CALIFORNIA PLANT PEST & DISEASE REPORT

CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE
PLANT PEST DIAGNOSTICS CENTER, 3294 MEADOWVIEW ROAD, SACRAMENTO, CALIFORNIA, 95832-1448

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CALIFORNIA PLANT PEST AND DISEASE REPORT

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ENTOMOLOGY HIGHLIGHTS

SIGNIFICANT FINDS

MEXICAN FRUIT FLY, *Anastrepha ludens*, -(A)- A Mexican fruit fly was found in a McPhail trap by Lopez on May 19 in Los Angeles, **Los Angeles** County.

ARTICHOKE FLY, *Terellia fuscicornis*, -(Q)- Artichoke flies were found on *Silybum marianum* in Nipomo, **San Luis Obispo** County. Little made the finds on April 12.

AFRICANIZED HONEY BEE (AHB), *Apis* "Africanized", -(A)- An AHB bee was trapped in an AHB trap in Blythe, **Riverside** County, on March 20. This is the first trapped AHB bee this year. On March 27, an AHB bee swarm was detected in El Centro, **Imperial** County. On the next day, March 28, an Africanized honey bee was trapped in Calipatria, Imperial County. Also in the same county, Ray and Inay discovered an AHB bee swarm in Imperial on May 4.

NEW COUNTY RECORDS

AUSTRALIAN GUM TREE WEEVIL, *Gonipterus scutellatus*, -(Q)- An Australian gum tree weevil was detected on a eucalyptus tree on the UCSD campus, La Jolla, **San Diego** County. The find was made by Kellam and Shaw on April 18.

AVOCADO MITE, *Oligonychus perseae*, -(Q)- Avocado mite has been found for the first time in **Santa Barbara** County. Harriet Heath discovered the pest on *Persea americana* on March 21 in Carpinteria. This mite has also been found in **Los Angeles** County for the first time. Found on the same host species, the find was made by Thomas Herrera in South Gate on April 6.

CYTISUS PSYLLID, *Arytainilla spantiophila*, -(C)- Jim Xerogeanes discovered cytisus psyllid on *Cytisus scoparius* in Caspar, **Mendocino** County. This new county record occurred on March 31.

EUGENIA PSYLLID, *Trioza eugeniae*, -(C)- This psyllid pest was also found for the first time in **Mendocino** County on March 31. Jim Xerogeanes made this find in Fort Bragg on *Eugenia* sp.

A GRASS MEALYBUG, *Miscanthicoccus miscanthi*,-(Q)- This grass mealybug was found for the first time in **Santa Barbara** County. Suzanne Squires made the find in Santa Barbara on February 22.

KUNO SCALE, *Eulecanium kunoense*, -(B)- Kuno scale was found for the first time in **Napa** County. Joel King made the collection in Napa on February 9.

NEW STATE RECORDS

A LEAFHOPPER, *Thamnotettix zelleri*, -(Q)- This leafhopper was found for the first time in Napa, **Napa** County, marking a new state and new North American record. The discovery, on vineyard weeds, was made by Ed Weber, Agricultural Extension Specialist, on April 20.

Ed Weber was cooperating with Dr. Sandy Purcell on Pierce's disease vector problems in the vineyards in the area. Ed noticed heavy populations of the leafhopper on annual weeds and grasses and submitted them to Sandy because of their possible vector significance. Sandy submitted them to the CDFA lab for identification. The leafhoppers closely resemble the genus *Ballana*, which contains numerous species and occurs throughout the western United States. However, the male aedeagal structures, illustrated in Fig. 1, are very different from those found in *Ballana* species.

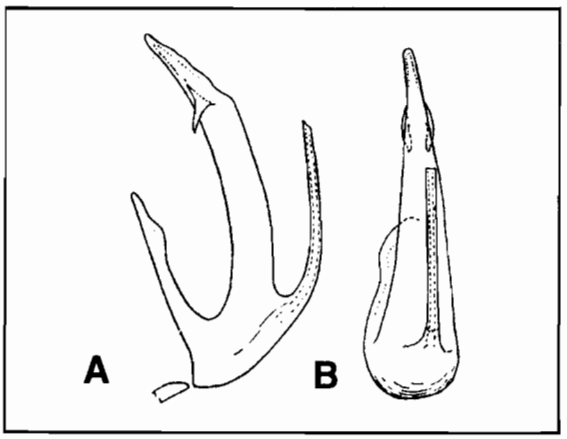

Fig. 1. *Thamnotettix zelleri*. Male aedeagal structures showing (A) Lateral view and (B) Posterior view. Illustration taken from H. Ribaut, 1952; Homoptères Auchénorhyques. II (Jassidae). Faune de France 57:1-474.

The leafhopper turned out to be a species originally described from Europe by Kirshbaum in 1868, based on specimens collected in Italy, France and Sardinia. Further records show that it occurs also in Syria and Palestine in northern Africa.

In conjunction with cooperative leafhopper DNA research projects at CDFA, we were looking for specimens of *Ballana* to send to Dr. Chris Dietrich, who is conducting leafhopper DNA phylogenetic studies at Colorado State University. A *Ballana*-like species was known to occur the last few years near Lake Natomas in Sacramento County. Keith Miller of the Agricultural Commissioner's office submitted specimens from there on May 25, and they turned out to be the new species, also a new **Sacramento** County record. Later collections showed that there were heavy populatons as well in adjacent parts of **El Dorado** and **Nevada** counties. Further delimitation will probably show it in other counties as well. From the size of the infestations, the leafhopper very likely has been in California for some time.

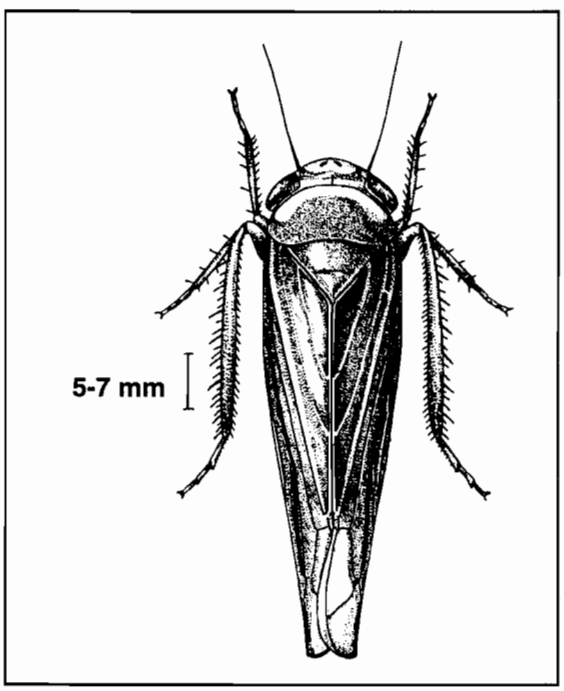

Fig. 2. *Thamnotettix zelleri*.

There is apparently very little written about this leafhopper, except for taxonomic information. All we know so far is that it occurs at the bases of weeds growing in cultivated areas.

No reports of economic injury or disease vector capabilities have been found. It is obviously adapted to the Mediterranean climate, and it will probably do well in the many similar climatic zones in California. The leafhopper is rather large compared to most California leafhoppers, with a length of 5-7 mm. It is jade green in color with yellow brown color on the head, anterior prothorax, scutellum and venter. There are black or dark brown markings on the frons, thorax and abdominal venter.

A EUCALYPTUS GALL WASP, *Aprostocetus* sp.,-(Q)- This wasp has been discovered on *Eucalyptus citriodora* (lemon gum) for the first time in California. This constitutes new county, state, and North American records. Delimitation surveys indicate that it is present in at least three additional counties besides the original four counties listed below. Other collections have been made after the time frame of this issue. On February 2, Suzanne Squires, Agricultural Biologist, first found the pest in Carpinteria, ***Santa Barbara*** *County. Then, on February 6,* this eulophid wasp was found in Westminster, **Orange** County, by Bob Park. The third record comes from **San Bernardino** County. On February 15, Janet Davey found the wasp in Rancho Cucamonga. Finally, Rosser Garrison found this pest on April 26 in Baldwin Park, **Los Angeles** County.

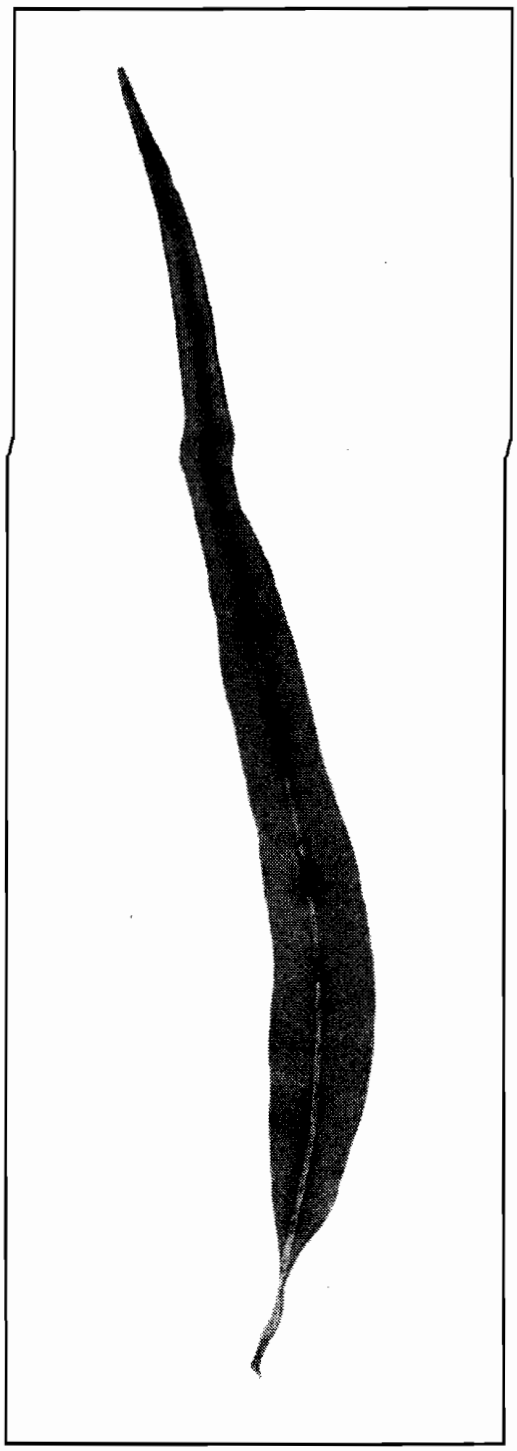

Fig. 3. Oedema-like galls.

The presence of the wasp was first noticed by Suzanne Squires who collected leaves of the lemon gum that had small oedema-like galls (Fig. 3) on the leaf midrib, or occasionally on other large leaf veins. Jerry Davidson, Santa Barbara County Entomologist, noticed exit holes in some of the galls but didn't know the cause, and so sent them to Sacramento. Wasps were first dug out of the galls in this sample but then it was discovered that a number of wasps had already hatched out of the galls and were in the sample bag. A preliminary search of Australian literature revealed the illustration seen in Fig. 4 which matched the suspect specimens. However, that illustration was captioned as *Coelocyba viridilineata* (Froggatt) in the family Pteromalidae. The sample was shown to Steve Hayden, a chalcid wasp specialist a the University of California, Davis, who concluded that the figure

caption and the family placement were wrong, and that the the wasp was actually an *Aprostocetus* eulophid. The wasp can be collected by rearing adults or cutting completely formed adults from the galls. The wasp is lemon yellow in color with black markings, and about 1 mm long.

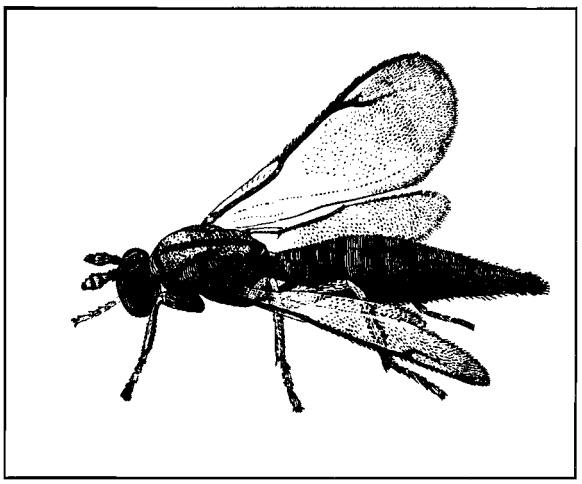

Fig. 4. *Aprostocetus* sp. Illustration taken from W. W. Froggatt, 1907; Australian Insects, William Brooks & Co., Ltd., 449 pp.

We do not know at this point whether the gall formation is detrimental to the tree in any way. We also do not know for sure whether the wasp is the actual cause of the gall, or whether it is an inquiline, which means that it is using the gall caused by yet another wasp. Nick Nisson in Orange County has discovered empty galls on the inside of the seed pods of the same eucalyptus. We likewise do not know if this is caused by the same wasp or if there will be any economic injury to the trees.

A THRIPS, *Aeolothrips ericae*, -(Q)- Jim Xerogeanes discovered this thrips on *Cytisus scoparius* in Caspar, **Mendocino** County on March 31. The thrips was identified by Steve Nakahara at the Systematic Entomology Laboratory in Beltsville, Maryland, from whose report the information concerning this find has been taken. A common insect on plants of the Ericaceae and Fabaceae families of Europe, this is the first time this pest has been found in North America. This species can be distinguished from other North American *Aeolothrips* spp., with two brown cross bands on each forewing, by the color of antennal segments II and III which are pale yellowish white and with only the extreme apex of III brown. The larvae are predacious on small arthropods. The following information on hosts and distribution was taken from the book, Thrips or Fringe-Winged Insects (Thysanoptera) of the European Part of the USSR (1977) by N. P. Dyadechko.

> *Aeolothrips ericae* inhabits inflorescences of various kinds of plants, particularly those belonging to the family Laminaceae. Found in large numbers on the following plants: poppy [Eschscholzia], mint, marjoram, savory, hyssop thyme, sage, catnip, and hemp nettle. More rarely, this species of thrips is also found in the flowers of the following plants: lupine, dyer's broom, alfalfa, sweet clover, black locust, and milk vetch.
>
> This species has considerable importance as a predator on many species of phytophagous thrips. Each larvae of the second stage of this thrip feeds on, in the course of 24 hours, approximately 50 to 60 eggs of tobacco thrips. *A. ericae* also reduces the numbers of many species of aphids by sucking out their eggs or newly hatched larvae. In conditions of the forest-steppe of the Ukraine thrips develop only one generation. The larvae covers itself with a cocoon before entering the prepupa stage. Hibernation takes place in the soil.
>
> This species of thrips is found throughout western Europe, the USSR, and central Asia.

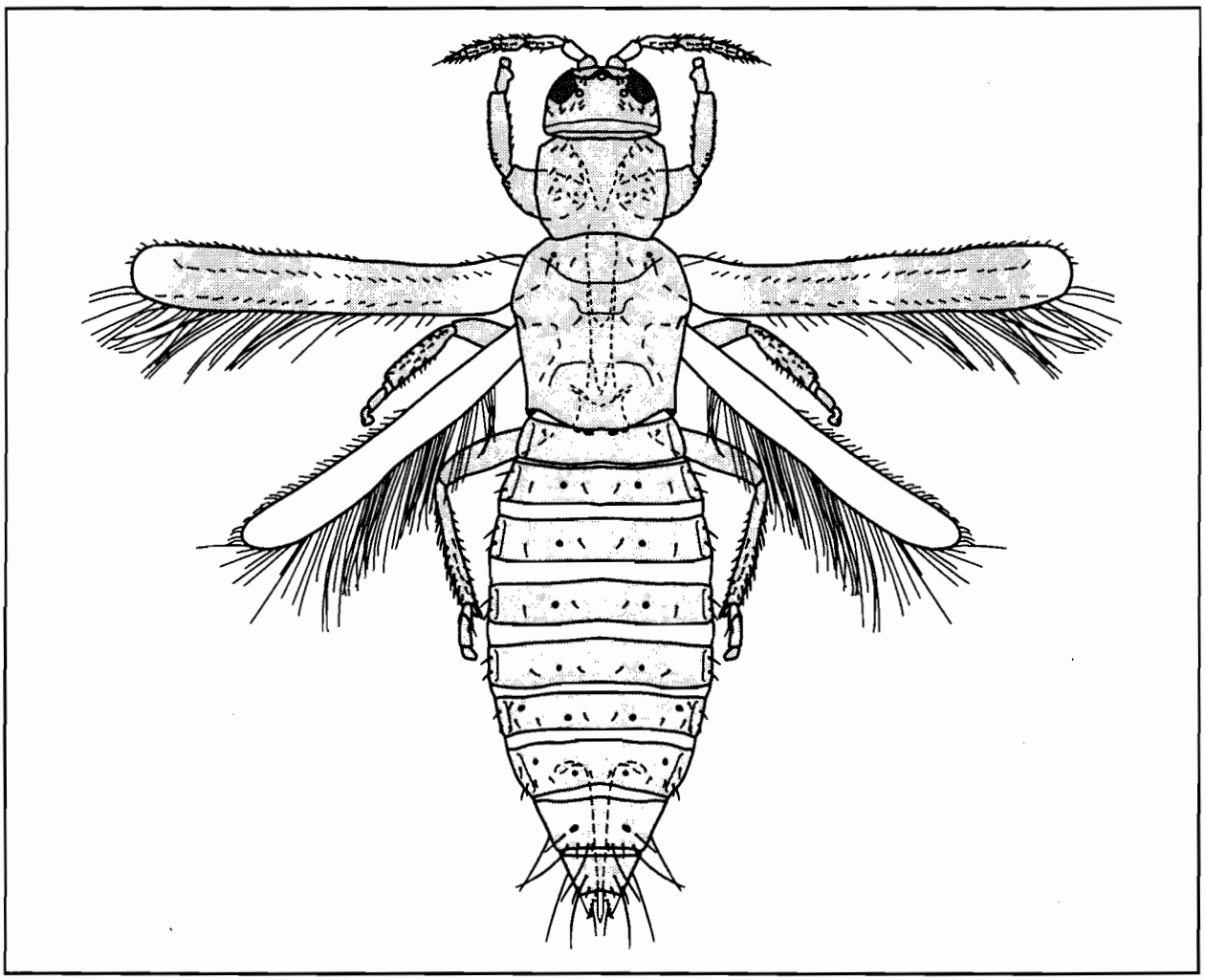

Fig. 5. Adult female of *Aeolothrips ericae.*

SIGNIFICANT FINDS IN OTHER STATES AND COUNTRIES

A WHITEFLY, *Dialeurodes* sp., -(X)- This new whitefly to the continental United States has been found for the first time in Hollywood, Florida. The discovery was made on April 16 on *Schefflera arboricola.* According to Dr. Hamon of the Florida Department of Agriculture and Consumer Services, Gainesville, the species was collected earlier at Plantation, Florida in 1986 on the same host. In 1988, it was intercepted on *Schefflera* foliage from Hawaii in California, and in 1991, it was collected in Honolulu, Hawaii. All known collections of this whitefly were from *Schefflera arboricola.*

The whitefly resembles *Dialeurodes citri* (Ashmead) and *D. kirkaldyi* (Kotinsky), which originated in Asia. Therefore, the origin of this whitefly is very likely in Asia where many species of *Dialeurodes* are known to occur. There are four adventive *Dialeurodes* species now in Florida; the three mentioned and *D. citrifolii* (Morgan). The information concerning the find has been taken from a report by S. Nakahara.

SIGNIFICANT FINDS IN OTHER STATES AND COUNTRIES continued

ASH WHITEFLY, *Siphoninus phillyreae*, -(C)- After making serious inroads on the quality of life in California during the late 1980s, this European species is continuing its world-wide march. It has been collected in the states of Georgia and North Carolina over the last year or two. But even more significant is the fact that it has been collected now in South America and New Zealand. According to Peter Holder, Entomologist with the New Zealand Plant Protection Centre in Lincoln, New Zealand, the whitefly was found on the north island last summer. In South America it was collected from ash and apricot trees in Santiago, Chile on April 4 by Roberto Gonzalez, a Professor of Entomology at the University of Chile. In July of this year, it was collected in Guadalupe, Lara, Venezuela. The collection was made from pomegranate by Radames Urtiaga, a freelance scale and whitefly specialist there.

EXCLUSION

On the following page is a brief list of specific quarantine interceptions involving tropical fruits. These interceptions have involved exotic tropical fruit such as mangosteens, rambutans, longans and litchees. Most of the fruit is coming from unknown origins, most likely from Southeast Asia. The fruit is being intercepted in the ports, at the border stations, mostly those in northern California from cars traveling down from British Columbia, and in Asian food markets. The following list shows the collections from the ports and from Asian food markets. Those tropical fruits intercepted at California's border stations are listed in the previous section.

Some of the unusual and uncommon pest interceptions (other than those involving tropical fruits) made during the the last two months of 1994 and the first part of 1995 are listed on pages 11-13. These lists are developed to keep quarantine inspectors and county officials informed on what pests are being intercepted.

"A", "B", and "Q" Rated Pests on Tropical Fruits Intercepted in Quarantine
May 1995

Rating	Species	Common Name	Date	Origin	County	Host	Collector(s)
Q	*Pseudococcus* near *citriculus*	a mealybug	05/01/95		SJQ	*Garcinia mangostana*	Alan
B	*Pseudococcus elisae*	elisa mealybug	05/01/95		SJQ	rambutan	Alan
Q	*Aulacaspis* sp.	an armored scale	05/01/95	Taiwan?	SJQ	*Litchi chinensis*	Alan
Q	*Drepanococcus chiton*	a soft scale	05/01/95	Taiwan?	SJQ	*Litchi chinensis*	Alan
Q	*Pseudaonidia trilobitiformis*	trilobe scale	05/01/95	Taiwan?	SJQ	*Litchi chinensis*	Alan
Q	*Pseudaulacaspis* sp.	an armored scale	05/01/95	Taiwan?	SJQ	*Litchi chinensis*	Alan
A	*Pulvinaria psidii*	green shield scale	05/01/95	Taiwan?	SJQ	*Litchi chinensis*	Alan
Q	Gastropoda	snails and slugs	05/01/95		SJQ	rambutan	Alan
Q	*Technomyrmex albipes*	an ant	05/02/95		SJQ	*Garcinia mangostana*	Watkins
A	*Ceroplastes rubens*	red wax scale	05/17/95		ALA	*Litchi chinensis*	Eaton
A	*Pulvinaria psidii*	green shield scale	05/18/95		SFO	*Litchi chinensis*	Pastalka
A	*Aspidiotus destructor*	coconut scale	05/18/95		SFO	*Garcinia mangostana*	Pastalka
Q	*Planococcus minor*	Pacific mealybug	05/18/95		SFO	rambutan	Pastalka
Q	*Pseudaonidia trilobitiformis*	trilobe scale	05/18/95		SFO	*Garcinia mangostana*	Pastalka
Q	*Coccus* sp.	a soft scale	05/18/95	Taiwan?	SFO	*Litchi chinensis*	Cunningham
Q	Formicidae	an ant	05/19/95	Thailand	SCL	*Litchi chinensis*	Maggi
Q	*Planococcus minor*	Pacific mealybug	05/19/95	Thailand	SCL	lychee/rambutan	Maggi/Farley
Q	*Pseudococcus* near *citriculus*	a mealybug	05/19/95	Thailand	SCL	lychee/rambutan	Maggi/Farley
Q	*Aonidiella* sp.	an armored scale	05/21/95		SFO	*Garcinia mangostana*	Pastalka
Q	*Planococcus minor*	Pacific mealybug	05/31/95	Asia?	ALA	*Garcinia mangostana*	Eaton

"A", "B", and "Q" Rated Arthropods and Mollusks Intercepted in Quarantine November 1994 - May 1995

Rating	Species	Common Name	Date	Origin	County	Host	Collector(s)
B	*Zabrotes subfasciatus*	Mexican bean weevil	11/07/94	Mexico	ORA	dry beans	Nestor
Q	*Pseudococcus citriculus*	a mealybug	11/08/94	Hawaii	LAX	*Phormium* sp.	Papilli
Q	*Geococcus coffeae*	a soil mealybug	11/10/94	Hawaii	LAX	*Chamaedorea* sp.	Sium
Q	*Anoplolepis longipes*	longlegged ant	11/14/94	Hawaii	LAX	tropical plants	Papilli
Q	*Bambusaspis miliaris*	a bamboo pit scale	11/14/94	Hawaii	LAX	tropical plants	Papilli
Q	*Oligonychus* sp.	a spider mite	11/14/94	Florida ?	CCA	*Mangifera* sp.	Guise
Q	*Crenodorsum* sp.	a whitefly	11/14/94	Hawaii	ORA	*Monstera* sp.	Fernandez
Q	*Aleurotulus* sp.	anthurium whitefly	11/16/94	Texas	ORA	palm	Fernandez
Q	*Hemiberlesia* sp.	an armored scale	11/17/94	?	MAD	*Tillandsia* sp.	Rohn
Q	*Chrysodeixis eriosoma*	green garden looper	11/21/94	Hawaii	LAX	fresh produce	Bakri
Q	*Autographa* sp.	a plusine looper	11/23/94	?	LAX	herbs	Bakri
A	*Theba pisana*	white garden snail	11/29/94	Italy	SJQ	*Genista* sp.	Allan
A	*Cylas formicarius elegantu*	sweetpotato weevil	11/30/94	Louisiana	SCR	*Ipomoea* sp.	Morton
Q	*Blissus* sp.	a chinch bug	12/09/94	Maine	LAX	fresh produce	Bakri
B	*Dasineura balsamicola*	balsam fir gall midge	12/09/94	Maine	MEN	*Abies* sp.	Hajik
B	*Dasineura balsamicola*	balsam fir gall midge	12/12/94	Maine	MEN	*Abies* sp.	Hajik
Q	*Chionaspis heterophyllae*	pine scale	12/20/94	Michigan	ORA	*Pinus* sp.	Do
Q	*Monomorium floricola*	an ant	12/21/94	Hawaii	ORA	cut flowers	Fernandez
Q	*Coccus capparidis*	capparis soft scale	12/22/94	Hawaii	SAC	areca palm	Bianchi
Q	*Pinnaspis uniloba*	unilobed scale	12/30/94	Hawaii	SMT	*Zingiber* sp.	Garcia
Q	*Chorizococcus* sp.	a mealybug	01/03/95	?	MAD	*Tillandsia* sp.	Rohn
Q	*Coptosoma* sp.	a coptosomid bug	01/04/95	Hawaii	SFO	automobile	Olmsted
Q	*Rhizoecus hibisci*	a root mealybug	01/04/95	Florida	LAX	*Ravenea* sp.	Banta
Q	*Coccus acutissimus*	slender soft scale	01/05/95	Hawaii	ALA	*Cycas* sp.	Hono Kala
Q	*Rhizoecus floridanus*	a mealybug	01/10/95	Florida	ORA	*Phoenix* sp.	Fernandez
Q	*Philephedra tuberculosa*	a soft scale	01/19/95	Costa Rica	SJQ	croton banana	Reed
Q	*Andaspis leucophleae*	a diaspidid scale	01/20/95	Florida	SBA	*Ficus* sp.	Squires
Q	*Geococcus coffeae*	a soil mealybug	01/24/95	Florida	LAX	*Phoenix* sp.	Papilli
Q	*Araeocorynus cumingi*	mauna loa bean beetle	02/08/95	Hawaii	SFO	*Canavalia* sp.	Olmsted
Q	*Camponotus* abdom. *floridanus*	Florida carpenter ant	02/13/95	Florida	KRN	bee hives	Sithole
Q	*Kuwanaspis hikosani*	a bamboo diaspidid scale	02/15/95	Florida	ORA	*Phyllostachys* sp.	Fernandez

Rating	Species	Common Name	Date	Origin	County	Host	Collector(s)
Q	*Trionymus sasae*	a mealybug	02/16/95	Oregon	CCA	*Fargesia* sp.	Fonseca
Q	*Hemiberlesia diffinis*	diffinis scale	02/16/95	Florida	ORA	*Ficus* sp.	Wynn
Q	*Coccotrypes* sp.	a bark beetle	02/22/95	Mexico	ALA	*Brahea* sp.	Eaton
Q	*Sybra alternans*	a longhorned beetle	02/23/95	Hawaii	LAX	herbs	Bakei
Q	*Spodoptera sunia*	white-spotted armyworm	02/28/95	Costa Rica	SJQ	*Aralia* sp.	Reed
Q	*Coccus capparidis*	capparis soft scale	03/03/95	Hawaii	SJQ	*Schefflera* sp.	Reed
Q	*Coccus capparidis*	capparis soft scale	03/03/95	Hawaii	RIV	*Schefflera* sp.	Tracy
Q	*Dreissena polymorpha*	zebra mussel	03/06/95	New York	VEN	boat	Dimock
Q	*Coccus capparidis*	capparis soft scale	03/07/95	Hawaii	SJQ	*Schefflera* sp.	Reed
Q	*Monochamus* sp.	a pine sawyer	03/07/95	Chile	SFO	*Nothofagus* sp.	Wion/Coen
Q	*Rhizoecus floridanus*	a soil mealybug	03/07/95	Florida	ORA	*Syagrus* sp.	Fernandez
Q	Thyreocoridae	a negro bug	03/10/95	Costa Rica	LAX	container reefer	Kawakami
Q	*Paleocallidium rufipenne*	a longhorned beetle	03/10/95	Japan	SFO	dunnage	Sohal
Q	*Dysmicoccus mackenziei*	MacKenzie mealybug	03/16/95	Guatemala	SMT	*Tillandsia* sp.	Pendleton
Q	*Monomorium floricola*	an ant	03/17/95	Hawaii	SMT	ginger/ti	Garibaldi
Q	*Tetranychina* sp.	a tetranychid mite	03/23/95	Guatemala	SMT	*Schefflera* sp.	Schmitz
Q	*Paleocallidium rufipenne*	a longhorned beetle	03/28/95	?	ALA	dunnage	Wion
Q	*Geococcus coffeae*	a soil mealybug	04/04/95	Hawaii	LAX	*Caryota* sp.	Sium
Q	*Coptosoma xanthogramma*	black stink bug	04/07/95	Hawaii	SFO	automobile	Olmsted
Q	*Miscanthicoccus miscanthi*	a grass mealybug	04/11/95	?	SBA	*Miscanthus* sp.	Davidson
Q	*Bambusaspis miliaris*	a bamboo pit scale	04/12/95	Hawaii	SBA	bamboo	Squires
Q	*Melormenis antillarum*	West Indian flatid	04/18/95	Hawaii	LAX	automobile	Rabe
Q	*Philephedra tuberculosa*	a soft scale	04/19/95	Florida	SCL	*Spathiphyllum* sp.	Rogoyski
Q	*Aleurocerus palmae*	palm whitefly	04/19/95	Texas	ORA	palm	Wynn
Q	*Philephedra tuberculosa*	a soft scale	04/24/95	Florida	SCL	*Spathiphyllum* sp.	Rogoyski
Q	*Calycomyza* sp.	a leafminer	04/25/95	Mexico	SFO	*Ocimum* sp.	Shook
Q	*Rhizoecus americanus*	a soil mealybug	04/25/95	Florida	LAX	*Ravenea* sp.	Banta
Q	*Rhizoecus americanus*	a soil mealybug	04/25/95	Florida	LAX	*Ravenea* sp.	Papilli
A	*Anastrepha obliqua*	West Indian fruit fly	04/27/95	New York	LAX	*Mangifera* sp.	Banta
B	*Parlatoria pergandii*	chaff scale	04/27/95	China	SFO	*Citrus* sp.	Wion
Q	*Carulaspis giffardi*	an armored scale	?	Hawaii	SFO	fruit/leaves	Sohal
B	*Parlatoria pergandii*	chaff scale	05/08/95	Florida	SCL	*Ravenea* sp.	Rogoyski

Rating	Species	Common Name	Date	Origin	County	Host	Collector(s)
Q	*Spodoptera latifascia*	an armyworm	05/10/95	Florida	SJQ	*Cordyline* sp.	Moretto
Q	*Nezara viridula*	southern green stink bug	05/10/95	Hawaii	LAX	*Ocimum* sp.	Sium
Q	*Thrips hawaiiensis*	Hawaiian flower thrips	05/11/95	Hawaii	ORA	flower lei	Fernandez
Q	*Echinothrips americanus*	a thrips	05/12/95	Florida	CCA	*Gardenia* sp.	Fonseca
Q	*Thrips hawaiiensis*	Hawaiian flower thrips	05/12/95	Hawaii	CCA	*Banksia* sp.	Wion
Q	*Thrips hawaiiensis*	Hawaiian flower thrips	?	Hawaii	YUB	tropical flowers	Martin
Q	*Philephedra tuberculosa*	a soft scale	05/12/95	Florida	SCL	*Spathiphyllum* sp.	Rogoyski
Q	*Thrips florum*	a flower thrips	05/12/95	Hawaii	ORA	*Protea* sp.	Fernandez
Q	*Thrips hawaiiensis*	Hawaiian flower thrips	05/12/95	Hawaii	ORA	*Protea* sp.	Fernandez
Q	*Thrips palmi*	a thrips	05/12/95	Hawaii	ORA	*Protea* sp.	Fernandez
Q	*Orchidophilus* sp.	a weevil	05/12/95	Hawaii	ALA	*Anthurium* sp.	Peek
Q	*Epicaerus* sp.	a weevil	05/14/95	Texas	LAX	herbs	Bakri
Q	*Oxydema* sp.	a weevil	05/15/95	Hawaii	ALA	tropical flowers	Peek
Q	*Camponotus* sp.	a carpenter ant	05/17/95	So. America	SJQ	*Dracaena* sp.	Moretto
Q	*Brachycyttarus griseus*	a bagworm	05/19/95	Hawaii	SCL	malongoy	Maggi
Q	*Thrips hawaiiensis*	Hawaiian flower thrips	05/19/95	Hawaii	CCA	*Gardenia* sp.	Fonseca
Q	*Philephedra tuberculosa*	a soft scale	05/22/95	Florida	SCL	*Spathiphyllum* sp.	Rogoyski

BORDER STATIONS

ZEBRA MUSSEL, *Dreissena polymorpha,* -(Q)- Live zebra mussels were once again discovered on a boat bound for San Diego. This time the pest was found in the starboard intake of a 40 foot yacht being shipped from Michigan. The find was made by Cliff McDonald on March 6 at the Needles Station. This is the third interception of zebra mussel at the California border stations.

PAPAYA FRUIT FLY, *Toxotrypana curvicauda,* -(X)- A heavy infestation of live papaya fruit fly larvae were found in a commercial shipment of Mexican papayas bound for San Jose. Andy Lacy discovered the pest at the Vidal Station on April 16.

The following list outlines some of the important discoveries of pests of tropical fruits at the border stations during the summer of 1994. See report on similar finds on page 9.

Pest	Station	Date	Origin	Collector	Host
Longan Scale --	HO	07/15	Canada	Calvery	longans
Thysanofiorinia nephelli	HO	07/23	Canada	Johnson	longans
	DO	08/16	Canada	Chapman	longans
	HO	08/21	Oregon	Johnson	longans
	HO	08/25	Washington	Smith	longans
	HO	08/26	Canada	Zavala	longans
	HO	09/06	Canada	Brown	longans
	HO	09/19	Canada	Johnson	longans
Mealybugs	HO	07/19	Washington	Johnson	rambutans

A total of 178 ant discoveries were made at California's border stations since last summer. The following list outlines the finds:

Common Name	Scientific Name	# Finds	Stage/Year
FLORIDA CARPENTER ANT	*Camponotus abdominalis floridanus*	7	live/dead adults, 1995
CARPENTER ANT	*Camponotus* sp.	28	live adults, 1994/95
RED IMPORTED FIRE ANT	*Solenopsis invicta*	30	live adults, 1994/95
FIRE ANT	*Solenopsis* sp.	23	live adults, 1994/95
	Myrmicinae	11	live adults, 1994/95
BIGHEADED ANT	*Pheidole megacephala*	1	live adults, 1994
BLACKHEADED ANT	*Tapinoma melanocephalum*	10	live adults, 1994/95
VARIOUS ANT PESTS	*Monomorium floricola*	1	live adults, 1995
	Pheidole sp.	11	live adults, 1994/95
	Tapinoma sp.	24	live adults, 1994/95
	Tetramorium sp.	18	live adults, 1994/95
	Formicidae	12	live adults, 1994
	Ponerinae	2	live adults, 1994

OTHER SIGNIFICANT CONCERNS

CITRUS PEEL MINER, *Marmara salictella* (?), -(C)- A lot of interest has been generated over the appearance in Florida several years ago of the very serious citrus pest called citrus leaf miner, *Phyllocnistus citrella* (see CPPDR 12[1-2]:15-17). That pest is certainly one to be reckoned with and would have a very serious impact on California citrus production. However, California has already had a leafminer problem on citrus for a number of years. The citrus peel miner has been a pest off and on since the mid 1950s in the Coachella Valley area of Riverside County. The following report by Dr. Eldon Reeves, Entomologist with the Riverside County Agricultural Commissioner's office, with minor modifications by the editor, outlines the problem:

CITRUS PEEL MINER PROBLEMS

from a report by
Eldon L. Reeves
Entomologist, Riverside County

A high population of this citrus pest has occurred in several citrus groves, primarily grapefruit, in the Oasis area of the Coachella Valley the past two seasons. This has been an ongoing citrus pest for several years. There was considerable loss due to this pest, in this same community, in 1984-85.

Dr. E. L. Atkins, Jr., of the University of California, Citrus Experiment Station in Riverside, pointed out in a paper entitled Citrus Peel Miner (in The California Citrograph, Sept. 1961) that this is an important economic pest of citrus and that its preferred host plant in this area is oleander. The larvae mine between upper and lower layers of epidermis on new oleander growth and occasionally mine the upper surface of oleander leaves and stems.

When high populations of this small moth build up in oleander, as we have observed in the Oasis area the past two seasons, the adult moths tend to be carried by wind currents to the citrus groves in the area. Grove inspections this past fall revealed extensive insect damage to the citrus fruit, with obvious crop losses to the growers.

There is a cultural practice that has been used to control this pest. It has been used quite successfully on several occasions within the Coachella Valley. It consists of removing all of the oleander plants within approximately 1/2 to 3/4 of a mile of any given citrus grove, thus eliminating this source of the insect pest.

By this method there would be very little, or no, pesticides involved in controlling this insect pest on the oleander or on the citrus fruit, consequently, it would be an environmentally friendly approach. This could be a fine example of Integrated Pest Management, or Sustainable Agriculture, whereby a crop pest is brought under control, for an extended period of time, without the use of pesticides.

Another plus for removing oleander, as well as caster bean and Jimsonweed from your community, would be for the safety of the children. All three of these plants are quite poisonous.

A summary of information contained in the report by E.L. Atkins in his California Citrograph article indicates that the miner burrows between epidermal layers of the leaves of the favored host, oleander. The oleanders are frequently planted in the area as wind breaks. Apparently, when populations build up on oleander, the insect moves into citrus that may be nearby, especially grapefruit. The larvae then mine the epidermal area of the fruit peel, particularly on fruit on the inside of the tree and near the ground. Occasionally they will also mine the young twigs. Multiple individuals may be present in the same fruit. The mines are small, almost hair-like streaks at the start, but as the insect grows, the mines become wider. The mines can be numerous, curved, often cross and recross each other, and usually end in a relatively wide blotch just under the rind surface. In some instances, the whole fruit surface may be blistered and resemble the peeling skin of a badly sunburned person. The damage is strictly cosmetic but the fruit is rendered unsaleable in the fresh fruit market.

The species was described in 1863 from specimens found mining the leaves of willow in the eastern United States. It was first recorded attacking citrus in 1917, in southern California. Periodic reports appeared in 1933, 1948 and in the late 1950s in various areas in southern California. It has also attacked citrus in Yuma, Arizona. The report by Dr. Reeves covers some of the more recent episodes of damage. According to CDFA Lepidopterist Tom Eichlin, there may be a species complex involved with this insect on the various hosts that it has been found to attack, and that the entity on oleander or citrus may or may not be *salictella*. Dr. Don Davis, National Museum of Natural History, Smithsonian Institution, has been trying to resolve this complex problem since early on. Specimens have been difficult to obtain.

Eggs are deposited singly on the epidermis of the current stem growth of oleander, and on the twigs of flush growth and peel of green fruit of citrus. Females produce about 20 eggs. The larvae burrow from the egg directly into the epidermis, where they mine, feed and develop through six instars. The last stage larva cuts a hole in the epidermis and travels to a secluded niche to pupate. The adult moths are small, brownish with an irregular silvery band on the basal third of the forewing. Adults are active right at dusk. A life cycle lasts approximately 40-45 days.

References

Arizona Cooperative Survey 1960. A peel miner (*Marmara salictella*). In Cooperative Economic Insect Report (CEIR) 10(48):1100.

Atkins, E. L. Jr. 1961. Citrus peel miner. In The California Citrograph, September 46(11):367-371.

Atkins, E. L. Jr. 1971. Citrus peel miner, more problems in the desert. In The California Citrograph, June 56(8):245-246,267.

Clemens, J. B. 1863. North American microlepidoptera. Proc. Ent. Soc. Phil. 2:6-8.

DeGryse, J. J. 1916. The hypermetamorphism of the lepidopterous sapfeeders. Proc. Ent. Soc. Wash. 18(1):164-168.

Lockwood, Stewart 1933. Orange peel miner. Calif. Agr. Monthly Bul. 22:343.

Vinal, S. C. 1917. Notes on the life-history of *Marmara elotella* Busck, a lepidopterous sap feeder in apple twigs. Jour. Econ. Ent. 10(5):488-496.

Woglum, R. S. 1948. A willow pest that occasionally injures oranges. Calif. Fruit Growers Exchange, Pest Control Circular No. 168, p. 658.

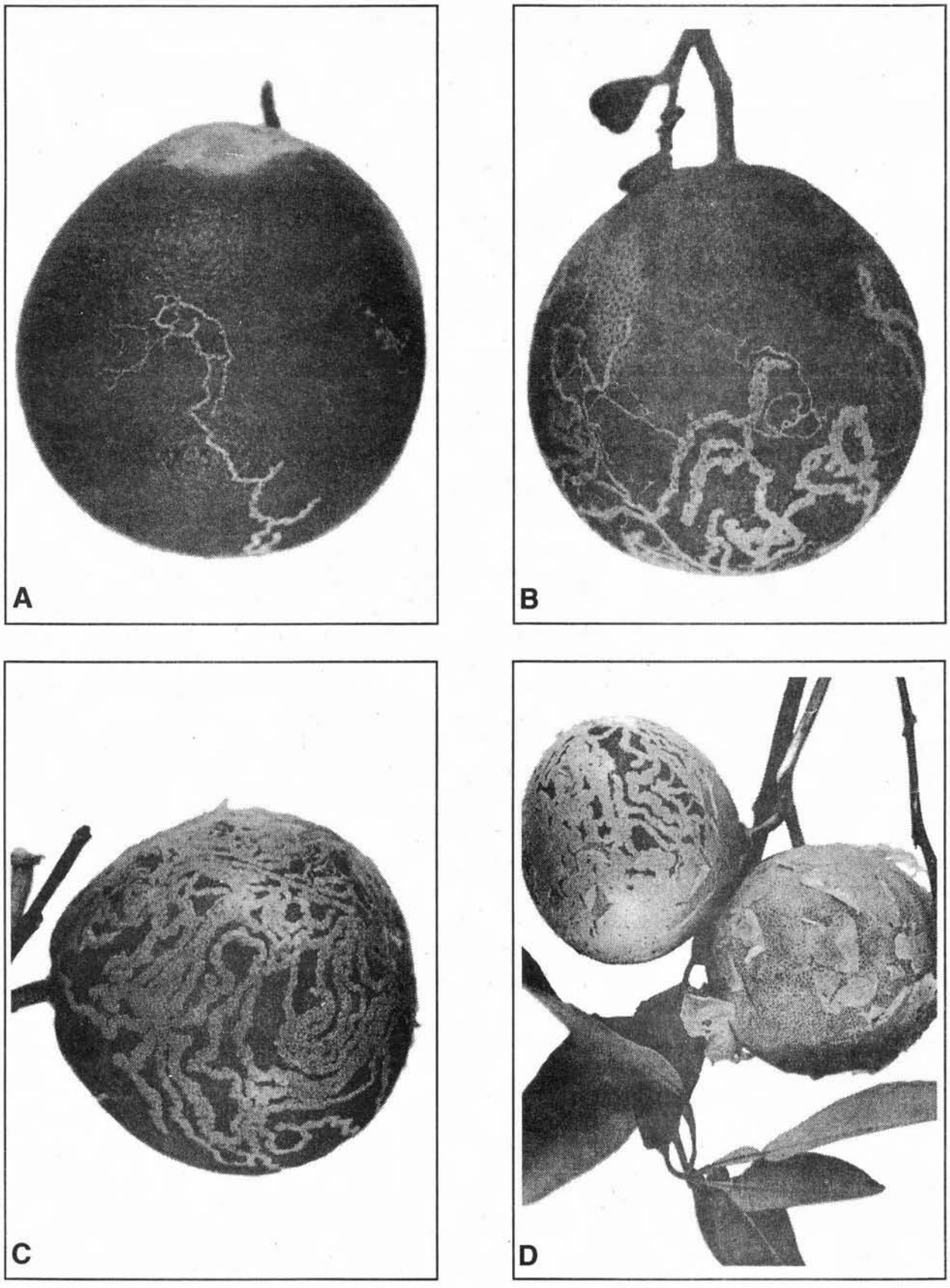

Fig. 6. Citrus peel miner, *Marmara salictella* (?). A: Beginning mine. B, C: Multiple mines affecting progressively more fruit surface. D: Severe and often complete blistering of epidermal layers of fruit.

→ BOTANY HIGHLIGHTS ←

HYDRILLA, *Hydrilla verticillata*, -(A)- The following report on a significant race of hydrilla was prepared by State Plant Taxonomist, Doug Barbe. For further information of hydrilla in California, see CPPDR 13(3-4):35-36,38.

An established monoecious race of *Hydrilla* has been identified from Clear Lake, Lake County, California, and from Pipe/Lucerne Lake, a small private lake south of Seattle, near Auburn, King County, Washington.

The significance of these populations lies in a study published by Kerry Steward, USDA-ARS, Ft Lauderdale, Florida, in the journal *Aquatic Botany*, 46(2):169-183 (1993).

Steward evaluated the potential for sexual reproduction in the various races in an international *Hydrilla* germplasm collection representing races of *Hydrilla* from Africa, Pakistan, India, Nepal, China, Korea, Taiwan, Malaysia, Indonesia, Papua New Guinea, Australia, New Zealand, Panama, and the United States.

Crosses between dioecious and monoecious races of *Hydrilla verticillata* resulted in seed production in 40 of the 56 crosses (71%). Seeds from 90% of these crosses were viable and most seedlings survived. The dioecious female race, established in the US since the 1950s, has never been reported to produce seed in the United States. This female race was discovered to be one of the greatest seed producers in the crosses. This race has been reported to be triploid, but seed from four of its five crosses were viable. Triploids are generally sterile, so these findings raise questions about the reported ploidy level of this race. Another observation, not previously reported for *Hydrilla*, was the occurrence of monoecious offspring from dioecious parents. The reported lack of seed production in the US female plants of the dioecious race apparently has been due to the absence of a viable pollen donor.

On the next three pages are the updated California weed distribution maps for the first part of 1995.

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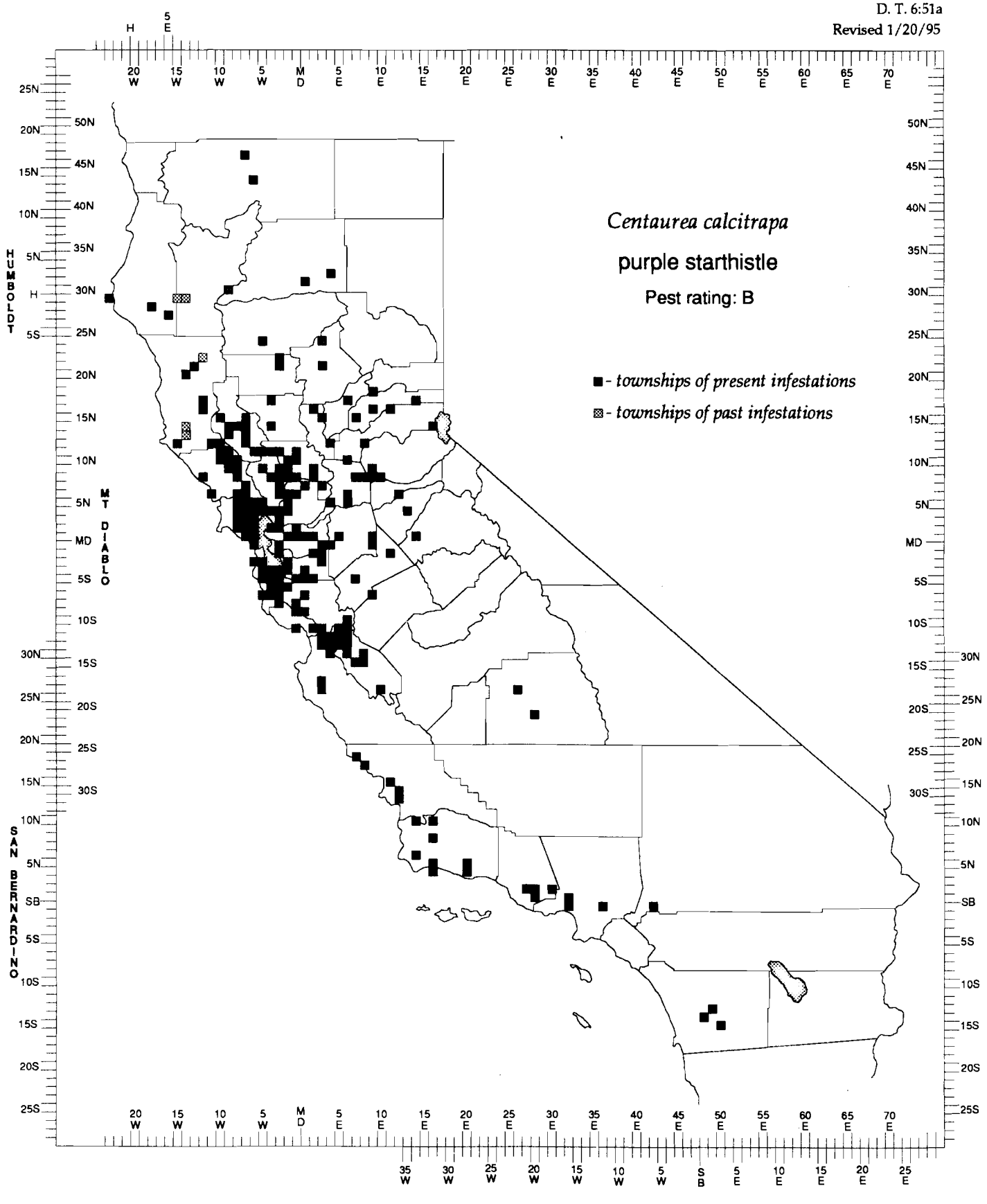

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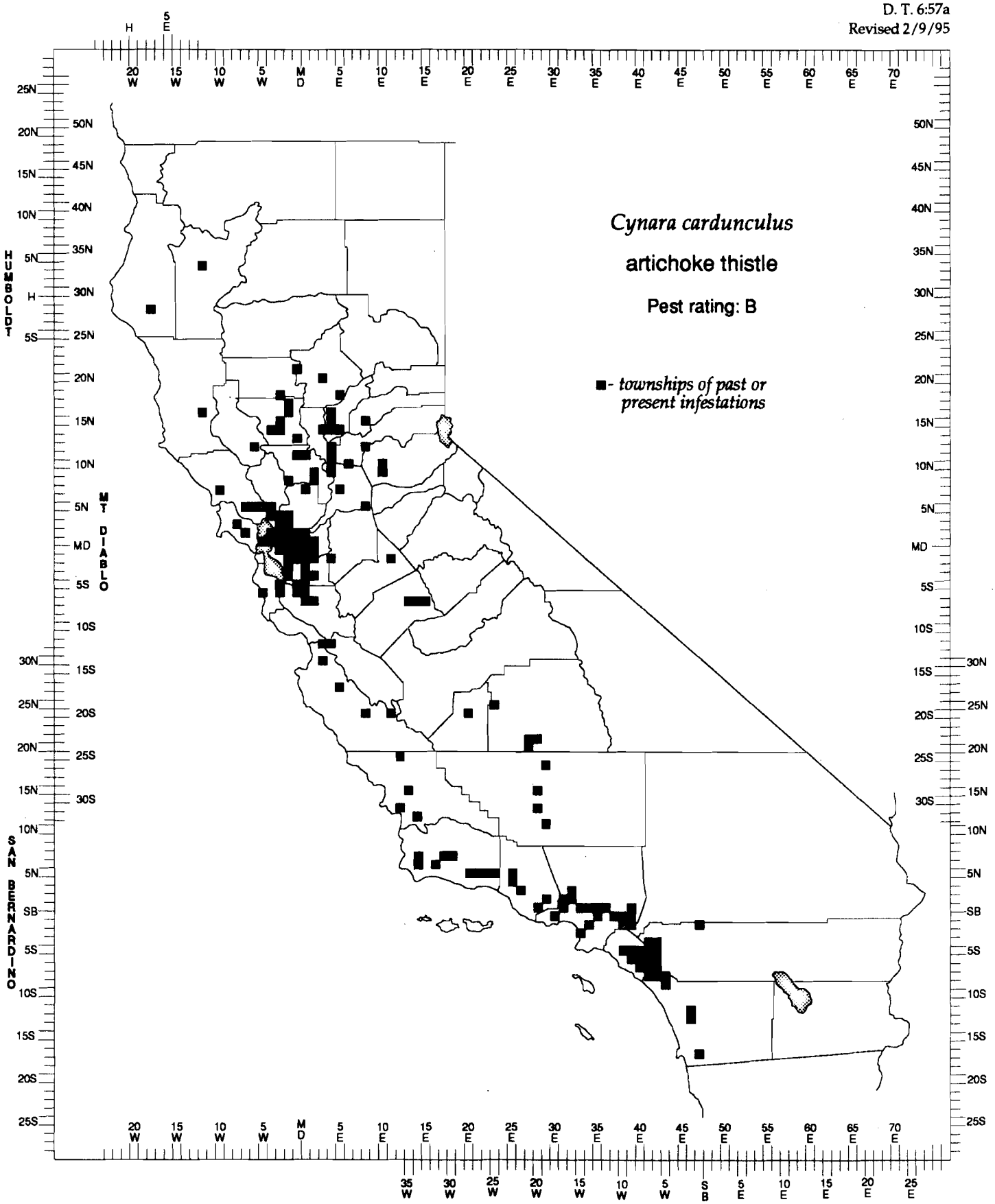

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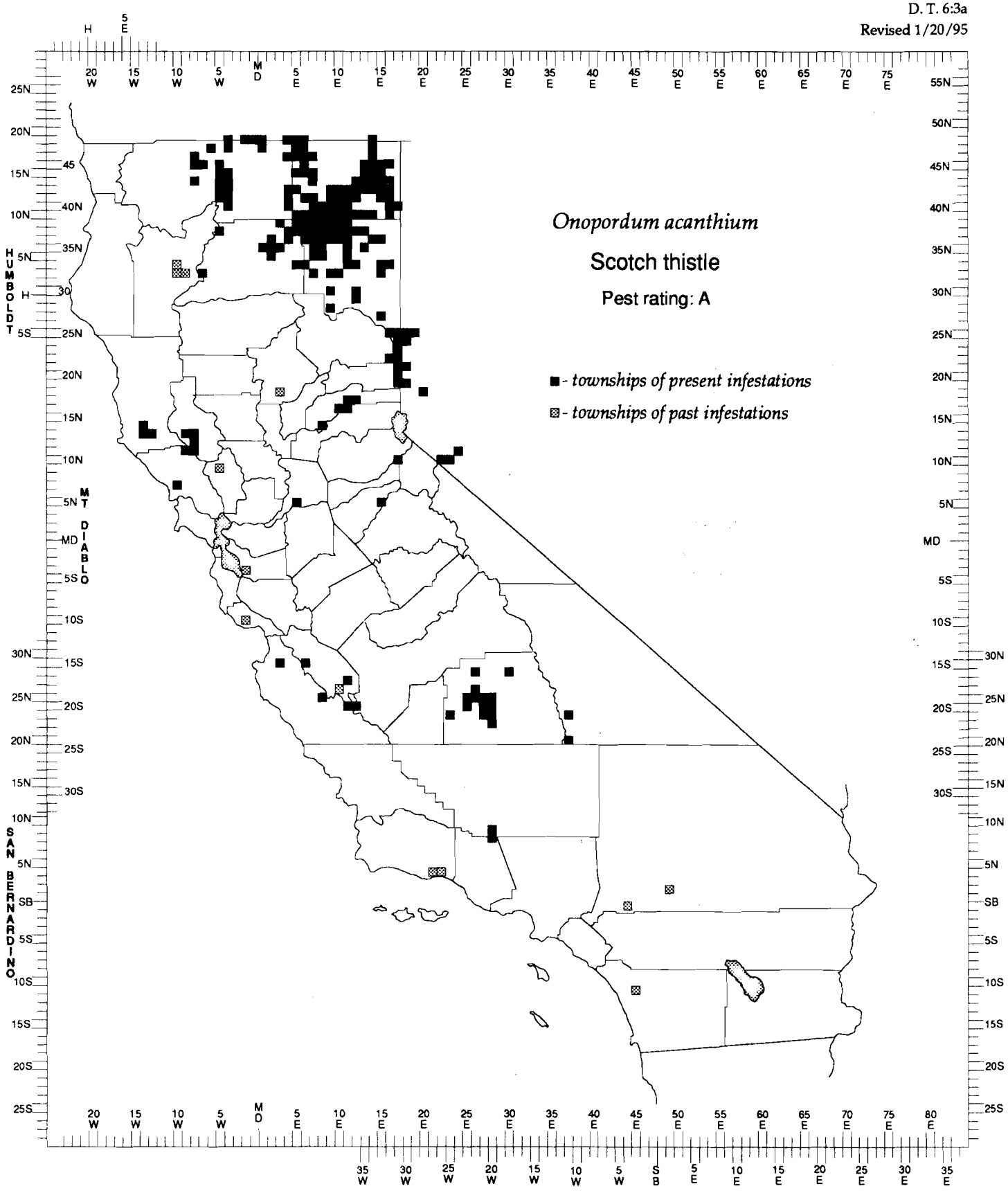

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