Control of the Red-Banded Thrips, *Selenothrips rubrocinctus* Giard, on *Acalypha*

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INTRODUCTION

The red-banded thrips, *Selenothrips rubrocinctus* Giard (*1*)[2], is one of the most common and injurious species of thrips attacking a large variety of plants, shrubs, and trees in our Island. Lately these insects have been observed doing severe damage to the foliage of such ornamental plants as *Acalypha wilkesiana* Muell. Arg. and *A. wilkesiana* variety *marginata*. The observations have been made at the Río Piedras Agricultural Experiment Station (P. R. Acc. No. 62-57)[3] and the Corozal Substation (P. R. Acc. No. 67-57). At the Río Piedras Station they have been also observed on the foliage of guava, *Psidium guajava* L. (P. R. Acc. No. 50-56) and as a new host record on the West Indian mahogany, *Swietenia mahagoni* Jacq. (P. R. Acc. No. 7-55), on cacao, *Theobroma cacao* (P. R. Acc. No. 68-57), "María", *Callophyllum antillanum* Britton (P. R. Acc. No. 69-57), "reina de las flores", *Lagerstroemia speciosa* Kochne (P. R. Acc. No. 75-57) and "croton", *Codiaeum variegatum* (L.) Blume (P. R. Acc. No. 78-57).

THE INSECT AND ITS CONTROL

DESCRIPTION

These minute inconspicuous insects belong to the group of the socalled thrips, of the order Thysanoptera. The common name of this insect is "cacao thrips", because of its ravages on the cacao plantations in some of the West Indian Islands (*5*), but they are also known as red-banded thrips from the color of the nymphs. The adult thrips is a small black insect having an average length of 1/24 of an inch. It is characterized by a body of deeply reticulated structure, particularly as to the head and prothorax, the head broader than long, with a very irregular and rough outline, Antenna eight-segmented; legs unarmed; wings, four in number, present. It derives its common and specific name from the nymphs, which are smaller than the adult, but yellowish in color with a distinct red band on the abdomen (fig. 1).

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[2] Italic numbers in parentheses refer to Literature Cited, p. 266.

[3] Reference to accession numbers in Card Catalog of the insect collection at the Agricultural Experiment Station.

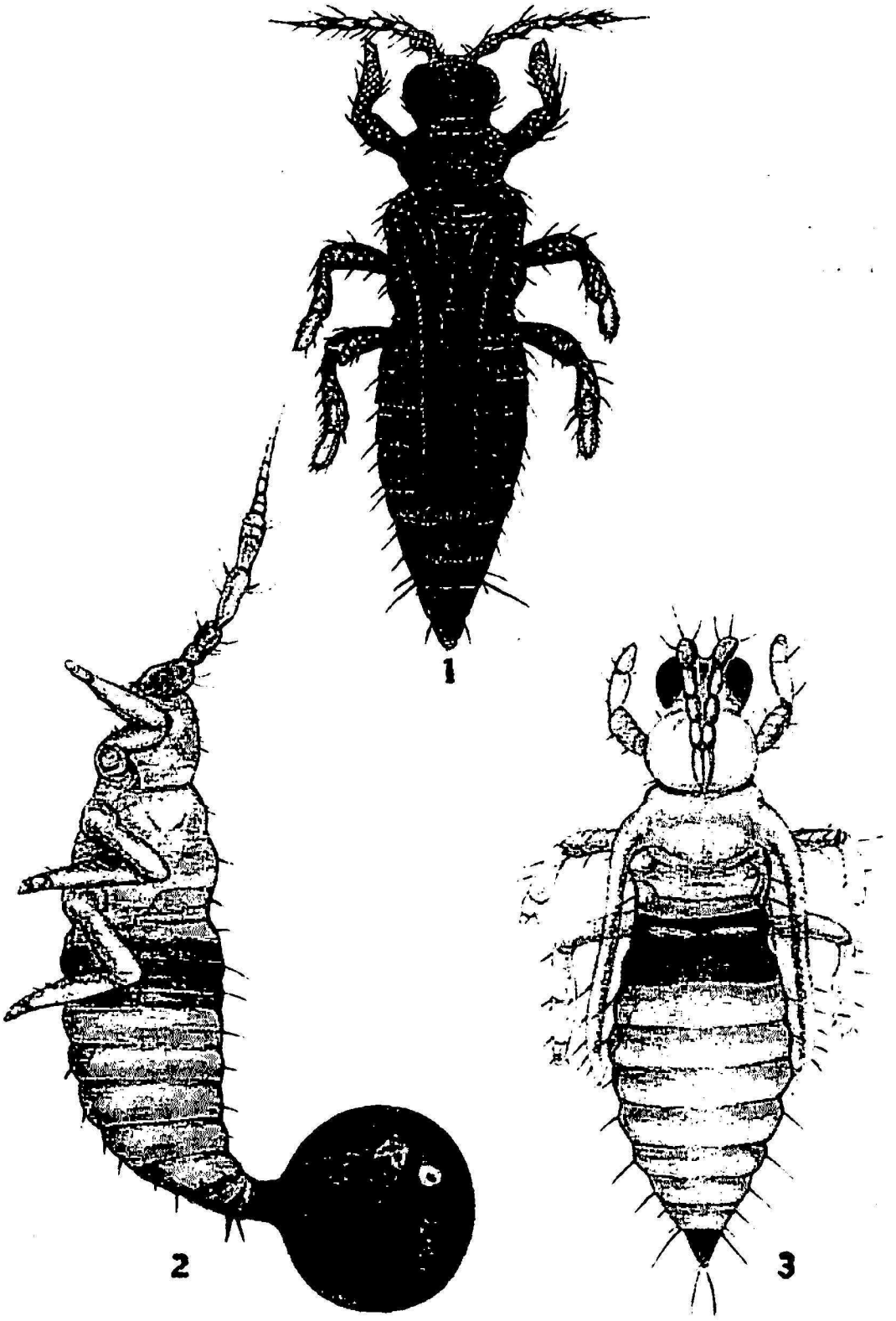

FIG. 1.—*Selenothrips rubrocinctus* (Giard): 1, Adult female at rest. 2, Full-grown larva in characteristic attitude as seen on cacao pods and leaves, with drop of liquid excrement on tip of abdomen. 3, Pupa. All magnified about 50 diameters. From: F. W. Urich, "The Cacao Thrips", Board of Agriculture of Trinidad, Feb. 1911.

TYPE OF INJURY

Both the nymphs and adults rasp the surface of the parts of the plants attacked and feed on the juices thus liberated. As a result of this type of feeding they cause a severe chlorosis on the leaves, sometimes giving a silvery appearance to the foliage. The surface cells die, after first turning silvery and later brown. The young nymphs also excrete from the tip of the abdomen a ball of brown semiliquid material which they carry about and later deposit on the leaves. This substance gives the leaves a dirty, flyspecked appearance.

HOSTS

In Puerto Rico this insect has been recorded from mango, *Mangifera indica* L.; tropical almond, *Terminalia cattapa* L.; avocado, *Persea americana* Mill.; guava, *Psidium guajava* L.; cashew, *Anacardium occidentale* L.; "jobo", *Spondias mombin* L.; "icaco", *Chrysobalanus icacao* L.; "achiote", *Bixa orellana* L.; "espino rubial", *Zanthoxylum monophyllum* Lam.; "uvilla" or "cucubano", *Coccolobis laurifolia* Jacq.; muscadine grape, *Vitis rotundifolia* Michx.; mangosteen, *Garcinia mangostana* L.; "cenizo", *Zanthoxylum martinicense* (Lam.) D. C.,; Himalaya raspberry, Cuthbert raspberry, and Burbank thornless berry (*1*, *2*, *3*, *7*, *8*).

DISTRIBUTION

The red-banded thrips has been recorded from Grenada, St. Vincent, St. Lucia, Dominica, Guadeloupe, Trinidad, Tobago, Virgin Islands, Uganda, East Africa, Island of Mauritius, Ceylon, and Florida, U.S. (*4*, *6*).

EXPERIMENTAL MATERIAL AND METHODS OF CONTROL

A control experiment was carried on April 2, 1957. The insecticides used in this test were 34-percent Pennsalt DDT emulsion concentrate containing 3 pounds of DDT per gallon, Pennsalt BHC emulsion E-11 containing 1 pound of gamma isomer per gallon, 25-percent Pennsalt Aldrin (Compound 118) containing 2 pounds of technical Aldrin per gallon, and 19.5-percent Shell Endrin emulsifiable concentrate containing 1.6 pounds of Endrin per gallon.

The experiment was conducted on a 76-foot *Acalypha wilkesiana* hedge, 3 to 4 feet high, with an average width of 2 feet. The hedge was divided into 10 plots, each plot with 5 plants, with an approximate length of 6 feet, leaving 3 buffer plants between treatments. The treatments were replicated twice. The insecticides were applied with a 4½-gallon knapsack sprayer using 2 gallons of spray for each treatment.

Results of the treatments were determined by counting the number of

live thrips before and after the spraying on samples of 50 leaves per plot taken at random from top, bottom, and sides. A total control was obtained within 48 hours (table 1). The status of the thrips population was determined again 15 days after the first examination on April 17, 1957. The plots sprayed with Aldrin showed no reinfestation; all other plots treated showed slight reinfestation from adjoining untreated plants heavily infested with thrips.

RECOMMENDATION FOR CONTROL

The insecticides used were effective in controlling the red-banded thrips on *Acalypha*. The insecticides should be used as follows: Concentrated

TABLE 1.—*Results of using specified insecticides for the control of red-banded thrips,* Selenothrips rubrocinctus *Giard*

Insecticides and dilution	Number of live thrips on 50 leaves per plot—					
	Before treatment, Apr. 2, 1957		After treatment			
			Apr. 4, 1952		Apr. 17, 1957	
	Adults	Nymphs	Adults	Nymphs	Adults	Nymphs
BHC: 1 pint/100 gal. water	335	270	0	0	3	10
Endrin: 1 pint/100 gal. water	258	229	0	0	3	0
DDT: 1 pint/100 gal. water	301	170	0	0	7	29
Aldrin: 1 pint/100 gal. water	307	183	0	0	0	0
Buffer—between treatment rows—nontreated	228	179	134	220	117	1,655
Check, nontreated	328	271	196	279	135	1,235

emulsion of either BHC, Endrin, DDT, or Aldrin, at the rate of 1 pint of the emulsion in 100 gallons of water. Spray at intervals of 2 weeks, giving two or three applications.

SUMMARY

The red-banded thrips, *Selenothrips rubrocinctus* Giard, is one of the most common and injurious species of insects attacking a large variety of plants, shrubs, and trees in our Island. This insect has been recorded from the Lesser Antilles, Virgin Islands, East Africa, and Florida. A series of host plants are recorded and the insect is described. Some insecticides were tested, mainly BHC, Endrin, DDT, and Aldrin. Each of them, when used at the rate of 1 pint of the concentrate emulsion in 100 gallons of water, is effective for the control of the pest. The spray should

be applied at intervals of 2 weeks. From two to three applications effect complete control.

RESUMEN

El trípido de las bandas rojas, *Selenothrips rubrocinctus* Giard es uno de los insectos más comunes y perjudiciales. Ataca a una gran variedad de plantas, arbustos y árboles en la Isla. La especie también ha sido encontrada en las Antillas Menores, las Islas Vírgenes, Africa Oriental y Florida. Se describe el insecto y se incluyen las plantas hospedadoras del mismo. Se probaron algunos insecticidas, entre ellos, BHC, Endrín, DDT y Aldrín. Cualquiera de éstos, usado a razón de una pinta de la emulsión concentrada en 100 galones de agua, es eficaz para su control. Las aspersiones deben hacerse a intervalos de 2 semanas. Dos o tres aplicaciones son suficientes para obtener un completo control.

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