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DEPARTMENT OF AGRICULTURE, PUNJAB.

SOME IMPORTANT INSECT PESTS OF
COTTON IN THE PUNJAB.

BY

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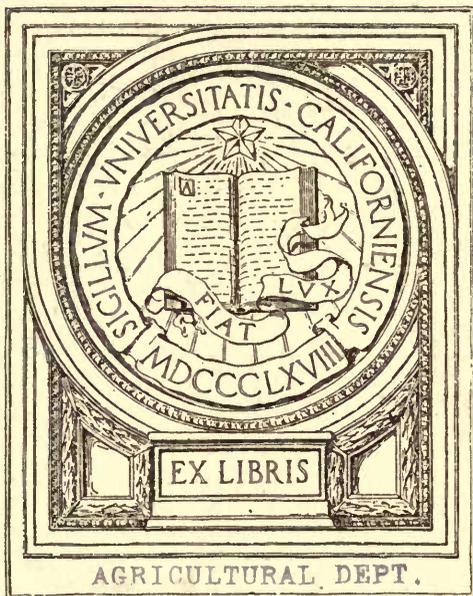
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Introductory Note.

THE cotton plant is attacked by a variety of insects, but only three of them do serious damage to the crop. These occur regularly every season, attack the fruit and lessen the yield. These pests are :—

- (1) the Bollworm.
- (2) the Red Cotton Bug.
- (3) the Dusky Cotton Bug.

All of them are easily recognised in the field: and the object of this short note is to put in the hands of cultivators simple means of preventing these pests from doing damage.

Explanation of Plate of Cotton Bollworm.

Figures 1 and 5.—Bollworm magnified.

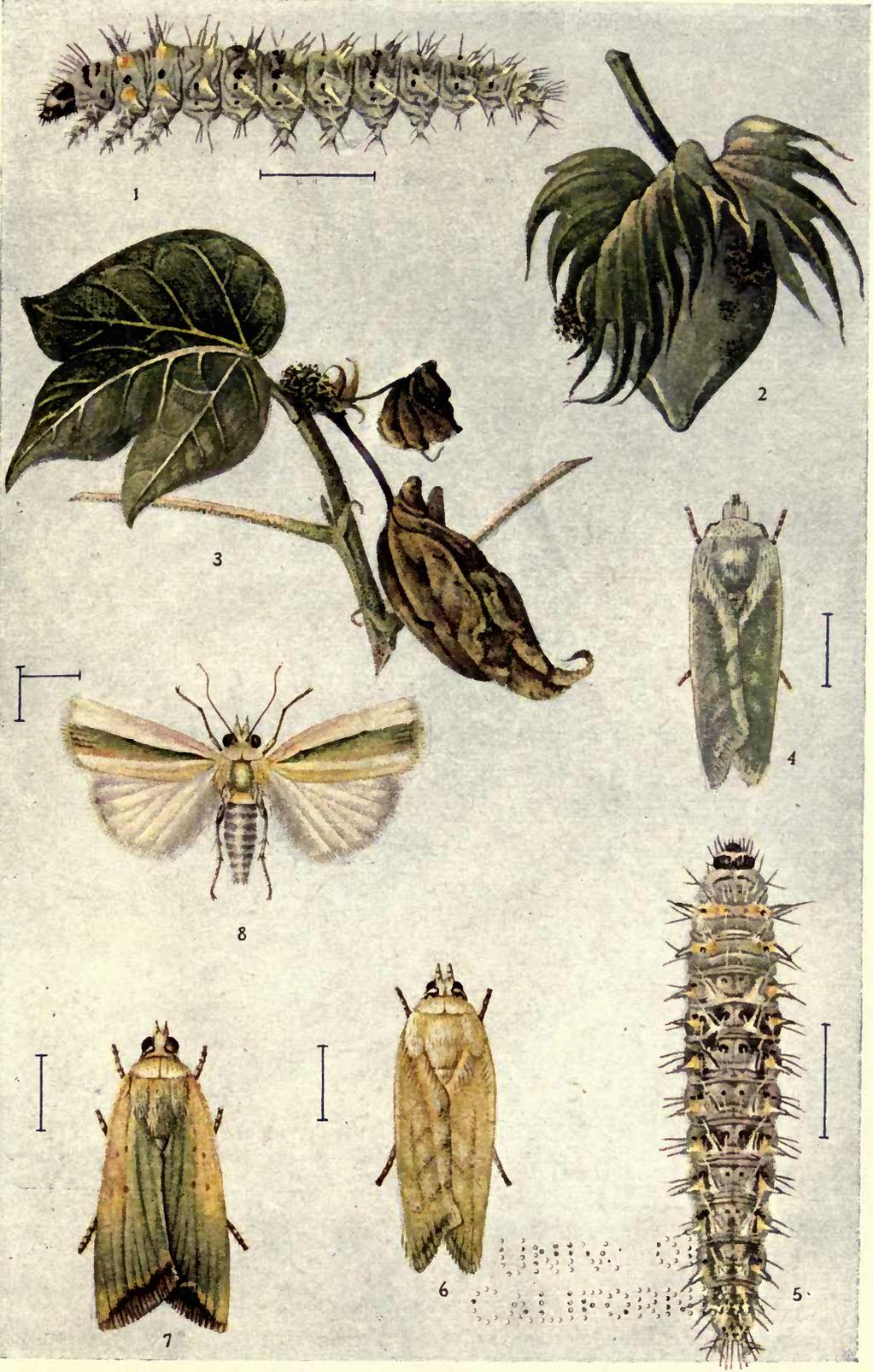
Figure 2.—Cotton boll showing bollworm attack.

„ 3.—Top shoot of cotton plant attacked by bollworm.

Figures 4, 6, 7 and 8.—Bollworm moths magnified.

(The lines alongside the figures show the natural sizes.)

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COTTON BOLLWORM, No. 2.

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1.—The Bollworm.

IT occurs throughout the plains all the year round, and besides attacking cotton it occurs on *bhindi* and *hollyhock*.

Damage.—This bollworm, which is really a caterpillar, bores into cotton buds, flowers and bolls, and thus damages the fruit. In June buds are attacked; they dry and fall off. In July flowers are attacked and wither. Bolls are attacked as soon as they appear. The caterpillars bore into them, eat the seed inside, and destroy the lint by filling it with excreta. The young bolls fall off and the mature ones do not open or yield only extremely poor cotton.

Control.—Bollworm is the most serious pest of cotton, and unless measures are adopted early in the season much damage is done to the crop.

The following measures will be found useful :—

1. During June and July, when the bollworm is in the cotton buds and flowers, mechanical measures must be employed to destroy them. One of the easiest ways of doing so is to sweep a drawn rope over the upper portions of the cotton plants in the field, which should then be thoroughly watered. In this way the affected buds and flowers will be jerked off the plants with the bollworms inside, and they will be drowned in the water. This should be carried out once a fortnight.

2. From the beginning of August, after the appearance of bolls, parasite boxes should be obtained from the Agricultural Department, and by their use the parasite, which is the enemy of the bollworm, should be spread in the fields. This will effectually stop any abnormal increase of the pest.

The use of the parasite and the parasite boxes is as follows :—

The parasite is a small insect which feeds upon the cotton bollworm. If it is present in cotton fields the growth of the bollworm is checked and the crop is saved. The Agricultural Department breeds a regular supply of these parasites, and from the end of July onwards distributes them in specially prepared parasite boxes in the cotton growing tracts of the province.

The parasite box is filled with heavily parasitised bollworms. To use the box, unscrew the wooden top. Below it is the gauze top. Place the box with this gauze top upwards on bricks under the shade of some plant in the middle of an affected cotton field. Leave it undisturbed for 12 days. By that time all the parasites

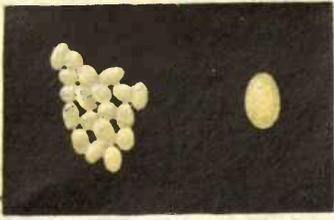
from inside the box will have flown out through the wire meshes into the field. At the end of twelve days the box should be emptied by unscrewing the side piece, and the contents should be buried in the ground *taking special care not to allow any green winged insect to escape out of the box*. If you see any green winged insects kill them otherwise they will produce bollworms in the field.

The parasites spread rapidly in the fields where the parasite boxes are used: from such fields the bollworm affected bolls should be plucked and filled in more parasite boxes: these bolls will have the parasites on the bollworms in them. These parasite boxes should again be used as described above in other cotton fields. In this manner the number of parasite boxes can be rapidly increased and the parasite can be established in different localities within a short period.

NOTE.—Parasite boxes can be had each year in the beginning of August by applying to the Assistant Professor of Entomology, Agricultural College, Lyallpur.

3. Cotton plants should not be allowed to remain in the ground after the crop has been picked. Otherwise they will afford shelter to the pest till the next season.

4. Bhindi should not be grown near cotton fields otherwise bollworms breeding in bhindi will go and attack cotton. But if bhindi is grown the plants should be carefully examined and all attacked flowers and fruits plucked off and destroyed so as not to let the bollworms breed in them.



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RED COTTON BUG.

Explanation of Plate of Red Cotton Bug.

Figure 1.—Group of eggs.

Figures 2, 3 and 4.—Young bugs magnified.

„ *5 and 6.*—Larger bugs magnified.

Figure 7.—Full grown bug, dorsal side magnified.

„ *8.*—Full grown bug, ventral side, showing the long beak magnified.

(The lines alongside the figures show the natural sizes).

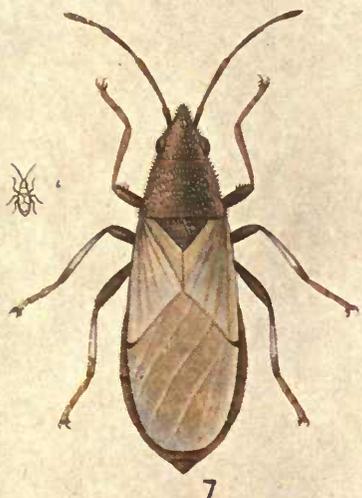
II.—The Red Cotton Bug.

THESE bright red insects are found throughout the plains and feed upon cotton, *bhindi*, hollyhock and similar plants.

They are found in all stages of their growth gathered together on green and open cotton bolls. They have long sharp mouths by which they suck the juices out of the lint and seed inside the boll. The damage is not noticed at the time, and the cultivators believe these insects to be harmless: but the loss becomes apparent when the cotton is picked and ginned. The bolls which are infested yield light seed which is of no value, and bad lint which is both poor in quality and stained by excreta.

The bugs are large and conspicuous and a coolie boy can clear them in a short time by sharply shaking the plants with one hand so that the bugs are dislodged and fall into a *balti* containing water and a thin layer of Kerosene which he holds in the other hand.

If this campaign is systematically carried in May and June, when the bug is on *bhindi*, and in August and September, when it is on cotton bolls, there need be no loss from these insects. Usually their destruction once a month is quite enough to keep them in check.



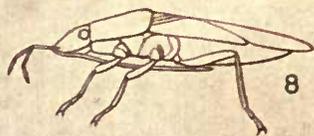
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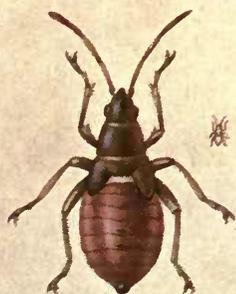
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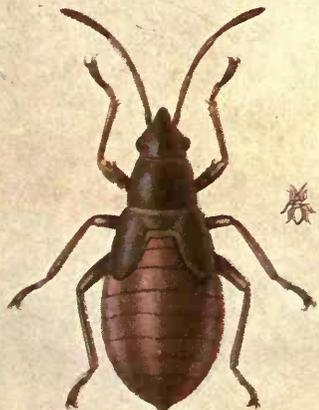
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DUSKY COTTON BUG.

Explanation of Plate of Dusky Cotton Bug.

Figure 1.—Eggs and nymph magnified.

Figures 2, 3 and 4.—Young bugs magnified.

„ *5 and 6.*—Larger bugs magnified.

„ *7 and 8.*—Full grown bugs magnified.

Figure 9.—Bugs of all stages clustered on lint of an open boll.

(The small figures show the natural sizes.)

III.—The Dusky Cotton Bug.

THEY are small brown insects found feeding upon cotton, *bhindi*, hollyhock and other allied plants. They attack the cotton bolls as soon as they open, suck out the seed and dirty the lint. Usually they are present in large numbers in cotton during September and October, and in the aggregate they do considerable damage.

The simplest way to destroy them is to shake them off the bolls into a pan of water.

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