UTETHESIA ORNATRIX L.

and

OTHER INSECTS ATTACKING

Hemp

in

TRINIDAD. B. W. I.

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Utetheisa ornatrix, L, and other Insects attacking Sann Hemp in Trinidad.

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SANN HEMP, Crotolaria juncea, has recently been introduced into Trinidad and other islands in the British West Indies as a cover crop. Though still in the experimental stage, it is giving every indication of success and is being taken up on a large scale in several localities in Trinidad. In its original home, India, it is attacked by larvae of the Red spotted Ermine Moth Utetheisa pulchella L., which, to quote Lefroy "is a common insect of the plains, the moth flitting about herbage in the day, it is widely scattered over the Old World. The brightly coloured caterpillar feeds upon Sann Hemp and wild Crotolaria." The closely allied neo-tropical species Utetheisa ornatrix L. is common in Trinidad, on the weed Crotolaria retusa which is of frequent occurrence on waste ground, roadsides, and along traces. This wild Crotolaria is very similar in appearance to Sann Hemp and it is not surprising that the introduced species soon became attacked.

It was found, under laboratory conditions, that larvae could be changed from one food plant to the other without detriment, that larvae hatched from eggs laid on one would immediately feed on the other, and that females laid their eggs indiscriminately on sprays of the two plants together.

The damage is done mainly by larvae boring into the developing pods and eating the young seeds. Minor damage results from their feeding on the young leaves. In Trinidad it has been found that practically all the damage is done to pods developing during the wet season, July to December. After this latter month
the seed is harvested without difficulty and little or no damage is apparent. Although it is then difficult to find larvae on the Sann Hemp, the number of imagos flying among the grass in the traces showed no diminution, at least up to the end of May.

*Utetheisa ornatrix* L. is a moth belonging to the family *Arctiidae.* "an assemblage of usually stout bodied moths, often with moderately broad wings, which are frequently conspicuously spotted, banded, or otherwise marked with bright colours. The family is tolerably well represented in nearly all zoo-geographical regions, but attains its greatest development in the tropics." (Imms^3). Included in the family are the "Tiger" and "Ermine" moths, the "Footmen", and the destructive Egyptian Bollworm *Heliothis insulana.*

Boisd. It is a whitish moth with the forewings suffused with pink and with red border spotted with black. The hind wings are white with black markings. Underneath, the forewings are red with black markings. The head and thorax are white, spotted with black, and the abdomen is white.

The following complete description is given by Hampson^4

*Utetheisa ornatrix.*

Noctua ornatrix, Linn. Syst. Nat. 1758. etc.

Deiopeia ornatrix, var. stretchii, Butl. Trans. Ent. Soc. 1877 etc.


Head and thorax white, sometimes tinged with brown; third joint of palpi, antennae, and spots on frons, vertex of head, tegulae, patagia, and thorax black; shoulders with scarlet patches; pectus spotted with black; legs striped and banded with black; abdomen white sometimes tinged with fuscous towards extremity and on ventral surface; usually with sublateral series of black spots.

Fore wings white suffused with pink, and sometimes tinged with brown; the costa with five black spots with scarlet streaks between them; basal black points on costa and below cell usually present; a subbasal scarlet point below the cell; an antemedial black point below
below vein I usually present; two discoidal black points; sub-terminal and terminal series of black points with scarlet spots between them, and sometimes some scarlet spots before the sub-terminal points developed into streaks towards costa and inner margin. Hind wing white, the costal area tinged with pink; a large irregular apical black patch with pink spot on it before apex, continued as a band to submedian fold or vein 1, developed into a hamate patch at middle; a discoidal band sometimes present, the black from apical patch running along subcostal nervure to middle and up vein 2 almost to cell. Underside of fore wing and costal area of hind wing deep crimson.

_**Ab. I. stretchii.**_ Fore wing with antemedial and medial series of black spots; four black spots from costa to lower angle of cell, and a postmedial series excurred from below costa to vein 3, then incurved; hind wing tinged with pink to median nervure. West Indies and Central America, Brazil and Peru.

_U. pulchella._ Separated from above by fore wing not suffused with pink or fuscous. Europe, Asia, Africa, and St. Vincent.

_U. bella._ Hind wing pink.

_U. ornatrix_ is a day flier, particularly evident in the late afternoon. It flies low, favouring long grass, through which it passes with rapidity. The flight is erratic and of short duration, long intervals being spent in repose on the stems and underside of the leaves of the food plants.

The eggs are white, smooth, and almost spherical in shape, 0.7 mm in diameter. They are laid either singly in the centre of the standard of a flower, or in regularly arranged groups on the underside of a leaf. The number of eggs in a group varies. A female is capable of laying a large number of eggs during her life.
life. One, taken on the College plots on 16th November, 1926, yielded the following numbers:

17th and 18th November ................. 220 eggs
19th " " ...................... 38 eggs
20th " ...................... 16 eggs
Total ...................... 274 eggs

The moth died on the 21st November without laying more.

The larvae hatched out in three to four days.

220 eggs laid 17 & 18.11.26 - Hatched 21.11.26. .... 3 - 4 days
16 " 20.11.26 - Hatched 24.11.26. .... 4 days
100 " (approx.) laid 12.2.27 - Hatched 15.2.27. .... 3 days

The newly hatched larva is pale in colour with brown spots on each segment, which rapidly darken to form a black band. It bears a number of long black hairs tipped with white. Within twenty four hours it has reached a length of 3 mm. and on the fourth to fifth day 5 to 6 mm. By this time the dark bands are more apparent. The fully developed larva is about 30 mm long, alternately banded with black and yellow, of a general velvet appearance, with a sprinkling of long, black hairs. This stage lasts about 30 days.

9 larvae emerge 15.2.27. - Pupate (2) 13.3.27. .... 26 days
Pupate (9) 19.3.27 32 days

The fully developed larva descends to the ground and spins a slight cocoon with silk and the longer abdominal hairs. It then changes into a dark brown pupa with yellow rings marking the abdominal segments, and yellow lines bordering the thoracic appendages. It responds actively to irritation throughout the dormant period. In the laboratory the larvae would not go below the surface of either soil or sand to pupate, but sought out some dark corner of the cage. This period extends 7 to 9 days, and is not influenced by changes in atmospheric humidity as obtained in controlled desiccators with different strengths of Sulphuric acid.

The total life cycle is approximately 42 days, varying within
within the limits of 36 and 46 days. Only one parasite was obtained, this an unidentified dipteran of the family Tachnidae. It emerged 18 days after a larva had pupated apparently normally.

*Uetheleia ornatrix* has not been recorded as far as is known as attacking any other economic plant in the West Indies than Sann Hemp where introduced. It is mentioned by Johnson as attacking the seed of cotton plants in Brazil, together with the allied *U.hella*. No details are given.

The following insects have been found on Sann Hemp growing at the Imperial College of Tropical Agriculture, Trinidad, during the period October 1926 - June 1927. This list only includes such insects as are likely to be of economic importance.


*Nezada viridula* L. The Green Bug has been quite common throughout the period. The numbers during the wet season were considerably greater than later, and at times suggested that they might develop into a serious pest. The bug was found on the Sann Hemp in all stages but the egg. Pods failed to develop, or did so without forming proper seed; in other instances more mature pods developed a rot, which in several instances could be traced from puncture holes. Hutson gives Crotolaria spp. among the hosts of the bug in St. Vincent, and deals with the danger of cover crops and weeds acting as a carrier of Nezada which spreads Internal Boll disease in cotton.

*Dinocoris variolosus* Westw. was on several occasions found on Sann Hemp, but never in any quantity. As it was found on tree cotton in the vicinity, it may prove to be another bug encouraged
encouraged by Sann Hemp, which will do damage to more important crops.

(2) Coleoptera. Family Chrysomelidae

Diabrotica 12-punctata caused much damage by defoliation during the wet season and the following month, January. Leaves of plants in all stages were eaten away in holes, giving the plants the appearance of having been peppered with small shot. The petals of flowers were also eaten away at times, although no actual damage of the vital parts was noted. D. melanocephala and four other undetermined but related beetles were found in small numbers doing similar damage. A bad attack of these Flea beetles would undoubtedly so lower the vitality of the plants that their value as green manure, another crop, or for seed production would be seriously impaired.

The weevil Cleogonus rubetra F. appeared in some numbers on March 23, 1927, but disappeared in a few days without doing any apparent damage.

(3) Thysanoptera.

A Thrips, probably of the genus Frankliniella Karny, was common in the flowers. No damage was actually observed. As several destructive species in this are recorded from the West Indies and Central America, it may have some relation with regard to the non-setting of pods which has been noted on several occasions, but this is merely hypothesis;
SUMMARY.

(1) Sarin Hemp, Crotolaria luncen, recently introduced into Trinidad is attacked by the indigenous moth Utetheisa ornatrix L. which tends to inhibit the production of seed.

(2) The moth normally feeds on the weed Crotolaria rataua.

(3) The life cycle occupies about 42 days.

(4) So far only one parasite, a Tachnid fly, has been obtained.

(5) Other insects attacking Samn Hemp in Trinidad are given.

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