

THE CUPMOTH SCOPELODES DINAWA B. BAK (Family Limacodidae) AS A PEST OF MANILA HEMP AND MANGO.

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THE larvæ of the Cupmoths (*Limacodidae*) are well known pests of various cultivated plants (Coconuts, African Oilpalm, Cacao, Coffee, Tea, Banana, Mango, etc.) in the tropical zone. Species of the Genera *Susica* Wlk., *Thosea* Wlk., *Setora* Wlk., *Orthocraspeda* Hmps., *Narosa* Wlk., *Altha* Wlk., and others have been recorded as polyphagous pests in the Oriental Region, species of the Genus *Parasa* from the Oriental and from the Aethiopian and of the Genus *Sibine* from the Neotropical Zoogeographical Region.

A PART from a few data recorded by Frogatt (3), Dun (1, 2) and the writer (5), very little was known of *Limacodidae* as pests of cultivated plants in the Territory of Papua and New Guinea.

The larvæ of a fairly large species, *Scopelodes dinawa* B. Bak. were found recently by the writer, defoliating Mango (*Mangifera indica*) and Manila Hemp (*Musa textilis*) in the Morobe District of New Guinea.

Figures Nos. 1-3 show the serious leaf damage caused by the large fleshy caterpillars to Manila Hemp, as observed in the Markham Valley near Lae. Figure 4 shows the larvæ and Figures 5 and 6 illustrate the cupshaped cocoons of *Scopelodes dinawa* B. Bak. on the leaves of *Musa textilis*. The defoliation of *Mangifera indica* observed in Wau (Morobe Highlands) was also very severe. On most of the leaves only the midribs were left intact.

The larvæ, kept in a breeding cage, refused to feed but the breeding of the insects from cocoons was very successful. The first adult moths emerged seven days after collecting the cocoons. Of 44 cocoons collected on Manila Hemp 20 males and 24 females emerged in the course of four weeks. All 44 adults emerged from the cocoons after sunset between 7 p.m. and 2 a.m. Perfect specimens could be obtained only if the freshly emerged moths were killed and mounted as soon as their wings became stiff. Individuals left in the breeding cage for two to three hours, began to crawl and fly around rubbing the scales off their wings. The breeding cages had to be checked every 40 to 50 minutes to obtain a good series of perfect specimens.

The photoxenic larvæ prefer to feed at night and they rest during the day on the lower surface of the leaves. The fully grown caterpillars are up to 1½ inches long and 7/16 inch wide. Four rows of spined hairy appendages cover the greenish-yellow thorax and the abdomen, two of which are on the lateral surface and two are on the dorsal surface, left and right from the longitudinal section (see Figure 4). On touching the caterpillars the spines cause a burning pain and skin irritation, as in the case of many other species of *Limacodidae* ("Nettle Caterpillars").

The semi-oval cocoons have a dirty greyish-brown colour, similar to that of dry fallen leaves. Their length varies from ¼ inch to ½ inch. The light brown coloured pupa lies in a slightly bent position in the roundish cocoon. The cocoons were found singly or in small concretions of two to four on the surface of Manila Hemp leaves (see Figures 5 and 6).

The adult moth shows a remarkable sexual dichroism. Typical for both sexes are the relatively long light brown coloured palpi, ending in greyish-black tufts. The resting moth keeps the palpi in a curved (crani-dorsal) position. The curved end of the abdomen protrudes between the two forewings (see Figure 7). The females are larger and more robust than the males. The male was described by Bethune-Baker in 1904 (*Novitates Zoologicae* 11., p. 384). The female was described by Hering in 1934 (4) with the remark: "the female, which probably belongs to this species" . . . Hering's suggestion is now proved by the fact that Bethune-Baker's description covers the morphological characters of the males

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Fig. 1.

General view of Manila Hemp damaged by "*Scopelodes dinawa*" B. Bak.

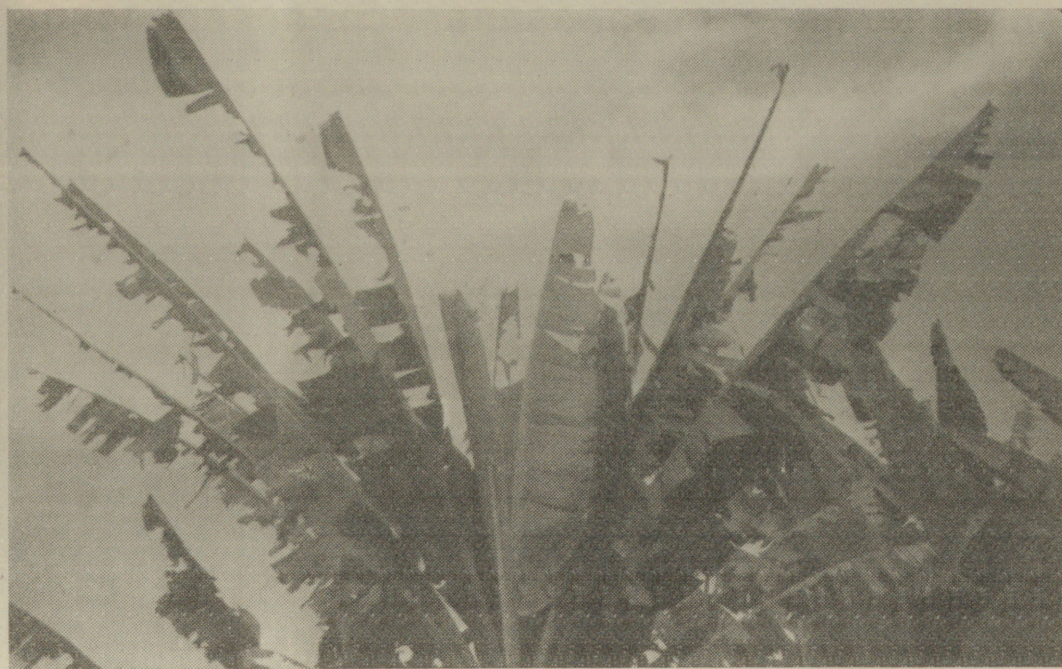


Fig. 2.

A detailed view of defoliation of Manila Hemp by "*S. dinawa*".

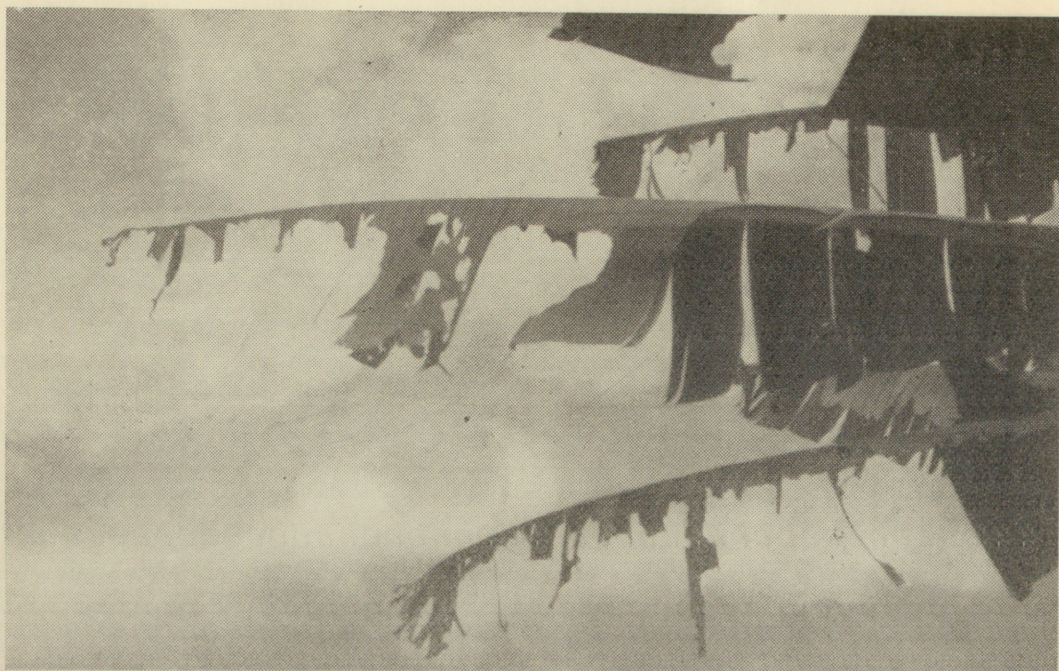


Fig. 3.
A further view of the leaf damage caused by "*S. dinawa*".



Fig. 4.
Larvae of "*S. dinawa*".

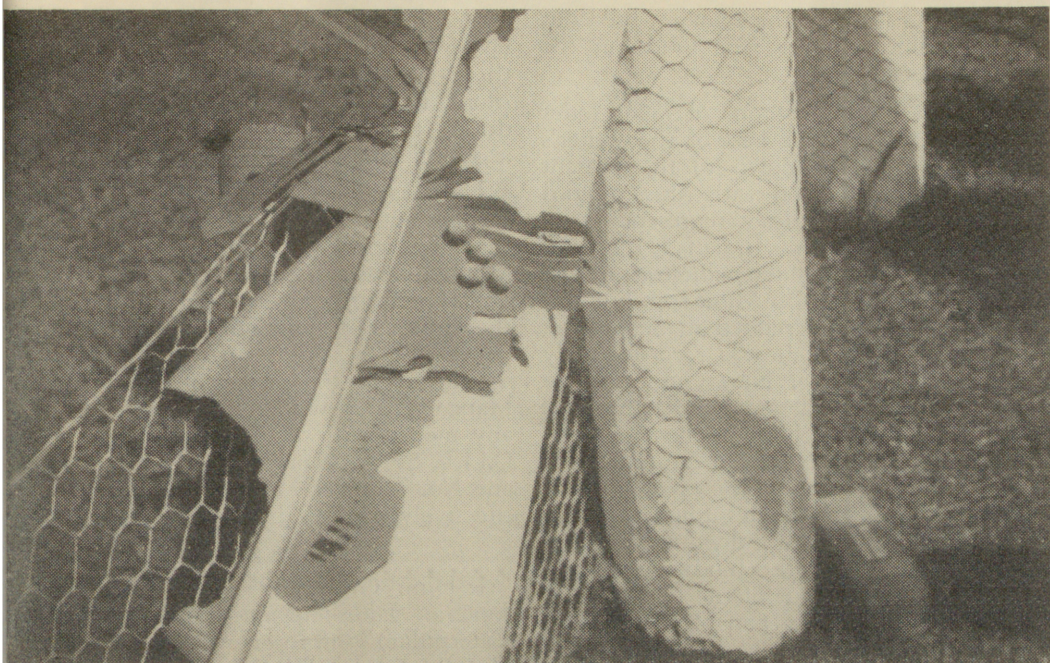


Fig. 5.

Cocoons of "*S. dinawa*" showing aggregation on leaf of Manila Hemp.

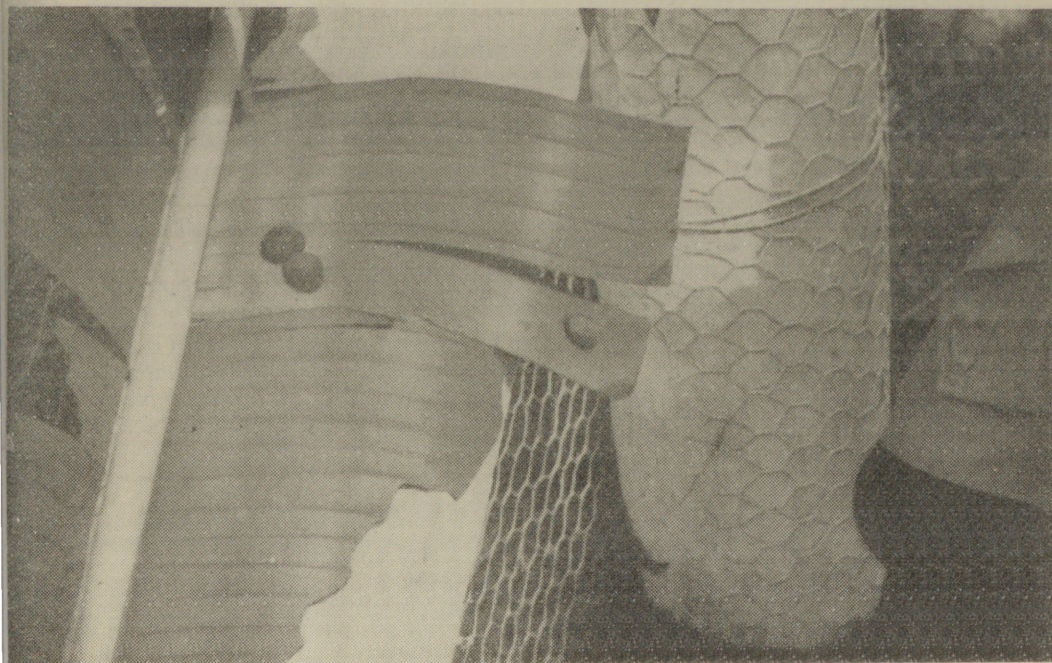


Fig. 6

Three cocoons of "*S. dinawa*" on leaf of Manila Hemp.

and Hering's those of the females, bred out by the writer from cocoons found in the Morobe District.

The larva and cocoon of *Scopelodes dinawa* B. Bak., to the best of the writer's knowledge, were unknown to the present date and its association with *Musa textilis* and *Mangifera indica* represent new economic records. An Indian (?) species of the Genus (*Scopelodes pallivittata* Sm.) was recorded feeding on *Musa* spp. but this species is not closely related to *Scopelodes dinawa* B. Bak., which was recorded only from the Mainland of New Guinea. The forewings of *Scopelodes pallivittata* Sm. are decorated with an obliquely bent whitish band, while the forewings of *S. dinawa* B. Bak. are uniformly blackish-grey or greyish-brown coloured. *Scopelodes dinawa* B. Bak. shows a certain degree of individual variation in the colouration of the hindwings of the males and in the colour of the forewings of both sexes. The wing span of the male is $1\frac{1}{2}$ inches to $1\frac{3}{4}$ inches and that of the female $1\frac{3}{4}$ inches to 2 inches.

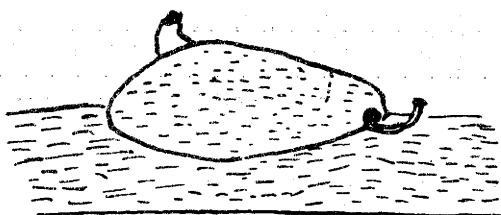


Fig. 7.

Adult of "*S. dinawa*" in resting position

From the ecological point of view *Scopelodes dinawa* B. Bak. seems to be a eurytropic and eurythermous species which is proved by the fact that it was found by the writer in the hot and humid coastal area (Markham Valley), in the cooler climate of the Morobe Highlands (3,400 feet above sea-level), and the pupæ were also resistant to the climatic conditions of the

Eastern Highlands (Goroka, 5,200 feet above sea-level) where they had to be taken three weeks after the date of collecting. More than half of the adults emerged during the two weeks of the writer's stay at Goroka.

No parasites emerged from the forty-four cocoons in the Breeding Cage. This indicates that the species has no parasites in the Morobe Coastal Area or the parasites were out of season, allowing the building up of the moth's population. The larvæ are susceptible to 1 per cent. White Oil spray as proved by the owner of the defoliated Mango tree at Wau. It is very likely that any modern insecticide (0.1—0.2 per cent. D.D.T. Spray, Gamexane 10 Dust, Gamexane No. 7 Water Miscible Oil, etc.) would effectively control this pest.

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