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The greenhouse thrips, Heliothrips haemorrhoidalis Bouche' in Florida

(THYSANOPTERA:THRIPIDAE)<sup>1</sup>

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**INTRODUCTION:** This thrips was described by Bouche in 1833 from specimens taken from a greenhouse in Europe, as Thrips haemorrhoidalis. Packard described this species for the first time from this country in 1870 and called it the greenhouse thrips. The common name approved by the Entomological Society of America is greenhouse thrips, Heliothrips haemorrhoidalis (Bouche).

**DISTRIBUTION:** This is a New World species, although it was described originally from Europe. It probably was introduced into Europe on ornamental plants from tropical America. It is found on wild and cultivated plants in Brazil, the West Indies, and Central America. It occurs in the United States outdoors in central and southern Florida and southern California. Throughout the United States it is found in greenhouses, and it escapes from greenhouses in warm months in states north of Florida. In Europe it is found in Austria, England, France, Finland, Germany, Italy, and in Israel and North Africa. This thrips probably can be found over much of the world due to its habit of living in greenhouses. It is a poor flier and remains in the shaded areas on the plant almost all the time.

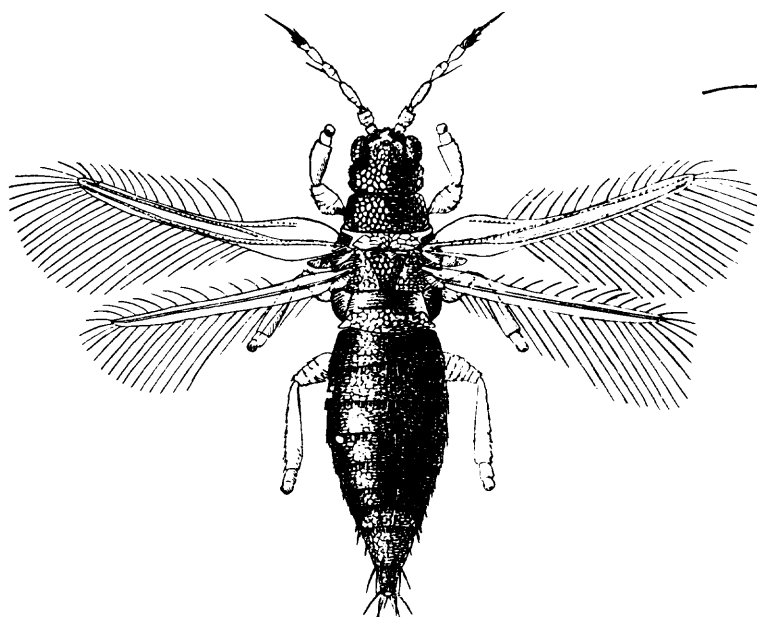


Fig. 1. Adult

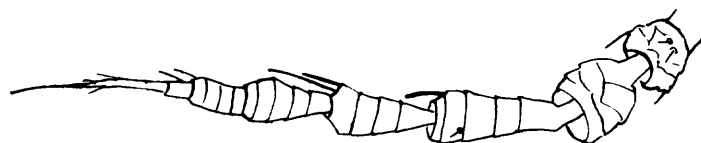


Fig. 2. Antenna

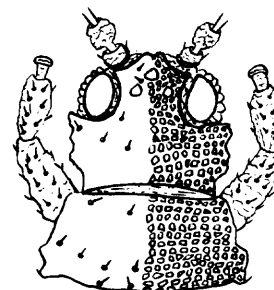


Fig. 3. Head and Prothorax

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HOSTS: In Florida this thrips is found especially on Codiaeum variegatum (L.) Blume var. pictum (Lodd.) Mull. Arg., but it has been taken from Acer sp., Arachniodes sp., Ardisia sp., Aspidium sp., Carissa grandiflora (E. H. May.) A.D.C., Coleus sp., Cornus florida L., Crinum sp., Dahlia pinnata Cav., Dianthus sp., ferns (several genera might be present), Ficus benjamina L., F. nitida Thunb., Hibiscus sp., Magnolia sp., Mangifera indica L., orchids (several genera might be present), palms (several genera might be present), Persea americana Mill., Philodendron sp., Phlox sp., Psidium sp., Rhododendron sp., Viburnum sp., Vitis sp., and many other ornamentals. In Israel it is reported on Citrus sp., and on Garcinia mangostana L. in Ceylon.

ECONOMIC IMPORTANCE: This thrips feeds primarily on the foliage of ornamental plants by rasping the leaf surface and sucking up the juices. It attacks the lower surface first, and as feeding progresses and the population increases, the thrips move to the upper surface. The leaves become discolored and develop a distorted aspect between the lateral veins. In addition to the feeding damage, both surfaces are covered with small droplets, excreted by the thrips, of a reddish fluid that gradually changes to black. Severely damaged leaves turn yellow and drop. In Israel the greenhouse thrips injures the leaves and fruit of citrus but does not cause leaf drop. Fruit damage is characterized by well defined depressed areas, often with irregular reticulation. This kind of damage occurs when fruit is immature. On mature fruit this damage is not well defined and merges into the healthy peel without a depression. The greenhouse thrips almost disappeared from the lower east coast of Florida following the 1956-57 Mediterranean fruit fly campaign when aerial applications of malathion were used to eradicate the medfly.

SURVEY AND DETECTION: Look for distorted leaves with small reddish or black droplets, voided by the thrips, mainly on the underside of leaves.

CONTROLS: According to the Federal Environmental Pesticide Control Act, all pesticides must be handled and applied in strict accordance with directions on the pesticide container label. The controls recommended by the Department of Entomology and Nematology, IFAS, include Dimethoate, Dursban, Guthion, Lindane, Malathion, Meta-Systox-R, Orthene, and Vydate.

DESCRIPTION: The eggs are white, banana-shaped, and inserted singly in plant tissue. The tip is usually visible with the aid of a hand lens. The larval stage is whitish with red eyes. The larvae become yellowish after feeding. Mature larvae average about 1 mm in length. There are 2 larval instars and then it moults to the prepupal stage which is light yellow with red eyes and short wing pads. The pupal stage is slightly larger, with longer wing pads and larger eyes. It is yellowish becoming darker with age. The antennae are bent backward over the head in the pupal stage. The prepupal and pupal stages do not feed. The adult's head and thorax darken to black while the abdomen changes from yellow, yellow-red, brown and black (fig. 1). Cool temperatures retard the color changes. The legs remain a light yellow. Each antennae (fig. 2) has 8 segments. Fig. 3 illustrates the setae and sculpturing on the head and prothorax.

LITERATURE CITED:

Bouche, P. F. 1833. Naturgeschichte der schadlichen und nutzlichen GartenInsekten und die bewahrtesten Mittel zur Vertilgung der ersteren. Berlin. 42p.