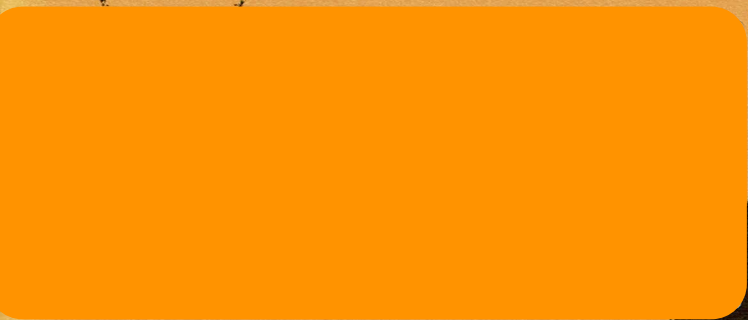




ENTOMOLOGICAL SOCIETY OF QUEENSLAND INC.

# NEWS BULLETIN



Price \$1.50

Print Post Approved

PP444461/0003

Volume 30, Issue 2, April 2002

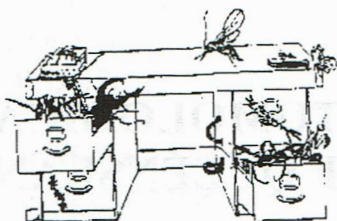
The **ENTOMOLOGICAL SOCIETY OF QUEENSLAND INC.**, since its inception in 1923, has striven to promote the development of pure and applied entomological research in Australia, and particularly in Queensland. Membership is open to anyone interested in Entomology. The Society promotes liaison among entomologists through regular meetings and the distribution of a *News Bulletin* to members. Meetings are announced in the *News Bulletin*, and are normally held in the Goddard Building, University of Queensland at 7.00 pm on the second Monday of each month (March to June, August to December) each year. Visitors and prospective members are welcome. Membership information can be obtained from the Honorary Secretary, or other office bearers of the Society.

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 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. Its magnificent purple and green colouration make it one of the most attractive of all Australian Coleoptera. It is restricted to the rainforests of Northern Queensland.

**COVER:** Aboriginal stylised depiction of a biological control agent (*Malacorhinus irregularis*) and its host plant (*Mimosa pigra*) on a background piece of torn bark, by Otto Fahey and Soussanith Nokham.



## TABLE OF CONTENTS

<b>Minutes of General Meeting</b>	<b>26</b>
<b>Main Business from April meeting</b>	
<b>Helen Wallace: Stingless bees as seed dispersers</b>	<b>28</b>
<b>Notice of Next Meeting</b>	<b>35</b>
<b>News from around the grounds</b>	
<b>Queensland Museum</b>	<b>35</b>
<b>Griffith University</b>	<b>37</b>
<b>University of Queensland</b>	<b>38</b>
<b>CSIRO Long Pocket</b>	<b>39</b>
<b>AQIS</b>	<b>42</b>
<b>A new order of insects?</b>	<b>44</b>

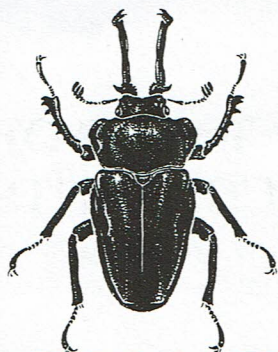
\*\*\*\*\*

The cover design is derived from the logo developed for the XI International Symposium on the Biological Control of Weeds to be held in Canberra in April 2003. See [www.ento.csiro.au/weeds2003](http://www.ento.csiro.au/weeds2003)

\*\*\*\*\*

The issue of this document does **NOT** constitute a formal publication for the purposes of the "International Code of Zoological Nomenclature 3<sup>rd</sup> edition, 1985". Authors alone are responsible for the views expressed.

\*\*\*\*\*



# THE ENTOMOLOGICAL SOCIETY OF QUEENSLAND

## GENERAL MEETING: 8 April 2002

Minutes of the General Meeting of the Entomological Society of Queensland Inc. held in Room 388, Goddard Building, The University of Queensland, on 8 April 2002, at 7pm. Chaired by Tim Heard

**Attendance:** J. Beard, K. Bell, M. Brown, B. Cribb, E. Exley, T. Heard, P. Mackey, G. Monteith, J. Nielson, L. Popple, A. Pound, H. Proctor, C. Rodriguez, B. Shepherd, D. Walker, H. Wallace, D. Walter.

**Visitors:** P. Collier, N. Spiller.

**Apologies:** Sarah Russell, Don Sands, Narelle Power, Claire Baker, Angela Hatch, John Moss, Bob Miller, Ross Kendall.

**Minutes:** The minutes of the last General Meeting, the Annual General Meeting, were circulated in the News Bulletin Vol. 30 Issue 1. I was moved by Heather Proctor, seconded by Bruce Shepherd that the minutes be accepted without amendment.

**Nominations:** The following nominations were received and were put before the meeting:

Mr Peter Collier  
PO Box 480

Nominated:  
Seconded:

Tewantin  
QLD 4565

Mr Michael Sands  
12 Sutling Street  
Chapel Hill  
QLD 4069

Nominated:  
Seconded:

Mr Ted Edwards  
CSIRO Entomology  
PO Box 1700  
Canberra  
ACT 2601

Nominated:  
Seconded:

Mr Toby Burgess  
PO Box 1546  
Fortitude Valley  
QLD 4006

Nominated:  
Seconded:

In accordance with the Society's rules, these candidates will be considered for election at the next meeting.

### **Elections:**

The following nominations were received at the last General Meeting, and circulated in the News Bulletin Vol. 30 Issue 1.

Edward Petrie  
PO Box 382  
Frenchs Forest, NSW 2086

Nominated: L. Muir  
Seconded: J. King

Khema Siriwardanan  
1 Charles Place  
Runcorn, QLD 4113

Nominated: N. Power  
Seconded: D. White

The nominees were elected, unanimously, by a show of hands.

### **General Business:**

It was brought to the attention of the society members that an order of 30 T-shirts is required before the next shipment can be received.

### **Main Business:**

## **Stingless bees as seed dispersers**

Dr Helen Wallace  
University of the Sunshine Coast

Stingless bees have become more and more popular as pets and the commercial stingless beekeeping industry is also growing rapidly. *T. carbonaria* is the most common species in the South East Qld and is often kept in nests or hived in boxes in suburban backyards. In Australia, there are about 12 species of stingless bees in 2 genera, *Trigona* and *Austroplebeia*. There are now six recognized species of *Trigona* in Australia. *Austroplebeia* is currently under revision, but there will also probably be around six species.

Stingless bees are social and one of their unique features is their elaborate nest structures, built from a mixture of resin collected from plants and wax which they secrete. Honeypots, pollen pots, brood and the batumen, the protective layer that surrounds the internal nest structure, are made mostly from plant resins. Stingless bees must collect large quantities of plant resin for these structures.

### **Bizarre behaviour in the back garden**

My story starts in about 1990, when I went into the backyard to check my hive of *T. carbonaria*. I found small red seeds stuck all

over the outside of the hive, and especially around the hive entrance. I couldn't figure out how they got there and after a few minutes I saw the worker bees bringing in the seeds in their corbiculae.

This seemed like totally bizarre behaviour for a bee. After some more observations and enquiries and we found that the seeds were from *Corymbia torelliana* (formerly *Eucalyptus torelliana*). The capsules are hollow and produce copious amounts of a pale yellow resin, which is very attractive to the bees. When the bees crawl inside the capsule to collect the resin, seeds sometimes become stuck to their corbiculae. Bees may try to remove the seeds at the capsule entrance, but many do not succeed and fly back to the hive carrying both seeds and resin. We also observed bees flying away from the hive to throw away seeds that had been completely cleaned of resin.

### **Are the seeds effectively dispersed?**

The burning question was, are the seeds that are transported by bees capable of germination? If so, this would mean that the bees were dispersing the seeds. There were many examples in the literature of seed dispersal by birds, bats and ants, but at the time there was absolutely no mention of bees dispersing seeds. There was also no record in the literature of eucalypts being dispersed by animals- in most species they simply fall out of the capsule, or at best they may be wind dispersed.

To find out if seeds transported by bees could germinate, we collected seeds from under many hives and nests, and also from capsules. Around 80 -90 % of seed from under hives germinated and there was no difference between seeds from capsules and seeds from under *Trigona* hives. Under many hives there was a nice crop of *C. torelliana* seedlings coming up and in some cases the dispersal distances were around 300m. In one case the nearest tree we could find was over 1km away.

## **A new seed dispersal syndrome**

By this stage we knew we were dealing with a new seed dispersal syndrome, where *C. torelliana* trees were offering resin as a reward and using *T. carbonaria* bees to disperse their seeds. We coined the term "mellitochory" to describe this syndrome.

## **Latest developments**

The native range of *C. torelliana* is North Qld. On a recent trip there I found many stingless bees, both small and large, foraging on capsules and saw 1 bees leaving capsules with seeds attached. I also found 2 nests, probably of *T. clypearis*, with seeds stuck on the entrance. I also have reports from stingless beekeepers that *T. hockingsi* and *Austroplebeia australis* collect seeds, so I suspect that all of the stingless bee species in Australia are capable of dispersing *C. torelliana* seeds. I will be doing more research in North Qld over the next 3 years as part of an ARC project on *C. torelliana* and I'm looking forward to spending many hours observing some fascinating and at times bizarre stingless bee behaviour.

## **Acknowledgements**

Thanks to my collaborator, Stephen Trueman, Tim Heard, and the staff and students of the Department of Entomology 1989-1994.

## **Questions:**

Q: I have a hive at home with hundreds of *torelliana* seeds around it all this year. The bees would knock seeds off, take them inside and bring them back out again later. Could the seeds be a tool for carrying the resin rather than a hindrance?

A: We are not sure if seeds are deliberately collected at the seed capsule. The bees appear to fill their corbiculae with resin and only about 1/10 of the bees will have a seed too. We assume it to

be only accidental.

Q: Could you look at the seeds being dumped by bees to see if the bees are cleaning the resin off the seed? In addition, this year our bees have been swarming a great deal, and though we have never checked, could it be that the *torelliana* seeds are blocking the entrance to the hive and the bees are simply cueing up to get inside?

Comment: The native bee keepers in Buderim area insist on cleaning the *torelliana* seeds off the hive, as they do block the hive and even kill the hive.

Q: What time of year does *torelliana* set seed?

A: Nov-April, should be ending about this time of year. In Northern Queensland it may be all year round.

Comment: Our hives appear to look clogged full of seeds, but both hives are doing fine.

Q: Is this the only way *torelliana* seed is dispersed?

A: Both the normal eucalypt dispersal (i.e. dropping from parent tree) and bee dispersal takes place. About 80% of dispersal is through dropping from parent tree.

Q: Is there any difference in the rates of seed germination?

A: There does not appear to be.

Q: Why is *torelliana* designated a weed, but at the same time forestry is interested in it?

A: It is like camphor laurel in that it grows readily in places it is not native to, it is an invasive weed.

Q: Although *torelliana* appears to flower prolifically, I have never collected any useful bees from the flowers.

A: The resin appears to be the most important for the bees.

Q: When you are doing your comparisons of seed germination rates, do you use seeds collected directly from the nuts yourself and from the hive?

A: We bag nut clusters to collect seed that would fall naturally and we collected from under the hive. We do know that when the seed has not been cleaned, i.e. is still covered in resin, germination rates are lowered.

Q: Do the seeds need some treatment before germination, e.g. scouring?

A: There is no need, they germinate very readily.

Q: Why do the bees swarm?

A: We don't know why they swarm. Don't know if the participants in a swarm are all from the one hive or from several. A big swirling ball develops in which they grab each other and fall to the ground together and eventually die, still clinging to each other. In Australia, only *Trigona* are known to do this, no other stingless bees have this behaviour.

Q: We have had masses of bees swarming, and some even forming a bivouac overnight. Could this be due to an overcrowded hive?

A: Not sure. There are apparently all male swarms as well.

Q: The North Queensland situation is critical to what you want to do. *Torelliana* is not so common up there.

A: I have seen an almost monoculture near Kuranda.

Q: But it does not occur everywhere it could occur.

A: Yes. I found only 2 tree with seeds. Are the bees moving the seeds around in the natural habitat of *torelliana*? Is the resin more attractive in North Queensland than down here? The density of

bees around nuts with seeds was enormous in North Queensland. Here you may find about 10 bees around a nut cluster, but up there you get around 40 bees. There were two common bee species in North Queensland - *Trigona carbonaria* and *T. hockingsi*.

Q: What did *carbonaria* use before *torelliana* was grown in southeast Queensland?

A: We don't know what other eucalypts produce resin in the seed capsule, but the bees do used resin from wounds in the trunks of eucalypts.

Q: How did you work out that the seeds can be dispersed over 1 km by bees?

A: We examined lots of hives and wild nests and worked out where the nearest *torelliana* trees were, through the help of a local botanist.

### **Votes of Thanks:**

Elizabeth Exley:

It was quite a long time since Helen first came to me, with a CSIRO scholarship to investigate a rural something or other. She was a botanist come entomologist. I was interested in pollination, and many agriculturalists only study things that hurt plants rather than pollination. So Helen had to increase her interest in insects and bees. She first worked on *Macadamia* pollination, then came across *torelliana*.

I was up in Cowen, a very long time ago, when Cowen was very small, just after a cyclone had destroyed most of the buildings. I stayed with the local carpenter and his family, and he asked me "What do you think of all my new houses?" I thought "Hmm, pretty good. But why don't you paint any of them?" "Because the bees take it all away.....".

Bee expert Professor Michener brought a hive of *T. hockingsi*

down to an observation hive to study. Nearly all *Trigona* have an entrance tube of some kind, but this species makes one about 12 inches long. The Professor asked everyone to come look at the hive one day, and all the way along there entrance tube was blue and white paint, obviously collected from some new building in the vicinity.

They had just painted Bamaga airport when I was there one time. It was just a tin shed really, but they had painted it white, with black specks. But when you looked closely, it was covered in bees stuck to the white paint.

I am interested to discover what is going on with the bees and forestry. I ask you all to thank Helen again.

Geoff Monteith made a general announcement regarding green tree ants being found on Hope Island at the Gold Coast. The normal distribution of the ant is in the far north of Australia, down the east coast as far as Gladstone, maybe Tenent Sands. Peter Woodall from the Veterinary Department, on a birding trip to the Gold Coast, found the green tree ants in a fig tree. He found 12-14 nests in the one tree. They may have come down in palm nursery stock as there is such a demand to satisfy the thirst on the Gold Coast for instant gardens. Geoff does not think they will survive the frosts. Elizabeth Exley commented that you may not get frosts on Hope Island. Geoff agreed that you don't get frosts anymore like they had when he was a lad, and that they must have been much much worse when Elizabeth was a kid..... Geoff told Peter to phone the Fire Ant Team immediately.

The Chair announced that the next meeting will be held on Monday 13 May 2002.

As there was no further business, the Chair closed the meeting.

### Notice of next meeting

Monday 13<sup>rd</sup> May, 2002

Carrie Hauxwell

**Successes and failures in microbial pesticides, experiences  
from Nicaragua and Australia**

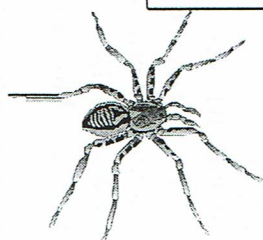
### News from the Queensland Museum

Chris, Doug and Susan accompanied by **Barbara Baehr**, **Robert Raven** (Arachnology QM), **John Stanisic** and **Darryl Potter** (Malacology QM) spent a week in January collecting on Stradbroke Island. Some of the gems collected included several uncommon Christmas beetles (Scarabaeidae: Rutelinae) and a specimen of the giant dragonfly, *Petalura litorea*. In February, **Ross Storey** in Mareeba had visitors in the form of Geoff M. and **Geoff Thompson** who spent most of the time light trapping and paying close attention to the dung beetles on and around his property. Geoff Monteith will make a return visit in April. In March **Geoff Monteith**, **Doug Cook** and **Susan Wright** ended nine days of investigating various patches of vinescrub around Roma with Bug Catch which turned out to very profitable (see Jenny Haines article). Meanwhile **Chris Burwell** and **John Heraty** (University of California, Riverside) spent two weeks chasing the elusive Mallee Monster, the chalcid wasp *Akapala* (Family Eucharitidae). They spent a week in Mt Isa and another in Alice Springs with a few days in Cairns due to the lack of direct flights between the first two spots. Unfortunately the beast eluded capture but several related taxa were collected so the trip was still

successful. Following his successful visit to the Museum of Comparative Zoology at Harvard University, funded by an Ernst Mayr Award Grant, **Rudy Kohout** will be leaving soon for a 6 week trip to north-west Australia. He will be accompanied by **Simon Robson** (James Cook University, Townsville) and both will visit Lawn Hill in the Gulf Country, Katherine Gorge and Kakadu in the Northern Territory and the Kimberley and Pilbara districts in northern Western Australia. This trip is funded primarily by Rudy's ABRS Research Grant, with partial support from Simon's ARC Research Grant.

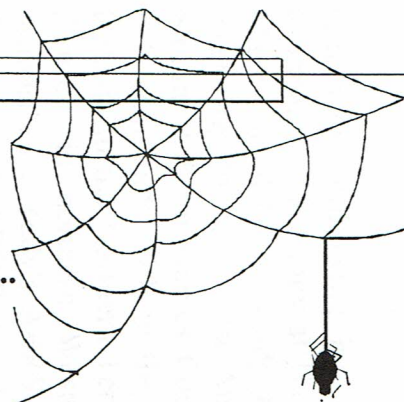
Visitors over the last few months have included **Darryl Gwynne** (University of Toronto) studying king crickets, **David and Joan Hollis** (Natural History Museum, London) looking at psyllids and **Richard Leschen** (Landcare Research, Auckland) searching for an particular cerambycid in our collection and also looking at cucujoid beetles. **Ottillie Neser** (Plant Protection Research Institute, Pretoria) spent a couple of weeks looking at A.A. Girault types of *Bruchophagus* and other Eurytomids. **Chris Darling** (Royal Ontario Museum, Canada) visited briefly before he too headed off to Mt Isa for another disappointing search for *Akapala*. However he managed to spend some profitable hours with some of the locals at the Boyd Hotel. He then met up with Geoff Monteith on a return trip to New Caledonia. **Michael Wall** (University of Connecticut) is working on the taxonomy of reduviids and pentatomids and also made a brief visit to look at the collection.

In December, 2001 Robert Raven & Barbara Baehr gave a 3-day workshop on spider identification (using paper keys and real spiders) for 20 people from Perth, Canberra, Sydney & Brisbane. In January, Dr Norman I Platnick, American Museum of Natural History, visited the museum and with Barbara Baehr & Robert Raven went hunting a new lamponid genus (and other grist for a DNA "mill") just south of Texas. A group of scientists focused on the Araneoid clade visited the museum in April and will collect



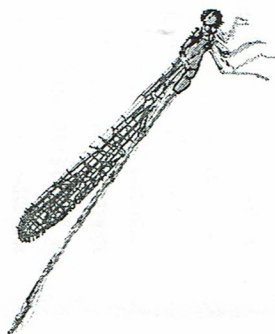
# Bug Catch 2002

*The other 99% in our Protected Areas ....  
What are we preserving?*



Queensland Parks and Wildlife Service and the Department of Primary Industries would like to extend an invitation to the Entomological Society members for a weekend of collecting in the Karawatha Forest in Brisbane's South East. Enjoy guest speakers, conducting a preliminary inventory of the invertebrates of the area and just getting together for a fun and informative weekend.

Jenny Haines will be collating the returns and other information from the weekend.



**Where :** Karawatha Forest  
Elizabeth St gate, Woodridge

**When :** From 8:00am Saturday 25 May to  
5:00pm Sunday 26 May 2002



**Meals:** Saturday evening meal provided  
BYO breakfast and lunch

**Accommodation :** Camping for those wishing to stay Saturday night.

Only 30 places are available so please fill in the registration form below and forward onto Jenny Haines, PO Box 1241, Oxley Queensland 4075. Closing date for registration is 17 May 2002. For further information contact Jenny Haines on phone 3310 2826 or email [Jennifer.Haines@dpi.qld.gov.au](mailto:Jennifer.Haines@dpi.qld.gov.au)

## Registration

Name:.....

Address:.....

Contact Phone number:.....

Email:.....

I will attend (please tick):

- ☐ Saturday 25 May 2002  
☐ Sunday 26 May 2002



in south-east Queensland and north-east Queensland. They are: from the Smithsonian and George Washington Univ, USA, Dr Gustavo Hormiga and his PhD students Matjaz Kuntner, Fernando Alvarez; and from the Zoological Museum of Denmark, Dr Nikolaj Scharff & his student Ms Sidsel Larsen.

### **Tropical Fruit Fly Research Group**

**Australian School of Env. Studies**

**Griffith University**

**Correspondent: S. Raghu**

The TFFRG continues to be the hub of a considerable level of activity. **Dr. Tony Clarke** has moved from Griffith University to take up a permanent job at Queensland University of Technology as a Lecturer in Ecology. He will be missed. However, **Tony** still continues to interact with the group as a collaborator in research projects and student supervision. We have a new addition to the lab in **Dr. S. Vijayasegaran** (Vijay) who has taken up a position as Research Fellow on the group's new project in Vietnam (Managing fruit flies to increase food (fruit and vegetable) production in Vietnam) funded by ACIAR. This project is being headed by **Prof. Dick Drew** and Vijay. In connection with this project Vijay and Meredith Romig have made visits to field sites in North and South Vietnam to initiate the fieldwork and data collection phase of the project. A high level diplomatic delegation from Vietnam visited the lab to observe the progress being made and to have discussions with the project leaders. Amy Lawson continues to make considerable progress in developing a LUCID key to the *Bactrocera dorsalis* complex of fruit flies (a major pest group in the Asia-Pacific). Currently she is developing a subkey, for certain problematic species, based on morphometric data being meticulously gathered by **Peter Halcoop** and **Dick Drew**. Dr. David Yeates (CSIRO-Entomology, Canberra) visited the lab in his capacity as a collaborator in this project and has been providing his critical inputs towards the development of the key.

**Barbara Clifford** is finalising the data sets from the PNG fruit fly project. **Ann Beames** and Barbara continue to add to and curate the group's reference collection of fruit fly specimens at an impressive rate. The group has two new students. **Karen Hurley** has started her MPhil on the behaviour of fruit flies in relation to protein sources. **Solomon Balagawi**, from the National Agricultural Research Institute, PNG, has taken up a John Allright Fellowship (ACIAR) towards an MPhil at GU with the group. **Raghu** is currently writing up his PhD thesis and associated papers.

**What is harder to collect than a stilbopterygid?**

**.....A movingbpterygid!**

— Contributed by Queensland Museum.

### **News from University of Queensland**

**Claire Baker** was awarded a UQ postgraduate travel scholarship to travel to Alabama in May, 2002 to collect a species of glow-worm to use as an outgroup in her molecular and morphological phylogenetic study of the Australian/New Zealand glow-worm fauna. She will also be rearing the larvae to adults and identifying the American species officially. Local tourist centres have identified them as *Arachnocampa luminosa*, which is unlikely as this is the New Zealand species. It is more likely the species is the same or more closely related to the species occurring in North Carolina. The analysis will take place in Alameda at Xenogen Corporation, a biotechnology company which is currently using bioluminescent genes for drug trials.

## News from CSIRO Entomology, Long Pocket Laboratories, Indooroopilly.

Our friend, colleague and mentor, **Lindsay Barton Browne**, is returning to Canberra after spending 12 years in Brisbane in his role as an honorary research fellow. We all thank Lindsay for his good company and inspired scientific guidance and wish him the best for the future.

**Paul De Barro**, **Don Sands** and **Marc Coombs** attended the First International Symposium on Biological Control of Arthropods at Honolulu, Hawaii 13-18 January. Paul De Barro presented a joint paper with **Stefan Schmidt** (CSIRO Entomology Canberra) on Australian native whiteflies and their parasitoids; Don Sands and **Jim Cullen** (CSIRO Entomology Canberra) made a presentation honouring the lifetime achievements of Doug Waterhouse. Don also presented a paper co-authored with **Roy Van Driesche** (Univ. Massachusetts) on developing techniques for host range testing of arthropods in quarantine. Marc Coombs presented a paper on post-release evaluation of the green vegetable bug parasitoid *Trichopoda giacomellii*.

**Shama Khan** and **Veronica Brancatini** have been revamping a quarantine facility at the CSIRO Long Pocket Laboratories in preparation for importation of new parasitoids (*Eretmocerus* spp.) for host range testing against silverleaf whitefly *Bemisia tabaci*.

**John Goolsby** reports that a second biocontrol agent for *Melaleuca* has been released in Florida, USA. The paperbark tree, *M. quinquenervia* was introduced into Florida in the United States at the beginning of this century. In the last 30-40 years, *M. quinquenervia* has greatly expanded its range in southern Florida where it now infests over 200,000 hectares causing extensive environmental and economic damage. Trees, which can grow to 30 m in height, flower and seed prolifically and form dense forests, which displace native plants and animals. A joint

biological control program for melaleuca was initiated between the United States Department of Agriculture (USDA), Agricultural Research Service and Commonwealth Industrial and Science Research Organisation, Division of Entomology (CSIRO). The USDA operates the Australian Biological Control Laboratory (ABCL) with CSIRO to conduct research on biological control of plants that are native to Australia and Southeast Asia and have become weeds in the USA. This interaction leads to sharing of research findings and exchange of biological control agents which is of benefit to both countries.

The first biological control agent, the melaleuca weevil, *Oxyops vitiosa* was released in 1997. The weevil is now well established and having a considerable impact on melaleuca in southern Florida. A second agent, the melaleuca psyllid, *Boreioglycaspis melaleucae* was released in Florida USA on Feb 12, 2002. The melaleuca psyllid was originally collected near Brisbane, Australia by **Matthew Purcell** (CSIRO Entomology). ABCL staff members **Matthew Purcell**, **Jeff Makinson**, **Dr. Joe Balciunas**, and the late **Dr. Charlie Turner** all contributed to the evaluation of this agent in Australia. **Gary Buckingham** and **Susan Wineriter** (USDA) conducted the quarantine screening in Florida. **Dr. Ted Center** (USDA), the Melaleuca project leader, reports that two months after release, the melaleuca psyllid is established locally and spreading. The joint CSIRO/USDA team are optimistic that the psyllid will have a lasting impact on melaleuca and in a broader sense contribute to the long term conservation of the Florida Everglades.

Research on *Parkinsonia aculeata*, a weed of national significance, has recently received a leg-up. **Rieks van Klinken's** work on plant ecology and impact of released biocontrol agents has expanded with federal NHT funding. From the same source, surveys of natural enemies as potential new biocontrol agents has been funded. **Tim Heard** and **Ricardo Segura** recently travelled to Costa Rica and Nicaragua to initiate these surveys. While in

Costa Rica, they attended a conference on the Globalisation of Agricultural Research.

Surveys for new biological control agents for another WONS weed, alligator weed, began late last year in Argentina. **Alejandro Sosa**, based at **Hugo Cordo's** USDA lab in Buenos Aires was appointed to the project and in November **Mic Julien** joined surveys in northeastern areas and areas south and east of Buenos Aires.

**Mic Julien**, and **Rieks van Klinken** in company with Darren Kriticos, Ric Roush, Rachel McFadyen and Dane Panetta visited South Africa to explore opportunities for collaboration on weeds research of common interest to the two countries. Recommendations are being prepared for the Department of Education, Science and Training that supported the delegation.

The bellyache bush (*Jatropha gossypifolia*) project is steaming along with progress on several fronts. **Richard Chan** has finished host testing the first biocontrol agent against this weed, the scutellerid *Agonosoma trilineatum*. **Tim Heard** and **Ricardo Segura** found this insect in Venezuela. Tim and Richard will soon make an application for permission to release. **Cathy Lockett** visited Long Pocket to learn more about this insect, as she will be responsible for its rearing and release in north Queensland. A workshop on the management of bellyache bush was held in February at Long Pocket Labs and a report describing current work and listing research priorities is available.

The mimosa project is achieving its goals with biocontrol agents making some important gains. New agents that attack the leaves are still needed. The latest agent (number 13) is *Macaria pallidata*, a consummate leaf-consuming geometrid from Mexico. **Tim Heard** and **Areli Mira** submitted an application to release this agent and hopefully releases will be made this wet season.

**Nadine Graham** and **Bruce Hutchings**, NT DBIRD (formerly NT DPIF), visited Long Pocket for a week to learn rearing techniques for *Macaria* and *Agonosoma* the next bellyache bush agent.

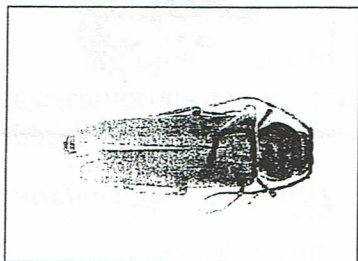
**Ricardo Segura** and **Mic Julien** surveyed in Venezuela and Mexico late last year for potential agents on hyptis (*Hyptis suaveolens*) a bellyache bush. Morphological variation in hyptis and the differences in insect diversity and numbers between plant populations suggest that this species needs revision. Plant collections have been sent for assessment and DNA comparisons are underway. So far studies conducted by **Gio Fichera** on various insect species collected from hyptis have resulted in their being rejected as potential agents or they failed to breed on the Australian hyptis type.

### **AQIS News**

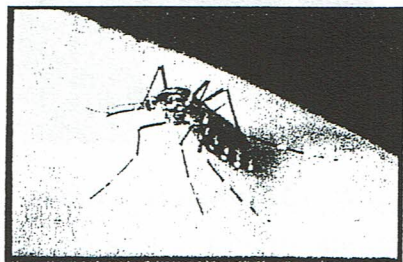
Four interesting quarantine detections to mention. The first involves the discovery of a live burnt pine longhorn beetle (*Arhopalus ferus* – Coleoptera: Cerambycidae) hitchhiking in the baggage of a passenger returning from New Zealand. This is an introduced pest to New Zealand that regularly rears its ugly head in Australia, but normally in association with cargo on vessels, especially consignments of kiln dried timber. The intercepting officer quickly dispatched the illegal immigrant into spirit when it's passport was unable to be located.

Another 'alien' tried to make it's way into Australia in an imported motor yacht. The craft had been imported from Singapore on a flat rack and the preliminary inspection revealed live mosquitoes within the toilet. The vessel was quickly re-secured and a knock down spray conducted to eliminate any adult mosquitoes. Next day it was re-examined and specimens collected for identification. They were subsequently identified as Asian tiger mosquitoes (*Aedes albopictus* – Diptera: Culicidae). This

species poses a significant health risk to Australia and it is regularly intercepted on a range of cargo, including machinery, tyres, steel and yachts. The water tanks and other water receptacles (eg. toilet) were also super chlorinated to eliminate the aquatic stages.



*Arhopalus ferus*



*Aedes albopictus*

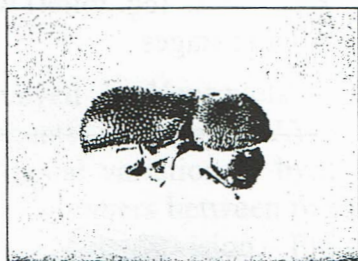
In Cairns, imported Indonesian furniture was found to be infested with the powderpost beetle *Minthea reticulata* (still considered to be exotic to Australia). The item of furniture was able to be traced to a particular consignment which was accompanied by a valid fumigation certificate and was also voluntarily fumigated on arrival. Other furniture from the same consignment still on the showroom floor has also been found to have live borer activity and has undergone treatment. Investigations as to why the fumigation was not successful are currently underway as well as tracebacks of furniture from the same consignment already sold to the public.

A member of the public from Hervey Bay was a little perturbed to find her brand new \$4000 cane lounge suite was infested with the exotic auger beetle *Dinoderus bifoveolatus*. The furniture was purchased from a Bundaberg store (supplied through a NSW company) only a month ago. Follow-ups are being made to determine if this piece can be linked to a particular consignment,

and if successful, distributions of other furniture from that consignment.



*Minthea reticulata*



*Dinoderus bifoveolatus*

## A New Order of Insects?

**Bijal P. Trivedi**

**National Geographic Today**

**Reprinted with permission from National Geographic**

For the first time in 87 years, researchers have discovered an insect that constitutes a new order of insects. Dubbed "the gladiator" (for the recent movie), it lives in the Brandberg Mountains of Namibia, on the west coast of Southern Africa.

Entomologist Oliver Zompro of the Max Planck Institute of Limnology in Plön, Germany, who identified the creature as unique, said it resembles "a cross between a stick insect, a mantid, and a grasshopper."

Pictured above (go to U.R.L. for photograph) is a new, as yet unnamed species that has been identified as belonging to a new order of insects. It lives atop the Brandberg Mountains in

Namibia, dwelling in grasses that spring from rock crevices, and probably feeds mainly on spiders and small insects.

It differs from a stick insect, Zompro noted, because its first body segment is the largest. Unlike a mantid, it uses both its fore and mid legs to catch prey, and unlike a grasshopper, it can't jump.

Growing up to four centimeters (1.6 inches) long, "the gladiator" is carnivorous and nocturnal. It lives at the base of clumps of grass that grow in rock crevices.

Zompro first suspected that he was seeing a new insect order while examining fossils of stick-like insects sent to him by amber collectors in Germany. After finding similar specimens in more recent collections at museums in London and Berlin, he set out to determine whether the insect—which had been presumed extinct—might still be found in the wild.

The existence of the insect was confirmed last month on a field trip to Namibia. The discovery of the new insect order, which has been named Mantophasmatodea, increases the number of insect orders to 31.

"This discovery is comparable to finding a mastodon or saber-toothed tiger," said Piotr Naskrecki, director of Conservation International's new Invertebrate Diversity Initiative.

Diana Wall, an ecologist at Colorado State University in Fort Collins, called the discovery "tremendously exciting" and said it could give scientists "a new perspective on how life fits together."

"This new order could be a missing link to determining relationships between insects and other groups," she said, adding: "Every textbook discussing the orders of insects will now need to

be rewritten."

No new order of insects has been identified since 1915. Zompro said he got lucky. "So many zoologists all over the world have combed the Earth for new specimens in so many locations that the chance of finding a new order is close to zero," he said.

Zompro, a specialist in stick insects, was studying a group of fossils sent to him by various collectors when he began to suspect he was seeing a new type of insect. The oldest known specimen of the newly identified insect was encased in a 40-million-year-old chunk of golden amber.

Over a period of six months, Zompro received nearly two dozen specimens that led him to conclude he had discovered a new order, but one that he thought was now extinct. One amber nugget contained a perfectly preserved adult specimen. Another fossil had captured the insect in the cannibalistic act of eating another.

"It's a big insect and difficult to overlook. That's what is so amazing" about the finding, Zompro said. Sifting through entomology collections at the British Museum of Natural History in London, he found an adult male insect from Tanzania that looked remarkably like the specimens entombed in amber. A few weeks later, he came upon a female specimen of the insect at Berlin's Museum of Natural History.

When Zompro dissected the specimen from the Berlin Museum, he found the remains of insects in its gut, indicating that the stick-like insect was a carnivore. All other known stick-like insects are plant eaters.

"At this point, I was sure that I had found an absolutely new order of insects," said Zompro.

Both of the insects Zompro observed in London and Berlin appeared related to the 40-million-year-old fossilized insect encased in amber. But the museum specimens had been collected during expeditions in the last century, suggesting that the insect was not extinct.

Zompro photographed the three specimens and sent the pictures to museums in Africa and South America, requesting information about any insects that appeared to be similar. The National Museum of Namibia responded with a specimen that had been found in the Brandberg Mountains. It appeared to be from the same insect group.

Eugene Marais, the museum's curator of entomology, met with Zompro in Berlin and examined the original amber fossil. Based on their analysis, Zompro made plans to travel to Namibia to search for the insect. Earlier this month, he joined an expedition to the Brandberg Mountains, jointly sponsored by Conservation International, the Max Planck Institute, and the National Museum of Namibia. The team consisted of 16 entomologists from Germany, England, South Africa, Namibia, and the United States.

The scientists were dropped onto a mountain peak in the remote area and began a painstaking search on the stony, arid summit. After a night of shaking grass bushes, a scientist looking for insects called silverfish found the first of the live insects that came to be known as "the gladiator."

During the trip, Zompro collected a dozen of the insects, which he carried back to his lab in Germany to study mating, feeding, and other forms of behavior in the insects. Aggressive tendencies became one area of interest—a couple of the insects apparently were eaten during the trip back.

Zompro plans to return to Namibia to study the distribution of the

insect in Namibia. Naskrecki of Conservation International said Zompro's discovery is important because it "tells us that there are places on Earth that act as protective pockets, preserving tiny glimpses of what life was like millions of years ago."

The Namibian insects, he added, "are one of the last living witnesses of a time when America and Africa were still part of the same land mass. This order was thought to be extinct for 35 to 50 million years."

(for more information, go to

[http://news.nationalgeographic.com/news/2002/03/0328\\_0328\\_TVstickinsect.html](http://news.nationalgeographic.com/news/2002/03/0328_0328_TVstickinsect.html))

#### **Corrections to contact details on back cover**

Please note that the following changes to contact details of Society office bearers:

Tim Heard's telephone number is (07) 3214 2843

Jenny Beard's telephone number is (07) 33657085 and her email is [j.beard@zen.uq.edu.au](mailto:j.beard@zen.uq.edu.au)

Bronwyn Cribb's telephone is (07) 33657086 and fax is (07) 3365 2199

## SOCIETY SUBSCRIPTION RATES

- ORDINARY:** Persons resident within the municipality of Brisbane - \$26pa (\$23 if paid by the AGM)
- COUNTRY:** Persons resident elsewhere - \$24pa (\$21 if paid by AGM)
- JOINT:** Couples in either of the above two categories who share a copy of the *News Bulletin*, but each otherwise have full membership privileges.  
Ordinary        \$33 pa (\$30 if paid by AGM)  
Country        \$30 pa (\$27 if paid by AGM)
- ASSOCIATE:** Students and others at the discretion of the Society Council, \$18 pa (\$15 if paid by the AGM). Associate membership conveys full membership privileges, except the right to vote on the conduct of affairs of the Society, to hold office and to nominate new members.

## THE AUSTRALIAN ENTOMOLOGIST SUBSCRIPTION RATES

- AUSTRALIA:** Individuals A\$16 pa    Institutions A\$20 pa  
**ELSEWHERE:** Individuals A\$20 pa    Institutions A\$22 pa

Subscriptions should be sent to the Business Manager, *The Australian Entomologist*.

## Sustaining Associates

Tropical Fruit Fly Research Group, Griffith University  
Pest Management Research, Department of Natural Resources  
Centre for Identification and Diagnostics, The University of Qld

## OFFICE BEARERS 2002/2003

### PRESIDENT

Dr Tim Heard  
CSIRO Entomology  
120 Meiers Road  
INDOOROPILLY Qld 4068  
Ph: (07) 3214 2483  
Fax: (07) 3214 2885  
Email:  
tim.heard@brs.ento.csiro.au

### SENIOR VICE-PRESIDENT

Dr Browwyn Cribb  
Dept Zoology & Entomology  
University of Queensland  
ST LUCIA Qld 4072  
Ph: (07) 3365 7086; 3365 3025  
Fax: (07) 3365 1655  
Email:  
B.Cribb@mailbox.uq.edu.au

### JUNIOR VICE PRESIDENT

Dr Heather Proctor  
Aust. School Environ. Studies  
Griffith University  
NATHAN Qld 4111  
Ph: (07) 3875 3844  
Fax: (07) 3875 7459  
Email:  
H.Proctor@mailbox.gu.edu.au

### HONORARY SECRETARY

Dr Jenny Beard  
Dept of Zoology & Entomology  
University of Queensland  
ST LUCIA QLD 4072  
Ph: (07) 3366 9008  
Fax: (07) 3365 1655  
Email:  
J.Beard@mailbox.uq.edu.au

### HONORARY TREASURER

Dr Greg Daglish  
Dept of Entomology  
Dept of Primary Industries  
INDOOROPILLY Qld 4068  
Ph: (07) 3896 9415  
Fax: (07) 3896 9446  
Email: DaglisG@dpi.qld.gov.au

### NEWS BULLETIN EDITOR

Dr Cas Vanderwoude  
Fire Ant Control Centre  
81A Seventeen Mile Rocks Rd  
OXLEY Qld 4075  
Ph: (07) 3310 2810  
Fax: (07) 3310 2827  
Email:  
Cas.Vanderwoude@dpi.qld.gov.au

## COUNCILLORS

Bill Crowe  
Quarantine Entomologist  
GPO Box 778  
Brisbane, Q. 4001  
Ph: (07) 3246 8751  
Fax: (07) 3246 8661  
Email:  
Bill.Crowe@aqis.gov.au

Claudina Rodriguez  
c/- Qld Museum  
PO BOX 3300  
SOUTH BRISBANE QLD  
Ph: (07) 3720 2941  
Fax: (07) 3846 1918

Angela Hatch  
c/- Qld Museum  
PO BOX 3300  
SOUTH BRISBANE QLD  
Ph: (07) 3840 7667  
Fax: (07) 3846 1918  
Email: angelah@qm.qld.gov.au

### EDITOR

*Aust. Entomologist*  
Dr David Hancock  
PO BOX 537  
INDOOROPILLY Qld 4068  
Ph: (07) 4053 4499

### BUSINESS MANAGER

*Aust. Entomologist*  
Susan Wright  
PO BOX 537  
INDOOROPILLY Qld 4068  
Ph: (07) 3840 7704  
Fax: (07) 3846 1918  
Email: susanw@qm.qld.gov.au

## NOTICE OF NEXT MEETING

The next meeting of the Society will be held at 7.00 pm on **Monday 13<sup>th</sup> May** in **Room 388, GODDARD Building**. The main business will be: **Carrie Hauxwell: Successes and failures in microbial pesticides, experiences from Nicaragua and Australia**. Refreshments will be served before the meeting at 6.30 pm in the tea room, level 2. the Goddard Building, UQ.

**VISITORS ARE WELCOME**