

NOTES ON SOME INSECT PESTS

G. D. Austin

A few species of insects, hitherto considered of minor importance, were reported during the year 1953 when they temporarily assumed the status of pests. They caused sufficient concern to justify their being mentioned for purposes of record.

(1) *Toxoptera aurantii* Boyer. (Aphididae) Tea Aphid.—Tea aphids are small, soft-bodied, blackish insects, invariably confined to the tender shoots of tea seedlings, young clonal plants, and tea recovering from pruning. Following their feeding i.e. sucking the sap, shoots become curled and stunted. They are sensitive to weather conditions: are preyed upon by many natural enemies which include ladybird beetles and larvae, lace-wing flies, Syrphid larvae, the hymenopterons *Aphidius* sp. (Braconidae), *Eurytoma* sp. (Eurytomidae), and a parasitic fungus *Empusa* sp.

During the long spells of dry weather in Uva the bugs become a nuisance, especially in nurseries, where they cause a definite set-back to the growth of V.P. cuttings and seedlings. If natural enemies fail to cope with the situation, the remedy lies in spraying the nurseries with a nicotine spray.

(2) *Melanagromyza theae* Cotes (Agromyzidae) Tea leaf-miner.—The mines caused by the larvae of this minute blackish fly, which is rather similar to the common 'eye fly' in appearance, continue to be mistaken for early stages of blister blight attack. The fly oviposits on the upper surface of the tea leaf and the larvae or maggots, on hatching, tunnel their way under the epidermis producing a blotched or blister-like appearance—hence the confusion with the fungus 'blister blight'. Observations at Passara indicate that weekly spraying with Perenox (for protection against blister blight) did not prevent the fly ovipositing on the tender foliage of young tea plants.

Though the effect of the mines on a mature tea bush is insignificant, the presence of several blotches on the foliage of young tea plants when quite a considerable area of the leaves are mined, has a decided effect in retarding growth of the young plants. A gammexane or D.D.T. spray should control the fly on young tea. This miner was for many years known as *Oscinis theae* Bigot. Vide *T.R.I. Bull.* No. 22, p. 49.

(3) *Simplicia robustalis* Guen. (Noctuidae). After a lapse of half a century, according to recorded observations, the brownish caterpillars of the Noctuid moth appeared in very large numbers in the Ratnapura district where they caused considerable defoliation of tea recovering from pruning, especially in new clearings. Hand collecting the caterpillars was found to be extremely difficult. A 50 per cent. D.D.T. spray at a concentration of one pound to 30 to 40 gallons water was very satisfactory.

Regarding this species, Green (Ceylon's first Government Entomologist) wrote as follows in his report for 1903 'The small brown caterpillars of this moth have been reported on several occasions as infesting tea prunings on recently pruned fields. As long as they confine their attention to the prunings no harm will be done ; but after breeding in the withered prunings they have commenced to devour the living tea'. No local parasites have so far been recorded from this caterpillar which is known to feed on tea only.

(4) *Porthesia (Euproctis) scintillans* Wlk. (Lymantriidae). This is a hairy, dark-coloured, caterpillar with yellow stripes down its back, adult moths being yellowish in colour. It is met wherever tea is grown. The young caterpillars on hatching are gregarious in habit and skeletonize the leaves as they feed ; as they grow older they migrate and confine their depredation to mature foliage.

A peculiar feature of the caterpillar in recent years is its predilection to feed on the mature blisters of *Exobasidium vexans* which it completely devours, leaving a circular hole indicating the size of the blister consumed.

The caterpillar might have been worth encouraging for the biological control of blister blight had it confined its taste to blistered tea only. As records stand, however, it is known to feed on at least ten host plants in addition to tea. It has one larval parasite—a species of *Apanteles*.

(5) *Indarbela (Arbela) quadrinotata* Walk. (Cossidae) Bark-eating borer.—Beyond reports by Green in 1903 and S. Stuart Light in 1927, the writer has so far not seen or come across any records of this bark feeding caterpillar paying any attention to tea in Ceylon. It is a moot point whether the caterpillar ever does any serious damage to *Albizia* on which host it is frequently seen wherever tea is grown.

Even Green wrote 'it feeds upon the superficial layers of the bark and does not appear to cause much real injury here though in India it is regarded as a serious pest of tea'.

Its run-ways or galleries which are covered with frass, and under which it feeds and moves, are certainly unsightly and perhaps alarming to see in a tea field.

Strong applications of Gammexane P. 520, D.D.T. 50 per cent. and Dieldrin failed to have any effect on the caterpillars when sprayed on *Albizia falcata* in the Balangoda district.

Hainsworth, author of 'Tea Pests and Diseases and their Control' must have obtained satisfactory results in India because he recommends 1 lb. of 50 per cent. D.D.T. powder in 40 gallons water as giving excellent control.

(6) *Actias selene* Hb. (Saturniidae). The Moon moth.—An opportunity of testing the authenticity of an old record that tea is one of the host plants of the beautiful Moon Moth, *A. selene*, presented itself when a small collection of a week old caterpillars was received at the Passara laboratory towards the end of the year. On arrival the caterpillars were at once offered the foliage of both tea and the Patna Oak (*Careya arborea*) which they fed on quite readily. The caterpillars were then fed solely on tea and the following life-history data recorded :—

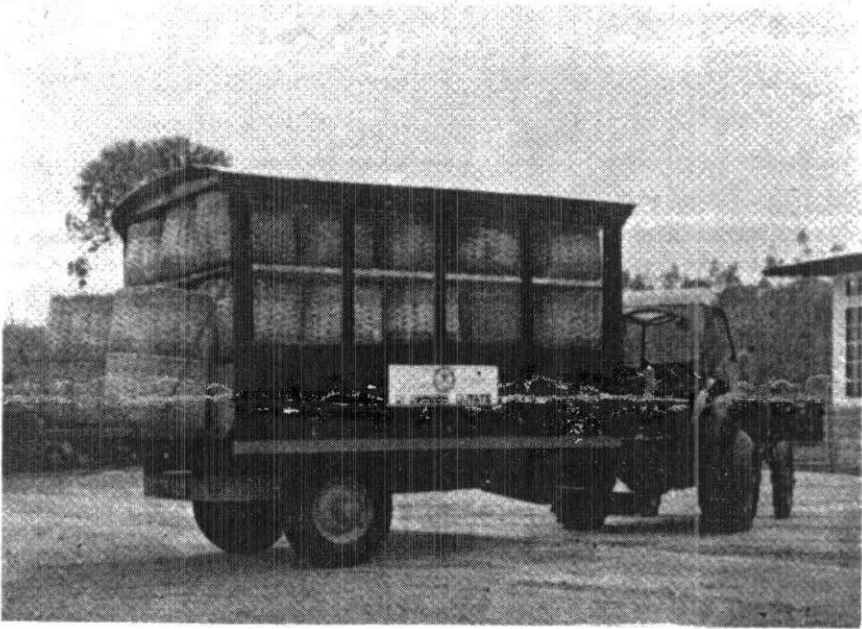


Photo by J. Landreth.

Photograph 3. Ferguson trailer modified for leaf transport.

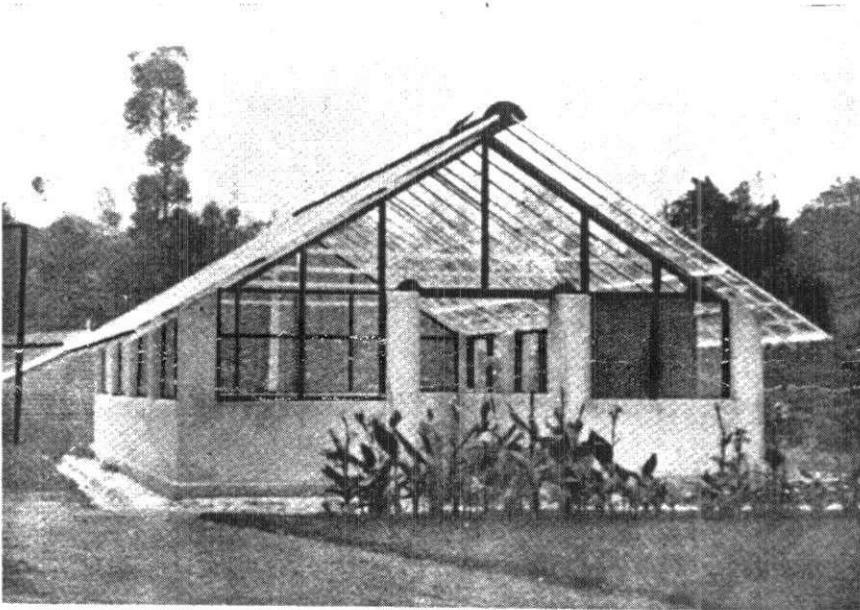


Photo by J. Landreth.

Photograph 4. The new glass-house, St. Coombs.

Incubation period	...	13 days
Larval period	...	48 to 63 days
Pupal period	...	36 to 53 days
Egg to adult	...	97 to 129 days

The adult *A. selene*, with its wings of a pale, sea-green and the hind wings tapering into long curved tails, is one of our most beautiful moths. The larvae, though allied to the silkworms of commerce are not of economic importance. Besides the two host plants already mentioned, caterpillars are known to feed on *Odina wodier* Roxb. 'Hik', and *Eugenia jambolana*. Lam.

ESTATE GREENHOUSE

J. Landreth

In the *Tea Quarterly* Vol. XXIII, Part IV of 1952, there is an article by Dr. Haworth on the establishment of green manures, in which he mentions a greenhouse for this purpose.

A greenhouse, recently built here, is illustrated in Photograph 4. For those interested the specification is as follows :—

Size.—30' 0" × 18' 0", 6' 0" at eaves and 12' 0" at ridge.

The roof trusses are in 2" × 2" × ¼" T iron, the purlins in 2" × 2" × ¼" angle iron and the 1/8" thick glass is set in 1¼" × 1¼" × ¼" T iron which is attached to the purlins by countersunk headed screws. Aluminium clips and 'Stopstara' putty are used to retain the glass in position.

A 3' 0" high dwarf wall surmounted with expanded metal with concrete pillars encloses the building, and a sliding door is fitted in the end wall. A suitable watering system manufactured by British Overhead Irrigation Limited, has been ordered and should arrive in the near future.

The all in cost of this building including irrigation is approximately Rs. 6,800/-.

MINUTES OF THE MEETING OF THE BOARD OF THE
TEA RESEARCH INSTITUTE OF CEYLON HELD AT THE
OFFICES OF THE PLANTERS' ASSOCIATION OF CEYLON
AT 2-30 P.M. ON FRIDAY, 21ST MAY, 1954.

Present:—Mr. R. C. Scott, c.b.e. (Chairman), Dr. A. W. R. Joachim, o.b.e. (Director of Agriculture), Messrs. T. E. D. Loftus, c.c.s. (Assistant Secretary Ministry of Finance, representing the Minister of Finance), Kenneth Morford c.b.e. (Chairman, Planter's Association of Ceylon), D. F. Ewen, c.b.e. (Chairman Agency Section, Planters' Association of Ceylon), D. C. L. Amarasinghe, c.c.s. (Tea Controller), W. Neal de Alwis, m.p., D. E. Hettiarachchi, j.p., u.m., Errol Jayawickreme, j.p., u.m., A. J. Dickson, A. D. McLeod, C. D. Green, H. S. Hurst and J. Lamb (Director and Secretary).

Mr. W. P. H. Dias, j.p., Chairman, Board of Management, Rubber Research Institute of Ceylon, Dr. H. E. Young, Director of the Rubber Research Institute, and Mr. E. S. Rose, Superintendent, St. Coombs Estate, were also present by invitation.

A letter regretting inability to be present was received from Mr. V. G. W. Ratnayake, m.b.e., m.p. A message from Sir Arthur Ranasingha intimating his inability to attend was conveyed by Mr. T. E. D. Loftus.

1. Notice convening the meeting was read.
2. **Minutes of the Meeting of the Board held on 19th February, 1954.**

The minutes were confirmed subject to the amendments notified to members in circular No. A7/54 of 12th May, 1954.

3. **Membership of the Board & Committees**

(a) **Board.**

The following changes in the personnel of the Board were reported.

(i) *Ex-officio Members.*

On his appointment as Chairman of the Agency Section of the Planters' Association of Ceylon as from 10th March, 1954, Mr. D. F. Ewen, c.b.e., had replaced Mr. C. D. Green.

Mr. Kenneth Morford, c.b.e., on his appointment as Chairman of the Planters' Association of Ceylon, had replaced Mr. W. R. Vander Kiste as from 27th March, 1954.

Mr. D. C. L. Amarasinghe who was appointed Tea Controller on 29th April, 1954, had replaced Mr. B. Mahadeva. The Chairman offered his and the Board's congratulations on his appointment.

(ii) *Representing the Planters' Association of Ceylon, Agency Section.*

Mr. C. D. Green had been nominated to succeed Mr. W. H. Attfield, who had resigned his seat on the Board with effect from 10th March, 1954. Mr. Green would be away from Ceylon for about a month from 31st of May.

Mr. A. D. McLeod, whose term of nomination had expired on 31st March, 1954, had been re-nominated.

(iii) *Representing the Low-Country Products Association.*

The period of nomination of Messrs. W. Neal de Alwis and Errol Jayawickreme had expired on 5th March, 1954.

Mr. Errol Jayawickreme informed the meeting that the Low-Country Products Association had nominated Messrs. J. L. D. Pieris and B. Amarasuriya as their representatives on the Board.

The Chairman thanked the outgoing members for the service they had rendered to the Institute as members of the Board. He welcomed the incoming members.

(b) Finance Sub-Committee.

(i) Mr. Kenneth Morford had replaced Mr. W. R. Vander Kiste as from 26th March, 1954.

(ii) Dr. A. W. R. Joachim had resigned as from 31st March, 1954. As the Committee concerned itself mainly with matters of finance it was proposed that the member representing the Minister of Finance on the Board should take his place. Agreed.

(c) Experimental and Estate Sub-Committee.

Mr. R. J. S. Bean had resumed his seat on the Experimental and Estate Sub-Committee on his return from leave out of Ceylon. He therefore replaced Mr. A. Watt who had acted for him.

(d) Small Holdings Sub-Committee.

At the meeting of the Small Holdings Sub-Committee held on 18th February, 1954, it was proposed that the Tea Controller should take the place of Dr. A. W. R. Joachim who had resigned his seat. Agreed.

(e) Standing Committee.

The Director commented on the usefulness of the Special Sub-Committee and the part it had played in the immediate past.

Mr. H. S. Hurst questioned the function of the Committee which, he considered, was set up for a special purpose. He thought the continuance of the committee would overlap the duties of the Finance Sub-Committee. He also objected to the name given to the committee.

The Director stated that the main function of the Finance Sub-Committee was the consideration of the Auditors' Report and the Estates and Research Estimates at the end of each year. It held at the most two meetings in the course of a year.

Mr. Green proposed and Mr. A. J. Dickson seconded that the committee should henceforward be called the Standing Committee of the Board. Approved.

Mr. Errol Jayawickreme said that he would no longer be a member of the committee. On the Chairman's proposal, Mr. D. E. Hettiarachchi was elected to fill the vacancy.

Mr. C. D. Green remarked that he was a member of the committee as Chairman of the Agency Section of the Planters' Association. He therefore suggested that Mr. D. F. Ewen should take his place. Agreed.

4.

Finance

The Chairman reported that acting on the advice of Messrs. Forbes & Walker the following investments had been made :—

- (i) Tea Research Institute of Ceylon Rs. 75,000 Stock in Ceylon Government 3½ per cent. National Loan 1964/69 at a cost of Rs. 73,088/50.
- (ii) Tea Research Institute of Ceylon, Small Holdings Advisory Service Rs. 120,000 Stock in Ceylon Government 3½ per cent. Loan 1959/64 at a cost of Rs. 117,987/10.
- (iii) Tea Research Institute of Ceylon Junior Staff Provident Fund Rs. 30,000 stock in Ceylon Government 3½ per cent. Loan 1959/64 at a cost of Rs. 29,497/52.
- (iv) The repayment proceeds of the £6,750 2½ per cent National War Bonds, viz. Rs. 89,688/58, had been placed on Fixed Deposit for three months as from 21st April, 1954.

On the proposal of Mr. W. Neal de Alwis, seconded by Mr. Errol Jayawickreme, it was agreed that enquiries should be made as regards investing any available funds of the Institute in the Bank of Ceylon 4½ per cent. Housing Scheme Loan.

5.

Minutes of the 87th Meeting of the Experimental and Estate Sub-Committee held on 20th March, 1954

The Chairman stated that copies of the minutes, together with the Visiting Agent's Report, which had been discussed at the meeting of the committee held on 20th March, 1954, had been issued to members.

Sanitation on St. Coombs including the T.R.I.

The Chairman referred to the Report issued by the Planter's Association Medical Officer, Dr. O. J. S. MacDonald, M.D., in which he had stressed the necessity for early action in respect of the recommendations contained therein. Estimates were being prepared and would be put up to the Board at the next meeting.

6.

St. Coombs Estate.

Profit from St. Coombs Estate for 1953.

The Chairman said he was pleased to report that St. Coombs Estate had finished up the year 1953 with a profit of Rs. 113,764/57, the second highest recorded since 1929 when the estate became the property of the Institute. In 1947 the profit was Rs. 175,763/57.

Two or three sales ago St. Coombs had topped the Colombo Auction with Tientsin at Rs. 2/90.

The crop this year to the end April was 11,957 lb. more than last year.

7.

Staff

(a) Engineer—Mr. J. Landreth.

The Chairman reported that Mr. Landreth had, by letter dated 21st April, 1954, tendered his resignation from the post of Engineer. The resignation had been accepted from the above date, which means that Mr. Landreth would leave the services of the Institute as from 21st October, 1954.

(b) Pathologist—Mr. C. A. Loos.

The Chairman stated that Mr. Loos, as members would recall, was awarded a grant under the F.A.O. Technical Scheme for a visit to the U.S.A. in 1952, but was compelled to postpone the visit on account of his wife's illness. Mr. Loos had recently been informed that should he not make use of this award now he would lose it.

Mr. Loos was due to leave Ceylon on 2nd June. Arrangements had been made for him to visit Dr. Kenneth Smith at the Molteno Virus Research Station at Cambridge, where work is being carried out, in co-operation with the Tea Research Institute, on virus disease of nettle grub. He is due to arrive in the U.S.A. by June 15th and would remain there for about six weeks.

(c) Agricultural Chemist—Mr. J. A. H. Tolhurst.

It was reported that Mr. Tolhurst had returned to Ceylon with his family on the 16th May, 1954.

(d) Technical Assistant to the Director—Mr. J. V. Harbord.

As decided at the last meeting the appointment had been offered to and accepted by Mr. Harbord. His employers, Universal Crop Protection Ltd., had agreed to release Mr. Harbord as from 1st June, 1954.

(e) Entomologist.

It was reported that an advertisement had been sent to the local press calling for applications for the post. Mr. Austin would remain in service until the post was filled.

(f) Technologist for Factory Research.

The Director said that he intended calling for applications for the post almost immediately.

It was agreed that the post should be advertised first in Ceylon, and that, should there be no suitable candidates, it be advertised in 'Nature' as a case would have to be made out to Government for employment of a non-Ceylonese.

8.

Any Other Business

(a) Arrangements for Out-Station Staff to be at St. Coombs for the Annual General Meeting of the Junior Staff Association.

It was reported that the Junior Staff Association had made the request that out-station members be allowed to make an annual visit to St. Coombs to coincide with the Annual General Meeting of the Association.

The Director stated that he had allowed the request for 1954 but should like to have the Board's authority for future dates.

It was agreed that the request be allowed on the understanding that the Association fixes its Annual General Meeting whenever possible on a date which would necessitate the visit of out-station members to the Institute, such as for a conference or demonstration.

(b) Conference.

It was agreed to hold the Institute's Biennial Conference next year.

J. LAMB,
Secretary.