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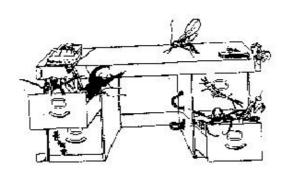
The ENTOMOLOGICAL SOCIETY OF QUEENSLAND INC., since its inception in 1923, has striven to promote the development of pure and applied entomological research in Australia, particularly in Queensland. Membership is open to anyone interested in Entomology. The Society promotes liaison among entomologists 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). Visitors and 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 in 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 makes it one of the most attractive of all Australia Coleoptera. It is restricted to the rainforests of northern Queensland.

**COVER**: *Trichogramma*, *sp.*, an egg parasitoid. Drawn by Catherine Bryant.



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The issue of this document does  ${\bf NOT}$  constitute a formal publication for the purposes of the "International Code of Zoological Nomenclature 4<sup>th</sup> edition, 1999". Authors alone are responsible for the views expressed.

# The Entomological Society of Queensland

# General Meeting June 2007

Minutes of the General Meeting of the Entomological Society of Queensland Inc. held in Room 388, Goddard Building, The University of Queensland, on 12 June 2007, at 7 pm. Chaired by Sassan Asgari

#### Attendance:

Peter Allsopp, Sassan Asgari, Bradley Brown, Richard Bull, Lyn Cook, Bronwen Cribb, Mike Furlong, Klaus Gottschaldt, Judy Grimshaw, Kerrie Huxham, Chris Lambkin, Anna Marcora, Gunter Maywald, Geoff Monteith, Matthew Purcell, Andrew Ridley, Don Sands, Noel Starick, Kyran Staunton, Desley Tree

## **Visitors:**

Jeremy Andersen, Deanna Bayliss, Michelle Rafter, Federica Turco.

# **Apologies:**

Mike Furlong, Gio Fichera.

**Minutes:** The minutes of the May ordinary General Meeting were circulated in the News Bulletin Vol. 35 Issue 3. It was moved by Chris Lambkin, seconded by Sassan Asgari, that the minutes be accepted without amendment.

## **Nominations:**

The following nomination for membership was received and approved by Council, and is now put before the meeting for election:

Mr. Nick Porch

In accordance with Society rules, the nominee was elected by a show of hands.

# **General Business:**

The President announced that the student prize this year was won by Deanna Bayliss. Deanna will be presenting a talk about this project later in the meeting

The President showed a copy of the new Society brochure to the members present, and encouraged them to take a few along with them to help get new members into the Society.

## **Main Business:**

This was a "Notes and Exhibits" meeting, and the presentations tonight were:

Deanna Bayliss (Student prize winner):

"Pre-release evaluation of a biological control agent for cat's claw creeper"

Chris Lambkin

"The Burnham Collection: From Bougainville to Gold Coast garage"

Geoff Monteith

"The ups and downs of Lamington Dung Beetles".

Ross Kendall

"Another March Mystery"

# **Vote of Thanks:**

Sassan Asgari gave the vote of thanks for these presentations.

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

# Student Prize Award Presentation

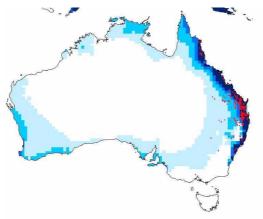
The pre-release evaluation of a potential biological control agent (*Carvalhotingis visenda*) for cat's claw creeper (*Macfadenya unguiscati*) – plant growth and physiological responses to herbivory

# Deanna Bayliss

Macfadyena unguis-cati (L.) Gentry (Bignoniaceae), commonly called cat's claw creeper, is an invasive weed in south eastern Australia. Carvalhotingis visenda (Hemiptera: Tingidae), a potential biological control agent originating from South America, has been imported into Australia to control infestations of cat's claw creeper. Although this insect damages the plant, the underlying mechanisms behind this impact on the plant are not well understood. Two experiments were conducted to explore the leaf physiological responses and the plant growth responses of the creeper to feeding by C. visenda. The first study investigates the effects of tingid herbivory over nine weeks on the rates of photosynthesis, stomatal conductance and transpiration and the level of chlorophyll content of individual leaves. The physiological effects of herbivory on the nearest undamaged opposite leaf were quantified. The morphologic aspects of the plant, namely tuber size, tuber abundance, the number of leaves and stem length were measured over 29 weeks to quantify the damage of insect feeding. At high insect densities, photosynthesis was significantly reduced by 49% after 9 weeks of herbivory. Opposite undamaged leaves showed increased photosynthetic compensatory effects, most noticeable at lower insect densities. Tingid feeding reduced chlorophyll content of damaged leaves by 17% at high insect densities and had little impact on transpiration and stomatal conductance. Most importantly, insect feeding by C. visenda significantly reduced the growth rates of tubers, leaves and stems. It appears that damage to the aboveground tissues reduces the plants' ability for fast growth following herbivory, both aboveground and belowground. Conversely, the number of leaves, the stem length, tuber size and tuber abundance increased regardless of intense tingid herbivory. At high insect densities, C. visenda is likely to reduce the biomass of cat's claw creeper by decreasing the growth rate of the plants. Insect herbivory seemingly reduced the accumulation of resources in tubers but did not have an impact on existing tuber reserves. If this is the case, then infestations of cat's claw creeper will persist in natural habitats despite intense herbivory.



Young cat's claw creeper seedling containing one major tuber and four smaller tubers.



Distribution of cat's claw creeper in south eastern Australia. Red areas represent the actual distribution, darker colours indicate the areas that are susceptible to invasion by cat's claw creeper as predicted by CLIMEX.



Carvalhotingis visenda adult (picture obtained from Alan Fletcher Research Station).



Entomological Society of Queensland

Two opposite leaves used to measure the physiological responses of a damaged and undamaged leaf.

# Notes & exhibits presentations

# THE BURNHAM COLLECTION: FROM BOUGAINVILLE TO GOLD COAST GARAGE

Chris Lambkin<sup>1</sup>, Tony Hiller<sup>2</sup>, John Tennent<sup>3</sup>, and Noel Starick<sup>1</sup> Queensland Museum, <sup>2</sup>Mount Glorious Biological Centre <sup>3</sup> Natural History Museum (London)

In mid 2007 we received a phone call from Sam Burnham who had found a butterfly collection in his Gold Coast garage when attempting to organise the effects from his late father, Jeffrey Thomas Burnham. Sam brought into the Queensland Museum a collection housed in a wooden box with a tightly sealed glass lid. On top was a folded sheet of a Dutch daily newspaper, with the date 23 April 1925. Inside the box were 52 folded papers; 19 of them Ecclesiastical, including pages from 'The Ecclesiastical Review', 'Eucharistic Preaching', and 'The Little Israelite' dated 1/3/17. Advertisements for statues, Sabbath bells, and school equipment also feature.



Newspaper dated 23 April 1925

Inside the papers were an assortment of butterflies, mainly **Birdwings** (Lepidoptera: Papilionidae) including the blue form of the northern birdwing, Ornithoptera priamus urvillianus and the listed **CITES** Victoria's birdwing, *Ornithoptera* victoriae regis. Other butterflies included Papilio phestus



Ecclesiastical papers



Paper with initials

reductus (Papilionidae); Delias shoenbergi shoenbergi and Catopsilia pomona (Pieridae); Argyronympha pulchra, Cyrestis acilia nitida, Mynes woodfordi woodfordi, Phaedyma fissizonata pisias, Tellervo hiero hiero, and Vindula arsinoe sapor (Nymphalidae).



Ornithoptera priamus urvillianus amongst the statues, Ornithoptera victoriae regis 'Turning to HIM' Photographs by Noel Starick

Initial inspection of the collection indicated that the specimens have little scientific value, as no locality, date, or collector information was included. Closer examination indicated considerable insect pest damage, and the specimens were not considered suitable for mounting and display.

Several of the papers bear the initials JBP and the word Buin. Tony considered these specimens may have been collected by local villagers for a Father Poncelet, who exported specimens from Buin in Bougainville, to collectors in other countries, to support his mission. While *Ornithoptera priamus* is widespread from New Guinea, east to the Solomon Islands, and south to Australia, *Ornithoptera victoriae* and *Argyronympha pulchra* are restricted to the Solomon Archipelago (Tennent 2002, 2006). Bougainville is politically part of New Guinea, but biogeographically belongs to the Solomon Archipelago. Sam was able to inform us that his father, Jeff, had worked in New Guinea, and may have acquired the collection there.

There appear to be several butterflies named after Poncelet. *Papilio ponceleti* (a synonym of *Papilio woodfordi*) was described by Le Moult (1933) with a type pair from Kieta, Bougainville. D'Abrera (1971) includes an image of an aberrant gynandromorph of *Ornithoptera victoriae regis* from Buin in the Natural History Museum (London) named *ponceleti*. In the description of this fundamentally female *victoriae* individual with male coloration, Rothschild states "This extraordinary insect was sent to me by the Rev. Père Poncelet ... [from] Buin, Bougainville ... I name this ♀ f. *ponceleti* after its captor" (Rothschild 1936). Rousseau-Decelle later (1946) described another aberrant specimen from Buin as "*Papilio (Ornithoptera) Victoriae Regis* Rothsch. F. indiv. ♂ *poncelatus*" and said (in French) "I dedicate this magnificent form of *Victoriae Regis* to R. P. Poncelet, the brilliant naturalist, for ... services to entomology and ornithology".

Poncelet is often recorded in association with biological specimens. Described as "a missionary in the Buin area of Bougainville" he collected two of the first 10 recorded specimens of the bird Woodford's rail (Nesoclopeus woodfordi) in the 1930's (Hadden 2002). In a recent description of a new genus of frogmouth (Podargidae) from the Solomon Islands he becomes "Father J.B. Poncelet, a French missionary on Bougainville" who collected five of the earliest specimens (Cleere et al. 2007). One of the most remarkable records however is Poncelet's collection of the first nine specimens of Poncelet's giant rat, Solomys ponceleti (Flannery 1995). Poncelet visited Ellis Troughton at the Australian Museum in Sydney in 1934 and offered to collect specimens for the museum. In little more than 2 years he had supplied over a hundred specimens of mammals alone (Troughton 1936), including a young adult female and two skulls that were described by Troughton (1935) as Unicomys ponceleti. Poncelet subsequently sent two more specimens of this species to Troughton, and four to Musée Royal d'Histoire Naturelle in Belgium. This grotesquely large, arboreal, murid rodent, that builds large loose stick nests in huge forest trees, is so rare that only three more specimens are recorded (Flannery 1995), it is considered endangered, and was placed on the IUCN Red List of Threatened Animals in

By examining the Oceania Marist Province Archives we were able to discover that Jean-Baptiste Poncelet SM, 1884 – 1958, was in the North Solomon's Region between 4 Feb. 1919 and 26 Sept. 1928 (Cook 1986). J.B. Poncelet served in South Bougainville from 1939-1950 (except for a period 1942-1946) (Laracy 1976). There is a mention of a diary written by R.P. Poncelet, a Catholic missionary and Belgian national, who was captured on Bougainville and interned on New Britain in World War II (Nelson 2007). Poncelet, a Marist Father, was among those who welcomed the first Marist Brothers in Bougainville on their arrival at Torokina on 17 June 1948 (McCane 2004). Possibly the difference in Poncelet's initials by Rousseau-Decelle (1946) and Nelson (2007) is a reference to his title, Rev. Père, as used by Rothschild (1936) earlier. It would be coincidental for there to be on Bougainville both a Belgian and a French missionary of the same surname at the same time, or are these all references to the same man?

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# SURVEYING DUNG BEETLES ALONG THE IBISCA TRANSECT AT LAMINGTON

Geoff Monteith, Queensland Museum, and Rosa Menendez, Lancaster University

The IBISCA project currently running at Lamington National Park is an international collaborative effort to survey insects along an altitudinal transect of rainforest sites from the lowlands of Canungra Creek to the highest *Nothofagus* forests. The object is to document the change in fauna long the transect with a view to using the data to monitor change that may occur under the influence of global warming. The 20 sample sites consist of four (A, B, C, D) at each of 5 different altitude zones (300m, 500m, 700m, 900m and 1100m).

We chose the dung beetles (Coleoptera: Scarabaeidae: Scarabaeinae) as a specialist sampling group because they have a number of desirable characteristics. They are easily and reliably sampled using baited traps; they are relatively easy to identify because their taxonomy is in good shape; there is a great amount of baseline distributional information available for the native Australian species; they are being used in many parallel biodiversity and stratification studies around the world.

Our sampling protocol consists of the use of four baited pitfall traps and one unbaited flight intercept trap in each of the 20 IBISCA sampling plots. During each sampling phase ( three to date: October 2006, January 2007, March 2007) the baited pitfalls were exposed for two 5-day periods each, being baited with macropod dung for one period and rotting mushroom for the other. Flight intercept traps, which capture randomly flying beetles, were exposed for a continuous 10-day period during each phase.

Preliminary results are available for the October and January sampling phases and all 360 bulk trap samples from those periods have been sorted. These samples yielded 6729 specimens, or an average of 19 specimens of dung beetles per trap sample. Specimens per plot ranged from a low of 90 at 1100D to a high of 1393 at 300A.

The total collection has been sorted to 33 species, 9 of which are shown in the accompanying plate. Frequencies ranged from a single specimen of *Onthophagus dandalu* (an open forest species regarded as a "blow-in" to one of the 300m rainforest plots) to 783 specimens of *Monoplistes leai*. Species richness at the different altitudes ranges from a high of 21 species at the 300m level to a low of 7 species at the 1100m level. Richness at the intermediate elevations was almost uniform (16 spp. at 500m; 16 spp. at 700m; 17 spp. at

900m).

Curiosities among the species included 3 species of the cryptic, dirt-covered genus *Amphistomus*, 3 species of the leaf-utilising genus *Cephalodesmius*, and several specimens of Australia's largest dung beetle, the rare *Aulacopris maximus*.

Examination of the distribution of species along the altitudinal transect shows a highly stratified fauna, and no single species occurs at all elevations. The most distinctive components of the fauna are the separate suites of species which occur at each end of the transect. The lowest zone (300m) has not only the most diverse fauna, but fully 7 of the species which occur there do not occur any higher on the transect. The highest zone (1100m) has a small fauna of 7 species but two of the species are restricted to that elevation and four others extend downwards only as far as the 900m zone.

Study of the wider distribution of the transect species reveals particular species whose distribution could be predicted to change with the effects of global warming, and which may therefore be useful for future monitoring. Many of the species found at only 300m-500m levels are also at their absolute southern limit of geographic distribution at Lamington (e.g. *Cephalodesmius quadridens*, *Onthophagus CQ2*). These species could be expected to move upwards on the transect at Lamington with increased temperature. Conversely, some species restricted to higher parts of the transect are at their northern limit of geographic distribution (e.g. *Onthophagus fuliginosus*). These may drop out at Lamington with increased temperature and have their overall geographic range contract to the south. Most vulnerable are the narrowly endemic species which are restricted to the highest elevation at Lamington and to similar habitats at adjacent Springbrook (*Lepanus glaber, Lepanus NSW1*). Since they have no populations elsewhere they stand in danger of absolute extinction with temperature rise.







1. Cephalodesmius laticollis 2. Amphistomus speculifer 3. Aulacopris maximus







4. Lepanus glaber

**5.** *Diorygopyx simpliciclunis* 

**6.** Monoplistes leai







7. Onthophagus fuliginosus 8. Onthophagus sydneyensis 9. Onthophagus arrilla

# ANOTHER MARCH MYSTERY- Ross Kendall.

In March 2006, I found a brown *Eurema hecabe* and a pure white *Catopsilia pomona* that had bred in my butterfly enclosure. It was jokingly suggested that the enclosure must be a radiation hot spot or that it possesses an aberrant magnetic field. This March a *Papilio aegeus* bred in the enclosure from wild caught parents, emerged as a bilateral gynandromorph.



# Notice of Next Meeting Monday 13th August 7 pm 2007

Room 388, Goddard Building University of Queensland, St Lucia

Capturing the ecosystem service of pest control from native vegetation

Nancy Schellhorn CSIRO



# People & Projects

# BEQUEST OF MARKS PROPERTY AT SAMFORD TO Q.U.T.

Many Australian entomologists, as well as numerous visiting overseas entomologists, will have fond memories of Pat Marks' family property at Samford, just NW of Brisbane. This 55 hectare piece of original bush, bounded by Samford Creek, was part of a larger property which had been in the Marks family sine 1887. The smaller block became her family's weekend retreat from the 1940s. At that time they relocated to the property, piece by piece, a rustic building which had been the workers' barracks at a nearby granite quarry (where, incidentally, the foundation blocks for Brisbane's City Hall was cut). This building became their weekender quarters and was always known as "The Barracks".

Elizabeth Nesta ("Pat") Marks, long the doyen of Australian mosquito systematics, was the only child of the Marks family and she grew up horse-riding and exploring the bush of this property. With the evenutal death of her parents, she inherited the property and, just before she retired in 1983, she moved there to live alone in "The Barracks" almost up to her death in 2002. For over 50 years Pat was the genial host

to literally hundreds of fellow entomologists who visted her at the property, and she took special delight in showing her bit of bush off to overseas visitors.

Over the years, with the population explosion in the Samford Valley and the close subdivision of surrounding areas, Pat's beloved property came to be an island of untouched bush in a sea of development. When she died, her will directed that her Executors (her niece and nephew siblings, Margaret Ward and Stephen Tonge) explore expressions of interest from various bodies with a view to permanently bequeathing the property to a body who would preserve the environment and use it for educational purposes. It has been a long process for Margaret and Stephen, and in sifting ideas and proposals they have been assisted in environmental assessment by Hugh Lavery, an old friend of Pat's and long retired himself from the National Parks Service. However it has just been announced that the property will go to the Queensland University of Technology in Brisbane.

On June 28, QUT held a garden party for interested parties on the lawn in front of the Barracks on the property to anounce the bequest and provide a preliminary briefing on plans. The property has been named the Samford Ecological Research Facility and will be administered as part of QUT's Institute for Sustainable Resources. The group was addressed by ISR Director Mike Hefferan, the Dean of Science, Professor Margaret Britz, estate executor Margaret Ward and environmental advisor Hugh Lavery (see photo). Basically the property is to be maintained as is with the existing buildings kept intact, and it will be made available for various undergraduate and postgraduate student projects and wider research programs by staff. Early attention is being paid to the groundwater hydrology and aquatic weed problems associated with high nutrient levels in the creek. A Masters student is already researching links with the Samford community and strategies to showcase QUT's research at the site. For the present research at the site will be restricted to QUT personnel, but wider collaborations are expected in future. A Permit is required to visit the site and information is available at: http://www.isr.qut.edu.au/projects/samford/index.jsp

At the request of the family, the station does not bear the name of the Marks family. However it will endure as a fitting testament to the scientific heritage of the wider Marks family and to the special generosity of the family's only entomologist, Pat Marks.

The Executors have assisted production of a reprint of the special issue of the Australian Entomologist devoted to the ESQ Symposium on the life and work of Pat Marks. Copies of this booklet are available from Geoff Monteith for \$5 (posted). Send payment made out to ESQ to Geoff at P.O.Box 537, Indooroopilly. Q. 4068, and include your address.

Geoff Monteith



In front of "The Barracks" at QUT's recently inaugurated Samford Ecological Research Facility are (L-R) Hugh Lavery, Mike Hefferan, Margaret Ward, Margaret Britz, with entomologists Harry Standfast and Geoff Monteith.

# PERMIT REPORT TIME

To all members who have been issued with endorsed copies of permits held by the Entomological Society of Queensland.

It is a requirement of the permit that a report is sent by the Society to the EPA. This report is due in August and it is now time to send me the information.

The information the EPA requires is as follows: latitude and longitude or grid references, datum used, locality information, collector, date, method of collection, habitat, life stage, sex (if known), altitude, scientific name (common name if there is one) and number collected. In the case of butterflies I need to know if a specimen was taken or if the record is an observation only. They also ask for information on where the specimens are held. There is an excel file which your data should be entered, so please contact me if you require this form.

Your **reports are due by 16 August 2007** so I can collate the information and then send it on. Reports sent electronically would be very welcome as it saves my fingers but printed reports (especially in the case of nil reports) are fine. **Even if you haven't collected anything the EPA still requires that a report be lodged by every holder of the permit.** If there are any queries or problems my contact details are on the back of the bulletin. If I don't hear

anything to the contrary any report I receive may be used in the bulletin for a future update on the permits.

A reminder also that **members who hold permits must be financial** members of the society, so can all members please check that you have paid up for 2007.

Looking forward to seeing your reports.

Susan Wright



Australian Entomological Society's 38th Annual General Meeting & Scientific Conference

> Beechworth 23 - 26 September 2007 La Trobe University

# Welcome to the Australian Entomological Society's 38th Annual General Meeting & Scientific Conference

# **INVITATION**

On behalf of the organising committee, we extend a warm invitation to you to attend the 38th scientific conference of the Australian Entomological Society to be held in Beechworth, Victoria, from September 23 – 26th 2007. The conference will bring together researchers (scientists and students) from a broad range of interests to discuss the latest research in entomology. The conference will run several symposia with themes of major importance for entomology. Intending delegates are encouraged to submit papers/posters on their own areas of expertise and interest as the overall program will be designed to cover a much broader range of topics.

If you have any questions please do not hesitate to contact Sally Brown,

Conference Coordinator, <a href="mailto:sally.brown@uq.net.au">sally.brown@uq.net.au</a>

AES conference web page: http://aes2007.org

Sally Brown AMM

**Conference Connections** 

PO Box 108 Kenmore QLD 4069 Australia

Telephone:(07) 3201 2808 Fax: (07) 3201 2809

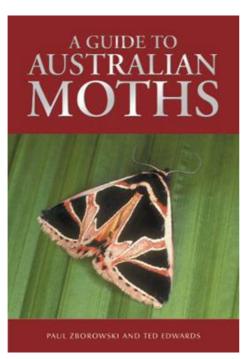
# Collecting biological specimens in the Northern Territory with particular reference to terrestrial invertebrates: guidelines to current legislation and permits

The following Northern Territory Government web site document (http:// www.nt.gov.au/nreta/wildlife/permits/pdf/invertebrates.pdf) provides overview of current legislation and permits regarding the collection of biological material, particularly terrestrial invertebrates, in the Northern Territory under the Territory Parks and Wildlife Conservation Act and Environment Protection and Biodiversity Conservation Act (EPBC Act). The document defines several terms under the Northern Territory Government Act, types of permits issued by the Northern Territory Parks and Wildlife Service, and outlines various land management systems in the Northern Territory. Contrary to popular belief that all insects and invertebrates in the Northern Territory (estimated to range from 24,900 to 63,500 species for insects) are protected, only 48 species, from the Phyla Mollusca (31), Chelicerata (13) and Insecta (4), are currently listed as Protected Wildlife. Of the protected species, 35 are designated as Threatened Wildlife, of which five are also listed nationally under the EPBC Act. However, all native invertebrates that occur within the boundaries of national parks and other conservation areas managed by the Northern Territory Parks and Wildlife Service or Parks Australia are protected under the Territory Parks and Wildlife Conservation Act or EPBC Act, respectively. Relative merits of the current legislation and permit system are also discussed.

Michael Braby Biodiversity Conservation Division Department of Natural Resources, Environment and the Arts PO Box 496 Palmerston, NT 0831

Please note, due to a technical hitch, the book release article is run again in this issue as the book cover picture did not appear in the May issue of the bulletin— Apologies.

# New Book Release A Guide to Australian Moths



# Paul Zborowski Ted Edwards

Colour photographs, Illustrations 224 pages, 210 x 148 mm

224 pages, 210 x 146 mm

Publisher: CSIRO PUBLISHING Publication date: May 2007

Paperback - ISBN: 9780643091597 -

AÛ \$39.95

http://www.publish.csiro.au/

pid/5571.htm

# **Description**

Moths are often thought of as the ugly cousins of butterflies, yet their colours can be just as remarkable and, with over 20,000 species in Australia, their biology and lifestyles are far more diverse.

With striking colour photographs of live moths in their natural habitat, this guide illustrates all the major moth families in Australia, including some rarely seen species. It provides many curious facts about the unusual aspects of moth biology, including details on day-flying species, camouflage, moths that mimic wasps, larvae with stinging hairs, and larvae that have gills. This easy-to-read book includes sections on the iconic Witjuti grubs, Bogong

moths, the giant-tailed Hercules moths of northern Queensland (one of the largest moths in the world, with a wingspan of over 25 cm), moths that release hydrocyanic acid in their defence, and moths that produce ultrasonic calls that bats learn to associate with a bad taste.

A Guide to Australian Moths highlights the environmental role of moths, their relationships with other animals and plants, and their importance to humans. It provides a unique introduction to the extraordinary diversity of moths found in Australia.

#### **Features**

- The first well-illustrated guide to Australian moths aimed at a general readership
- Treats all 82 families of Australian moths
- Provides an introduction to moth biology and camouflage
- Copiously illustrated with high quality photographs

# **Author Information**

**Paul Zborowski** is a qualified entomologist and photographer with over 25 years experience of field based study of insects and related creatures in habitats all over the world's tropics. He is the published author of a number of insect reference works including the Whitley Award winning *Field Guide to Insects of Australia*. He has a vast photo library of insect images, which he has built up over 30 years.

**Ted Edwards** worked on Australian moths for more than 30 years at CSIRO's Australian National Insect Collection (ANIC) in Canberra. He has published widely in the fields of insect classification, nomenclature, biology, behaviour, collecting and handling.

# "Butterfly and Dragonfly" Phd Request

Please note email address for Kath McClellan which was omitted from her Butterfly and Dragonfly request in the May issue of the Bulletin Kath McClellan: kMcClellan@bio.mq.edu.au

# **DIARY DATES 2007**

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

August 13th Nancy Schellhorn Capturing the ecosystem service of

pest control from native vegetation

September 10th David Merritt

October 8th Steve Barker Why are there so many head

lice, Pediculus capitis?".

November 12th Andrew Austin (Perkins

Memorial lecture)

December 10th Notes & Exhibits

## IMPORTANT NOTICE

The official address for the Entomological Society of Queensland and *Australian Entomologist* and to which all communications should be addressed is:

Sustaining associate of the News Bulletin:

TROPICAL FRUIT FLY RESEARCH GROUP, GRIFFITH UNIVERSITY

# SOCIETY SUBSCRIPTION RATES

GENERAL: Person who has full membership privileges \$30pa

**JOINT**: Residents in the same household who share a copy of the

News Bulletin, but each otherwise have full membership \$36pa

privileges.

STUDENT: Students and others at the discretion of the Society Council \$18pa

Student membership conveys full membership privileges at a reduced rate. See subscription form on opposite page for details.

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www.esq.org.au

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# NOTICE OF NEXT MEETING

The next meeting of the Society will be held at 7:00 pm on **Monday**, **13th August** at Room 388, GODDARD Building, University of Qld. The main business will be Nancy Shellhorn: . Refreshments will be served before the meeting at 6:30 pm in the tea room, Level 2 of the Goddard Building (to the right of the main stairs), with a gold coin donation required. No donation is required to attend the talk alone.

## VISITORS ARE WELCOME

# HONORARY LIFE MEMBERS OF THE SOCIETY

R.A.I. Drew E.M. Exley D.L. Hancock

M.J. Harslett R.P. D.S. Kettle R. P. Kleinschmidt