CALIFORNIA PLANT PEST and DISEASE REPORT

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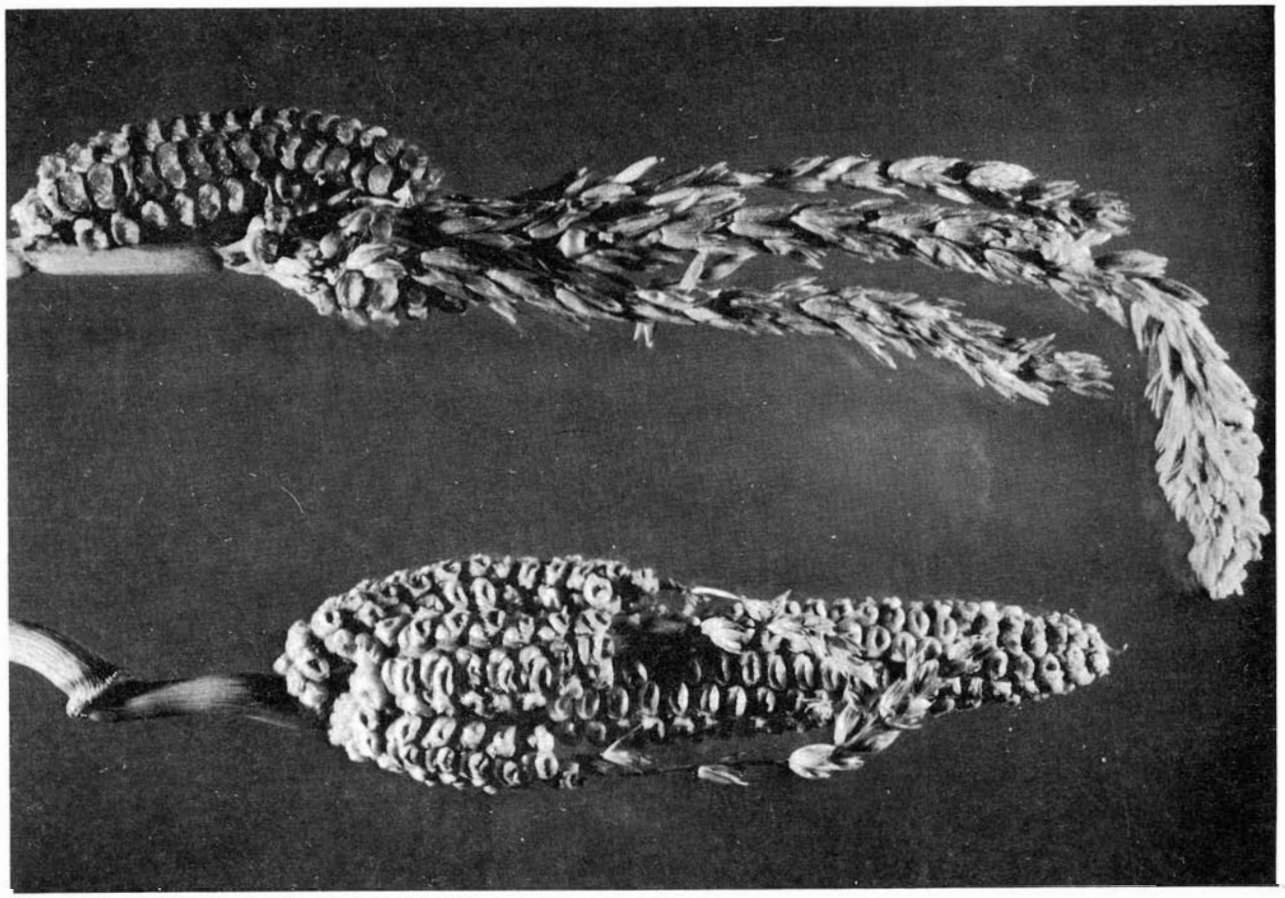
California Department of Food and Agriculture 1220 N Street Sacramento California 95814



A natural "sex-change"-genetic aberration resulting in transformation of parts of hybrid field corn ears into tassels.

RED BAND NEEDLE BLIGHT OF PINES

T.E. Tidwell & K.L. Kosta

Red band needle blight, caused by the fungus *Dothistroma pini* (perfect stage - *Scirrhia pini*), is a serious foliar disease of pines grown for use in landscapes, for Christmas trees, and in shelter belts, i.e. uses in which healthy foliage is of foremost importance. The fungus causes a needle blight and partial defoliation of infected trees. Affected landscape trees become unsightly, and Christmas trees become unmarketable. Successive years of severe infection result in decreased growth and may ultimately cause the death of the tree. Premature defoliation by this disease has resulted in complete failure of Ponderosa pine plantings in states east of the great plains.

The early symptoms of the disease are tan spots that eventually give rise to tan to reddish bands on the needles (Fig. 1). In California and Oregon these bands are a brighter red color than in other parts of the United States where the disease occurs, hence the name "red band needle blight" is used predominately on the west coast. In other parts of the country where the reddish color is much less pronounced, the disease in known merely as "*Dothistroma* needle blight."

The disease tends to progress from a chlorosis of the needle to necrosis, the base of the needle often remaining green. The necrosis may develop quickly, in some cases only two or three weeks after the "banding" symptoms appear. Infection is typically most severe in the lower portions of the canopy. Infected needles eventually fall off, but may remain on the tree up to a year after becoming infected. Interestingly, infected second-year needles usually drop before infected current-year needles.

In California the fungus can complete its life cycle in one year. The disease is not systemic; thus the sticky spores (Fig. 2) are rainsplash-dispersed from fruiting bodies to other needles to begin new infections. New infections can occur any time it rains (or when trees are sprinkler-irrigated) during the growing season.

The fungus has a relatively wide host range in the genus *Pinus*, attacking about 30 pine species and hybrids in the U.S. On the Pacific coast the disease is especially severe on Lodgepole and Monterey pines. Surprisingly, the Scots pine *(P. sylvestris)* is rarely affected by red band needle blight. Thus selection of this and other resistant tree species is one means of dealing with the disease in areas of severe disease occurrence. The planting of genetically resistant clones of some *Pinus* species such as Ponderosa and Monterey pines looks promising for disease prevention, or at least reduction of the degree of damage. In addition, the use of copper fungicides is reported to give good disease control by prevention of infection.

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Peterson, Glenn W. 1965. *Dothistroma* needle blight of Austrian pine: Infection and control. Plant Dis. Rep. 49:124-126.

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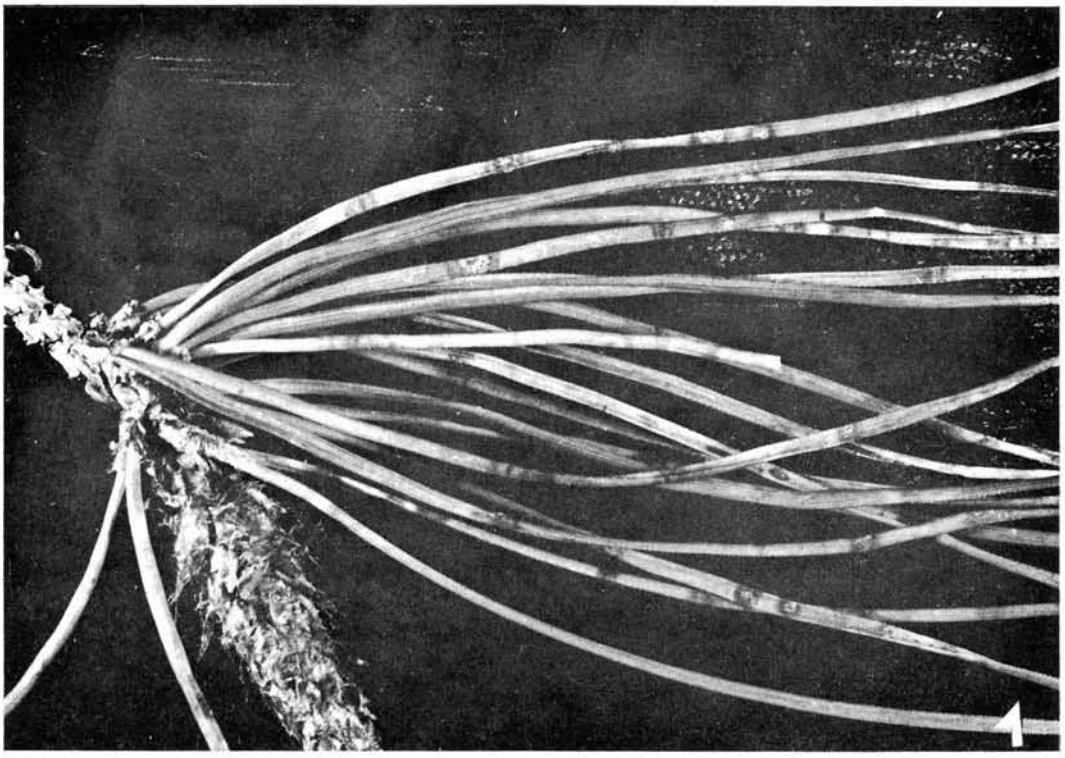
T.E. Tidwell is a Plant Pathologist and Kathy Kosta is an Agricultural Inspector with the CDFA Analysis and Identification Unit, Sacramento.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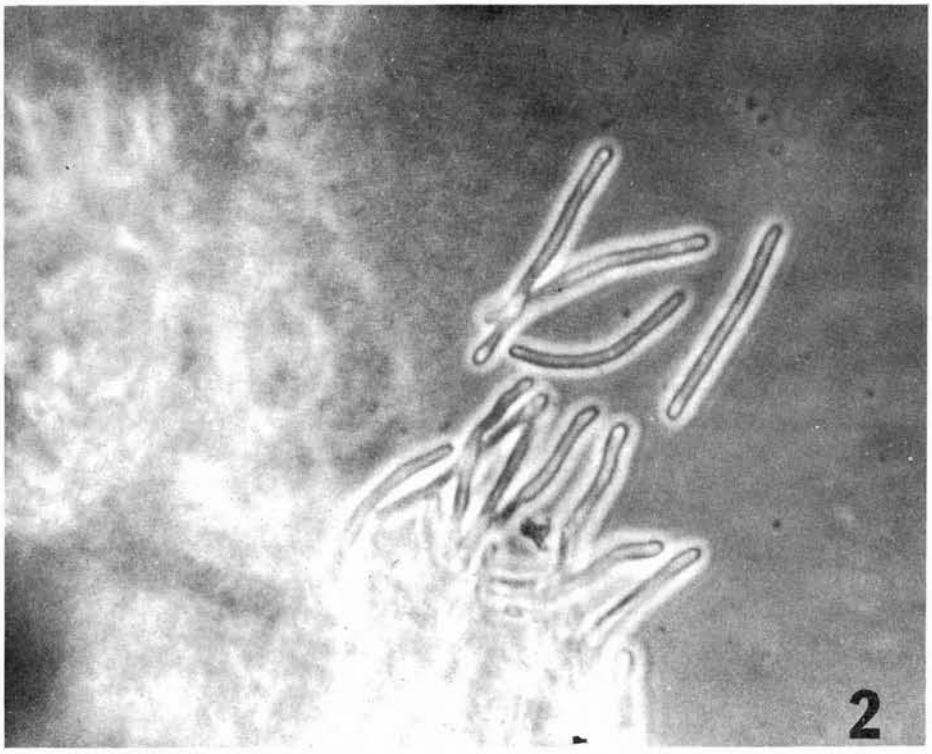
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GAZANIA GROWERS ALERT

Karen Wiese

Gazanias (*Gazania* spp.) are important perennial ground cover plants native to South Africa. Recently, gazania samples from nurseries and home ornamental plantings in Los Angeles and Santa Clara counties have been received by the diagnostic laboratory of the California Department of Food and Agriculture exhibiting symptoms of leaf distortion, mottling, yellowing, and veinal necrosis. Based on symptoms, particle morphology and host, Sonchus yellow net virus and Bidens mottle virus have been identified as the causative agents.

Sonchus yellow net, a rhabdovirus, is also referred to as Sowthistle yellow net. Three plant families, the Compositae, Solanaceae and Chenopodiaceae, are represented in the known hosts of this virus. Symptoms include stunting, veinal necrosis and leaf yellowing. All naturally-infected hosts have also been infected with Bidens mottle virus.

Bidens mottle virus, a long flexuous rod, infects various species of the Compositae and five other dicotyledonous families. Crops of economic importance sensitive to this virus include sunflower, lettuce, endive and zinnia. Symptoms include mottle, leaf distortion, and stunting.

Aphids are vectors of both viruses. *Aphis coreopsides* transmits Sonchus yellow net. Bidens mottle is transmitted in a non-persistent manner by several aphid species. *Myzus persicae* is a common vector.

As the virus persists in gazania, marketability, vigor and appearance decline. These plants are a source of inoculum for subsequent infection. Roguing infected plants and effective aphid control are suggested for reducing spread of this virus complex.

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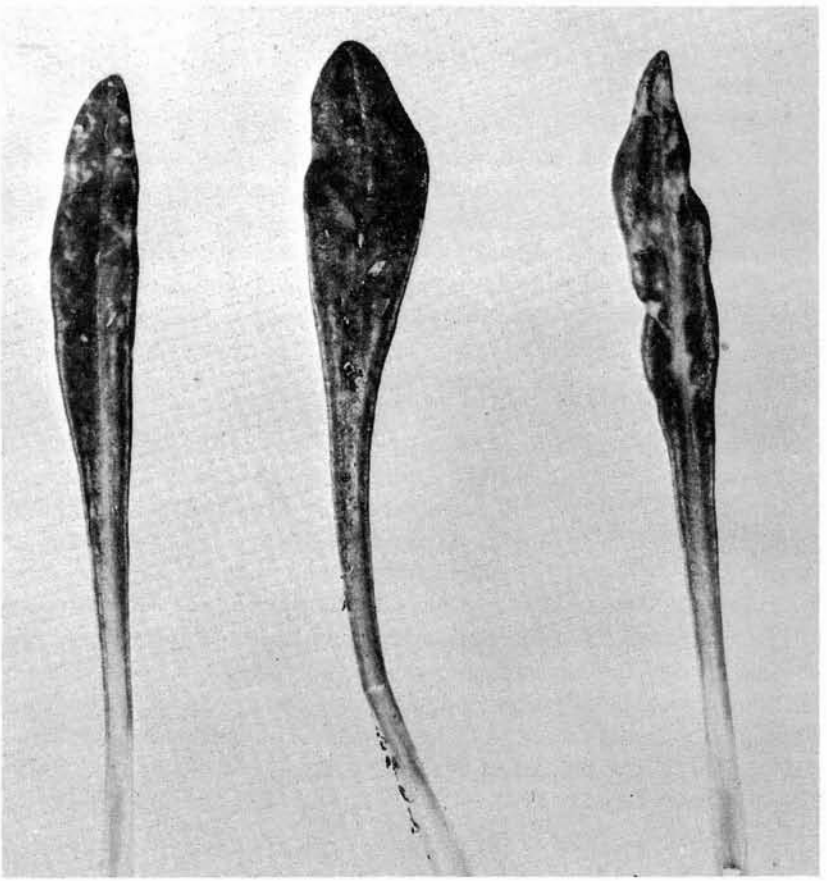

Leaf distortion and mottle on gazania leaves are symptoms of Sonchus yellow net virus - Bidens mottle virus complex.

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THE USE OF ELISA TO DETECT SQUASH MOSAIC VIRUS IN CUCURBIT SEED

Paula E. Mayhew

Squash mosaic virus (SqMV) is an isometric virus that causes mosaic diseases in cucurbits. The disease is characterized by severely mottled and malformed foliage with raised dark green blister-like areas. Infected plants may exhibit ring patterns, enations, or may be symptomless. Fruits from infected vines are yellow, malformed, and mottled. Infected plants do not grow as rapidly as healthy plants, and set fewer fruit. SqMV is transmitted mechanically, by beetles, and through seed. Because it is seed borne, SqMV may be introduced wherever infected seeds are sown.

Traditionally, seed producers have relied on "growing on" tests in the field or greenhouse to determine the amount of virus infection in a particular seed lot. Infectivity is determined by the presence of symptoms in seedlings or in inoculated indicator plants. The major disadvantages of these methods are: 1) they involve a great deal of time; 2) they are labor intensive; 3) they are expensive; and 4) most importantly, sensitivity is extremely low. Because of this, virus infected seed continues to be a problem in the seed industry. Serological testing may overcome most of the disadvantages of "growing on" tests. Of the procedures evaluated in a study performed in cooperation with the plant virology laboratory, California Department of Food and Agriculture, ELISA (enzyme linked immunosorbent assay) was determined to be the serological method of choice. Table 1 compares the results of ELISA and field testing on several lots of cucurbit seed.

The technique developed in this study can detect virus in seed directly without waiting for germination. The seed is soaked in water at room temperature for 48 hours and embryos separated from the seed coat by rolling seeds between layers of waxed paper with a rolling pin. A single embryo is placed in each test well and macerated in the appropriate buffer with a toothpick or glass rod. The ELISA procedure is carried out as usual with some modification. Incubation time between steps is reduced to one hour, and at least five washings are required to adequately remove embryo debris. Purified virus or infected sap is used as a positive control in each plate. The results are measured visually. Several hundred samples can be assayed in less than a day.

ELISA has many qualities of an ideal assay. The procedure described above is extremely sensitive (visual readings can detect as little as 230 ng/ml of virus), specific, easy to perform and read, reliable, and economical. It can be easily adapted to field conditions since no sophisticated equipment or specialized training is required. Tests of this type will probably soon replace the more traditional "plant-oriented" methods of virus detection ("growing on" tests, symptomatology, etc.).

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Table 1. Comparison of field ("growing on" tests) and ELISA techniques for determining percent squash mosaic virus-infected seed in selected seed lots

Seed Lot	Percent Infected Seeds: Field Observation	ELISA
Asgrow Cantaloupe Honeydew Greenflesh	Infected at low %	35.4%
Moran Muskmelon Honeyloupe	20% or greater	48.0%
Moran Seed EDISTO	8.1%	4.2%
Niagara Seed Cantaloupe var. Persian Melon	low % infected	35.4%

Paula E. Mayhew is a former Agricultural Inspector with the CDFA Analysis and Identification Unit, Sacramento.

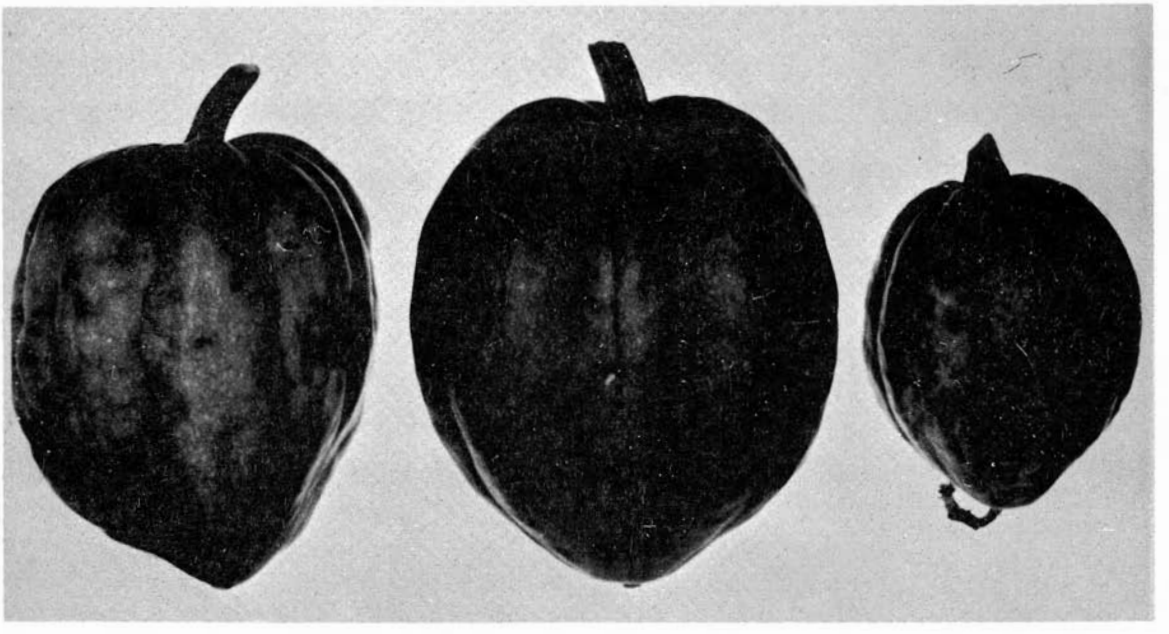

Figure 1. Squash mosaic virus-infected acorn squash (*Cucurbita pepo*). Center fruit is healthy.

A POINSETTIA PROBLEM

Phyllis Hedin

In the last year an increased number of poinsettia (*Euphorbia pulcherrima*) samples have been submitted to the plant pathology laboratory by county biologists. Symptoms (Fig. 1) included stunting, severe leaf distortion, mosaic and incomplete bract formation.

In every case, electron microscope examinations showed that the symptoms were associated with Poinsettia mosaic virus (PoiMV), an isometric, graft-transmissible virus. PoiMV is common in poinsettias grown commercially, and observations suggest that higher growing temperatures may elicit the more severe symptoms.

Reference

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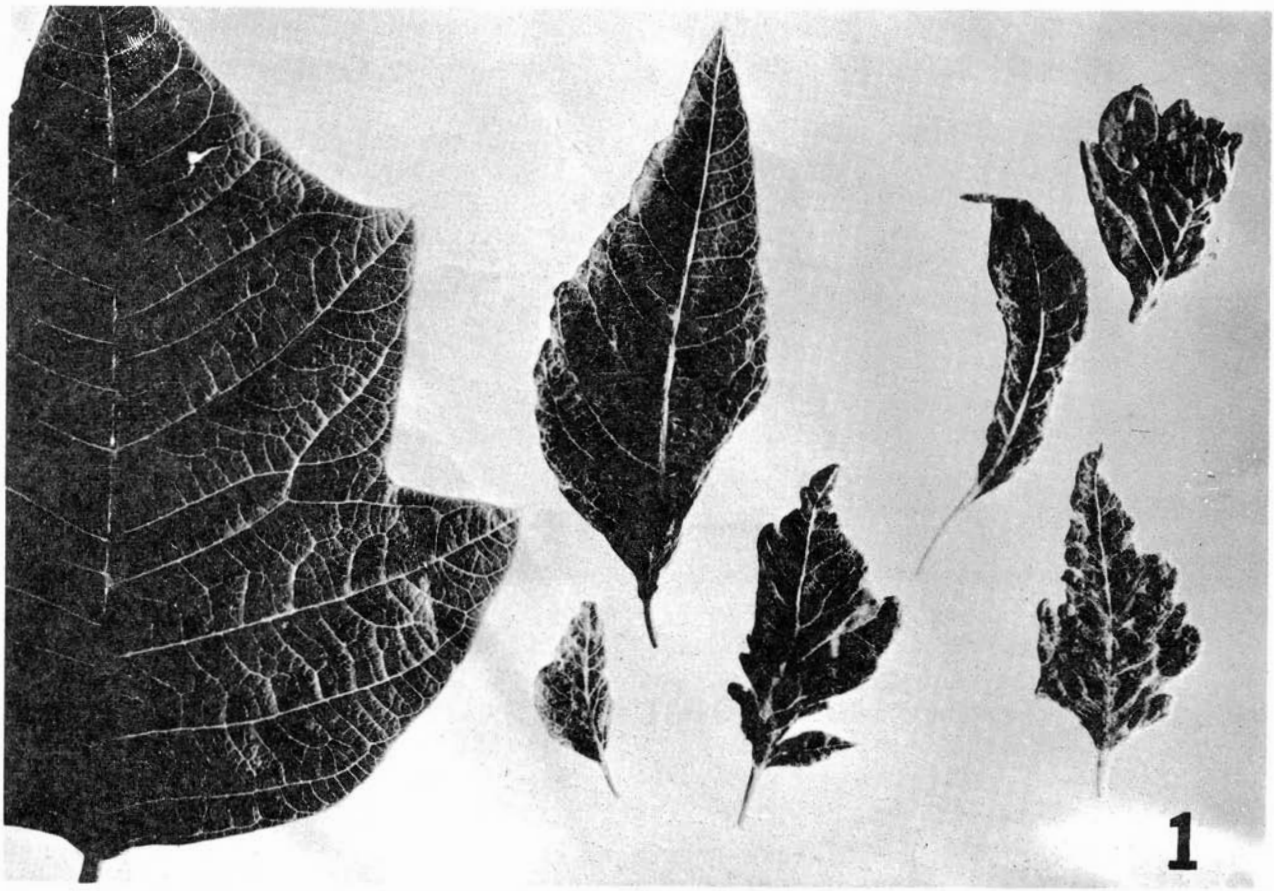
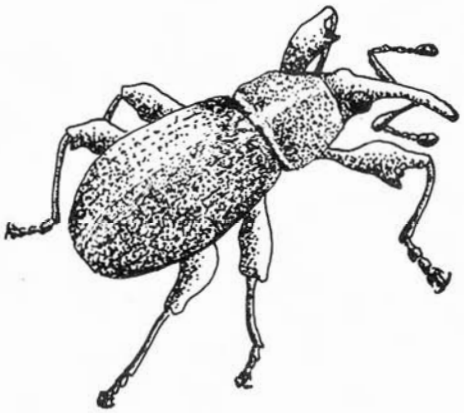
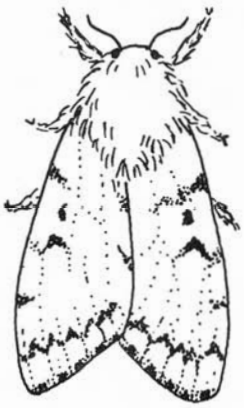
Phyllis Hedin is an Agricultural Inspector with the CDFA Analysis and Identification Unit, Sacramento.





Entomology Highlights



Apple Maggot, *Rhagoletis pomonella* -(A)- This serious pest of apples has been detected for the first time in the northern part of the state. Large scale infestations of apple maggot in Washington and Oregon in recent years indicate that the appearance of this pest in northern California was just a matter of time.

The first find of apple maggot was at Smith River in Del Norte County. The following report on that find is by John Pozzi:

> "Apple maggot adults have been trapped for the first time in California. The find was made on 8/24/83 in Smith River, Del Norte County. County Senior Animal Control Officer Carrol Harwood made the discovery while servicing an apple maggot trap on Oceanview Drive.
>
> A total of six apple maggot adults were found in the trap with three being submitted to Analysis and Identification for confirmation. Of these, Systematic Entomologist Karen Corwin determined that two were females and one was male.
>
> Oceanview Drive, in Smith River, is approximately four miles south of the Oregon border and parallels Highway 101.
>
> Trap densities in the area are in the process of being increased to protocol levels for apple maggot finds."

It is interesting to note that apple maggot is known to occur in Brooking's, Oregon, about five miles north of the Smith River border station. The infestation at Smith River is very likely due to natural spread. Further apple maggot collections were made in Smith River as is indicated by this continuing report by John Pozzi:

> "Eighteen apple maggots were trapped on 8/28/83 and 9/02/83 near the city of Smith River, Del Norte County. Sixteen were discovered in an apple maggot trap on 9/02/83 at the Oceanview Drive property where the original apple maggot was trapped. The remaining two were found on 8/28/83 and 9/02/83 at another Oceanview Drive property that is one quarter of a mile north. County Agricultural Biologist Glenn Anderson and Animal Control Officer Tad Hardwood were responsible for the finds. A total of 19 apple maggots have been trapped in Del Norte County."

Simultaneous with these additional finds at Smith River, specimens were trapped in Siskiyou County as is stated here by John Pozzi:

> "Apple maggots have been detected in a second county. Three apple maggot adults were trapped between 8/28/83 and 9/02/83 in Siskiyou County. One was found on 8/29/83 in an apple maggot trap on Liberty Street in the city of Weed. The other two were discovered in Yreka on 8/31/83 and 9/02/83 in apple maggot traps on Knapp Street and Greenhorn Road, respectively. County Trappers Nadine Timm and Becky Smith were responsible for the finds.
>
> Additional apple maggot traps are in the process of being deployed around the finds by County personnel."

An additional specimen was trapped by Becky Smith at Yreka on 9/8/83. More significant however, is the find by Becky of an apple maggot adult in a trap at Happy Camp, Siskiyou County on 9/6/83. This find indicates that the entire Klamath River drainage may be infested. This is wild, rugged country, heavily forested or brushy. The Klamath River is a famous and popular salmon and steelhead fishing river, and it is visited by fisherman from all over the western United States. There are many wild apple trees and other hosts scattered throughout. Many abandoned homestead sites dating back to the depression days still have bearing apple trees which could serve as a reservoir for the population.

There are some commercial apple orchards in Siskiyou County, but they have not been found to be infested thus far. The trees are sprayed on a regular basis for codling moth and other apple pests, which may have helped prevent the orchards from becoming infested. All of the Siskiyou County finds are north of or not covered by the Mt. Shasta inspection station.

Identification of the apple maggots have been by Karen Corwin and Eric Fisher. Identification of apple maggot is complicated because of the extreme similarity between it and *Rhagoletis zephyria*, the snowberry fruit fly which occurs naturally throughout the western United States and feeds exclusively on species of snowberry (*Symphoricarpus*). Wing patterns of the two species are essentially identical, and identification must be based on careful comparative measurements as can be seen in the following report by Karen Corwin.

> "Since the beginning of the apple maggot trapping season, the Diptera laboratory has received nearly 100 suspect *Rhagoletis pomonella* specimens. Each of these specimens is soaked in xylene overnight to remove from the sticky trap material and point-mounted. A series of three measurements is done on each fly. If there is reason to believe from these measurements that the fly is *Rhagoletis pomonella*, the ovipositor of females or the genital capsule of males is removed and examined, then measured. Records are kept in the laboratory of all specimens received to date.
>
> The specimens which arrived late Monday, August 29, 1983 were put through this procedure and double-checked. They are definitely the first specimens we have received and fall well within the identification parameters for *R. pomonella*. Any additional specimens we receive will also be subjected to this procedure, so "RUSH" results cannot be expected within the same day; in some cases it may be at least two days before the specimens are

ready. Many times visual determination is not possible because of the very close resemblance of apple maggot adults to *Rhagoletis zephyria*, snowberry fruit fly."

The following article by Marius Wasbauer of the Analysis and Identification Systematic Entomology laboratory was developed a number of years ago. It contains the criteria still used by the systematic entomology laboratory for separating apple maggot from the snowberry fruit fly. These criteria are the ones mentioned by Karen Corwin in the previous report.

TAXONOMIC DISCRIMINATION OF RHAGOLETIS POMONELLA FROM THE EASTERN UNITED STATES AND RHAGOLETIS ZEPHYRIA FROM CALIFORNIA

The apple maggot, Rhagoletis pomonella (Walsh), is one of a series of very closely related forms, generally referred to as the R. pomonella complex. This complex includes six distinct populations which have previously been considered inseparable on the basis of commonly used morphological criteria.

The evidence now at hand suggests that these populations are distinct biologically and are reproductively isolated. As such, they should be considered sibling species.

In Washington, Oregon, and California, the western member of this complex, Rhagoletis zephyria Snow, has long been known to infest snowberry, Symphoricarpos albus. There is no authentic record of it ever attacking apples, which often grow side by side with heavily infested snowberry bushes in some California coastal localities. Thus it is not a species of direct economic concern. The continued westward extension of the range of Rhagoletis pomonella, however, increases the possibility of accidental introduction of that species into California. The objective of this study, then, is to provide a reliable means of separating adult eastern Rhagoletis pomonella and R. zephyria so that, in the event of introduction of the former into California, delimiting surveys may be instituted without undue delay because of problems of identification.

The study is based on a comparison of series of R. zephyria collected by the author and Mr. F. L. Blanc at Forestville, Sonoma County, California, on August 17, 1962, on snowberry, and R. pomonella collected by R. W. Dean at Poughkeepsie, New York, July 15, 1940, under apple trees.

The method employed involves examination of the male clasper (Figs. 4 and 5), measurement of wing length of both males and females (Figs. 1 and 2), the width of certain wing color bands in males and females, and the length of the ovipositor in females (Fig. 3). In order to clearly see the structures of the male clasper, it was necessary to relax the specimen in a humidity chamber for at least 24 hours or until the intersegmental membranes become flexible. The genital capsule was then removed with a pair of fine jeweler's forceps and placed in cold 10% KOH for about 8 - 12 hours. The tissue surrounding the clasper was then removed to afford a horizontal view.

The ovipositor of the female was removed by use of the same method. These structures were stored in a very small drop of glycerine in the bottom of a genitalia vial and associated with the pinned specimen. All measurements were made with a dissecting microscope using a 50 division ocular scale which was calibrated with a standard stage micrometer.

Measurements of the wing were made on dry mounts which did not necesitate removal. In all cases, the wing was measured from the proximal thickening of the costa to the apex (Figs. 1 and 2). In some cases, the wing was strongly curved or bent. In these instances, it was necessary to remove the wing and make a temporary slide mount using glycerine and a cover slip. The wing bands, which I have designated from the base of the wing outward toward the apex as band 1, band 2, band 3, and band 4, were measured at the points indicated by the heavy lines (Fig. 1). To minimize the effects of individual size variation, measurements of the width of bands 2 and 3 were converted to a ratio (B3/B2).

The ovipositor (Fig. 3) was oriented to a horizontal position in a drop of glycerine on a well slide before measurements were made.

Nichols (1932:10, Fig. 4) first illustrated the difference in the claspers of eastern and western forms of what was then considered a single species, R. pomonella. Later, Curran (1924:63) described this difference in detail when he proposed the name symphoricarpi (= zephyria Snow) for the western form.

The clasper difference is quite distinct when individuals from known populations of Rhagoletis pomonella and R. zephyria are available for comparison but may be unclear when a single individual is being identified. The main features of the clasper which will serve to distinguish the two species are the distinctly upcurved dorsal margin and greater width in lateral view for pomonella. In R. zephyria, the clasper is more slender throughout with the dorsal margin straight or nearly so.

In general, although no external morphological difference was evident between the sample of zephyria from California and samples of eastern pomonella, the mensural values and ratio B3/B2 showed significant difference when subjected to statistical analysis. Pertinent statistical data derived from the study of these population samples is summarized in the following table:

		Wing length		Ovipositor length	B3/B2
		♂	♀		
zephyria	R	3.00-3.75 mm	3.40-3.82 mm	.63 mm-.88 mm	.415-.675
	$\bar{X}$	3.26 mm	3.52 mm	.75 mm	.537
	SD	±.188 mm	±.147 mm	±.060 mm	±.056
	N	15	15	18	35
pomonella	R	3.18-4.08 mm	4.00-4.62 mm	1.01-1.26 mm	.355-.515
	$\bar{X}$	3.77 mm	4.39 mm	1.127 mm	.430
	SD	±.264 mm	±.208 mm	±.066 mm	±.045
	N	6	15	15	25

R = range
$\bar{X}$ = mean
SD = standard deviation
N = sample size

For a full account of the derivation and use of the statistical measures employed in this study, see Cazier and Bacon (1949).

No significant statistical difference was noted between the sexes in B3/B2, so this data was not separated before analysis. This ratio was found to be the least reliable of any of the measures of difference, and will serve to separate the two species only about 70% of the time. Accordingly, it should be used only as a supplementary character. In wing length of the males, the sample of R. pomonella is small (N = 6) and is thus a less reliable index of the total population than the larger sample (N = 15) available for the males of R. zephyria. On the basis of the small sample number, there is considerable predicted overlap in wing length between populations of pomonella and zephyria males. Wing length of females provides a more trustworthy criterion with no overlap at ± 2 SD.

Ovipositor length was found to vary less than other measurements within the sample and may provide the best single means of distinguishing the females of the two species. Ovipositor length of over 99% of the females (± 3 SD) in a projected population from Forestville, California, could be expected to fall outside the range of variation of this measure in a similar population from Poughkeepsie, New York.

Key for Separation of Rhagoletis pomonella and R. zephyria

1. Last abdominal tergum narrow, usually with a single projecting, needle-like ovipositor (females). 2

- Last abdominal tergum broad, without a projecting ovipositor. If appendage (paramere) projects, it is paired (males). 3

2. Ovipositor length less than .90 mm (.63-.88 mm); wing length less than 3.90 mm; B3/B2 usually greater than .50 (Fig. 2) . . . . . Rhagoletis zephyria Snow

- Ovipositor length greater than .90 mm (1.01-1.26 mm); wing length greater than 3.90 mm (4.0-4.62 mm); B3/B2 usually less than .50 (Fig. 1) . . . . . Rhagoletis pomonella (Walsh)

3. Claspers in lateral view slender throughout, the dorsal margin straight or nearly so (Fig. 5); B3/B2 usually greater than .50 (Fig. 2) . . . . . Rhagoletis zephyria Snow

4. Claspers in lateral view rather wide, the dorsal margin with a decided upward curve (Fig. 4); B3/B2 usually less than .50 (Fig. 1) . . . . . Rhagoletis pomonella (Walsh)

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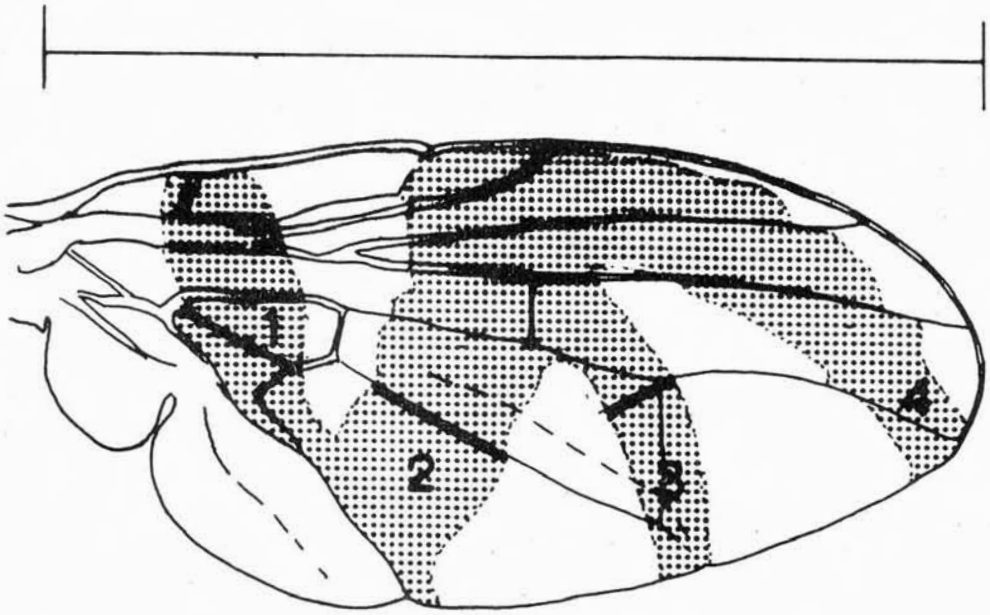

Fig. 1. Wing of R. pomonella

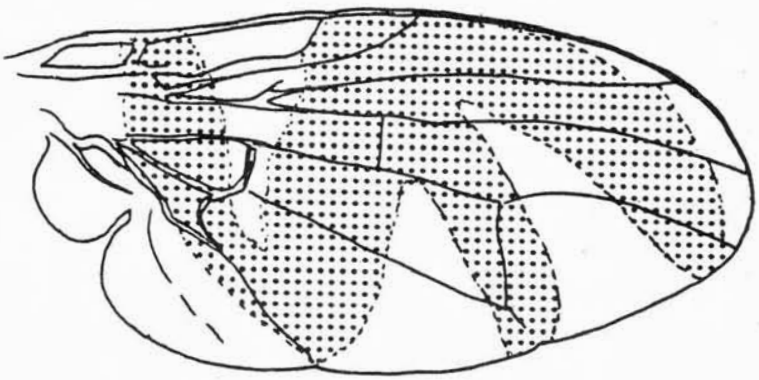

Fig. 2. Wing of R. zephyria

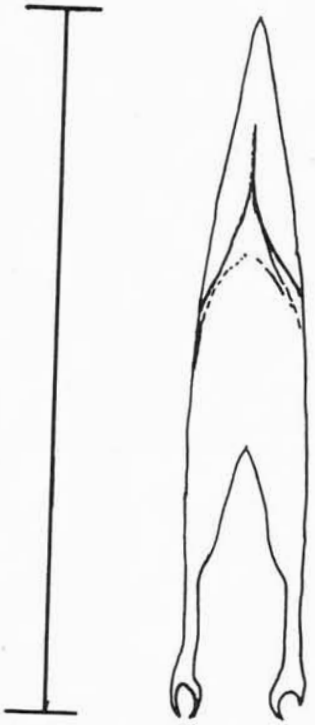

Fig. 3. Ovipositor of R. zephyria

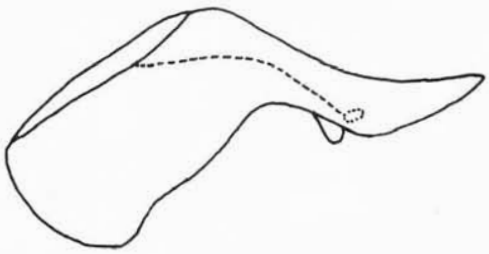

Fig. 4. Clasper of R. pomonella

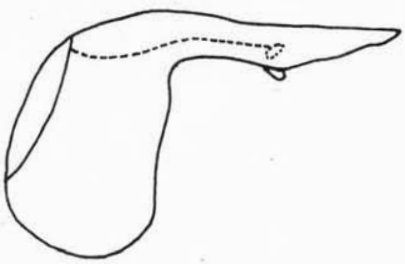

Fig. 5. Clasper of R. zephyria

Gypsy moth, *Lymantria dispar* -(A)- This serious pest continues to be found in small numbers throughout the State. The following chart by John Pozzi gives the total gypsy moth finds for 1983 up to September 7.

Gypsy Moths Trapped in California Since July 1

County	Locality	Date	No. of Specimens	Collector
San Diego	San Diego	7/01	2	B. Taylor
Santa Clara	San Jose	7/01	2	D. Daniels
" "	" "	7/02	1	D. Sousa
Alameda	Oakland	7/02	1	H. Lasak
San Diego	San Diego	7/02	1	B. Taylor
" "	" "	7/03	3	" "
Alameda	Oakland	7/03	1	H. Lasak
Santa Clara	San Jose	7/03	2	J. Matlich
" "	" "	7/05	9	S. Graham
San Diego	San Diego	7/05	6	B. Taylor
" "	" "	7/06	1	" "
Santa Clara	San Jose	7/06	3	J. Stamm
" "	" "	7/06	1	D. Soares
" "	Los Altos	7/06	1	S. Klauer
Alameda	Livermore	7/06	1	A. deGrassi
San Diego	San Diego	7/07	1	L. Guidry
Santa Clara	San Jose	7/07	2	D. Soares
Contra Costa	Pleasant Hill	7/07	1	K. Anderson
" "	San Ramon	7/07	6	V. Clark
San Diego	San Diego	7/08	3	B. Taylor
Santa Clara	San Jose	7/08	2	D. Soares
Alameda	Livermore	7/08	2	A. deGrassi
Santa Barbara	Santa Barbara	7/08	1	M. Rajala
Sonoma	Petaluma	7/08	1	B. Sallee
Alameda	Livermore	7/09	1	M. Whetstone
Contra Costa	San Ramon	7/09	3	V. Clark
" "	" "	7/10	1	" "
Alameda	Livermore	7/10	1	M. Whetstone
San Diego	San Diego	7/11	3	B. Taylor
Santa Clara	San Jose	7/11	8	D. Daniels
Alameda	Fremont	7/11	1	C. Azevedo
Contra Costa	San Ramon	7/11	2	V. Clark
Santa Cruz	Santa Cruz	7/12	1	R. Dufour
Santa Clara	San Jose	7/12	1	S. Graham
" "	" "	7/12	3	R. Pummer
" "	" "	7/12	1	D. Soares
" "	" "	7/12	1	J. Bombaci/R. Eng
" "	Los Altos	7/12	1	S. Klauer
" "	Palo Alto	7/12	1	K. O'Day
Alameda	Oakland	7/12	1	H. Lasak
Contra Costa	San Ramon	7/12	2	V. Clark
Solano	Vacaville	7/12	1	B. Lyon
Santa Clara	San Jose	7/13	adult larvae eggs pupae	J. Bombaci
" "	" "	7/13	1	R. Pummer

County	Locality	Date	No. of Specimens	Collector
Contra Costa	San Ramon	7/13	1	L. Stout
" "	" "	7/13	1	Clark et al.
Santa Clara	San Jose	7/14	3	R. Pummer
Alameda	Berkeley	7/14	1	G. Campbell
Contra Costa	San Ramon	7/14	1	V. Clark
Santa Cruz	Santa Cruz	7/14	2	R. Dufour
Marin	Mill Valley	7/14	1	S. Sangalli
San Bernardino	Redlands	7/14	1	Mitchell
Santa Clara	San Jose	7/15	1	Connell et al
" "	" "	7/15	egg mass	" " "
" "	" "	7/17	2	C. Butterfield
" "	Cupertino	7/18	2	S. Klauer
" "	Los Gatos	7/18	1	D. Soares
San Mateo	Woodside	7/18	1	S. Aby
Santa Clara	Los Altos Hills	7/19	1	K. O'Day
Marin	Tiburon	7/20	2	S. Titus
Shasta	Redding	7/20	1	K. Garrison
Fresno	Fresno	7/20	1	E. Gallman
Santa Clara	San Jose	7/21	6	S. Graham
San Bernardino	Redlands	7/21	1	Mitchell
Solano	Fairfield	7/21	1	T. Carnine
Santa Clara	Almaden	7/25	1	L. Higgins
" "	San Jose	7/26	1	S. Graham
" "	" "	7/26	1	D. Daniels
Contra Costa	Clayton	7/26	1	P. Greer
Alameda	Livermore	7/27	eggs & larvae	K. Peek
Los Angeles	Santa Monica	7/27	1	M. Kehr
Santa Clara	San Jose	7/28	5	S. Graham
Marin	Olema	7/29	1	C. Montgomery
San Diego	Poway	8/01	1	L. Guidry
Santa Clara	San Jose	8/02	1	R. Pummer
Santa Cruz	Santa Cruz	8/03	1	R. Dufour
" "	Aptos	8/04	1	V. Hironaka
San Bernardino	Redlands	8/04	2	R. Miller
Contra Costa	Danville	8/05	1	L. Stout
Tulare	Three Rivers	8/05	1	H. Michalk
"	" "	8/11	eggs & pupae	Jones/Evans
San Diego	La Costa	8/11	1	L. Shipley
Santa Barbara	Goleta	8/11	1	S. Clark
Contra Costa	San Ramon	8/17	1	K. Athey
San Diego	San Diego	8/22	pupae	Penrose/Connell
Alameda	Berkeley	8/23	1	G. Campbell
Santa Cruz	Ben Lomond	8/29	1	S. Knego

*All identifications were by T.Eichlin and R.Somerby

Japanese beetle, *Popillia japonica* -(A)- Since the last issue of this publication only a few individuals have been found in the infested area of Sacramento County. Spraying of Oftanol and Sevin have proceeded, but not without complaints and demonstrations by some of the local residents involved. Since July 7, the following beetles have been trapped or found visually in Sacramento County bringing the total to 33 beetles:

Orangevale	7/10	1a Visual/dead	V. Jensen
Orangevale	7/20	1a Visual/dead	G. Agosta
Fair Oaks	7/27	3a Visual/dead	J. Murray
North Highlands	7/27	1 Visual/dead	T. Bainville

In addition, 4 adult beetles have been trapped at San Ramon, Contra Costa County as per the following report by John Pozzi:

> "Four dead Japanese beetle adults were trapped in San Ramon on 8/17/83. County Trapper Laurie Stout made the discovery while servicing a Japanese beetle trap on Barnwood Drive near Interstate Highway 680. The trap is located in a new community recreational center for residences in that area and is primarily landscaped with turf.
>
> State Systematic Entomologist Fred Andrews determined that two of the beetles were male and two were female. They appeared fresh and Fred was able to find eggs in one of the females that was dissected. No pinholes were observed and chemical analysis for alcohol was negative.
>
> County agricultural personnel are increasing trap densities to protocol levels for new Japanese beetle finds and have initiated a visual survey."

Also, Peddicord and Robbins trapped an adult male beetle at Los Angeles International Airport on July 7.

Cotton boll weevil, *Anthonomus grandis* -(A)- adults of this cotton pest are being trapped in low numbers in the desert cotton areas of Southern California. The following chart is a brief summary of those finds:

Locality	Date	Collector	No. of Specimens
Winterhaven	6/01	Land	1
Blythe	6/02	Nelson	3
"	6/03	Robinson	2
"	6/07	Miles	1
"	6/09	Nelson	2
"	6/10	Robinson	1
"	6/16	Miles	1
"	6/16	Nelson	2
Vidal	8/18	Stickney/ Layaye	2
Winterhaven	8/25	Lockhart	1
Winterhaven	8/31	Weedle et al.	1

Grapeleaf skeletonizer, *Harrisina brillians* -(B)- Several collections of this grape pest were made during this period. Four separate submissions were made from Delano, Kern County on June 7 and June 10 by Poore, Bennett and Jackson. Specimens were also collected by Anzar at Tuolumne, Tuolumne County on July 19.

A Eucalyptus psyllid - undescribed genus and species -(Q)- Specimens of this new psyllid have been collected from Alpine, Chula Vista, El Cajon, Escondido, Linda Vista, Ramona and San Diego in San Diego County. Collectors are Sixtus, Moss, Smith, Kenyon and Dorsey. More specimens have been collected in Ventura County, this time at Santa Paula. The psyllids were collected by D. Buettner and J. Hazel on May 16.

Satin moth, *Leucoma salicis* -(B)- This moth, related to the gypsy moth, was collected in several locations this summer. Mayra Morris found a live specimen in a Japanese beetle trap at Adin, Modoc County on July 12. Ray Donnelly submitted a larva from Lassen County which was brought to the border station by a local resident. G. Anderson submitted larvae and pupae from silver maple at Smith River, Del Norte County on June 27.

Fuchsia mite, *Aculops fuchsiae* -(B)- This mite continues to devastate fuchsia plants and to extend its range in California. The following collections were made during June and July: Concord, Contra Costa County by Case on June 23; American Canyon, Napa County by Godfrey on July 11; at El Cerrito, Contra Costa County by Case and Kean on July 12; at Pleasant Hill, Contra Costa County by Case on July 12; at San Jose, Santa Clara County by Howser on July 19; at Mendocino, Mendocino County by Steve Lincoln on July 21; and at Stockton, San Joaquin County by B.Winters on July 21.

Torpedo bug, *Siphanta acuta* -(Q)- This flatid planthopper was again collected in San Diego by Ray Rinder on July 4.

Asiatic red scale, *Aonidiella taxus* -(Q)- and Messinger scale, *Aonidiella messingeri* -(Q)- were collected in a nursery in Huntington Beach, Orange County by Delia Barella-Smith. The first specimens were from podocarpus and were identified as Asiatic red scale, a species known primarily from yew (Taxus) and *Podocarpus*. Identification was by R. Gill of CDFA. Upon requesting more specimens, Delia returned to the nursery and found scale specimens on palm (*Phoenix roebeleni*) but could not find more specimens on the podocarpus. These specimens from palm were identical morphologically with a scale species occasionally encountered on palms in Hawaii and Asia (*Aonidiella messingeri*). However, it was noted at that time that the morphological characters used to separate the two scales *A. taxus* and *A. messingeri* are apparently not reliable. This indicates that only one species may exist rather than two. Scale specialists will be taking a close look at this identification problem in the future.

NEW STATE RECORDS

A Gelechiid moth, *Athrips rancidella* -(Q)- Details concerning the first collection of this moth in California will be found in the following report by Tom Eichlin of the Systematic Entomology Laboratory:

> "The following information has been extracted from a manuscript written by Dr. J.A. Powell, U.C. Berkeley, and with the author's permission. In his paper he details the activity of a small moth, *Athrips rancidella* (Herrich-Schaeffer) (Gelechiidae) collected in Berkeley, California. Realizing that this was a pest not previously recorded from the state, Dr. Powell informed Dr. Tom Eichlin, one of our Systematic Entomologists.
>
> This gelechiid is a pest of *Prunus* spp. in its native region of Central Europe. It has been known to occur in the Pacific Northwest since its discovery on *Cotoneaster* in Oregon in 1929 and its subsequent collection in coastal British Columbia, Washington and Oregon.
>
> The local hosts (*Cotoneaster* spp.) are commonly used as ornamental shrubs. In the spring the small black larvae cover the foliage with dense silken webbing, producing a caked mass of silk, frass and brown leaves.

We are grateful to Dr. Powell for bringing this introduction to our attention and to the two students who collected the original samples for their Immature Insects class."

NEW COUNTY RECORDS

Garden bagworm, *Apterona crenulella* -(B)- This Psychid moth was collected for the first time in Napa County at Angwin on June 3 by King. The host was apple and pear.

Woolly oak mealybug, *Chnaurococcus villosa* -(C)- specimens of this native mealybug were collected from oak trees at Fresno, Fresno County on June 2 by Norm Smith. Previously this mealybug was known only from Alameda and Santa Clara counties.

Miscellaneous Finds of Interest

A hay mite, *Acarus farris* -(C)- The following information about this mite is supplied by T. Kono:

Acarus farris (Oudemans), a Hay Mite

"A species of mite collected on oat and ryegrass hay in Humboldt County by Farm Advisor Gary Markegard was identified by T. Kono (CDFA) and confirmed by R.L. Smiley (USDA-ARS) as *Acarus farris* (Oudemans) (83H11-21).

Although this is the first time that the name *Acarus farris* is being used in California, Markegard's collection is not the first California collection. In the CDFA collection, there is a glass slide of specimens of *Acarus farris* collected in the Moorpark District, Ventura County, CA, on March 21, 1962, on chicken feathers, by Clements and Holmer (62G26-1). It was misidentified as *Tyroglyphus farinae*, another name for *Acarus siro*. *Acarus siro* and *Acarus farris* resemble each other very closely.

"*A. farris* is a field species, but it has been recorded from barley, hay, cheese, poultry food, oats, etc. It is found in birds' nests and the deep litter of poultry houses and is often particularly abundant on farms during August and September when it is associated with *Tyrophagus longior*" (A.M. Hughes, 1976).

This mite has been reported from England, Scotland, Wales, Netherlands, Germany, Kenya, U.S.A., Poland, Czechoslovakia, and possibly France, Morocco, Bermuda (D.A. Griffiths, 1964 and A.M. Hughes, 1976)."

References

Griffiths, D.A. 1964. A revision of the genus *Acarus* (Acaridae, Acarina). Bull. Brit. Mus. (Nat. Hist.) (Zool.) 11:413-464.

Hughes, A.M. 1976. The Mites of Stored Foo and Houses. Tech. Bull. Minist. Agric. Lond. No. 9:1-400.

QUARANTINE AND EXCLUSION

Several interceptions of interest or importance were made during this period.

Papaya fruit fly, *Toxotrypana curvicauda* -(A)- larval specimens of this fruit fly were intercepted at Redlands, San Bernardino County by Arnold Wright on July 26. Determination was by Eric Fisher of CDFA. The following report by Allen Clark of CDFA Exclusion explains the situation:

> "A shipment of papayas from Mexico was sent to a Ralph's Market warehouse in Los Angeles. From there, papayas were shipped to Ralph's Markets in several counties. The infested papaya found in Redlands was bought in Chula Vista. Ralph's Markets in other counties may have infested fruit also.
>
> The host of the papaya fruit fly is primarily papaya, but mangos may be infested. A good description of this Tephritid is included in the Pest Exclusion Advisory dated July 5, 1983 (No. 158)."

Mexican fruit fly, *Anastrepha ludens* -(A)- dead larvae of this serious fruit fly pest were submitted from Willows, Glenn County by Simpson and Stenlune. The larvae were taken from a mango purchased in San Francisco.

Plum curculio, *Conotrachelus nenuphar* or near -(A)- specimens of what is probably this species were collected at the Yermo Inspection station. The significance of this find will be noted in the following report by Howard Ingham of Exclusion:

> "The Yermo Station has recently intercepted three separate lots of Utah grown cherries with grubs identified as *Conotrachelus* sp. These are probably plum curculio. *Conotrachelus* sp. larvae are very similar and almost impossible to separate to species. The host gives the probability that the larvae are plum curculio.
>
> One lot was from Brigham City, Box Elder County, and the other two lots were from Salt Lake City, Salt Lake County. Home-grown hosts of plum curculio from these two counties of Utah should be refused admittance under Section 6461 of the Food and Agriculture Code. Home-grown hosts from other counties in Utah should be closely examined with suspect fruit being cut open for inspection.
>
> Extension representatives of the University of Utah have reported seeing plum curculio in Box Elder County, but the State entomologist has not seen the specimens.
>
> To help Utah officials locate infestations, attempt to get specific address where the fruit was grown or obtained."

Asiatic fruit flies - various species. The recent influx of Vietnamese and other people from nearby Asiatic countries has put a strain on our exclusion system. These people are sending exotic fruit to each other through the mails, often from Hawaii and even from Asia. Since many of these people cannot speak English it has been most difficult to explain to them the seriousness of shipping exotic fruit into California -- that is until now. Through the efforts of Richard Little of Exclusion, we now have a pamphlet explaining just such problems in the Vietnamese, Khmer, Lao and Hmong languages. Following is the front cover of

the pamphlet plus the page containing the Vietnamese explanation. These pamphlets are available through the CDFA Exclusion Unit. Good work Rich!

EVEN ONE CAN HURT!

STATE OF CALIFORNIA GOVERNMENT REGULATIONS FOR MAILING PLANTS FROM HAWAII

IN VIETNAMESE, KHMER, LAO, HMONG AND ENGLISH

JULY 1983

TIỂU BANG CALIFORNIA **VIETNAMESE**

Các Điều Lệ của Chính Quyền về việc Gởi Các Loại Cây từ HAWAII sang

Các điều lệ của chính quyền CẤM CHỈ việc gởi các loại cây hoặc các phần của các loại cây sau đây từ Hawaii vào California:

Cấm chỉ: Tất cả các loại rau cải, quả có hạt và không có hạt ngoại trừ quả bơ, chuối, trái vải và đu đủ đã được kiểm nghiệm.

Các loại côn trùng sống, ốc sên hoặc các động vật khác.

Các loại cây đang trồng trong đất.

Các loại hoa (đã cắt rời) sau đây:
Mauna loas, sơn chi (gardenias), nho ngọc bích (jade vines) và hoa hồng.

Các loại cây sau đây hoặc bất cứ bộ phận nào của các loại cây này: xương rồng, mía, hồng, chanh và bông vải.

Các loại cây khác hoặc các bộ phận của cây phải được Bộ Canh Nông Hawaii kiểm nhận là KHÔNG NHIỄM MẦN BỆNH (PEST FREE) trước khi được gởi đi. Các kiện hàng phải được ghi "PLANT MATERIAL".

KHI QUÝ VỊ NHẬN BẤT CỨ KIỆN HÀNG NÀO CÓ CÂY TRÁI TỪ HAWAII, QUÝ VỊ PHẢI ĐỂ CHO KIỂM SOÁT VIÊN CANH NÔNG CỦA QUẬN HẠT KIỂM NGHIỆM.

SỰ HƯỞNG ỨNG CỦA QUÝ VỊ RẤT CẦN THIẾT ĐỂ NGĂN NGỪA sự xâm nhập của các loại côn trùng vào California, có thể gây nguy hại và hủy hoại các loại nông phẩm.

Để có thêm chi tiết, xin liên lạc:

QUARANTINE AND EXCLUSION
Pest Interceptions-Insects

Gypsy moth, *Lymantria dispar* -(A)- Forty-nine interceptions were made between May 27 and August 26 on outdoor furniture and household goods shipped from Connecticut, New York, New Jersey, New Hampshire, Rhode Island, Massachusetts, Maryland, Maine, Pennsylvania, and Virginia (det. by T.D. Eichlin, R.E. Somerby).

Eastern tent caterpillar, *Malacosoma americana* -(Q)- N. Kellam collected dead larvae and pupae from a doghouse shipped from New Hampshire to Lawndale, Los Angeles County on July 8 (det. by R.E. Somerby).

A tent caterpillar, *Malacosoma* sp. -(Q)- Collections were made June 20 (Santa Clara County; C. Denny), July 6 (Los Angeles County; D. McGrath), and July 14 (Orange County; R. Spencer) from outdoor furniture and household goods shipped from Massachusetts (det. by T.D. Eichlin, R.E. Somerby).

Asiatic garden beetle, *Maladera castanea* -(Q)- On August 16, K. Rousch and E. Storm collected specimens at Brownsville, Yuba County from a redwood table shipped from New Jersey. On July 6, D. McGrath collected a specimen from outdoor furniture arriving from Massachusetts in Los Angeles (det. by F.G. Andrews).

1983 JAPANESE BEETLE FINDS
(June 27-August 16)

Aircraft Interceptions

Date	Airport*	County	Condition	Collector
6/27	SFO	SM	alive	J. Killeen
6/30	LAX	LA	dead	McClure/Souw
7/05	LAX	LA	alive	A. McClure
7/05	SFO	SM	dead	D. Devine
7/08	SFO	SM	alive	S. Swales
7/08	LAX	LA	alive	E. Davis-Robbins
7/08	LAX	LA	dead	A. McClure
7/08	LAX	LA	dead	D. Papilli
7/08	LAX	LA	dead	A. McClure
7/07	SAN	SD	alive	J. Meyer
7/11	LAX	LA	dead	E. Davis-Robbins
7/11	LAX	LA	alive	A. McClure (2 collections)
7/11	LAX	LA	dead	Davis-Robbins/Souw (3 coll.)
7/12	LAX	LA	alive	Souw/Davis-Robbins
7/12	LAX	LA	dead	D. Papilli
7/13	SFO	SM	dead	D. Gold

Date	Airport*	County	Condition	Collector
7/14	SFO	SM	dead	D. Gold
7/15	SFO	SM	dead	D. Gold
7/19	SFO	SM	dead	D. Gold
7/13	LAX	LA	alive/dead	Davis-Robbins/Souw
7/14	LAX	LA	alive	L. Krogh
7/14	LAX	LA	alive	T. Peddicord
7/14	LAX	LA	alive/dead	Davis-Robbins/souw (2 coll.)
7/14	LAX	LA	dead	K. Barbour
7/15	LAX	LA	alive	Davis-Robbins/Souw (3 coll.)
7/16	LAX	LA	alive	A. McClure
7/17	LAX	LA	alive	A. McClure (2 coll.)
7/13	SAN	SD	dead	J. Meyer (2 coll.)
7/19	SFO	SM	dead	S. Swales
7/18	LAX	LA	dead	M. Souw
7/14	SAN	SD	dead	J. Meyer
7/19	LAX	LA	dead	McClure/Souw (3 coll.)
7/19	LAX	LA	dead	Davis-Robbins/Peddicord (2 coll.)
7/21	LAX	LA	dead	A. McClure
7/ ?	LAX	LA	dead	?
7/ ?	SFO	SM	dead	J. Killeen
7/13	OAK	ALA	dead	E. Whitaker/P. Evans
7/22	LAX	LA	dead	T. Peddicord
7/22	LAX	LA	dead	M. Souw
7/23	LAX	LA	dead	E. Davis-Robbins (4 coll.)
7/24	LAX	LA	dead	A. McClure
7/25	LAX	LA	dead	Souw/Peddicord
7/26	LAX	LA	dead	McClure/Davis-Robbins
7/26	LAX	LA	alive	Peddicord/Souw
7/26	SFO	SM	alive	Swales/Killeen
7/26	OAK	ALA	dead	Newey/Whitaker
7/27	SFO	SM	dead	D. Gold
8/09	LAX	LA	dead	Davis-Robbins/Peddicord
8/10	LAX	LA	dead	Souw
8/11	LAX	LA	dead	McClure/Souw
8/08	SAN	SD	dead	J. Meyer
8/11	SFO	SM	dead	S. Swales
8/11	SFO	SM	alive	D. Gold
8/16	LAX	LA	dead	Peddicord/Souw
8/16	LAX	LA	--	A. McClore
8/16	SFO	SM	dead	D. Gold

* SFO = San Francisco International Airport
  LAX = Los Angeles International Airport
  SAN = San Diego International Airport - Lindbergh Field

The following miscellaneous insects were also intercepted in aircraft during Japanese beetle surveys:

Rating	Common Name	Scientific Name	Date	Airport*	Collector
Q	Oriental beetle	*Anomala orientalis*	7/07	LAX	M. Souw
			7/08	LAX	M. Souw
			7/12	LAX	Davis-Robbins/Souw
			7/13	LAX	J. Lee
			7/13	SFO	D. Gold
			7/14	SFO	J. Killeen
			7/18	LAX	Davis-Robbins/Krogh
			7/18	SFO	J. Killeen
			7/25	SFO	D. Gold
			8/04	SFO	D. Devine
Q	Scarab beetle	*Anomala* sp.	7/07	LAX	M. Souw
			7/27	LAX	A. McClure
Q	Asiatic garden beetle	*Maladera castanea*	6/17	SAN	J. Meyer
			7/01	LAX	A. McClure
			7/14	SFO	D. Devine (2 collections)
			7/15	SFO	S. Swales
			8/10	LAX	M. Souw
Q	Scarab beetle	*Dycinetus morator*	8/ ?	SFO	S. Swales
Q	Scarab beetle	*Phyllophaga* sp.	6/14	SFO	D. Gold
			6/21	SFO	J. Killeen
			6/29	SAN	J. Meyer
			6/30	SFO	J. Killeen
			7/05	SFO	J. Killeen
			7/06	SAN	J. Monroe
			7/12	SAN	J. Meyer
			7/13	SAN	J. Monroe
			7/14	SFO	D. Devine
			7/18	SFO	D. Devine
			7/18	SFO	J. Killeen
			7/20	SFO	S. Swales
			7/21	SFO	S. Swales
			7/29	SAN	J. Meyer
			8/04	LAX	A. McClure
			8/07	SAN	Ginsky
			8/08	SAN	J. Monroe
			8/11	SFO	J. Killeen

Rating	Common Name	Scientific Name	Date	Airport*	Collector
Q	Katydid	Tettigoniidae	7/06	SAN	J. Monroe
			7/14	SAN	J. Meyer
A	Gypsy moth	*Lymantria dispar*	7/06	SAN	J. Meyer
Q	Tiger moth	*Halysidota harisii*	7/06	SFO	S. Swales
			7/11	SFO	J. Killeen
Q	Noctuid moth	*Euxoa* sp.	6/17	SAN	J. Meyer
			6/29	SFO	J. Killeen
			6/30	SAN	J. Meyer
			-	SFO	S. Swales
			7/01	SFO	S. Swales
			7/07	SAN	J. Monroe
			7/08	SAN	J. Meyer

* SFO = San Francisco International Airport
LAX = Los Angeles International Airport
SAN = San Diego International Airport - Lindbergh Field

The following insects and molluscs were intercepted in quarantine:

Rating	Species	Common Name	Origin	County	Host	Collector
Q	*Malacosoma americanum*	Eastern tent caterpillar	CT	STCL	lawn chair	J. Shimoda
			NJ	CC	picnic table	V. Guise
			NJ	SLO	outdoor BBQ	G. Stultz
Q	*Lymire edwardsii*	Tiger moth	FL	CC	*Ficus*	Kean/Hesman
			FL	LA	*Ficus*	Watanabe
Q	*Paratrechina fulva*	An ant	FL	LA	*Chrysalidocarpus*	S. Rawald
			FL	LA	*Dracaena*	Hurley
			HI	SD	*Tupidanthus*	R. Walsh
Q	*Paratrechina longicornis*	Crazy ant	HI	SD	Dracaena	D. Nielsen* *(2 collections)
Q	*Ochetomyrmex auropunctata*	Little fire ant	FL	LA	*Raphis*	R. Smice
A	*Pulvinaria psidii*	Green shield scale	HI	LA	red ginger	P. Eisenhart
			FL	LA	lychee	P. Eisenhart
			FL	LA	*Ficus*	Hurley
			FL	LA	*Ficus*	Sulentich
			HI	LA	ginger	P. Eisenhart
			FL	STB	*Ficus*	M. Pitchard
			HI	V	ginger	D. Mitchell* *(2 collections)
			HI	V	anthurium	D. Mitchell
			HI	V	ginger	D. Van Epp
			HI	SAC	*Ficus*	Otsuji
			HI	SD	*Ficus*	D. Nielsen
			HI	SON	*Ficus*	H. Kobayashi
			HI	SJ	cut flowers	T. Watkins
			HI	SJ	*Ficus*	S. Hudson* *(2 collections)
A	*Kilifia acuminata*	Acuminate scale	FL	STCZ	Philodendron	P. Larson
Q	*Ceroplastes floridensis*	Florida wax scale	FL	LA	*Ficus*	Hurley
			FL	SJ	*Ficus*	S. Hudson
Q	*Anoplolepis longipes*	Longlegged ant	HI	V	ginger	D. Mitchell
			HI	V	ginger	D. Van Epp
Q	*Paratrechina sharpii*	Ant	HI	V	ginger	D. Van Epp

Rating	Species	Common Name	Origin	County	Host	Collector
Q	*Rhizoecus americanus*	Soil mealybug	?	LA	*Areca*	Sulentich/Rawald
			FL	LA	*Areca & Aralia* *(2 collections)	Hurley*
			HI	LA	*Areca*	K. Cornett
			GA	LA	*Chamaedorea*	M. Adams
			FL	LA	*Areca*	S. Rawald
Q	*Geococcus coffeae*	Soil mealybug	HI	SD	*Chamaedorea*	D. Nielsen
			HI	SD	*Neanthe*	D. Nielsen
			HI	LA	*Chamaedorea*	Sulentich
A	*Pseudaulacaspis cockerelli*	Magnolia white scale	FL	SJ	*Chrysalido-carpus*	S. Hudson
			HI	O	*Piper*	T. McRoberts
			HI	STCL	coconut	S. Maggi
			HI	V	ginger, ti leaves, bird of paradise	D. Van Epp
			FL	STB	*Chrysalidocarpus*	M. Pitchard
			FL	SM	*Areca* *(2 collections)	G. Raabe*
Q	*Aleurodicus dispersus*	Spiraling whitefly	HI	LA	ti leaves, monstera leaves *(2 collections)	P. Eosenhart*
			HI	V	ti leaves, ginger, bird of paradise *(2 collections)	D. Van Epp*
			HI	O	*Piper*	T. McRoberts
A	*Ischnaspis longirostris*	Black thread scale	HI	LA	ti leaves, monstera leaves	P. Eisenhart
Q	*Pinnaspis buxi*	Boxwood scale	HI	LA	ti leaves, monstera leaves	P. Eisenhart
B	*Ferrisia virgata*	Striped mealybug	FL	SD	*Areca*	D. Nielsen
Q	*Aspidiotus excisus*	Armored scale	Costa Rica	STB	*Aglaonema*	T. Wurster
Q	*Lindingaspis floridana*	Armored scale	FL	LA	*Ficus*	Sulentich
A	*Pinnaspis strachani*	Lesser snow scale	FL	SJ	*Chrysalido-carpus*	S. Hudson
Q	*Coccus viridis*	Green scale	HI	LA	red ginger	P. Eisenhart
			HI	STB	ginger	J. Hillis

Rating	Species	Common Name	Origin	County	Host	Collector
Q	*Siphanta acuta*	Torpedo bug	HI	V	anthurium, ti leaves	D. Van Epp
Q	*Sparattina nigrorufa*	Earwig	HI	B	red ginger	Pooler
Q	*Pterophylla camellifolia*	Katydid	AL	LA	cut foliage	P. Eisenhart
A	*Epilachna varivestis*	Mexican bean beetle	MI	SOL	lawn furniture	Shephard/Carnahan
B	*Bradybaena similaris*	Snail	Singapore	ALA	cabbage	S. Brown
			FL	STB	*Sanseviera*	T. Wurster
			FL	O	-	J. Ellis
Q	*Veronicella floridana*	Slug	FL	STB	*Ficus*	M. Pitchard

The following Q-rated pests intercepted in quarantine were not immediately identifiable to species because of life stage, condition, or lack of comprehensive taxonomic studies of the groups:

Q	*Aleurotulus* sp.	Whitefly	HI	V	anthurium, ti leaves	D. Van Epp
			HI	V	anthurium	D. Mitchell
			IL	SD	anthurium	Walsh
Q	*Pseudococcus* sp. nr. *lycopodii*	Mealybug	HI	STB	*Lycopodium*	D. Van Epp
Q	*Ceroplastes* sp.	Soft scale	HI	LA	ginger stalk	P. Eisenhart
Q	*Cryptophlebia illepida* or *C. ombrodelta*	Tortricid moth	HI	CC	lichi	K. Anderson
Q	*Nysius* sp.	Lygaeid bug	Japan	H	lettuce	Holland/Spadoni
Q	*Anomala* sp. (2 species)	Scarab beetle	Taiwan	ED	shoes	S. Burton
Q	*Orgyia* sp. prob. *leucostigma*	Tussock moth	IL	SD	outdoor chair	B. Bowers
Q	*Malacosoma* sp.	Tent caterpillar	PN	SD	outdoor furniture	B. Bowers
			PN	CC	barbecue	C. Denny
			Canada	CC	-	C. Denny
Q	Pyralidae	Pyralid moth	IA	STCZ	chrysanthemum	M. Morton
Q	Olethreutinae	Olethreutid moth	TX	SD	wisteria	P. Stotz
Q	Arctiidae	Tiger moth	MI	CC	lawn chair	J. Shmiada
			FL	CC	indoor decoration	W. Kean
Q	Cicadellidae	Leafhopper	TX	SD	wisteria	P. Stotz
Q	Homoptera egg mass		HI	STB	*Protea*	D. Mitchell
Q	Lepidoptera		AL	LA	cut foliage	P. Eisenhart
Q	Bruchidae	Seed beetle	HI	SBO	bean pods	Shaffer/Reeves
Q	Cerambycidae	Wood-boring beetle	HI	LA	*Schefflera*	K. Cornett

BORDER STATION INTERCEPTIONS

(Since July 1983)

WESTERN CHERRY FRUIT FLY	*Rhagoletis indifferens*	-A-	275
GYPSY MOTH	*Lymantria dispar*	-A-	91
APPLE MAGGOT	*Rhagoletis pomonella*	-A-	73
TENT CATERPILLAR	*Malacosoma* sp.	-Q-	51
WOOLLY BEAR CATERPILLAR	Arctiidae	-Q-	12
BAGWORM	Psychidae	-Q-	1
WEEVIL	*Conotrachelus* sp.	-Q-	42
CARIBBEAN FRUIT FLY	*Anastrepha suspensa*	-A-	1
PAPAYA FRUIT FLY	*Toxotrypana curvicauda*	-A-	1
CALIFORNIA RED SCALE	*Aonidiella aurantii*	-B-	7
PURPLE SCALE	*Lepidosaphes beckii*	-B-	6
WEEVIL	Curculionidae	-A-	10
OWLET MOTH	Noctuidae	-Q-	4
SCARAB BEETLE	*Phyllophaga* sp.	-Q-	3
ORIENTAL SCALE	*Aonidiella orientalis*	-Q-	6
SOFT SCALE	Coccidae	-Q-	1
ANT	*Paratrechina fulva*	-Q-	4
CARPENTER ANT	*Camponotus (Myrmothrix) abdominalis floridanus*	-Q-	1
WEST INDIAN FRUIT FLY?	*Anastrepha obliqua*	-A-	1
PYRALID MOTH	Pyralidae	-Q-	2
BEAN LEAF BEETLE	*Cerotoma trifurcata*	-Q-	1
ARMORED SCALE	Diaspididae	-Q-	2
COLORADO POTATO BEETLE	*Leptinotarsa decemlineata*	-A-	10
COCKROACH	Blattidae	-Q-	1
GLOVER SCALE	*Lepidosaphes gloverii*	-B-	2
CHAFF SCALE	*Parlatoria pergandii*	-B-	3
LEAFROLLER MOTH	Tortricidae	-Q-	2
WEEVIL	*Pachnaeus litus*	-Q-	1
BLUEBERRY MAGGOT	*Rhagoletis mendax*	-A-	2
MAGNOLIA WHITE SCALE	*Pseudaulacaspis cockerelli*	-A-	2
EASTERN CHERRY FRUIT FLY	*Rhagoletis cingulata*	-A-	1
MEALYBUG	Pseudococcidae	-Q-	2
ARMORED SCALE	prob. *Pseudaulacaspis*	-Q-	2
WHITE-MARKED TUSSOCK MOTH	*Orgyia leucostigma*	-Q-	2
WHITE PEACH SCALE	*Pseudaulacaspis pentagona*	-Q-	1
LESSER SNOW SCALE	*Pinnaspis strachani*	-A-	1
TORTRICID MOTH	Tortricidae	-Q-	1
SWEET POTATO WEEVIL	*Cylas formicarus elegantula*	-A-	1
PECAN WEEVIL	*Curculio caryae*	-A-	1
SNAIL	*Lamellaxis gracilis*	-B-	1
EUROPEAN CORN BORER	*Ostrinia nubilalis*	-A-	10
SQUASH VINE BORER	*Melitta cucurbitae*	-Q-	1
TIGER MOTH	Arctiidae	-Q-	2
BAGWORM	*Thyridopteryx ephemeraeformis*	-A-	1
TERMITE	*Reticulitermes* sp. prob. *flavipes*	-Q-	1
THRIPS	*Frankliniella* sp.	-Q-	1
SNAIL	possibly *Lamellaxis* sp.	-B-	1
CRAZY ANT	*Paratrechina longicornis*	-B-	1

HICKORY SHUCKWORM	*Laspeyresia caryana*	-A-	2
MEXICAN BEAN BEETLE	*Epilachna varivestris*	-A-	1
LEAF BEETLE	*Diabrotica* sp.	-A-	1
PUSS CATERPILLAR	*Megalopyge opercularis*	-Q-	1
SNAIL	*Bradybaena similaris*	-B-	3
SNAIL	*Subulina octona*	-B-	1
PEPPER MAGGOT	*Zonosemata electa*	-Q-	1
SOUTHWESTERN CORN BORER	*Diatraea grandiosella*	-A-	1
CUTWORM	*Spodoptera* sp.	-Q-	1

SAN JOAQUIN COUNTY BLACK LIGHT TRAP REPORT

DATE	6-28-83	7-4-83	7-4-83	7-3- to 7-5-83	7-10-83	7-10 7-11-83
LOCATION	Roberts Island	Manteca	Bellota	Roberts Island	Bellota	Roberts Island
TEMPERATURE		63° 96°			66° 105°	
ALFALFA LOOPER Autographa californica						
ARMYWORM Pseudaletia unipuncta	225	16	5	74	4	7
BEET ARMYWORM Spodoptera exigua			1		1	7
BLACK CUTWORM Agrotis ipsilon	110	24	5	22	12	
CABBAGE LOOPER Trichoplusia ni						
CLOVER CUTWORM Scotogramma trifolii	5	3	2	1	2	
CODLING MOTH Laspeyresia pomonella	1					
CORN EARWORM, (ETC.) Heliothis zea				1		1
FAISE CELERY LEAFTIER Udea profundalis	10	11	3	6		14
GRANULATE CUTWORM Feltia subterranea		2				
GRAPE LEAFFOLDER Desmia funeralis		4				
NAVEL ORANGEWORM Amyelois transitella						
OMNIVOROUS LEAFROLLER Platynota stultana						
PEACH TWIG BORER Anarsia lineatella		141				
ROUGH SKINNED CUTWORM Proxenus mindara	22			544	1	62
SALTMARSH CATERPILLAR Estigmene acrea	88	2	1	135	2	114
SPOTTED CUTWORM Amathes c-nigrum	14	4	2	6	2	8
SUGARBEET WEBWORM Loxostege sticticalis						
TOBACCO BUDWORM Heliothis virescens						
VARIEGATED CUTWORM Peridroma saucia	8	7	2	10	2	1
W.YELLOWSTRIPED ARMYWORM Spodoptera praefica	2	7	1	3	6	2

SAN JOAQUIN COUNTY BLACK LIGHT TRAP REPORT

DATE	7-17-83	7-17-83	7-17-83	7-25-83	7-24-83	7-26-83
LOCATION	Manteca	Roberts Island	Bellota	Manteca	Roberts Island	Bellota
TEMPERATURE	56° 82°			60° 90°		
ALFALFA LOOPER *Autographa californica*						
ARMYWORM *Pseudaletia unipuncta*	2	11	5		1	
BEET ARMYWORM *Spodoptera exigua*		3	1		3	
BLACK CUTWORM *Agrotis ipsilon*	6	10	4		6	
CABBAGE LOOPER *Trichoplusia ni*						
CLOVER CUTWORM *Scotogramma trifolii*		2		1	3	
CODLING MOTH *Laspeyresia pomonella*		3			4	
CORN EARWORM, (ETC.) *Heliothis zea*		3				
FALSE CELERY LEAFTIER *Udea profundalis*		7			6	
GRANULATE CUTWORM *Feltia subterranea*						
GRAPE LEAFFOLDER *Desmia funeralis*						
NAVEL ORANGEWORM *Amyelois transitella*				8		
OMNIVOROUS LEAFROLLER *Platynota stultana*						
PEACH TWIG BORER *Anarsia lineatella*	13			17		
ROUGH SKINNED CUTWORM *Proxenus mindara*		24			8	
SALTMARSH CATERPILLAR *Estigmene acrea*		17			6	
SPOTTED CUTWORM *Amathes c-nigrum*	1	5	4	1	2	1
SUGARBEET WEBWORM *Loxostege sticticalis*						
TOBACCO BUDWORM *Heliothis virescens*						
VARIEGATED CUTWORM *Peridroma saucia*		1	1		1	
W.YELLOWSTRIPED ARMYWORM *Spodoptera praefica*		5	6			

SAN JOAQUIN COUNTY BLACK LIGHT TRAP REPORT

DATE	8-1-83	8-1-83	8-8-83	8-8-83	8-9-83	
LOCATION	Bellota	Roberts Island	Roberts Island	Bellota	Manteca	
TEMPERATURE						
ALFALFA LOOPER *Autographa californica*						
ARMYWORM *Pseudaletia unipuncta*		2				
BEET ARMYWORM *Spodoptera exigua*	3	38	113	13	33	
BLACK CUTWORM *Agrotis ipsilon*	3		14	10	8	
CABBAGE LOOPER *Trichoplusia ni*			1	2	4	
CLOVER CUTWORM *Scotogramma trifolii*		2	8		17	
CODLING MOTH *Laspeyresia pomonella*		10	9		2	
CORN EARWORM, (ETC.) *Heliothis zea*			1			
FALSE CELERY LEAFTIER *Udea profundalis*		1	12		2	
GRANULATE CUTWORM *Feltia subterranea*				1	8	
GRAPE LEAFFOLDER *Desmia funeralis*						
NAVEL ORANGEWORM *Amyelois transitella*					50	
OMNIVOROUS LEAFROLLER *Platynota stultana*		1				
PEACH TWIG BORER *Anarsia lineatella*					45	
ROUGH SKINNED CUTWORM *Proxenus mindara*		85	131	6	1	
SALTMARSH CATERPILLAR *Estigmene acrea*						
SPOTTED CUTWORM *Amathes c-nigrum*	2		2	2		
SUGARBEET WEBWORM *Loxostege sticticalis*			1			
TOBACCO BUDWORM *Heliothis virescens*						
VARIEGATED CUTWORM *Peridroma saucia*	1	1		1		
W.YELLOWSTRIPED ARMYWORM *Spodoptera praefica*	2	1	1	3	1	

SAN JOAQUIN COUNTY BLACK LIGHT TRAP REPORT

DATE	8-14-83	8-14-83	8-18-83	8-21-83	8-22-83	8-24-83
LOCATION	Bellota	Roberts Island	Manteca	Bellota	Roberts Island	Manteca
TEMPERATURE			62 - 84			
ALFALFA LOOPER *Autographa californica*						
ARMYWORM *Pseudaletia unipuncta*	2	20	3	6	11	5
BEET ARMYWORM *Spodoptera exigua*	28	132	6	8	10	9
BLACK CUTWORM *Agrotis ipsilon*	1	8	2	2	2	6
CABBAGE LOOPER *Trichoplusia ni*					1	
CLOVER CUTWORM *Scotogramma trifolii*						
CODLING MOTH *Laspeyresia pomonella*						
CORN EARWORM, (ETC.) *Heliothis zea*					1	
FALSE CELERY LEAFTIER *Udea profundalis*	1	8			7	
GRANULATE CUTWORM *Feltia subterranea*						1
GRAPE LEAFFOLDER *Desmia funeralis*						
NAVEL ORANGEWORM *Amyelois transitella*			12			17
OMNIVOROUS LEAFROLLER *Platynota stultana*						
PEACH TWIG BORER *Anarsia lineatella*			12			17
ROUGH SKINNED CUTWORM *Proxenus mindara*	4	244			25	2
SALTMARSH CATERPILLAR *Estigmene acrea*						
SPOTTED CUTWORM *Amathes c-nigrum*						
SUGARBEET WEBWORM *Loxostege sticticalis*						
TOBACCO BUDWORM *Heliothis virescens*						
VARIEGATED CUTWORM *Peridroma saucia*						
W.YELLOWSTRIPED ARMYWORM *Spodoptera praefica*	3		1			3

SAN JOAQUIN COUNTY BLACK LIGHT TRAP REPORT

DATE	8-28-83	8-29-83	8-30-83	9/5/83	9/6/83	
LOCATION	Roberts Island	Bellota	Manteca	Manteca	Bellota	
TEMPERATURE			64°- 90°			
ALFALFA LOOPER *Autographa californica*	1					
ARMYWORM *Pseudaletia unipuncta*	43	2	6	4	8	
BEET ARMYWORM *Spodoptera exigua*		22	79	209	41	
BLACK CUTWORM *Agrotis ipsilon*	9		3	1	2	
CABBAGE LOOPER *Trichoplusia ni*				2		
CLOVER CUTWORM *Scotogramma trifolii*	4			4	1	
CODLING MOTH *Laspeyresia pomonella*						
CORN EARWORM, (ETC.) *Heliothis zea*	5					
FALSE CELERY LEAFTIER *Udea profundalis*	24	1				
GRANULATE CUTWORM *Feltia subterranea*		1		2		
GRAPE LEAFFOLDER *Desmia funeralis*		1	5	10		
NAVEL ORANGEWORM *Amyelois transitella*			54	309		
OMNIVOROUS LEAFROLLER *Platynota stultana*						
PEACH TWIG BORER *Anarsia lineatella*			36	99		
ROUGH SKINNED CUTWORM *Proxenus mindara*	192				2	
SALTMARSH CATERPILLAR *Estigmene acrea*	10			1		
SPOTTED CUTWORM *Amathes c-nigrum*				1		
SUGARBEET WEBWORM *Loxostege sticticalis*						
TOBACCO BUDWORM *Heliothis virescens*						
VARIEGATED CUTWORM *Peridroma saucia*	1					
W.YELLOWSTRIPED ARMYWORM *Spodoptera praefica*	4	2			5	