https://doi.org/10.29321/MAJ.10.A04094

Pericyma glaucinans Guen. a noctuid pest on Sesbania aculeata (Dhaincha)*

by

S. VENUGOPAL, B. SC., M. SC.
Madras Agricultural Department.

Introduction: The moth *Homoptera glaucinans* Gn. now known as *Pericyma glaucinans* Gn. is one of the caterpillar pests, noted to do considerable damage to *Sesbania aculeata*. It belongs to the family Noctuidae of the Order Lepidoptera. Recent observations have indicated that this insect has to be reckoned as a major pest of this crop, always occurring side by side with the geometrid *Semiothisa pervolgata* Wlk.

Distribution of the pest: It has a wide distribution throughout India, Burma, Ceylon, South Africa and Java; Hampson, (1894) Fletcher, (1914) recorded the occurrence of this pest throughout Southern India.

Life history: On the life-history aspect not much of work has been done anywhere in India. Fletcher (1914), has given a short description of the larval stage of this pest.

Host plants: Susainathan (1924) has noted the occurrence of this pest on Pomegranate and Citrus. It has been reported from Mauritius, as a pest on *Poinciana regia* (Moutia, 1946).

This caterpillar does extensive damage to the leaves of Dhaincha. This semilooper caterpillar, is very characteristic in its appearance on the plant. It occupies a parallel position on the leaflet almost resembling the green leaf and escapes attention. It first eats away the leaflets and finally the side and main shoots. In extreme cases, only the main stem and mid-ribs of leaves are left out. The attack continues throughout the growth of the plant.

Life-history and description of various stages — *Copulation and oviposition:* The female moth copulates after a day of emergence. After 2 or 3 days the eggs are laid on the tips of the leaflets as well as the petiole and main stem. (Egg. Plate I). A single female is capable of laying 55 to 60 eggs.

The eggs are deep green and conical with a number of furrows on the outside and with a diameter of 0·645 mm. They are laid in batches of 2 or 4 at a time. The egg period ranges from 2 to 3 days.

* Formed part of M. Sc: thesis submitted to Madras University in 1956.

Larva : The larva passes through four moults and pupates at its fifth moult. The newly hatched larva measures about 0·4 mm. in length. It is yellowish with 3 pairs of yellowish prolegs. It is very active and assumes a parallel position to the long axis of the leaflet merging with the greenish background. The full grown larva is 4 cm. in length and green coloured with ash coloured dorso-median area. Head is smooth, green and hairs on the head region, appear short and blackish. It rests, stretching on the mid-rib of leaf. It loops with a slender body thickset at the region of 4th, 5th and 6th segments. Prolegs are fairly stout, greenish and provided with orange coloured crochets. Thoracic legs are bluish green in colour. The larval period lasts from 15 to 17 days.

Pupa : (Plate II): Pupation takes place in the soil with a coating of mud and fragments of leaflets. The pupa is large, light brown and measures 1·6 cms. in length and is covered with flimsy whitish silken cocoon and deposit of white powdery substance. The pupal period is from 6 to 7 days.

Adult : (Plate III): Hampson (1894) has described the adult moth.

Total life-cycle : (Plate IV): The total life cycle is about 24 to 26 days, the egg, the larval and pupal periods being 2 to 3, 15 to 17 and 6 to 7 days.

Natural enemies : So far no natural enemies have been recorded or noted on this pest.

Seasonal history : The pest is noted during the months of June to October and occasionally in November also. It completes 4 broods during the duration of the crop in the field.

Control measures : The control trials on *Pericyma glaucinans* Gn. was conducted at the Central Farm with newly introduced synthetic chemicals. The following six treatments were attempted against this pest, namely, (1) BHC 5%, (2) DDT 5%, (3) P-520 ·1%, (4) DDT ·1%, (5) Aldrin ·1%, (6) Dieldrin ·1% and (7) Control. For each treatment 10 cents were taken and the different plots for each treatment located as distant as possible. The control plot was taken from one corner far away from treated plots. Initial counts of larval populations were taken from 20 plants at random. Population counts for different treatments were recorded after 24 and 48 hours. The results have been presented in Table 1. It will be seen clearly from the tabular statement that Aldrin ·1% and

PLATE I.
Egg of *Pericyma glaucinans* Guen.

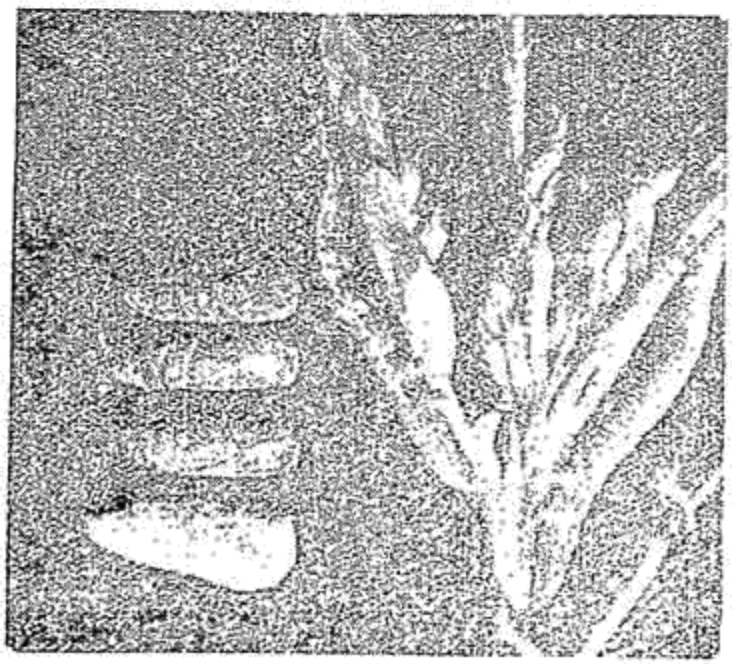

PLATE II.
Larva and pupa of *Pericyma glaucinans* Guen.

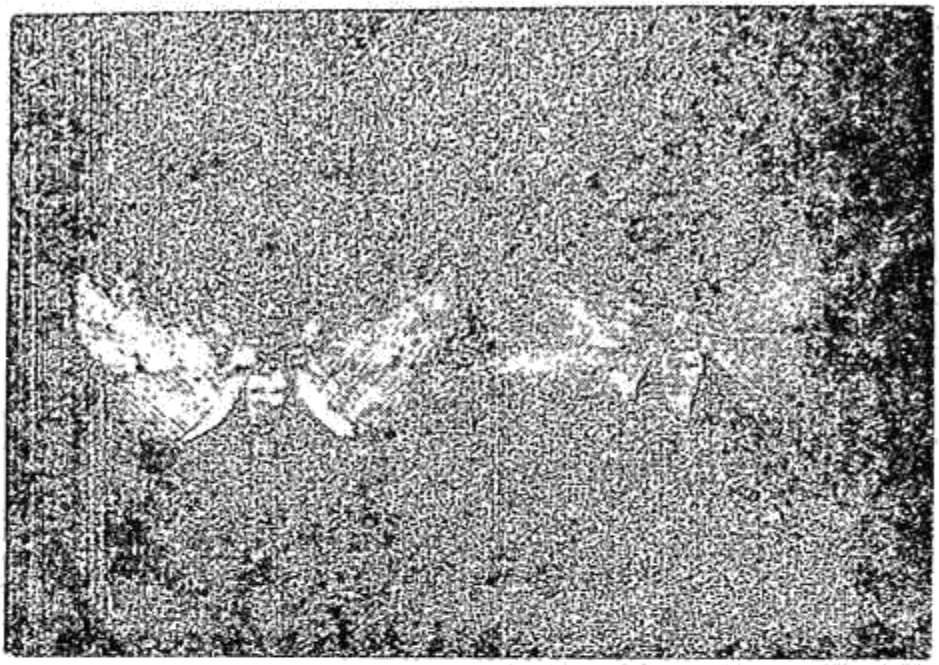

PLATE III.

Adults of *Pericyma glaucinans* Guen.

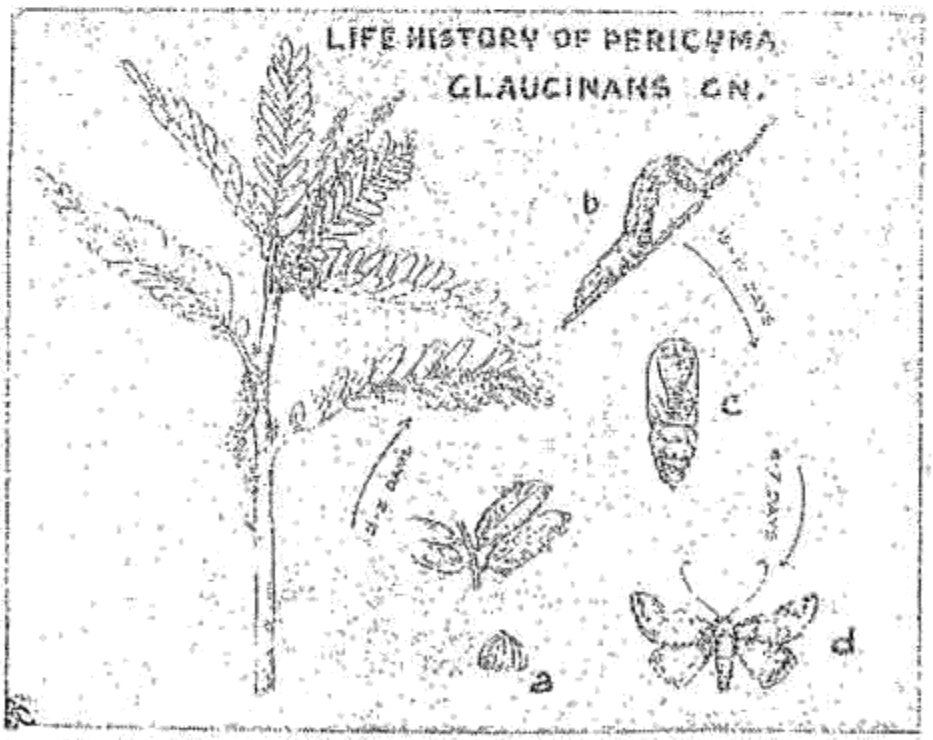

PLATE IV.

Life history stages of *Pericyma glaucinans* Guen.

(a) Egg
(b) Caterpillar
(c) Pupa
(d) Adult

Dieldrin ·1% gave cent percent reduction. Next in descending order came BHC ·1%, BHC 5%, DDT 5% and DDT ·1% showing least effect. In the case of control, there was slight increase in larval population probably due to hatching of some more eggs of the pest. The results of the control trials were subjected to statistical analysis and the same is furnished in Table 2. It may be noted from the table that differences in reduction in population were not statistically significant.

Summary: Among the pests that affect the green manure crop Dhaincha, *Homoptera glaucinans* Gn. now known as *Pericyma glaucinans* has to be reckoned as a severe pest often occurring in very large numbers throughout the growth of the crop. The life-history of this pest is worked out for the first time. Besides Dhaincha, it occurs on Pomogranate, Citrus and *Poinciana regia*. It is the larva that does considerable damage to the leaves. In a bad attack, the entire leaflets are defoliated leaving only the mid-rib and side branches. It is very difficult to locate the larva as it assumes a parallel position to the mid-rib and side veins and merges with their colour. The adult lays eggs in the tips of leaflets as well as on the petiole. The egg period lasts from 2 to 3 days. A single female is capable of laying as many as 55 to 60 eggs. The caterpillar undergoes four moults and pupates in the soil with a coating of mud and fragments of leaflets at its fifth moult. The larval period ranges from 15 to 17 days. The adult moth emerges after passing a pupal period of 6 to 7 days. The total life cycle from egg to adult is completed in 24 to 26 days. As it is a leaf-feeder, hand-picking and spraying with arsenicals are recommended for controlling this pest. Of late, dusting 5% BHC and spraying with ·1%, Aldrin and Dieldrin have been noted as highly useful for control of this pest.

TABLE I.

Control trials on Pericyma glaucinans Guen.

Sl. No.	Treatments	Initial counts	Counts after 24 hours	Counts after 48 hours	% of reduction in population after 48 hours
1.	BHC 5 %	60	9	6	90
2.	DDT 5 %	60	9	6	90
3.	BHC ·1 %	36	4	2	95
4.	DDT ·1 %	33	14	4	87
5.	Aldrin ·1 %	44	4	Nil.	100
6.	Dieldrin ·1 %	60	7	Nil.	100
7.	Control	42	45	45	...

TABLE II.

Statistical analysis of the control trials on Pericyma glaucinans Guen.

S. No.	Treatments	Difference in proportion	Standard error	Significance
1.	DDT ·1 % / Aldrin ·1 %	0·12	0·050	No.
2.	DDT ·1 % / Dieldrin ·1 %	0.12	0·042	No.

BIBLIOGRAPHY

1. Fletcher, T. B. 1914 Some South Indian Insects. Supdt. Govt. Press, Madras.
2. Hampson, G. F. 1894 *Fauna British India.* Moths *II :* 55.
3. Moutia, A. 1946 *Rep. Dept. Agric. Mauritius :* 17—21.
4. Susainathan, P. 1924 *Proc. 5th Ent. Meeting,* Pusa : 23—27.

Potash Status of Nanjinad Soils

by

N. S. MONEY, Junior Professor,
Agricultural College, (Vellayani) Kerala.

Scope of work: Nanjinad is an important rice growing tract which belonged to erstwhile Travancore State but now is in Madras State. The paddy lands in this tract cover an area of 50,000 acres and are mostly double cropped. The soil as a rule is very productive but the strain of bearing an annual crop coupled with inadequate application of fertilizers is bound to result in the gradual depletion of plant foods.

Pillai and Iyer (1) who carried out the soil survey of this tract concluded that these soils are well supplied with potash based on total potash content. Some cultivators, have, however, expressed the opinion that satisfactory crop yields were not forthcoming in the absence of systematic applications of potash. This has led them to coin the proverb. 'Ash in the pot-dung in the hay'. In view of this, an investigation of the potash status of these soils was carried out by the author prior to inclusion of this area in Madras State.