

FLIGHT STUDIES OF PASTURE WEBWORMS

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SUMMARY

Oil-bath trap records over a period of 4 years on the Northern Tablelands of Queensland together with numerous field collection records showed that flights of *Oncopera brachyphylla* Turn. occurred in the period from February to early April, with a peak close to the beginning of March, and that flights of *Oncopera mitocera* (Turn.) occurred in the period from early March to early May, with a peak close to the beginning of April.

I. INTRODUCTION

The flat-headed pasture webworm (*Oncopera mitocera* (Turn.)) was first recorded as a pest of pastures on the Northern Tablelands of Queensland in 1920 (Dodd 1921). Although serious damage to pasture by the larval stages was obvious at various times, it was not until 1960 that work was commenced to obtain biological and ecological information on the insect. This study revealed that a second species, the round-headed pasture webworm (*Oncopera brachyphylla* Turn.), was involved in the pasture damage (Elder 1965).

The early work by Dodd (1921) indicated that *O. mitocera* moths fly in the March-April period. Tindale (1933) recorded specimens of *O. brachyphylla* collected in February. In 1964, seasonal population studies by means of oil-bath traps were commenced as part of the ecological investigations of these insects.

II. METHODS

The oil-bath traps were those used in a similar study of the pasture soldier fly in dairy pastures on the Northern Tablelands (Elder 1969). As in that study, records at Peeramoon, Millaa Millaa and Maalan were obtained for the period from December 1, 1964, to December 3, 1968, and at Evelyn from August 17, 1965, to December 3, 1968. The traps were serviced weekly, the insects collected then being rinsed in petrol to remove the oil.

In the laboratory, male moths of the two species were separated on the basis of genitalia differences (Tindale 1933) and the female moths were separated according to external genitalia differences (Elder unpublished).

Data from the oil-bath traps were supplemented by numerous incidental field collections, over a number of years, of adults at the time of flight.

III. RESULTS AND DISCUSSION

All collections of specimens of *Oncopera* at the four locations over the periods of study were comprised of one or both *Oncopera mitocera* and *O. brachyphylla*.

The weekly catch records of both species for all traps are graphed as totals in Figure 1. For 1968, however, the records for each species are in addition graphed separately.

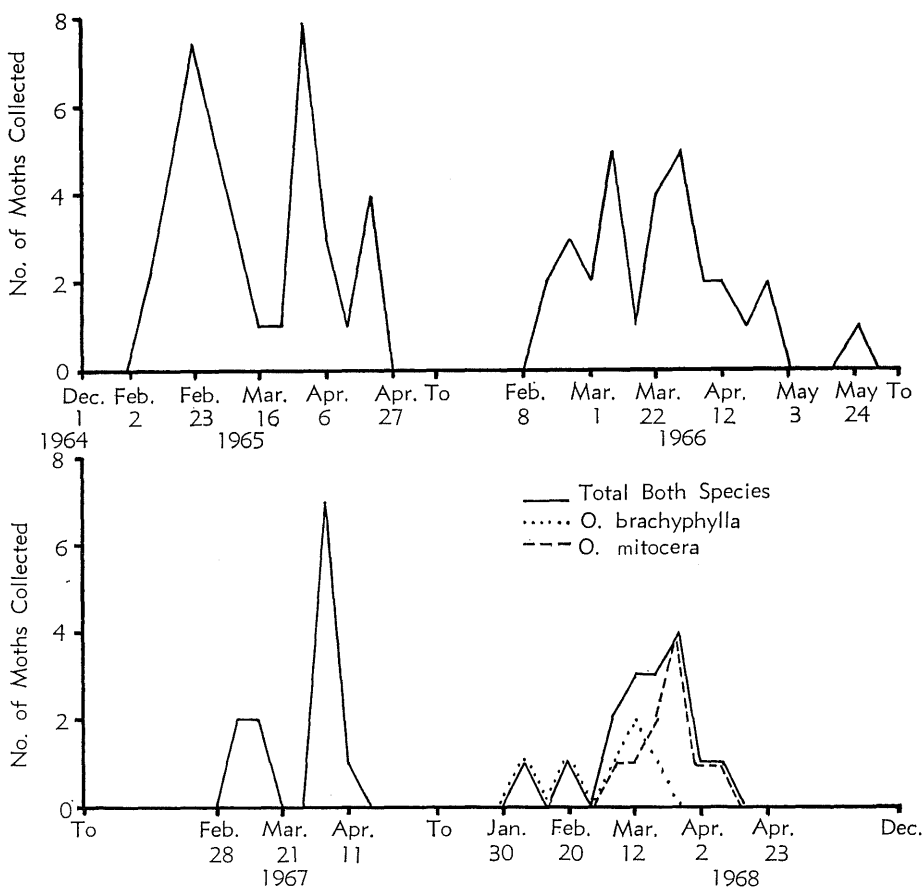


Fig. 1.—Oil-bath trap records of *Oncopera brachyphylla* and *O. mitocera*.

Totals of the sexes caught in all traps for the whole period were 45 females and 12 males. As well as being larger and slow flying, females fly up to 60 cm above ground level. The males, however, fly rapidly and at least up to 10 metres above the ground, with an average of about 2 metres. These flying habits were responsible for the larger number of females caught in the traps.

The consolidated field collection records are shown on a daily basis separately for the two species in Figure 2.

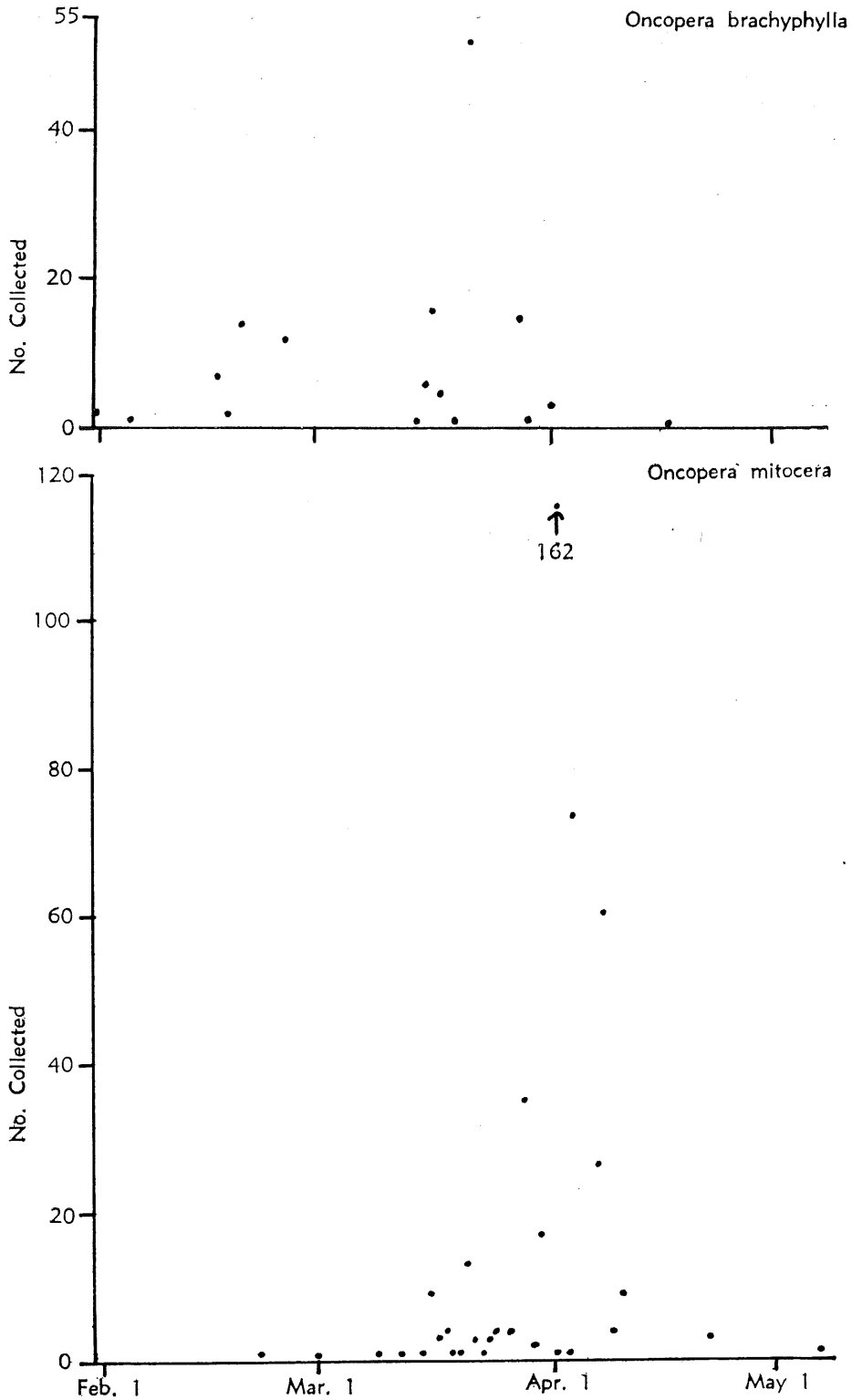


Fig. 2.—Field collection records of *Oncopera brachyphylla* and *O. mitocera*.

Both the oil-bath trap records and the field collection records on the Northern Tablelands show that one flight for each species occurred each year.

The double-peaked graphs for the bulked records in Figure 1 are indicative of different flight periods for the two species. *O. brachyphylla* flights occurred in the period from early February to early April, with a peak close to the beginning of March. *O. mitocera* flights were later and occurred in the period from early March to early May, with a peak close to the beginning of April.

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local field conditions delayed the onset of reproduction in these unmated females, as has been observed in both the red kangaroo (Newsome 1966) and the grey kangaroo (Kirkpatrick and McEvoy 1966). As overall field conditions were essentially favourable during this investigation, it was not possible to study the effects of drought on this species.

The life history of the agile wallaby, as indicated by this study, involves a 7-month pouch life, attainment of sexual maturity at about 1 year, with a reproductive potential in females of one young every 7 months, an interval which may be extended to 8 months if the quiescent embryo fails to develop. Under the normally favourable conditions of tropical coastal Queensland, rapid population growth (for a macropod) could be expected. That this happens is confirmed by the abundance of the species wherever suitable habitat occurs.

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