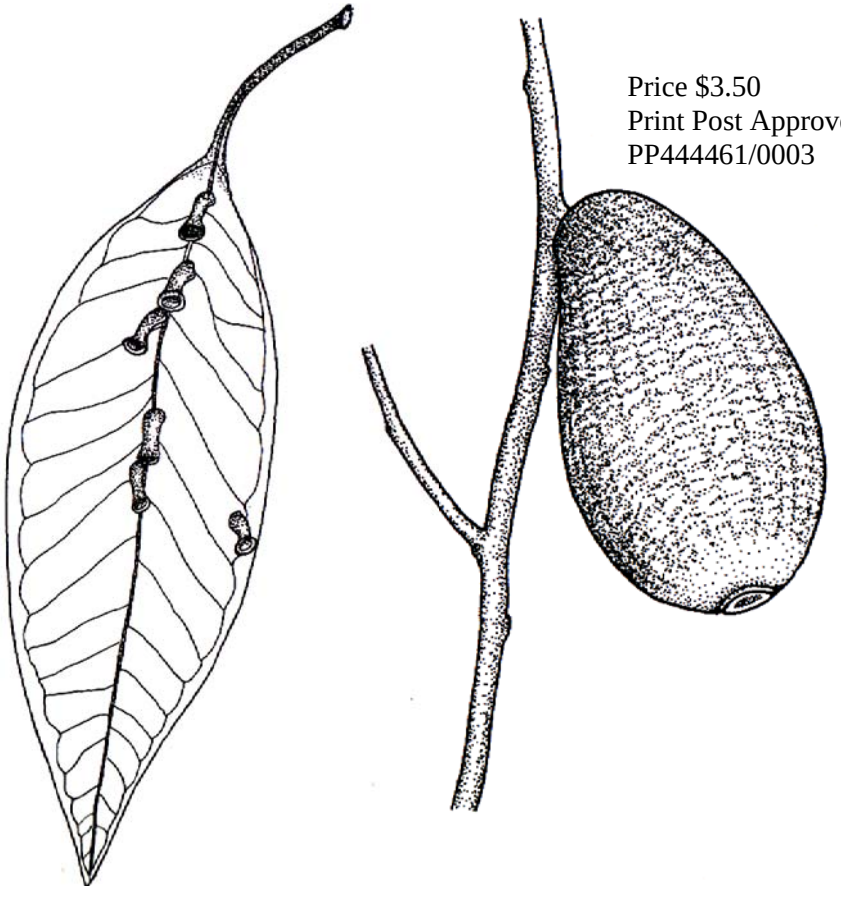
ENTOMOLOGICAL SOCIETY OF QUEENSLAND INC

NEWS BULLETIN



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THE ENTOMOLOGICAL SOCIETY OF QUEENSLAND

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Front cover illustration: Galls induced by the scale insect *Apiomorpha conica* (Eriococcidae) on *Eucalyptus obliqua*. Left: tubular galls on leaves induced by males. Right: gall induced by female on stem. Original drawing by Penny Gullan.

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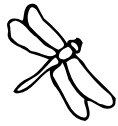


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The **ENTOMOLOGICAL SOCIETY OF QUEENSLAND INC.**, since its inception in 1923, has striven to promote the development of pure and applied entomological research in Australia, particularly in Queensland. The Society promotes liaison among entomologists 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 Monday of each month (March to June, August to December), or on Tuesday if Monday is a public holiday. 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. It is restricted to the rainforests of northern Queensland.

Minutes of General Meeting

Held in Meeting Room (Seminar Room 1–ground floor) Ecosciences Precinct, Boggo Rd, Dutton Park, Monday, November 14, 2011 at 5.00pm.

Chair: Lyn Cook

Attendance: Justin Bartlett, Bradley Brown, Chris Burwell, Lyn Cook, Alexandra Glauerdt, Jan Grigg, Penny Gullan, Judy King, Roger Kitching, Matt Krosch, Chris Lambkin, John Lawrence, Yen-Po Lin, Lance Maddock, David Merritt, Penny Mills, Chris Moeseneder, Geoff Monteith, John Moss, Mike Muller, Helen Nahrung, Don Sands, Helen Schwencke, Noel Starick, Bob Teakle, Geoff Thompson, Desley Tree, Federica Turco, Susan Wright.

Visitors: Dean Beasley, Peter Cranston, Kathy Ebert, Gordon Grigg, Greg Harper, Aki Nakamura, Rosa Schetiei, Nigel Stark, Yu Pei Tan, Irene Terry, Pauline Wyatt.

Apologies: Simon Lawson, Gunter Maywald, Doug McCarron, Matt Purcell.

Minutes: The minutes of the last General Meeting were circulated in News Bulletin Vol. 39, Issue 7, October 2011.
Moved that the minutes be accepted as a true record: Penny Mills.
Seconded: Geoff Monteith.
Carried unanimously.

Business arising: None.

Nominations for Membership:
General Membership: Doug McCarron, Kooralbyn, Qld. Nominated J. King, seconded G. Monteith.
Manon Griffiths, Ecosciences Precinct, Qld. Nominated Helen Nahrung, seconded Andrew Hayes.
Joint Membership: Ms Jeanine Kimber and Nathan Kimber, Taringa, Qld. Nominated Christine Lambkin, seconded Geoff Thompson.
New members elected unanimously.

General Business:
The December meeting is Notes and Exhibits. Please think about a contribution, and contact Lyn Cook or Judy King. The meeting will be held at 1pm, and will be followed by an informal get-together at the on-site Bistro.

Main Business

Lyn Cook introduced the speakers: Professors Penny Gullan and Peter Cranston

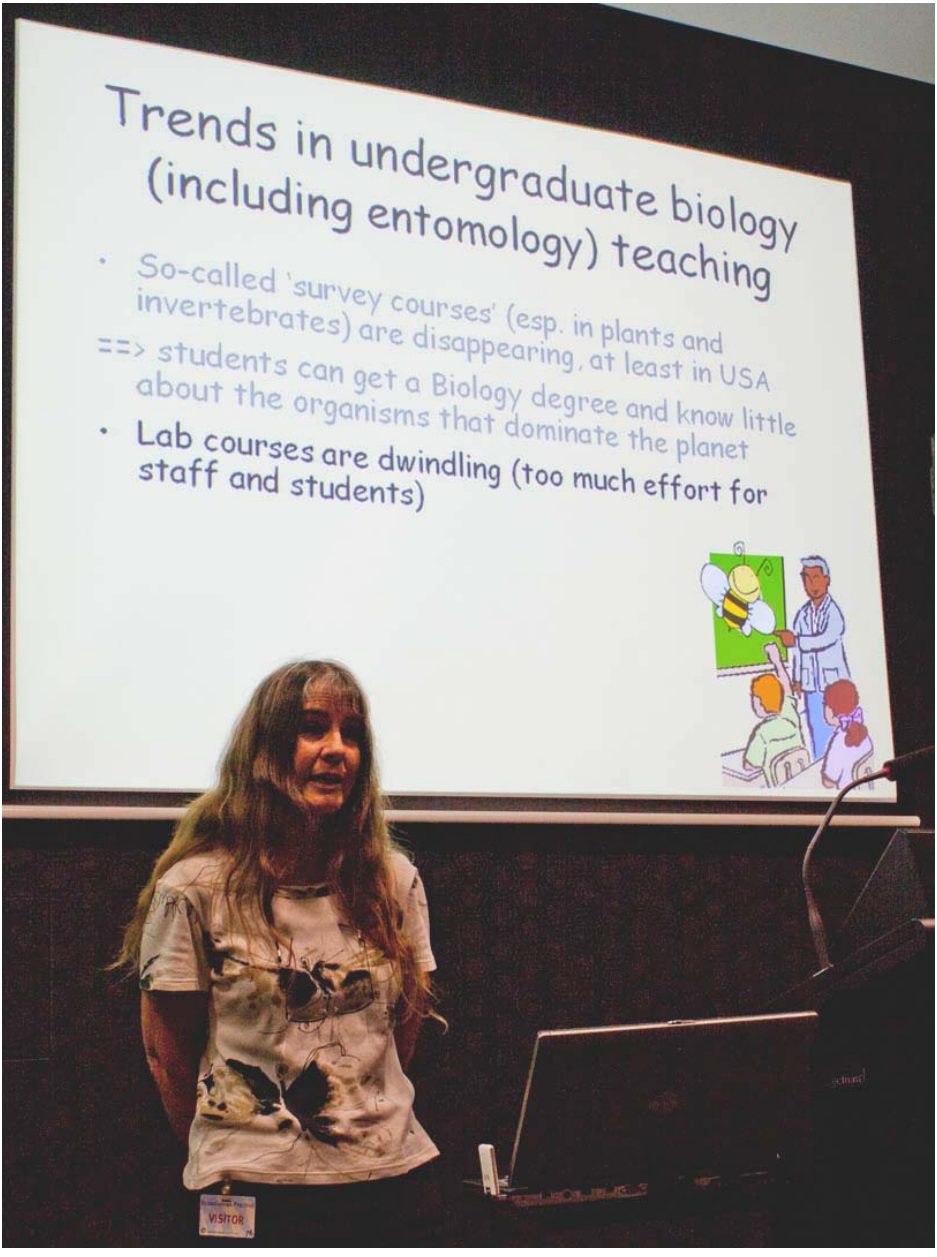
F.A. Perkins Memorial Lecture

Can teaching help engender enthusiasm for entomology?

By Penny Gullan and Peter Cranston

Division of Evolution, Ecology & Genetics, Research School of Biology, The Australian National University, Canberra.

Frederick Athol Perkins (1897–1976) was an influential figure in Queensland entomology (Marks, 1977). He conducted research on fruit flies (Tephritidae) and stoneflies (Plecoptera), provided valuable training and advice to the government on mosquito biology and control, and taught entomology to numerous agriculture, biology and entomology students at the University of Queensland. During Perkins' academic career (1926–1965), classes were very small, he usually ran laboratory sessions on his own, and he had very close contact with his students, especially during field trips. University teaching has changed radically in recent decades, with lecturers rarely having much direct contact with most of their numerous undergraduate students, and students now have rights and demands and thus more influence on the education process. So how has the discipline of entomology fared in this new educational era, and how can teaching foster enthusiasm for insects?


Trends in undergraduate biology (including entomology) teaching
• So-called 'survey courses' (esp. in plants and invertebrates) are disappearing, at least in USA
==> students can get a Biology degree and know little about the organisms that dominate the planet
• Lab courses are dwindling (too much effort for staff and students)
VISITOR

Trends in undergraduate entomology teaching

The 'survey courses' – those covering morphology, natural history and classification of organisms, especially plants and invertebrates – are disappearing, at least in the USA, and so students can obtain a degree in Biology and know little about organisms, such as insects, that dominate the planet (Rivers, 2006). Laboratory classes are dwindling too as they often require much effort for too little direct reward for staff and students, although no-one doubts the educational value of hands-on experience. Field trips are particularly important for encouraging students into entomology and other sciences, but administrators usually see these as expensive and, of course, liability issues are an ever-increasing concern. Insect collections remain an important teaching and assessment component, at least in US entomology courses. It seems, however, that the requirement to collect, prepare and identify dozens, or sometimes even hundreds, of specimens can be a huge deterrent to undergraduate students enrolling in entomology classes (Rivers, 2006). Many American undergraduates do not even know that entomology is the study of insects and thus there as been a move to modernise the image, including the name, of entomology courses and even whole departments (Carey *et al*. 2009).

Teaching using insects

Insects can be integrated into teaching at all levels, from primary to tertiary education. The fascination that most young children have for insects can be used to advantage to teach biological concepts embedded in stories about insects (Chiappini *et al*., 2011). Museum and university outreach programs can enthuse children with the wonders of insects and also assist teachers to use insects as part of their biological curriculum, especially as there are few ethical concerns with using or killing insects. The tiny wasps of *Melittobia digitata* (Eulophidae), marketed as WOWBugs, are an excellent example of an entomological teaching tool (http://www.wowbugs.com/). Entomological web sites can engage children by having sections directed at kids, as seen for example on the Kids' Corner web pages of the Bohart Museum of Entomology at the University of California at Davis (http://bohart.ucdavis.edu/#). As children become teenagers and then young adults, their attitudes to insects often change from curiosity and/or liking to fear and/or loathing, due to a combination of peer pressure and lack of familiarity with the natural world. Any activities that increase knowledge of and involvement with insects may facilitate their appreciation. A good Australian example was the description of a new species of gall-inducing wasp as a learning activity for primary school students (Hardwick *et al*., 2005).

A change of teaching style and approach, especially at university level, may greatly improve student enthusiasm for the subject being taught. A useful discussion of how a general entomology course can be transformed from teacher-centred didactic lecturing to more active student learning is provided by Rivers (2006), who still teaches at Loyola University in Maryland, USA. He advocates encouraging students to take ownership of the course by modifying the curriculum based their suggestions during the course and by incorporating student-led discussions or activities. Additionally, as mentioned above, Rivers recommends truncating the traditional insect collection, in place of which he requires just 20 identified species from which each student selects 10 for telling a natural history story.

At Cornell University in Ithaca, New York, the Department of Entomology teaches a wide range of courses including a fairly traditional course called 'Insect Biology' (not 'General Entomology'), but also courses with titles that may be more enticing to students: ' Alien Empire: Bizarre Biology of Bugs', 'Invasions: Trading Species in a Shrinking World' and 'Plagues and People' (for more information see:


DELL

http://entomology.cornell.edu/cals/entomology/undergraduate-program/courses.cfm). The 'Alien Empire' course can be taken either for two credits with just two lectures weekly, or for three credits with the two lectures plus another hour of interactive activities, but no labs or insect collection. The main textbook for the course is Waldbauer's (2005) 'Insights from Insects', in which each of the 20 chapters is about one kind of insect and its interactions with humans. The lectures for 'Alien Insects' cover much hard-core information about insects and often in considerable depth, but use excellent illustrations and photographs and emphasise interactions of insects and people.

When teaching 'General Entomology' (or the modernised 'Insect Biology') to undergraduates, is it better to introduce students first to the names and morphology of the major insect groups, or to interesting insect biology without worrying about the classification? Should you minimise scientific names and entomological jargon? But remember that students get a kick out of names such as 'frass' and 'aedeagus'. How much time in lectures should you devote to facts and concepts, and how much to videos, class interactions or exercises? We considered all of these and other issues during 10 years of teaching in the Department of Entomology at the University of California, Davis, USA. We actively sought feedback from undergraduate students but one of the most informative classes was a postgraduate participatory seminar that we taught on the topic 'Teaching General Entomology'. This seminar class was taught twice (2007 and 2009) to different cohorts of Ph.D. and M.S. students (15 and 13 respectively). The first few weeks of the 10-week teaching quarter were spent discussing literature on teaching, including teaching entomology, and considering the appropriate use of the internet and videos in class and ideas for the design of a curriculum in general entomology. Each postgraduate participant selected a topic for a 50-minute lecture, from which they prepared and delivered 20 minutes to the rest of the class, along with their plan for a course in entomology. Immediately after each mini-lecture, there was a 10-minute verbal feedback session and each speaker also received anonymous written comments from us as well as from everyone in the class. Participants were asked to give positive comments as well as instructive criticism to their fellow students and, overall this procedure worked extremely well. These postgraduate students had a huge diversity of approaches to the lecture schedule (course design) and to how to involve and enthuse undergraduates.

One of our brightest postgraduate 'teachers' went on to win the Outstanding Postgraduate Student Teaching Award from UC Davis for 2009, as a result of her many contributions to undergraduate teaching including twice running a Freshman Seminar to new undergraduates on 'Insects and the Media'. These special seminars included extensive use of videos portraying insects. It is undeniable that bug movies attract students and help to engender discussion. American undergraduate students respond favourably to the inclusion of videos in lectures but, if left to choose their own, inevitably they select non-didactic, anthropomorphic ones with little or erroneous science. Even high-quality videos that portray insect biology, such as the BBC Wildlife (Attenborough's) 'Life in the Undergrowth', require a trained mind to interpret fully the images and action portrayed. It is too easy for students to watch for entertainment alone, without interpretation and with little ability to recall salient points. Thus the instructor needs to emphasis the important aspects of each video and perhaps re-play selected parts in different lectures.

Many students are interested in the latest findings in a field and so it is worth emphasising recent discoveries and emerging problems in entomology, as well as pointing out how much there is still to learn about

insects. Keen students should be shown the diversity of research conducted by both professional and amateur entomologists and encouraged to contribute to our discipline.

A final way of enthusing students while teaching entomology is to provide reading material appropriate to what is being taught. Lecture notes and textbooks have to be relevant to the lectures, easy for students to understand and informatively illustrated. In the USA, most entomology courses require a textbook and our 'The Insects: An Outline of Entomology' (Gullan and Cranston, 2010 and earlier editions) is widely used. Free availability of the illustrations from the 'Instructor Companion Site' on the publisher's web site encourages instructors to use these in PowerPoint lectures and student notes (and presumably increases sales of the book!). With each new edition, we aim to include interesting and new information without drastically altering the format and content flow of the book. Academics do not like dramatic changes that require major overhaul of lecture notes and of course it is the lecturer, not the student, who selects the course textbook! We use boxes for novel, topical and perhaps tangential information with modest linkage to the text and, with each new edition, we add new boxes and review existing boxes to either retain them, delete them or incorporate them into the main text. For example, the recognition of a new insect order, Mantophasmatodea, was big news in 2002, but information on these heelwalkers is now mainstream and so the box from our third edition has been incorporated into the text. Boxes can also be used for highly complex issues and here 'a picture is worth a thousand words'. Indeed illustrations are an essential aid to teaching entomology, but then there's the age-old question of whether to use photographs or line drawings? Students may prefer photos and attractive images can help to spark interest in insects, but drawings can be more informative. Obviously, a balance is needed.

Engendering enthusiasm for insects: some tentative conclusions

1. Start young: expose young children to insects, especially via outdoor experiences.
2. Encourage children to reject societal and peer pressure to view insects as 'gross'.
3. Get insects into the school syllabus and into natural history clubs, etc.
4. If entomological interests survive to university years, encourage students to keep breadth in their biology courses and seek field-based experience.
5. Help students to understand that entomology is a science with many practical applications but with many exciting things remaining to discover.

Acknowledgements

We thank the many undergraduate and graduate (postgraduate) students at the University of California who provided feedback on all aspects of teaching in formal classes and participatory seminars. We especially thank Andrea Lucky, for her enthusiasm for entomology, especially the ants, for the philosophy and practice of teaching, and for everything Australian. We are grateful to the Queensland Entomological Society and president Lyn Cook for the invitation to present our thoughts on enthusing students in entomology, and to Desley Tree for hosting our visit to Brisbane.

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pscranston@gmail.com

The presentation was followed by an extended session of questions and discussion.

Vote of Thanks: Dr David Merritt

Next meeting: Reminder that the next meeting will be Notes and Exhibits meeting, Monday 12th December , at 1pm.

The Chair closed the meeting at 6.20pm and members and visitors adjourned to the Courtyard for the BBQ.

NOTICE OF NEXT MEETING

Monday 12th December 2011, 1pm

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Notes & Exhibits

Followed by an informal gathering at the Eco Café on-site

~

Seminar Room 1
Ground Floor, Ecosciences Precinct
Boggo Road, DUTTON PARK

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

ALL WELCOME

Request for galls

The photograph to the right depicts galls on a *Corymbia intermedia* leaf caused by an undescribed species of gall midge of which only part of the life-cycle is known. These galls are also known from *C. ficifolia.* More specimens are needed in order to complete the documentation of the life-cycle prior to formal description of the new species.

If found please post to me in a snap-seal bag with moist tissue. I am happy to reimburse postage cost.

Any assistance would be greatly appreciated.

Kind regards,

Ron May
11 Loch Street, Toowoomba, Q 4350

Insects in Public Art : That's One Mighty Meat Ant

Kylie Anderson
Senior Research Officer, School of Marine & Tropical Biology, James Cook University, Cairns

To continue the irregular series documenting insects in public art, I read an article in the local rag about a giant meat ant that has been installed at the entrance to Augathella, a tiny historic town in central south Queensland. Murweh Shire Council commissioned Atherton Tableland artist Amanda Feher to build the ant, to mark their junior football team's success (and to boost tourism). Guess what the footy team is named? Yep, the 'Mighty Meat Ants'! Augathella has a human population of 500; vastly outnumbered by meat ants!!

Amanda thought the timing was funny, because just two weeks before a Brisbane architect called her to build the ant, she and a mate were looking at a tramp ant magnet, and Amanda commented to her friend 'Wouldn't it be great to build a massive ant'! Wishes do come true!

The design process started with much research and countless hours of macro-photography with live, super speedy meat ants. Amanda then had to dissect and scale to 1:300 life-size. She also consulted Stef DeFavari (DEEDI Entomologist) to work out the differences between north and south Queensland meat ant varieties.

The sculpture is constructed from steel and copper. The infrastructure is made from a series of steel pipes, plates and rods bent to form the skeleton of the ant. The final part of the process is sheeting the form with copper. It is 4.5m ant out of steel and copper, and it strides vertically along a log 7.6m up in the air.

Left: Meat ant sculpture at Augathella **Above:** Artist Amanda Feher with her meat ant sculpture

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DIARY DATES 2011

Meetings held 2nd Monday of the month (or Tuesday if Monday is a public holiday)

MAR—Monday 14th	Matt Purcell	AGM and President's Address
APR—Monday 11th	Dr Diana Leeman	Small hive beetle, a recently established scourge of apiaries
MAY—Monday 9th	Dr Tim Heard (CSIRO)	Australian native stingless bees
JUN—Tuesday 14th	Notes and Exhibits & Student Award Presentation	
AUG—Monday 8th	Gunter Maywald	Shaking the eucalypt leaf beetle tree: some highs & lows
SEP—Monday 12th	DEEDI Forest Health	Semiochemicals for forest pest management
OCT—Monday 10th	Dr David Merritt (UQ)	Synchronised rhythmicity in bioluminescent insects
NOV—Monday 14th	Profs Gullan & Cranston	Perkins Memorial Lecture
DEC—Monday 12th	Notes & Exhibits	

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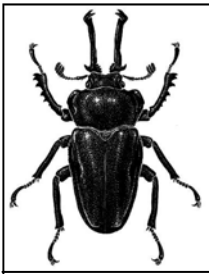

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ALL WELCOME

NEXT NEWS BULLETIN

Volume 39, Issue 9 (December 2011)
due early-mid February

CONTRIBUTIONS WELCOME

DEADLINE - Thursday 26th January 2012
Send your news/stories/notices to the editor
(justin.bartlett@deedi.qld.gov.au)