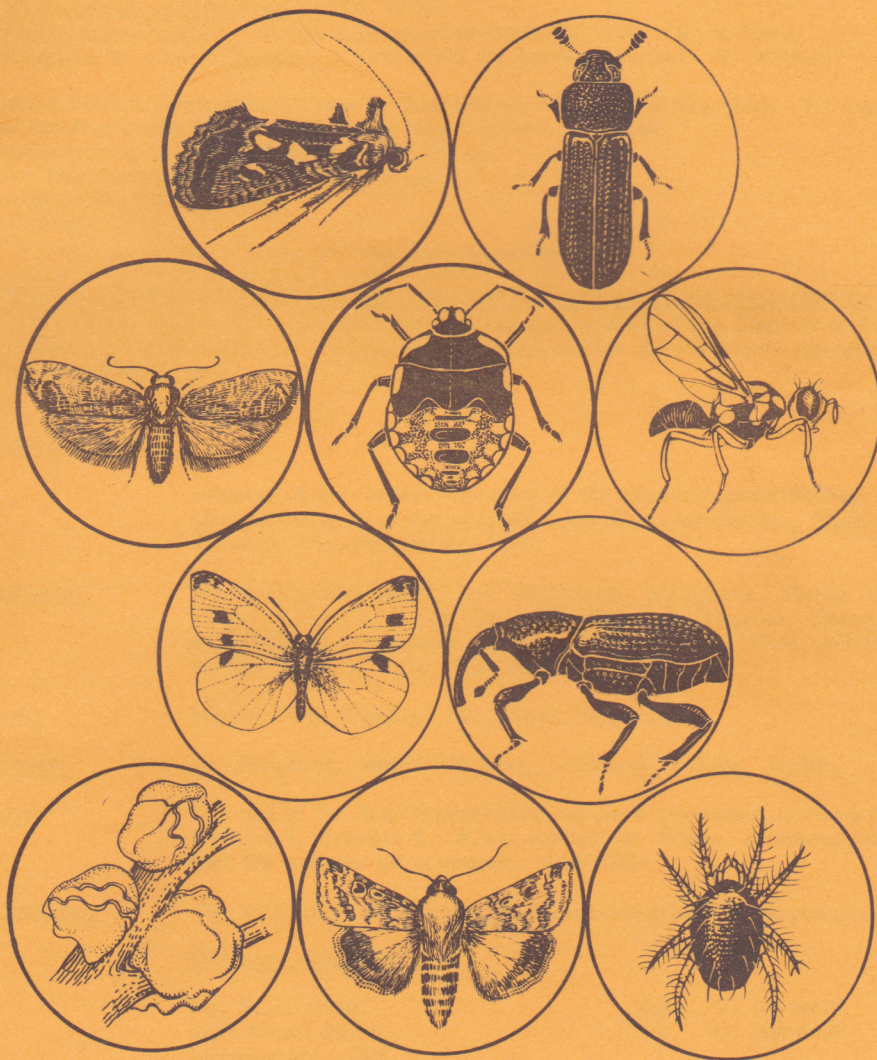




NEWS BULLETIN

ENTOMOLOGICAL SOCIETY
OF QUEENSLAND



PRICE 40c

Vol. 3, No. 9, November, 1975.

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GENERAL MEETING

Minutes of the General Meeting of the Entomological Society of Queensland held at the Alan Fletcher Research Station, Sherwood, on Monday, 10th November, 1975.

Attendance: Mr. Passlow (President), Drs. McDonald, Macqueen, Marks, Reye, Rice; Messrs. Cantrell, Coles, Donnelly, Ferguson, Haseler, Home, Kahler, Kay, Morgan, Naumann, Storey, Teakle, Webb, Wild, Williams, Willson, Wylie, Yule; Ms. Burrows.

Visitors: Messrs. Ball, Dunlop; Ms. Burns, Ferguson.

Apologies: Dr. Bengston; Messrs. De Baar, Galloway, Sabine, White.

Minutes: Minutes of the last General Meeting were circulated in News Bulletin, Volume 3, Number 8. It was moved Mr. Wylie, seconded Mr. Donnelly that the minutes be accepted. CARRIED.

Nominations: The following nominations for Membership have been received:-

Ordinary Membership

Mr. W. F. Gibb,	Nom. G. Monteith
4/55 Burrai Street,	Sec. D. Hancock
Morningside. Qld.	

Mr. Gibb is interested in butterflies.

Country Membership

Mr. G.H. Ball,
3 Carmel Court,
Surfers Paradise. Qld.

Nom. K. Ferguson
Sec. B. Kay

Formerly a lecturer at Melbourne College of Advanced Education, now living on the Gold Coast, he has developed an interest in biting midges.

Change of Membership Status:

1. Change of Address

Dr. A. Macqueen,
C.S.I.R.O.,
P.O. Box 196,
Rockhampton. Q. 4700.

General Business:

1. Insect Export Legislation. The Australian Entomological Society's request for repeal of the legislation has been refused. Dr. Marks briefly outlined proposed action. The President added that Ent. Soc. Qld. intended to write to the Minister conveying the Society's disapproval of his decision.

Main Business:

The President introduced Mr. W. Haseler, Director of the Alan Fletcher Research Station. Mr. Haseler began the evening by discussing the development of the centre and its programmes. Members were then shown around the Station by the Director and his staff. Mr. Haseler's introductory talk is reproduced below, followed by brief accounts of some of the bio-control programmes.

THE ALAN FLETCHER RESEARCH STATION

Following the successful completion of the prickly pear campaign in 1939, the Commonwealth Prickly Pear Board was disbanded and the responsibility for supervision of the control of the various prickly pears was assumed by the Governments of New South Wales and Queensland, in the latter State by the Departments of Lands. A Biological Section was established within this Department to handle the work and some of the staff of the Board transferred to the State Service for this purpose; the existing office and insectary facilities at Sherwood were also taken over. The new Section was given the further responsibility of carrying out experimental work on the control of noxious weeds throughout Queensland.

Since this time the scope of the work and the staff and facilities have expanded tremendously and in 1967 a new office and laboratory building was opened as the headquarters of the Biological Section; this station was named The Alan Fletcher Research Station in honour of the then Minister for Lands. The new quarantine insectary complex replaces a much older structure which is now obsolete.

The research responsibilities of the Station are now defined to include those plants which are declared noxious under the Acts administered by the Minister for Lands (the Lands Acts and the Stock Routes and Rural Lands Protection Acts), and those whose control is a requirement under the terms of Crown lease; it is mentioned that 80% of Queensland is still held under lease from the Crown. This latter group includes particularly unwanted tree species and weeds of native pasture and undeveloped lands.

Close liaison is maintained with other Government Departments, both State and Commonwealth, and with local authorities. Most research projects and screening trials are undertaken at the instigation of local authorities or landholder organisations, or through continued requests from individual landholders.

Funds for research projects are made available through Consolidated Revenue and the Stock Routes Fund.

All practicable methods of control are considered when a problem weed is investigated and for this reason staff and facilities have been assembled to cover as many of these facets as possible.

Consideration of biological methods is traditional, as the staff of the Department of Lands are still profoundly influenced by the success of the prickly pear campaign, and about half of the staff are engaged in biological control investigations. All aspects of this field are undertaken including overseas exploration; field observations and host-testing; quarantine insectary investigations at Sherwood; field observations and ecological studies in Queensland; the distribution of approved insect species to all areas of Queensland; and evaluation of results after insects have been fully established. Encouragement is also given for basic research into aspects of these projects which, while not of direct or immediate practical value, may assist in the future when new projects are being designed.

Current biological control projects will be discussed by the entomologists responsible for them and include Lantana, Noogoora burr, Groundsel bush and *Harrisia* cactus. A watching brief is maintained on the Prickly pears and preliminary investigations into insect enemies of *Parthenium* weed (*Parthenium hysterophorus*) and Rubber vine (*Cryptostegia grandiflora*) are being contemplated.

Staff

The Director is Mr. W.H. Haseler; the staff consists of eight scientists (4 entomologists, 3 agronomists and a chemist), twelve technical officers, three office staff, and six wages employees.

The Station

The Alan Fletcher Research Station is situated on the Brisbane River in the Brisbane suburb of Sherwood. Total area is some 1.66 ha (4.10 ac) with about 0.5 ha (1.2 ac) of flat arable land used for the cultivation of weeds and other plants for experimental purposes and for the mass rearing of insects.

Buildings

The Office and laboratory block totals some 464.5 m² (5000 sq. ft.) and includes two laboratories, a smaller one for entomological use and a larger chemistry laboratory; this latter laboratory is well equipped with quite sophisticated analytical equipment.

NOOGOORA BURR



PRICKLY PEARS

Glasshouses and insectaries

Two glasshouses, one temperature and humidity controlled of 92.9 m² (1000 sq. ft.) and one at ambient temperature of 185.8 m² (2000 sq. ft.) are now in use; and the new complex consisting of two temperature and humidity controlled quarantine glasshouse insectaries (74.3 m² and 111.6 m² respectively), two temperature, humidity and photoperiod controlled high-security quarantine insectaries (18.7 m² and 27.9 m²) and a headhouse, has recently been completed and is being brought into use. A medium security quarantine insectary of 76.9 m² is currently in use.

A gas fired boiler is used for the production of steam to humidify and heat all buildings in the new complex. The high security area consisting of an artificially lit insectary and a glasshouse type insectary is air-conditioned and temperatures of + and - 1°C can be maintained by means of an electronic control panel. All air is filtered by the use of absolute filters.

Lighting in the artificially lit area is by means of 400 watt Lucalox lamps which produce a very even light of exceptionally high intensity over fixed benches. These lights are also controlled by the electronic panel and can be switched on or off in sequence to simulate dawn and dusk.

It is possible within the high security area to simulate winter conditions in mid-summer and vice versa. This is helpful when insects are received from the northern hemisphere. Each room is independently controlled to increase the versatility of the complex.

The medium security glasshouses are cooled by evaporative coolers. Both medium and high security glasshouse are sheeted with coralite acrylic sheeting with a prismatic surface to give a diffuse light. All louvred openings in the medium security areas are screened with double layer of stainless steel mesh - 30 meshes per inch.

Plant fumigation is carried out in a fumigation chamber with Phosdrin. All material leaving the high security area is either autoclaved or fumigated with Methyl bromide. Potting soil is sterilized by steam.

Other Buildings

Fabrication of cages, and construction of experimental spraying equipment and other items of wood or steel is carried out in a workshop building.

A garage and store building serves to store some of the vehicles, spraying equipment and herbicides. A small locked security building is used as a bulk store for poisonous materials including 1080 concentrate for dingo and rabbit control.

Vehicles

A fleet of twelve vehicles, including four four-wheel-drive utilities, is used by the staff for field work. A Massey-Ferguson tractor has been supplied for land preparation and mowing purposes.

THE HARRISIA CACTUS STEM BORER - *ALCIDION CEREICOLA*

A permit to import this insect into Australia was granted subject to two main requirements:-
(a) that the insect be bred through one full generation in quarantine prior to release;

- (b) that supplementary testing be carried out to ascertain the likelihood of oviposition occurring on the common pest pears, Opuntia inermis and Opuntia stricta; and that if this did occur it be determined whether larvae would develop to maturity on these species.

Alcidion was shipped from Argentina as larvae in an artificial diet, hence the adult progeny of the beetles emerging from the shipments could be released. This procedure allows time to screen out parasites and predators which may have been inadvertently introduced in the shipment.

The second requirement was proposed with the thought that if Alcidion could complete its life cycle on the common pest pears, it may successfully compete with Cactoblastis cactorum to that insect's detriment, and thus recreate the prickly pear problem. Subsequent testing showed that oviposition in the field on the two species of Opuntia was highly unlikely, and also that larval development on those plants too was very unlikely, as heavy exudates entombed most larvae transferred into stems.

Three shipments of larvae were despatched from Argentina between June and October during 1974. In all, 460 living larvae were received at Sherwood. Laboratory rearing commenced immediately insects arrived. Adults are placed in oviposition cages with pieces of stem which are first "deprickled" for ease of handling. The eggs are placed deeply into the stems during oviposition, and hatch in about seven days. Time for larval development varies from six to ten weeks. Part of the development (3-4 weeks) is allowed to occur in the stems, during which larvae grow to a size suitable for transfer to artificial diet, and breakdown and softening of plant tissue by a fungus (Mucor) facilitates the transfer process. It is thought that the breakdown of healthy tissues may provide nutrients essential to normal larval development, as the duration of this is greatly extended when fungal growth is prevented.

Artificial diet (Harley and Willson) is used during the completion of the larval stage, being changed every fourteen days, 5 gms for the first dose, and in 10 gm lots thereafter. Pupae are then transferred from the diet tubes (1 oz pommade jars or 2" x 1" dia. specimen tubes) to test tubes. Small strips of wood-wool are included to aid the insects when emerging from the pupal exuvium. An interim production target of 5000 adults per week has now been reached.

Field Results

A subjective assessment of insect activity at three release sites made at Collinsville last mid-summer has been carried out, and results are very encouraging. Larva density was of the order of 20 individuals per square metre over an average area of 400 square metres. Larval feeding is at present confined to woody basal stems, and the destruction of these has led to a visible lowering of existing biomass. To date, 3000 insects have been released in the field at Collinsville.

Allan I. Tomley

Alan Fletcher Research Station
Sherwood.

HYPOGEOCOCCUS FESTERIANA (Pseudococcidae)

This mealy bug, imported for control of *Harrisia*, is only recorded from Cacti of the tribe Cereanae, and occurs in the "wet" Chaco areas of Argentina and Paraguay. There are four species in the genus, each of which is restricted to a single family of "succulent" plants.

Males develop through 4 instars (2 larvae, 2 non-feeding pupal instars) to a winged adult in 25 to 33 days, while females have three larval instars over 24 to 30 days, developing into a sessile adult covered in a waxy "fluff". An abundance of males is produced by a colony. Parthenogenesis is not suspected.

In Argentina, H. festeriana is quite rare and controlled by natural enemies (5 Hymenoptera and 2 Coccinellidae are known). Attack by this species is characterised by the onset of a purplish unhealthy appearance in young *Harrisia* tissues, but not death. H. festeriana appears incapable of killing *Harrisia*. Its value as a biocontrol agent relies on the attack of a single individual being able to cause bending of a growing stem, and a colony to totally arrest growth or flowering. H. festeriana may then serve to prevent regrowth of cactus which has been cut back by other insects or means.

Laboratory rearing is performed by sealing stem tips and mealy bugs inside brown paper bags, in which a fivefold increase in numbers is easily obtainable within 30 days. Recent field releases at Collinsville have apparently led to establishment, and 3 weeks after release tip bending of infested cactus was an obvious sign of attack. It is expected that for an insect as sessile as this species hand distribution of infested cactus to new areas will be necessary to facilitate dispersal.

The present distribution of *Harrisia* in southern Queensland is shown in the accompanying map.

Clyde H. Wild
Alan Fletcher Research Station,
Sherwood.

MEGACYLLENE MELLYI - FOR THE BIOCONTROL OF GROUNDSEL BUSH - BACCHARIS HALIMIFOLIA

The cerambycid stem boring beetle Megacyllene mellyi was imported from Brazil where host specificity testing was carried out by Paul McFadyen. In Brazil Baccharis halimifolia does not occur and M. mellyi was collected from various Baccharis spp.

It is a particularly destructive insect under laboratory conditions and it is to be hoped that it will be as effective when released in the field shortly.

Because of their destructive nature larvae are being reared in an artificial diet.

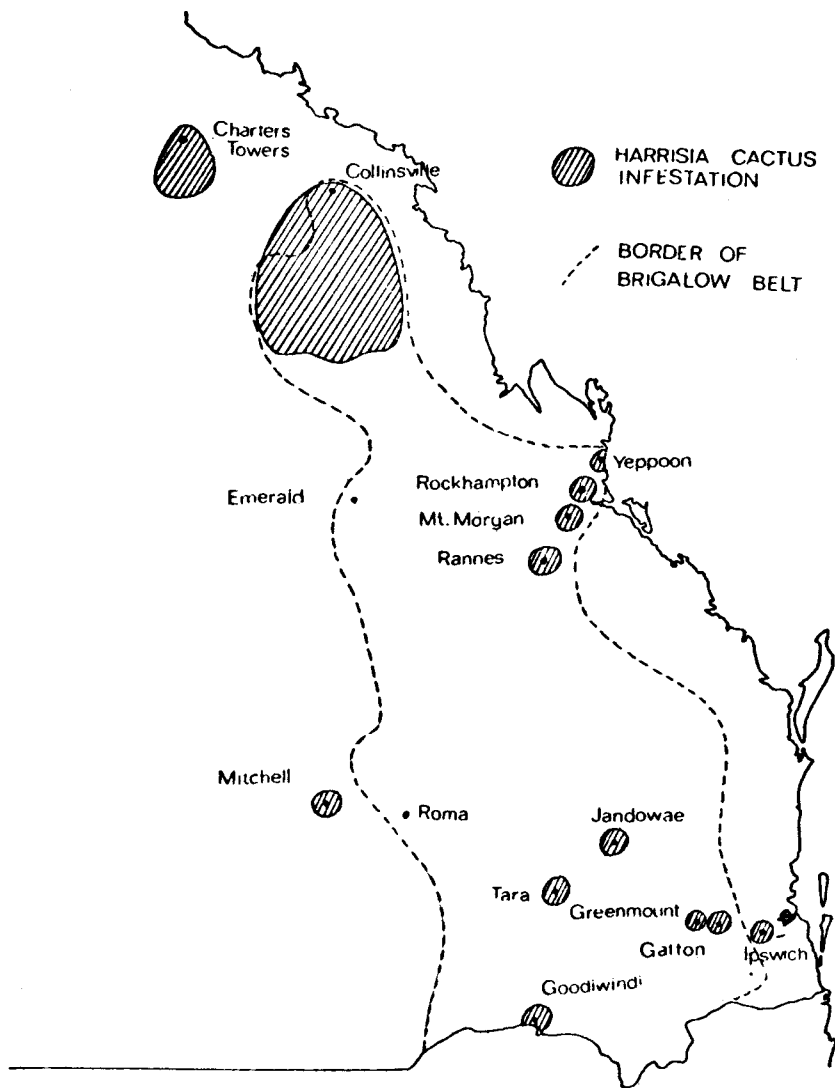
Brian Willson
Alan Fletcher Research Station,
Sherwood.

UROPLATA SP. NEAR BILINEATA - A NEW INSECT FOR THE BIOLOGICAL CONTROL OF LANTANA CAMARA

This leaf mining hispine beetle was recently imported from Costa Rica after host specificity testing had been carried out by G. Diatloff of this Station. This work is part of a joint programme in co-operation with C. S. I. R. O. and the Forestry Commission of New South Wales.

It was collected from the low coastal areas of Panama and Costa Rica and should be suitable for use in both North and South Queensland. The first larval generation is now in progress.

Brian Willson
Alan Fletcher Research Station, Sherwood.



DISTRIBUTION OF HARRISIA CACTUS (ERIOCEREUS SPP.) IN SOUTHERN QUEENSLAND

Vote of Thanks:

The President thanked Mr. Haseler and his colleagues for their hospitality and a very interesting inspection of their Station and the work being carried out there. Carried by acclamation. Supper was then served.

IMPORTANT PESTS OF AGRICULTURAL CROPS IN QUEENSLAND. PART 9. CODLING MOTH.

Codling moth (*Cydia pomonella* (L.)) (pictured on Bulletin cover, second row, left hand side) is a native of south eastern Europe. It was first recorded in Queensland in 1889, and has since become the most damaging insect pest of pome fruits.

Codling moth overwinters in orchards as a fully fed larva, encased in a silken cocoon. Cocoons are usually found under the loose bark of tree trunks, in cracks and holes in limbs and in debris at the base of trees. In spring, the larvae transform into the pupal stage and two to three weeks later, adults emerge. Within two to three days, females begin laying eggs singly on foliage and fruit. Within 4-14 days, depending on temperature, the eggs hatch and young larvae actively search for fruits to enter. Damage is caused by the larval stage as it tunnels through fruit. When fully fed, larvae vacate the fruit and seek out suitable pupation sites. There are generally three overlapping generations per year.

Control Measures.

Because of the lack of effective natural control agents, control has depended almost entirely on chemicals. Before the advent of DDT, cover sprays of lead arsenate, white oil and nicotine were widely used. Orchard hygiene, such as removing infested fruit from orchards and packing sheds, and the destruction of possible overwintering sites, was emphasised. Hessian or corrugated cardboard bandages were often applied to tree trunks to provide an artificial pupation site, from which larvae could be collected and destroyed. Codling moth control was generally poor. With the introduction of DDT, codling moth control improved dramatically. This situation lasted until about 1958, when DDT-resistance appeared. Azinphosmethyl and carbaryl replaced DDT and are still the most widely used chemicals. To date, no resistance to these chemicals has been reported. Although excellent control of codling moth was achieved after the introduction of DDT, secondary problems, viz. light-brown apple moth and mites were created. Woolly aphid also became a more serious problem. New chemical control measures were introduced into the orchardist's spray schedule to deal with the new problems. Unfortunately, insecticide resistance has arisen in some of these pests, notably O-P resistance in mites.

Control of codling moth is now viewed with the whole pome fruit pest complex in mind. Some aspects currently under investigation in Queensland include:

- . determination of efficacy of new insecticides for codling moth control, so that alternatives are available should resistance to azinphos - or carbaryl appear.
- . determination of the influence of new insecticides on other pest and beneficial species.
- . the manipulation of spray schedules to enable the introduced O-P resistant mite predator, *Typhlodromus occidentalis*, to control two-spotted mite.
- . The use of pheromone traps to provide accurate timing of spray applications.

Barry Ingram

Granite Belt Horticulture Res. Stn.,
Applethorpe.

CYCAD-FEEDING BUTTERFLY LARVAE IN PAPUA NEW GUINEA

The following note should clarify comments in my address to the Society (News. Bull. Vol. 3, No. 7) relating to butterflies that feed on cycads in Papua New Guinea. As mentioned by Szent-Ivany et al. (1956) Luthrodes cleotas is widely distributed on the northern side of the main dividing range of Papua New Guinea, particularly in the Markham Valley but is not found near Port Moresby.

Taenaris butleri has so far only been recorded on the southern side of the main range from Bereina to Milne Bay and is quite common in eucalypt country in the vicinity of Port Moresby. T. butleri is not found in the Markham Valley.

Eggs are deposited on the leaf undersurface and the gregarious yellow larvae feed mainly on young fronds, stripping the leaves back to the midrib. Larvae rest during the day at the base of the cycads where tall bladey grass (Imperata sp.) gives shelter from heat of the sun.

Luthrodes cleotas kaiphas Fruhs. also has larvae which feed on fresh foliage of cycads. In the Markham Valley the larvae are attended by ants and damage to the host plant resembles damage caused to the similar hosts of Theclines thes miskini in South-eastern Australia. These colourful, large lycaenids lazily fly in the heat of the day wherever the cycads occur in the Markham Valley, but as far as is known the species is not sympatric with Taenaris butleri, even in the Northern Province.

Reference:

- Szent-Ivany, J.J.H., Wormersley, J. S. and Ardley, J.H. (1956)
Some Insects of Cycads in New Guinea
P.N.G. Agr. J. 11: 53-56.

Don Sands

P.O. Box 7200

BOROKO. P.N.G.

INSECT COLLECTING IN NATIONAL PARKS

The October 1975 issue of the News Bulletin contained an address entitled "Some Aspects of Nature Conservation".

In the discussion which followed the address, Mr. Storey stated that, at present, it was very difficult to obtain permits to collect in National Parks in Queensland. Dr. Saunders replied that the present procedure in respect to permits was to be reviewed.

This is good news, for surely there is a need for everything to be done to encourage collecting in Parks, for it is only in this way that knowledge of their contained insect fauna can be established.

National Parks are vulnerable in many ways, more particularly from damage by fire. However insect collecting can in no way be regarded as one of the hazards since it cannot menace the continued existence in a Park of any insect species. In years of abundance such insects as may be taken will be of no moment, while in years of scarcity few, if any, insects will be available to be collected.

For a long time past the present writer has regarded South Western Australia as the supreme treasure chest of Australian insects, but now he no longer does so, for it is Queensland, with its rich representation of all the several elements in our fauna which provides the most promising collecting fields. Consequently, while in the interests of Australian entomology measures to encourage the collecting of insects in National Parks are highly desirable, any which discourage them are to be regretted.

J. W. Evans

47 Bundarra Road,
Bellevue Hill,
SYDNEY, 2023.

CALL FOR NOMINATIONS FOR 1976 OFFICE BEARERS

Members are invited to use the nomination form enclosed with this News Bulletin to nominate office bearers for the Society for 1976. Nominations should be forwarded to the Honorary Secretary at the address on the Nomination Form to reach him before February 9th, 1976. A list of nominations received will be circulated with the February News Bulletin and an election will take place at the Annual General Meeting on March 8. Positions to be filled are as follows:

1. President
2. Senior Vice-President
3. Honorary Secretary
4. Honorary Treasurer
5. Councillors (3 positions)
6. Convener of Publications Committee
7. Members of Publications Committee (2 positions)
8. Honorary Auditor

SUBSCRIPTION NOTICE FOR 1976

As this will be the last News Bulletin for the calendar year of 1975, advance notice is given that subscriptions fall due on January 1st, 1976. Members are encouraged to pay their subscriptions promptly as this aids the orderly management of Society affairs and accounts. Subscription rates are as follows:

Ordinary (Metropolitan) Members:	\$9.00
Country Members:	\$8.00
Associate Members:	\$3.00

ABOUT PEOPLE

From November 23 to November 28, Clyde Wild and Alan Tomley of the biological control section of the Department of Lands will be in the Collinsville area releasing Hypogeococcus and Alcidion and assessing the field performance releases of these natural enemies of Harrisia cactus. Graham Donnelly, also of the Dept. of Lands, will travel to Rockhampton in late December for the annual distribution of Noogoora Burr control agents.

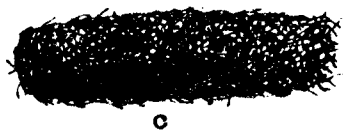
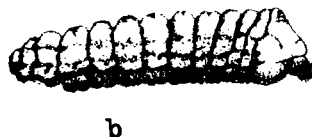
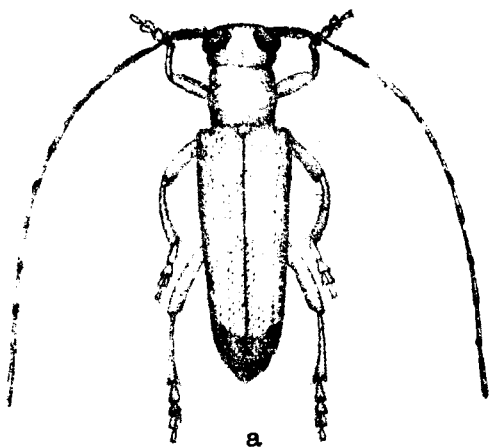
Dr. Karl-Johan Hedqvist from the Swedish Museum of National History, Stockholm, worked in the Entomology Section of the Queensland Museum from October 23 to November 5. Dr. Hedqvist examined Girault types in connection with his taxonomic studies on the genera of the Pteromalidae. He had previously visited the ANIC, Canberra, The South Australian Museum and the National Museum of Victoria, Melbourne.

Four members of the Interim Council of the Australian Biological Resources Study, Dr. A. Bartholomai, Dr. L.A. Johnson, Dr. D. Waterhouse and Dr. L. Webb, met in Brisbane on November 17. They visited the Queensland Museum and the Department of Entomology, U.Q., on the following day for discussions with grant holders.

Dr. Fred McDonald from the University of Sydney visited the Entomology Department at the University of Queensland during November, examining the University Collection as part of his continuing work on the taxonomy of certain Australian Pentatomidae.

Dr. Malcolm Campbell has left the Department of Entomology at the University of Queensland for a research appointment in the Department of Environment in Canberra.

Dr. Gordon Hooper of the Entomology Department, University of Queensland, is presently at the Waite Agricultural Research Institute, Adelaide, as a visiting lecturer.



Nupserha antennata, an exotic stem-boring natural enemy of Noogoora Burr.
a. adult. b. larva. c. cocoon.

OFFICE BEARERS 1975

PRESIDENT

Mr. T. Passlow
Entomology Branch
Dept. of Primary Industries,
Brisbane. Q. 4001.

SENIOR VICE-PRESIDENT

Mr. R.A. Yule
Dept. of Forestry
Meiers Road,
Indooroopilly. Q. 4068.

JUNIOR VICE-PRESIDENT

Mr. G.B. Monteith
Dept. of Entomology
University of Queensland
St. Lucia. Q. 4067.

HONORARY TREASURER

Mr. R. Wylie
Dept. of Forestry
Meiers Road,
Indooroopilly. Q. 4068.

HONORARY SECRETARY

Mr. B.K. Cantrell
Entomology Branch
Dept. of Primary Industries,
Brisbane. Q. 4000.

PUBLICATION COMMITTEE CONVENOR

Dr. A.H.A. Bensink
Dept. of Entomology
University of Queensland
St. Lucia. Q. 4067.

Dr. B. Doube,
CSIRO Long Pocket Labs.,
Private Bag No. 3
Indooroopilly. Q. 4068.

COUNCILLORS

Mr. G.P. Donnelly
Dept. of Lands,
Alan Fletcher Laboratory,
Sherwood. Q. 4075.

Mr. B.H. Kay,
Q.I.M.R.,
Herston Road,
Herston. Q. 4006.

NOTICE OF NEXT MEETING

The final meeting of the Entomological Society of Queensland for 1975 will be a Notes and Exhibits Meeting, to be held in Room 402 of the Department of Entomology, University of Queensland, St. Lucia, Queensland, at 8.00 p.m. on 8th December, 1975.

Contributors to the meeting should notify the Honorary Secretary of the nature of their material, their needs for display space and projection equipment, at least one week before the meeting. The Editor would appreciate receiving a copy of material to be reproduced in the News Bulletin at, or soon after, the meeting. It will be possible to produce a centre-spread of photographs related to the contributions, and those wishing to include a photograph should be able to provide a negative in case size adjustments are necessary.

Supper will be served after the meeting, with Christmas embellishments.

THE SOCIETY

The Entomological Society of Queensland is an association of over 300 people with a professional or amateur interest in Entomology. It is dedicated to the furtherance of Pure and Applied Entomological Science and, since its inception in 1923, has promoted liaison amongst entomologists in academic, private and governmental institutions. It has a concern for the conservation of Queensland's natural resources. Further information is available from the Honorary Secretary at the address given above.

MEMBERSHIP

Membership is open to anyone interested in Entomology and entitles the member to attend monthly Society meetings, held on the second Monday night of the month, and to receipt of the News Bulletin. There are three classes of subscription membership:
Ordinary: persons residing in the Brisbane area (\$9.00 p.a.)
Country: persons residing outside Brisbane (\$8.00 p.a.)
Associate: persons not in receipt of a full salary (\$3.00 p.a.)

THE NEWS BULLETIN

The monthly News Bulletin reports on the Society's monthly meeting, keeps members informed of Society events and news, and provides a vehicle for debate and discussion. Contributions in the form of articles, notes, letters, news clippings and photographs are always welcome, and should be sent to the Convenor of the Publication Committee at the address given above. The deadline for contributions is the Wednesday following the monthly Society meeting.