

## TARC Notes

### A new nettle caterpillar of oil palm in Sabah, Malaysia

Oil palm, one of the most important crops grown in Sabah, often suffers from leaf-eating pests such as nettle caterpillars and bugworms that seriously damage the trees. So far, eight species of leaf-eating nettle caterpillars have been identified and reported in Sabah, namely *Setora nitens* Walk., *Darna trima* Moore, *Thosea asigna* Moore, *Thosea bisura* Moore, *Thosea vetusta* Wlk., *Cania robusta* Hering, *Ploneta diducta* Snell and *Birhamula chara* Swinh, (Conway<sup>8)</sup> 1969, Syed.<sup>9)</sup> 1974). These species are also present

in the Peninsula Malaysia (Wood 1953, Corbett<sup>4)</sup> 1932) along with *Susica pallida* Wlk. which has not been reported in Sabah. Among these nettle caterpillars, *Setora nitens*, *Darna trima*, *Thosea bisura*, *Thosea vetusta* and *Ploneta diducta* are also distributed in Indonesia (Kalsoven<sup>2)</sup> 1950, Tjoa<sup>3)</sup> 1953, Turner & Gilbanks<sup>7)</sup> 1974), and *Thosea asigna*, *Setora nitens*<sup>1)</sup> and *Darna trima* are known to be leaf-eating pests of coconut palm (*Cocos nucifera*).

In addition to the above mentioned oil palm leaf-eating nettle caterpillars, a new nettle caterpillar was discovered by the author on 11th February 1974 at the 'A' field located in the Oil Palm Research Station (32 miles from Sandakan).

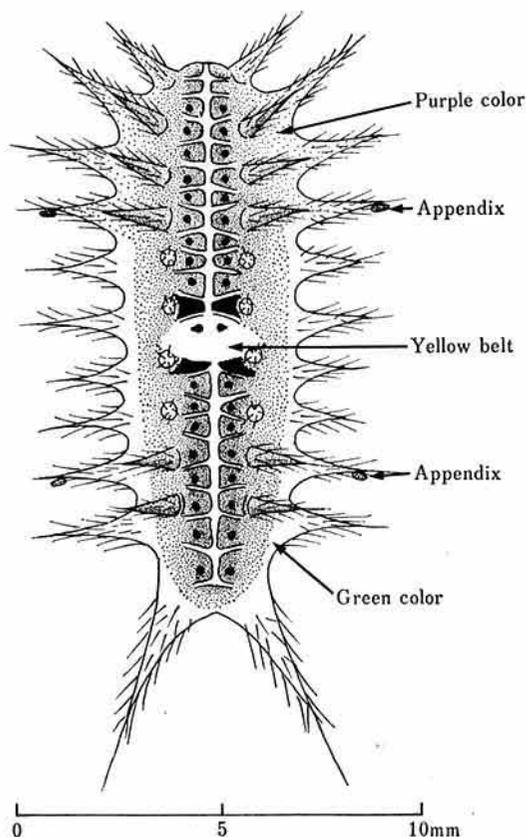


Fig. 1. Larva of *Marcropectra* sp.? at the last instar.

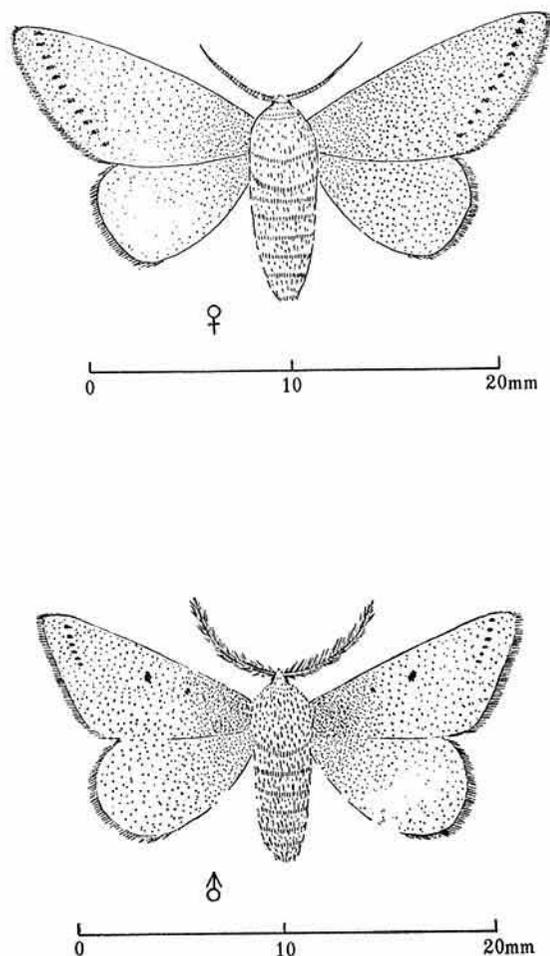


Fig. 2. Moth of *Marcropectra* sp.?

Table 1. Life history of oil palm leaf-eating nettle caterpillars

Name of caterpillars	Size of Body (mm)	Instar	Larval stage		
			Duration (day)	Quantity of leaf* eaten in whole larval stage (sq. cm.)	Duration of cocoon (day)
<i>Darna trima</i> Moore	13.9±1.1	7	31.3±1.4	26.7±5.3	12.4±0.9
<i>Macroleptera</i> sp.?	12.8±0.7	6	27.6±1.8	28.3±7.1	} 12.6±1.8
	13.6±0.9	7	30.5±1.9	30.6±5.4	
<i>Setora nitens</i> Wlk	29.8±3.1	8	39.1±2.1	258.1±7.5	} 26.7±3.4
	34.3±2.6	9	42.2±1.0	367.5±28.0	
<i>Thosea asigna</i> Moore	32.3±3.7	8	49.0±4.6	319.0±80.2	} 39.7±5.0
	35.4±3.6	9	50.3±4.4	403.4±100.2	
<i>Thosea vetusta</i> Wlk	25.1±2.9	8	49.1±5.5	170.8±38.8	24.8±4.3
<i>Thosea bisura</i> Moore	21.7±1.8	7	33.5±5.4	94.1±9.5	17.6±1.2
<i>Birhamula chara</i> Swinh	16.3±1.0	7	31.0±4.2	33.8±6.4	14.3±1.2

\* Oil palm leaflet weighs 4.0 g/100 cm<sup>2</sup> in an average

This pest appears to be a new oil palm pest which had not been reported before. One of the specific morphological characteristics is the presence of a yellow belt which can be seen laterally on the back of the larva at the last instar. Based on the morphological features (Figs. 1 and 2) this pest is considered to belong to the genus *Macroleptera* but the species identification is now being carried out at the British Museum.

Comparison of this new pest with other known nettle caterpillars is given in Table 1. The author proposes tentatively a Japanese name, Kiobi-iraga, for the new pest.

In April 1976 an outbreak of serious damage due to this new nettle caterpillar extending over 200 acres was observed in the oil palm field of the oil palm estate of Lai Fook Kim Co. The estate is located 32 miles from Sandakan along Labuk Road and adjacent to the Oil Palm Research Station. The suffered oil palm trees became almost skeletonized. However the distribution of the new nettle caterpillar did not extend beyond five miles from the original place where the first caterpillar was discovered.

Precise data on the life history of the insect

are needed to establish forecasting and controlling methods for the pest. However the raising of nettle caterpillars of oil palm is very difficult in general owing to their high mortality at the larval stage<sup>6</sup>. There were so far no reports indicating that the individual breeding or raising of nettle caterpillars could be achieved in the laboratory or in the net-room.

Based on detailed observations of the living habits of the larva of nettle caterpillars, the author found out that the high mortality of larvae is caused by (1) a sudden change in humidity that occurs by transferring the larvae from highly humid oil palm fields to the low humid laboratory and (2) by an infection of pathogenic microorganisms through wounds incurred during the handling of larvae.

Therefore the author employed metal-made cases to keep high humidity, and sterilized tools to avoid microbial contaminations. With these methods, individual rearing of nettle caterpillars was made successfully in the laboratory and records of life history of six species of nettle caterpillars and the new pest were obtained (Table 1).

With *Setora nitens*, the collection of eggs

in the laboratory was not succeeded, so that the breeding was not completed.

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