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The Effect of *Rhyssa persuasoria* (L) (Ichneumonidae) on a
Population of *Sirex noctilio* F. (Siricidae)

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Abstract

STUDIES of the activity and behaviour of *Rhyssa persuasoria* (L.), a parasite of the larvae of *Sirex noctilio* F., are described. Preliminary tests of the searching ability of the parasite were made and its effect on the numbers of *Sirex noctilio* F. was assessed from four years of sampling infested trees. The work was commenced in March 1957, at Rai Forest, Nelson Province, New Zealand, and completed in 1960.

INTRODUCTION

Rhyssa persuasoria L. was introduced into N.Z. by Miller and Clark in 1928 (Miller and Clark, 1935) in an attempt to control the woodwasp *Sirex noctilio* F. Since that time no assessment of the effect of the parasite on its host had been made. Work done by G. B. Rawlings (personal communication) had indicated that *R. persuasoria* parasitised only one woodwasp larva in every 10 insertions of its ovipositor. Our study was designed to find out what motivated an attack by *R. persuasoria*, whether that attack was always associated with the presence of woodwasp larvae, and, if so, what instar was most attractive or most successfully attacked. The percentage of host larvae present that were found by the parasite in a given time and the ultimate reduction of the siricid population due to parasitism were investigated.

MATERIALS AND METHODS

Logs of *Pinus radiata* D. Don were used in the study of the activity of *Rhyssa persuasoria*. These logs were all about 2 feet long and 2 inches in diameter. Each test was repeated three times with the same mated female of *R. persuasoria* and subsequently repeated with two others.

The logs included some fresh uninfested ones, some in which *Sirex* had recently oviposited, logs containing young larvae, logs containing emergence holes and late-stage larvae and logs from which all woodwasps had emerged. One test was done on wood of *Dacrydium cuppressinum* Soland. containing larvae of the prionid *Prionoplus reticularis* White.

To assess the effect of parasitism of *S. noctilio* by *R. persuasoria* rearings were made from *Sirex*-infested trees of *P. radiata* over a period of four years and totals

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