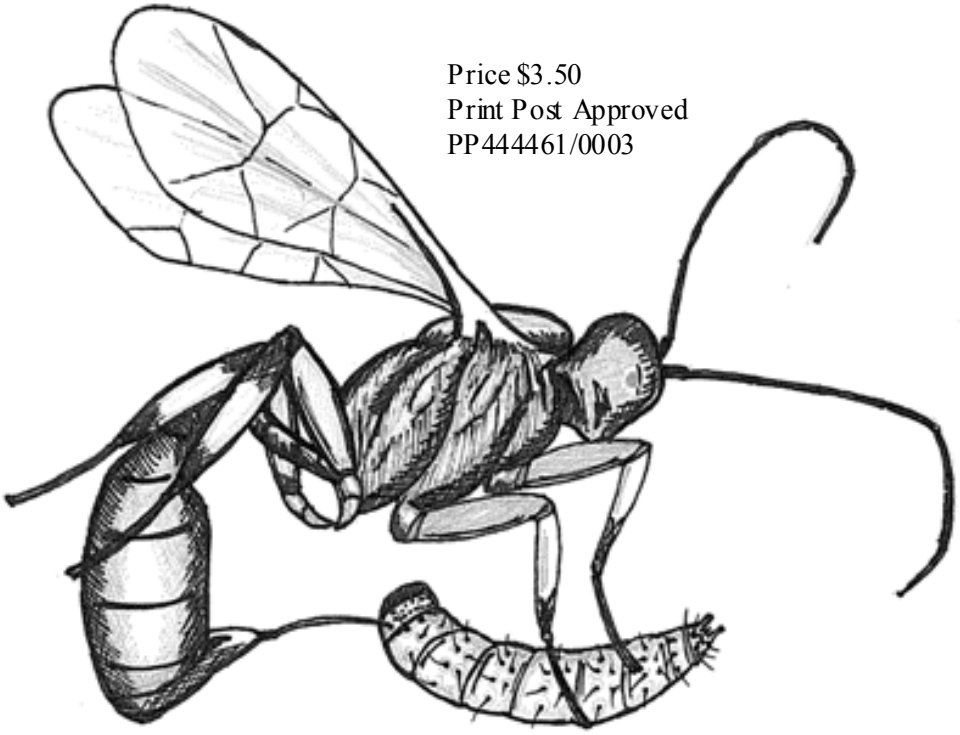
ENTOMOLOGICAL SOCIETY OF QUEENSLAND INC

NEWS BULLETIN



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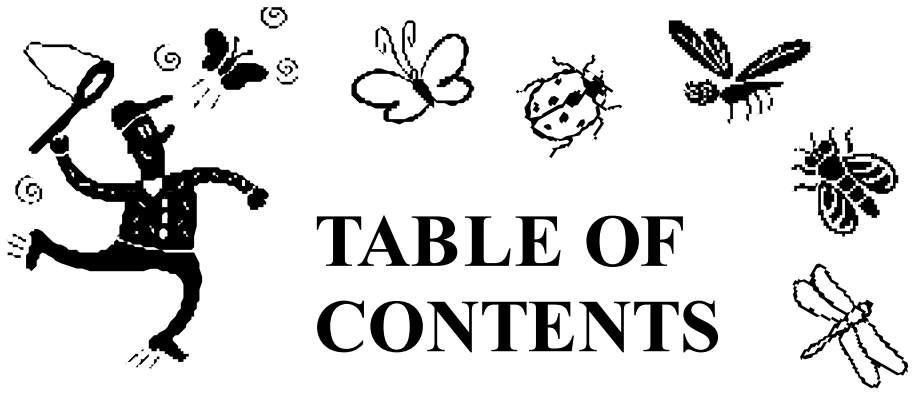
The **ENTOMOLOGICAL SOCIETY OF QUEENSLAND INC.**, since its inception in 1923, has striven to promote the development of pure and applied entomological research in Australia, particularly in Queensland. Membership is open to anyone interested in Entomology. The Society promotes liaison among entomologists through regular meetings and the distribution of a *News Bulletin* to members. Meetings are announced in the *News Bulletin*, and are normally held 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.

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. 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: *Diadegma semiclausum* ovipositing into a larva of the diamondback moth, *Plutella xylostella*. Drawn by Sandra Dennien.



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The Entomological Society of Queensland

Minutes of General Meeting
10 June, 2008

Held in the Large Conference Room, CSIRO Entomology, Long Pocket Labs, 120 Meiers Road, Indooroopilly, on June 10 2008, 12:00 midday.

Attendance:
Richard Bull, Geoff Monteith, Bradley Brown, Bill Palmer, Murdoch DeBaar, Owen Seeman, Susan Wright, Belinda Walters, Rachel McFadyen, Shaun Winterton, Tim Heard, Christine Lambkin, Noel Starick, Federica Turco, John Purdie, Anna Marcora, Ross Kendall, Graham Forbes, Andrew Ridley, Felix Bianchi, Lynda Perkins, Bronwen Cribb, Mike Furlong, Geoff Thompson.

Visitors:
Andrew Hulthen, Brendan Murphy, Karen Bell, Luke Halling, Michelle Rofter, Mary Finlay-Doney, Maten Shelomi.

Apologies:
Peter Allsopp, Stacey McLean, Lyn Cook, John Moss, Helen Nahrung.

Minutes:
The minutes of the last General Meeting of May 12, were circulated in the News Bulletin Vol. 36, Issue 3, May 2008.
Move Minutes be accepted: Christine Lambkin
Seconded: Geoff Monteith

Membership Nominations and Elections:
The following nominations were received and approved by Council, and put before the meeting for election:

Ms Jodie Coldwell, Nominated by Mark Hopkinson - Seconded by Matthew Purcell
Dr. Stefan Schmidt, Nominated by Mike Furlong - Seconded by Matthew Purcell
Dr Greg Anderson, Nominated by Lyn Cook - Seconded by David Merritt

In accordance with Society rules, the Chairman put the nominations to the members and called a show of hands for their election. All were in favour.

General Business:
Announcements:

- New publication announcement for Michael F. Braby's book, 'Butterflies of Australia' special offer from CSIRO Publishing of $79.95 if purchased before June 30, 2008.
- Aust. Ento. Soc. Inc. Research Grants call for applications to be awarded in 2009 – details to be provided in the next issue of the News Bulletin.

Main Business:

Student Award Winner - Jason Callander

The Australian sheep blowfly: habitat, way of life and subspecies status

Lucilia cuprina is responsible for causing about 90% of sheep myiasis in Australia (Anderson, 1988; Norris, 1990; Ward, 2000). Aubertin (1933) initially distinguished two forms of *L. cuprina* on the basis of subtle morphological variation across the species' geographical distribution. The distinction was formalized by Waterhouse and Paramonov (1950), who described two subspecies, *L. cuprina cuprina* and *L. cuprina dorsalis*. This taxonomic subdivision has been controversial and is not universally accepted (Norris, 1990; Wallman *et al*., 2005). *Lucilia cuprina cuprina* was described as readily distinguishable by its dull olive-bronze colouration when compared to the brilliant metallic green of *L. c. dorsalis* (Waterhouse and Paramonov, 1950). Other defining characteristics have subsequently been recognized, mainly relating to the degree and distribution of "dusting" over the integument (Norris, 1990), however this character is to some degree subjective and difficult to identify.

Lucilia cuprina cuprina is distributed through the New World, Asia, Indonesia and Oceania, including Papua New Guinea (Norris, 1990). The furthest west it seems to have been collected in Asia is Assam in north east India (Waterhouse and Paramonov, 1950). *Lucilia cuprina dorsalis,* by contrast, is less widely distributed. Waterhouse and Paramonov (1950) reported its distribution as Africa, Australia and India. It has evidently since spread to New Zealand and the Middle East (Norris, 1990).

A retrospective analysis of *Lucilia* specimens in insect collections has suggested that flystrike in Australia is most commonly caused by *L. c. dorsalis. Lucilia cuprina cuprina*, by contrast, is a synanthropic blowfly observed in urban areas feeding on household refuse or animal faeces (Rice, 1986). *Lucilia cuprina cuprina* was at one stage distributed in far north Queensland (near Cairns) and was thought to have also occupied patches of the eastern coastline (Fig. 1) (Norris, 1990). Norris (1990) describes hybrids of the two subspecies which he suggests are now distributed down most of the eastern coast of Queensland. These specimens were collected from refuse dumps and reportedly contained a blending of characteristics of both *L. c. cuprina* and *L. c. dorsalis*. This is consistent with the population genetic concept of subspecies advocated by Ford (1974), as *L. c. cuprina* and *L. c. dorsalis* have independent global distributions and hybridize where distributions overlap.

More recently, Wallman *et al*. (2005) (in a study of mitochondrial DNA sequence variation) suggested that *L. cuprina* collected from Western Australia were phylogenetically distinct from *L. cuprina* from the east coast of Queensland. They suggest that *L. c. cuprina* is paraphyletic with reference to *L. sericata,* the sister species of *L. cuprina*, showing far less divergence from *L. sericata* than it does from the other subspecies *L. c. dorsalis*. In Wallman *et al*.'s (2005) opinion, these two subspecies must actually constitute distinct species.

There are known differences in biology between *L. c. dorsalis*, which is considered to be functionally almost an obligate parasite of sheep in southern Australia, and the now relatively rare *L. c. cuprina*, which has behaviour more closely resembling that of common house flies than other blowflies. However, the extent of differences in the behaviour and ecology of *L. cuprina* of other genetic types and from different geographical locations is unclear.

My study was divided into two sections; the first was devoted to understanding the habitat preferences of this blowfly, specifically whether Brisbane *L. cuprina* are restricted to urban habitats, or are also found in nearby forests. The second section was devoted to indentifying the ecological and genetic differences between urban *L. c. cuprina* and rural *L. c. dorsalis*.

Trapping transects through suburbia and into open sclerophyll forest demonstrated conclusively that *L. c. cuprina* does not inhabit forest habitats (Fig. 3). The consistently high proportion of *L. c. cuprina* females captured is probably the result of using liver baits because female blowflies need proteins to mature their eggs (Clift and McDonald, 1976; Barton Browne, 1979). Subsequent mark release recapture experiments revealed a low number of marked *L. c. cuprina* recaptured in the open sclerophyll forest area after release. This suggests that these individuals did not remain in this area, which in turn implies that this environment may not match their sensory template for habitat recognition, or it may be unsuitable for them, or both of these may be true. Surprisingly little research has been conducted into the habitat relationships of this species, but the anecdotal evidence available supports the conclusions drawn. For example, Dymock and Forgie (1993) reported that no *L. cuprina* blowflies (subspecies unspecified, but presumably *L. c. dorsalis*) were trapped at urban sites or in rural bush remnants, although only 13 *L. cuprina* individuals were trapped in rural pastures. Denwood *et al.* (1999) described that Lucitraps ® (Luci-lure) attached to *Eucalyptus* trees caught significantly fewer *L. cuprina* than those placed 15m away from the trees. Large carcass succession trials within Brisbane Forest Park revealed that no *L. cuprina* were reared from pig carcasses throughout the year, (A.R. McDowell, University of Queensland, unpublished data.). Together with the data collected in this study, these results suggest that *L. c. cuprina* do not actively patrol forest areas for resources.

Olfactory response bioassays indicated that there are subtle differences between the odours to which the two subspecies respond (Fig. 5.). *Lucilia cuprina cuprina* responded to all test stimuli including liver, dampened soiled fleece and sour cream, indicating a general olfactory response. This more general response correlates with observed resource use in suburban populations of this synanthropic blowfly (McKenzie, 1984; Rice, 1986; Norris, 1990). However, *Lucilia cuprina dorsalis* did not respond to sour cream. The lack of response to the sour cream baited traps correlates with the life history of *L. c. dorsalis* as it is an obligate parasite on sheep (Anderson, 1988; Lang, 2006).

Sampling in New Zealand has revealed that *L. cuprina* (presumably *L. c. dorsalis*) was readily caught in rural pastures, where it strikes sheep (Dymock *et al*., 1991; Gleeson and Heath, 1997), yet it was virtually absent from rurally refuse dumps in rural (Gleeson and Heath, 1997) and urban areas (Dymock *et al*., 1991; Dymock and Forgie, 1993). Gleeson and Heath (1997) demonstrated that New Zealand populations of *L. cuprina* have a low tendency for dispersal when favourable conditions exist, which the authors felt explained the observed habitat use in New Zealand. However, the habitat and olfactory responses of these organisms may play a greater role in the lack of *L. c. dorsalis* migration into urban areas of New Zealand, as indicated by the trapping data (Fig. 3) and the preliminary olfactory data in Fig. 5.

Gas chromatograms of cuticular hexane extractions revealed differences in both composition and concentration of hydrocarbons between protein fed and protein deprived blowflies. This was observed in both subspecies however their profiles did not differ from one another.

Sequence variation of the COI gene suggests that both subspecies may occur in sympatry in the Brisbane area (Fig. 6). Interpretations of this data could not provide resolution to the current debate regarding the subspecies status of *L. c. cuprina* and *L. c. dorsalis* and, as such, demonstrates that more comparative investigations are needed.

This study has revealed unexpected subtleties in the ecology of the *L. cuprina* subspecies and has identified specific areas for research that will help resolve the subspecies status of these blowflies. Special attention should be paid to the resource use of these subspecies and amount of gene flow between them along the Queensland coast.

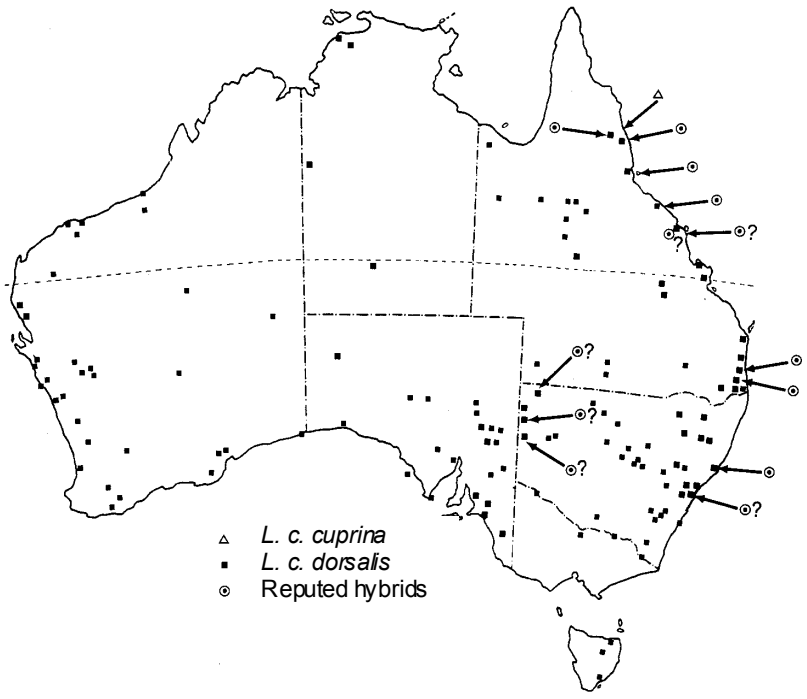

Fig. 1. Map of Australia illustrating the recorded distribution of the two *Lucilia cuprina* subspecies, as well as that of reputed hybrids between them. (?) signify inconclusive interpretations made from badly preserved material (redrawn from Norris (1990)).

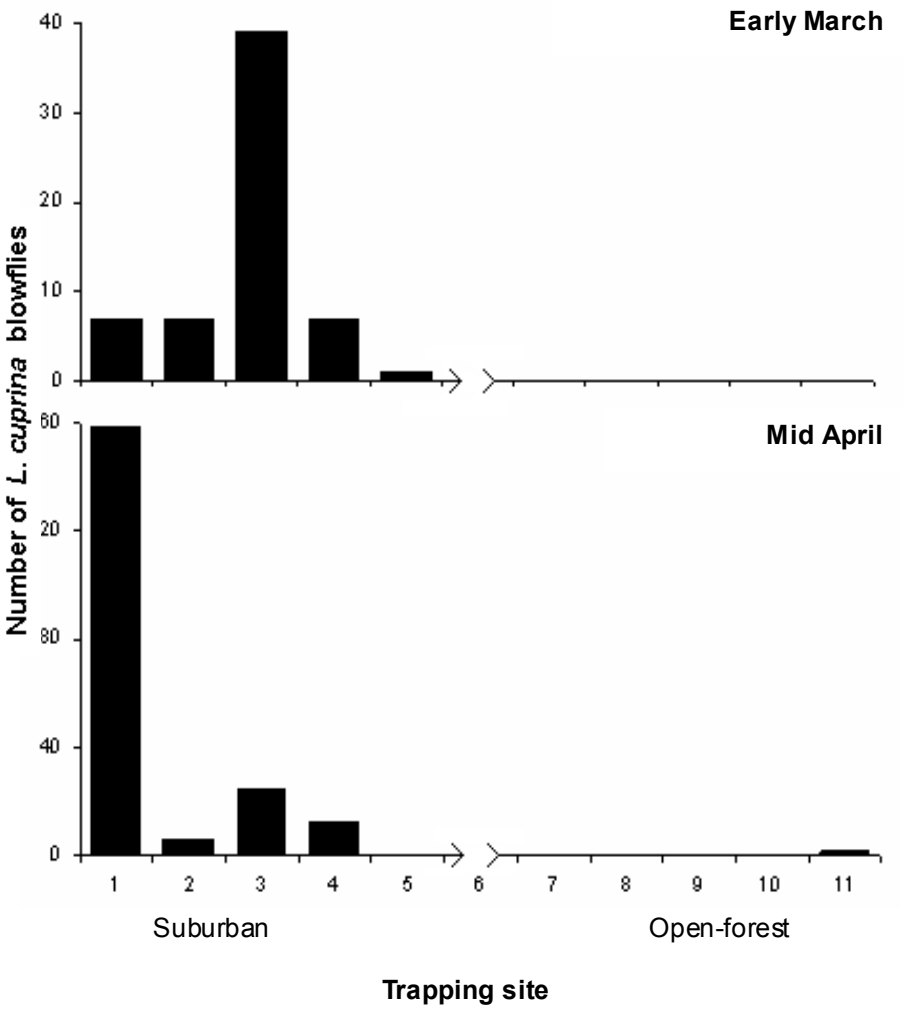

Fig. 3. Total number of *Lucilia cuprina* caught in single traps (and on two trapping occasions, 28.2 to 1.3.2007 and 11.4 to 12.4.2007) set at 11 points along a transect that ran from suburban gardens (traps 1-5) via an intermediate setting in a park (trap 6) into open sclerophyll forests (traps 7-11).

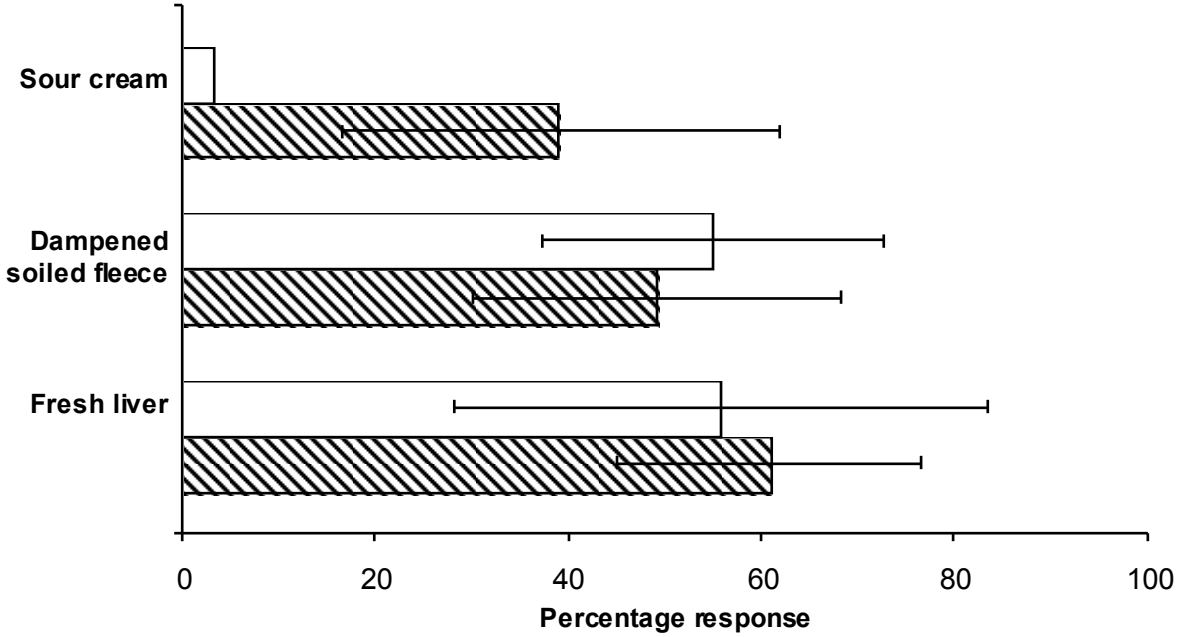

Fig. 5. Percentage responsiveness of Brisbane *L. c. cuprina* and *L. c. dorsalis* (originally from Canberra) to three natural stimuli in an outdoor bioassay (n=4 tests, each with 30 gravid female blowflies). Error bars indicate two standard errors of the mean. Note that variance = 0 in the *L. c. dorsalis* sour cream trap catches.

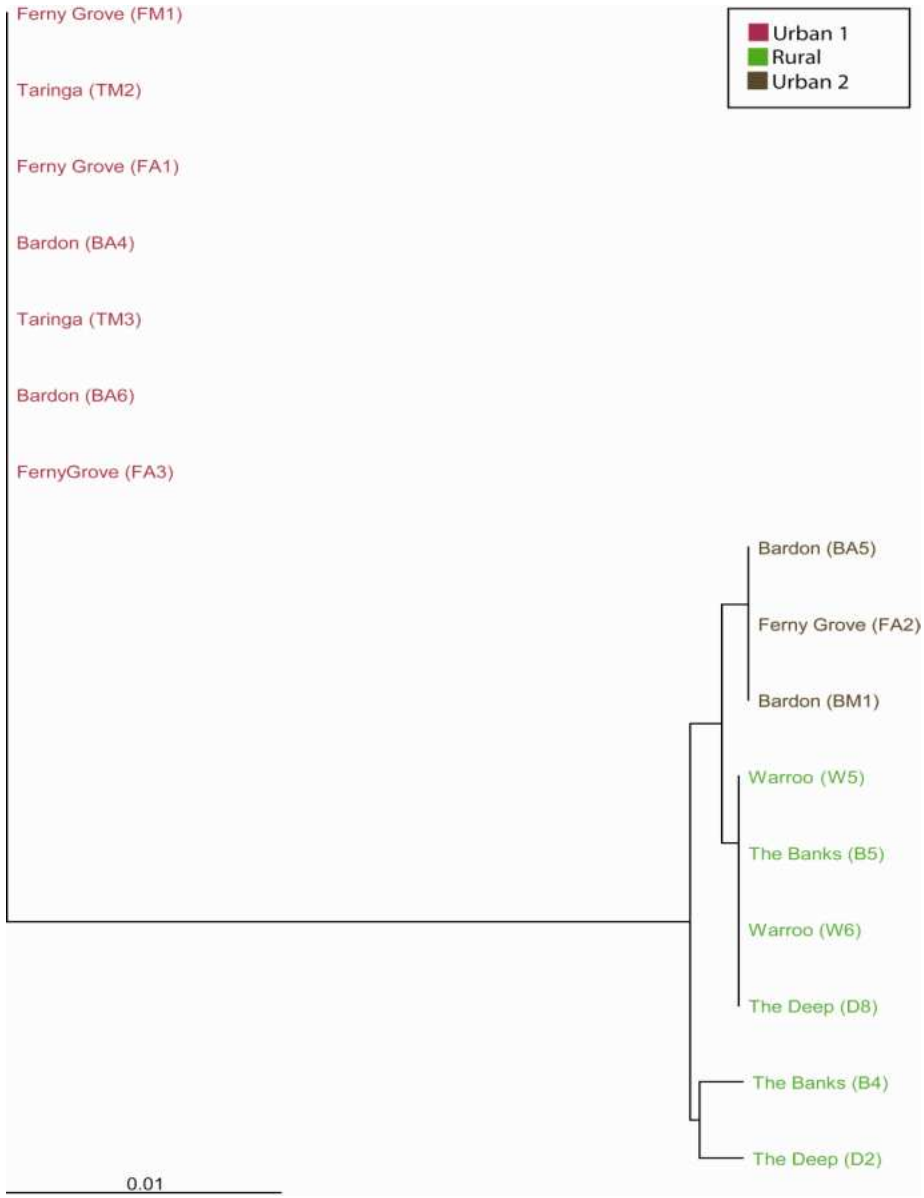

Fig. 6. Neighbour-joining tree of *L. cuprina* based on COI sequence data. * indicate individuals caught in liver baited traps from residential properties in Brisbane, the remaining individuals were obtained from rural inland Queensland (Warroo = Inglewood, The Banks = Dirranbandi and The Deep = Tara). The tree has been scaled to the average number of nucleotide substitutions per site.

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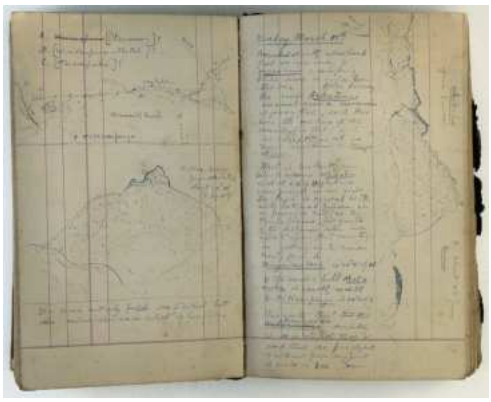
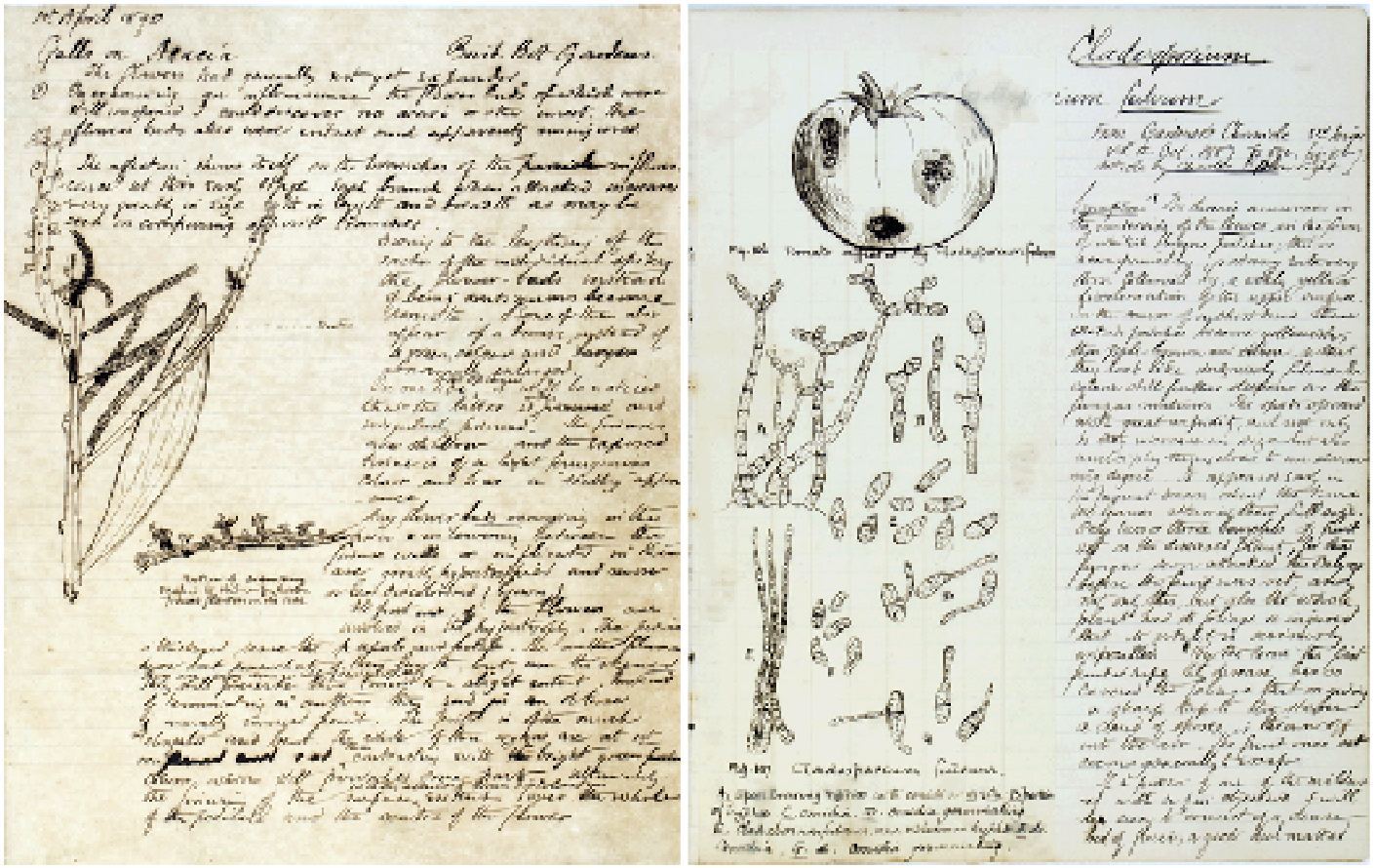
Notes and Exhibits
Presentation #1 by Geoff Thompson (QLD Museum):

Recently discovered papers of Henry Tryon

Henry Tryon was Queensland's first Professional Entomologist. He was Assistant Curator Queensland Museum 1883 and appointed as Government Entomologist in 1884. In 1901 he was also appointed as Government Vegetable Pathologist. He presided over nearly all major developments in Queensland Entomology and Plant Pathology until he retired in 1925.
Some years ago Pat Marks gave Geoff Monteith a box of papers, including a diary from New Zealand and in a recent clean up I investigated. There was a cache of Tryon's books and papers.

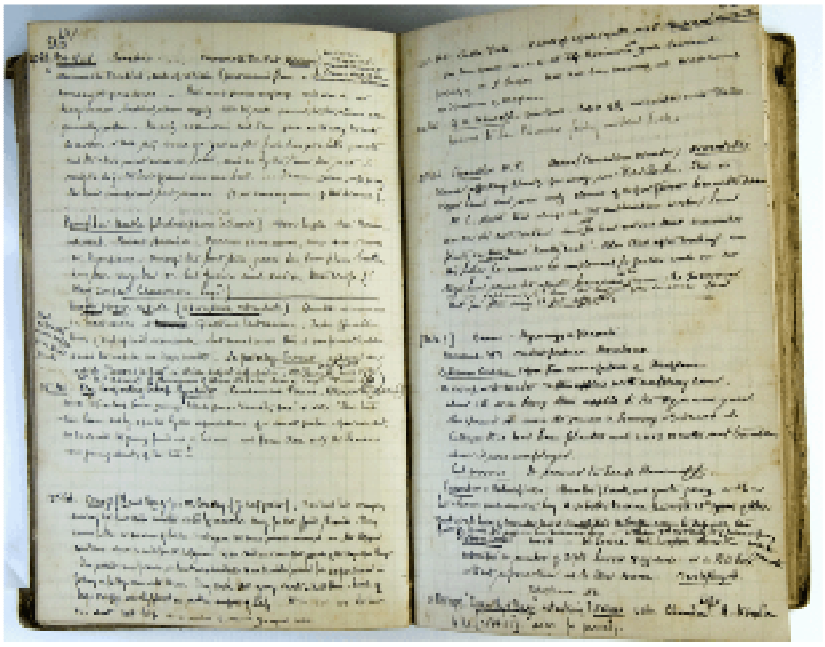
The cache included his 1879 New Zealand Diary with notes and sketches of topography and plants. There was even a pressed grass specimen.



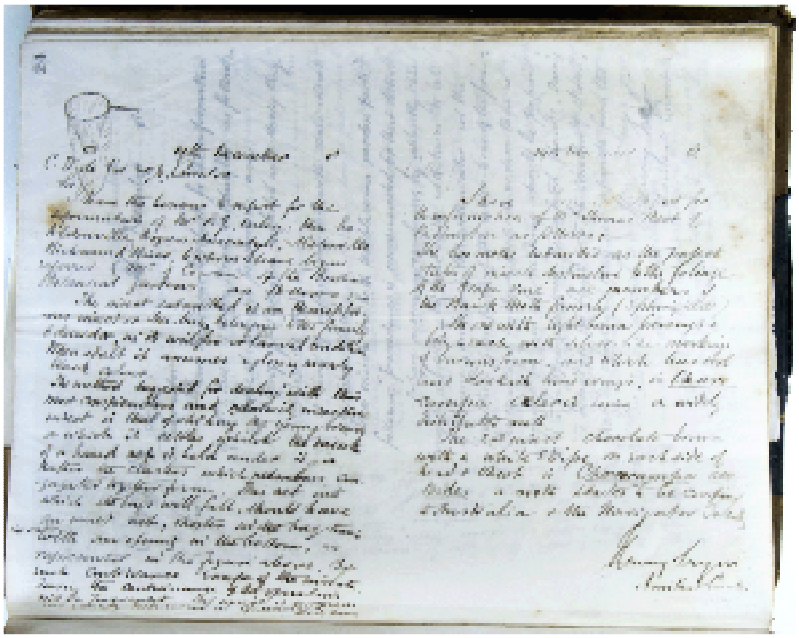


Included were a set of field notebooks with drawings, including one from the Botanic gardens in 1890.

Amazingly, there is an indexed record of public enquiries from 6 June 1909 – 10 Feb 1916.

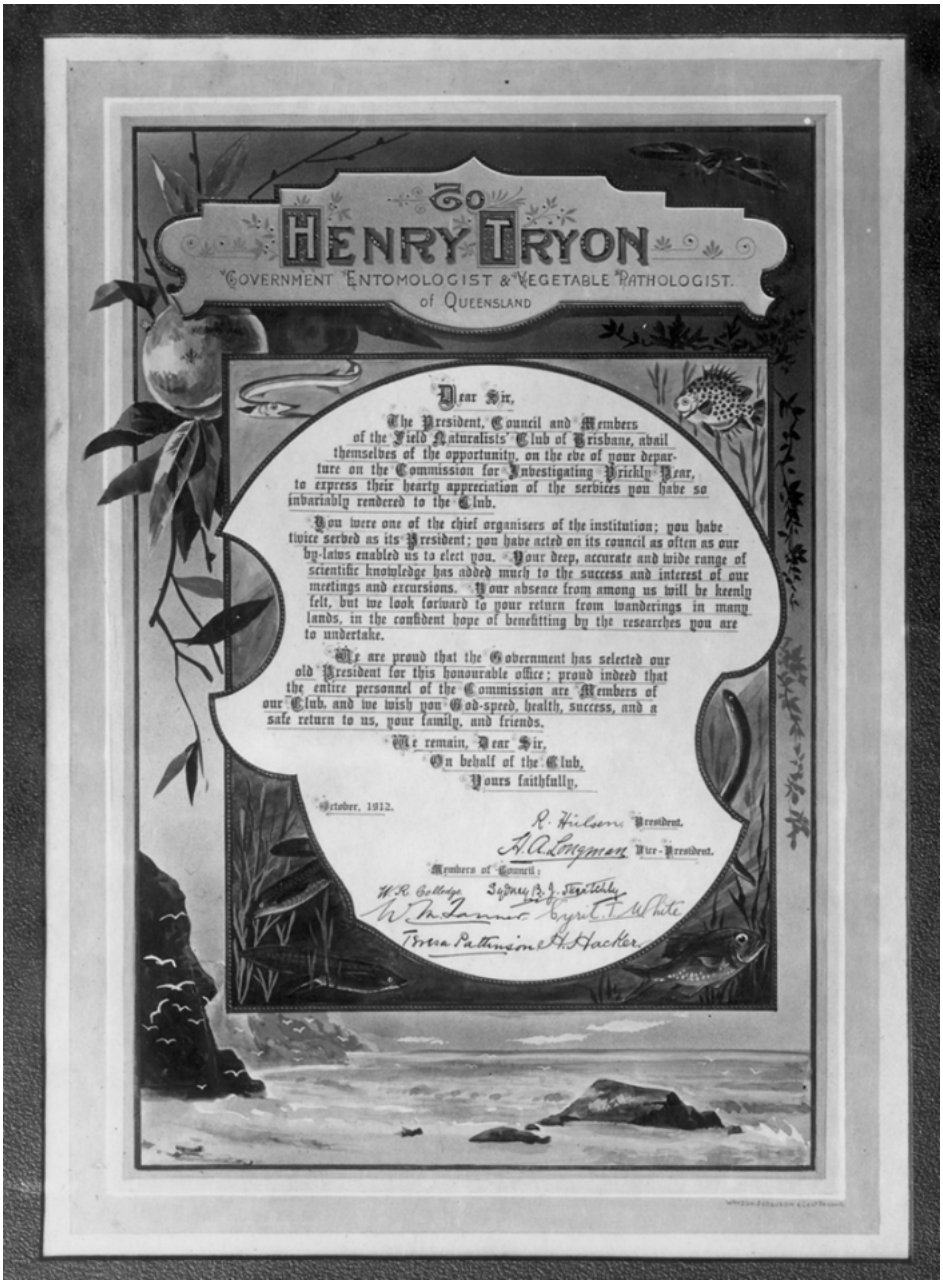


There is a letter book covering the period February 1888 to July 1893, with an extra dated October 1902.



There are also a few photographs of retirement functions in the Brisbane Chamber of Commerce and at Government House.

Lastly there is a photograph of an illuminated address presented to Tryon on his departure with the Prickly Pear Commission (set up at his suggestion) to investigate possible bio-control agents in Central and South America. It is dated October, 1912 and the illuminations include a moth and fruit fly on fruit.



This material will be deposited in the Queensland Museum Library.

Notes and Exhibits
Presentation #2 by Brendan Murphy:

The Paropsine Threat to *Eucalyptus* (& *Acacia*) in New Zealand

The *Eucalyptus* tortoise beetle *Paropsis charybdis* Stål (Coleoptera: Chrysomelidae: Paropsini) (Figure 1) established in New Zealand in the early 1900s and is historically the single greatest impediment to a commercial short-fibre *Eucalyptus* resource in that country. Although biological control was attained in the late 1980s with the introduction of the egg parasitoid *Enoggera nassaui* Girault (Hymenoptera: Pteromalidae) (Figure 2) from Western Australia (Kay 1989) control has been inconsistent in cold or high altitude regions. This is particularly problematical as the preferred commercial species *Eucalyptus nitens* is preferentially grown in these areas.

The successful collection and release of Tasmanian *E. nassaui* strains in New Zealand to attain cold-climate control offered an opportunity to further evaluate the paropsine threat to New Zealand. This was considered valuable as not only are several species notorious forestry pests within Australia (e.g. *Chrysophtharta agricola* and *C. bimaculata* in Tasmania), but this group has proven highly invasive internationally. New Zealand additionally hosts the *Eucalyptus* pests *Trachymela catenata* and *T. sloanei*, as well as a small non-descript *Peltoschema* species and *Dicranosterna semipunctata* on *Acacia*. Another *Acacia* defoliator *Peltoschema suturalis* was eradicated in Wellington in the early 2000s. *Trachymela tincticollis* was discovered in South Africa since 1982, and two species (*T. sloanei* & *C. M-fuscum*) are established in California. Somehow a Tasmanian *Chrysophtharta* species has apparently now established in Ireland!

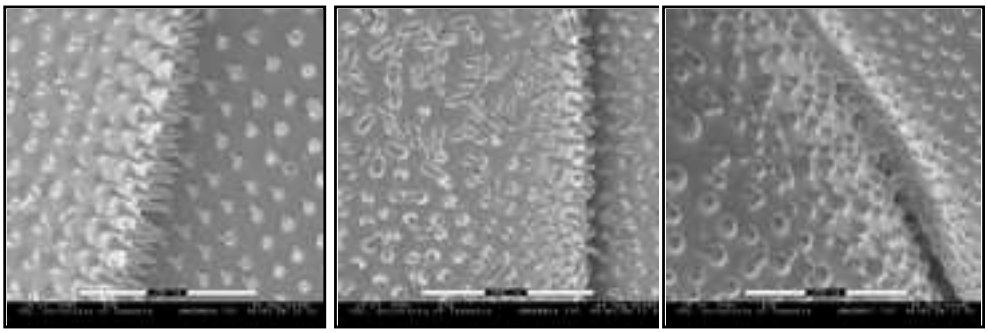
The paropsine threat was evaluated by examining paropsine fecundity and the host range of the egg parasitoid. These were considered to be two limiting factors to the rate of spread and population growth of paropsines in New Zealand conditions, and are easily measurable. Reproductive output was measured for 12 *Chrysophtharta*, seven *Paropsis*, two *Trachymela*, one *Paropsisterna* and one *Dicranosterna* species. Mean fecundity and oviposition rates did not differ between *Chrysophtharta* and *Paropsis*, but significant differences were found within each genus. Three species, *C. agricola*, *C. obovata* and *P. charybdis* had mean fecundity above 1000 eggs. Pest species or those capable of outbreaks were characterised by fecundity exceeding 600 eggs with an oviposition rate above 10 eggs per day.

The host range of *E. nassaui* was evaluated by both field collection and laboratory bioassay. Field collections revealed that *E. nassaui* parasitised five *Chrysophtharta* and four *Paropsis* species. This included the first record of *E. nassaui* parasitising *P. charybdis* in their natural range. No-choice laboratory bioassays were used to quantify a one hour parasitism rate against three *Chrysophtharta*, five *Paropsis*, two *Trachymela* and one *Dicranosterna* species. Parasitism rates were significantly lower on *Chrysophtharta*, *Trachymela* and *Dicranosterna* than on *Paropsis*. Scanning electron micrography (SEM) revealed that *Paropsis* eggs had a smooth, reticulated chorion, while *Chrysophtharta* eggs posses either spines or nodules (Figure 3). The presence of chorion modifications was hypothesised to explain the significantly lower parasitism rates on the *Chrysophtharta* species examined.

The body of data indicates that *E. nassaui* is a polyphagous parasitoid, but is more efficacious against *Paropsis* than other paropsine genera. *Chrysophtharta* species with a combination of high fecundity and low susceptibility to *E. nassaui* represent a particularly serious threat to the *Eucalyptus* industry in New Zealand. This prediction is clouded by the recent accidental establishment of two egg parasitoids; the obligate hyperparasitoid of *E. nassaui*, *Baeoanusia albifunicle* (Hymenoptera: Encyrtidae) and the primary egg parasitoid *Neopolycystus insectifurax* (Hymenoptera: Pteromalidae). The former species has had an adverse impact on *E. nassaui* populations, while the latter species offers some promise at control. Because of this scenario, the next paropsine to establish in New Zealand is eagerly awaited.

Figure 1. *Paropsis charybdis* has historically been the most serious impediment to *Eucalyptus* growers in New Zealand.

Figure 2. *Enoggera nassaui* parasitising *P. charybdis* egg.



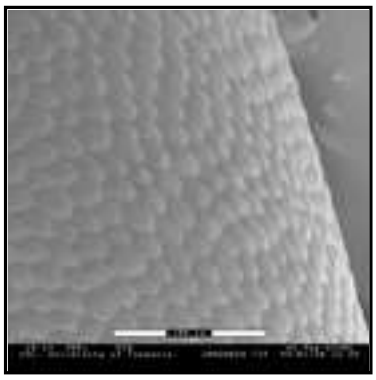


Figure 3. Various scanning electron microscopy (SEM) images of paropsine egg chorion. The top three show typical *Chrysophtharta* eggs with spines or nodules. In contrast (to the right) is a smooth, reticulated *Paropsis* egg chorion.

Acknowledgements

Brendan's research was funded and supported by Forest Research (ENSIS), the School of Forestry (University of Canterbury), New Zealand Plant Protection Society, a FoRST Bright Futures Scholarship, and was hosted by the CRC for Sustainable Production Forestry (Hobart).

Notes and Exhibits
Presentation #3 by Geoff Monteith (QLD Museum):

A GRAVE STORY OF THE BUTTERFLY MAN OF KURANDA

Many members will know of Frederick Parkhurst Dodd, a famous early entomologist/ collector who lived at Kuranda in North Queensland from 1904 until his death in 1937. He was the first resident collector to explore in detail the rich insect fauna of the Cairns-Atherton region, and he made a living supplying insects to museums and collectors around the world. He also developed a spectacular show collection of tropical insects which he displayed to tourists in his home. He toured it around the eastern states in 1918 and 1923, becoming a national figure known popularly as "The Butterfly Man of Kuranda".

After his death, his show collection was stored in Brisbane by his children and eventually passed to the Queensland Museum in 1987. It comprised 40 large display cases in perfect condition and represented a prime example of an artistic Victorian Era gentleman's natural history preoccupation. One of the famous cases was his "Poem Case" (Fig 1) in which he spelled out this verse from a poem by Henry Longfellow in small colourful moths:

> *And whenever the way seemed long*
> *Or his heart began to fail*
> *SHE would sing a more wonderful song*
> *Or tell a more marvellous tale.*

"She" in that poem is "Nature, the old nurse", so Dodd was saying in that case that whenever he was down in the dumps there were always new and exciting insects to keep him going.

The Queensland Museum decided to develop this historic collection as its first major travelling exhibition and it toured extensively in Australia and New Zealand during the 1990s. As Curator of the Exhibition, I wrote an illustrated biography of Dodd to accompany the exhibition (Monteith 1991). During research for that book I spoke to numerous descendents of F.P.Dodd. One granddaughter, Isobel Baldwin of Redcliffe, presented to the Museum a treasure in the form of a leather-bound book of Longfellow poems (Fig 2) which had been presented to Dodd in 1890 by his "old comrades of the Mercantile Cricket Club, Townsville". Sure enough, it contained the full poem from which Dodd had taken the verse in his "Poem Case". It is an ode written in 1857 to commemorate the 50th birthday of Alexander Agassiz, an eminent biologist at Harvard University. I also sought out Dodd's grave in the little grassy Kuranda cemetery, and was disappointed to see that the headstone simply read "Frederick Parkhurst Dodd 1861 – 1937" (Fig 3). I hinted broadly to Isobel that there was plenty of room on the granite headstone to say something about who this man was. In very short order the relatives rallied and in, I think 1992, the stone was removed and sent to Brisbane where it was engraved and returned to the cemetery. It now proudly carries his popular title of "The Butterfly Man of Kuranda" as well as the Longfellow verse.

In January this year I called in to the Kuranda cemetery and was sad to see that the gravestone was so covered with mould and algae from the record wet season that the lettering was unreadable. So, on a return visit in early June, a group of local entomologists had a pleasant picnic lunch come working bee in the cemetery and scrubbed the whole grave up to its former glory (Fig 4). I had brought Dodd's book and we had a reading of the whole poem in the sunshine when we finished the job….a couple of Ulysses dipped their wings.

Members might like to visit the grave if passing by Kuranda. The cemetery is only 100m off the main Cairns-Kuranda highway. Heading towards Kuranda, its entrance is the first turn right after crossing the Barron River bridge and Dodd's grave is at the highest point of the tiny cemetery. (PS. take a scrubbing brush and some Exit Mould!)

REFERENCE

Monteith, G.B. (1991). *The Butterfly Man of Kuranda – Frederick Parkhurst Dodd.* Queensland Museum, Brisbane. 34 pp.

FIG. 1. F.P.Dodd's "Poem Case" that he arranged in about 1918 to spell out a verse in yellow pyralid moths. The "Longfellow" signature is done in small green chrysomelids.

FIG. 2. F.P. Dodd's book of Longfellow poems. FIG. 3. Dodd's grave as it was before 1992. FIG. 4. The working bee cleaning up Dodd's grave. From left: Geoff Monteith, Max Moulds, Paul Zborowski, Kerry Huxham, Dave Rentz, Margaret Humphreys, Geoff Thompson.

Continued... Notes and Exhibits
Presentation #3 by Geoff Monteith (QLD Museum):

MORE BEETLES THAN YOU CAN POKE A STICK AT...?

Forty Mile Scrub National Park lies a little west of Mount Garnet in North Queensland and protects a unique patch of dry rainforest on basalt soil. It is traversed by the bitumen highway which runs west from the Atherton Tableland out to the Gulf Country. While on field work with Kip Will of University of California (Berkeley) in January this year we stopped briefly to look for carabid beetles. It was the height of the wet season and there had been much rain in the area. Simon Thompson, an EPA resource ranger from Atherton, called in while we were there and, in conversation, asked if we had seen the big mass of beetles which was nearby. Expecting them to be giant cockroaches (*Macropanesthis rhinoceros*), flushed out of their burrows by rain, or perhaps a cluster of the scutellerid bug (*Lampromicra senator*) which often forms grapefruit-sized clusters on foliage in these dry rainforests, we assumed a knowledgeable air and were led a few hundred metres along the road to a spot where a large fig tree stood, filling the narrow, 20-metre wide, cleared verge between the bitumen highway and the edge of the intact rainforest. But what we found was quite unexpected.

As we approached we could see that a large patch of the ground surface beneath the tree looked for all the world like a smooth-surfaced, oval, brown golf putting green. On closer examination this was revealed to be an enormous mass of scarab beetles, about 6 metres in diameter. It was possible to walk out on the surface of the mass, which was reasonably compacted. Digging down into it showed it was 25-30 cm deep in the middle. The material was a solid mass of moist, oozing, decaying beetles and, as revealed by the look on my face in Fig 1, emanated an overwhelmingly putrid smell. Almost all beetles were dead but the surface layers had a small percentage of living beetles, burrowing aimlessly about among the rotting mass. There were just two species present (Fig 3). The commonest, outnumbering the other by about 20 to 1, was the hybosorid *Phaeochrous emarginatus* Laporte. The other was the scarabaeinae, *Coptodactyla brooksi* Matthews, a localised species known only from Forty Mile scrub and nearby similar habitats.

I visited the site again in June, at the start of the dry season. At this time the aggregation looked much the same but was completely dried out and had no living beetles in evidence. The material comprised several cubic metres of beetle bodies and fragments (Fig 2) and had the consistency of dried chaff, with no smell. The long-term Ranger who looks after Forty Mile Scrub NP, Col O'Keefe, advised me that he had been aware of the aggregation for at least five years at the same site, and that each year it went through a similar cycle of becoming moist and smelly in the wet season, with some newly-arriving living beetles, then dried out and lifeless in the dry season.

So what's going on? Scarabs are beetles which are highly efficient at finding their food at long distance by smell...usually a "bad" smell! *Phaeochrous emarginatus* is a carrion attracted beetle that occurs during the wet season in far north Queensland. At peak periods they fly in great numbers just after dusk and will even invade food and cooking activities. We had been plagued with them during a very wet camp on Prince of Wales Island just before first seeing the Forty Mile Scrub aggregation. *Coptodactyla brooksi* and other species of its genus are true dung beetles but they are more catholic in their tastes than most dung beetles and readily utilise carrion and even rotten fungi if available.

Many years ago we shot a large wild pig close to our camp at Iron Range in the wet season. Within days it began to attract literally bucketfuls of *Phaeochrous emarginatus* and several species of *Coptodactyla*. By the end of our ten days at that camp the pig was reduced to bare bones on a patch of ground ploughed up by untold thousands of beetles as they dug their nest burrows to receive the putrid pig flesh they stripped off and busily carried below ground to feed their larvae. My suggestion is that the Forty Mile Scrub aggregation had its genesis in a similar dead animal (shot pig, roo or even a roadkill steer) that attracted so many beetles that their own biomass produces enough smell each year to attract more, to the extent that it is now almost a self-perpetuating phenomenon.

However, I could find no obvious bones beneath the mass to support this idea. I could also not find any sign of breeding burrows of the beetles in the soil beneath the mass. It seems that the arriving beetles, attracted by the smell of the mass during the wet season, cannot find suitable tissue to use for stocking breeding burrows and/or cannot burrow down through 30cm deep mass of accumulated dead beetles. Thus they burrow around among the tantalising pong until they themselves die and add to it...and so on....and so on... Anyway, if you notice a bad smell from your car window as you drive by about 200m west of the rest area at Forty Mile Scrub, it's worth stopping to see the curiosity!

FIG.1: Geoff Monteith sampling the depths of the mass of beetles at Forty Mile Scrub NP in January 2008. FIG 2: Detail of the beetle fragments, mostly elytra, of which the mass is comprised. FIG 3: The two species forming the mass, *Coptodactyla brooksi,* on left, and *Phaeochrous emarginatus*. Both are around 10mm in length.

Numerous questions were put to all presenters, but space does not permit reporting of often lengthy and detailed answers.

Vote of Thanks :
Christine Lambkin thanked all presenters for their most interesting presentations that stimulated considerable discussion around questions from the audience.

Closing Statement:
The next meeting will be held at CSIRO Long Pocket Laboratories, 120 Meiers Road, Indooroopilly at 12:00 midday on 11 August 2008 with an address by Dr Peter James, Qld DPI&F "Lousy research and the Integrated Parasite Management Group".

News Bulletin contributions from Ensoc Members

We would love to receive your news, field trip reports, sightings of strange and wonderful beasts, Entomological Notes, Bug of the Month, gossip, concerns, questions and suggestions pertaining to the world of entomology. Please send contributions to the News Bulletin editor or your nearest Ensoc office bearer!

Don't delay, next issue out soon!

Thank you, Anna

Notice of Next Meeting

Entomological Society of Queensland

Monday 11th August 2008 12pm

Large Conference Room
CSIRO Long Pocket Laboratories
120 Meiers Rd, Indooroopilly

Dr Peter James

Qld DPI&F

"Lousy research and the Integrated Parasite Management Group"

OBITUARY

ROSS IAN STOREY
(29 Nov 1949 - 14 June 2008)

When Ross Storey slipped away after a bout of pneumonia in Cairns Hospital this year we lost one of the heroes of Australian entomology.

Ross was born in Canada and did his BSc in the late 1960s at Victoria University in British Columbia. During his course he'd become interested in scarabaeine dung beetles, but temperate BC had just a couple of species and he dreamed of tropical beetle diversity. Soon after graduating, at age 21, he came to Sydney in late 1971 and began applying for any sort of insect related work. Peter Blood, then insect ecologist at UQ in Brisbane, needed an assistant to trap and sort sheep blow flies and Ross was appointed for two years. The UQ Ento Dept was then in its prime with many people interested in native faunas and a large collection (which I then curated). Ross fitted in immediately and soon became a friend to everyone. He was gregarious, positive about everything, had outrageous tastes in music, loved a beer, had strong political ideas, knew sport from ice hockey to cricket, but most of all he was passionate about insects. His job was a dream come true. His main duty was to go out to Inglewood by himself for a few days every couple of weeks, catch blow-flies using rotten liver baits in many different habitats, then sort the catch. It was only a minor paradigm shift to double the smell by using dung baits as well and he was able to also sample the dung beetles. Soon after this started, Eric Matthews' magnificent revision of the diverse dung beetle genus *Onthophagus* was published in mid 1972. This gave Ross the ability to identify his dung beetle catches and he soon published a list of 19 species he had collected at Inglewood, including many significant distribution records. He rapidly acquired a car and used every minute of leave to explore dung beetles further afield, heading north to Mackay in the first year and up to the Wet Tropics and south to Victoria in the second year.

He joined the Entomological Society of Queensland and attended his first meeting the same month he arrived in Brisbane and barely missed a meeting during the years he was in Brisbane. Soon after joining he became News Bulletin Editor for two years (1973-74) and often brightened the pages up with his own excellent drawings of beetles. He remained a member until his death.

At the time his initial blow fly sampling job ran out, Elizabeth Exley, also in UQ Ento Dept, had received a major ABRS grant to study tiny native bees and she took Ross on as her assistant for another two years. This involved adventurous trips to Darwin and Kakadu in 1974, and right across to Broome and the Kimberleys in 1975. They collected with super long nets to harvest tiny euryglossine bees from tall flowering gum trees (Fig 3) and everywhere they went Ross collected dung beetles. It was at this time that Ross, in his quest for ockerdom, began to wear the Aussie "Jackie Howe" navy blue singlet and it became his signature dress during much of his active days. Ross and I underwent a considerable "bonding" process in those UQ days. We had discovered that a curious dung beetle, *Cephalodesmius,* made synthetic dung from plant material for its larvae and to follow the details of this remarkable process through two summer seasons we camped at our Tooloom Scrub study site for 27 weekends between 1972 and 1974. In 1975 the noted Canadian entomologist, Henry Howden, the doyen of North American scarabaeologists, visited Brisbane with his coleopterist wife Ann, and they met Ross Storey. Their Canada/scarab commonality made them firm friends and they collaborated on many projects to do with Histeridae and dung beetles over the next 25 years.

QDPI entomologist Ian Cunningham had been given time off to do a full-time PhD at UQ in 1974-75 and knew Ross well. At completion of his degree Ian became OIC of the newly ugraded DPI laboratories in Mareeba, and he appointed Ross to a permanent experimentalist position there. His initial duty was to work on tobacco problems, this being the major Mareeba crop in those days. But Ian gave Ross his taxonomic head and he set out to develop a reference collection and provide much-needed taxonomic support for all aspects of NQ entomology.

At this time, Ross's great personal burden began to reveal itself. At age 16 he had been diagnosed with a rare muscle-wasting disease called "inclusion body myositis". Its cause and cure are unknown, it strikes only 5 per million, its progress is very slow, with muscles in the hands and legs being the first to decline, and with eventual complete loss of mobility, including breathing, being inevitable.

Ross's method of dealing with this was to ignore it. He bought a new Subaru 4WD, put a camper on the roof and set out on years of field trips, mostly on weekends and on annual leave, into remote parts of Cape York, NT and WA, as well as all through the rainforests of the nearby Wet Tropics. Much of it was by himself and, as his condition worsened, he devised all sorts of tricks to be able to cope with camping alone. He used malaise, pitfall and FIT traps widely, and when, in the early 90s, he could no longer do field work himself he had friends and colleagues run traps for him and bring him the samples to sort and mount. He built the collection up to be a major resource for NQ insects and he actively lobbied external scientists to work on it. An indication of the gratitude of those who studied his collections is the fact that more than 50 species are named after Ross Storey. His home was free lodging for every passing entomologist and scores stayed there. For 15 years we at the Queensland Museum worked intensively in the Wet Tropics and on dozens of occasions we descended on Ross for baths, de-leeching, a convivial meal and much chat about beetles.

He published quite widely himself, describing 4 new genera and 59 new species, many in collaboration with others such as Henry Howden, Tom Weir and Chris Reid. His book with Paul Zborowski, "A Field Guide to Australian Insects", has been a great success running to several reprintings.

About ten years ago Ross went into a wheelchair permanently. It had a beetle in clear resin as the control knob and just meant that Ross was now faster than the rest of us. He was known and loved in the Mareeba community and was the centre of the social set, aka The Bunyip Club, at the Mareeba DPI lab. Other accounts have dealt with his community service with carer groups and assistance dogs. Immediately prior to his last hospitalization I had stayed with him for a week working with him on dung beetles and he was as cheery as ever, devouring the latest book on bostrichids which had just appeared. But he no longer had the strength to cope with the complications of pneumonia. His funeral in Atherton was a packed house with more than a dozen people speaking. The wake next night at his home was astonishing. More than 200 people, musical pieces, bush poetry, men in "Jackie Howe" singlets arriving from overseas in stretch limos and singing lusty songs, a fitting end to his wine collection. Ross would have loved it.

Geoff Monteith
Queensland Museum

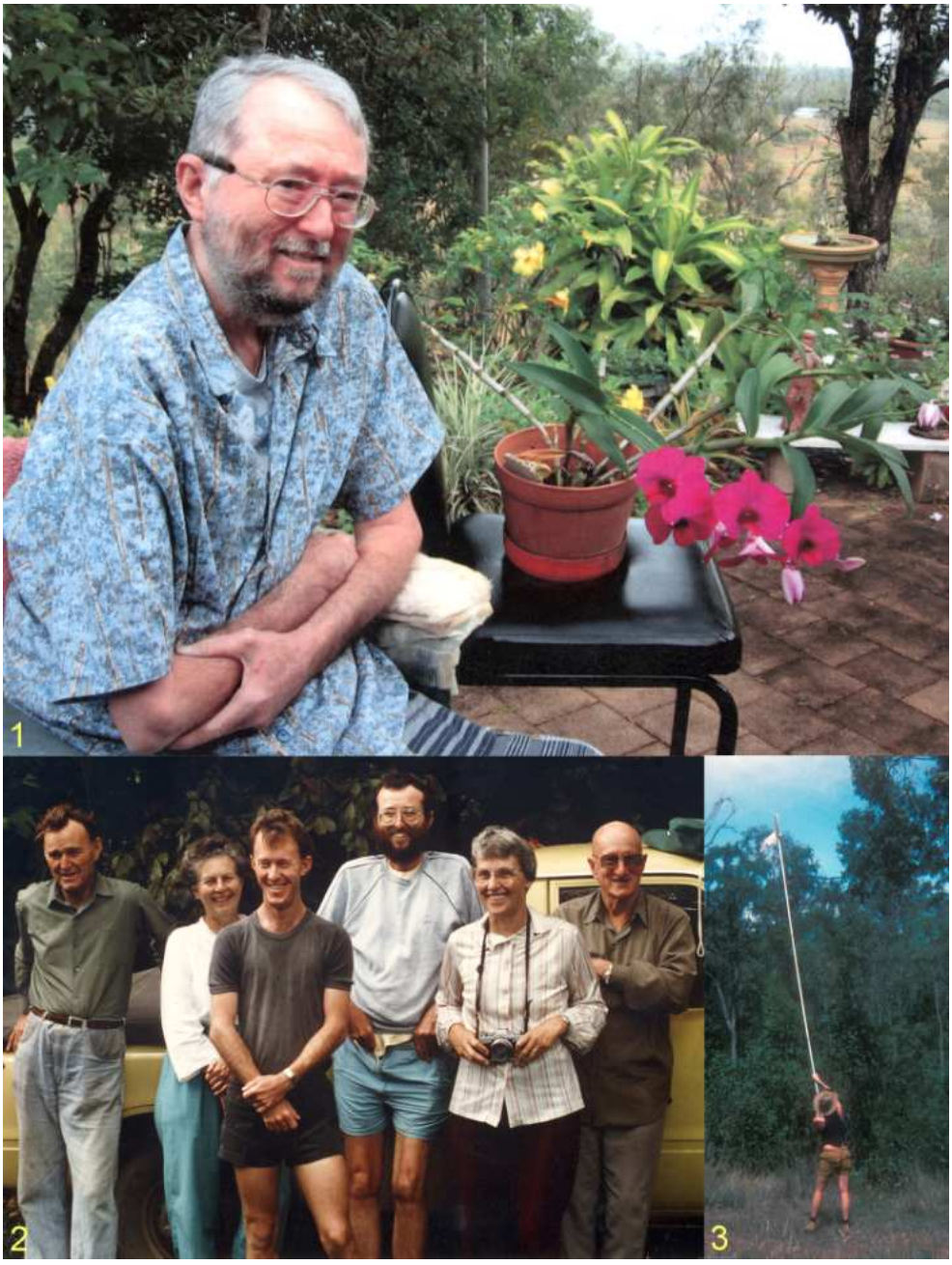


Fig.1: Ross Storey, taken on his terrace a few months ago. Fig. 2: On a collecting trip to Paluma in 1989: from left, Ernie Adams, Anne Howden, Eddie Adams, Ross, Joy Burns, Gordon Burns (photo by Henry Howden). Fig 3: Ross in his "Jackie Howe" days, swinging the tall bee net for Elizabeth Exley in the wild west, circa 1975.

Queensland Museum South Bank

Backyard Insects of the Great South-east

Thursday 21 August 2008, 1:30pm - 4:30pm
Friday 22 August, 9:30am - 12:30pm
Saturday 23 August, 9:30am - 12:30pm

Bookings are essential.

This workshop will include:

- What bug is that? Identifying common backyard insects.
- Friend or Foe? Which insects are pests and which are the good guys.
- Where to next? Useful and reliable sources of information on insects in the backyard.

http://www.southbank.qm.qld.gov.au/calendar/2008/workshops/index.asp
You can download the Wildlife Workshops 2008 Booking Form at the following web address: http://www.southbank.qm.qld.gov.au/calendar/2008/workshops/wildlife_workshops_booking_2008.pdf
Cost to participants is $50 Adults, $45 Concession/additional family members (cost includes a resource pack). Further details can be obtained on (07) 3840 7555.
All workshops are held at Queensland Museum South Bank.
Max. of 25 participants per session – Hurry Book Now!

freetalks
QUEENSLAND CONNECTIONS 2008

http://www.southbank.qm.qld.gov.au/calendar/2008/connections/index.asp

Make a note in your diary for the lively and interesting 2008 Queensland Connections Series. This year there will be 20 fascinating talks covering aspects of cultural heritage and our natural environment. All talks are held in the Theatre, Level 2, Queensland Museum South Bank.

FREE ENTRY

Wednesday 6 August at 1pm

Insect illustration
Speaker: Geoff Thompson, Queensland Museum
A tour through scientific illustration from 16th century engravings to digital illustration.

ESQ Permits

There are a number of activities occurring at the moment with respect to the permits.

Reports due

Firstly, it is a requirement of the permit that a report is sent by the Society to the EPA. This report is due at the end of August so it is now time to start gathering the information. You should have all received either a letter or an email from me about the returns along with the excel file you need to return. I have had a few emails returned due to out-of-date addresses so if you have a new email address could you please let me know the new one.

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 into which your data should be entered and you should all have a copy.

Please send your reports to me 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 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.

Expiry and renewal of permits

The permits the society holds will be expiring on the 18 August 2008 therefore please ensure that if you are collecting around this time you are aware of the dates. Both the permits covering National Parks and State forests will be renewed, however ESQ council are reviewing the protected species permit and it will not be renewed until that process is completed. We apologise for any inconvenience this may cause but in light of possible changes to the species listed under the Act we are delaying the renewal for a few months.

All those members wishing to have access to our new permits need to fill in the attached form and send the signed original back to me. You will note that the protected species permit is no longer listed on that form. One of the decisions we have made is that there will be a separate form for the protected species permit and therefore when we are able to renew the permit we will make the new form available to members.

Please keep an eye out in the bulletin for information about the permits as there will be updates in the next few months.

Financial status

A reminder also that **members who hold permits must be financial** members of the society, so please check that you have paid up for 2008.

Susan Wright

To: **Users of the Entomological Society of Queensland QPWS collecting permits**

From: **President, Entomological Society of Queensland**

Re: **Use and conditions of collecting permits**

Please note that you are required to follow the conditions as stated on the permit. The permit and membership to the ESQ may be revoked if conditions are not followed. In particular note that:

- you are required to submit a return of operations within 30 days after the end of each 12 month period the permits are in force;
- specimens may not be given, sold or traded (but a member who is endorsed on the permit may collect specimens on behalf of another member provided that they are also endorsed);
- wildlife habitat must not be damaged, environmental impact must be kept to a minimum;
- this permit does not give you the right to enter any land, you must get prior per mission from the agency responsible for administration of the land;
- where possible, collecting activities should be effected away from public view;
- a copy of any resulting report / activities from this research should be provided to the EPA office at which the permit was issued;
- you must carry a copy of the permit endorsed by the permit holder (S.Wright) and with your name and residential address;
- you must carry a form of identification that displays a coloured photograph such as a Queensland drivers license.

Complete and return the attached application form to:

Susan Wright
Entomology
Queensland Museum
PO Box 3300
South Brisbane Qld 4101
Ph 07 3840 7704
Fax 07 3846 1226
Email: Susan.Wright@qm.qld.gov.au

Signed applications sent by fax are preferred.

Application Form for use of The Entomological Society of Queensland Collecting Permits

Name: _____

Residential Address:

_____

_____

Postal Address (if different from above):

_____

_____

Phone number: _____

Fax number:_____

Email address:_____

Project outline:

_____

_____

_____

_____

_____

_____

Which permit will you be requiring? (please tick)

National Parks: _____
State Forests: _____

Declaration:
I agree that in using the permit I will read all conditions and procedures relating to these permits and will abide by them.

Signed :_____

Entomological Society of Queensland

BEERWAH BUG-CATCH

Sunday August 24

The Bug-Catch Program

"Bug-Catch" is a program of collecting trips run by the Entomological Society of Queensland, in conjunction with the Queensland Environmental Protection Agency. The object of the trips is to utilise the specialist insect collecting and identification skills of Society members to assist EPA to compile lists of invertebrates for protected areas (National Parks, Forest Reserves, State Forests, etc). Target areas are chosen jointly by ESQ and EPA. EPA then facilitates permits for collecting during these trips. ESQ members attending the trips are required to sign EPA volunteer forms to give them access to these permit privileges. Members are asked to supply lists of species collected, and these are included by EPA in their faunal databases. The Bug-Catch Program is arranged by Jenny Greenland, on behalf of EPA, and by Geoff Monteith and Christine Lambkin, on behalf of ESQ.

When is it? Sunday August 24 (10am-10pm)

We hope to be set up by 10 am and you may arrive anytime after then. We will run the insect lights into the evening. Things will wind up about 10pm. Participants may attend for all or part of the day.

Where is it? Beerwah Forest Reserve

Good quality mixed wallum, heathland, and aquatic habitats; hopefully with the first flowers of spring. For more details; see below.

Collecting Activities

Everyone is encouraged to use their own special methods to target groups they know well. There may be some University students there to learn about field sampling methods so be prepared to show off your tricks. Christine Lambkin and Geoff Monteith will install some traps at the site. We will have several big MV lights from the Museum running in the evening. You are encouraged to bring other light traps but will need to have generators and fuel to run them.

Food

Please bring all your own food, water, and drink for your stay.

Let us know if you are interested or for More Details

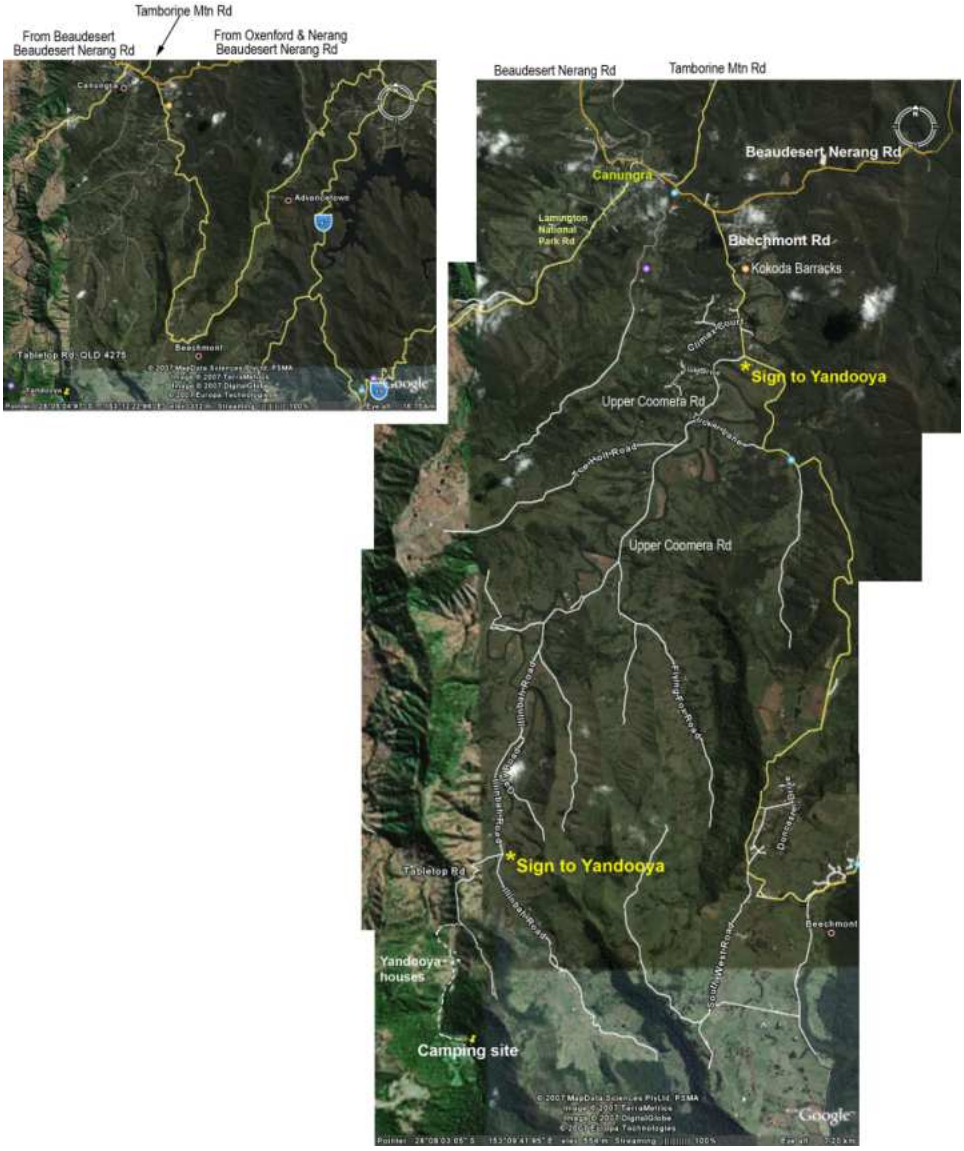
Please give your names to Geoff Monteith (38407690; geoff.monteith@qm.qld.gov.au) or Christine Lambkin (38407699; christine.lambkin@qm.qld.gov.au) if you intend coming. Directions will then be provided.

Entomological Society of Queensland

BEERWAH BUG-CATCH

Sunday August 24

10am-10pm



DIARY DATES 2008

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

June 10th	Student Award Winner: Jason Callander	
	Notes & Exhibits	
August 11th	Dr Peter James (Qld DPI&F)	Lousy research & the Integrated Parasite Management Group
September 8th	Dr Shaun Winterton (Qld DPI&F)	Evolution of the Mantid lacewings based on multiple genetic markers (Neuroptera: Mantispidae)
October 13th	Dr Felix Bianchi (CSIRO Ento.)	The landscape context of the ecosystem service of pest control
November 10th	Professor Hugh Dingle (University of QLD)	
December 8th	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: **PO Box 537, Indooroopilly 4068, Qld.**

Sustaining associate of the News Bulletin:

TROPICAL FRUIT FLY RESEARCH GROUP, GRIFFITH UNIVERSITY

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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 privileges.	**$36pa**
STUDENT:	Students and others at the discretion of the Society Council	**$18pa**

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See subscription form on opposite page for details.

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The Australian Entomologist PO Box 537, Indooroopilly 4068, QLD.

Society's web page and www.esq.org.au

Email address: esq@uqconnect.net

PRESIDENT
Dr Mike Furlong
Ph: (07) 3365 4822
Fax: (07) 3365 1655
Email:m.furlong@uq.edu.au

SENIOR VICE PRESIDENT
Christine Lambkin
Ph: (07) 3840 7699
Fax: (07) 3846 1226
Email:christine.lambkin@qm.qld.gov.au

SECRETARY
Richard Bull
Ph: (07) 3378 0340
Fax: (07) 3378 0340
Email:richard.bull@uqconnect.net

TREASURER
Matthew Purcell
Ph: (07) 3214 2847
Fax: (07) 3214 2815
Email:matthew.purcell@csiro.au

NEWS BULLETIN EDITOR
Anna Marcora
Ph: (07) 3214 2877
Fax: (07) 3214 2885
Email:anna.marcora@csiro.au

COUNCILLORS

Noel Starick
Ph: (07) 3840 7699
Fax: (07) 3846 1226
Email:noelstarick@optusnet.com.au

Geoff Thompson
Ph: (07) 3840 7690
Fax: (07) 3846 1226
Email:geoff.thompson@qm.qld.gov.au

Dr Peter Allsopp
Ph: (07) 3331 3316
Fax: (07) 3871 0383
Email:pallsopp@bses.org.au

THE AUSTRALIAN ENTOMOLOGIST

PERMIT INFO OFFICER
Susan Wright
Ph: (07) 3840 7704
Fax: (07) 3846 1226
Email:susan.wright@qm.qld.gov.au

BUSINESS MANAGER
Dr Geoff Monteith
Ph: (07) 3840 7690
Fax: (07) 3846 1226
Email:geoff.monteith@qm.qld.gov.au

EDITOR
Dr David Hancock
PO Box 537
INDOOROOPILLY QLD 4068
Ph: (07) 40534499

NOTICE OF NEXT MEETING

The next meeting of the Society will be held at **12:00 pm** on **Monday**, **11th August 2008** in the **Large Conference Room**, **CSIRO Long Pocket Laboratories**, 120 Meiers Rd Indooroopilly. The main business will be a presentation by **Dr Peter James (Qld DPI&F):** "Lousy research and the Integrated Parasite Management Group".

VISITORS ARE WELCOME

(Please sign in at CSIRO Reception before attending the meeting)

HONORARY LIFE MEMBERS OF THE SOCIETY

R.A.I. Drew	D.L. Hancock	M.J. Harslett R.P.
D.S. Kettle	D.P.A. Sands	R. P. Kleinschmidt