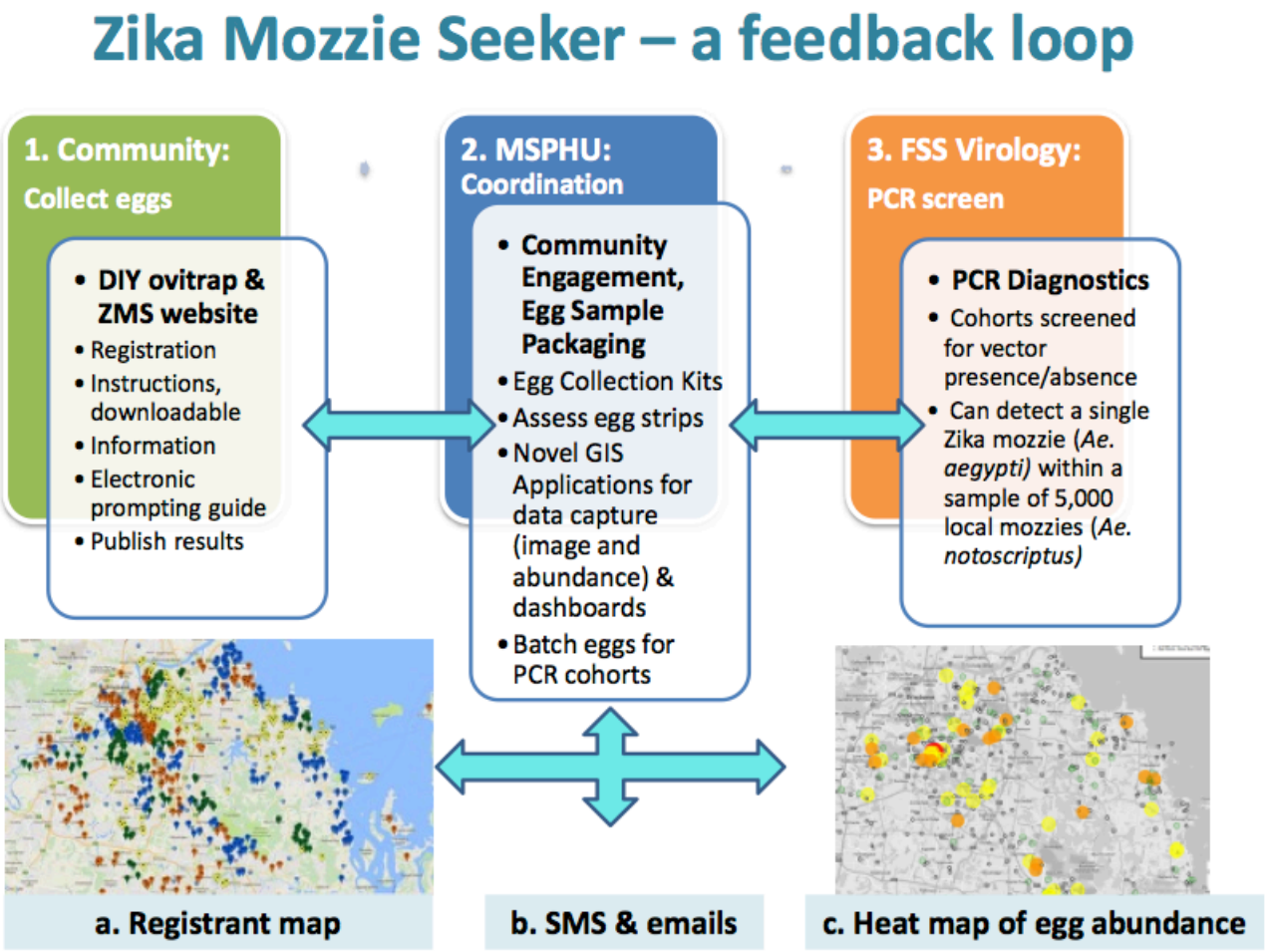
Since mid-2016 Metro South Health (MSH) has partnered with its community (1 million people across 3,856 km^2) to pilot the sharing of this public health priority – monitoring for invasions of Zika mosquito (*Aedes aegypti*). The project combines three innovative elements, namely:

1. Synchronized citizen science to conduct biannual sampling of urban mosquitoes using Do-It-Yourself egg trapping in trapping 'rounds'–managed by MSH.

2. A 'Decision Support System' coordination hub. All participation, mailing and sampling result processes are managed for timely feedback to individuals and community–created by MSH.

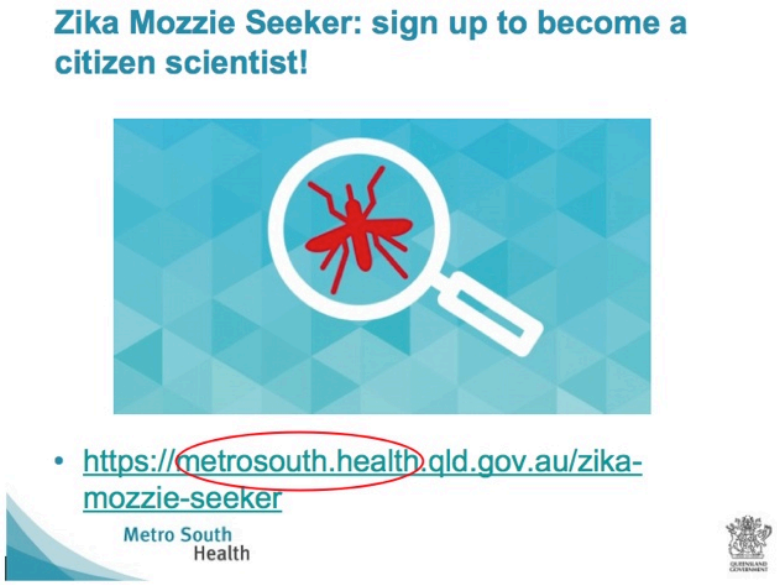
3. PCR diagnostic testing to screen large amounts of DNA from local mosquitoes for *Ae. aegypti* DNA–by Queensland Health's Forensic and Scientific Services.

Citizen scientists register on-line (https://metrosouth.health.qld.gov.au/zika-mozzie-seeker) to conduct Do-It-Yourself mosquito egg trapping (i.e. ovitraps). The 'egg collection kit', self-addressed envelope and PCR testing is provided free by Queensland Health. Twice a year, participants are invited to deploy an ovitrap in their backyards for a few weeks. A 'green policy' is promoted by directing participants to recycling bins to source mosquito trap buckets, and using electronic communications (email, SMS) to minimise paper use. Eggs are sent to MSH for counting (by automated software) and batching (up to 25 traps in a single PCR cohort), prior to PCR testing for *Ae. aegypti* DNA. The process of mailing out 'egg collection kits' and batching the returned eggs into PCR cohorts enables

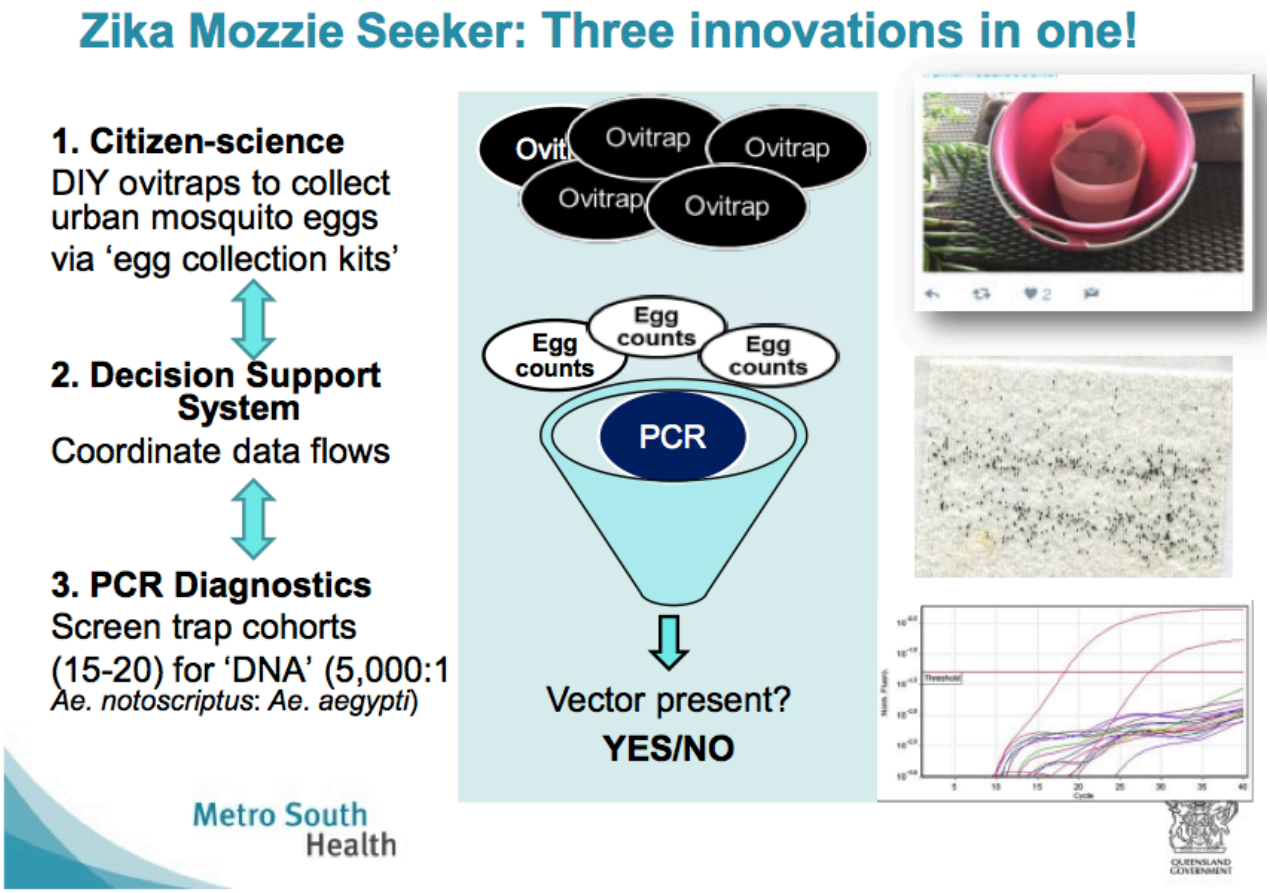


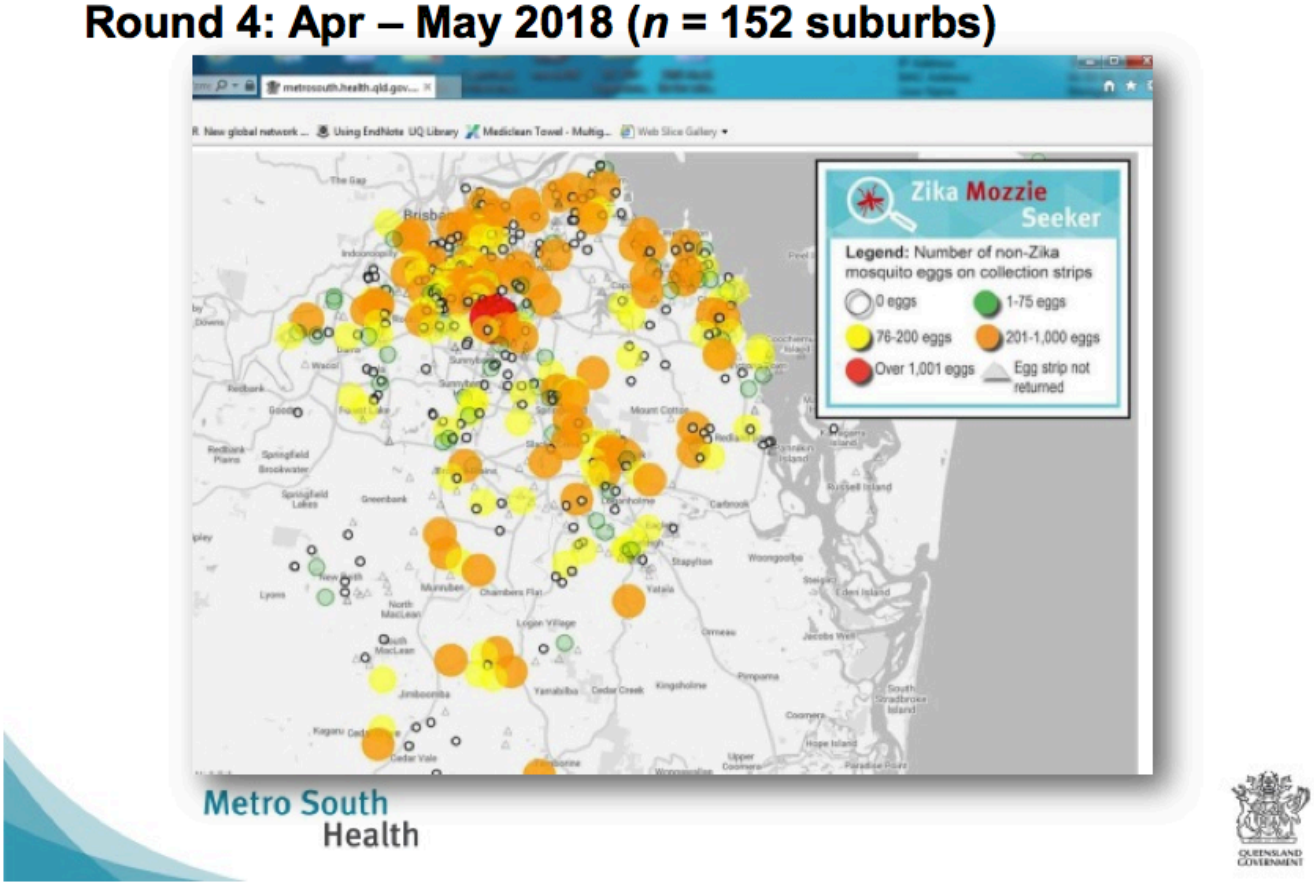
ZMS to deliver an efficient, loosely synchronised trapping 'Round'.

A sophisticated 'ZMS Decision Support System' has been developed by MSH that is efficient, flexible and scalable to coordinate the data and information streams between each citizen scientist and MSH (e.g. registration details, egg data, email and SMS text reminders and individualised results for egg abundance, PCR diagnostics and thematic mapping outputs). The project emphasises two-way communication (e.g. by responding to all 1,200 SMS/email enquiries), and provided forums to accommodate volunteers and enable face-to face feedback. Feedback from the 18,000+ electronic reminders was that it has created a personalised sense of rapport /support. The functionality of the system has been enhanced after each round to improve spatial and temporal reporting requirements, and improve the 'user' experience of each citizen scientist.



Over 1,600 ovitraps in four trapping 'rounds' have collected 170,000 eggs, processed by 81 PCR tests, without detecting any *Ae. aegypti* DNA. Each





'round' has attracted an encouraging level of registrants (580–780 per round) with a high proportion returning eggs for analyses (76%, 59%, 50% and 54%, respectively). Many have trapped in multiple rounds (190 in all Four!), demonstrating that ZMS provides a blueprint for a sustainable early-warning system to detect invasions of Zika mosquitoes. Importantly, participation may improve an understanding of Zika and the threats of other exotic mosquito-borne diseases (dengue and chikungunya), methods of urban mosquito surveillance and control, and personal protective behaviours that can reduce risks.

This innovation is timely; the risk of an invasion by 'Zika mozzies' is increasing because

1. Receptivity of SEQ suburbia is increasing via the proliferation of rainwater tanks (est. 300,000 since 2000) that will provide additional, widespread and abundant breeding sites.

2.Both species are being detected more frequently at Australian international ports, including Brisbane Airport (Dec 2017, Feb 2018) and Port of Brisbane (Dec 2017-Jan 2018, Mar 2018, May 2018).

3. Many travellers infected overseas with Zika virus and other exotic mosquito borne viruses (dengue and chikungunya) were diagnosed in SEQ in 2016. Predictive modelling indicates that seasonal Zika outbreaks could occur in Brisbane if *Ae. aegypti* were present.

ZMS was trialled as a STEM module for secondary schools (x 9) in April–May 2018, in a partnership between MSH and Toohey Forest Environmental Educational Centre (Education Queensland), funded by an *Advance Queensland, Engaging Science Grant* (Queensland Government, Dept. of Science, Technology and Innovation). Feedback from all involved was very positive. Roll out of this module

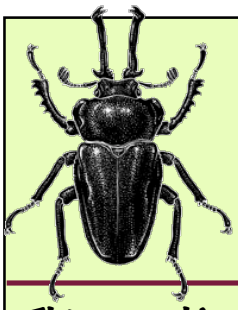
(where students collect eggs, record data, send in to MSH as a PCR cohort, and receive a report) will hopefully inspire the next generation to pursue STEM careers or participate in this or other citizen science programs that will provide future benefits to individuals and the community.

The History Corner...

Elizabeth Morris EXLEY (1927-2007)

Born Brisbane and attended Brisbane Girls Grammar School. Graduated with B.Sc. in Zoology from UQ in 1948 then served as a tutor while doing Honours, received in 1950. F. A. Perkins encouraged interest in dacine fruit flies and she gained a fellowship in 1952 to study their larvae at London's Imperial College from which she received DIC in 1954. Joined Qld Dept of Agriculture on return to Brisbane and pursued M.Sc. on fruit flies, awarded in 1956. Rejoined UQ Entomology Dept in 1958 as a tutor, later lecturer, retiring as Associate Professor in 1992. Took up study of native bees, especially endemic subfamily Euryglossinae, after sabbatical visit to UQ by US bee specialist Charles Michener in 1958 and devoted her career to their study, earning a Ph.D. from UQ in 1968. Collected bees widely and described more than 230 spp. Supervised many postgraduate students on bee projects. Was strong supporter of ESQ, serving on Council for many years, as President in 1968 and became an Honorary Life Member. Foundation member of Australian Entomological Society in 1965, President in 1986 and became Honorary Life Member.

Biography: King, J.,1997. Elizabeth Exley pp. 73-74. *In* McKay, J.(ed.) *Brilliant careers: women collectors and illustrators in Queensland.* Queensland Museum, 80 pp.; Anon., 2007. Dr Elizabeth M. Exley 1927-2007. *News Bulletin of the Entomological Society of Queensland* **35(7):**155-156.



S-t-r-e-t-c-h your Ento knowledge

This month's mystery photo:

Here's a tricky one for you...this is a scanning electron micrograph taken by the UQ students recently for their assessment. Any guesses? I'll give you some hints: it's a ventral view and yes, those are legs... but who's??

If you think you know what it is, send me an email!

--the Editor
k.ebert@uq.edu.au

Word of the Month:
Brachypterous is a term used to describe an animal with short or reduced wings. In the insects it usually means that both pairs of wings are reduced and this often means that the insect in question is unable to fly.
From the Entomologist's Glossary, Amateur Entomologist Society website: https://www.amentsoc.org/insects/glossary/terms/brachypterous

Last month's mystery photo was a Hemiptera, Pentatomidae, *Bromocoris souefi* (Distant, 1910)), photographed in the western suburbs of Brisbane on a grey gum. Congratulations to Ingrid Shiel from QUT for guessing Pentatomidae!

This is a tropical species which has only been recorded in the Brisbane area since 2006. The females will guard their eggs and the first-instar nymphs to protect them from parasitic wasps or other predators. They usually lay their eggs in clutches of 14 placed in rows of 3, 4, 4 and 3!

Have you got a photo to share for the mystery photo challenge?

Entomology News

from Queensland and beyond...

QuestaGame: a nature app for discovering and documenting the world's biodiversity

by Penny Mills

Touted as "Pokemon Go for nature lovers", QuestaGame is a mobile app dedicated to discovering and identifying the Earth's organisms. Players earn "gold" for photographing and submitting a sighting. The gold earned from sightings allows players to purchase equipment for more accurate ids, supplies to go on "Quests" for particular species and upgrade transport options to carry more supplies. Gold can also be earned by identifying sightings from other players. Sightings and their associated data submitted by players are incorporated into the Atlas of Living Australia (ALA) and the Global Biodiversity Information Facility (GBIF) databases. Players can also identify sightings online via the Bio-Expertise Engine, where money earned for correct ids is donated to a player's chosen organisation. QuestaGame also holds national and international BioQuests with prizes on offer to players and organisations. The Great Aussie BioQuest was recently held during National Science Week (August 11–19), and the ESQ received a small donation from QuestaGame thanks to all the players who selected ESQ as their chosen organisation and identified sightings online during the competition period. Upcoming events on QuestaGame include a Lepidoptera BioQuest being held in January, an Arthropod BioQuest in February and a month-long Uni BioQuest in April. QuestaGame was also recently awarded the Innovation in Citizen Science Prize at the 2018 Eureka Awards held in Sydney. If you're looking for a fun and educational app, check out QuestaGame at https://questagame.com/thebasics/ and if you do sign up, don't forget you

can also support the ESQ whilst you're identifying sightings. Happy BioQuesting!

Funding to help South Pacific farmers deal with crop pests

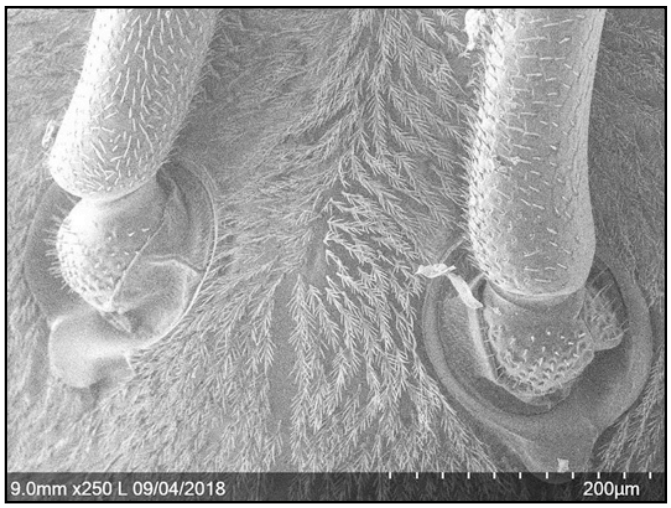
UQ School of Biological Sciences researcher and ESQ member, Mike Furlong, is part of a program recently funded by the Australian Centre for International Agricultural Research. The program is being developed to help farmers living on south Pacific islands to better manage insect pest problems. Local agencies and extension personnel will be trained up to be able to advise farmers on long term pest management strategies using biological control methods. Read more at: https://www.uq.edu.au/news/article/2018/08/grant-improve-management-of-agricultural-pests-and-diseases-pacific

Dung beetle project to help Australian livestock farmers

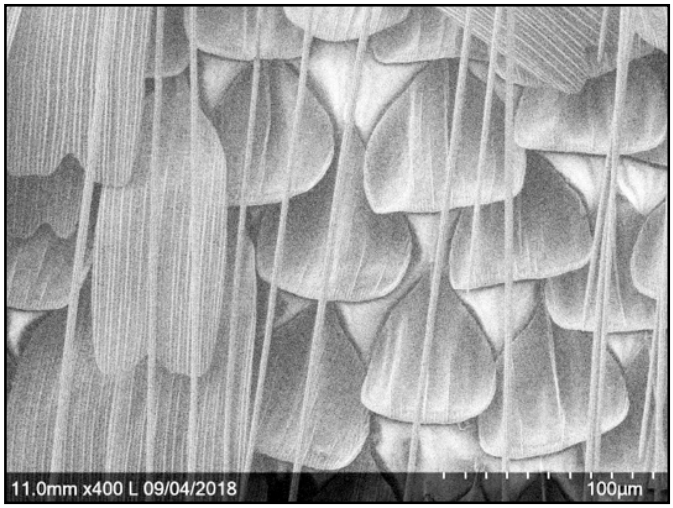
Charles Sturt University and the Graham Centre for Agricultural Innovation (Wagga Wagga, NSW) are leading a $23 million dollar research effort to improve livestock production programs using dung beetles. Part of the project involves mass rearing of three new introduced species and two endemic species that are more suited to areas in inland

Australia. They hope to be able to incorporate dung beetles more widely in the livestock production system and to better quantify the benefits to soils and pastures. Read more at: http://news.csu.edu.au/latest-news/science/csu-research-$23-million-project-to-put-dung-beetles-to-work

Introduced dung beetle: *Onthophagus nigriventris* Photo credit: CSIRO Science Images.



Native bee: *Tetragonula carbonaria* (Smith, 1854) - front of head and base of antennae. showing the plumose hairs on the face. Photo credit: Ryan & Rizky.

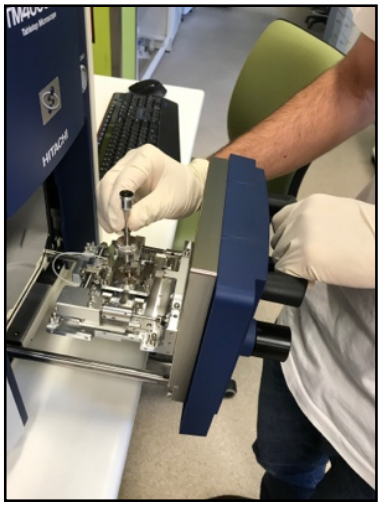


Moth wing: Geometridae*: Eucyclodes pieroides (Walker, 1861) - male dorsal hind wing scales*. Photo credit: Deborah & Cait.

UQ Students get up close and personal with insects

A new assessment item being trialled by UQ's Insect Science course this year involves the students getting to know insects up close and personal with a scanning electron microscope. The new assessment item was developed as part of the new Students as Partners Program at UQ where students get an opportunity to gain a breadth of experience in academic projects. UQ students Shannon Close and Kathy Ebert worked closely with UQ academic David Merritt and education consultant Bec Mills to develop the new assessment item. A benchtop scanning electron microscope was hired from the UQ Centre of Microscopy and Microanalysis for the practical component of the assessment. Students worked in pairs under the guidance of Shannon and Kathy in the lab, taking photos of a chosen insect feature such as antennae, tarsi or wings. The students enjoyed taking the photographs and were amazed by the strange and wonderful landscapes of insect cuticle!

Below: Shannon Close guides a student in sharpening the image from the SEM. *Right:* Placing the specimen mounted on a stub into the scanning electron microscope. Photos: K. Ebert.



Cricket in a bottle: A win for entomological forensics

by David Rentz

A bottle of wine was sent to me recently; not out of kindness but because it contained a cricket. The wine had come from New Zealand but was bottled in Tasmania.

The question was: did the cricket come from New Zealand with the wine or did it get into the bottle in Tasmania? Such a question could only be answered by a taxonomist. For those who may not know, a *taxonomist* is one of a dwindling number of scientists who actually know about species, their relationships, distributions, etc. but are not highly valued in some circles. Taxonomists have been on the decline since the 1990s at least. Employment positions at museums and universities have steadily declined to the point where taxonomy is seldom even taught at universities. Those institutions of higher learning that used to specialise in the topic now have abandoned it almost entirely. Still, taxonomic information is requested every day. Just look at the Amateur Entomology Facebook site (Insects & Invertebrates of FNQ). The first question always is: What is this? Check out the site and you can see for yourself. And it's a taxonomist that usually has to answer. But taxonomists are becoming fewer on the ground.

But I digress. In less than 5 minutes I was able to answer the question about the drunken cricket and provide a scenario as to how it got there.

The cricket is a Raspy Cricket, family Gryllacrididae. There are no native Raspy Crickets in New Zealand. In recent years, an Australian Raspy Cricket, *Pteropotrechus* sp, has been found there. It is a fully winged species most likely introduced through commerce. The cricket in the bottle (a rosé) is an adult female of an apterous species. It is *Kinemania ambulans* (Erichson). This species is endemic to Tasmania as is the genus. See Rentz and John (1990).

Knowing a bit about the biology of Raspy Crickets leads to a scenario about how it managed to get into the bottle. I suspect the bottles are stored, open mouthed awaiting their turn to be filled with wine. The cricket is nocturnal and somehow managed to get into the bottling plant. These crickets prefer dark places and many species live in burrows in the ground. The bottle with its tight neck probably provided the ideal resting place. It all changed when the bottle was filled trapping the cricket. Faecal

Figure 1. The wine.

Figure 2. *Kinemania ambulans* (Erichson), adult female.

pellets in the bottle suggest the cricket had been there for a while.

The wine never got into circulation, although the bottle was sealed and ready to go. The point is that this situation was reconciled in minutes. Had there been no taxonomist familiar with matters orthopteroid, it could have taken weeks to identify the cricket and develop the scenario. It does make one wonder "Whither taxonomy"? (in both senses of the word) (and no, I did not drink the wine!)

Reference

Rentz, D. C. F., John, B. 1990. Studies in Australian Gryllacrididae: Taxonomy, Biology, Ecology and Cytology. *Invertebrate Taxonomy*, **3**: 1053–1210.

Cautionary note regarding Moccona jars!

Last month I suggested using "Moccona coffee jars" as killing bottles. I notice now on one of the 400 g larger jars that the cyanide deliquesces and the liquid migrates to the outer rim of the jar. This could be dangerous if it got into an open cut in the hand. So be careful. I have not observed anything similar in the smaller jars or with Ammonium Carbonate as the killing agent. Perhaps, the plastic liner is not as tight-fitting in the larger jars.

-- D Rentz

ESA Workshop: Do we need insect ecologists?

This workshop is being held in conjunction with the annual **Ecological Society of Australia** conference in Brisbane in late November this year. Anyone may attend irrespective of attendance at the main Conference. New ESQ member, Nigel Andrew, insect ecologist at University of New England, and one of the workshop convenors, cordially invites interested ESQ members to attend. More information about the ESA conference is available at http://esa2018.org.au/

Workshop program:

1. The first two hours of the workshop will focus on identifying if and where differences between insect ecologists and other ecologists exist and how any disadvantages could be ameliorated (e.g., would listing more invertebrates help to direct more government funding toward to conservation of invertebrates). This may result in an opinion paper for *Austral Ecology.*

2. The remaining four hours of the workshop will focus on putting together a meta-analysis paper asking whether our ability to detect the impact of anthropogenic disturbances and restoration is improved by knowing the taxonomic resolution or traits of terrestrial and aquatic insects. The target journal for this paper would be *Conservation Biology*.

Invited speakers will bring insights from industry, government and CSIRO and have an active involvement in insect conservation.

Date and time: 10am-5pm on Friday, November 30, 2018.
Where: At the Royal International Convention Centre, Southbank, Brisbane.
Cost: $10.00, register and pay on the day at the ESA Registration desk.

ESA ECOLOGICAL SOCIETY OF AUSTRALIA

New Books

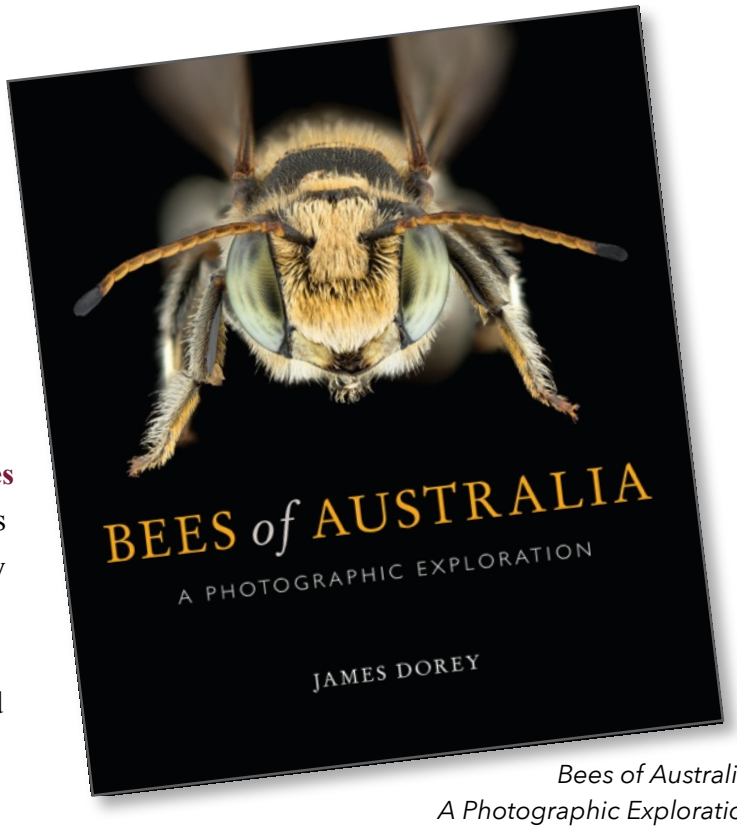
If you were wishing you could learn more about Australia's amazing native bees, there are two fantastic new books available from CSIRO Publishing.

The first is by Dr. Terry Houston who has been studying Australian native bees for over 50 years. He has put together **"A Guide to Native Bees of Australia"**. The first part of the book provides plenty of information about bee morphology with labelled photographs of key features used to identify the different groups of bees. He also includes information about their life cycle, colour, mimicry, nests and extensive information about their behaviours. He includes a bit of information about the history of native bee study, how to collect them, how to encourage them in your garden and a bit about their conservation.

A Guide to Native Bees of Australia
Published: August 2018, CSIRO Publishing
Paperback: 280 pages
Price: $49.99
ISBN: 9781486304066

The second part of the book starts with a table of key characters defining each family, then goes on to have detailed sections about each family including keys to subfamilies and genera. Characters used in the keys are illustrated with labelled photographs. Each section has lots of fantastic photos to accompany the text. This book provides an excellent reference for identifying and learning more about native bees.

Another book due to be published soon is the **"Bees of Australia, A Photographic Exploration"**. This book introduces the reader to the amazing diversity of native bees through striking photos set again a black background. Photos are grouped by state which reflects James' photographic journey around Australia. While the focus of the book is mainly photos, each chapter begins with a brief text about habitats and the types of bees found in the state, then ends with an informative article on a different topic relating to bees. Each species is photographed from



Bees of Australia:
A Photographic Exploration
To be published: October 2018, CSIRO Publishing
Paperback: 224 pages
Price: $49.99
ISBN: 9781486308491

different angles allowing the reader to see key characteristics. A brief descriptive text with a point of interest accompanies each set of species photos. One thing that I find quite useful is a size reference included with each image to put the photos into perspective.

This book would make a great gift for a bee-lover!

"...from purple moonbeams to itchy cows"

Densey Clyne has produced a new book -- her 32nd! This one is her best. It deals with her encounters with a variety of invertebrates: katydids, caterpillars, spiders, bugs, etc. Once you start reading, you will not be able to put it down and I guarantee you will uncover some observation that is new to you be it the Cast-net Spider using a faecal lure for the flies it hopes to catch or the Magnificent Spider luring male moths by simulating the female's scent.

Densey's writing is elegant and fluid. It appeals to both the scientist and the interested naturalist. She talks about pollination noting that without it there would be little or no food for us among others. Anything that comes from flowering plants is the result of pollination by insects.

There are 35 chapters dealing with observations over the years. There are short jaunts to New Guinea and Borneo in her book as well. The photography is superb and well reproduced with a number of photos taken by her colleague Jim Frazier (https://en.wikipedia.org/wiki/Jim_Frazier_(inventor)).

In the introduction to the book she states, *"Writing these stories has given me almost as much pleasure as the encounters themselves. Since childhood my two greatest interests have been the world of nature and the world of words. Happily for me the two worlds merged."* And happily for us we have this book.

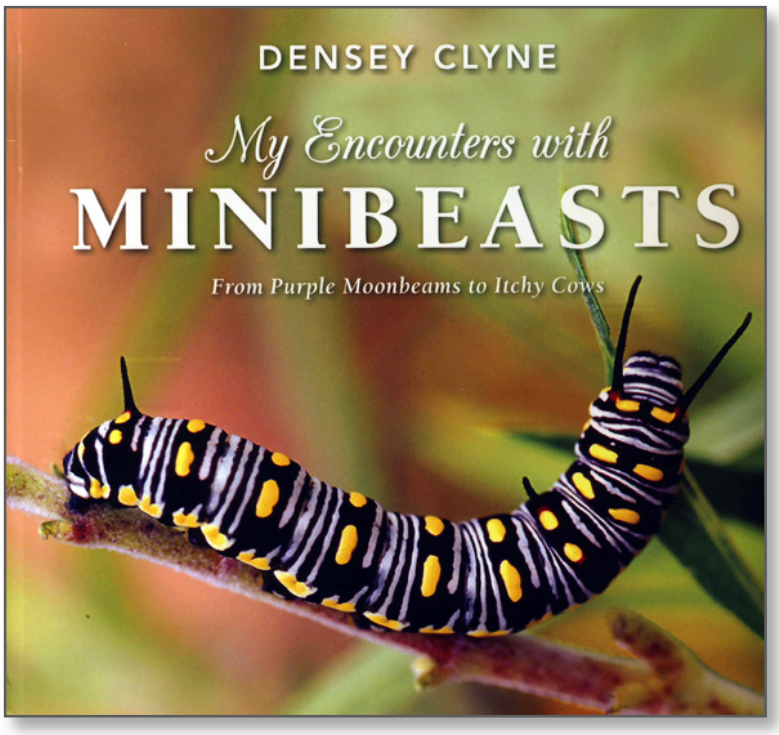
The book is a welcome addition to the library and would also make a very nice Christmas present for a lucky individual.

Contributed by David Rentz

shared with permission from his blogpost:

http://bunyipco.blogspot.com/2018/09/new-book.html

Editor's note: Densey Clyne is 92 years old - what an inspiration!



My Encounters with Minibeasts From Purple Moonbeams to Itchy Cows.
New Holland Publishers
ISBN 9781925546170.

If you're interested in Historical Entomology...

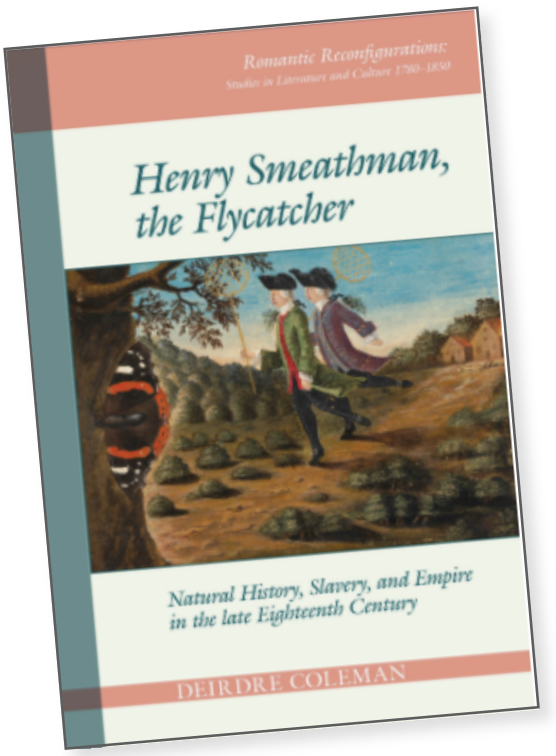
Christopher Harrington from the English department at Latrobe University sent us the following recommendation and book review:

"I recently read a great book that might interest some of the QLD ento folks. It is called "Henry Smeathman, the Flycatcher" (2018). It is a wonderful read and will be of interest to anyone enthusiastic about the history of insect collecting."

When the eighteenth-century naturalist Henry Smeathman set out on an expedition to Africa to gather specimens of naturalia for a group of wealthy armchair collectors, he planned to write an account of his adventures. Sadly, this never happened. Deirdre Coleman's book *Henry Smeathman, the Flycatcher* (2018) minutely reconstructs the story of these entomological adventures with exquisite detail. *Flycatcher* comes with 35 colour illustrations and an appendix containing Smeathman's seminal 1781 essay on termites. It is a jewel beetle of a book. It reads like termites eat and will prove invaluable to anyone interested in the history of entomology, eighteenth-century collecting practices, and the curious interrelationship between imperialism, slavery, and natural history.

--Christopher Harrington

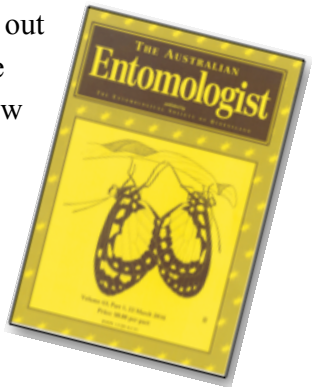
Editor's note: The author, Dierdre Coleman, is from the University of Melbourne.



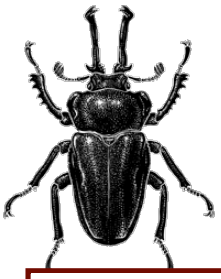
Henry Smeathman, the Flycatcher; Natural History, Slavery and Empire in the Late Eighteenth Century.
Published: June 2018, Liverpool University Press
Hardback, 336 pages
Price: £90.00
ISBN: 9781786940537

Notice to *Australian Entomologist* Subscribers

Normally we would be producing Part 3 for 2018 around this time of year and mailing it out towards the end of September. However this issue will be a larger-than-usual beetle issue devoted to the memory of the late carabid coleopterist Dr Barry Moore and there are a few delays in its production. Meanwhile copy for the last issue of the year (Part 4) is already being finalised. What we have decided to do is to prepare both issues for mailing simultaneously in the second half of November. We apologize for this slight disruption but subscribers can look forward to a double arrival of two issues, both somewhat larger than normal.



Geoff Monteith
Business Manager, Australian Entomologist



Diary Dates for 2018

Meetings held on the second Tuesday of the respective month

MARCH 13	Tim Heard	AGM and Presidential Address: "*Stingless Bees, their journey from obscurity to insect ambassadors"*
APRIL 10	Andy Walker	*"Exploring the world of insect venoms"*
MAY 8	Brendan Trewin	*"The history of* Aedes aegypti *in Southeast Queensland and novel techniques for its surveillance and control."*
JUNE 13	Notes and Exhibits	Notes & Exhibits
AUGUST 14	Mike Rix	*"Life down under: evolution and conservation of Australia's trap door spiders"*
SEPTEMBER 11	Brian Montgomery	*"Zika Mozzie Seeker - exploring Citizen Science as a tool to monitor invasive and urban mosquitoes"*
OCTOBER 9	Irene Terry	*"Wacky world of cycads: Thermogenesis, volatiles and pollinator interactions"*
NOVEMBER 13	John Neilson	*Quarantine entomology - topic to be announced*
DECEMBER 11	Notes & Exhibits	Notes and Exhibits/Christmas Afternoon Tea

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http://www.esq.org.au/membership.html

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ELSEWHERE	Individuals/Institutions	**AU$65pa/AU$70pa**
ELECTRONIC	Individuals/Institutions	**AU$25pa/AU$30pa**

Journal subscriptions should be sent to the Business Manager, PO Box 537, Indooroopilly QLD 4068
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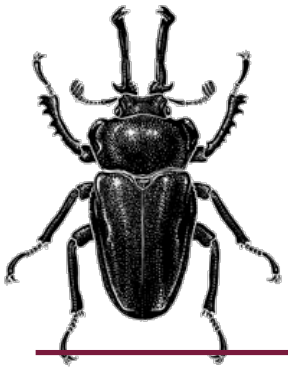

Entomological Society of Queensland

Notice of next meeting:

Tuesday, 9 October 2018, 1:00 pm

Irene Terry

Research Professor
University of Utah
Salt Lake City, Utah, USA

presenting:

"Wacky world of cycads: Thermogenesis, volatiles and pollinator interactions"

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

Ground floor Seminar Room, Ecosciences Precinct, Boggo Road, DUTTON PARK

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

Next News Bulletin:

Volume 46, Issue 7 (October 2018)

CONTRIBUTIONS WELCOME

Deadline Wednesday, 17 October 2018.

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