

The Commonwealth of Massachusetts

Department of *Natural Resources* ENVIRONMENTAL MANAGEMENT
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Division of Forests and Parks

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Parasite Release Program - 1976

In late June 1976 releases of the tachinid parasite *Palexorista inconspicua* were made in Sturbridge and Easton, Massachusetts. *Palexorista inconspicua* is a multibrooded, polyphagous species which attacks several lepidopterus larvae and diprionid sawflies.¹ In addition to the Gypsy Moth this parasite also attacks the Eastern Tent Caterpillar, Ugly Nest Caterpillar and the Fall Webworm² which occur in the release areas. There are other alternate hosts. However these have not been identified as occurring within the release sites. In the years 1906 - 1911 and 1923 - 1928 this parasite was released in Massachusetts as *Sturmia inconspicua* between 1923 - 1928. In the years 1906 - 1911 it was released as *Zygobothria gilva*.³ This parasite attacks the late instar caterpillars.

The release sites chosen were at the Wells State Park in Sturbridge and Borderland State Park in Easton. There were fifteen release sites in Sturbridge and fourteen sites in in Easton. The sites chosen had a Gypsy Moth population ranging from 600 - 2,840 egg masses per acre in Easton and from 50 - 1,200 egg masses per acre in Sturbridge. Each site contained favored host trees for the late instar Gypsy Moth larvae. In the same site or nearby were host trees or bushes for at least one of the following alternate hosts, Fall Webworm, Ugly Nest Caterpillar, Eastern or Forest Tent Caterpillar. Stand composition was generally mixed hardwood. Sites were rated as swamp, moderate or dry. Defoliation of the sites ranged from 5% - 75% in Sturbridge and from 30% - 100% in Easton.

The *Pallexorista* were reared in New Jersey and received here late on June 24th. They were released on June 25th in both areas. Eleven thousand five hundred puparia were received and set out. Five thousand five hundred and fifty going to Easton and five thousand nine hundred and fifty going to Sturbridge. The puparia were packaged in squat, non-waxed cups with two hundred in each cup except for two cups that had one hundred and fifty each. Two cups were placed in each site. The puparia were left in each cup so that natural emergence could take place. The cups were checked several times for emergence and removed from the sites on July 14th. The emergence rates varied considerably. Some of the puparia were packed on May 26th and at intervals thereafter until June 14th. They had been kept in cold storage and shipped in insulated cartons with frozen ice packs. Due to the extreme heat during shipment the ice packs melted and much moisture developed with many of the cups and the cotton batting used to immobilize the puparia becoming saturated. This apparently caused many of the parasites to die prior to emergence. It also caused many of the puparia to stick together in large masses. It was impossible to separate these and make any reliable counts of the emergence. Some of the cups had remained dry and determinations were possible. When the cups were set out one dry cup and one wet cup went into each site. The estimated average emergence was 50% or two hundred adults per site.

Recovery efforts were made by collecting late instar larvae of the Gypsy Moth and later by collecting late instar Fall Webworm caterpillars. The Gypsy Moth larvae were collected individually and reared to pupation or until they expired. Each caterpillar that was collected had an egg laid on the body wall by a tachinid. No *Pallexorista* were recovered. The Fall Webworm that were collected had no visible eggs on the body walls. These late instar larvae were removed from the webs and reared to pupation or expiration. The larvae were kept in non-waxed one pint containers. Ten larvae in each of fifteen containers. No *Pallexorista* emerged although several other parasites were recovered.

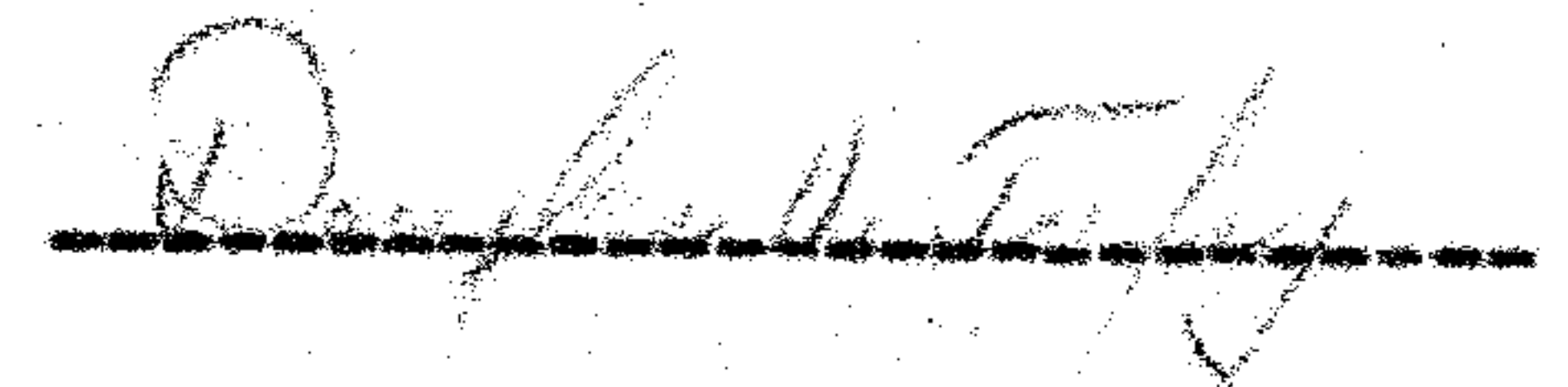
Similar collections and rearing are planned for the spring of 1977.

Eastern and Forest Tent Caterpillars and the Ugly Nest Caterpillars will be collected.

A braconid parasite of the Gypsy Moth, *Apanteles liparides* was also released in the Sturbridge area. Two thousand cocoons were received and set out on four sites. This parasite prefers early instar larvae. Due to the late release date the majority of the caterpillars were in late fourth or fifth instars. Several cocoons were found. The adults were not recovered however and positive identification could not be made.

References Listed

1. P.68 Sabrosky & Reardon 1976. Tachinid Parasites of the Gypsy Moth, *Lymatria Dispar* With Keys to Adults and Puparia. Misc. Publications. Ent. Soc. Am. Vol.10 #2.
2. pp 69 (see 1.)
3. P. 308 L.O.Howard & W. F. Fiske 1911. The Importation Into The United States of the Parasites of the Gypsy Moth and the Brown-Tail Moth. U. S. D. A. Bureau of Entomology - Bulletin no. 91.



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