

TARSUS

Welcome to *Tarsus* for another year. It's around this time that members of your Council emerge from their holiday season torpor to realise there's a lot of work to be done to get the Society through another year. A major task which seems to get harder each year is to organise speakers for the seminar series. With the exception of February, March and May, 2006 is an open book. We are grateful to Steve Doggett for stepping forward at short notice to speak at our February meeting. If there are any members ready to volunteer to give a talk in future, or suggest someone else who may be willing, please let me know.

On the following pages you will find:

- Insect of the month, by Ted Taylor
- "Aphids down under", a review of the 7th International Symposium on Aphids, Esplanade Hotel, Fremantle, Australia, 2-7 October 2005, by Dinah Hales (supplied last year but forgotten about by yours truly).
- Seminar series program for 2006.

Martin Horwood
President

Next Meeting of the Entomological Society of NSW

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

When: 7.30 p.m. on Wednesday, 1 February 2006

Speaker: Stephen Doggett, Senior Hospital Scientist, Department of Medical Entomology, Westmead Hospital

Title: "THE RISE OF THE BED BUG"



Abstract: Bed bugs are insects belonging to the order Hemiptera, and in Australia there are now two introduced species; the common bed bug, *Cimex lectularius*, and the tropical bed bug, *Cimex hemipterus*. During the second part of the 20th century, bed bug infestations became a rare event, with improvements in hygiene concomitant with the use of powerful residual insecticides. However, the situation has reversed in many countries, including Australia. Since 2001, we have recorded a 400% increase in bed bug samples submitted to our laboratory. Pest controllers are observing a similar trend, with one company reporting a 1,000% rise in the number of treatments. Bed bug infestations are being found in all levels of accommodation, from homeless shelters to five star motels, from homes to trains to even cruise ships. Over the last three years some backpacker lodges have had close to every bed in their facility infested with bed bugs at some time.

Stephen Doggett has been at the forefront of documenting the rise of bed bugs and has been working in close association with the pest control industry in developing best practice for control. In his presentation Stephen will show you how to identify bed bugs (& how to look for evidence that you are not sleeping alone!), look at their ecology, their meteoric rise and why this has happened, and finally, he will discuss the various strategies employed to control bed bugs.

Insect of the Month

Termite alates – Ted Taylor

Termites are most active at this time of year because the warmth and higher humidity speed up their activity and trigger the mass migration of the reproductives known as alates (Figure 1). In the late spring and early summer, it is these winged forms that fill the air and flutter down the evening breeze in the leafy suburbs of Sydney and most other mainland towns.



Figure 1. Alates of *Schedorhinotermes intermedius* (Photo: Martin Horwood, NSW DPI).

Termites are often sensationalised in the media as nasty pest insects because just a few of 350 species find their way into buildings and cause damage. It is true that up to 7 out of the 350 species can damage timber in buildings in New South Wales but it is only 2 of the 7 that cause 90% of all the structural damage attributed to 'termites'. Australia wide there are perhaps up to 20 species that may enter buildings and cause damage but it is still probably only 3 species causing most of the damage. If you live in Tasmania or in the higher parts of the Southern Highlands you don't have to worry about house damaging termites at all because there are none.

What is generally not understood about termites is the fact that they are part of the natural fauna that recycle cellulose - a material that is indigestible to most other insects. In the more arid parts of Australia, termites do the work normally carried out by earth worms and other moist-soil organisms. Examples of this soil enrichment by termites can be seen in very arid desert areas in central Australia where the landscape may be dotted with individual clumps of trees - often quite far apart. Usually in the centre of each clump you will find the remains of an old termite mound which has provided the nutrients for the trees to flourish in an otherwise treeless place. In the Great Sandy Desert of Western Australia the termite mound is usually that of the Spinifex termite (*Nasutitermes triodiae*).

Termites are also valuable in playing their part to earn the tourist dollar, especially in the tropical north of Australia. The tour guides at Kakadu and Litchfield National Parks near Darwin always include a visit to those parts of the Parks that have spectacular termite mounds. The most conspicuous are made by the magnetic termite (*Amitermes meridionalis*) and the Spinifex termite, also called the cathedral termite, that builds 6 metre high mounds in Litchfield Park. Solid timber is quite safe near these termite species because they feed only on

grass stems that are collected at night by the worker termites and taken back to the mound - hence the general common name 'harvester termites' applied to this type of termite.

So next time you hear the Media blasting on about the terrible termites remember it is only the very few that give the rest a bad name - a bit like the poor old cockroaches!

**7th International
Symposium on
Aphids, Esplanade
Hotel, Fremantle,
Australia, 2-7
October 2005**

"Aphids down under"

by Dinah Hales

This is the first time one of these aphid symposia has been held outside Europe. The initial concept was developed by Professor Tony Dixon, to involve eastern European scientists in international meetings, in the days when it was politically and financially difficult for them to leave the eastern bloc countries - so we came to them, in Poland, Czechoslovakia (twice) and Hungary. Since the fall of communism, we've had magnificent meetings in Spain, France and now Australia, where we had 23 countries represented, including several from Eastern Europe.

Just on aphids, you ask? Yes, every presentation was about aphids, but they ran the full gamut of biological disciplines from taxonomy to proteomics, and from functional morphology to biological control. Being the oldest available Australian aphid, I had the honour and pleasure of giving the introductory lecture, and then chaired 3 sessions of taxonomy(!). Aphid taxonomy has certainly moved into the molecular era,

though I suspect that not all users are right on top of the theory and practice. Several younger entomologists are really on the ball and there is a level of agreement that, with the known intraspecific variation shown by this group of insects, 'total evidence taxonomy' is the best way forward.

Some interesting data came from the grid of European suction traps: for many species, warming over recent decades has advanced the dates of first arrival in the traps, and increased the biodiversity of aphids in western Europe.

The succeeding sections were concerned with population biology, ecology and genetics, aphids as vectors of plant disease, and aphid-symbiont interactions. The latter session had special interest to me as an erstwhile physiologist, with some great work coming from Spain and Japan in particular.

The section on aphid management and biological control included a paper by Lewis Wilson from Narrabri on the emerging threat of pesticide-resistant cotton aphid on Bt cotton; he concluded that cotton aphid effects on yield were predictable and should be readily controlled.

Thursday's sessions were 'Aphid Genetics and Evolutionary Biology' and 'Aphid-Plant Interactions'. While techniques have advanced enormously in the forty years since I was an honours student, I had the impression that some of these techniques were being applied without a good understanding of overall physiology and without any attempt to read papers published before the days of the electronic literature search. Hence some attempts to present mechanisms for control of aphid polymorphism were disappointing – up-regulated genes were cunningly identified, and to my mind were either irrelevant to control of polymorphism or else were a result, rather than a cause, of the determination of morph. And yet some of the investigators seemed quite willing to believe that they had really made major breakthroughs. Re-invention of the wheel is alive and well among molecular biologists.

Friday morning continued the session on plant interactions at a more molecular (genomic and proteomic) level. I was interested to hear how some groups are using the model plant *Arabidopsis*, with its fully characterised genome, to investigate interactions with aphid feeding.

There followed a special session on Phylloxera concurrently with one on aphid genomics. A large consortium of labs is working to characterise in full the genome of the pea aphid *Acyrtosiphon pisum*.

The Esplanade Hotel provided a comfortable venue, though on the expensive side for accommodation. The layout of the lecture room was not ideal, in that it was difficult to see the screen from many of the seats. (The room was wide and not deep so people on the ends of the rows saw the screen at a very acute angle, when it was not actually concealed by the speaker and podium). The buffet lunches included in the registration were of high quality – and quantity! Extra-curricular activities included an excursion to Rottnest Island, with whale watching, on a very wet Wednesday, and an excellent conference dinner at the new Maritime Museum, not to mention some well-spent evenings at the several boutique breweries within an easy walk from the hotel. Congratulations and thanks to Owain Edwards, of CSIRO in Perth, for his excellent job as organiser, and to his team of helpers.

Wanted

Articles or papers
for the
next issue of
General and Applied
Entomology.

Please send your papers
to the
Honorary Editor,
Garry Levot
Entomological Society of
NSW Inc.
6 College Street
Sydney NSW 2000

SEMINAR SERIES 2006

Date	Speaker	Title
9 February	Dr Steven Doggett	
1 March	Annual General Meeting	
5 April	To be advised	
3 May	Sue Marte, District Horticulturist with NSW Department of Primary Industries at Young	<i>Maroga melanostigma</i> - Just another boring insect? Investigations into the biological control of fruit-tree borer in prune trees

Venue:

Meeting Room 2
Ermington Community Centre
10 River Road Ermington

Meetings start at 7:30 p.m.

Talks run for around 45 minutes, with 10 minutes for questions. Afterwards a supper is provided. 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.

(Information: Martin Horwood martinh@sf.nsw.gov.au phone 02 9872 0111)

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