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# The Mango shoot-webber—*Orthaga exvinacea* Hmpsn. and its control

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**Introduction** Of the caterpillar pests affecting mango shoots, *Orthaga exvinacea* Hmpsn. a pyralid, is the most important. Little or no connected account of the pest exists excepting for scattered references made by Hampson (1896), Fletcher (1914) and Ramakrishna Ayyar (1932; 1940). A record of the observations on the pest made over a period of two years is presented in this paper.

**Distribution and occurrence** The insect is known to occur throughout the Madras Presidency and is recorded as a pest. At Coimbatore, it is fairly serious from February to October though it is sparsely evident at other periods.

**Nature of damage** The caterpillars destroy the foliage a great deal. A badly affected tree can be recognised even from a distance, by the presence of numerous clusters of webbed leaves. The leaves wither and dry up and are often found loosened from their stalks but held together by webs. The trees which bear such clusters of affected leaves, present a sickly appearance. The pest seems to have no special preference to any particular variety of mango. Young trees are subject to more severe attack than old ones.

**Life history** The female moth reared in captivity lays eggs in small clusters on the silken strands of the webs of attacked shoots. When laid on the leaf, they are laid singly near the ribs of the leaf. Thirty to fifty eggs are laid by a single moth in seven to nine clusters.

**Egg** The egg is yellowish green in colour, matching with the colour of ribs of leaves; when laid on leaf, it is oval and somewhat flat, but when in clusters, the eggs overlap and are glued in mass and the true shape of individual eggs is not revealed. In two to three days, the eggs take a pinkish colour owing to the transparent shell allowing the colour of the developing caterpillar to be seen. The eggs hatch in four days.

**Larva** The newly hatched caterpillar is pale greenish in colour with pale white head and blackish prothorax. The first abdominal segment has a clearly marked pink transverse band. The abdominal region as a whole has numerous light and irregular pinkish lines especially at the lateral region. The whole body is covered with isolated whitish hairs which are thin and fairly long, and arise from light dark warts on the body. The caterpillars in the young stages are gregarious and begin to feed on the foliage by scraping the green matter. They wriggle on hatching from the old webs and slowly reach the foliage nearby. Small patches of green

matter on leaves are gnawed, and soon a tunnel of thin webs is made within which the caterpillars remain. While extending the area of attack on the leaf the extent of the tunnel of webs is also increased slowly. The caterpillar moults five to seven times and in captivity takes one month to go into the next pupal stage.

The full grown caterpillar measures about 3·5 cm. The head shield is brownish with dark motlings. Prothorax is as broad as head, pale with less dense markings. In the body, there are two dark bands, one longitudinal, and the other across the hind border of the prothorax. The mid-dorsal area is pale greenish white or light pale greenish. The setae are thin and inconspicuous but arise from clear black warts arranged in rows. The five pairs of prolegs are slender and pale white, with the crochets arranged in a circle The caterpillar is very active and always lives in tunnels of webs. In the grown-up stage, it makes holes in the leaf, and many a leaf in the webbed cluster is reduced to mere ribs. Only a single caterpillar or two are found in a webbed cluster. When disturbed from the folds of leaves it treads forwards or retreats backwards, and with a characteristic bending and wriggling of its body, skips off the leaf into the air and drops by a long silken thread which may be sometimes one to two yards long it suspends, itself dexterously on this strand which is produced to required length with marvellous rapidity, and the caterpillar uses it to climb back to the same web of leaves. The silken thread itself is very delicate, thin, inconspicuous and made visible only by the hanging caterpillar below. It takes an hour or more for the caterpillar to regain its normal position on the leaf. The grown-up caterpillar is a voracious feeder. It nibbles the edges or bites large holes, deserts old clusters and forms new ones binding fresh leaves. The signs of active feedings are manifest by the presence of numerous fresh green castings scattered on the strands. The leaves in cluster, denuded of green matter, or nibbled to the ribs, or clumsily bound together by webs, dry prematurely and the whole cluster of leaves may fall to the ground or remain suspended on the tree The caterpillar before pupation, becomes dull and shrunk in size.

**Pupa** Now and then a pupa or two may be found inside a cocoon made of silken thread and castings, within the folded or webbed foliage. But in cages, provided with soil, the caterpillars have been noted to form freely cocoons of silk and sand grains, and these lie almost at the surface, barely half buried in soil. Sometimes three to five days are spent in making a suitable strong and tough cocoon of silk, within which it lies in a curled up posture. The normal pupa is brown and about 13 mm. long. The emergence of adult takes place in 11 to 14 days. The adult moth, after emergence, lives in captivity for four to five days.

**Natural enemies** A carabid beetle *Parena laticincta* Bates and also a reduvid bug *Occama* sp. have been noted feeding on young and old caterpillars. Both of these live long, and form no inconsiderable check on the pest. It is a common observation that these caterpillars are scarce or

absent in trees infested by the red ant *oecophylla.* In addition to the predators a braconid parasite *Hormius* sp. has also been once reared from pupating caterpillars.

**Control** Systematic handpicking of affected clusters with the contained insects and destroying them, forms one of the best remedies to minimise damage. The affected twigs with young or old caterpillars can be easily collected.

Spraying the foliage with calcium arsenate ($\frac{1}{2}$ oz. calcium arsenate in one gallon of water) has given satisfactory results. The caterpillars feed on the poisoned leaves and eventually die.

### References

Fletcher (1914) *Some South Indian Insects*—pages 429—30. Hampson (1896)—*Fauna of British India* Vol. 4 page 125. Ramakrishna Ayyar, T. V. (1932)—*Bul. No. 27, Department of Agriculture, Madras*; -do.- (1940)—*A Handbook of Economic Entomology for South India*, page 289.

## SELECTED ARTICLE

## Some Plants Poisonous to Livestock

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Poisoning of livestock may be caused either by some of the flowerless plants such as fungi, lichens, etc., or by flowering plants such as the gramineae and leguminosae. This article deals with plants of the second group only, inasmuch as they are more extensively concerned with the poisoning of livestock.

The history of poisoning by plants in India can be traced to the remote past. The earliest mention is to be found in the *Rig Veda*, which is one of the oldest repositories of human knowledge, while further details may be gleaned from the *Charaka Samhita* and the *Shushruta Samhita*. Although some poisonous plants are protected by an unpleasant odour, an acid or bitter taste, or by spines, the poisoning of animals by such plants is of common occurrence, in spite of the widespread belief that they are protected by some instinct against eating dangerous plants. The important contributory factors incidental to poisoning are: (1) the ingestion of wilted, frosted or defoliated plants during drought, (2) the scarcity of palatable fodder during winter and early spring, (3) fatigue in transport and draught animals, (4) lack of salt, (5) a depraved appetite, (6) the fact that poisonous plants often grow in close association with palatable fodder, (7) the importation or transport of animals to new surroundings, and (8) the ingestion of poisonous plants along with hay.

**Enormous losses** It appears therefore that in a country such as India where a balanced feed is rarely available to animals where pastures are over grazed and grazing grounds are infested with poisonous plants, an enormous percentage of the cattle population is exposed to the dangers of poisoning. It seems, however, difficult to obtain reliable figures with regard to livestock losses sustained by plant poisoning, as only those cases are reported in which a large number of animals are involved.

The annual loss due to plant poisoning in animals in the U. S. A. is estimated to exceed $ 200,000,000 and in some years they may be even greater. In one