

H.A.S. East & Helyar

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Administration
Bureau of Entomology and Plant Quarantine
Division of Fruit Insect Investigations

University of California

Hawaii Agricultural Experiment Station

Territorial Board of Agriculture and Forestry

Pineapple Research Institute

Hawaiian Sugar Planters' Association
Experiment Station.

INVESTIGATIONS OF FRUIT FLIES IN HAWAII
(Formerly Oriental Fruit Fly Investigations.)

QUARTERLY REPORT

July 1 - September 30, 1952.

TERRITORIAL BOARD OF AGRICULTURE AND FORESTRY

Q U A R T E R L Y R E P O R T

PERIOD: July - September, 1952

PERSONNEL: N. L. H. Krauss
Q. C. Chock
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and Staff

STATION: Honolulu, Hawaii

4.11 and 4.12 BIOLOGICAL CONTROL OF FRUITFLIES

During this quarter, seven species of parasites were propagated. These consist of the braconids Opius compensans, Opius formosanus, Opius kraussii, Opius #2 (New Caledonia), Opius #3 (Siam), the eulophid Syntomosphyrum indicum and the cynipid Trybliographa daci.

Although propagation of these species have been reduced from previous levels, sufficient numbers have been reared to allow for regular liberations on all the islands.

Propagation of Parasites

<u>Species</u>	<u>No. Propagated</u>	<u>Species</u>	<u>No. Propagated</u>
<u>Trybliographa daci</u>		<u>Opius compensans</u>	
July	314		1313
August	381		2115
September	432		1085
	<u>1127</u>		<u>4513</u>
<u>Opius kraussii</u>		<u>Opius #2 (New Caledonia)</u>	
July	654		2755
August	416		3365
September	547		1650
	<u>1619</u>		<u>7770</u>
<u>Opius formosanus</u>		<u>Opius #3 (Siam)</u>	
July	2735		1165
August	3045		1835
September	1340		700
	<u>7120</u>		<u>3700</u>
		<u>Syntomosphyrum indicum</u>	
July		5000	
August		9800	
September		9600	
		<u>24400</u>	

Distribution of Parasites

<u>Island</u>	<u>Date</u>	<u>Locality</u>	<u>No. Released</u>
<u>Opius formosanus</u>			
Oahu	July 2, 7, 21	Aiea Hts. 150; Nuuanu 100; Tantalus 150;	400
	Aug. 7, 29	Nuuanu 250; Nuuanu 300;	550
Hawaii	July 16	Kukuihaele 175;	175
	Aug. 11, 25	Hawi 50; Halaula 285;	335
	Sept. 29	Waimea 125	125
Maui	July 11	Makawao 160;	160
	Aug. 21	Upper Kula 135;	135
	Sept. 18	Kula 200;	200
Kauai	Aug. 5, 19	Lihue 100; Waimoa Valley 116;	216
Molokai	Aug. 27	Pukoo 150;	150
	Sept. 10	Pukoo 100;	100
<u>Opius #2 New Caledonia</u>			
Oahu	July 3, 9, 14, 23	Kalihi Valley 150; Sierra Drive 200; Kaimuki 100; Kalihi Valley 150;	600
	Aug. 8	Maunaloa Gardens 275;	275
	Sept. 22	Kaneohe 150;	150
Hawaii	July 16, 24	Kealahakua 220; Keauhanu 180;	400
	Aug. 4, 6, 6, 25	Holualoa 100; Union Hill 190; Mt. View 100; Halaula 100;	490
	Sept. 17, 24, 29	Kupaahu 120; Kalapana 150; Waimea 130;	400
Maui	Aug. 14	Kipahulu 75;	75
	Sept. 4	Upper Kula 100;	100
Kauai	July 14	Lihue 215;	215
	Aug. 12, 19	Lihue 200; Waimoa Valley 100;	300
	Sept. 16	Niumalu 170;	170
Molokai	Aug. 27	Pukoo 75;	75
<u>Opius compocans</u>			
Oahu	July 9	Makiki 170;	170
	Aug. 22, 25, 29	Aiea Hts. 150; Nuuanu 200; Kahala 250;	600
	Sept. 18	Kaimuki 100;	100
Hawaii	Aug. 13	Kaohaoaha Gulch 60;	60
	Sept. 8	Hoea 160;	160

Distribution of Parasites
(Continued)

<u>Island</u>	<u>Date</u>	<u>Locality</u>	<u>No. Released</u>
<u>Opius compensans</u>			
Maui	July 11 Sept. 26	Haiku 100; Kihei 100;	100 100
Kauai	Aug. 12 Sept. 9, 30	Kealia 100; Moloaa 170; Waimea Valley 65;	100 235
Molokai	July 15 Sept. 10, 17;	Pukoo 125; Pukoo 140; 110;	125 250
<u>Opius #3 Siam</u>			
Oahu	July 9, 30 Aug. 19	Makiki 190; Aiea Hts. 100; Nuuanu 75;	290 75
Hawaii	Aug. 11, 20 Sept. 3	Hawi 100; Kealahakua 120; Pahala 50;	220 50
Maui	July 18 Aug. 7 Sept. 26	Lahaina 100; Wailuku 120; Kihei 50;	100 120 50
Kauai	Sept. 9	Omao 170;	170
Molokai	July 15	Pukoo 125;	125
<u>Opius kraussii</u>			
Oahu	Aug. 6, 18, 28 Sept. 10	Nuuanu 150; Moanalua Gardens 100; Nuuanu 75; Moanalua Gardens 100;	325 100
Hawaii	July 7, 16, Sept. 24	Kokoiki 110; Kamuela 100; Kupaahu 115;	210 115
Maui	Aug. 7 Sept. 4	Olinda 80; Upper Kula 115;	80 115
Kauai	Sept. 30	Kekaha 100;	100
<u>Syntomosphyrum indicum</u>			
Oahu	Aug. 8, 11 Sept. 11, 29	Moanalua Gardens 4000; Puunui 3000; Manoa 3000; Nuuanu 1500;	7000 4500
Maui	July 18	Lahaina 4000;	4000

Distribution of Parasites
(Continued)

<u>Island</u>	<u>Date</u>	<u>Locality</u>	<u>No. Released</u>
<u>Trybliographa daci</u>			
Oahu	July 16	Nuuanu 35;	35
	Aug. 18, 25,	Nuuanu 100; Kahala 150; Kalihi-uka	490
	27, 29	90; Kaimuki 150;	100
	Sept. 9	Nuuanu 100;	100
Hawaii	July 28	Kohala 100;	100
Kauai	Sept. 16	Lihue 75;	75

In this quarter, six shipments of fruitfly parasites were supplied to the U. S. Fruitfly Laboratory for shipment to Dr. C. Mote, Oregon State College, Corvallis, Oregon and J. R. Mullarky, Horticultural Inspector, Lewiston, Idaho. These were to be released as possible parasites of the cherry fruitfly.

Shipments were made as follows:

	<u>Species</u>	<u>Oregon</u>	<u>Idaho</u>
July 22	Opius formosanus	310	180
	Opius #2 (New Caledonia)	75	70
	Opius compensans	80	70
	Opius #3 (Siam)	45	40
July 29	Opius formosanus	90	97
	Opius #2 (New Caledonia)	55	55
	Opius compensans	60	60
Aug. 5	Opius formosanus	60	60
	Opius #3 (Siam)	60	60
	Total...	<u>835</u>	<u>692</u>