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NOTES

THE IDENTITY OF A MALAYSIAN TEAK SKELETONISER, *PALIGA DAMASTESALIS* WALKER (LEPIDOPTERA: PYRALIDAE)

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The teak skeletoniser caterpillar is a commonly encountered pest of teak (*Tectona grandis*) throughout its native range (India, Myanmar and Thailand). In Malaysia and Java, Indonesia, where teak is an exotic species, similar damage has been observed. In Sabah, the teak skeletoniser has caused 100% defoliation in a 3-y-old teak plantation (Intachat, in preparation) though this has been observed to be seasonal (Chey 1997). The causal organisms, however, are two different species even though in both cases the damage to the teak leaves is very similar, that is, the leaves are skeletonised. Specimens of teak skeletonisers obtained from Malaysia (Peninsular Malaysia and Sabah) have been identified as *Paliga damastesalis* Walker (Tho 1981, Chung 1995, Chey 1997) whilst in native teak growing countries, they have been known as *Eutectona machoeralis* Walker, although in most of the literature, it has often been misspelt as *E. machaeralis*.

Until recently, the teak skeletoniser in Java was thought to be and referred to as *E. machoeralis* (White 1991). Examination of the male genitalia of specimens obtained from Bokol, Java showed that it is *P. damastesalis*, although the external coloration differs slightly, especially on the underside, at the apex of the forewings. The Java specimens have much greyer markings on the undersides and clearer markings on the forewings, compared to the Malaysian specimens.

In Sumatra and Papua New Guinea, adults of *P. damastesalis* have been seen actively sucking tears from the eyes of water buffalo, cattle and even from human eyes (Bänziger 1988). Similarly, in Thailand, the adults have been recorded to drink mammalian fluid (Hutacharern & Tubtim 1995), but there was no mention of their larvae feeding on teak. Examination of genitalia dissections of teak skeletoniser specimens obtained from Khao Bin and Chanthaburi, Thailand and previously identified as *E. machoeralis* revealed that they were actually *P. damastesalis*. It could be that the teak skeletonisers in Thailand have previously been misindentified.

Eutectona is now regarded as a junior synonym of *Paliga* (Shaffer *et al.* 1996). Male genitalia show no important differences between the type species of the two genera, though the differences between the females are more striking. However, taking into consideration the variety of form that exists among *Paliga* species, the distinctions for the generic differentiation of *Eutectona* are not good. What has been done so far in the way of dissection clearly show that the species *machoeralis* and *damastesalis* are distinct although closely related. Literature references to these species could in some cases be inaccurate and it seems likely that confusion has existed between the two species. In Asia, the species of *Paliga* should be listed as follows:

Paliga Moore, 1886, type species *Scopula damastesalis* Walker
  synonym *Eutectona* Wang & Sung, 1980, type species *Scopula machoeralis* Walker
damastesalis (Walker 1859) (*Scopula*) type locality Ceylon

distribution: Sri Lanka, India, Thailand, Malaysia, Papua New Guinea, Australia.
machoeralis (Walker 1859) (*Scopula*) type locality Ceylon
synonym *egenalis* (Lederer 1863) (*Boty*) type locality East Indies
synonym *fimbriata* (Moore 1886) (*Ebulea*) type locality Ceylon
synonym *albicostalis* (Swinhoe 1890) (*Hapalia*) type locality Burma
(note: synonym still needs verification)
distribution: Sri Lanka, Burma.

The essential differences to note in the two species are in the wing markings and certain features of the genitalia in both sexes. In *damastesalis,* the wings are basically yellow with the forewings marked fairly distinctly with red; the hindwings are unmarked (Figure 1). In the male genitalia, important features to note are the valve shape and in particular, the valve process which is more liberally covered with short spines; in females the shape of the antrum and form of the signa are very distinctive (Figure 2). In *machoeralis,* the wings are yellow with grey markings on both fore- and hindwings (Figure 1); the valve process in the male genitalia bears spines at the apex only; and the female has smaller signa (see Figure 3).

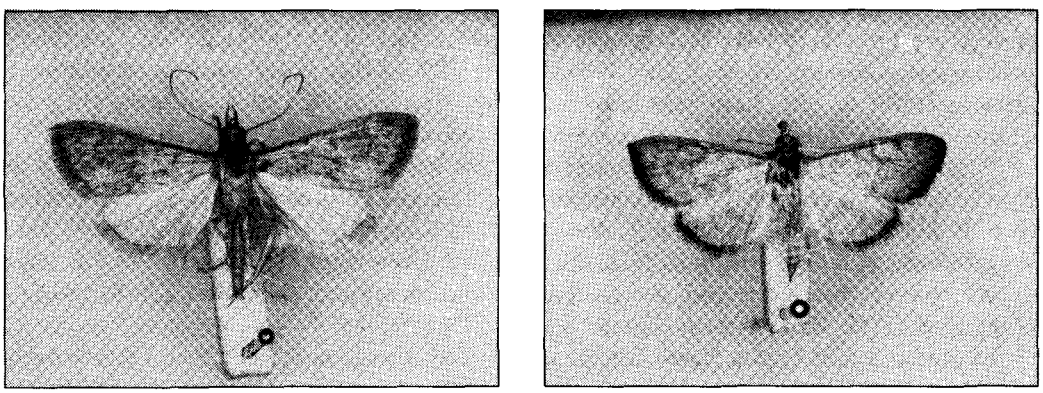

Figure 1. *P. damastesalis* (Walker 1859) on the left and *P. machoeralis* (Walker 1859) on the right

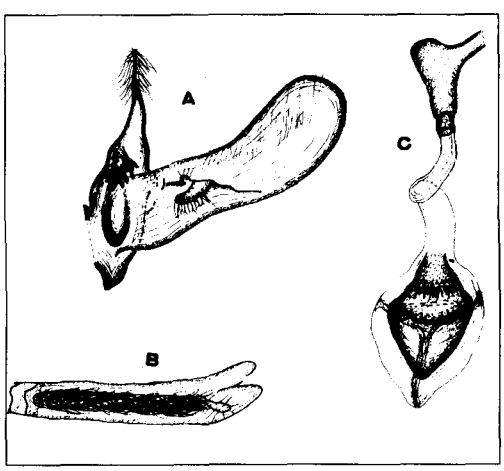

Figure 2. *P. damastesalis* (Walker 1859), Ceylon
A: Male genitalia in ventral view;
B: Aedeagus; C: Female genitalia in ventral view

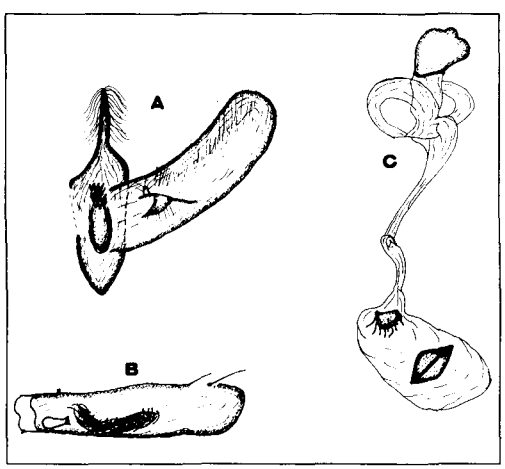

Figure 3. *P. machoeralis* (Walker 1859), Ceylon
A: Male genitalia in ventral view;
B: Aedeagus; and C: Female genitalia in ventral view

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References

BÄNZIGER, H. 1988. Lachryphagous Lepidoptera recorded for the first time in Indonesia (Sumatra) and Papua New Guinea. *Heterocera Sumatrana* 2(6) : 133 - 144.

CHEY, V.K. 1997. *Forest Pest Insects of Sabah.* Sabah Forest Record No. 15. 111 pp.

CHUNG, A.Y.C. 1995. Teak in Sabah and its insect pests. *Nature Malaysiana* 20(4) : 100 - 107.

HUTACHARERN, C. & TUBTIM, N. 1995. *Checklist of Forest Insects in Thailand.* OEPP Biodiversity Series. Volume One. Office of Environmental Policy and Planning, Thailand. 392 pp.

INTACHAT, J. Insect pests of teak. *In Planting Teak in Malaysia.* FRIM's Publication. (In preparation).

LEDERER, J. 1863. Beitrag zur Kenntnis der Pyralidinen. *Wiener Entomologische Monatschrift* 7(10) : 331 - 378.

MOORE, F. 1886. *The Lepidoptera of Ceylon.* Volume 3 (12). Reeve, London: 305-382, Plates 182-195.

SHAFFER, M., NIELSEN, E.S. & HORAK, M. 1996. Checklist of the Lepidoptera of Australia. Pyraloidea. *Monographs on Australian Lepidoptera* 4 : 164 - 199.

SWINHOE, C. 1890. The moths of Burma. Part 1. *Transactions of the Entomological Society of London* : 161 - 296.

THO, Y.P. 1981. *Insect Pests of Teak in Peninsular Malaysia and their Potential Economic Significance.* FRI Reports No. 20. Forest Research Institute Malaysia, Kepong, Malaysia. 16 pp.

WALKER, F. 1859. *List of Specimens of Lepidopterous Insects in the Collection of the British Museum.* Volume 19. British Museum, London : 799 - 1036.

WANG, P. -Y. & SUNG, S. -M. 1980. On taxonomic status of teak leaf skeletonizer *Pyrausta machaeralis* [sic] Walker, with establishment of a new genus. *Acta Entomologica Sinica* 23(3) : 305 - 307.

WHITE, K.J. 1991. *Teak, Some Aspects of Research and Development.* RAPA Publication 1991/17. FAO Regional Office for Asia & the Pacific (RAPA). Agricultural Organization of the United Nations, Bangkok, Thailand.