



September
2009

Issue
No. 588

CIRCULAR OF THE ENTOMOLOGICAL SOCIETY OF NEW SOUTH WALES Inc

Next Meeting of the Entomological Society of NSW Inc

Where: Meeting Room 2, Ermington Community Centre, River Road, Ermington

When: 7.30 pm on Wednesday, 2nd September 2009

INTEGRATED FLEA CONTROL

BRYCE PETERS

Faculty of Science
University of Technology, Sydney
P.O. Box 123 Broadway
NSW 2007 Australia

Fleas are ectoparasites found in many countries. They have a complete metamorphosis, developing from egg to larvae to pupae and finally to adults. Fleas are significant pests causing problems to humans ranging from irritation to diseases which have killed millions of people. Fleas also cause many problems to companion animals such as dogs and cats and are a major source of revenue for the veterinary industry. Integrated flea control is a holistic approach aimed at doing the best possible treatment using the available knowledge and technology.

Bryce is an experienced and entertaining speaker who will share his very practical knowledge of flea biology and pest status along with the various components of an integrated flea control system.

Bryce Peters, has a degree in Applied Science (Applied Biology), a certificate in urban pest control, is a member of The New South Wales Entomology Society, The Entomological Society of America, The Mosquito Control Association of Australia, the Australian Institute of Biology, the Australian Environmental Pest Managers Association and is a licensed pest control operator. He is the Laboratory Operations Manager of the Faculty of Science at the University of Technology, Sydney, Australia.

Bryce has 25 years experience in the area of urban entomology research working primarily with fleas, cockroaches and mosquitoes and has conducted numerous laboratory and field studies against these insect pests. His research interests focus on the efficacy of novel insecticide formulations for use in and around the home.

Current research projects include insecticide resistance in Cat fleas, field efficacy of area repellents against mosquitoes and the field evaluation of new bait formulations against ants and cockroaches.

Bryce has presented at conferences and meetings throughout Australia, New Zealand, Asia, Europe and North America.



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NOTICE: Statements made in the Circular do not necessarily represent the views of the Entomological Society of New South Wales Inc. TARSUS is for educational purposes only. TARSUS is prepared by for ESNSW by Graeme Smith Ph: 02 9981 3749 Email: le_gbsmith@optusnet.com.au

Show & Tell May meeting

Dinah Hales spoke about work she has been doing on the genus *Sitobion* (Hemiptera: Aphididae) in Australia. There are four entities, *Sitobion* nr *fragariae*, *Sitobion miscanthi*, a *Sitobion* on native Smilacaceae, and *Sitobion luteum*, a yellow aphid on orchids. The first three have questions about their identity: is *S.* nr *fragariae* a separate species? What should be done taxonomically with the chromosomal races of *S. miscanthi*? Should *S. miscanthi* be synonymised with *S. avenae*? Is the Smilax *Sitobion* a new species or is it one of the Asian ones, and if so, which? Morphometric analysis in association with the statistical skills of Canadian colleagues has answered all these questions. But if you weren't there, you'll need to wait till it's published to get the answers.



Robin Parsons talked about the mantids of urban Sydney where gardens and weedy regrowth plant communities may be home to principally five species of Mantids. These being; *Archimantis* sp., (Large Mantid of shrubs/trees); *Mantis octospilota* (Westwood), Eight – spotted mantid: *Orthodera ministralis* (Fabricius), Garden (Leaf) Mantid: *Pseudomantis albofimbriata* (Sjostedt), False Garden Mantid and *Tenodera australasiae* (Leach) Purple-winged mantid. A description of their size, appearance, preferred vegetation, life cycles, relative abundance and comments on conservation issues were presented.

Robins talk was supported by personal photographs, book plates, egg sac specimens and a well behaved model making up for the seasonal scarcity of living mantids.



Adult female *Archimantis* with recently produced egg sac. She remained near the sac until it had solidified to a sponge like texture.





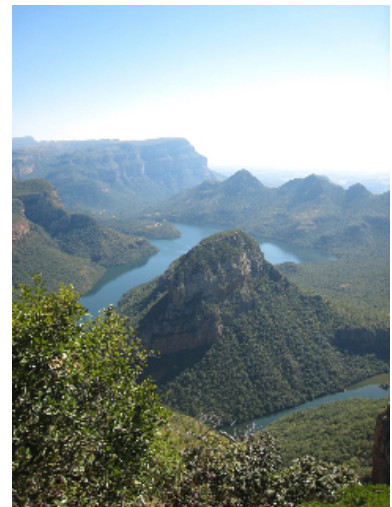
Steve Fellenberg showed the spiny stick insect (*Extatosoma tiaratum*) and a male nymph of the critically endangered stick insect from Lord Howe Island that he calls “the long lost Phasmid” (*Dryococelus australis*)! The spiny was obtained from Debbie Kent while the long lost Phasmid has only just arrived from Melbourne Zoo the day before. Stephen had asked for some males as the two adult females he has are laying unfertilised eggs which may not hatch, to date having 108 of these eggs.



Barbara May brought some tiny fly larvae (1mm) are constantly falling on cars in a garden (from which tree overhead?). They are yellow (unlike *Drosophila* larvae which are white) and contain a dark area (gut contents?). Supposing that fly larvae falling down would be full grown and about to pupate, she has kept them in the hope of rearing out adults, as fly larvae are difficult to distinguish.



Further to Debbie Kent's presentation at the previous meeting, *Acizzia*, the psyllid she was researching on eggplant, inhabits my Cape gooseberry. She brought a few specimens. It is an attractive insect, (2mm max) with red eyes, black thorax and green abdomen. Barbara wonders if it really is Australian, as the wild tobacco on which it is often found is South American (brought by John Macarthur?), as is the Cape gooseberry, despite its name. Ships from England to Australia picked up plants at Cape of Good Hope that people thought might do well in a similar climate here. Eggplant is also in Solonaceae. Debbie came to Barbara's place after the last meeting and collected *Acizzia* from the Cape gooseberry, together with green mirids which would be preying on young psyllids.

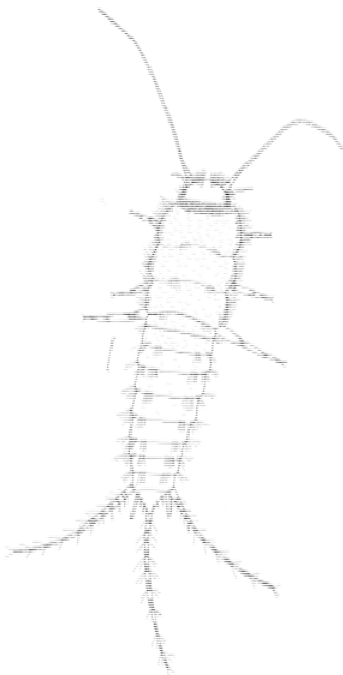


Thirdly, Barbara was given a photo of a spectacular South African grasshopper by a touring friend. It was said to be 10-11cm long, with strange "bubbling" on its pronotum. When first told of the size, she was wondering if she was going to see a N.Z. weta-type insect, or large Stenopelmatid as we have in Australia. However it appears to be an unusually large short-horned grasshopper (Acridid). The size and well-armed rear legs reminded her of some sturdy *Valanga irregularis* which were used to teach insect morphology in Brisbane, and which when alive could bend their rear legs around to rip the hand of an incautious captor. It inhabits rocky, scrubby country between Kruger N.P. and Johannesburg, a place called Mpumalanga, or Rondavels (=round houses with central columns). (See photos)



Eliza entertained us with her thriving collection of Spiny Leaf insects (*Extatosoma tiaratum*)





Acrotelsella sp from the North-west Cape



Graeme Smith brought along a small display case containing examples of giant stag beetles from SE Asia.

He also showed some of the silverfish drawings he's been working on recently. This prompted Dinah to find some teaching materials useful to students which she sent to Graeme to help him with his artistic efforts.



Acrotelsella sp from Barrow Island



Anisolepisma hartmeyeri (?) from Barrow Island



New genus from Barrow Island

THE AUSTRALIAN ENTOMOLOGIST
 A quarterly, illustrated magazine of original research on insects of Australia and the southwest Pacific
AN INVITATION TO SUBSCRIBE

Commenced in Sydney by Max Moulds in 1974, the magazine is now published in Brisbane by the Entomological Society of Queensland and is recognised as one of the leading outlets for quality, refereed research on native insects in Australia. In particular, it publishes much of the new information on Australian butterflies with more than 200 papers since inception. Attractively presented on quality paper, it carries much colour work, while the cover features illustrations by Australia's top insect artists.

Annual subscription for individuals is \$25 in Australia, \$30 in Asia/Pacific and \$35 elsewhere. To subscribe send name and address with cheque/money order (payable to *Australian Entomologist*), to Business Manager, Box 537, Indooroopilly, Qld. 4068. To pay by credit card, send email request to geoff.monteith@bigond.com and an email invoice will be sent to you, or use the subscription form at <http://esq.org.au/entomologist.html> Ask about our back issue sale.

Book Review

Dust Mites Colloff MJ, CSIRO Entomology
June 2009. CSIRO Publishing, 600 pages, hard cover
with illustrations.
Price: \$150.00

Dust mites are arguably the most important urban mites, at least by public perception, in many parts of the world, with these microscopic and sightless mites being regarded as the single most important arachnid associated with many allergic and non-allergic diseases in humans. These include asthma, rhinitis, atopic eczema and gastrointestinal allergies, to name a few. Dust mites are therefore regarded as a significant risk to public health throughout the world and are commonly found in beds, clothing, carpets and furnishings throughout the home.

Although dust-mites themselves are harmless to most people, the mites produce potent allergens in their gut that are then concentrated and excreted in their faecal matter.

Dust Mites by Matthew J Colloff is a key reference work that provides a unique insight into the biology of dust mites. This book incorporates, for the first time in a single 600 page volume, the importance of dust mites around the globe, including their biology, environmental habitat and human allergic response to their associated allergens. Extensive coverage of dust mite taxonomy, anatomy, ecology, and population dynamics is also included in this book, together with comprehensive chapters on dust-mite allergens, allergen biochemistry and epidemiology.

Chemical and non-chemical control of both dust mites and their allergens, together with recommendations for allergen avoidance, are also included.

The book is very well illustrated, truly comprehensive, and has an extensive bibliography. The identification keys are also very comprehensive and will be of great value to mite taxonomists.

Eminently readable, this landmark work is the distillation of 25 years of research by one of the world's leading acarologists and deserves a prominent place in the library of anyone interested in dust mites and their associated allergens, including;

- researchers working in the area of asthma & allergy, such as immunologists, epidemiologists and clinical allergologists,
- asthma and allergy clinicians and specialist nurses,
- acarologists and medical entomologists,
- teaching hospitals,
- those working in the industry field of house dust mite control.

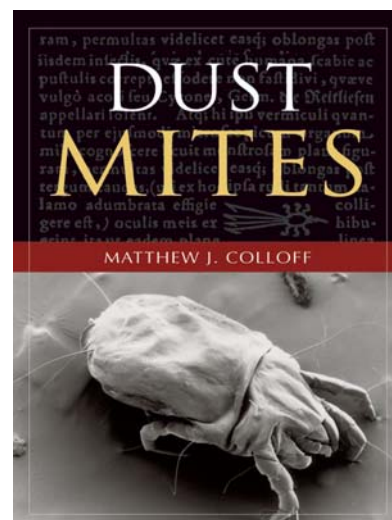
This book is beautifully written and also accessible to the lay reader.

Dr. Colloff is to be congratulated on his achievement in making such a vast body of knowledge so readily available

About the Author:

Dr. Matthew Colloff is a senior research scientist with CSIRO Entomology based in Canberra and has studied the biology and ecology of dust mites for the past 25 years. In this time he has focused on factors affecting their global distribution and abundance, together with methods for dust mite control.

Review by Ian Thompson
Principal Scientist (semi-retired)
Reckitt Benckiser



A walk in the park

West Macdonnell National Park, NT (collecting a few silverfish along the way)

Graeme Smith

In July my wife Louise and I jumped at the opportunity to leave our teenage sons in the care of their grandparents to join some friends on a walking trip in the West Macdonnell Ranges near Alice Springs. The National Parks have developed an excellent 230 km long walking trail however we were only able to get a small taste of it with a mixture of day walks and overnight hikes. While the main aim of the trip was to go walking, I couldn't help myself and decided to see if I could get a permit to collect silverfish along the way.



I'd heard stories that it was very difficult to get permission to collect in the Northern Territory so I contacted one of our members based in Darwin (Dr Graham Brown) and he suggested I talk to one of the entomologists within the Parks and Wildlife Commission (Dr Chris Palmer). Chris was happy to support my objectives as he had found it difficult to identify some *Acrotelsella* species collected in the area. I applied for a permit which was duly granted without any problems. The conditions were not onerous. I had to contact the rangers in the park when I arrived, I had to avoid being conspicuous when collecting, I needed to supply a summary report (excel spreadsheet) with details of specimens and GPS location within 3 weeks of the expiry of the permit and if I described any new species, all holotypes and half the paratypes had to go to the Museum and Art Gallery of the Northern Territory.

It wasn't so easy to fit in the collecting with the rest of the group (all non-entomologists). If I stopped to look for silverfish and happened to find any (and I had about a 30% strike rate), by the time I caught it, photographed it, recorded habitat, GPS locations and looked for a few more specimens in the same area, about 20-30 minutes had passed and I had to walk like crazy to catch up with everybody. There was no chance to use any sort of trapping systems or leaf litter sampling tools. I was just able to dig through the leaf litter and soil or look under rocks. I generally had more success in the mornings and suspect that the silverfish are slower and closer to the surface in the cooler moister mornings, whereas at the end of a hot day (well not too hot at this time of the year) they were deeper down and when I did see one they moved so fast that I rarely managed to catch them.

Just one word of warning for anyone else as naive as I attempting to grab at a fast moving insect under spinifex. This grass has lots of spikes that break off in your hand. By the end of the trip I'd learned to move the spinifex aside and to plunge a small shovel into the soil below the escaping silverfish and to deposit the lot into a small plastic container where I could sort through at a bit more leisure and with a lot less pain.



spiteful spinifex

The collecting was however quite fruitful. Twenty one specimens belonging to six morphotypes (= species?) were collected. All belong to the family Lepismatidae and all three subfamilies known to occur in Australia were represented (Ctenolepismatinae, Heterolepismatinae & Lepismatinae). No inquiline Atelurinae or soil dwelling Nicoletiidae were collected but this is probably a reflection of the superficial sampling methods used during this short visit, rather than their absence.

Four of the species collected belong to the genus *Acrotelsella*, a genus that is causing me a great deal of trouble as the variability seems to be very high. Some species seem to be quite consistent in their morphology but others (or am I looking at a complex of species?) seem to be extremely variable. This latter group is the most commonly collected one but it is going to take me a long time to sort things out. I think I need a partner who can do some DNA analysis.

One *Acrotelsella* species however stood out as something unusual in that it has small (vestigial?) medial urosternal combs; something known in other genera within the subfamily but not in this genus. This very attractive species (to me anyway) was the only one I found here living on the underside of rocks (something common elsewhere) and it was living at 1194 m a.s.l., (not far below the summit of one of the tallest mountains in the Northern Territory - Mt Sonder). Perhaps it is a relict species isolated in a cooler mountain top habitat? All other species collected at the hotter lower altitudes were living in soil or leaf litter. Maybe it's too hot to live under rocks in this area however my visit was only cursory and I wouldn't be surprised if these thoughts get completely overturned if I manage to visit the area again. Mature male and female specimens were collected so I should be able to put together a good description when time permits.



Acrotelsella sp



Acrotelsella sp. from Mt Sonder

A species of *Heterolepisma* was collected in soil below leaf litter in a number of locations and is probably widespread. This genus is relatively commonly collected and complex so will take some time before I can do anything useful with it.

Finally an extremely unusual species of Lepismatinae was collected in leaf litter near the Ormiston campsite. From outward appearance I thought I'd collected a species of the little known genus *Anisolepisma* but was even more surprised when I got home and put it under the microscope. It has a highly modified prosternum, reminiscent of some Acrotelsatinae but it does not have their diagnostic pectinate macrochaetae. While clearly related to *Anisolepisma*, this species cannot be placed within the current generic structure of the subfamily and will probably need to be described as a new genus. Although only two specimens were collected they both appear to be mature and both sexes are represented.



Heterolepisma sp. found in soil



New genus of Lepismatinae



Louise on Mt Sonder

While silverfish are unlikely to be the motivation for most people, I would still recommend a visit to the West MacDonnell Ranges for many other reasons. The scenery is spectacular and there are views wherever you look. The National Parks have done a great job putting in water tanks and trail markers and the climate in July was ideal; warm during the day and cool but not freezing at night.

Graeme Smith



Australian Entomological Society
40th Annual General Meeting and Scientific Conference 2009
Darwin, Northern Territory
25–28th September 2009

A joint meeting with
The Society of Australian Systematic Biologists
and
The Australian Coral Reefs Society

The Charles Darwin Symposium is an annual event supported by Charles Darwin University and the Northern Territory Government. In 2009, a special symposium will be held to mark the 200th anniversary of the birth of Charles Darwin, the 150th anniversary of the publication of *The Origin of Species* and the 170th anniversary of the visit of *The Beagle* to northern Australia. This symposium will be held 22-24 September leading into the AES joint conference.

Conference Secretariat:

Sally Brown Conference Organiser

Conference Connections

PO Box 108, Kenmore QLD 4069 Australia

CONFERENCE WEBSITE: <http://www.evolutionbiodiversity2009.org/>

Society web site

www.entsocnsw.org.au

I'm still not receiving any contributions to the web site other than our regular posting of Tarsus, but hits are still reaching about 700 per month. Just imagine if we had more information available.

Don't be shy. Send me a new photo for our front page.

I would be more than happy to train anyone who would like to learn how to manage the site. It's not that hard once you get used to a few things. I knew nothing about web pages until I volunteered to set this one up and we now have a manual that leads you through the steps.



For any problems (e.g. lost passwords), submission of photos for publication or suggestions for improvement get in contact with Graeme Smith. (0421 617 377) or le_gbsmith@optusnet.com.au

Council Position(s) to become vacant

Journal Editor

Garry Levot has decided to stand down at the next AGM after 10 years in the position of Honorary Journal Editor. Garry has done an outstanding job of ensuring the membership has a quality journal in which to publish their research. He has maintained the high standard of our Journal, greatly reduced our publication costs and published it on time. We are really grateful for the effort that Garry has put in to the Society.

If you'd like to step into this role please let the Council know. He has offered to still do the layout work but the new incumbent will still have plenty to do. For more information give Garry a call on 4640 6376.

The responsibilities of the position can be checked if you log in as a member to our web site <http://www.entsocnsw.org.au/> and go to the Constitution section. Duties are spelled out on page 14.

Circular Editor

After 3 terms in the job (15 issues to date) Graeme Smith is running out of stories to print and would like to have a go at the Journal Editor's role if elected to the position. This means we would need a new Circular Editor and we can all have a break from stories about silverfish.

The responsibilities of the position can be checked if you log in as a member to our web site <http://www.entsocnsw.org.au/> and go to the Constitution section. Duties are spelled out on page 13.

The role is not too onerous and it should be possible to do the job even if you can't get to the meetings (but you'd need to co-opt a Show & Tell reporter). The newsletter is currently created as a simple Microsoft Word document but this then needs to be turned into a pdf document using Adobe Acrobat or something similar. This can probably be arranged within the membership if you don't have access to this programme.

The bulk of the content comes from the speakers notes (prepared by the speaker themselves), some notes and photos of the Show & Tell sessions, an Insect of the Month (I still have a couple of spare ones ready for use when needed), the future programme plus anything else that might turn up (e.g. conference reports, stories from members etc).

Tarsus needs to be e-mailed to the membership using Microsoft Outlook which takes about half an hour in general. Maintaining the membership list also comes with the job (using an Excel spreadsheet) but this only requires a few changes per year.

The Circular is important to keeping the membership informed of Society activities so we hope somebody would like to have a go, even if just for a year (5 issues). Give Graeme a call if you want to know more on 9857 2470 (w) or 9981 3749 (h).

Bi-monthly Meetings

The Society meets **BI-MONTHLY** unless otherwise advertised. General meetings with a speaker will generally be held only on the “odd numbered” months (March, May, July, September, November) while the Council will meet more frequently. Speakers tentatively scheduled for the coming general meetings are shown below.

This timing allows us to alternate meetings with the Society for Insect Studies (SFIS) which meets at the Australian Museum at 7.30 on the second Tuesday of the “even numbered” months.

Future Events

Date	Speaker	Title
Sunday 30 th August 9am til 4 pm	Gith Strid-Nwulaekwe	Ku-ring gai Wildflower Festival
2 Sept, 2009 7.30 pm	Bryce Peters	Flea control
4 Nov, 2009 7.30 pm	Graeme Smith	Cave Insects (some experiences from Australia and PNG)
December, 2009	TBA	Christmas Function
Early 2009	Warrick Angus	Burrowing Bees

Venue:

Meeting Room 2
Ermington Community Centre
10 River Road Ermington

Meetings start at 7:30 p.m. (directly following the Council meeting)

Talks run for around 45 minutes, with 10 minutes for questions, followed by a light supper. Guests are most welcome.

Getting there:

By Car: From Victoria Rd turn into Spurway St (head towards Parramatta River). Turn right into Jackson St then left into River Rd. If heading north on Silverwater Rd, turn right into Victoria Rd then proceed as above. If heading south on Silverwater Rd take the Parramatta off ramp, cross Victoria Rd and proceed into River Rd. If you miss the off ramp, turn left into South St, then left into River Rd.

By Bus: Routes 525, 523 and L20 depart from Argyle St near Westfield shopping centre near Parramatta station. Routes 523 and L20 depart from West Ryde station. Get off at the Ermington shops. River Rd passes between the supermarket and the hotel.

SOCIETY POSTAL ADDRESS

C/- ENTOMOLOGY DEPARTMENT
THE AUSTRALIAN MUSEUM
6 COLLEGE STREET
SYDNEY NSW 2000

MEMBERSHIP FEES 2009

ORDINARY MEMBERS	\$50
COMPANY ASSOCIATES	\$60
STUDENT MEMBERS	\$25
CORPORATE MEMBERS	\$50

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