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A FLIGHT STUDY OF THE PASTURE SOLDIER FLY

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SUMMARY

Oil-bath trap records over a period of 4 years on the Northern Tablelands of Queensland, together with field collection records, showed that flights of the pasture soldier fly (*Altermetoponia rubriceps* (Macq.)) occurred each year in the period from April to June, with a peak in early to mid May.

I. INTRODUCTION

Pasture soldier fly (*Altermetoponia rubriceps* (Macq.)) was first recorded as a pest of pastures on the Northern Tablelands of Queensland in the summer of 1961-62 (Saunders 1963). The potential of the insect as an adverse factor in dairy pasture management was soon realized and in 1964 biological and ecological investigations were commenced. These included seasonal population studies of the adult fly by means of oil-bath traps.

Earlier records of this insect as reviewed by Dumbleton (1949) showed that either one or two flights may occur each year. In areas such as Bundaberg and Mackay, where one flight occurred, it was in the April-June period. At Sydney (New South Wales) and Opotiki (New Zealand), adults were found in April to mid May and from October to December.

II. METHODS

Oil-bath traps were set up, one at each of four separate locations in dairy pastures on the Northern Tablelands (Figure 1). At Peeramon, Millaa Millaa and Maalan, records of fly catches were obtained for the period from December 1, 1964, to December 3, 1968, and at Evelyn from August 17, 1965, to December 3, 1968.

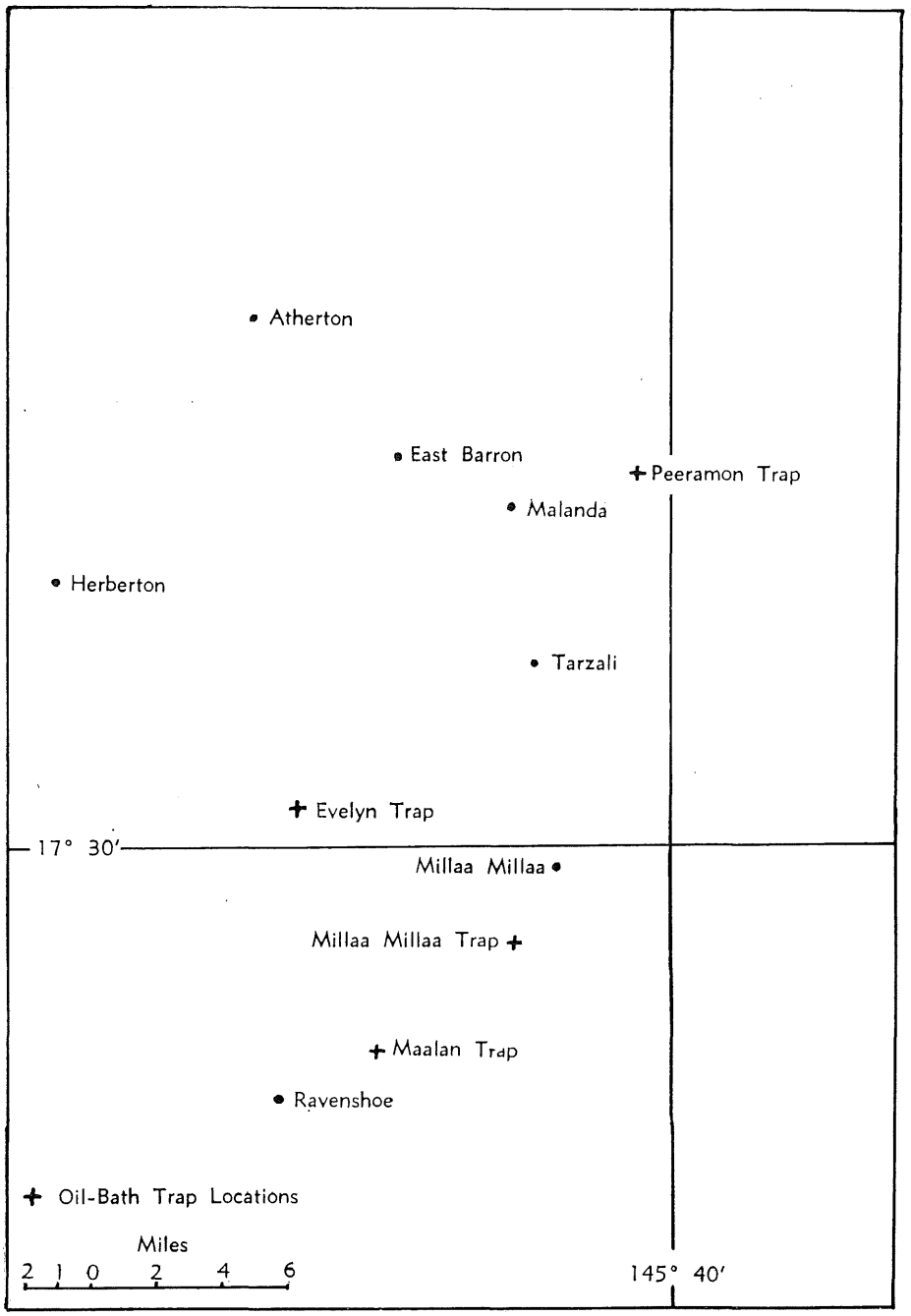

Fig. 1.—Pasture soldier fly collection sites on the Northern Tablelands.

The oil-bath trap (Figure 2) was comprised of a galvanized iron tray 46 cm square and 7·5 cm deep which carried 2 cm depth of "Shell Risella Oil 17". Over the centre of the tray was a baffle of four glass plates each 45 cm high and 22·5 cm wide, fixed as a cross with the arms at right angles. The traps were mounted 30 cm from the ground. An overflow device allowed water to escape from underneath the oil.

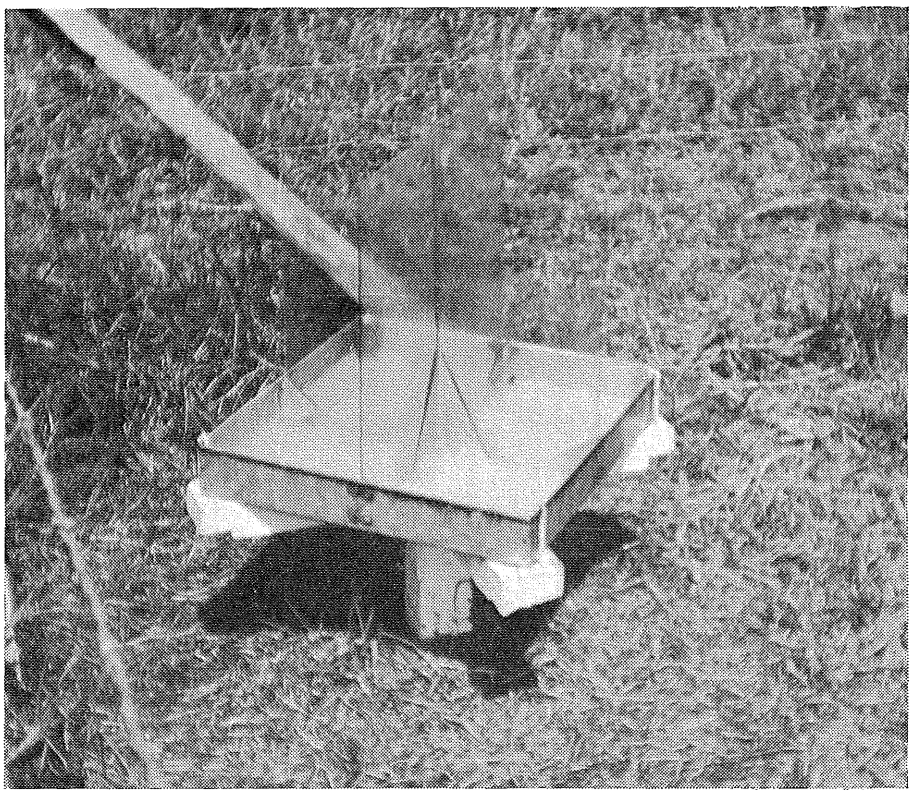

Fig 2.—Oil-bath trap at the Millaa Millaa location.

Insect catches in the traps were collected weekly, when the traps were also serviced. The insects were immediately rinsed in petrol to remove the oil. In the laboratory, male pasture soldier flies were separated from females on the basis of gross morphological differences (Saunders 1963) and numbers of each sex recorded.

Data from the oil-bath records were supplemented by incidental field collection of adults and by records made of flights at various times in other locations.

III. RESULTS AND DISCUSSION

Pasture soldier flies on the wing in general move in the space up to 60 cm from the ground. Flight is active and flies striking the glass baffle of the trap fall into the oil.

The quantitative trap records for Peeramon and Evelyn are shown graphically in Figure 3. The few records for Millaa Millaa and Maalan are given in Table 1 and field collection records in Table 2.

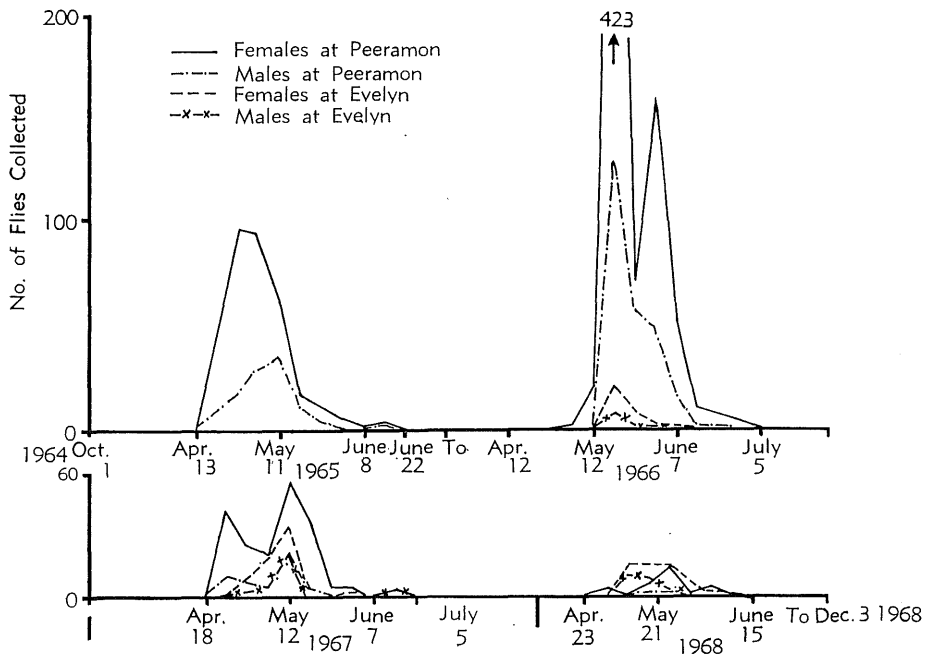

Fig. 3.—Oil-bath trap records of pasture soldier flies caught at Peeramon and Evelyn.

TABLE 1

OIL-BATH TRAP RECORDS OF PASTURE SOLDIER FLIES FOR MILLAA MILLAA AND MAALAN

Location	Date	Males	Females
Millaa Millaa ..	May 5, 1966	..	2
	June 6, 1966	1	4
	May 21, 1968	1	..
Maalan ..	April 19, 1966	..	1
	May 9, 1967	1	..
	May 30, 1967	1	..

TABLE 2

FIELD COLLECTION RECORDS OF PASTURE SOLDIER FLIES ON THE NORTHERN TABLELANDS

Location	Date	Remarks
Atherton ..	March 30, 1965	Both sexes observed
	April 15, 1966	Males observed
	April 15, 1968	One male, three females
East Barron ..	April 4, 1964	Large numbers of males, few females
Malanda ..	June 23, 1967	One male
Tarzali ..	May 22, 1962	Both sexes

These data show that on the Northern Tablelands one flight of the pasture soldier fly occurred each year and this was during the period from April to June, with a peak in early to mid May. The data are therefore in agreement with the observations of Saunders (1963).

This information, considered in conjunction with the complete absence of adults at other times of the year, indicates that in North Queensland the insect has a life cycle of one or more years. During these other times it is present in developmental stages, mainly as larvae in the soil.

Limited observations indicated that larger flights occurred on sunny, still days than on wet, windy days. Peak flight activity was between 10 a.m. and 2 p.m. and mated pairs were noted in this interval.

Larger numbers of females than of males were captured in the traps, possibly due to the larger size and weaker flight of the females.

REFERENCES

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