



CALIFORNIA PLANT PEST and DISEASE REPORT

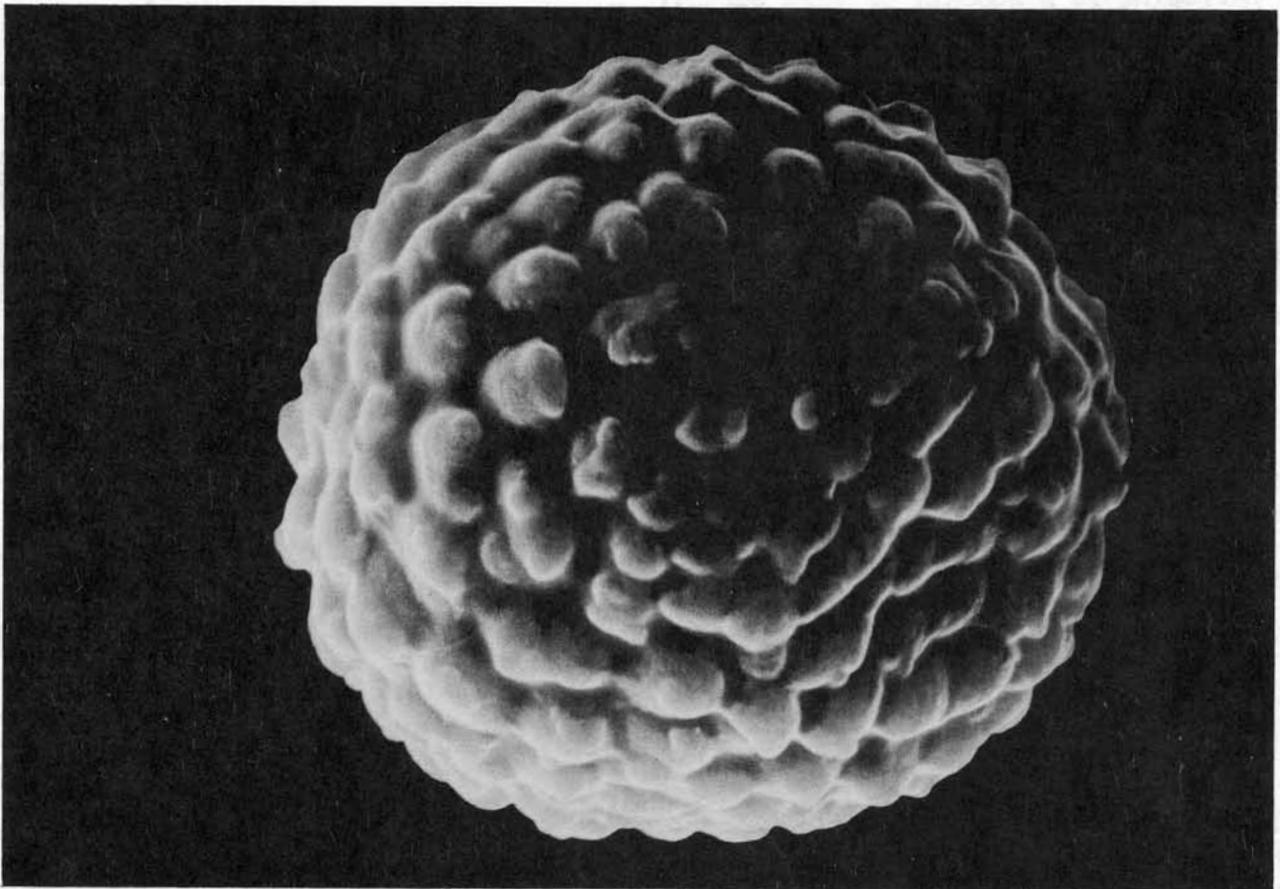
Volume 3

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



A spore of kernel smut of rice viewed under the scanning electron microscope at a magnification of 6400K.

KERNEL SMUT OF RICE

T. Matsumoto, D. Showers, D. Luscher, D. Higuera and C. Krass

Kernel smut of rice has recently been found in California. The economic impact on the California rice industry has not been determined. However, under certain favorable environmental conditions, susceptible rice varieties in India have incurred yield losses of up to 36%. In 1968, the disease cost Texas rice producers an estimated fifteen million dollars. Kernel smut can cause a reduction in milling quality as well as yield losses.

This disease is caused by a smut fungus named Tilletia barclayana or Neovossia horrida. The symptoms include smutted grains (Fig. 1a) and spores adhering to the surface of the hulls (Fig. 1b). The host range includes Oryza sativa (rice), Digitaria spp., Panicum spp. and Pennisetum spp. (common grassy weeds). Spores are globose to subglobose in shape and have a tinted sheath surrounding the spores (Fig 1c).

A detection survey has been completed in California using a centrifuge-wash seed assay. Smut spores were found in samples submitted from 7 of 11 counties. The following is a summary of this survey:

<u>County</u>	<u>Number of Samples</u>	<u>Kernel Smut Kisease Locations*</u>
Butte	26	3
Colusa	12	0
Fresno	6	1
Glenn	15	1
Merced	9	3
San Joaquin	5	1
Stanislaus	3	0
Sutter	11	1
Tulare	1	0
Yuba	7	3
Yolo	<u>10</u>	<u>0</u>
	105	13

*Ten additional positives were found in samples which were submitted from Experiment Stations, Farm Advisors and University personnel or were resamples from infested locations.

T. Matsumoto and C. Krass are Plant Pathologists, D. Showers is Agricultural Biological Technician, and D. Luscher and D. Higuera are Agricultural Inspectors with the Analysis and Identification Unit, CDFR, in Sacramento.

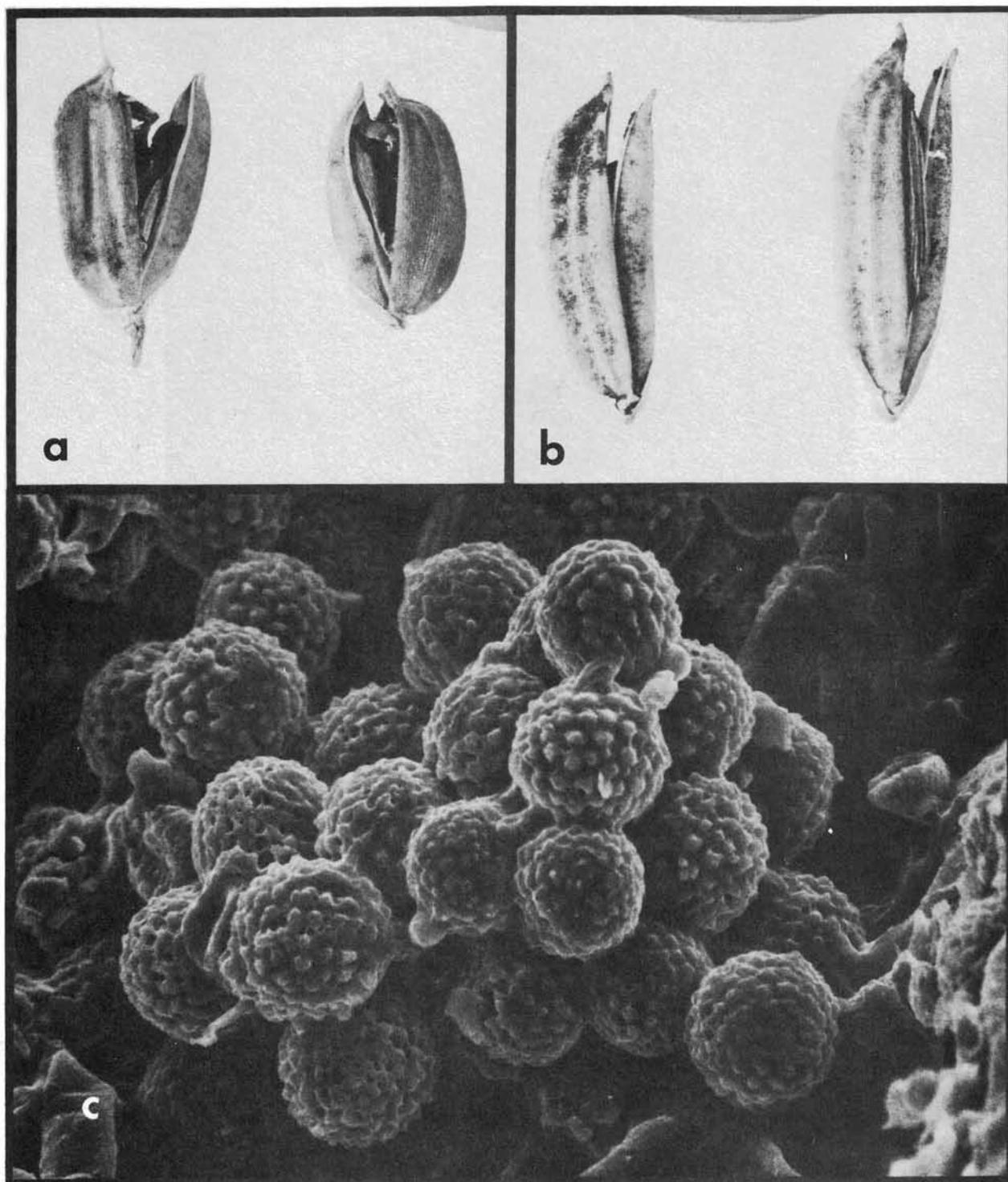


Fig. 1. Kernel smut disease of rice. a) Smutted kernels (S-201 variety) showing dense black masses of spores. b) Spores adhering to the surface of rice hulls (L-201 variety). c) Scanning electron micrograph showing a number of spores in a smutted kernel.

Phyllis Hedin, Dennis Mayhew and Darryl Thomas

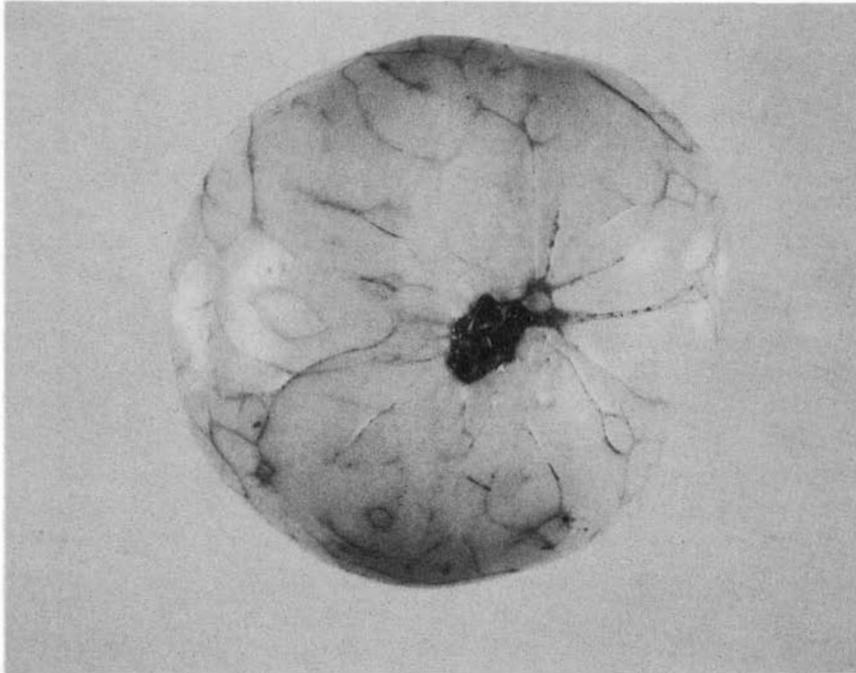


Fig. 1. Symptoms of corky ringspot strain of *Tomato Mosaic Virus* on tomato fruit.

Within the last two years, the symptoms of a new virus disease in tomatoes have been reported from five California counties. Fruit symptoms include raised, corky lines and rings, uneven ripening, and decreased size (Fig. 1). Greenhouse inoculation, electron microscope and double diffusion tests show this virus to be a strain of *Tomato Mosaic Virus* (ToMV, related to *Tobacco Mosaic Virus*) and it has been named *Corky Ringspot*.

Tomatoes are grown year round in California (California produces 28% of the nation's fresh market tomatoes). Virus disease problems are extensive and can result in poor fruit quality and lower yield. ToMV and its strains are the most common virus infections.

Tomato varieties known to be susceptible to the new strain of ToMV include Blazer, Castleby, Castlemart, Firechief and Valerie. The counties in which the unusual fruit symptoms have been reported are Santa Clara, Monterey, San Joaquin, Fresno and San Diego.

Reference

Mayhew, D., Hedin, P., and Thomas, D. *Corky Ringspot, a new strain of tomato mosaic virus in California*. *Plant. Dis. Repr.*, 1984. (Accepted for publication.)

Phyllis Hedin is an Agricultural Inspector and Dennis Mayhew is a Plant Pathologist with CDFA Analysis and Identification Unit, Sacramento. Darryl Thomas is a Plant Pathologist with the Goldsmith Seed Company.

SPECIAL BULLETIN

California's Newest Fruit Fly

The first specimen of Dacus zonatus (Saunders), Peach fruit fly, found in the Western Hemisphere was discovered in a Jackson trap near Los Angeles International Airport on March 16, 1984. The fly was identified by systematic entomologist Karen Corwin of CDFA.

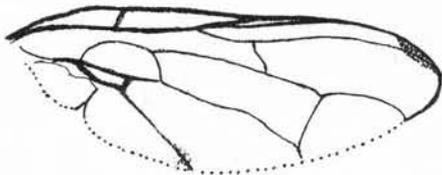
Peach fruit fly is found in Burma, Ceylon, India, Laos, Mauritius, Moluccas, Nepal, Pakistan, Sri Lanka, Thailand, and Viet Nam.

It is ranked with the melon fly and oriental fruit fly as one of the three most damaging fruit flies in India. Hosts include apple, citrus, cucumber, Eugenia spp., fig, guava, loquat, mango, orange, peach, pear, and tomato.

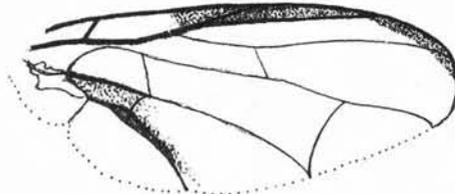
Intensive trapping was started immediately in the areas around the find.

The above report is by Dr. Robert Dowell of the Exotic Pest Analysis Staff. We are including this timely information in this issue of C.P.P.D.R. to keep our readers as up to date as possible. As we go to press, only the single male specimen has been found. No regulatory action is anticipated unless additional flies appear.

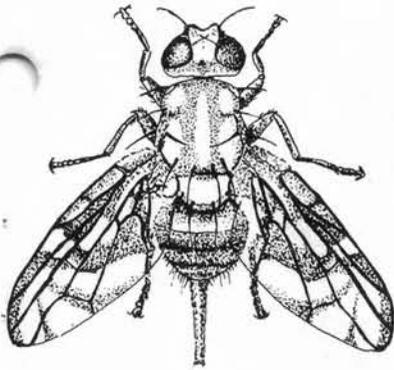
The new fruit fly is very similar to Oriental fruit fly (Dacus dorsalis) in appearance, although lighter brown in color. Other distinguishing features are not available at this time and will be supplied in the next issue of C.P.P.D.R. However, a comparison of the wing patterns of zonatus and dorsalis is supplied below.



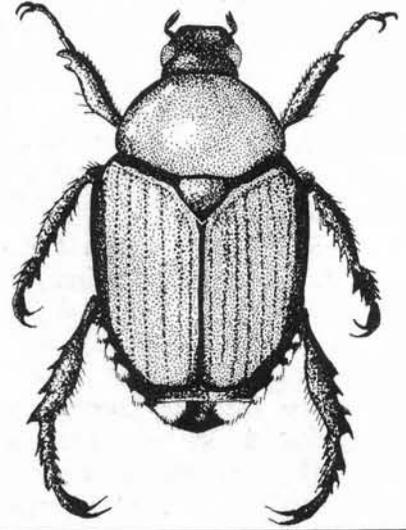
D. zonatus wing



D. dorsalis wing



Entomology Highlights



Caribbean fruit fly, Anastrepha suspensa -(A)- Since the last issue of CPPDR, the identity of this species in California has been confirmed and three more flies have been found. Two flies were found on the original site and one was found about 1 block away. The following reports by John Pozzi detail the finds:

"A female Caribbean fruit fly (CFF) was trapped on 1/31/84, at the same Wilson Avenue property in San Diego, San Diego County (where one was trapped earlier on 12/13/83). County Agricultural Technician Aide Belinda Moss made the discovery while servicing a McPhail trap that had been placed in an orange tree on that property.

State Systematic Entomologist Karen Corwin determined that it was an unmated sexually mature female with eight fully developed eggs.

A male Caribbean fruit fly (CFF) was trapped on 2/06/84 in San Diego, San Diego County. The find was made at the same Wilson Avenue property where two female CFF were trapped on 12/13/83 and 1/31/84. County Agricultural Technician Aide Belinda Moss made the discovery while servicing a McPhail trap placed in a tangerine tree.

A female Caribbean fruit fly (CFF) was trapped on 2/13/84 at a new residential property along 35th Street in San Diego, San Diego County. The find was made approximately one block from where three CFF were trapped between 12/13/83 and 2/06/84 at a Wilson Avenue residence. State Agricultural Inspector Tim Breuninger made the latest discovery while servicing a McPhail trap that had been placed in a lemon tree.

State Systematic Entomologist Karen Corwin determined that it was an unmated and sexually immature female."

The eradication program for this fly is summarized by the following report by Allen Clark.

"An Eradication Regulation covering San Diego County was adopted on February 6, the day the third fly was trapped. Treatments began the same day in an area $\frac{1}{4}$ mile around the property. Malathion bait spray by ground and diazinon soil drench are being applied.

An Interior Quarantine is being prepared that covers approximately 16 square miles around the site. The quarantine should be distributed this week if all goes well."

Mexican fruit fly, Anastrepha ludens -(A)- The last larval specimens of this pest were collected on January 10 in Huntington Park. Seven 3rd instar larvae were found by State Inspector Mike Martinez and Terry London in grapefruit. A total of 175 adults have been trapped and 26 larval collection sites have been recorded up until the present time. Apparently March is a critical period, since flies from the most recent generation will begin hatching. So far, two flies were collected in March near Dodger Stadium.

Oriental fruit fly, Dacus dorsalis -(A)- A third specimen of this pest has been collected in recent months in San Diego County. This specimen was a male collected in a Jackson trap in a lemon tree by Joe Carrasco. The fly was trapped on January 5 in National City. The other two finds were reported in the last issue of CPPDR.

Gypsy moth, Lymantria dispar -(A)- Larvae of this species continued to hatch from caged egg masses all through the months of December, January and February. Also, egg masses have been found in the following locations: Los Altos, Santa Clara County in an aluminum ladder on December 5 by T. Eichlin and D. Marion; Oakland, Alameda County from a fence and basement on January 24 by P. Evans; Escondido, San Diego County from a ladder on February 1 by A. Sixtus.

Cotton boll weevil, Anthonomus grandis -(A)- Weevils are now inactive due to the season and plow-up. Updated trap catch totals for the months October, November and December are 4,247 weevils in Imperial County and 7,060 weevils in Riverside County. Of the 7,060 weevils in Riverside County, 23 were trapped in the Coachella Valley. The following report by Tom Palmer sums up the status of the eradication program:

COTTON BOLL WEEVIL ERADICATION PROGRAM HIGHLIGHTS
(Presented to the Pest Prevention Committee February 1, 1984)

The cotton boll weevil, Anthonomus grandis, was first detected in California by Imperial County personnel in October 1982. Since that time, much has happened with the program that makes it evident that unless there is a concerted, cooperative effort on the parts of California, Arizona and Mexico, California cannot keep boll weevils out of cotton fields in southern California.

Several significant events transpired during the cotton growing season of 1983-84:

1. The spring program was relatively quiet, only 296 acres of cotton were treated in the Blythe area, six times with Dimilin. The cotton growing areas of Bard/Winterhaven and the Imperial Valley needed no spring treatments.
2. The summer months of June, July, August and early September were the quiet months before the storm. Starting in late September, increasing numbers of weevils started to be trapped along the Colorado River. Weevils were not only trapped in the cotton regions of Blythe and Bard/Winterhaven, but also out in the desert areas.

Beginning in July, the House Agriculture Subcommittee hearings on the boll weevil were held in El Centro. The meetings were chaired by the Honorable George F. Brown, Jr. and Pat Roberts. As a result of these hearings, Undersecretary of Agriculture, Bill McMillean, visited California with a select group of CDFA, County and grower representatives to discuss the boll weevil crises.

There have also been meetings of the Regional Committee for the Eradication of Boll Weevil. This committee is composed of members from California, Arizona and Mexico. It was at a meeting of this group that Dr. Jim Brazzel first presented the USDA Contingency Plan for the Eradication of Boll Weevil.

3. By early October, malathion ULV applications were being made in Blythe and Bard/Winterhaven. Boll weevils were being trapped with alarming frequency in the Imperial Valley. By late October treatments commenced in the Imperial Valley.
4. During November and into December, weevil populations continued to climb in all areas and treatment areas continued to expand.
 - a. Riverside County
 1. Blythe - 10 applications, 31,454 acres treated.
 2. Coachella Valley - 4 applications, 4,716 acres treated.
 - b. Imperial County
 1. Bard/Winterhaven - 9 applications, 16,085 acres treated.
 2. Imperial Valley - 13 applications, 24,361 acres treated.

The bottom line is that the project failed to hold the weevil from infesting cotton in the Imperial and Coachella Valleys. The weevil was able to migrate over 110 miles out from the intensely infested areas of Poston, Roll and Texas Hill, Arizona. Mexico has infested fields just south of the border from San Luis to Mexicali. Worse yet, the cotton in this area has not been plowed down.

The plow down in California and Arizona has been better than anticipated with nearly 100% compliance to the plow down regulations. Only a few fields in the Bard/Winterhaven area have not been plowed under because of the high underground water table near the river. Blythe also had a few fields which did not comply. The areas near Poston and Yuma, Arizona had very good compliance.

The program has received very good cooperation from Arizona Agriculture and Horticulture Commission personnel, especially in the area of sharing trap catch information.

New County Records

Southern chinch bug, Blissus insularis -(C)- Specimens of this lawn pest were found for the first time in Yuba County by Dave Wilson. They were collected from a lawn in Yuba City on September 6. ID by Hardy.

A native fruit fly, Euaresta stigmatica -(C)- Collected for the first time from Merced and San Joaquin counties. Collected at Hilmar, Merced County in a Jackson trap on December 14 by Gudgel and Peeler; collected at Lathrop, San Joaquin County in a Jackson trap on December 12 by V. Helmar. ID by Corwin.

A planthopper, Delphacodes pseudoseminigra -(C)- First found in California in Orange County in 1973, this delphacid planthopper has extended its range to Santa Barbara County. Joe Karl collected specimens from Carpinteria on 11/25/83 from St. Augustine grass which is apparently the preferred host.

A eucalyptus psyllid, Ctenarytaina sp. -(Q)- This psyllid, an apparently undescribed species near Ctenarytaina eucalypti, is apparently native to Australia. Originally found in California at San Diego on May 19, 1983, the species has now been found in Orange County. Collections were made from the Brisbane box tree, Tristania conferta, a close relative of the eucalyptus. Eggs, nymphs and adults were collected at Huntington Beach on February 16.

Miscellaneous Finds of Significance

The House Mite, Glycyphagus domesticus (De Geer), A Winter Nuisance in Homes in California (Acari: Glycyphagidae).

During the past two very wet winters, Glycyphagus domesticus (De Geer), commonly known as the house mite, has gained prominence as a nuisance in homes in California. They were usually found in enormous numbers everywhere in the house and on/in anything, including television sets and cameras.

Glycyphagus domesticus is a white, oval-shaped mite with very long, densely pectinate setae (Fig. 1). It is a medium-sized mite about a half millimeter long, or 50 mites lined up end to end to an inch.

Under optimum environmental conditions of 23 to 25°C and 80 to 90 percent relative humidity, the life cycle is completed in 22 days (Hora, 1934). The mite is carried over dry periods by a very drought resistant nymphal stage which may remain encysted for a few years (Hughes, 1976).

Collections have been made in flour, wheat, hay, linseed, tobacco, cheese, ham, sugar beet seed, bees' and birds' nests, and on damp and moldy wallpaper. Large numbers have been found on furniture covered with rush or sea grass fiber, or upholstered with Algerian fiber, where the mite feeds on fungi growing on the fiber. Sinha (1966) showed that Glycyphagus domesticus thrived and reproduced very well on a saprophytic fungus, Nigrospora sphaerica.

The house mite causes a type of dermatitis, "grocers' itch," when heavily infested material is handled (Baker and Wharton, 1952).

Glycyphagus domesticus is a cosmopolitan species, distributed by man through commerce.

Detailed descriptions, discussions, and keys are given by Zakhvatkin (1941) and Hughes (1961, 1976). Some of the mite's distinguishing characters are shown by the scanning electron micrographs (Fig. 1-4).

Scanning electron micrographs of Glycyphagus domesticus (De Geer).

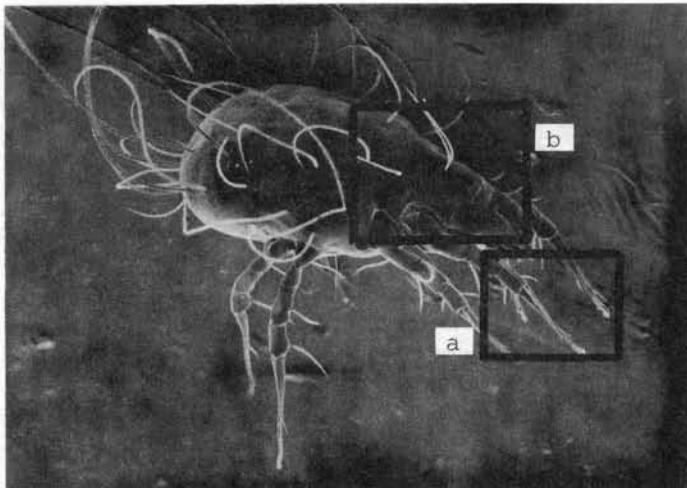


Fig. 1. Female

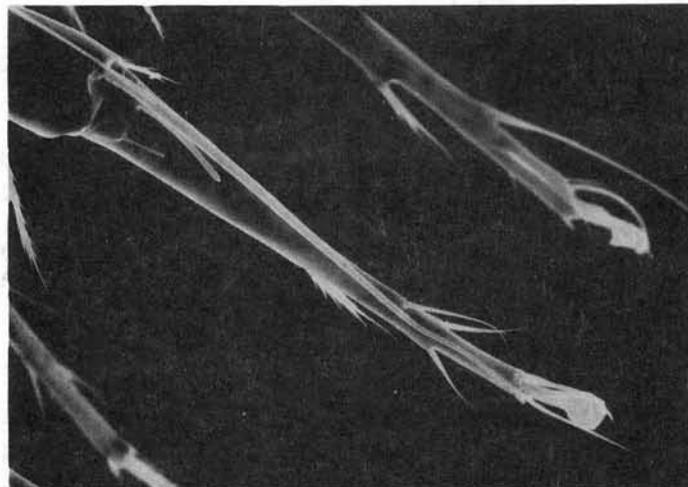


Fig. 2. Enlarged section of Fig. 1a, showing long, tapering tarsus I.

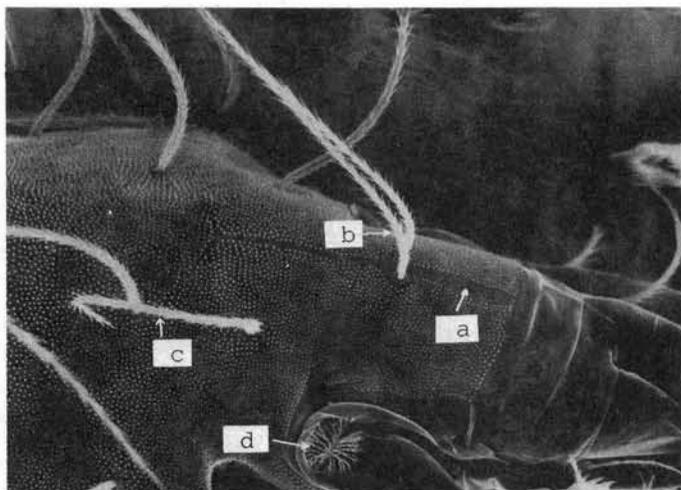


Fig. 3. Enlarged section of Fig. 1b, showing: a. crista metopica, wider in anterior half than in posterior half; b. vertical internal setae arising from wide area near middle of crista metopica; c. position of vertical external seta close to base of crista metopica; and d. supra-coxal seta.

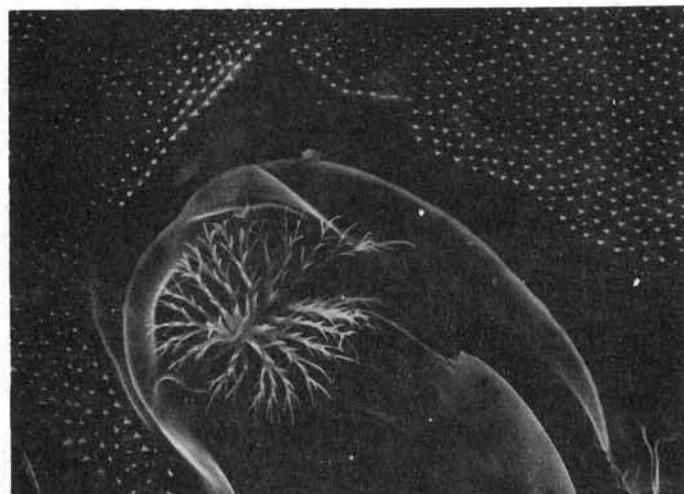


Fig. 4. Supra-coxal seta and papillae on cuticles.

References

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- Hora, A.M. 1934. On the biology of the mite, Glycyphagus domesticus De Geer (Tyroglyphidae, Acarina). Ann. Appl. Biol. 21:483-94.
- Hughes, A.M. 1961. The Mites of Stored Food. Minist. Agric. Lond. Tech. Bull. 9:1-287.
- Hughes, A.M. 1976. The Mites of Stored Food and Houses. Minist. Agric. Lond. Tech. Bull. 9:1-400.
- Sinha, R.N. 1966. Feeding and reproduction of some stored-product mites on seed-borne fungi. Jour. Econ. Entomol. 59:1227-32.
- Zachvatkin, A.A. 1941. Fauna of U.S.S.R. Arachnoidea, Tyroglyphoidea (Acari). 6:1-573. (Translated and edited by A. Ratcliffe and A.M. Hughes, AIBS, Washington, D.C., 1959).

Walnut husk fly, Rhagoletis completa -(C)- This common pest of California walnuts and peaches has been implicated as the causative agent of human gastrointestinal problems. See the following report by Dr. John H. Poorbaugh of the Vector Biology and Control Branch of the California Department of Health Services. This report appeared in "California Vector Update" #1-84, February 1984.

WALNUT HUSK FLY IMPLICATED IN HUMAN ILLNESS

In October 1982, a hospital laboratory submitted five fly larvae for identification that had been recovered from the stool of a female Alameda County resident who was exhibiting severe gastrointestinal upset with fever, loss of weight, and loss of hair. The stool was reported negative for pathogenic microorganisms and parasites. The fly larvae were alive when collected, and the attending physician believed they were involved in the patient's illness.

VBCB determined that the larvae were in the family Trypetidae, or fruit flies. They were subsequently identified as third instar larvae of the walnut husk fly, Rhagoletis completa, by Karen Corwin, entomologist with the State Department of Food and Agriculture in Sacramento. Inquiry revealed that the patient indeed had a walnut tree in her backyard from which she had eaten walnuts about ten days before onset.

We were admittedly skeptical that the walnut husk fly larvae could have caused the woman's disease because medical entomology textbooks made no mention, and agricultural experts were unaware of any association of this fly with human illness. However, we recently found a published report implicating a close relative of the walnut husk fly, the oriental fruit fly, Dacus dorsalis, with human illness in Pakistan [Khan and Khan, 1981; Taxonomic study on third instar larvae of Dacus dorsalis Hendel (Trypetidae: Diptera) implicated in pseudomyiasis in man in Pakistan. Pakistan J. Zool. 13(1-2): 185-188]. It describes live third instar larvae found in the stool of patients exhibiting severe gastrointestinal symptoms.

Undoubtedly, fruit fly larvae are ingested on many occasions in areas where the flies occur but apparently only occasionally result in overt disease symptoms. Certainly this report lends credence to the California physician's implication of the walnut husk fly larvae with his patient's illness. We wonder if such illness may not be more common, but the larvae are not found or simply discounted as being the causative agent.

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Tyrophagus neiswanderi (Acari: Acaridae) on
Greenhouse-Grown Cucumber Plants in California

Tokuwo Kono¹ and Kirby Brown²

Ken Sasaki observed mites puncturing and feeding on green leaf tissue of cucumber plants in his greenhouse. The mite was identified as possibly Tyrophagus sp. by Dr. Kirby Brown, San Joaquin County Economic Entomologist, and as Tyrophagus neiswanderi by Tokuwo Kono of CDFA (84B14-12).

This mite was reported by Kono (1982) as follows: "Tyrophagus neiswanderi is a mite that belongs to the family Acaridae. It belongs to genus Tyrophagus, which consists of very closely related mites that are ubiquitous and cosmopolitan. In Ohio, its existence was known since 1956 when it was found feeding on cucumber plants in a greenhouse."

In order to determine the source of infestation, mite samples were taken from fresh bark mulch (84C2-7) and from bark mulch in the infested greenhouse (84C2-8). Caloglyphus mycophagus, possibly mycophagous, was the only mite that was present in both mulch samples.

According to Johnston and Bruce (1965), Tyrophagus neiswanderi has the following morphological characters: The anterior lateral seta (la) is slightly longer than dorsal seta₁ (d₁), and dorsal seta₂ (d₂) is at most twice as long as dorsal seta₁ (Fig. 1); solenidion omega₁ is rod-shaped, not claviform and not tapered distally (Figs. 2, 3); and the supracoxal seta is lanceolate, setulose, and distally attenuate (Fig. 4).

The California collections of Tyrophagus neiswanderi are: 82C24-3, Sacramento, Sacramento County, March 24, 1982, Centaurea diffusa (diffuse knapweed) in greenhouse, K. Casanave; 83B7-15, Buena Park, Orange County, February 4, 1983, pansies, R.B. Nesbitt and W.W. Chui; 84A23-22, Fontana, San Bernardino County, January 16, 1984, Cymbidium orchid, M. Cohen; 84B14-12, Lodi, San Joaquin County, February 13, 1984, cucumber plants in greenhouse, K. Sasaki.

References

- Johnston, D.E. and Bruce, W.A. 1965. Tyrophagus neiswanderi, a new acarid mite of agricultural importance. Ohio Agric. Res. Dev. Center Res. Bull. 977: 1-17.
- Kono, T. 1982. An acarid mite new to California. Calif. Plant Pest and Disease Report. 1(5):67.

¹ Systematic Entomologist, Calif. Dept. Food and Agric.

² Economic Entomologist, San Joaquin County Agric. Comm. Office.

Scanning Electron Micrographs of Tyrophagus neiswanderi Female

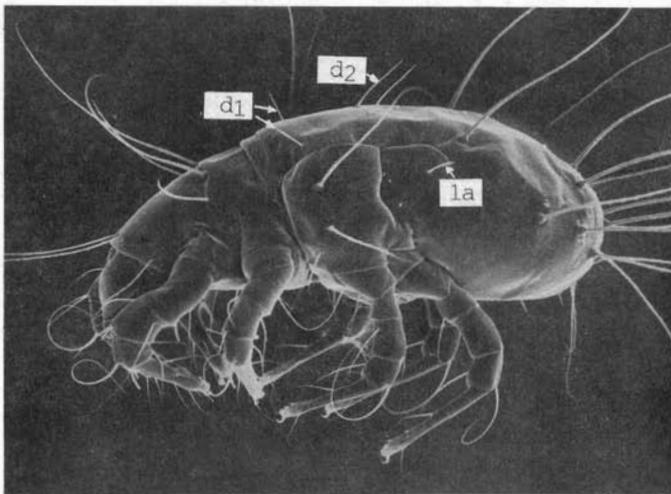


Fig. 1. Tyrophagus neiswanderi female

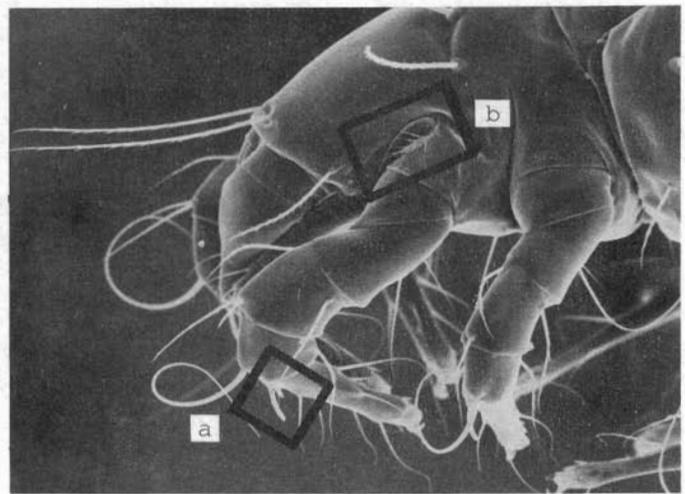


Fig. 2. Enlargement of Fig. 1. showing anterior end.

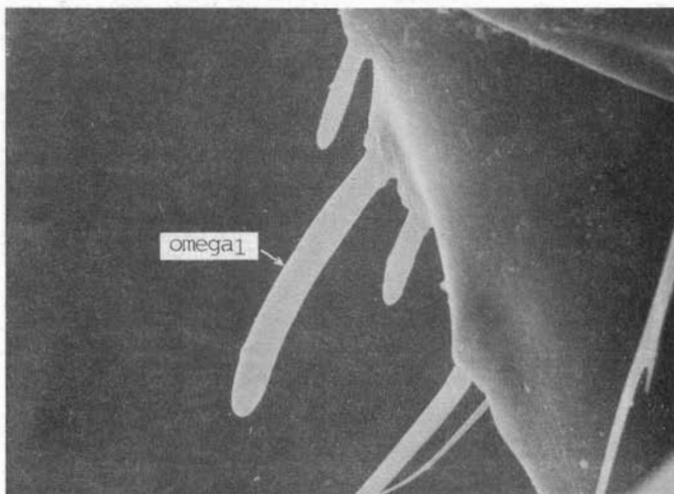


Fig. 3. Enlargement of Fig. 2.a. showing solenidion ω_1 of leg 1.

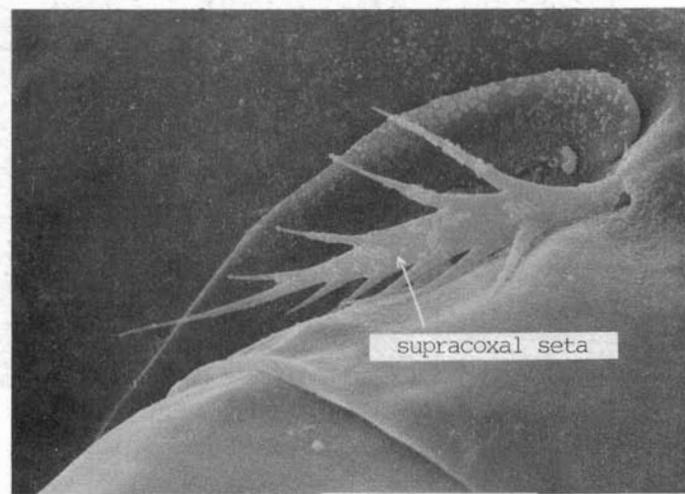


Fig. 4. Enlargement of Fig. 2.b. showing supracoxal seta.

Scanning Electron Micrographs of the
Greenhouse Thrips, *Heliethrips haemorrhoidalis*

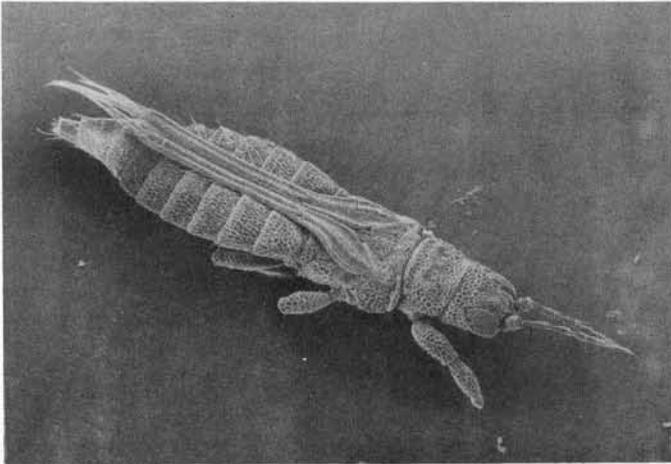


Fig. 1. Adult female.

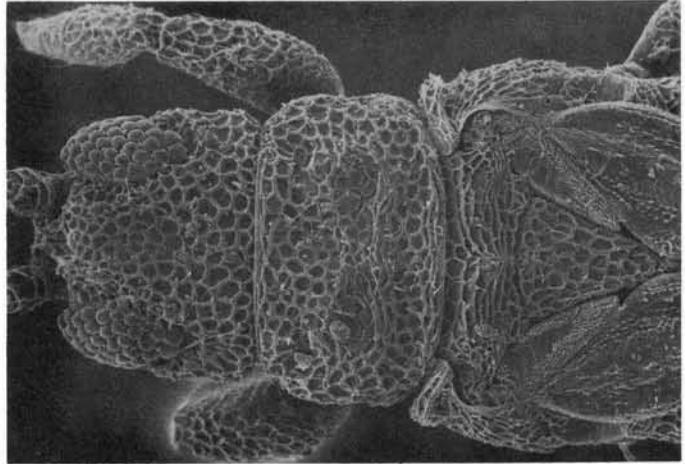


Fig. 2. Head and thorax of adult female showing large reticulations.

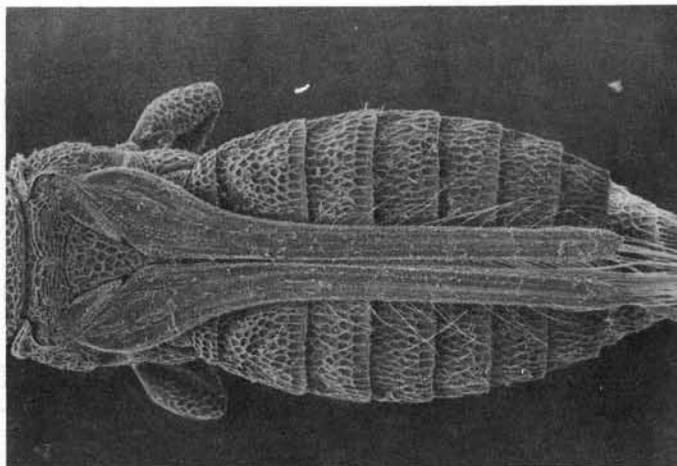


Fig. 3. Thorax and abdomen of adult female showing large reticulations and the forewings.

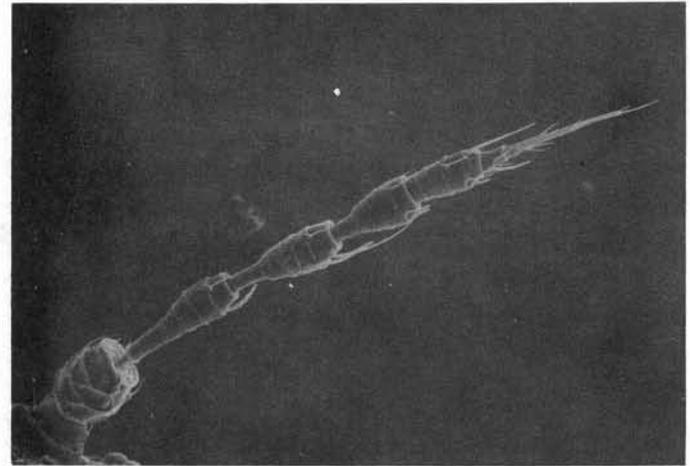


Fig. 4. Right antenna of adult female.

(Ed. Note - This set of electron micrographs by Tokuwo Kono, Systematic Entomologist with the Analysis and Identification Unit, CDFA, in Sacramento, is reproduced here because of poor print quality in January issue.)

Quarantine and Exclusion

A birch aphid, Acalitus rudis -(Q)- Specimens of this unusual aphid were submitted to the Sacramento County Agricultural Commissioner's Office on February 2.

Gypsy moth, Lymantria dispar -(A)- Twenty collections of gypsy moth egg masses and pupae have been made from lawn furniture and other outdoor equipment during the months of December and January. All of this infested equipment came from the New England States. Collectors were Cupp and Burns, Keshmiry, Bennett, Albracher, Ratto, Clark, Curtner, DeHoop, Anderson, Gunn, Stanland, Janssen and David, Bushley, Krogh, Lopez and Plant, Foster and Visthum, and Wright and Hennessy.

The following A, B and Q rated pests have been intercepted in quarantine during December and January:

Rating	Species	Common Name	Origin	County	Host	Collector
Q	<u>Pinus</u> sp.	A Pine bark aphid	OR	Mer	<u>Pinus</u>	Aguelar
Q	<u>Aleurodicus dispersus</u>	Spiraling whitefly	HI	LA	?	McGrath
Q	<u>Aleurocerus</u> sp.	a whitefly	HI	SJ	Ti	Watkins
Q	<u>Aleurotulus</u> sp.	Anthurium whitefly	Mex	SLO	Comador Palm	Crump
A	<u>Dialeurodes citrifolii</u>	Cloudwinged whitefly	HI	SM	Anthurium	Spadoni
Q	<u>Aleurodicus cocois?</u>	a whitefly	HI	YU	<u>Citrus</u>	Struffenegger
A	<u>Ischnopsis longirostris</u>	black thread scale	FL	SF	Cocconut	Storm
A	<u>Pseudaulacaspis cockerelli</u>	Magnolia white scale	Gen. Am.	IA	Monstera	Brown
			HI	IA	Ginger, Ti	Eisenhart
			HI	V	Betelnut	Vandpp
			HI	IA	Areca Palm	McGrath
			HI	SD	Bird of Paradise	Boch
			HI	V	Palm	Vandpp
			HI	LA		McGrath/ Hanson
Q	<u>Acutaspis</u> sp.	an armored scale	FL	SBO	Areca palm	Nash
			FL	IA	Areca palm	Adams
			FL	MY	Areca palm	Bunch/Oliver
A	<u>Pinnaspis strachani</u>	Lesser snow scale	C. Rica	STB	<u>Aglaonema</u>	Weaver/ Champion
Q	<u>Pinnaspis buxi</u>	Boxwood scale	HI	IA	Ginger, <u>Monstera</u>	Eisenhart
A	<u>Selenaspis articulatus</u>	rufous scale	HI	IA	Ginger	McGrath
Q	<u>Parlatoria cinerea</u>	an armored scale	HI	B	Ti	Pooler
Q	<u>Pseudonidia trilobitiformis</u>	an armored scale	FL	SM	<u>Philodendron</u>	Buerer
Q	<u>Geococcus coffeae</u>	a soil mealybug	HI	V	Ti	Mitchell
B	<u>Pseudococcus elisae</u>	Elisae mealybug	Gen. Am.	SF	<u>Citrus</u>	Brown
Q	<u>Rhizococcus americanus</u>	a soil mealybug	Tahiti	V	<u>Citrus</u>	Vandpp
Q	<u>Pseudococcus lycopodii?</u>	a mealybug	Tahiti	V	<u>Citrus</u>	Vandpp
Q	<u>Coccus viridis</u>	green scale	Tahiti	V	<u>Citrus</u>	Rawald
Q	<u>Pulvinaria psidii</u>	green shield scale	HI	LA	<u>Neanthebella Palm</u>	Boch/Nielsen
			HI	SD	<u>Neanthebella Palm</u>	Watkins
			HI	SJ	Flowers	Sulentich
			HI	IA	Areca palm	Rawald
			HI	IA	Areca palm	Haggard
			HI	H	Club moss	Eisenhart
			HI	IA	Ginger	Kovarik
			HI	STCZ	Heliconia	Ginsky
			HI	SD	Bird of Paradise	Sulentich
			HI	IA	<u>Ficus benjamina</u>	McGrath
			HI	IA	Ginger	_____
			HI	SD	Ginger	Eisenhart
			HI	IA	Ginger	_____
			HI	IA	Ginger	_____
			HI	Mer	Flowers	Watkins

The following insects and molluscs are "A" or "Q" rated pests intercepted in quarantine which were not immediately identifiable to species because of life stage, condition or lack of comprehensive taxonomic studies of the groups.

Rating	Species	Common Name	Origin	County	Host	Collector
Q	<u>Curculio</u> sp.	an acorn weevil	FL	SD	Acorns	Johnson
Q	<u>Coccidae</u>	a soft scale	HI	IA	Herbs	McGrath/ Hansen
Q	<u>Tortricidae</u>	a tortricid moth	HI	IA	Flowers	McGrath/ Kellan
Q	<u>Pentatomidae</u>	a shield bug	HI	STB	<u>Dracaena</u>	Pritchard
Q	<u>Noctuidae</u>	a moth	C.Rica	SJ		Croce
Q	<u>Tettigoniidae</u>	a Katydid	PI	SBO	Boxes, Pallets	Young/ Mitchell
Q	<u>Lygaeidae</u>	a plant bug	PI	SBO	" "	" "
Q	<u>Rhinotermitidae</u>	a termite	PI	SBO	" "	" "
Q	<u>Phyllophaga</u> sp.	a scarab beetle	NY	SD	Patio. furniture	Marriscal

Border Station Interceptions
(October 25, 1983 - February 25, 1984)

GYPSY MOTH	<u>Lymantria dispar</u>	-A-	34
EASTERN TENT CATERPILLAR	<u>Malacosoma americana</u>	-Q-	2
APPLE MAGGOT	<u>Rhagoletis pomonella</u>	-A-	5
A MEALYBUG	<u>Pseudococcidae</u>	-Q-	10
EUROPEAN CORN BORER	<u>Ostrinia nubilalis</u>	-A-	2
CALIFORNIA RED SCALE	<u>Aonidiella aurantii</u>	-B-	13
A TENT CATERPILLAR	<u>Malacosoma sp.</u>	-Q-	11
A WOOLLY BEAR CATERPILLAR	<u>Arctiidae</u>	-Q-	9
AN OWLET MOTH	<u>Spodoptera sp.</u>	-Q-	1
CHAFF SCALE	<u>Parlatoria pergandii</u>	-B-	40
PURPLE SCALE	<u>Lepidosaphes beckii</u>	-B-	12
AN ARMORED SCALE	<u>Pseudischnaspis bowreyi</u>	-Q-	1
GLOVER SCALE	<u>Lepidosaphes gloverii</u>	-B-	3
PINK BOLLWORM	<u>Pectinophora gossypiella</u>	-A-	16
BAGWORM	<u>Thyridopteryx ephemeraeformis</u>	-A-	1
A BAGWORM	<u>Psychidae</u>	-Q-	1
A LOOPER	<u>Geometridae</u>	-Q-	1
HICKORY SHUCKWORM	<u>Laspeyresia caryana</u>	-A-	65
MINING SCALE	<u>Howardia biclavis</u>	-A-	1
A WEEVIL	<u>Curculio sp.</u>	-A-	4
A LEAFMINER	<u>Lithocolletis sp.</u>	-Q-	1
AN OWLET MOTH	<u>Noctuidae</u>	-Q-	1
A LEAFROLLER	<u>Tortricidae</u>	-Q-	1
HOLLY LEAFMINER	<u>Phytomyza ilicis</u>	-B-	7
ORIENTAL SCALE	<u>Aonidiella orientalis</u>	-Q-	3
ARROWHEAD SCALE	<u>Unaspis yanonensis</u>	-Q-	17
HACKBERRY GALL PSYLLID	<u>Pachypsylla sp.</u>	-Q-	1
SUGARCANE BORER	<u>Diatraea sp.</u>	-Q-	1
A PLANTHOPPER	<u>Pintalia sp.</u>	-Q-	1
MEXICAN FRUIT FLY	<u>Anastrepha ludens</u>	-A-	1
JAPANESE MEALYBUG ?	<u>Planococcus krauhniae</u>	-Q-	1 (nymph)
A PENTATOMID BUG	<u>Banasa sp.?</u>	-Q-	1
LITTLE FIRE ANT	<u>Ochetomyrmex auropunctata</u>	-Q-	4
MANGO SHIELD SCALE	<u>Protopulvinaria mangiferae</u>	-Q-	1
A MIRID BUG	<u>Miridae</u>	-Q-	1
A SCARAB BEETLE	<u>Phyllophaga sp.</u>	-Q-	1
COMSTOCK MEALYBUG	<u>Pseudococcus comstocki</u>	-A-	1
CHINCH BUG	<u>Blissus leucopterus</u>	-Q-	2
A PHYCITINE MOTH	<u>Pyralidae</u>	-Q-	1
SWEET POTATO WEEVIL	<u>Cylas formicarius elegantulus</u>	-A-	1
CLOUDYWINGED WHITEFLY	<u>Dialeurodes citrifolii</u>	-A-	1
A SNAIL	<u>Bradybaena similaris</u>	-B-	2
WHITE-MARKED TUSsock MOTH	<u>Orgyia leucostigma</u>	-Q-	1
PINE SCALE?	<u>Chionaspis heterophyllae</u>	-Q-	1
COCONUT SCALE	<u>Aspidiotus destructor</u>	-A-	5
A LEAFHOPPER	<u>Nionia palmeri</u>	-Q-	1
LESSER SNOW SCALE	<u>Pinnaspis strachani</u>	-A-	1
BLACK PARLATORIA SCLAE	<u>Parlatoria zizyphi</u>	-Q-	1
A MOTH	<u>Arctiidae</u>	-Q-	1
JAPANESE BEETLE	<u>Popillia japonica</u>	-A-	1
A MEALYBUG	<u>Spilococcus sp.</u>	-Q-	1
A WEEVIL	<u>Pissodes sp.</u>	-A-	1
SWEETPOTATO LEAF BEETLE	<u>Typophorus nigritus viridicyaneus</u>	-A-	1
A CASEBEARER	<u>Coleophora sp.</u>	-Q-	1
A SNAIL	<u>Subulina octona</u>	-B-	1

SAN JOAQUIN COUNTY BLACK LIGHT TRAP REPORT

DATE	12-18-83	12-18-83	12-26-83	1-2-84	1-2-84	1-8-84
LOCATION	Bellota	Roberts Island	Bellota	Bellota	Manteca	Bellota
TEMPERATURE	48° 53°			40° 50°	40° 50°	45° 47°
ALFALFA LOOPER <i>Autographa californica</i>	1		1			
ARMYWORM <i>Pseudaletia unipuncta</i>	12	2	46	3		8
BEET ARMYWORM <i>Spodoptera exigua</i>						
BLACK CUTWORM <i>Agrotis ipsilon</i>	9		19	3		8
CABBAGE LOOPER <i>Trichoplusia ni</i>						
CLOVER CUTWORM <i>Scotogramma trifolii</i>						
CODLING MOTH <i>Laspeyresia pomonella</i>						
CORN EARWORM, (ETC.) <i>Heliothis zea</i>						
FALSE CELERY LEAFTIER <i>Udea profundalis</i>						
GRANULATE CUTWORM <i>Feltia subterranea</i>					1	
GRAPE LEAFFOLDER <i>Desmia funeralis</i>						
NAVEL ORANGEWORM <i>Amyelois transitella</i>						
OMNIVOROUS LEAFROLLER <i>Platynota stultana</i>						
PEACH TWIG BORER <i>Anarsia lineatella</i>						
ROUGH SKINNED CUTWORM <i>Proxenus mindara</i>						
SALTMARSH CATERPILLAR <i>Estigmene acrea</i>						
SPOTTED CUTWORM <i>Amathes c-nigrum</i>						
SUGARBEET WEBWORM <i>Loxostege sticticalis</i>						
TOBACCO BUDWORM <i>Heliothis virescens</i>						
VARIEGATED CUTWORM <i>Peridroma saucia</i>			11			1
W. YELLOWSTRIPED ARMYWORM <i>Spodoptera praefica</i>						

SAN JOAQUIN COUNTY BLACK LIGHT TRAP REPORT

DATE	1-10-84	1-22-84	1-22-84	1-29-84	1-29-84	2-5-84
LOCATION	Manteca	Manteca	Tracy	Bellota	Roberts Island	Bellota
TEMPERATURE	44 ^o 47 ^o			33 ^o +.61 ^o		
ALFALFA LOOPER <i>Autographa californica</i>						
ARMYWORM <i>Pseudaletia unipuncta</i>	1	2	1		2	3
BEEET ARMYWORM <i>Spodoptera exigua</i>						
BLACK CUTWORM <i>Agrotis ipsilon</i>						
CABBAGE LOOPER <i>Trichoplusia ni</i>						
CLOVER CUTWORM <i>Scotogramma trifolii</i>						
CODLING MOTH <i>Laspeyresia pomonella</i>						
CORN EARWORM, (ETC.) <i>Heliothis zea</i>						
FALSE CELERY LEAFTIER <i>Udea profundalis</i>						
GRANULATE CUTWORM <i>Feltia subterranea</i>						
GRAPE LEAFFOLDER <i>Desmia funeralis</i>						
NAVEL ORANGEWORM <i>Amyelois transitella</i>						
OMNIVOROUS LEAFROLLER <i>Platynota stultana</i>						
PEACH TWIG BORER <i>Anarsia lineatella</i>						
ROUGH SKINNED CUTWORM <i>Proxenus mindara</i>						
SALTMARSH CATERPILLAR <i>Estigmene acrea</i>						
SPOTTED CUTWORM <i>Amathes c-nigrum</i>						
SUGARBEEET WEBWORM <i>Toxostege sticticalis</i>						
TOBACCO BUDWORM <i>Heliothis virescens</i>						
VARIEGATED CUTWORM <i>Peridroma saucia</i>				1		
W.YELLOWSTRIPED ARMYWORM <i>Spodoptera praefica</i>						
GREEN FRUITWORM <i>Orthosia hibisci</i>				3		

SAN JOAQUIN COUNTY BLACK LIGHT TRAP REPORT

DATE	2-5-84	2-6-84	2-13-84	2-20-84	2-27-84	2-27-84
LOCATION	Manteca	Roberts Island	Bellota	Roberts Island	Bellota	Roberts Island
TEMPERATURE						
ALFALFA LOOPER <i>Autographa californica</i>	1					
ARMYWORM <i>Pseudaletia unipuncta</i>		1	3		4	1
BEET ARMYWORM <i>Spodoptera exigua</i>						
BLACK CUTWORM <i>Agrotis ipsilon</i>		1	6		1	
CABBAGE LOOPER <i>Trichoplusia ni</i>						
CLOVER CUTWORM <i>Scotogramma trifolii</i>			4			
CODLING MOTH <i>Laspeyresia pomonella</i>						
CORN EARWORM, (ETC.) <i>Heliothis zea</i>						
FALSE CELERY LEAFTIER <i>Udea profundalis</i>						
GRANULATE CUTWORM <i>Feltia subterranea</i>						
GRAPE LEAFFOLDER <i>Desmia funeralis</i>						
NAVEL ORANGEWORM <i>Amyelois transitella</i>						
OMNIVOROUS LEAFROLLER <i>Platynota stultana</i>						
PEACH TWIG BORER <i>Anarsia lineatella</i>						
ROUGH SKINNED CUTWORM <i>Proxenus mindara</i>						
SALTMARSH CATERPILLAR <i>Estigmene acrea</i>						
SPOTTED CUTWORM <i>Amathes c-nigrum</i>						
SUGARBEET WEBWORM <i>Loxostege sticticalis</i>						
TOBACCO BUDWORM <i>Heliothis virescens</i>						
VARIEGATED CUTWORM <i>Peridroma saucia</i>		1	1			
W. YELLOWSTRIPED ARMYWORM <i>Spodoptera praefica</i>		1		4		
Green Fruitworm <i>Orthosia hibisci</i>	1		2		7	1