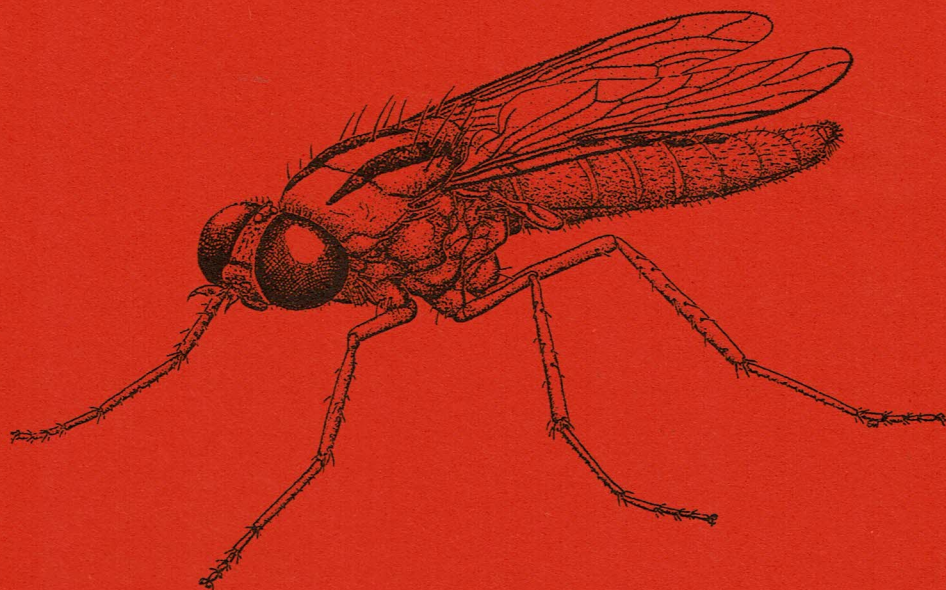




ENTOMOLOGICAL SOCIETY OF QUEENSLAND NEWS BULLETIN



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Volume 25, Issue 7, October 1997

The **ENTOMOLOGICAL SOCIETY OF QUEENSLAND**, 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 Entomology Department, The University of Queensland at 6.30 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.

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 of the Australian region, including New Zealand, Papua New Guinea and 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. Its magnificent metallic 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: A stiletto fly belonging to an undescribed genus and species of Therevidae (Diptera: Asiloidea) drawn by Shaun Winterton. Shaun and David Yeates are currently working on the systematics on this family, which is extremely diverse in the woodland and semi-arid habitats of Australia.

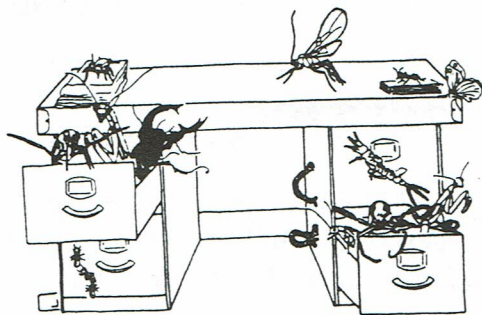
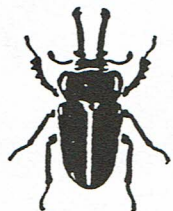


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The issue of this document does **NOT** constitute formal publication for the purposes of the "International Code of Zoological Nomenclature 3rd edition 1985". Authors alone are responsible for the views expressed.



GENERAL MEETING

Minutes of the General Meeting of the Entomological Society of Queensland Inc. held in Room 323, Hartley Teakle Building, University of Queensland, on 13 October 1997, at 6.30pm. Chaired by D. Yeates.

Attendance: L. Barton Browne, E. Exley, D. Holdom, J. Lamy, A. Loch, P. Mackey, E.N. Marks, L. Muir, H. Nahrung, G. Norton, E. Reye, J. Rogers, O. Seeman, C. Palmer, G. White, T. Withers, D. Yeates.

Visitors: N. Power, D. Schlipalius, D. White, I. Zeiner, I. Zeiner.

Apologies: J. Christensen, S. Evans, J. King, G. Maywald.

Minutes: The Minutes of the last General Meeting were circulated in News Bulletin Vol. 25, Issue 6. It was moved by E. Exley, seconded O. Seeman, that the Minutes be accepted without amendment.

Nominations:

David Schlipalius
Department of Entomology
University of Queensland
Qld. 4072

Nominated by D. Yeates
Seconded by C. Lambkin

In accordance with the Society's rules, election is held over to the next General meeting.

General Business:

The Society is seeking a new News Bulletin Editor. Expressions of interest to David Yeates or other Council members.

The December Notes & Exhibits meeting and Christmas break-up will be held on December 8th at the CRC for Tropical Pest Management. The CRCTPM is located in the Gehrmann Laboratories at the University of Queensland, St. Lucia. The meeting will be held at 6.00pm for 6.30pm as usual, followed by a chicken and salad meal/desert etc. Cost will be \$6.50. Further details in the News Bulletin.

A special joint meeting with the Queensland Naturalists Club and the Butterfly Club will be held on January 12th, 1998 at the Queensland Museum. The speaker will be J. McNeal and further details will be in the News Bulletin.

Main Business:**“WHITE GRUBS AND PEANUTS: A MARRIAGE MADE IN HEAVEN?”**

by

**John Rogers and David Holdom
Qld Dept of Primary Industries, and
Entomology Department, The University of Queensland**

John Rogers is a Department of Primary Industries Principal Entomologist and has been with the DPI since 1974. John was a Fullbright Fellow 1983-1986. He has had a long standing interest in white grubs. David Holdom is an insect pathologist with the CRC for Tropical Pest Management. He will soon come under the auspices of the Department of Entomology at the University of Queensland but will be located at Indooroopilly.

White grubs before annual cropping systems

Extrapolating from limited studies done in non-cropped areas (near cultivated crops) in several parts of the world, it seems that prior to the imposition of a modern cropping system most places had a diversity of scarab species (perhaps tens of species), with a diversity of life history strategies and food preferences. In these natural systems, no one scarab species predominates. In contrast, in crops immediately adjacent to such natural systems, one or a very few species comprise most of the individuals in the scarab population.

White grubs in annual cropping systems

Once an annual cropping system is imposed on a scarab fauna, several things happen. The cultivation and consequent soil disturbance redistributes and destroys soil organic matter. This impacts negatively on the scarabs whose larvae feed predominantly on organic matter. Also, because crops usually have clearly defined planting and harvesting times, the availability of either or both adult and larval food can be restricted. Adults active before the normal crop planting time tend to be disadvantaged, as are species whose larvae take longer to develop than the crop is in the ground. The end result is that one, or a very few, species comprises most of the scarab population under the crop. In addition, because there is a good fit between the requirements of the favoured scarab species and the crop phenology, total population levels can be higher than under natural vegetation. Additional factors that can make matters worse are irrigation, the addition of fertiliser, and/or the inclusion of high nitrogen crops like legumes in the rotations. All these things tend to allow the favoured species to perform closer to their biological potential, and so become pests.

In peanut cropping systems across the tropics and subtropics, white grubs have emerged as a significant management constraint over the last couple of decades for at least some of these reasons. However, it is only over the last few years that they have attracted the attention of the funders of international agricultural research. We have now reached the situation where in addition to our new ACIAR-funded project, there is a US-AID

funded project in west Africa, and a global white grub task force being formed under the aegis of the Collaborative Group for International Agricultural Research (the group that runs the network of international agricultural research centres such as IRRI, CIAT, ICRISAT etc).

ACIAR White Grub Project

This new four-year project will focus on white grubs as pests of peanuts in India and Australia and involves collaboration between ourselves, the All India Coordinated Research Project on Whitegrubs in Jaipur, Rajasthan (led by Dr C.P.S. Yadava), and Dr John Wightman (formerly ICRISAT Principal Entomologist). John Rogers, David Holdom and John Wightman spent time in India during September and October 1997 getting the project off the ground. Field work in Queensland begins in November 1997.

The project has several components. One major component in both countries is insect pathology with the focus being on *Metarhizium anisopliae* for larval control. Key areas for the pathology work will be *Metarhizium* strain selection, production and formulation research and field testing. Other project areas include larval control with insecticidal seed dressings, quantification of the yield losses on the major crops grown as part of the peanut cropping systems in both countries, and survey work to clarify distribution of the various pest species. Adult control work (including the identification of the female-emitted aggregation pheromone in southern Indian *Holotrichia* species) will be undertaken now that the aggregation pheromone of *Holotrichia consanguinea* has been identified by Dr Yadava's group. There will also be a considerable amount of project activity in southern India, with project staff being based at ICRISAT Asia Centre at Hyderabad and doing on-farm research between Hyderabad and Bangalore in association with a Dutch-funded non-government organisation.

Q: Have you considered that the adults may become resistant to the insecticide sprayed onto the trees that are baited with the sex pheromone? Would a better strategy be to bait some kind of physical trap that does not use insecticide to kill the beetles?

A: Yes. Some of the techniques that have been tried over the years include light traps, and shaking the trees and having boys collect all the beetles from the ground and put them into buckets of kerosene or water. So yes, there are other options whereby this aggregation pheromone could be used as a lure in a physical trap. We are still investigating the influence of the pheromone on beetle behaviour. It seems to attract beetles from quite a long distance, and in large numbers.

We have already considered the possibility of chlorpyrifos resistance because there are some areas of India where they have been using this insecticide every year for 8 to 10 years. One of the tasks next summer is to do some baseline susceptibility studies on larvae from our study area and then from areas where chlorpyrifos has been used extensively.

One of the things we have found in India is that the white grubs are incredibly polyphagous because they are adapted to an environment where it is bone dry for 9 months of the year and when it rains, they eat just about whatever grows. The main form of natural control seems to be the odd failed monsoon whereby the beetles stay in the ground. Unfortunately, this form of natural control also effects people. Supplementary irrigation has been introduced so that crops can be planted a month or 6 weeks before the beginning of the monsoons, but this has provided some reliability for the white grubs as well as for people, and has been one of the triggers for increasing pest problems over the last 15-20 years.

Q: If our white grubs feed on peanuts specifically, what was their host plant before peanuts arrived?

A: If you look at natural systems around the South Burnett for example, there are a lot of grasses, but scattered through them there is a range of native legumes like native glycine. In fact, there are dozens and dozens of native legumes and I suspect these kept the white grubs ticking over, that is why we have to look at the natural systems to find what's going on. Sometimes, the native legumes occur in quite dense and relatively large patches.

Q: How specific are the pheromones?

A: The pheromones are definitely different for different genera, but we will be looking at the same type of chemicals that they are using in India in our search for a pheromone for the Australian species. When you look at scarabs elsewhere, a lot of them do have common stock standard chemicals as aggregation and sex pheromones, phenols for example.

Q: Does this mean you get a lot of species in traps?

A: We tend to get just the one species, but this probably reflects the prominent species which is by far the most abundant.

Q: What is the story of white grubs in Australian peanut crops?

A: It's not the problem it is in India, but in the traditional peanut production areas, grubs cause significant yield loss. It has taken some time to convince growers because the yield loss is not detected by mechanical harvester methods. The pods are penetrated and the nuts inside eaten but the extent of the damage is not evident unless the plant is dug up to reveal the empty shells. All the grower knows is that there are less peanuts in the bin at the end of the harvesting process.

Q: Will the problem get bigger if peanuts are grown in sugar growing areas?

A: Yes. One of the potential growth areas for the peanut industry is to move into the Bundaberg Irrigation Area and use peanuts as a rotation crop with sugarcane. The limited surveys we have done indicate that the white grubs of sugarcane will switch to eating peanuts quite readily. The sugarcane white grubs are large and develop quickly like the white grubs on peanuts in India, so the amount of damage they will cause to peanuts in Australia is a big unknown at the moment. No doubt, if peanut growing goes ahead in Bundaberg, we will have some involvement there.

The Vote of Thanks was given by Geoff Norton who paid tribute to John's persistence in bringing the problem of white grubs to the attention of industry and funding bodies. Geoff said that John and David's talk emphasised the need to understand key aspects of natural systems, as human-use systems are overlaid on natural systems.

The President announced that the speaker for the next General Meeting in

November will be Jeff Skevington, who will talk about biodiversity in Canadian National Parks. Lots of beautiful slides expected.

There being no further business, the President closed the meeting.



PEOPLE AND PROJECTS



NEWS FROM QDNR
Alan Fletcher Research Station, Sherwood.

Releases of *Ectaga garcia*, an oecophorid moth, have been made by Kristin Latimer on *Lanatan camara* and *L. montevidensis* at Kurwongbah, and on *L. camara* at Murwillumbah, Grafton and Coffs Harbor, NSW.

Michael Day traveled to Monto, Blackwater and St Lawrence to release and monitor biological control agents of lantana. Michael spoke on classical biological control of weeds at a training workshop, BIOTROP in Bogor, Indonesia, as part of the Siam Weed Project.

Graham Donnelly traveled to Papua New Guinea, as the second phase of the ACIAR project is underway.

Dr K Dhileephan (TWRC. Charters Towers), Steve Adkins (UQ Agriculture) and Scott Deardon (Parthenium Action Group) attended an International Conference on Parthenium management, where they delivered

papers on the biological control of parthenium in Australia, and are returning to develop a joint project with ACIAR.

Anna Yeomans has commenced work at AFRS, assisting Toni Withers with CTPM-funded specificity research over summer.

The ten participants from around SE Asia in the successful annual CTPM Biological Control Course spent a day at AFRS learning about classical biological control.



NEWS FROM DPI MAREEBA

Trips to South Africa seem to be flavour of the month in north Qld. Stef Defaveri has just returned from 5 weeks in the land of the boks, and now it seems it is Judy Grimshaw and Barbara Waterhouse's turn. Though mostly in holiday mode rather than bug mode, J. And B. will be spending some time on quarantine issues while there. It is Barbs third visit to Africa, Judy's first time.

Chris Reid just returned from two weeks down south. He spent time in both Adelaide and Canberra, working on chrysomelid problems with one of his post grads. While in Canberra, he spent time with Tom Weir working on taxonomic problems with various scarabeine genera as part of the CRC-TREM dung beetle databasing project.

Judy King spent several days on the Atherton Tableland looking at insect problems in some plantation areas and giving talks on forest insect problems. She managed to catch up with Ross Storey at the Mareeba DPI to compare notes on cultural communicative entanglements of the verbal nature in this corperative, EB'ed newspeak world.

Keith Halfpapp and Bruno Pinese both spent time in the Weipa trying to gage the extent of the outbreak of the latest Quarantine incursion, mango planthopper. The species seems to have resident in the area for several years, and is also in the Darwin area, which will limit possible responses.

The Orthopterists' Society is having its International Conference in Cairns from 26-30 Oct. I have no details of the number of participants, though about 200 mostly overseas are expected. No doubt, some will combine a bit of collecting with the conferencing. One such is Hugh Rowell from Basil in Switzerland. He is doing work on DNA in Orthoptera and hopes to obtain some Australian material for inclusion.



NEWS FROM DPI SOUTH EAST QUEENSLAND

Prof Uri Gerson, arrived recently from the Hebrew University of Jerusalem to begin a one year sabbatical with the Plant Protection Unit at Indooroopilly. Uri is no stranger to the Unit having spent a year here in 1993/94 working on mites of agricultural importance. The results of that visit included the description of some six new genera and 12 new species, including one genus named in memory of the late Neil Gough. One of the things that Uri plans to do here is to prepare notes for a revised edition of *Acarine Biocontrol Agents: An Illustrated Key and Manual* which he co-authored with Robert L. Smiley. The book was recently translated into Chinese. We wish him a happy and productive stay.

Merve Bengston and Greg Daglish (Indooroopilly) made visits to Indonesia during September and October to participate in ACIAR funded trials in rice stores in Jakarta and West Java. The project is nearing completion and greg and Barry Longstaff (CSIRO Canberra) will make an end of project trip in December. The project has resulted in large scale field trials on insect populations and phosphine fumigation of milled rice (DPI), and the development of decision support and teaching software (CSIRO and CTPM).

Chinese visitors Mr Liang Yong Sheng, Mr Qin Zhang Gui, Mr Bai Xu Guang, and Mr Li Fu Jun are spending from 20 to 31 October in Australia in relation to an ACIAR project on phosphine resistance in grain insects. Liang and Qin are from the Chengdu Grain Storage Research Institute, Bai is from the Zhengzhou Grain College and Li is from the Chinese Ministry

of Internal Trade. They will spend most of their time at Indooroopilly with Merv Bengston, Greg Daglish and Pat Collins, but will also visit industry representatives on the Darling Downs and in North Queensland to discuss current trends in management of insects in stored grain.

John Donaldson (Indooroopilly) has been identifying samples of mango leaf hopper from Weipa, Aurukun and Moreton in far north Queensland. This is the first record of the mango leaf roller in Queensland, although it was found in Darwin a month ago and has been present in the Torres Strait since 1986.

Ted Fenner (NT Department of Primary Industries and Fisheries) and Andras Szito (WA Agriculture) visited the Plant Protection Unit recently for discussions with John and examination of specimens from the insect collection.



NEWS FROM THE DEPARTMENT
OF ENTOMOLOGY
The University of Queensland

Prof Andre Cokl, from the University of Slovenia, will be in the department for four weeks. He will be spending his time investigating sound communication and neural processing information of bugs and grasshoppers.

Shaun Hood has found himself a job at the DPI Maroochy Research Station where he'll be working on fruit spotting bugs.

Congratulations to Brian Heterick, whose thesis has been accepted.

Chris Lambkin, Jeff and Angela Skevington and Shaun Winterton recently covered 8000 km through South Australia, Victoria, New South Wales and Queensland. All parties collected their respective genera: *Exoprosopa*, *Eudorylas* and *Agapophytus*. All members of the troupe attended the Systematics Conference held in Adelaide, which by all accounts

“enlightening, and demistified phylogenetic systematics” (quote from Jeff Skevington). Congratulations to Chris Lambkin, whose artwork was chosen for the Society of Australian Systematic Biologists’ logo.

David Yeates visited North and South America in September/October. First he attended a meeting discussing the current NSF “Partnerships Enhancing Expertise in Taxonomy” grant in Illinois. David and Mike Irwin then spent three weeks collecting in Chile. It was early spring in most of Chile and the best collecting spots for Diptera were around LaSerena in the north. David and Mike also ventured to the south and can thoroughly recommend Parque Nacional Nahuelbuta for its spectacular *Auracaria* and *Nothofagus* forests.



NEWS FROM QDNR Tropical Weeds Research Centre, Charters Towers.

Dr Kunjithapatham Dhileepan, Dr Steve Adkins (Dept. Of Agriculture, UQ) and Mr Scott Dearden (Parthenium Action Group, Rolleston) attended the First International Conference on Parthenium Management held at Dharwad, India from 6-8 Oct. Dr Dhileepan presented a paper titled ‘Biological Control of Parthenium in Australia: Progress and Prospects’ at the Conference. Dr Dhileepan also gave guest lectures on the ‘Recent Developments in the Biological Control of Parthenium in Australia’ at the Project Directorate of Biological Control, Bangalore and Tamil Nadu Agricultural University, Coimbatore.

While in India, discussions were held with the scientists from the University of Agricultural Sciences, Dharwad; Project Directorate of Biological Control, Bangalore and Tamil Nadu Agricultural University, Coimbatore and developed collaborative research plans for the proposed ACIAR project on the management of parthenium, with an emphasis on biological control.

A collaborative research project has been initiated with Prof. A Raman (visiting scientist, Orange Agricultural College, NSW) to study the developmental morphology, histochemistry and ultrastructure of insect induced galls in parthenium weed.



NEWS FROM THE QUEENSLAND MUSEUM Brisbane

European arachnologists Christa Deeleman-Reinhold and John Murphy will visit the Queensland Museum on July 17 & 18 and Robert Raven will accompany them to Cairns from October 19-24.

Robert Raven will present papers at an International Toxinology Course and visit the South Australian Museum from 17-21 Nov.

After a marathon 15 hours unpacking session with Tarantula Keeper Kurt Walker, Robert has been carefully checking the progress and settling in of the 53 live American and Indian tarantulas, scorpions & whip scorpions at Butterfly House, South Bank. Just a clarification for those concerned, the imported material are kept in tight quarantine conditions for the term of their natural life. They have already been assigned museum registration numbers (on display) for the time when they die, after which they remain in alcohol for 4 weeks, and are then transferred to the Museum collection. The biggest danger from these spiders is not a bite, but the urticating hairs which are flurried up each time the spiders are upset.

NOTICE OF FUTURE MEETINGS

- 10 November: Lecture, Jeff Skevington presents 'Insect Diversity in an endangered Ontario ecosystem'
- 8 December: Notes and Exhibits Meeting
CRC Tropical Pest Management, Level 5
Gehrmann Laboratories, The University of
Queensland, St Lucia. Starting at 6.00pm

The Entomological Society of Queensland invites you to the Notes and Exhibits Meeting

When: MONDAY 08 DECEMBER 1997, 6.00
pm

Where: Seminar Room, CRC for Tropical Pest
Management, Level 5 Gehrmann
Laboratories, The University of
Queensland, St Lucia

Nibbles: Start at 6.00pm

Meeting: Notes and Exhibits at 6.30pm

Meal: After the meeting: Chicken and salad
(cost \$6.50) Beer, wine and softdrinks for
sale

RSVP: 01 December - contact Cathy Simpson
(fax: 3365 1855, email
cathy@ctpm.uq.edu.au)


ALL WELCOME!

ENTOMOLOGICAL SOCIETY OF QUEENSLAND

1998

\$250 Student Award

- Who:** Honours, diploma, or fourth-year undergraduate students in any Queensland tertiary institution.
- What:** A thesis or report on an entomologically related topic examined during 1996 or 1997.
- When:** **Applications close 4 March 1998.**

Send thesis/report and completed entry form to  The Secretary, Entomological Society of Queensland, c/- Entomology Dept., The University of Queensland, Brisbane Q 4072.


This is an award by the Society to encourage entomological research. Entries are judged by a panel of three entomologists appointed by the President. The winner will be announced at the May General Meeting, and is invited to present a summary of their research at the June Notes & Exhibits Meeting of the Society.

Entrants need not be Society members.

If the standard of entries is too low an award may not be given.

Student Award sponsors

- ★ Arrest-A-Pest Pty. Ltd.
- ★ Rhone-Poulenc Rural Australia Pty. Ltd.
- ★ Ciba-Geigy Australia Ltd.
- ★ CRC for Tropical Pest Management.

Enquires should be directed to the President, David Yeates
 07 3365 2217 or any Office Bearer of the Society.

ENTOMOLOGICAL SOCIETY OF QUEENSLAND
1998 Student Award
Entry Form

Name:

Title of thesis/report:

Institution:

Degree:

Supervisor:

Date of examiners report/grading:

Address for return of thesis/report:

Signature

Date

Applications close **4 March 1998**.

Send thesis/report and completed entry form to:

✉ The Secretary, Entomological Society of Queensland,
c/- Entomology Dept., The University of Queensland, Brisbane Q 4072.

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- ORDINARY:** Persons resident within the municipality of Brisbane - \$23pa (\$20 if paid by AGM).
- COUNTRY:** Persons resident elsewhere - \$21 pa (\$18 if paid by AGM).
- JOINT:** Couples in either of the above categories who share a copy of the *News Bulletin*, but each otherwise have full membership privileges.
Ordinary - \$30 pa (\$27 if paid by AGM).
Country - \$27 pa (\$24 if paid by AGM).
- ASSOCIATE:** Students and others at the discretion of the Society Council - \$15 pa (\$12 if paid by 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

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NOTICE OF NEXT MEETING

The next meeting of the Society will be held at 6.30 pm on **Monday 10 November** in Room 323, Hartley Teakle Building, UQ. The main business will be: **Jeff Skevington**, "Insect Diversity in an Endangered Ontario Ecosystem". Refreshments will be served before the meeting at 6.00 pm in the Tea Room (510).

VISITORS ARE WELCOME