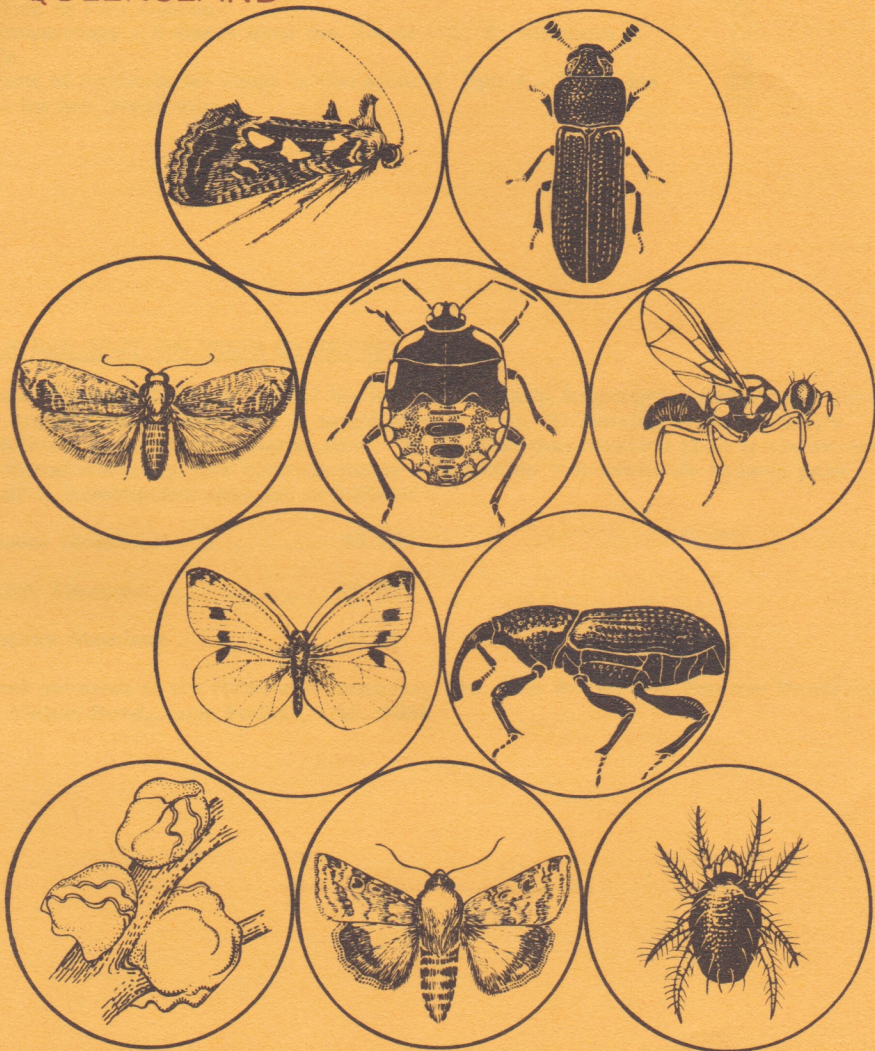


D. S. Kettle



NEWS BULLETIN

ENTOMOLOGICAL SOCIETY
OF QUEENSLAND



PRICE 40c

Vol. 3. No. 4 May, 1975.

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HAVE YOU A RED SPOT ON YOUR BULLETIN?

If you have it means that your annual Society Membership Subscription has not yet been received by the Honorary Treasurer. It would greatly assist the running of the Society's affairs if you could attend to this matter soon. Remember that taxation time is almost upon us so if you intend claiming your subscription as a deduction it is advisable to have paid it beforehand! Subscription rates are as follows:

Ordinary Members \$9.00

Country Members \$8.00

Associate Members \$3.00

Please forward payment to the Honorary Treasurer, Mr. Ross Wylie, c/- Forestry Department Laboratory, Meiers Road, Long Pocket, Qld. 4068

NEW SUPPLIES OF BULLETIN BINDERS

Last year the Society produced a limited number of embossed binders suitable for storing back issues of the News Bulletin. These were offered for sale to members for \$2.50 and proved so popular that stocks were soon exhausted.

Those members who missed out will be pleased to learn that new stocks are now available and these are being offered at the same price of \$2.50 each. As an encouragement to country members no postage will be charged on mail orders.

These handsome binders will each hold three to four years of News Bulletins and come in two colours, black and green. All are embossed in gold on the spine with the Society's emblem, the spectacular North Queensland stag beetle, *Phalacrognathus muelleri*.

Please address orders to the Honorary Secretary, whose address appears on the rear cover of this Bulletin. Remember to nominate the colour required, black or green.

GENERAL MEETING

Minutes of the General Meeting of the Entomological Society of Queensland held in Room 323 of the Hartley Teakle Building, University of Queensland on Monday, 12th May, 1975.

Attendance: Mr. Passlow (President), Drs. Blood, Hassan, Marks, Rice, Messrs. Cantrell, Donnelly, Etman, Kay, Monteith, Naumann, Page, Postle, Spencer, Swindley, Teakle, Tichon, Wylie. Ms. Edwards, Youlton, Monteith.

Visitors: Drs. Teo, Waddell, Whitten. Messrs. Bulow, Hall, Lucy, McDowell, Ratnasingham. Ms. Hall, Spencer.

Apologies: Dr. Bengston, Messrs. McRae, Roulston, Sabine, Yule. Ms. Burrows.

Minutes: Minutes of the last general meeting held on April 14 were circulated in News Bulletin Vol. 3, No. 3. It was moved Mr. Monteith, seconded Dr. Hassan that the minutes be taken as a correct record. CARRIED.

Elections: The following people, nominated at the April meeting, were elected by show of hands:

Ordinary Membership: Mr. G. Thompson

Country Membership: Mr. P. Hudson
Dr. B. Main
Mr. A. Roebuck

Nomination: The following nomination for membership was tabled and will come up for election at the next General Meeting:

Country Membership: Mr. Hans Schwabe, Nom. E. Hassan
177 Jellicoe Street, Sec. P. Wells
Toowoomba. Q.4350

Changes in Membership Status:

Change in Address: Ms L. Bramich, 1086 Moggill Road, Kenmore, Q. 4069
Mr. S. Learmouth, 51 Finness St., North Adelaide, S.A. 5006
Mr. P. L. Thomas, Ciba-Geigy Tick Res. Stn.,
Logan Road, Beenleigh, Q. 4207

MAIN BUSINESS: The main business of the evening was an address by Dr. Max Whitten of the CSIRO Division of Entomology, Canberra, entitled:

"USING A PEST INSECT FOR ITS OWN CONTROL - WITH SPECIAL REFERENCE TO THE SHEEP BLOWFLY, *Lucilia cuprina*"

Genetic approaches to controlling insect pests fall into two main categories:

- (1) Genetic load -
to devise means of increasing the innate level of genetic death (or genetic load) in a natural population to a point where pest abundance declines.
- (2) Genetic manipulation -
to develop effective means of transporting genetic information into natural populations which either render them amenable to conventional forms of control (e. g., introducing insecticide susceptibility) or which removes a need for conventional forms of control.

In practice, these need not be considered exclusive alternatives, and ideally they would be used jointly to enhance the prospects of effective control. Emphasis on either of the objectives of genetic control will depend on factors such as mode of population regulation, pest mobility, nature of nuisance value of pest, availability of appropriate conditional lethal mutations, and cost of rearing and distribution.

Because time is short, I will discuss how these ideas are being applied to the control of the Sheep Blowfly, a major pest of the sheep industry in Australia.

The Release of Sterile Males of the Sheep Blowfly

The screw-worm fly has been controlled in the Southern States of the U.S.A. and in Northern Mexico over the past decade by the release of up to 200 million sterilised males and females per week. Economic and biological considerations prevent the adoption of the screw-worm technique for the Australian sheep blowfly unless significant changes are made to both the objectives of such a program and the means for their implementation. First, regional suppression of the sheep blowfly must replace wide-scale eradication as the only realistic goal with any reasonable chance of success. Second, the releases must be geared to have as great an impact as possible if the economics are to be attractive. With these two points in mind we have:

1. aimed to develop means of roughly doubling the efficiency of the sterile male method. By coupling dieldrin resistance to the male determining chromosome we have constructed a strain where all the female larvae are susceptible and therefore can be eliminated as first-instar larvae before transfer to mass rearing. This allows us to dispense with the "release of 100 million useless sterile females" each week.

2. Embarked on a field program to examine the feasibility of controlling the sheep blowfly in a defined region near Canberra by the release of semi-sterilised males. This program is providing us with information on:

1. suitable techniques for mass rearing the sheep blowfly,
2. the logistics of distributing mass reared insects, especially as fully-fed larvae,

3. performance of released males in competition with field males,
4. the importance of ecological factors, such as density-dependent regulation and migration in regional control which is effected by the introduction of high levels of genetic death into the region following the release of sterilised males.

The Release of Fertile Flies for Autocidal Control

To control a pest by releasing more of its own kind would appear to be counter-intuitive. Consequently, it is necessary to understand thoroughly the nature of the insects released, what their immediate impact will be, and what will be the long-term effect of their release on the field population.

Our objective, here, is to release flies which carry a sample of the genetic information which already exists in the field; that is the flies for release would not carry any genetic aberration of which we need be fearful. Under normal circumstances they would be released when few flies are present in the field (e.g., early spring) and consequently the presence of the released flies should not be felt by the farmer.

To understand the effects of these flies on the field population we need to know in what way these flies differ from their field counterparts.

I have already stated that they carry more or less the same genes as field flies. Thus they are not only indistinguishable to us, these strains cannot tell one another apart so that they mate randomly if the occasion presents itself. However, their chromosomes have been so rearranged that hybrids between them and the field fly do not survive. In this sense, the laboratory fly can be regarded as a new species because it breeds true with itself but produces no offspring on crossing to the field fly. The laboratory fly should be physically as fit as the field fly - they both carry the same genetic information - but the laboratory strain produces about a quarter as many offspring because three quarters of the offspring do not get a full set of genetic material from their parents and consequently are inviable.

We should be able to construct five such strains, each being incompatible with the others and with the field strain. Two such strains are already available and the remaining three strains are in various stages of synthesis.

Co-existence in the one population of two incompatible strains for any period of time is not possible. They compete with one another in a genetic, not an ecological, sense and whichever one wins, depends on their initial frequencies. As one of the strains increases in frequency so does its advantage. This situation arises from the fact that as one strain becomes infrequent, its chance of mating with its own type decreases and therefore its prospects of leaving any offspring diminish.

Availability of one or more of these synthetic strains allows us to consider the following approach to control. We could release sufficient of one synthetic strain to replace the field population over a designated region. The presence of a new strain whose fertility is likely to be about 25% of normal, may be sufficient to reduce abundance of the fly other than in particularly favourable times for flystrike. If this presumption proves to be true, the successful displacement of the field population over large regions by one of the synthetic strains with lowered fertility constitutes an improvement over the existing situation. However, we are not optimistic that this step in itself will prove sufficient. It could be augmented by ensuring that the released strain is susceptible to OP-insecticides so that, in those periods when the abundance of the released strain exceeds economic levels, the farmer can resort to conventional insecticidal procedures with the assurance that the insecticide will manifest that same efficiency noted on its introduction in the mid-fifties.

If this plan proves successful initially, any subsequent problems of resistance - an eventual and inevitable fact - could be effectively countered by displacing the new resistant strain with another incompatible strain. We require no more than two incompatible strains for the implementation of this cyclic scheme which represents a healthy integration of genetic and insecticidal control.

The principle we have established in the preceding argument is the following: the successful replacement of a field population by a strain which exhibits no pre-mating isolation but for which complete post-mating isolation exists, provides an efficient tool for transporting any genetic condition into the field. It may be a conditional lethal such as insecticide susceptibility we described above, or it could be a conditional lethal such as inability to overwinter. Our choice amongst such alternatives will largely depend on what emerges from the melting pot of our genetical experiments. But it will also depend on what the ecologists discover about the field biology of the sheep blowfly, how does it overwinter, how quickly will re-invasion into an eradicated area take place, what is the relationship between adult abundance and strike incidence, is there any significant density-dependent regulations, and, if so, how does it vary from one season to the next?

If we have at our disposal more than one laboratory strain we can contemplate releasing not just one synthetic strain but several simultaneously. Since matings between strains (which should occur randomly) produce no offspring, up to 94% of matings will be infertile. Those successful matings simply lead to the recreation of the same confusion for the flies in the following generation. Thus, the initial release which boosts the numbers of fertile adults present in the field actually should lead to a reduction in the number of larvae because of the high level of genetic death associated with the released strains. We would expect these high levels of genetic death to prevail for some 5-6 generations after the release. Eventually one of the strains will displace the remainder and if the initial release ratios are determined to ensure the successful fixation of a released strain which is OP-susceptible then we retain the option of deploying insecticides as described above.

Further reading:

C. G. Foster & M. J. Whitten (1974)

"The development of genetic methods of controlling the Australian Sheep Blowfly, *Lucilia cuprina*". In 'The Use of Genetics for Insect Control' - Ed. R. Pal & M. J. Whitten. Elsevier - Nth Holland (1974).

M. J. Whitten, C. G. Foster, J. Arnold and C. Konowalow (1974)

"The Genetics of the Australian Sheep Blowfly" in 'Handbook of Genetics' ed. R. King, Plenum, N.Y.

Vote of Thanks: Following a lively discussion period Mr. Kay proposed a vote of thanks to Dr. Whitten for his interesting and well presented address and it was carried in the usual manner. There being no further business the President closed the meeting and invited all present to supper.

PLANNING A TRIP TO NEW GUINEA ?

Members are advised that there are now a number of controls applied to persons collecting specimens in Papua New Guinea and those contemplating visiting the country are advised to ensure that regulations are not broken. The previous protection of most species of Birdwing Butterflies, other than the common Ornithoptera priamus, is still in force and collecting and/or export of these species is viewed most seriously - and penalties are high. In addition, the export of non-protected species is subjected to a permit system which is being enforced with increasing severity. Recently, the import of insects into Papua New Guinea has also been prohibited except under permit; this applies to all specimens, dead or alive, regardless of country of origin. A prosecution has already been launched against a person who brought in non-New Guinea specimens of butterflies for his own collection. So be warned!

The Papua New Guinea Minister for Foreign Relations and Trade has recently released a set of guidelines for persons contemplating carrying our research in New Guinea. This is reproduced in full below:

"Guide to Foreign Research Workers Seeking Research Permits to PNG"

Foreign Research Workers are welcome to Papua New Guinea provided their work is relevant to this country. The Government of Papua New Guinea is concerned, however, because in recent years certain areas have been overexposed to research workers with the result that villagers have become irritated with and sometimes resentful of the presence of research workers in their midst. Because of this it has become necessary to introduce some degree of control.

1. Research workers will have to be affiliated in future with some national institution like the National Museum, the Institute of Papua New Guinea Studies or relevant departments of the University of Papua New Guinea or the Technical University of Lae. In some cases affiliation to a Government Department could be more suitable.

This will ensure that incoming research workers will not duplicate work already done, and they will, wherever possible fit into existing research programmes in their field. This arrangement will also ensure that the incoming research worker can draw on the experience and contacts of others who have been working in related fields for some years.

2. Research workers must make sure that their presence is acceptable to the local community. It may not be possible or practicable to obtain the consent of the host community before arrival in the country. It is strongly advisable, however, that the research worker explain his purpose to the local area authority, before he commences work. He should also enlist the support and advice of the local District Commissioner who with his experience of the area is best suited to introduce him to local leaders and local communities. The Migration Act provides for the cancellation of temporary entry permits and such action may be taken if complaints are received from the host community.
3. Research workers are required to deposit copies of their research material with the archives of the Institute of Papua New Guinea Studies. This includes copies of research papers, books, photographs, tapes and films.
4. In the first instance all research proposals must be submitted to the nearest Papua New Guinea Overseas Office, or to the nearest Australian Post in countries where Papua New Guinea has no representative, for referral to the Chief Migration Officer, Port Moresby, who in turn will notify details to the Director of the Institute of PNG Studies. The Director of the Institute will liaise with other Institutions and/or Departments.

5. Applications for research permits cannot be processed unless they include the following: a curriculum vitae of the applicant, a full research proposal and, in the case of PhD students, a letter from the supervisor. Since the processing of these applications involves the Institute in considerable administrative costs, a fee of \$100 is payable to the Institute of Papua New Guinea Studies (Box 1432, Boroko, PNG) to cover these costs.

In addition to the above requirements the Chief Migration Officer may require individuals to undergo normal immigration checks (such as medical examinations, etc) and to lodge Bonds (which are refundable) depending on the length of intended stay in Papua New Guinea.

RAINFOREST ENTOMOLOGY - A REPLY FROM THE TOWER

I had heard that Dr. Blood, on hearsay versions of my Presidential Address (1), and before seeing it in print, was already whetting his pen in anticipation of writing his comments on it which appeared in last month's Bulletin (2). It is a pity that, in his impatience to attack my "naivety", he apparently did not take the trouble to read it closely. If he had, he would have found that I suggested some rainforest studies as an addition to his cabbages, cultures and computers in ecology courses, not as a replacement for them. I recommended "a taste of the Garden of Eden" - not an all-exclusive meal! So his alliterative defence of crucifers, clones and cybernetics argues a point I did not make and does not concern us further here.

However, having got the bit between his teeth, Dr. Blood goes on to argue that anyway the rainforest ecosystem is inappropriate for student teaching for several reasons: firstly, because most rainforest studies are not ecology; secondly, because the rainforest ecosystem is too complex for undergraduate teaching purposes; and finally, because there is insufficient employment demand for rainforest ecologists. I will comment briefly on these points.

Many of those inquisitive and innovative biologists who are carrying out the modern studies of rainforests which I mentioned would be flattered to know that Dr. Blood regarded them as scientific natural historians, an appellation to which many might wishfully aspire, but the same men would be taken aback, I'm sure, to learn that by a feat of semantic acrobatics he could not accept their work as "ecology". Such exercises in academic sciolism whereby certain methods of study are decried as not being real ecology, or real entomology, or whatever, are a disservice to our science; as Kettle (3) has appealed in this same News Bulletin we need a "unifying approach" to the artificial compartmentalization of entomology - not further divisions.

The notion that the rainforest ecosystem is too complex for undergraduates is a curious one. In support of this Dr. Blood quotes an example (4, and I cite its full title) of "eminent researchers just beginning to unravel the ecological processes associated with monocultures leave alone making sense out of more complex systems". Indeed, to add to this line of argument it is worth noting that during discussion at that paper's symposium the authors could report no significant field confirmation of their theoretical monoculture model after 18 months research. This certainly does bode ill for an eventual understanding of a rainforest which may have 500 tree species and 200 ant species cohabiting, to mention only two groups. But the method of study in an ecological project must depend on the level of information required and the resources available. If one wishes to know the number of cents profit per dollar invested in a cotton field, and one has liberal funds, manpower and time, then of course one chooses a total system modelling approach. But if one is an over-worked medical entomologist with two untrained assistants and one is confronted with an insect borne man-monkey zoonosis in a Malaysian rainforest then an entirely different approach is called for. Undergraduates need to experience these different approaches.

It will be a sad day when University course contents are determined purely by immediate job prospects. Since courses can contain such a small quantity of the available factual information, priority must be placed on the heuristic value of included material. Every graduate going into a career soon realizes how little immediate practical value have the few facts he picked up; more important is the way his thinking processes were trained. As the scientific educationist, W. H. Ewers, writes (5):

"... much of what is currently 'important knowledge' in science will be unimportant in five, ten or twenty years. And there is so much knowledge in any area that few gain a scholarly appreciation of their field until they have worked at it for ten or more years after the completion of their formal tertiary work. If scientific knowledge is being accumulated so fast that we have little hope of keeping up with it, except in a very small area, isn't it time we started to teach less about knowledge, and more about the methods of science."

Accepting this basic premise there is no reason to suppose that a dose of rainforest ecology will in any way affect the future competence of a budding pest management consultant. Indeed at the very least, the exposure of the undergraduate to a variety of ecosystems and methodologies will encourage in him a sense of tolerance and understanding towards related disciplines and academic predilections, attitudes which are singularly lacking in Dr. Blood's remarks.

G. B. Monteith
Entomology Dept.,
Univ. of Qld.

REFERENCES

1. Monteith, G. B. (1975). "Rainforest Entomology - At Home and Abroad." News Bull. ent. Soc. Qd 3(2):29-40
2. Blood, P. R. B. (1975) "Comments on 'Rainforest Entomology - At Home and Abroad'" News Bull. ent. Soc. Qd 3(3):59-60
3. Kettle, D. S. (1973) "The Two Entomologies." News Bull. ent. Soc. Qd. 94:8-17
4. Blood, P. R. B., Longworth, J. W. & Evenson, J. P. (1975) "Management of the cotton agroecosystem in Southeast Queensland: a preliminary modelling framework." Proc. ecol Soc. Aust. 9:230-249
5. Ewers, W. H. (1975) "Teach it how it happened: the importance of an historical approach in the teaching of science." Search 6(5):179-182

ABOUT PEOPLE

Brian Dunser, a post-doctoral researcher from Canada, and who is spending a year at the Waite Institute in Adelaide, paid a flying visit to the Entomology Department at the University of Queensland in May where he enjoyed a chat with Martin Rice about mutual friends in the tsetse world. Brian hopes to apply electrophysiological techniques to the study of neurosecretion.

Elizabeth Exley of the Entomology Dept. at the University of Queensland visited Canberra for a week in mid May to study euryglossine bees in the Australian National Insect Collection. She reports that it was home town week in the Hymenoptera Section because Ted Dahms, of the Queensland Museum was also in residence and Ian Galloway of DPI called in on his way back from working at the South Australian Museum in Adelaide.

Ross Wylie of the State Department of Forestry will be visiting Sydney for a few days in May during which time he intends to check types of the cerambycid genus Strongylurus, some of which are timber pests in Queensland, at the Australian Museum.

Ross Storey and Dave Hancock are spending three weeks collecting in North Queensland during May. They hope to reach as far north as Laura on the Coen road and will be concentrating mainly on dung beetles, fruit flies, butterflies and bees.

Professor Doug Kettle of the UQ Entomology Department and Tom Passlow, Director of Entomology in the Department of Primary Industries will leave Brisbane on June 27 to attend the Commonwealth Entomology Conference in London during the following week. Immediately after they will spend two weeks in Russia with Dr. D. F. Waterhouse, Mr. S. W. Bailey (CSIRO, Canberra) and Mr. T. Hogan (Agriculture Dept., Victoria) for discussions with USSR entomologists under the terms of the Australia-USSR Agreement for Co-operation in Science. At a later date a visit to Australia by a group of USSR entomologists is planned. Areas of research will be explored in which mutually advantageous co-operation can take place in the future. Both Prof. Kettle and Mr. Passlow plan to visit research establishments in England and Western Europe for a short period after the USSR discussions and to return to Brisbane in early August.

Elizabeth N. Marks, Brian Kay (Queensland Institute of Medical Research) and Harry Standfast (CSIRO, Long Pocket) are Queenslanders who have been appointed to a Working Party on Entomological Control of Australian Arboencephalitis which has been formed under the auspices of the National Health and Medical Research Council. The Working Party met for the first time on March 11 at the School of Public Health and Tropical Medicine, University of Sydney. Following that meeting Dr. Marks spent March 17-20 at the Entomology Section, Victorian Plant Research Institute, Burnely, Victoria having discussions in connection with a mosquito control project being carried out by the Section.

Ian Mackerras will be visiting Brisbane informally from May 31st to June 8. Friends in Brisbane who wish to see him can contact him via Dr. E. N. Marks at the University of Queensland.

Dr. L. H. Teo, a lecturer in the Department of Biology, Nanyang University, Singapore is visiting Brisbane under a Colombo Plan Fellowship during the period 12th - 30th May. He will be discussing his interests in physiology of stored products insects with entomologists in CSIRO, DPI and the University.

Bernard Doube, of the CSIRO Long Pocket Labs will be attending the Annual Conference of the Australian Veterinary Association in Hobart during the period 27th to 30th May. On his way to Hobart he will be visiting the McMaster Institute in Sydney and Melbourne University in Melbourne. While in Victoria he is hopeful of trapping specimens of Ixodes cornuatus, a close relative of the Queensland Paralysis Tick, I. holocyclus, and the only other tick in Australia known to cause paralysis.

Frank Page, Department of Primary Industries entomologist stationed at Biloela, spent a fortnight at Head Office in Brisbane during May and took the opportunity to consult with the University regarding his thesis studies on sorghum midge.

Don Sands, a member of the CSIRO Screw Worm Unit in Port Moresby and well-known lepidopterist, made an unscheduled visit to Brisbane in mid-May for melanoma surgery. His many friends will be pleased to know that the operation went well and Don should return to Port Moresby in early June.

IMPORTANT PESTS OF AGRICULTURAL CROPS IN QUEENSLAND

PART 4

Heliothis armigera (Hübner) - Corn earworm

The corn earworm is pictured on the News Bulletin cover in the centre of the bottom row. It belongs to a particularly complex genus of moths known throughout the world as major agricultural pests. Although it is difficult to estimate the monetary value of damage associated with this group, the vast quantity of literature published is an indication of its importance. In some cropping situations it is not uncommon for the cost of insecticide application alone to average \$150 per hectare.

Of the 21 world species, 4 are Australian and of these H. armigera and H. punctigera are major agricultural pests.

As is the case with many present day pests, the problem of insect resistance to the commonly used insecticides is becoming increasingly important. In Australia, H. armigera in most agricultural areas has developed resistance to hydrocarbons and organophosphates although H. punctigera has not developed any significant level of resistance. In Queensland, whilst the problem is not as critical as in other areas, there is still a need for concern since, although resistance levels here are not as high, producers are experiencing serious problems with spray control programmes.

Although species of Heliothis may not be selective in their choice of oviposition sites, they are highly selective in choosing food plants in a suitable condition of development. The Department of Primary Industries is currently involved in assessing this preference for host plants in South-East Queensland. Deposition of eggs on host plants is largely confined to the period of floescence. Thus, although the species may not actually oviposit on the floral bud, it ensures that the blossoms or fruit will be available when they subsequently hatch.

The number of larval instars normally varies between five and seven and when larval feeding is complete the mature larva drops to the ground and burrows into the earth to form its pupal cell and emergence tunnel. Pupal diapause, when it occurs, may be in response to forthcoming cold temperatures or in response to arid conditions.

Screening of new and old chemicals for potential use against resistant larvae will continue to provide an immediate solution to the farmer but more long term solutions are required. Studies in this field being undertaken by the Department of Primary Industries include:

- Economic Injury Levels for beans, cotton, maize and sorghum;
- Monitoring of insecticide resistance;
- Appraisal of "minimum spray" regimes in cotton using scouting techniques;
- Monitoring of moth flights in major cotton growing areas;
- Distribution of egg parasites in central and southern Queensland;
- Release of egg parasites (Trichogramma) in cotton;
- Development of host plant resistance in cotton.

Peter H. Twine
Department of Primary Industries
Toowoomba

NOMINATE A NEW MEMBER

Pass on the membership nomination form reproduced below to a colleague or friend who is not a member. Ordinary Members are those resident in Brisbane (\$9.00 p. a.), Country Members are those resident elsewhere (\$8.00 p. a.) and Associate Membership (\$3.00 p. a.) is designed for students, retired persons and others not in receipt of an ordinary salary. A nominator and seconder are required on the nomination form. However if a second member is not available locally send the completed form to the Honorary Secretary who will arrange a seconder in Brisbane.

THE ENTOMOLOGICAL SOCIETY OF QUEENSLAND

MEMBERSHIP NOMINATION FORM

I nominate (Name)

(Address)

.....
.....

**for Ordinary, Country, Associate* Membership of the
Entomological Society of Queensland (* Strike out whichever
do not apply.)**

Nominated

Seconded

I accept nomination

(Nominee's Signature)

Forward completed form to:-

The Honorary Secretary,
Entomological Society of Queensland,
C/- Department of Entomology,
University of Queensland,
ST. LUCIA. Q. 4067

OFFICE BEARERS 1975

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Alan Fletcher Laboratory,
Sherwood. Q. 4075.

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

NOTICE OF NEXT MEETING - NOTES AND EXHIBITS

The next meeting of the Entomological Society of Queensland will be held at 8.00 p.m. on Monday, June 9th, 1975, in Room 402 of the Hartley Teakle Agriculture Building, University of Queensland, St. Lucia, Brisbane. This will be a special evening of Notes and Exhibits by members. Society members are invited to give thought to specimens, apparatus, techniques, slides or notes of general interest suitable for presentation at this meeting. Delivery time should not exceed 15 minutes. Country members may send exhibits to the Honorary Secretary who will arrange for their presentation at the meeting. If possible, intending contributors should inform the Honorary Secretary of their title before the meeting.

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.