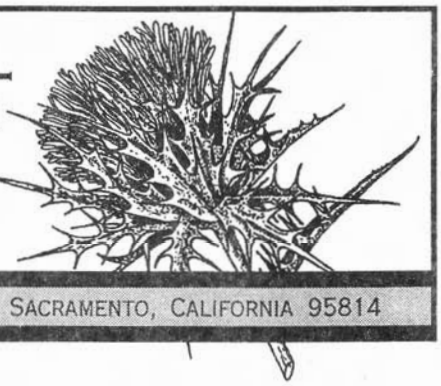
CALIFORNIA PLANT PEST AND DISEASE REPORT



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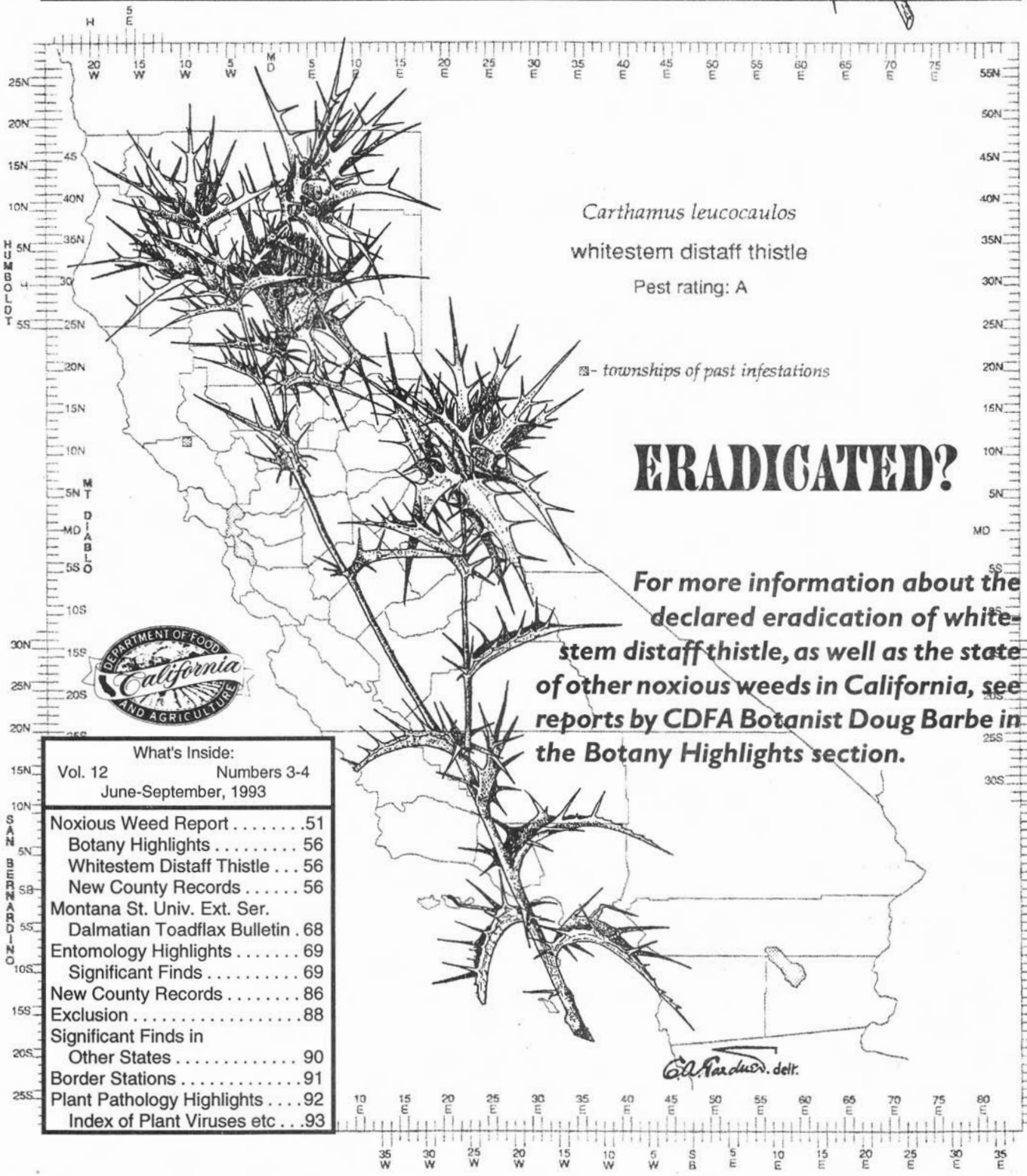

ERADICATED?

For more information about the declared eradication of whitestem distaff thistle, as well as the state of other noxious weeds in California, see reports by CDFA Botanist Doug Barbe in the Botany Highlights section.

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June-September, 1993

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CALIFORNIA PLANT PEST AND DISEASE REPORT

Editor: Raymond J. Gill
Production Assistant:
Brenda R. Beckwith

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Correspondence concerning the CPPDR or subscription requests should be addressed to:

Editor, CPPDR
State of California
Department of Food and Agriculture
Analysis and Identification Branch, Rm. 340
1220 N Street
P. O. Box 942871
Sacramento, CA 94271-0001

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CALIFORNIA NOXIOUS WEED DETECTION PROGRAM

In two past issues of CPPDR, 9(1-2 & 3-4), 1990, a series of maps were presented that detailed the distribution of noxious weeds in California. These maps were developed from a master map produced by a draftsman a long time ago for the Botany department of the California Department of Food and Agriculture. The base map has now been been computerized, allowing a much easier production and correction of maps for each weed species. The base map (See page 53) is designed to show accurate distribution based on township and range. CDFA botanist Doug Barbe has been continually updating these weed maps, and nearly every CPPDR since these 1990 issues has had some of these updates. The following report by Doug Barbe outlines the CDFA noxious weed detection and control program:

Preventing the Spread of Noxious Weeds

G. Douglas Barbe, Senior Plant Taxonomist,
California Department of Food and Agriculture, Sacramento

The California Department of Food and Agriculture, in order to meet its resposibility "...to prevent the introduction and spread of...noxious weeds" (Calif. Food & Agr. Code), has developed over the past thirty years a plan which has been successful to varying degrees. In the department there are units responsible for various aspects of the plan. Pest Exclusion (quarantines and border inspection stations to prevent the introduction of weeds), Pest Detection (early detection and delimitation surveys of weed infestations), Analysis and Identification (timely and accurate identification of weed species and evaluation of their noxious potential), and Pest Control and Eradication (control and eradication strategies, methods, and materials).

To know with certainty whether a species is newly introduced or is spreading from an established population, permanent records are absolutely necessary. Accurate long term records and maps are a *sine qua non* for documenting where and when weeds have been introduced and whether they are spreading from the initial site. Also, as various weed workers retire and their knowledge retires with them, or as programs and priorities change and the weeds are "institutionally forgotten", which sometimes happens, accurate long term records avoid the problem of reinventing the wheel when a new worker arrives on the job, or attention is again focused on the weeds.

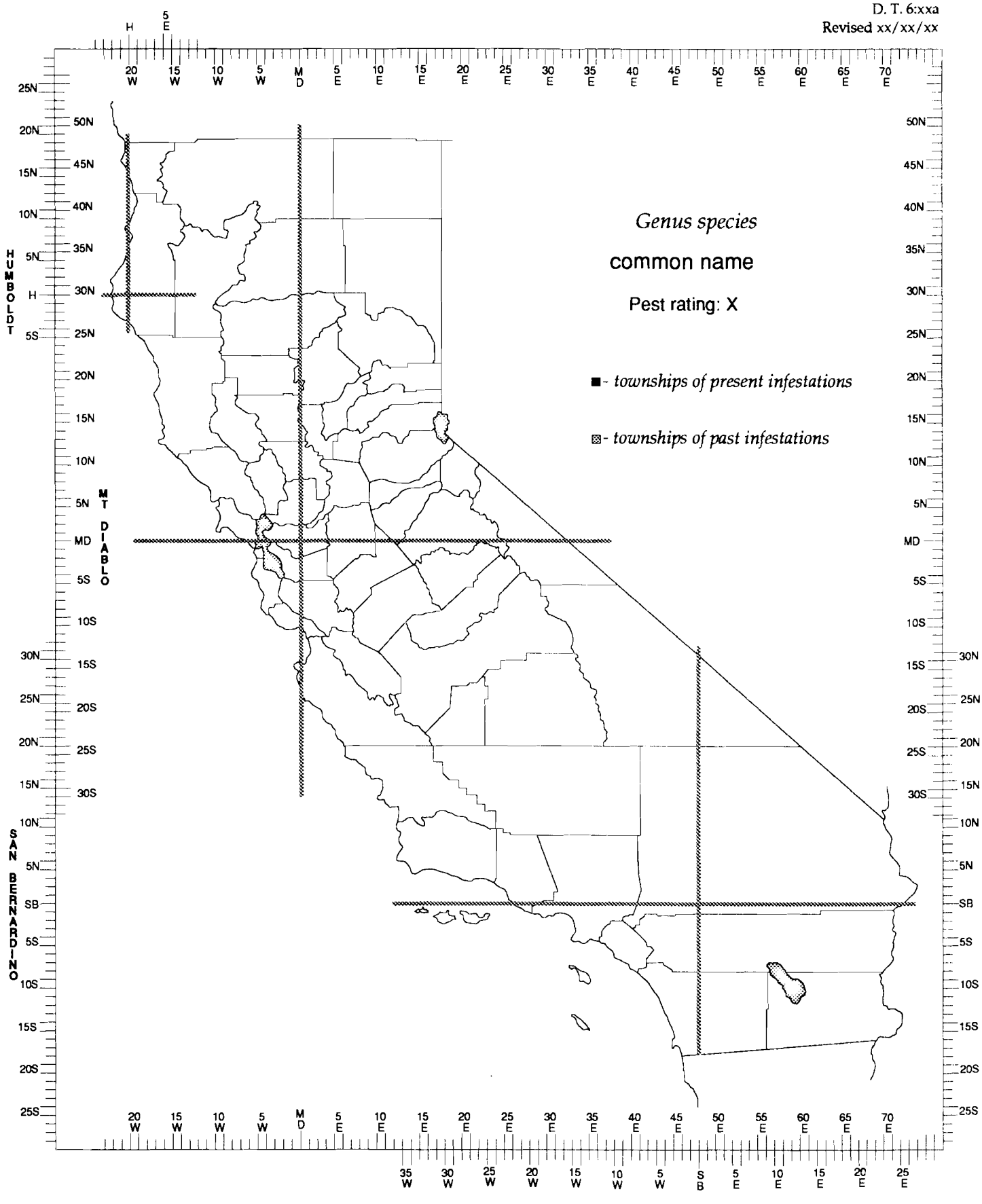
Mapping of noxious weeds in California is based on the common *Federal System of Rectangular Surveys of the United States* (see map on page 53), which is found on all USCGS topographic maps, Forest Service maps, and on many county maps which are readily available in stationary stores or local chambers of commerce. (The map on page 54 shows

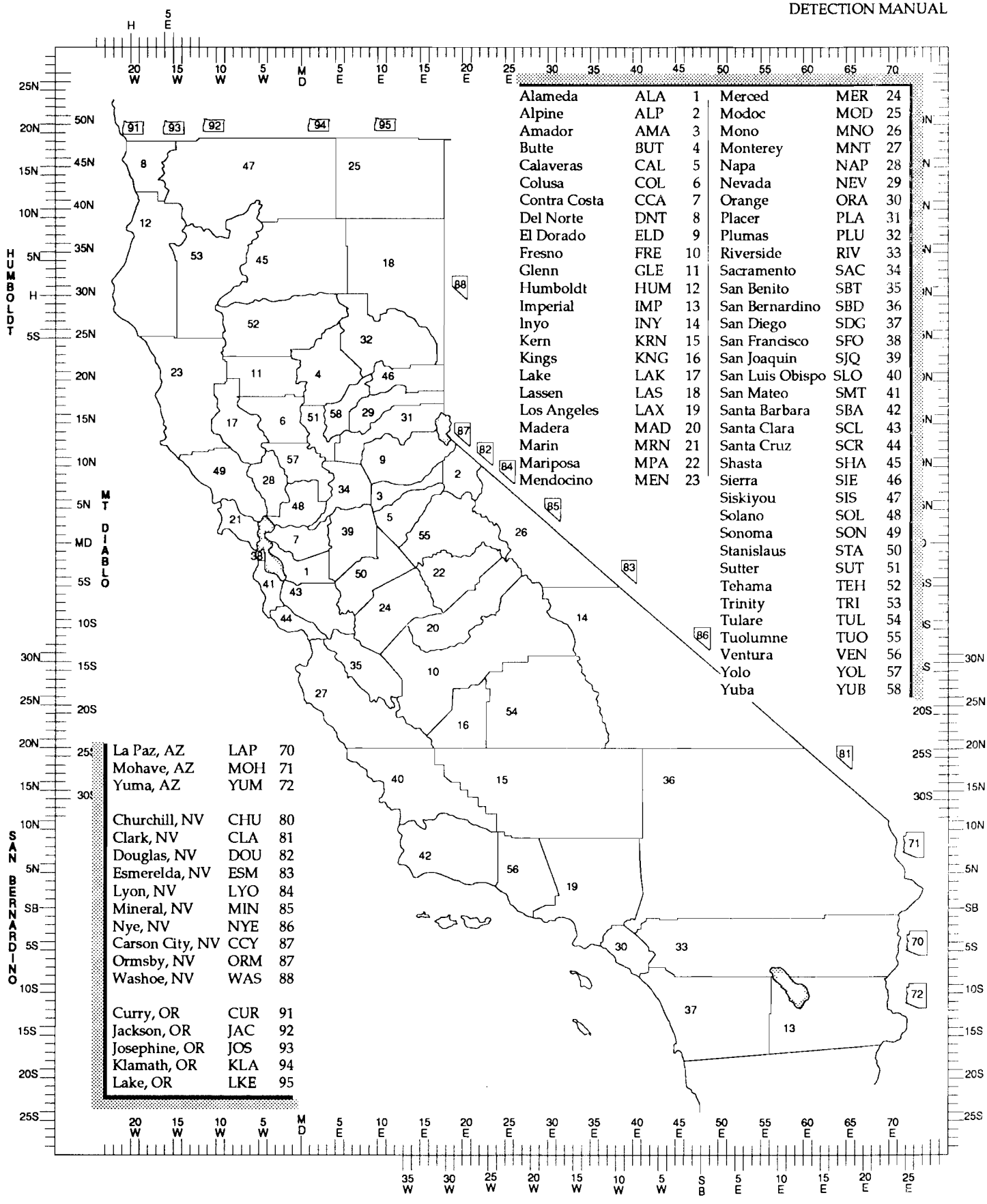
the county codes for the maps as well as the county codes for adjacent states along the California border).

A weed infestation can be located to within one square mile (640 acres or 259 hectares) by township, range, and section, while other descriptors can pinpoint the infestation to any field or roadside within the section. Most important, however, is that a weed infestation, or the historic site of one, can be found years later from the records. Township information is stable over time; most surveys and legal descriptions of land in the western states are made by this system which ensures its permanency.

When a new weed species is found, its location is mapped and the extent of its invasion is delimited. Spreading from the initial site is determined from subsequent surveys and recorded. This way the magnitude and direction of spreading is documented and mapped. In a similar manner the *eradication* of weeds is recorded. The map on page 55 illustrates the eradication of camelthorn (*Alhagi maurorum*) from most of the sites it once occupied in California. A new infestation was found recently in San Bernardino County in a township adjacent to one from which camelthorn had been eradicated. The weed's reappearance in the vicinity of a dormant or extinct infestation was found during a routine detection survey and allowed control and eradication crews to act quickly to quash its re-establishment and spread.

The botany laboratory keeps records on the occurrence of the state's noxious weeds going back to the earliest years of the state. Recently Doug Barbe has been visiting two of the largest herbaria in California, the University of California, Berkeley, and the California Academy of Science, San Francisco, to find the earliest records of our most troublesome weeds. The old historic records will be incorporated into the distribution maps and will show as complete a documented history of the introduction and spread of our noxious weeds as possible.

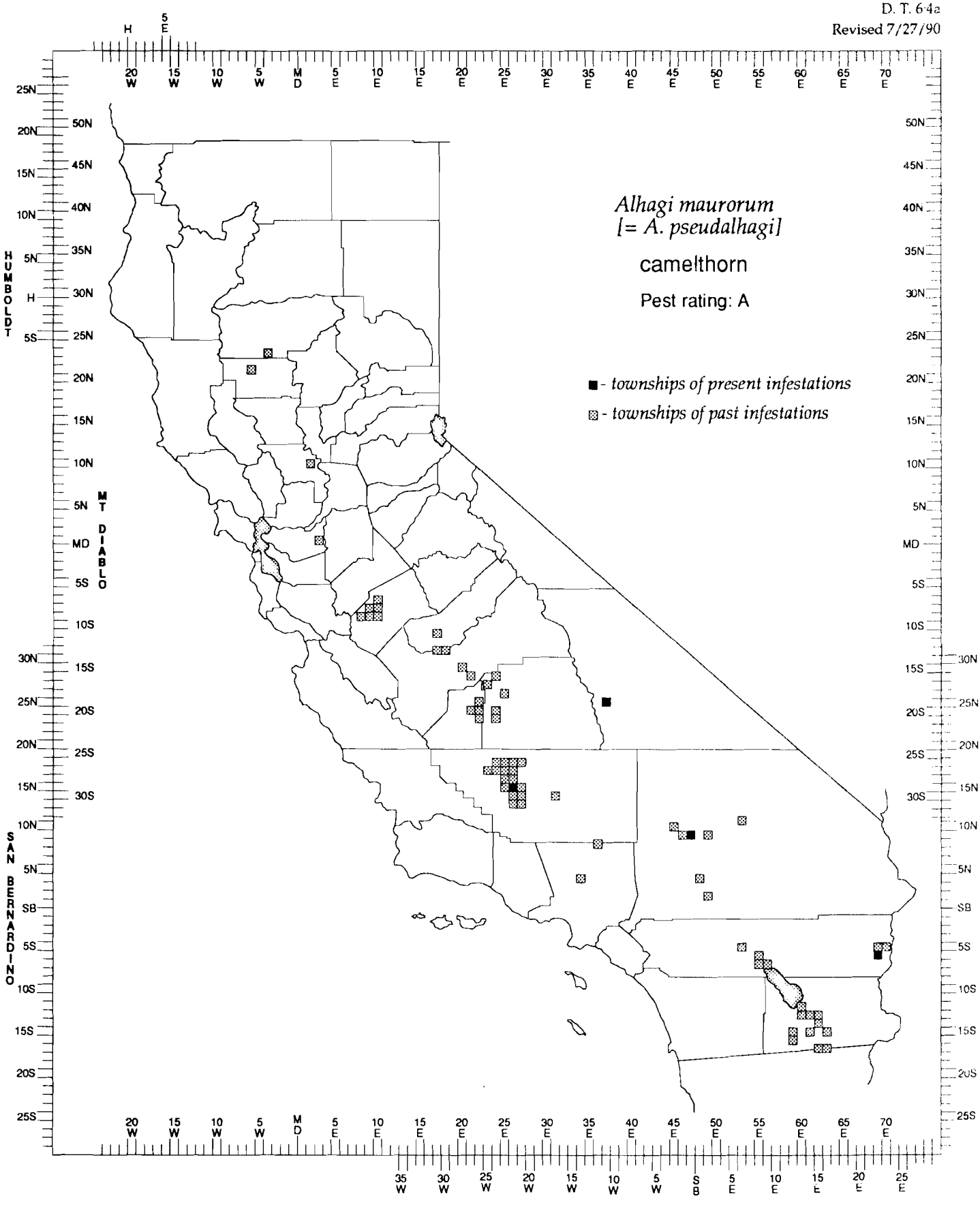

Genus species
common name
Pest rating: X
■- *townships of present infestations*
▨- *townships of past infestations*
HUMBOLDT
MT DIABLO
SAN BERNARDINO



Alameda	ALA	1	Merced	MER	24
Alpine	ALP	2	Modoc	MOD	25
Amador	AMA	3	Mono	MNO	26
Butte	BUT	4	Monterey	MNT	27
Calaveras	CAL	5	Napa	NAP	28
Colusa	COL	6	Nevada	NEV	29
Contra Costa	CCA	7	Orange	ORA	30
Del Norte	DNT	8	Placer	PLA	31
El Dorado	ELD	9	Plumas	PLU	32
Fresno	FRE	10	Riverside	RIV	33
Glenn	GLE	11	Sacramento	SAC	34
Humboldt	HUM	12	San Benito	SBT	35
Imperial	IMP	13	San Bernardino	SBD	36
Inyo	INY	14	San Diego	SDG	37
Kern	KRN	15	San Francisco	SFO	38
Kings	KNG	16	San Joaquin	SJQ	39
Lake	LAK	17	San Luis Obispo	SLO	40
Lassen	LAS	18	San Mateo	SMT	41
Los Angeles	LAX	19	Santa Barbara	SBA	42
Madera	MAD	20	Santa Clara	SCL	43
Marin	MRN	21	Santa Cruz	SCR	44
Mariposa	MPA	22	Shasta	SHA	45
Mendocino	MEN	23	Sierra	SIE	46
			Siskiyou	SIS	47
			Solano	SOL	48
			Sonoma	SON	49
			Stanislaus	STA	50
			Sutter	SUT	51
			Tehama	TEH	52
			Trinity	TRI	53
			Tulare	TUL	54
			Tuolumne	TUO	55
			Ventura	VEN	56
			Yolo	YOL	57
			Yuba	YUB	58

La Paz, AZ	LAP	70
Mohave, AZ	MOH	71
Yuma, AZ	YUM	72
Churchill, NV	CHU	80
Clark, NV	CLA	81
Douglas, NV	DOU	82
Esmerelda, NV	ESM	83
Lyon, NV	LYO	84
Mineral, NV	MIN	85
Nye, NV	NYE	86
Carson City, NV	CCY	87
Ormsby, NV	ORM	87
Washoe, NV	WAS	88
Curry, OR	CUR	91
Jackson, OR	JAC	92
Josephine, OR	JOS	93
Klamath, OR	KLA	94
Lake, OR	LKE	95

DETECTION MANUAL
D. T. 6-4a
Revised 7/27/90



BOTANY HIGHLIGHTS

WEED ERADICATION

Whitestem distaff thistle, *Carthamus leucocaulos*, an A-rated noxious weed, was declared eradicated by the Sonoma County Agricultural Commissioner in May 1993.

In the only known occurrence in the western hemisphere, whitestem distaff thistle was first found near Asti, in northern Sonoma County, by County Agricultural Inspectors in 1969. It was a quarter-acre infestation on both faces of an earthen soil conservation dam which had been constructed in 1958.

Whitestem distaff thistle was believed to have been introduced as a contaminant in the subterranean clover seed from Australia, used to stabilize the slopes of the new dam, a practice required by the Soil Conservation Service. The thistle is native to the southern Ægean Islands of the eastern Mediterranean Sea, and is adventive to southwestern Europe and Australia.

Despite eradication efforts, whitestem distaff thistle continued to appear on the face of the dam sporadically over the years. The last time it was seen on the dam was in 1987 by County Agricultral Inspector Pierre Gadd and CDFA Detection Biologist Robin Breckenridge.

The "treatment" that finally eradicated this persistent weed came when a much larger earth dam was built over the original dam, burying the entire site under twenty feet of earth and rip rap.

The area surrounding the new dam will continue to be surveyed for whitestem distaff thistle for several years to come, but it is unlikely to appear on the face of the new dam. The map on the next page shows where the infestation had existed. The illustration of this weed on the front cover is an electronically redesigned pen drawing originally done by C.A. Gardner, Government Botanist, in: 'Weeds of Western Australia.' (Jour. Agric. Western Australia) by G.R.W. Meadly.

NEW COUNTY RECORDS

HYDRILLA, *Hydrilla verticillata*, -(A)- Oh, that pesty hydrilla is back and in a new county. This new find in **Tulare** County marks the southern-most of the present infestations. D. Haines, Marjorie Deshon and A. Acosta collected hydrilla in a commercial waterlily pond in Visalia on June 11.

SQUARROSE KNAPWEED, *Centaurea virgata* var. *squarrosa*, -(A)- This northern Californian weed was discovered in Crescent Mills, **Plumas** County, by Keck on June 28.

SKELETONWEED, *Chondrilla juncea*, -(A)- Skeletonweed has been found for the first time in **Santa Clara** County. Ed Finley found this new occurrence of skeletonweed along the Southern Pacific Railroad in Palo Alto on June 24.

PLUMELESS THISTLE, *Carduus acanthoides*, -(A)- This thistle was found for the first time in **Trinity** County. Keck discovered this weed in Zenia on August 25.

For the current maps of the above weeds, as well as other updated maps, see the following pages.

STATE OF CALIFORNIA • DEPARTMENT OF FOOD AND AGRICULTURE

DIVISION OF PLANT INDUSTRY - ANALYSIS & IDENTIFICATION/BOTANY

DETECTION MANUAL
D. T. 6:18a
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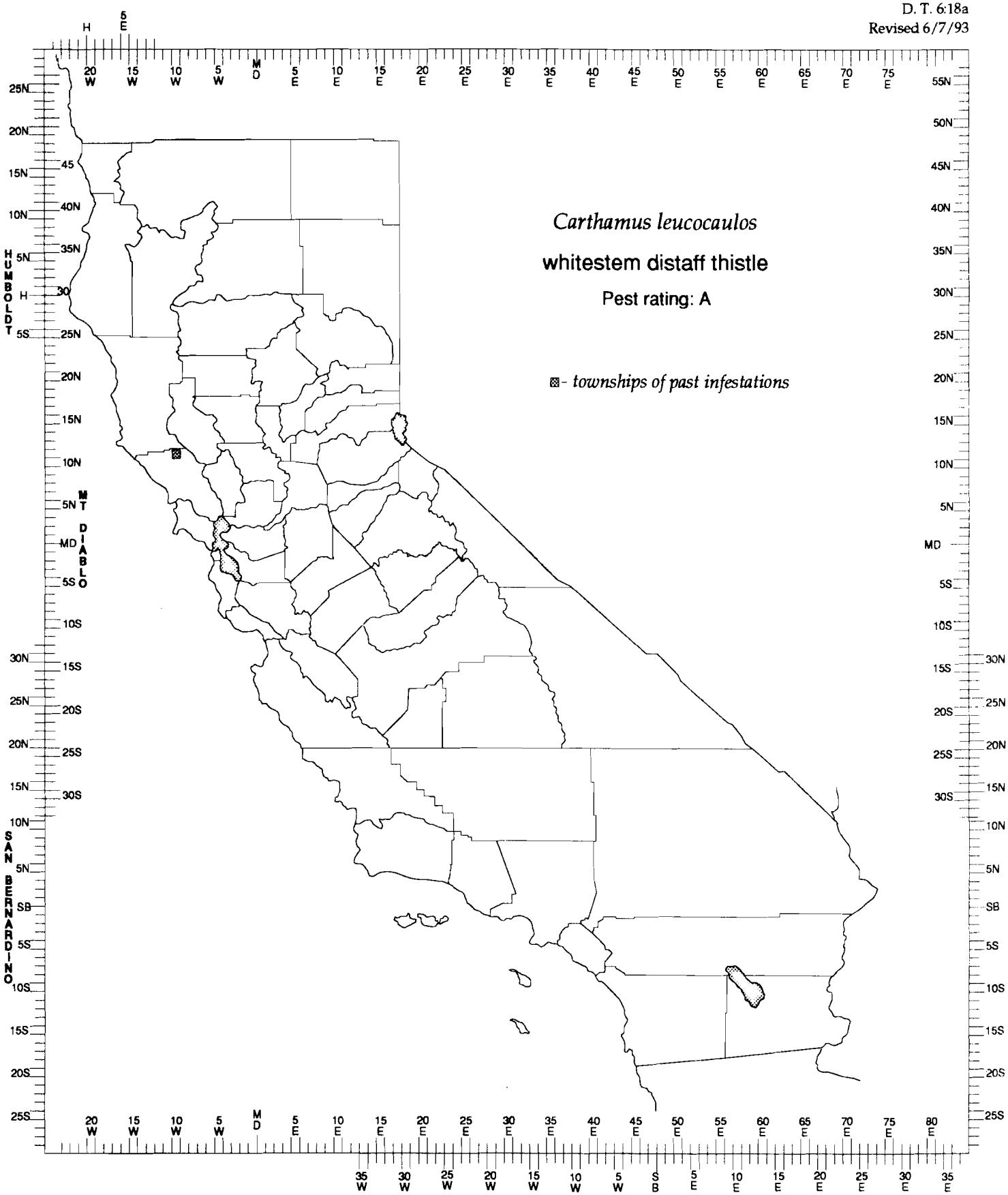

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DIVISION OF PLANT INDUSTRY - ANALYSIS & IDENTIFICATION/BOTANY

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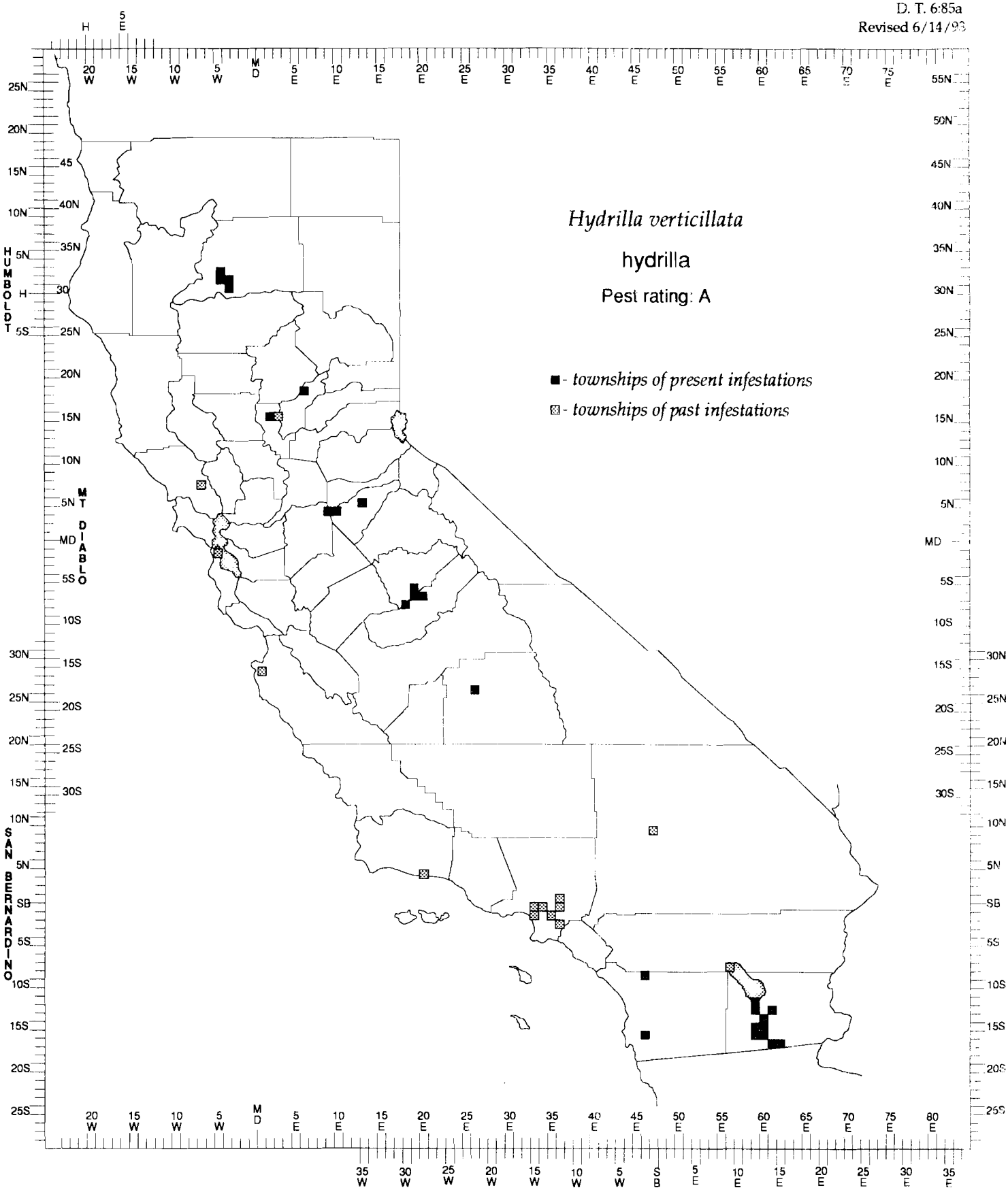
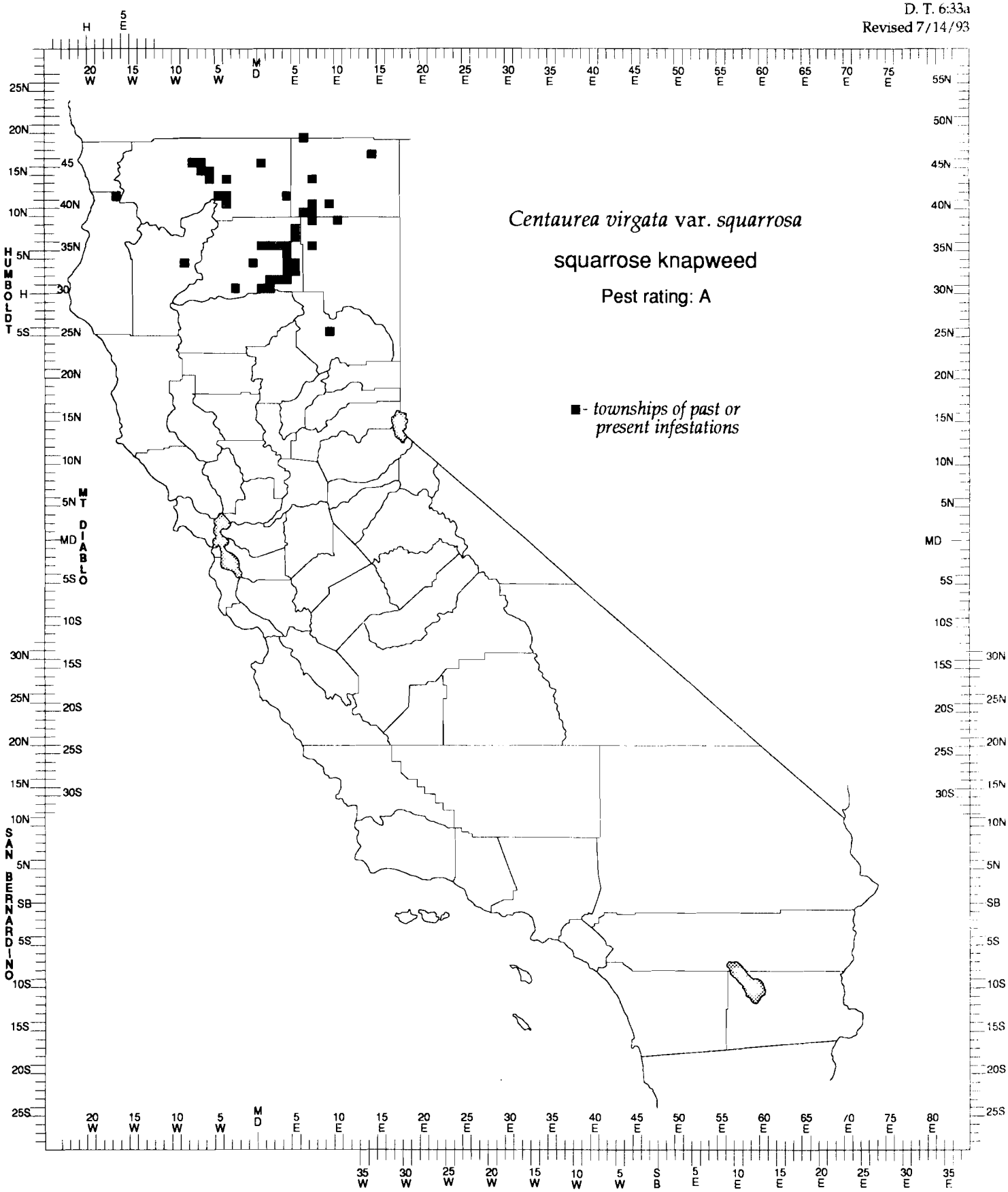
DETECTION MANUAL
D. T. 6:85a
Revised 6/14/93




Centaurea virgata var. *squarrosa*
squarrose knapweed
Pest rating: A
■- *townships of past or present infestations*
HUMBOLDT
MT DIABLO
SAN BERNARDINO

STATE OF CALIFORNIA • DEPARTMENT OF FOOD AND AGRICULTURE

DIVISION OF PLANT INDUSTRY - ANALYSIS & IDENTIFICATION/BOTANY

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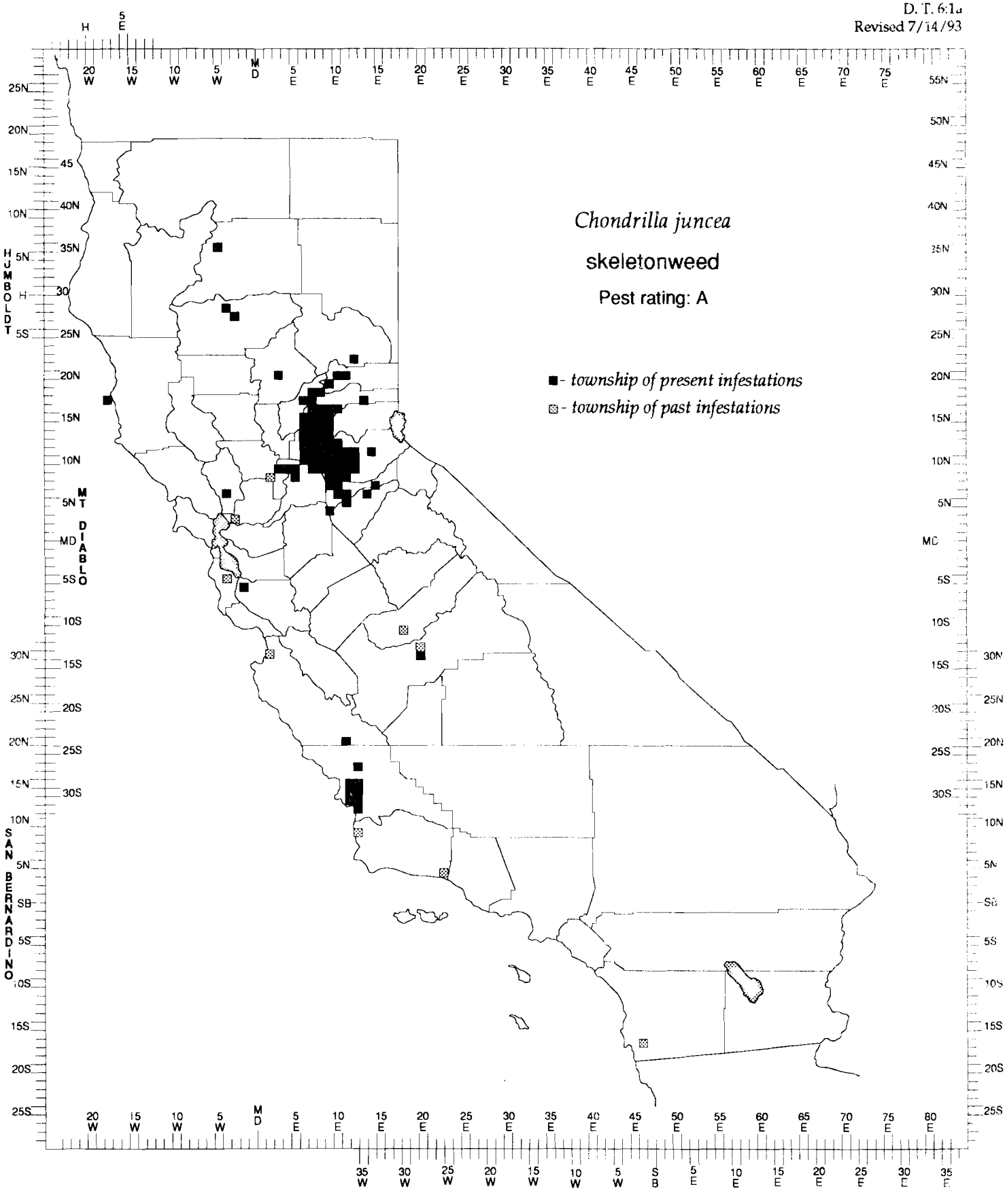
DETECTION MANUAL
D. T. 6:1a
Revised 7/14/93



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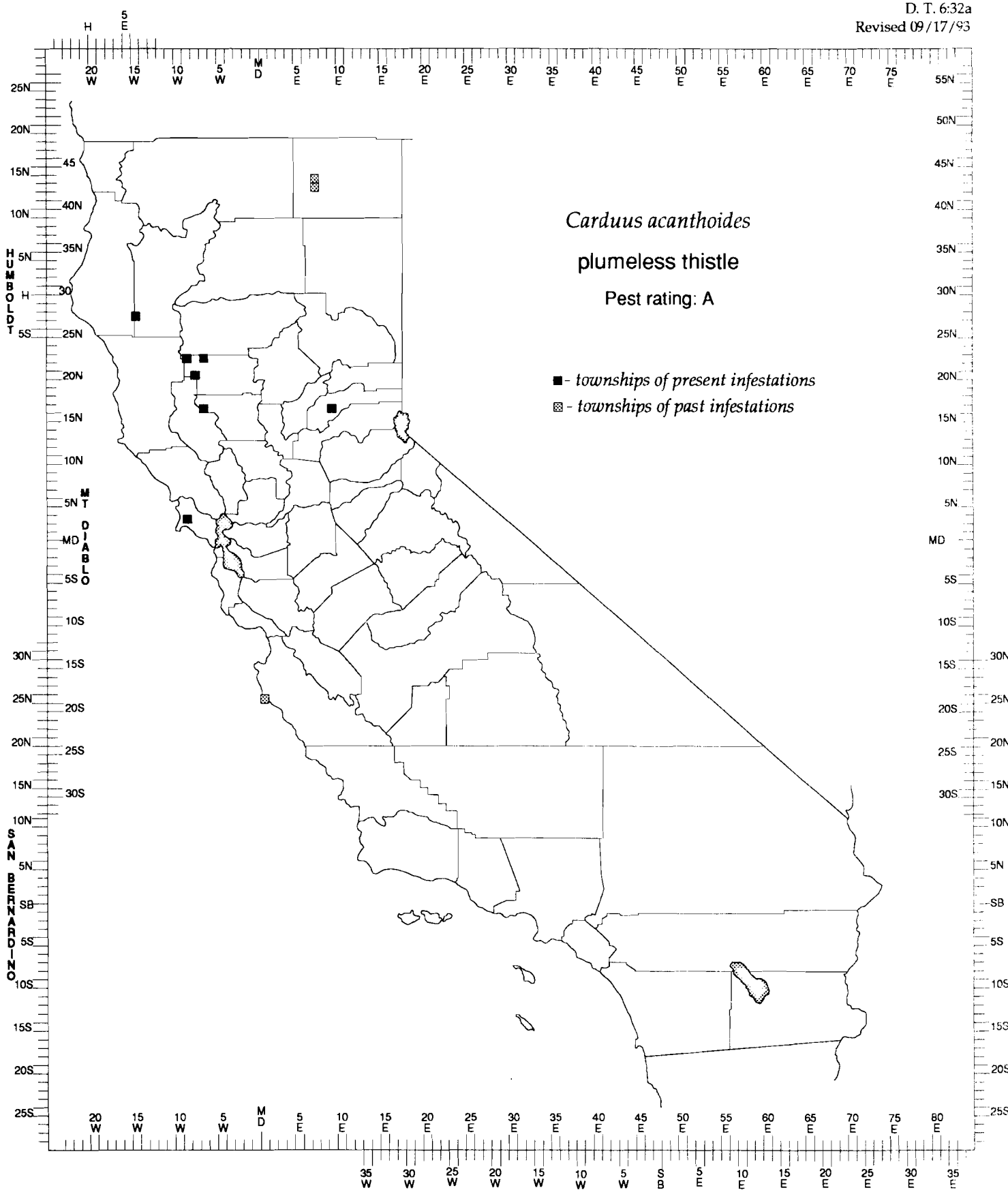
DETECTION MANUAL
D. T. 6:32a
Revised 09/17/93



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DIVISION OF PLANT INDUSTRY - ANALYSIS & IDENTIFICATION/BOTANY

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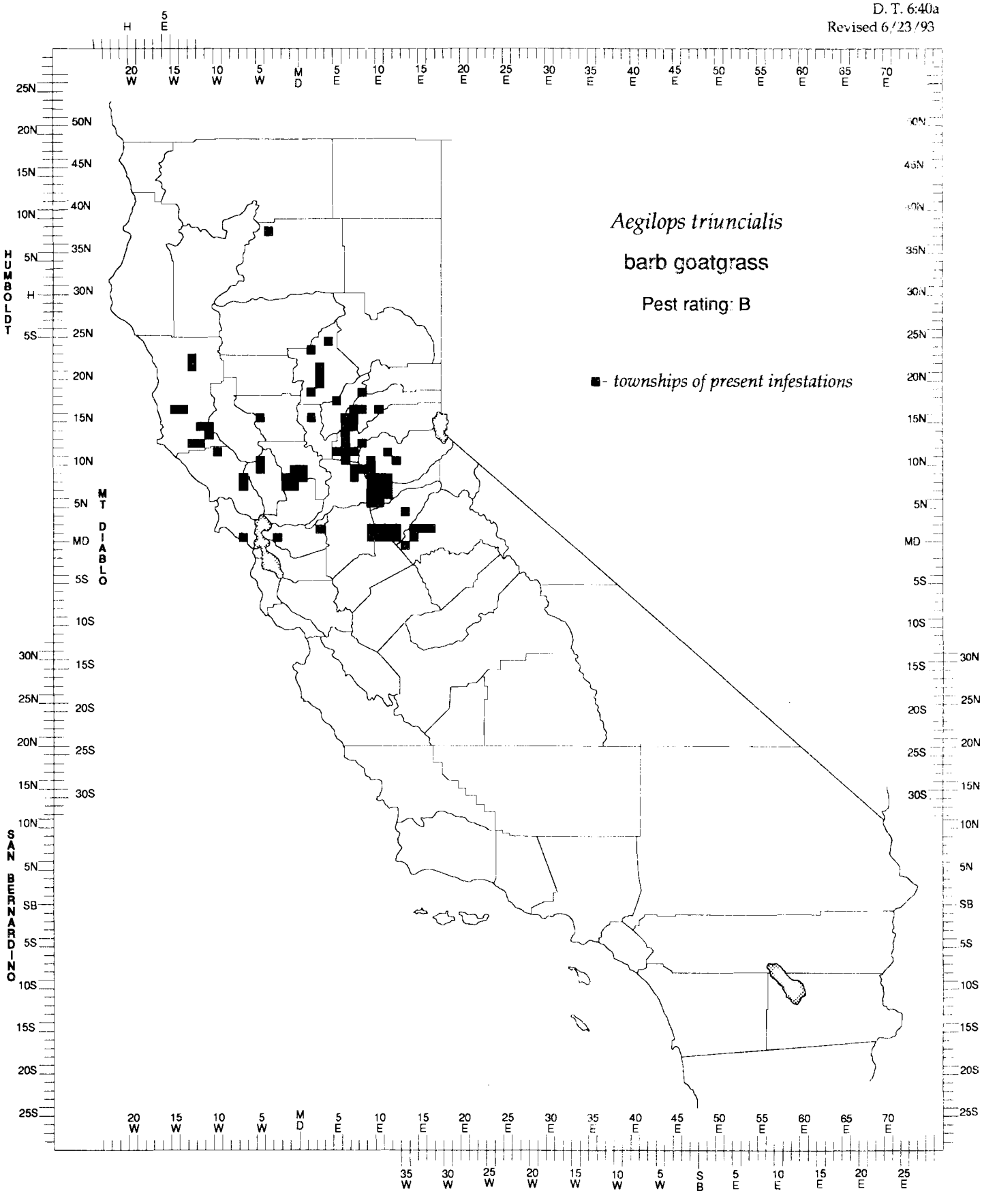
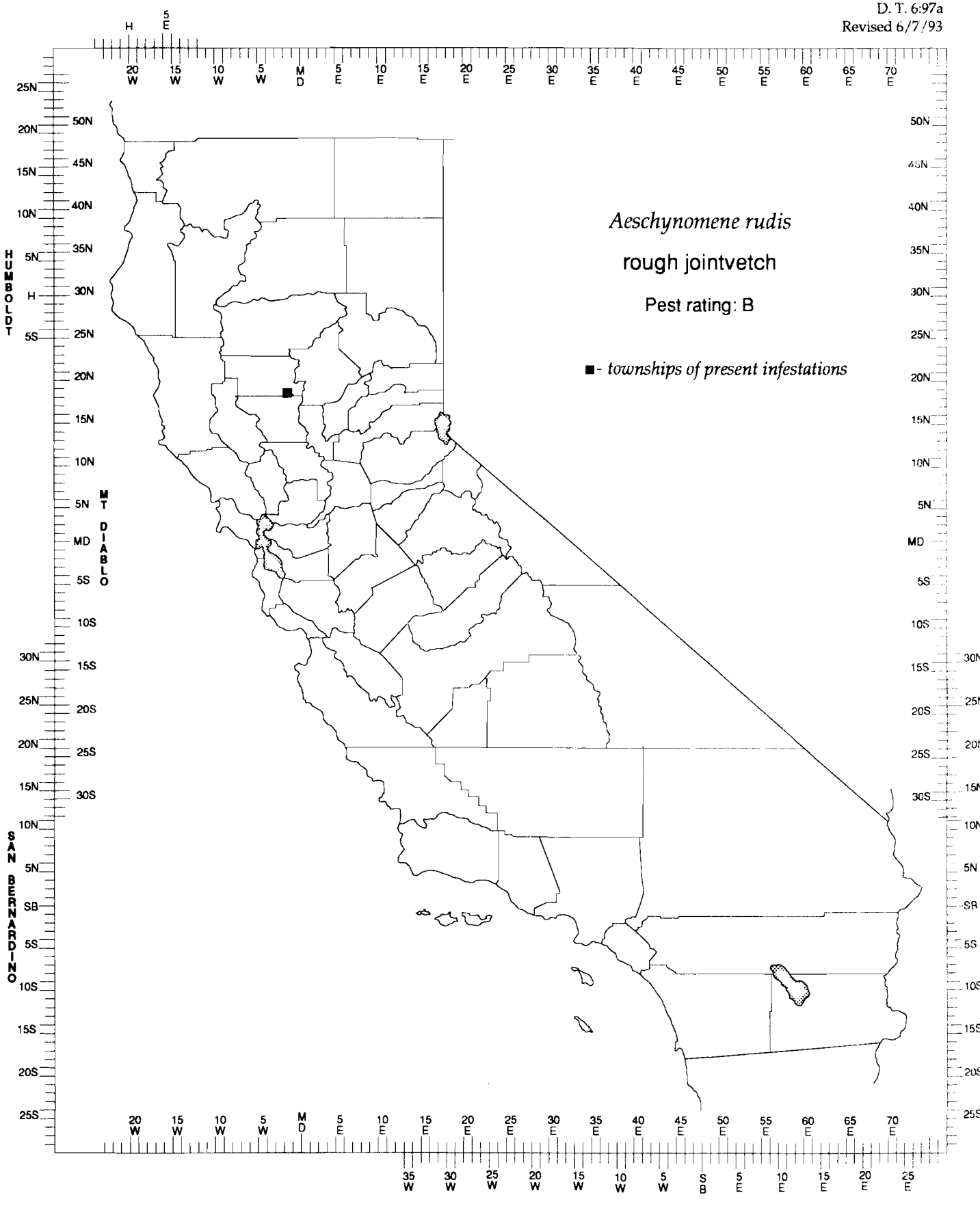
DETECTION MANUAL
D. T. 6:40a
Revised 6/23/93




Aeschynomene rudis
rough jointvetch
Pest rating: B
■- *townships of present infestations*
HUMBOLDT
MT DIABLO
SAN BERNARDINO

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DIVISION OF PLANT INDUSTRY - ANALYSIS & IDENTIFICATION/BOTANY

DETECTION MANUAL
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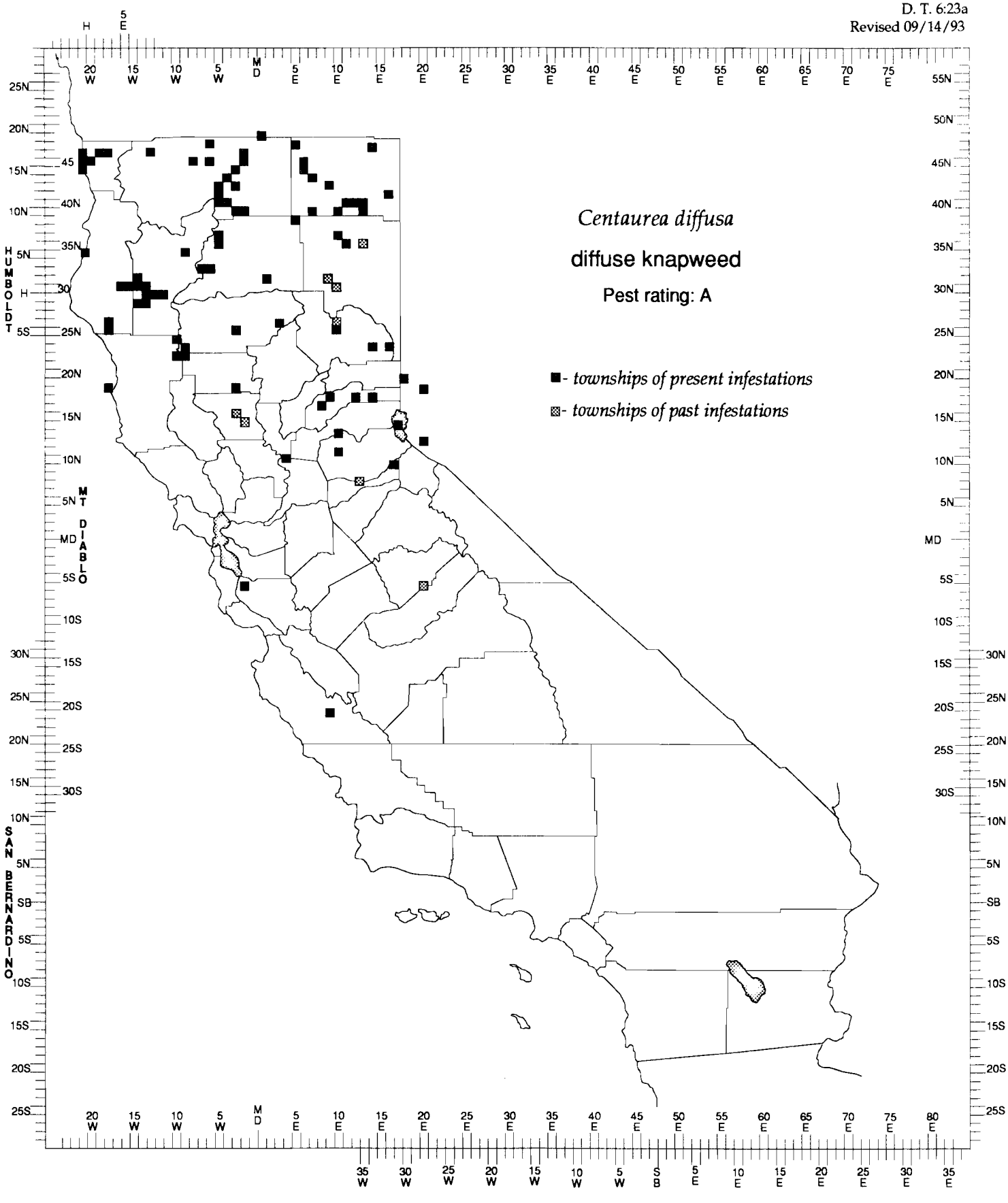
Revised 09/14/93



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DETECTION MANUAL
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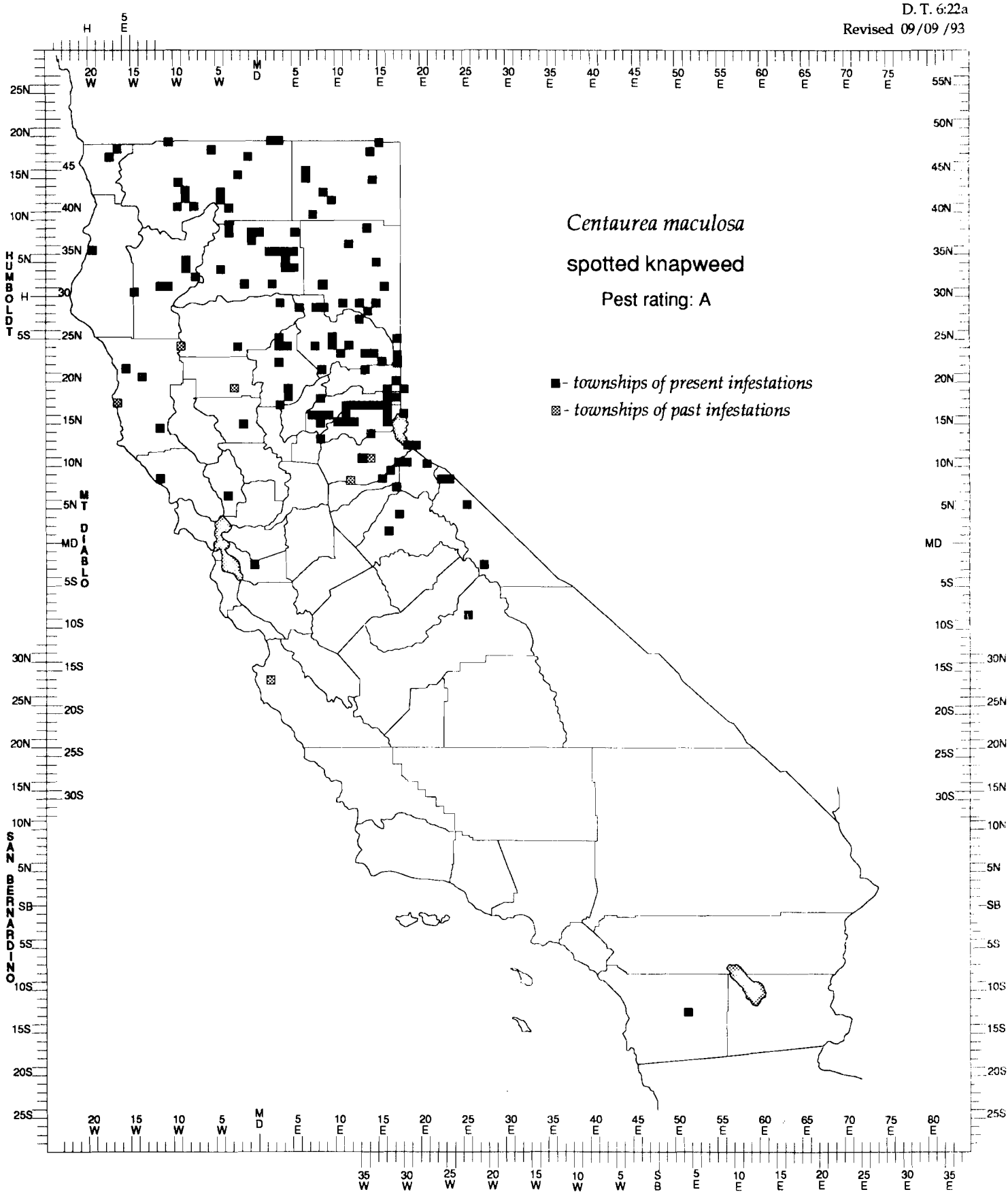
Revised 09/09/93



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DIVISION OF PLANT INDUSTRY - ANALYSIS & IDENTIFICATION/BOTANY

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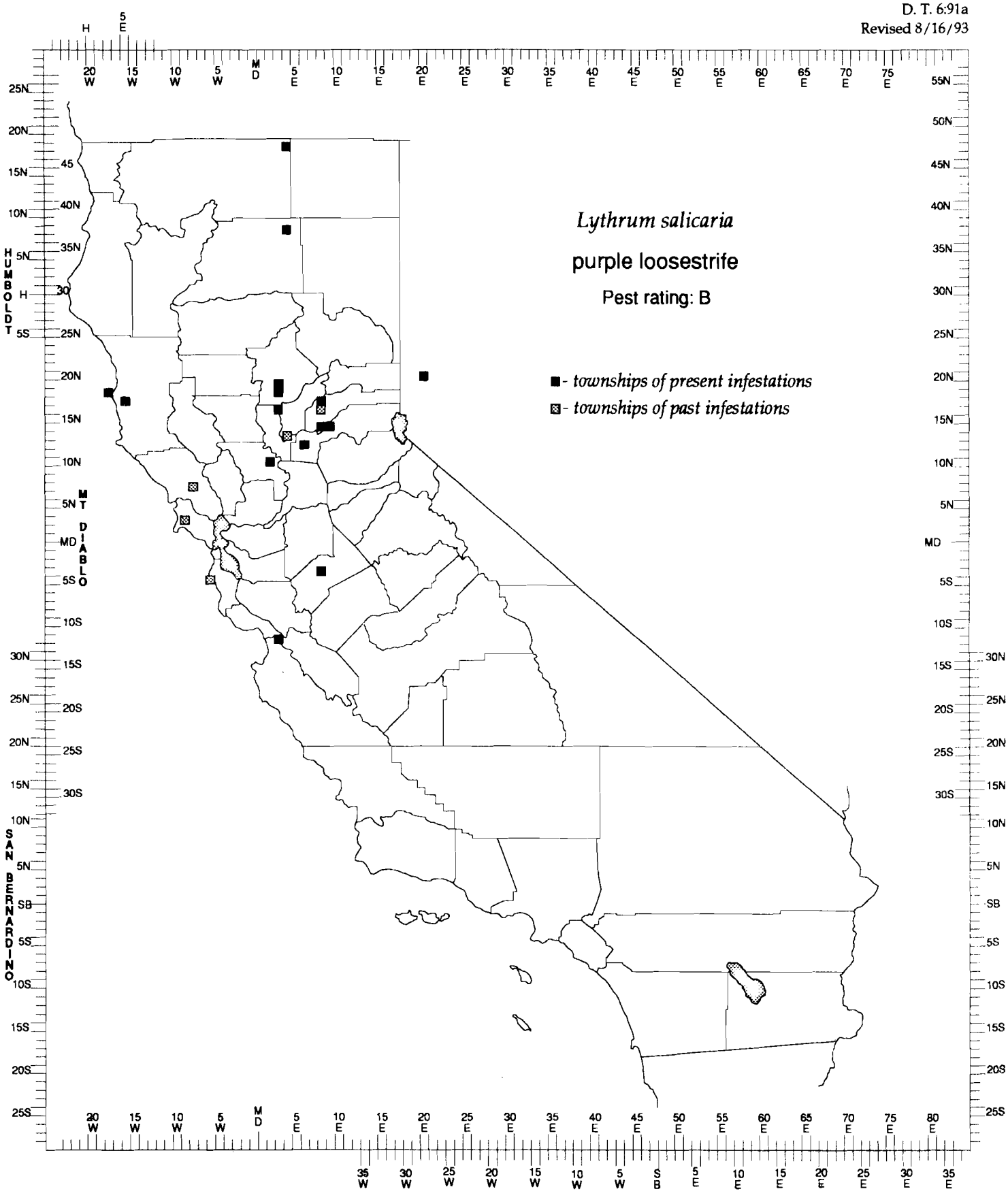
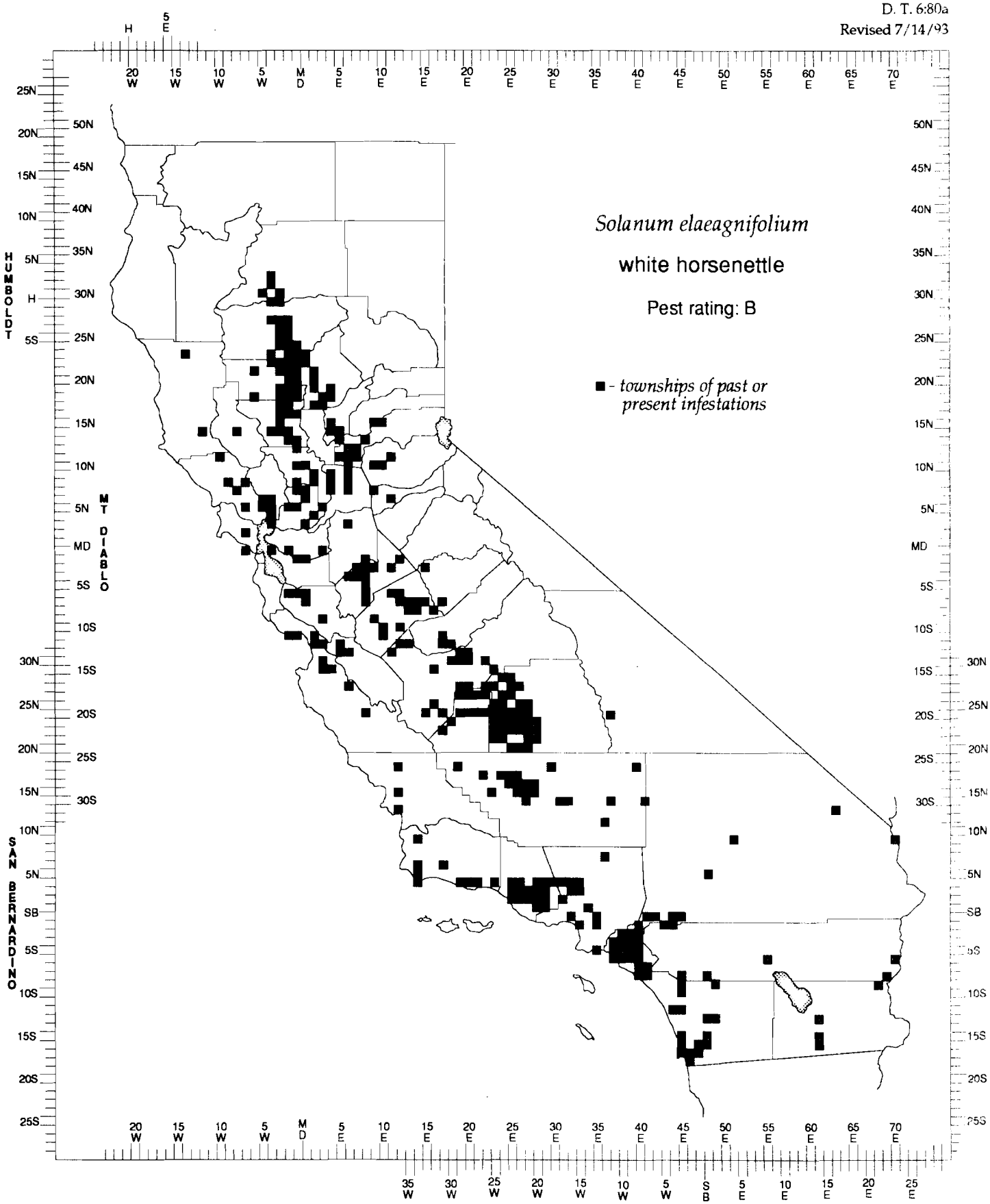
DETECTION MANUAL
D. T. 6:91a
Revised 8/16/93



STATE OF CALIFORNIA • DEPARTMENT OF FOOD AND AGRICULTURE

DIVISION OF PLANT INDUSTRY - ANALYSIS & IDENTIFICATION/BOTANY

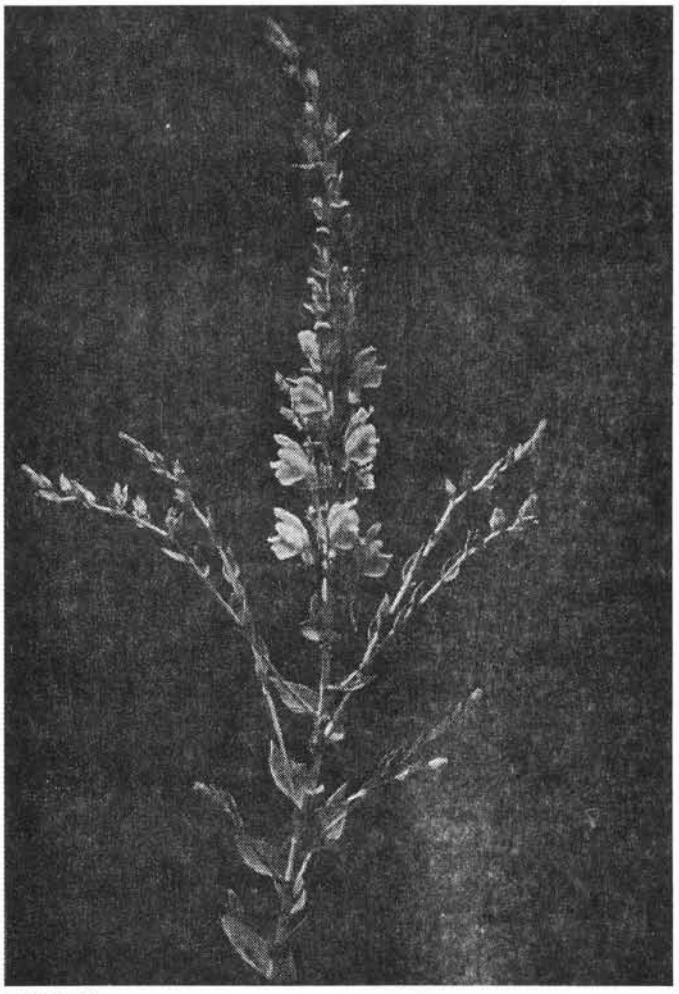
DETECTION MANUAL
D. T. 6:80a
Revised 7/14/93



The California Plant Pest and Disease Report (CPPDR) is being funded as part of the USDA Cooperative Agricultural Pest Survey (CAPS) which maintains a nation-wide computer data base (NAPIS) on noxious pests. One such pest monitored in this data base is Dalmation toadflax, a troublesome weed in California and many of the western states. Below is a reproduction of a cover of a recent Agricultural Extension publication of Montana State University. It is a very fine, thirteen page color publication on this rangeland weed pest, and it is recommended reading for those interested in its control or management. Included in the publication is a county by county distribution map of this weed for the entire United States that was generated from the NAPIS data base by Diana Cooksey. The paper is authored by S.E. Lajeunesse, P.K. Fay, D. Cooksey, J.R. Lacey, R.M. Nowierski and D. Zamora. The bulletin is available through the Montana State University Agricultural Extension Office, Bozeman, MT 59717. The price is $1.10 per copy, but free to Montana residents.

DALMATIAN AND YELLOW TOADFLAX

Weeds of Pasture and Rangeland



MONTANA STATE UNIVERSITY 1893•CENTENNIAL•1993 | Extension Service

EB 115
February 1993

ENTOMOLOGY HIGHLIGHTS

SIGNIFICANT FINDS

MEDITERRANEAN FRUIT FLY, *Ceratitis capitata*, -(A)- Mediterranean fruit flies were found in the counties of **Los Angeles, Orange, San Bernardino,** and **Santa Clara** this summer. There were a total of 333 adults and 306 larvae found in the last four months, most of which were in and around Los Angeles, while a single male was trapped in San Jose. A complete listing of all the finds are presented on the following pages.

ORIENTAL FRUIT FLY, *Bactrocera dorsalis*, -(A)- There were also a relatively large number of Oriental fruit fly finds over the past four months. Thirty-seven adults and 198 larvae were found in the counties of **Los Angeles, Orange, San Bernardino, San Diego,** and **Alameda.** The records are listed on pages 77-78.

GUAVA FRUIT FLY, *Bactrocera correcta*, -(A)- Six adult guava fruit flies were found in the counties of **Sacramento, Los Angeles,** and **San Diego**. Refer to page 78 for a complete listing of these finds.

PEACH FRUIT FLY, *Bactrocera zonatus, -(A)-* **Orange** and **Riverside** were the counties to find the four peach fruit flies this summer. Please see the data on page 79.

MEXICAN FRUIT FLY, *Anastrepha ludens*, -(A)- One Mexican fruit fly was found in **Los Angeles** County and one was found in **San Bernardino** County. Both listings are on page 79.

WEST INDIAN FRUIT FLY, *Anastrepha obliqua*, -(A)- Finally, a female West Indian fruit fly was found in **San Bernardino** County over the summer. The complete record is on page 79.

GYPSY MOTH, *Lymantria dispar*, -(A)- The following table outlines this summer's gypsy moth finds:

County	City	Date	#M/F/Stage	Host	Collector
Los Angeles	Downey	06/24	adult	ornamental	Rice
Alamenda	Albany	07/07	1/0	liquidamber	Shankland
Orange	Anaheim	07/19	adult	?	Moreno
Mariposa	Wawona	07/21	adult	pine	Fisher
Santa Clara	Saratoga	07/29	adult	oak	Gustafson
Orange	Irvine	08/10	adult	?	Sandoval
Shasta	Redding	08/11	?	vacant lot	Albright
Orange	Newport Beach	08/17	adult	magnolia	Sandoval
San Diego	Serra Mesa	08/23	adult	liquidamber	Castellanos
Los Angeles	Montebello	08/25	adult	?	Cardenas

Mediterranean Fruit Fly, *Ceratitis capitata*, -(A)- 1993 Collections

County	City	Date	#M/F/Stage	Trap	Host	Collectors
Los Angeles	Granada Hills	07/12/93	0/1	McPhail	lemon	Carranza
Los Angeles	Mission Hills	07/13/93	0/1	Jackson	peach	Kawakami
Los Angeles	Granada Hills	07/18/93	5/0	Yellow Panel	apricot	McLain
Los Angeles	Granada Hills	07/18/93	1/0	Yellow Panel	apricot	McLain
Los Angeles	Granada Hills	07/19/93	1/0	Yellow Panel	ornamental	Baltazar
Los Angeles	Granada Hills	07/19/93	2/0	Yellow Panel	apricot	Baltazar
Los Angeles	Granada Hills	07/19/93	1/0	Yellow Panel	nectarine	Baltazar
Los Angeles	Granada Hills	07/19/93	1/0	Yellow Panel	avocado	Baltazar
Santa Clara	San Jose	07/20/93	1/0	Jackson	orange	Bristol
Los Angeles	Granada Hills	07/20/93	39L	---	nectarine	Olague
Los Angeles	Granada Hills	07/20/93	1L	---	plum	Fregoso
Los Angeles	Granada Hills	07/20/93	26L	---	nectarine	Fregoso
Los Angeles	Granada Hills	07/20/93	4L	---	peach	Fregoso
Los Angeles	Granada Hills	07/20/93	7L	---	peach	Paier
Los Angeles	Granada Hills	07/20/93	1L	---	peach	de la Cruz
Los Angeles	Granada Hills	07/21/93	1/0	Yellow Panel	ornamental	Burke
Los Angeles	Granada Hills	07/21/93	11L	---	nectarine	Bronson
Los Angeles	Granada Hills	07/21/93	1L	---	peach	Valdez
Los Angeles	Granada Hills	07/21/93	8L	---	peach	Jimenez
Los Angeles	Granada Hills	07/22/93	1L	---	nectarine	Contreras
Los Angeles	Granada Hills	07/23/93	3/0	Yellow Panel	apricot	Roman
Los Angeles	Granada Hills	07/23/93	1/0	Yellow Panel	apple	Mosquera
Los Angeles	Granada Hills	07/23/93	7L	---	nectarine	Bronson
Los Angeles	Granada Hills	07/23/93	2/0	Yellow Panel	avocado	Parayho
Los Angeles	Granada Hills	07/23/93	1/0	Yellow Panel	apricot	Arolia
Los Angeles	Granada Hills	07/23/93	2/0	Yellow Panel	lemon	Iniquez
Los Angeles	Granada Hills	07/23/93	8L	---	nectarine	Bronson
Los Angeles	Granada Hills	07/23/93	1/0	Yellow Panel	peach	Iniquez
Los Angeles	Granada Hills	07/23/93	2/0	Yellow Panel	ornamental	Romas
Los Angeles	Granada Hills	07/23/93	4/0	Yellow Panel	apricot	Roman
Los Angeles	Granada Hills	07/23/93	1/0	Yellow Panel	ornamental	Segelken
Los Angeles	Granada Hills	07/23/93	5/0	Yellow Panel	apricot	Roman
Los Angeles	Granada Hills	07/23/93	7L	---	nectarine	Tallo
Los Angeles	Granada Hills	07/26/93	4/0	Yellow Panel	orange	Tarver

Mediterranean Fruit Fly, *Ceratitis capitata*, -(A)- 1993 Collections

County	City	Date	#M/F/Stage	Trap	Host	Collectors
Los Angeles	Granada Hills	07/26/93	1/0	Yellow Panel	ornamental	Duvall
Los Angeles	Granada Hills	07/26/93	1/0	Yellow Panel	palm	Taboas
Los Angeles	Granada Hills	07/26/93	1/0	Yellow Panel	ornamental	McLain
Los Angeles	Granada Hills	07/26/93	1/0	Yellow Panel	ornamental	Duvall
Los Angeles	Granada Hills	07/26/93	2/0	Yellow Panel	plum	Iniquez/Sterling
Los Angeles	Granada Hills	07/26/93	1/0	Yellow Panel	lemon	Lee
Los Angeles	Granada Hills	07/26/93	1/0	Yellow Panel	lemon	Lee
Los Angeles	Granada Hills	07/26/93	3/0	Yellow Panel	apricot	Taboas
Orange	Westminster	07/28/93	5/0	Yellow Panel	peach	Shoemaker
Orange	Westminster	07/30/93	3/0	Yellow Panel	peach	Roman/Miller
Orange	Westminster	08/02/93	2/0	Yellow Panel	peach	Shoemaker
Orange	Westminster	08/02/93	4/0	Yellow Panel	ornamental	Roman/Miller
Orange	Westminster	08/02/93	4/0	Yellow Panel	ornamental	Roman/Miller
Orange	Westminster	08/02/93	2/0	Yellow Panel	grapefruit	Roman/Miller
Orange	Westminster	08/02/93	2/0	Yellow Panel	grapefruit	Roman/Miller
Orange	Westminster	08/02/93	1/0	Yellow Panel	ornamental	Roman/Miller
Orange	Westminster	08/03/93	5L	---	peach	Hernandez
Orange	Westminster	08/04/93	1/0	Yellow Panel	grapefruit	Anderson
Orange	Westminster	08/04/93	0/2	Yellow Panel	ornamental	Anderson
Orange	Westminster	08/04/93	0/1	Yellow Panel	fig	Anderson
Orange	Westminster	08/04/93	1/0	Yellow Panel	ornamental	Anderson
Orange	Westminster	08/04/93	4L	---	nectarine	Ruiz
Orange	Westminster	08/05/93	6L	---	nectarine	Penrose
San Bernardino	Ontario	08/10/93	0/1	McPhail	orange	Williams
San Bernardino	Ontario	08/10/93	1/0	Jackson	orange	Williams
Los Angeles	Rosemead	08/11/93	1/0	McPhail	grapefruit	Rodriquez
San Bernardino	Ontario	08/12/93	2/0	Jackson	orange	Williams
Los Angeles	Chatsworth	08/12/93	1/0	McPhail	peach	Bursson
Los Angeles	Rosemead	08/20/93	8L	---	peach	Nunez/Jimenez
San Bernardino	Ontario	08/13/93	1/0	Yellow Panel	orange	Roman
San Bernardino	Ontario	08/13/93	4L	---	peach	Jimenez
Los Angeles	Rosemead	08/16/93	1/0	Yellow Panel	orange	Hooper
Los Angeles	Rosemead	08/16/93	3/0	Yellow Panel	orange	Andrade
Los Angeles	Rosemead	08/16/93	4/0	Yellow Panel	fig	Sedgwick

Mediterranean Fruit Fly, *Ceratitis capitata*, -(A)- 1993 Collections

County	City	Date	#M/F/Stage	Trap	Host	Collectors
Los Angeles	Rosemead	08/16/93	1/0	Yellow Panel	lemon	Sedgwick
Los Angeles	Rosemead	08/16/93	1/0	Yellow Panel	ornamental	Hooper
Los Angeles	Rosemead	08/16/93	3/0	Yellow Panel	orange	Sedgwick
Los Angeles	Rosemead	08/16/93	0/1	McPhail	peach	Olagues
Los Angeles	Rosemead	08/16/93	2/0	Yellow Panel	orange	Contreras
Los Angeles	Rosemead	08/16/93	1/0	Yellow Panel	ornamental	Contreras
Los Angeles	Rosemead	08/16/93	1/0	Yellow Panel	ornamental	Hooper
Los Angeles	Rosemead	08/17/93	20L	---	peach	Cortez
Los Angeles	Rosemead	08/17/93	3L	---	peach	Jimenez/Cortez
Los Angeles	Rosemead	08/18/93	2L	---	peach	Penrose/Call
Los Angeles	Rosemead	08/18/93	2/0	Yellow Panel	peach	Villarruel
Los Angeles	Rosemead	08/18/93	1/0	Yellow Panel	orange	Carrera
Los Angeles	Rosemead	08/18/93	1/1	Yellow Panel	orange	Villarruel
Los Angeles	Rosemead	08/18/93	3/0	Yellow Panel	ornamental	Carrera
Los Angeles	Rosemead	08/18/93	1/0	Yellow Panel	ornamental	Carrera
Los Angeles	Rosemead	08/18/93	1/0	Yellow Panel	ornamental	Augutto
Los Angeles	Rosemead	08/18/93	2/0	Yellow Panel	fig	Villarruel
Los Angeles	Rosemead	08/18/93	6L	---	peach	Ruiz
Los Angeles	Rosemead	08/19/93	27L	---	peach	Penrose/Call
Los Angeles	Rosemead	08/19/93	9L	---	peach	Hernandez
Los Angeles	Rosemead	08/19/93	15L	---	peach	Hernandez
Los Angeles	Rosemead	08/20/93	3L	---	peach	Hernandez
Los Angeles	Rosemead	08/20/93	8L	---	peach	Jimenez/Nunez
Los Angeles	Rosemead	08/21/93	8L	---	peach	Jimenez
Los Angeles	Rosemead	08/21/93	15L	---	peach	Fregosa
Los Angeles	Rosemead	08/21/93	3L	---	peach	Moody
Los Angeles	Rosemead	08/23/93	1/0	Yellow Panel	fig	Kinzel/Smallbone
Los Angeles	Granada Hills	08/24/93	6L	---	peach	Luna
Los Angeles	Redondo Beach	08/24/93	0/1	Yellow Panel	persimmon	Gamboa
Los Angeles	Rosemead	08/25/93	4L	---	peach	Hernandez
Los Angeles	Rosemead	08/26/93	2L	---	apple	Tallo
Los Angeles	Pacoima	08/31/93	5/0	Yellow Panel	peach	Naga
Orange	Santa Ana	08/31/93	5/0	Jackson	peach	Hernandez
Orange	Santa Ana	09/01/93	0/1	McPhail	peach	Hernandez

Mediterranean Fruit Fly, *Ceratitis capitata*, -(A)- 1993 Collections

County	City	Date	#M/F/Stage	Trap	Host	Collectors
Orange	Santa Ana	09/01/93	1/2	McPhail	persimmon	Gomez
Orange	Santa Ana	09/01/93	1/0	McPhail	grapefruit	Gomez
Los Angeles	Pacoima	09/01/93	0/1	Yellow Panel	calamondin	Lisenby
Orange	Santa Ana	09/02/93	4/0	Jackson	peach	Gonzales
Los Angeles	Pacoima	09/03/93	1/0	Yellow Panel	calamondin	Naga
Los Angeles	Pacoima	09/07/93	1/0	Yellow Panel	ornamental	Sanchez
Orange	Santa Ana	09/07/93	1/0	Yellow Panel	lemon	Cardenas
Orange	Santa Ana	09/07/93	1/0	Yellow Panel	guava	Cardenas
Orange	Santa Ana	09/07/93	1/0	Yellow Panel	peach	Miranda
Orange	Santa Ana	09/07/93	0/2	McPhail	lemon	Gamboa
Orange	Santa Ana	09/07/93	1/0	Yellow Panel	guava	Garcia
Los Angeles	Los Angeles	09/09/93	0/1	McPhail	guava	Gonzalez
Los Angeles	Los Angeles	09/13/93	0/1	McPhail	peach	Beguico
Los Angeles	Los Angeles	09/15/93	1/0	Yellow Panel	lemon	Bryan/Bryant
Los Angeles	Los Angeles	09/15/93	2/0	Yellow Panel	peach	Licciardi
Los Angeles	Los Angeles	09/15/93	1/0	Yellow Panel	avocado	Vascuz
Los Angeles	Los Angeles	09/15/93	1/0	Yellow Panel	loquat	Vascuz
Los Angeles	Los Angeles	09/15/93	1/0	Yellow Panel	ornamental	Nelson/Larkins
Los Angeles	Los Angeles	09/15/93	1/0	Yellow Panel	orange	Vascuz
Los Angeles	Los Angeles	09/15/93	4/0	Yellow Panel	peach	Vascuz
Los Angeles	Los Angeles	09/15/93	1/0	Yellow Panel	loquat	Inguito
Los Angeles	Los Angeles	09/15/93	3/0	Yellow Panel	orange	Nelson/Miller
Los Angeles	Los Angeles	09/15/93	1/0	Yellow Panel	avocado	Licciardi
Los Angeles	Los Angeles	09/15/93	4/0	Yellow Panel	ornamental	Polliard
Los Angeles	Los Angeles	09/15/93	1/0	Yellow Panel	orange	Inguito
Los Angeles	Los Angeles	09/15/93	1/0	Yellow Panel	avocado	Keller
Los Angeles	Los Angeles	09/15/93	1/0	Yellow Panel	magnolia	Larkins
San Bernardino	Chino Hills	09/15/93	0/1	McPhail	fig	Martin
Los Angeles	Los Angeles	09/16/93	1/0	Yellow Panel	orange	Richards
Los Angeles	Los Angeles	09/16/93	3/0	Yellow Panel	orange	Richards/Brown
Los Angeles	Los Angeles	09/16/93	1/0	Yellow Panel	orange	Bryan/Tagliarino
Los Angeles	Los Angeles	09/16/93	2/0	Yellow Panel	ornamental	Bryan/Tagliarino
Los Angeles	Los Angeles	09/17/93	2/0	Yellow Panel	peach	Valdez
Los Angeles	Los Angeles	09/17/93	3/0	Yellow Panel	loquat	Inguito

Mediterranean Fruit Fly, *Ceratitis capitata*, -(A)- 1993 Collections

County	City	Date	#M/F/Stage	Trap	Host	Collectors
Los Angeles	Los Angeles	09/17/93	1/0	Yellow Panel	apricot	Caldwell
Los Angeles	Los Angeles	09/17/93	0/1	Yellow Panel	loquat	Caldwell
Los Angeles	Los Angeles	09/17/93	1/0	Yellow Panel	ornamental	Espinoza
Los Angeles	Los Angeles	09/17/93	1/0	Yellow Panel	fig	Valdez
Los Angeles	Los Angeles	09/17/93	1/0	Yellow Panel	ornamental	Valdez
Los Angeles	Los Angeles	09/17/93	0/1	Yellow Panel	ornamental	Valdez
Los Angeles	Los Angeles	09/17/93	4/0	Yellow Panel	lemon	Inguito
Los Angeles	Los Angeles	09/17/93	0/1	Yellow Panel	peach	Valdez
Los Angeles	Los Angeles	09/17/93	1/0	Yellow Panel	lemon	Valdez
Los Angeles	Los Angeles	09/17/93	1/0	Yellow Panel	ornamental	Caldwell
Los Angeles	Los Angeles	09/17/93	1/0	Yellow Panel	orange	Martinez
Los Angeles	Los Angeles	09/18/93	3/0	Yellow Panel	orange	Contreras
Los Angeles	Los Angeles	09/18/93	3/0	Yellow Panel	peach	Sauautr
Los Angeles	East Los Angeles	09/18/93	0/1	McPhail	peach	Uchima
San Bernardino	Los Serranos	09/18/93	1/0	Jackson	orange	Lopez
San Bernardino	Los Serranos	09/20/93	1/0	Yellow Panel	fig	Lopez
San Bernardino	Los Serranos	09/20/93	1/0	Yellow Panel	ornamental	Dieball/Brown
San Bernardino	Los Serranos	09/20/93	1/0	Yellow Panel	ornamental	Elliot
San Bernardino	Los Serranos	09/20/93	1/0	Yellow Panel	orange	Dieball
San Bernardino	Los Serranos	09/20/93	1/0	Yellow Panel	ornamental	Andrade
San Bernardino	Los Serranos	09/20/93	2/0	Yellow Panel	orange	Lopez
San Bernardino	Los Serranos	09/20/93	1/0	Yellow Panel	grapefruit	Brown
Los Angeles	Los Angeles	09/20/93	3/0	Yellow Panel	lemon	Romo
Los Angeles	Los Angeles	09/20/93	5/1	Yellow Panel	apple	Romo
Los Angeles	Los Angeles	09/20/93	2/0	Yellow Panel	lemon	Romo
Los Angeles	Los Angeles	09/20/93	2/0	Yellow Panel	orange	Romo
Los Angeles	Los Angeles	09/20/93	1/0	Yellow Panel	walnut	Romo
Los Angeles	Los Angeles	09/20/93	1/0	Yellow Panel	ornamental	Romo
Los Angeles	Los Angeles	09/20/93	1/0	Yellow Panel	peach	Charles
Los Angeles	Los Angeles	09/21/93	1/0	Yellow Panel	ornamental	Smallbone
Los Angeles	Los Angeles	09/21/93	2/0	Yellow Panel	orange	Smallbone
Los Angeles	Los Angeles	09/21/93	6/0	Yellow Panel	fig	Smallbone
Los Angeles	Los Angeles	09/21/93	1/1	McPhail	lemon	Vargas
Los Angeles	Los Angeles	09/21/93	3/3	McPhail	grapefruit	Vargas

Mediterranean Fruit Fly, *Ceratitis capitata*, -(A)- 1993 Collections

County	City	Date	#M/F/Stage	Trap	Host	Collectors
Los Angeles	Los Angeles	09/21/93	6/0	Yellow Panel	orange	Smallbone
Los Angeles	Los Angeles	09/21/93	2/0	Yellow Panel	ornamental	Smallbone
Los Angeles	Los Angeles	09/21/93	2/0	Yellow Panel	lemon	Romo
Los Angeles	Los Angeles	09/21/93	0/1	Yellow Panel	ornamental	Garcia
Los Angeles	Los Angeles	09/21/93	3/1	Yellow Panel	lemon	Smallbone
Los Angeles	Los Angeles	09/21/93	1/0	Yellow Panel	ornamental	Smallbone
Los Angeles	Los Angeles	09/21/93	2/0	Yellow Panel	ornamental	Smallbone
Los Angeles	Los Angeles	09/21/93	1/0	Yellow Panel	ornamental	Romo
Los Angeles	Los Angeles	09/21/93	10/0	Yellow Panel	ornamental	McDuffie
Los Angeles	Los Angeles	09/21/93	25/1	Yellow Panel	grapefruit	McDuffie
Los Angeles	Los Angeles	09/21/93	7/1	Yellow Panel	ornamental	Smallbone
Los Angeles	Los Angeles	09/21/93	1/0	Yellow Panel	grapefruit	Charles
Los Angeles	Los Angeles	09/21/93	1/0	Yellow Panel	loquat	Charles
Los Angeles	Los Angeles	09/21/93	2/0	Yellow Panel	orange	Smallbone
Los Angeles	Los Angeles	09/21/93	2/0	Yellow Panel	ornamental	Charles
Los Angeles	Los Angeles	09/21/93	2/0	Yellow Panel	fig	Charles
Los Angeles	Los Angeles	09/21/93	1/0	Yellow Panel	lemon	McDuffie
Los Angeles	Los Angeles	09/21/93	1/0	Yellow Panel	orange	McDuffie
Los Angeles	Los Angeles	09/21/93	2/0	Yellow Panel	ornamental	Smallbone
Los Angeles	Los Angeles	09/21/93	2/0	Yellow Panel	orange	Smallbone
Los Angeles	Los Angeles	09/22/93	15L	---	peach	Wingfield
Los Angeles	La Puente	09/22/93	1/0	Yellow Panel	orange	Valenzuela
San Bernardino	Los Serranos	09/22/93	1/0	Yellow Panel	ornamental	Dieball
Los Angeles	Los Angeles	09/23/93	4L	---	guava	Rosales
Los Angeles	Pacoima	09/23/93	2/0	Jackson	guava	Vingua
Los Angeles	Los Angeles	09/23/93	1L	---	peach	de la Cruz
Los Angeles	Los Angeles	09/24/93	4L	---	grapefruit	Wingfield
Los Angeles	Los Angeles	09/24/93	4L	---	grapefruit	Wingfield
Los Angeles	La Puente	09/27/93	1/0	Yellow Panel	orange	Lopez
Los Angeles	East Los Angeles	09/28/93	1/0	Yellow Panel	ornamental	Brown
Los Angeles	Los Angeles	09/28/93	5L	---	guava	Penrose
Los Angeles	Los Angeles	09/29/93	2L	---	peach	Ruiz
Los Angeles	Los Angeles	09/29/93	1L	---	peach	Ruiz
Los Angeles	Los Angeles	09/29/93	3L	---	peach	Penrose

Mediterranean Fruit Fly, *Ceratitis capitata*, -(A)- 1993 Collections

County	City	Date	#M/F/Stage	Trap	Host	Collectors
Los Angeles	Los Angeles	09/29/93	1L	---	peach	Penrose
Los Angeles	Los Angeles	09/29/93	5L	---	peach	Penrose
Los Angeles	Los Angeles	09/29/93	4L	---	peach	Penrose
Los Angeles	Los Angeles	09/29/93	2L/3P	---	peach	Penrose
Los Angeles	Los Angeles	09/29/93	18L	---	peach	Ruiz
Los Angeles	Los Angeles	09/29/93	5L	---	peach	Ruiz
Los Angeles	East Los Angeles	09/29/93	1/0	Jackson	peach	Valdez
San Bernardino	Los Serranos	09/30/93	2/0	Yellow Panel	ornamental	Lopez

Oriental Fruit Fly, *Bactrocera dorsalis*, -(A)- 1993 Collections

County	City	Date	#M/F/Stage	Trap	Host	Collectors
Alameda	San Leandro	06/01/93	1/0	Jackson	loquat	Myers
Los Angeles	Los Angeles	06/23/93	1/0	Jackson	fig	Macias
Los Angeles	Los Angeles	06/25/93	1/0	Jackson	avocado	Vargas
Los Angeles	Rosemead	06/28/93	1/0	Jackson	peach	Kheir
Los Angeles	Los Angeles	07/19/93	1/0	Jackson	calamondin	Agaurre
Los Angeles	Long Beach	07/26/93	1/0	Jackson	nectarine	Ibrahim
Los Angeles	Pasadena	07/28/93	1/0	Jackson	orange	de la Hoya
Los Angeles	Hacienda Heights	08/04/93	1/0	Jackson	fig	Parayno
Los Angeles	Gardena	08/04/93	1/0	Jackson	peach	Shinvani
Orange	Buena Park	08/10/93	1/0	Jackson	apple	Burnham
Orange	Buena Park	08/10/93	1/0	Jackson	nectarine	Burnham
Orange	Buena Park	08/11/93	1/0	Jackson	orange	Gomez
Orange	Santa Ana	08/12/93	1/0	Jackson	peach	Hernandez
Orange	Buena Park	08/12/93	1/0	Jackson	orange	Tadesse
Orange	Santa Ana	08/12/93	1/0	Jackson	persimmon	Gonzales
Orange	Anaheim	08/12/93	1/0	Jackson	plum	Tadesse
San Diego	Vista	08/20/93	1/0	Jackson	apple	Carette
Los Angeles	Arcadia	08/23/93	1/0	Jackson	fig	Cabacungan
Los Angeles	Downey	08/26/93	1/0	Jackson	fig	Alcantar
Los Angeles	Sherman Oaks	08/30/93	0/3	McPhail	orange	Shirvani
Los Angeles	Downey	08/30/93	1/0	Jackson	lemon	Carrera
Los Angeles	Sherman Oaks	08/31/93	4L	---	orange	Aldana/Paier
Los Angeles	Sherman Oaks	09/01/93	1/0	Jackson	pineapple guava	Carrera
Los Angeles	Sherman Oaks	09/01/93	8/0	Jackson	orange	Carrera
Los Angeles	Sherman Oaks	09/01/93	1/0	McPhail	orange	Carrera
Los Angeles	Sherman Oaks	09/02/93	6L	---	peach	Reynaga
Los Angeles	Sherman Oaks	09/02/93	5L	---	grapefruit	Corral
Los Angeles	Sherman Oaks	09/02/93	28L	---	orange	Wingfield
Los Angeles	Sherman Oaks	09/02/93	10L	---	peach	Nuna
Los Angeles	Sherman Oaks	09/03/93	43L	---	orange	de la Cruz
Los Angeles	Sherman Oaks	09/03/93	27L	---	grapefruit	de la Cruz
Los Angeles	Sherman Oaks	09/03/93	2L	---	fig	de la Cruz
Los Angeles	Sherman Oaks	09/07/93	4L	---	orange	Wingfeld
Los Angeles	Sherman Oaks	09/08/93	1/0	Jackson	orange	Carrera

Oriental Fruit Fly, *Bactrocera dorsalis*, -(A)- 1993 Collections

County	City	Date	#M/F/Stage	Trap	Host	Collectors
San Bernardino	Rialto	09/09/93	1/0	Jackson	catalina cherry	Almanza
Los Angeles	Sherman Oaks	09/09/93	1/0	Jackson	orange	Rodriguez
Los Angeles	Sherman Oaks	09/10/93	40L	---	grapefruit	Wingfeld
Los Angeles	Sherman Oaks	09/10/93	26L	---	orange	Wingfeld
Los Angeles	Sherman Oaks	09/10/93	eggs	---	orange	Wingfeld
San Bernardino	Redlands	09/10/93	1/0	Jackson	peach	Nash
San Bernardino	Redlands	09/14/93	1/0	Jackson	fig	Stoffaire
Los Angeles	Sherman Oaks	09/16/93	3L	---	orange	Penrose
Los Angeles	Sherman Oaks	09/20/93	1/0	Jackson	orange	Rodriguez
Los Angeles	Van Nuys	09/29/93	0/1	McPhail	fig	Rivas

Guava Fruit Fly, *Bactrocera correcta*, -(A)- 1993 Collections

County	City	Date	#M/F/Stage	Trap	Host	Collectors
Sacramento	Sacramento	06/24/93	1/0	Jackson	plum	Saunders
Sacramento	Sacramento	07/01/93	1/0	Jackson	apple	Weiner
Sacramento	Fair Oaks	07/20/93	1/0	Jackson	peach	Van Ells
San Diego	Linda Vista	08/19/93	1/0	Jackson	peach	Lyons
Los Angeles	Baldwin Park	09/02/93	1/0	Jackson	avocado	Scianni
Los Angeles	Arcadia	09/14/93	1/0	Jackson	orange	Leaf

Peach Fruit Fly, *Bactrocera zonatus*, -(A)- 1993 Collections

County	City	Date	#M/F/Stage	Trap	Host	Collectors
Orange	Anaheim	08/11/93	1/0	Jackson	peach	Burnham
Orange	Fullerton	08/16/93	1/0	Jackson	ornamental	Takaesu
Riverside	Riverside	08/26/93	1/0	Jackson	orange	Phipps
Orange	Fullerton	09/09/93	0/1	Jackson	orange	Takaesu

Mexican Fruit Fly, *Anastrepha ludens*, -(A)- 1993 Collections

County	City	Date	#M/F/Stage	Trap	Host	Collectors
San Bernardino	Ontario	08/31/93	0/1	McPhail	sapote	Sarmiento
Los Angeles	South Gate	09/07/93	0/1	McPhail	grapefruit	Beguico

West Indian Fruit Fly, *Anastrepha obliqua*, -(A)- 1993 Collections

County	City	Date	#M/F/Stage	Trap	Host	Collectors
San Bernardino	Rialto	08/20/93	0/1	McPhail	peach	Almanza

SIGNIFICANT FINDS (continued)

PINK BOLLWORM (PBW), *Pectinophora gossipiella*, -(A)- The first native pink bollworm was trapped on July 6, 1993 in **Tulare** County just north of Tulare. In comparison, the first native PBW trapping in 1991 was on July 18, and in 1992 on May 18. All 20,183 traps were deployed and were being serviced on a weekly basis. Over 35 million sterile PBW were being released per day. Through the week of July 3, nearly 278 million moths have been released in the San Joaquin Valley.

JAPANESE BEETLE, *Popilla japonica*, -(A)- There were two Japanese beetles trapped so far this year, both in **Los Angeles** County. The first find on August 13 was in Los Angeles by Haider in a Japanese beetle trap located in ivy. Haider also trapped another female in Los Angeles on September 9 near a pittosporum bush.

SWEETPOTATO WEEVIL, *Cylas formicarius elegantulus*, -(A)- On May 11 and June 15, sweetpotato weevils were trapped by Betchart in sweet potato hotbed traps in Livingston, **Stanislaus** County. Tillema collected a sweetpotato weevil in a agrisense management funnel trap in Turlock on July 27. This pest was first discovered in central California in the Livingston area on February 16, 1993. For additional information on sweetpotato weevil see CPPDR 12(1-2):3-8.

GREEN SHIELD SCALE, *Pulvinaria psidii*, -(A)- Another, major infestation of this troublesome soft scale has been found in **Orange** County, where several cities have been found to be infested. For information on the original Orange County find see CPPDR 11(1-2):6-7. The following information outlines the current finds and information about the scale:

The soft scale pest green shield scale, *Pulvinaria psidii*, was found infesting dooryard hopseed bushes, *Dodonea viscosa* on January 23, 1992. The collection was made on Dodson Way in Villa Park, Orange County (see included map). This find constituted the first California record of the scale other than from a nursery or quarantine situation. The collection was made by a pest control operator who found the insects in a client's yard. Apparently many of these shrubs are infested in this particular yard, and a detection survey team conducted a delimination in the yard and in the surrounding neighborhood. Since delimitation surveys failed to find the scale outside this one property, the infested bushes were cut down and removed, thereby apparently eradicating the population.

However, according to Orange County Entomologist Nick Nisson, heavy populations of this scale insect have now been found in major street tree plantings on several avenues in three other Orange County cities including Anaheim, Fullerton and Placentia (see included map). The populations are heavy enough to be causing copious honeydew, which is dripping on cars parked along the streets. Initially, the infested streets included Orangethorpe Avenue, Anaheim, Ladera Vista Street, Fullerton, and Bastanchury Road at Placentia Avenue, Placentia. Collections were made from *Schinus terebinthifolia* (Brazilian pepper), and *Ficus nitida*. Collectors included N. Nisson, J. Wynn and J. Feaster, all of Orange County.

A nursery in Brea had been involved in a on-going eradication program for this scale. There is some concern by Orange County officials that the infestations may have originated from this nursery.

Further delimitation has extended the infested area to at least 16 sites running in an arc from Orangethorpe Avenue at Highway 5 to Valencia Avenue at Highway 90.

Green shield scale is commonly encountered in quarantine shipments of nursery stock and cut flowers from Hawaii, Florida, and numerous other tropical or subtropical localities. It has been found numerous times on nursery stock in post-entry situations in nurseries, and occasionally it has been found outdoors on the nursery grounds on plants not involved with quarantine shipments. Except for the one nursery in Orange County, all of these nursery infestations have apparently been eradicated.

The scale is a major pest in many tropical areas of the world. It is especially troublesome on coffee wherever that host is grown. It is a common and often serious pest of ornamental plants in Florida, especially *Ficus* and guava. It is a prolific honeydew producer along with resultant sooty mold that becomes a serious problem when populations become large. The white ovisacs can also become unsightly. In California it can be expected to be troublesome in coastal communities outdoors, and especially troublesome in indoor decorative landscape situations such as shopping malls.

Taxonomically, the green shield scale adult female is decidedly distinct from all other species in the genus. The major morphological separation characters include the short, curved, fimbriated marginal setae, a sclerotized half-circle around the spiracles in older adult individuals, 10 locules in the ventral abdominal multilocular pores, and a cluster of multilocular pores outside of the spiracular furrows just antero-medial to the spiracles.

Other pertinent information can be found in the following report by Joanne Wasbauer of CDFA:

Taxonomic description: Female oval, smooth, 2-4 mm. long; green to greenish brown, sometimes covered with a whitish powdery secretion. Dead females are brown. Female shrinks with egg laying and body surface becomes ridged. Older females with well-developed ovisacs with a crescent shaped sclerotized area surrounding the spiracles. Egg sac is cottony, white, projecting first to the rear, eventually surrounding the scale; it becomes several times the size of the female and elevates the hind portion of her body.

History and economic importance to agriculture:

Origin and current distribution: *P. psidii* is a tropical species found in Africa, southeast Asia, Australia, Brazil, Egypt, India, Papua New Guinea, United States (Alabama, Florida, Georgia, Missouri, New York, South Carolina, Washington, D.C.), Venezuela, the West Indies.

Biology/life cycle: Leaves, branches and fruit are liable to infestation. The adult female deposits an average of 200 eggs in white cottony ovisacs of waxy filaments secreted behind the terminal end of their bodies. The egg stage hatches in 11-28 days. The life cycle takes 180 to 210 days. Often tended by ants. There are two or three generations a year.

Hosts: Many ornamental plants and some commercial crops; different hosts preferred in different parts of the world. Hosts include but are not limited to apples, avocado, Brazilian pepper tree (*Schinus terebinthifolia*), camellia, citrus (serious pest in southeast Asia), coffee, croton, elder, elm, *Eugenia* spp., *Ficus* spp. (especially *benjamina*), gardenia, guava, *Jasminum humile* (Italian jasmine), mulberry, myrtle, mangoes, oleander, phlox, *Plumeria*, rhododendron, sapote.

Damage: *P. psidii* secretes copious amounts of honeydew on which sooty molds develops, preventing respiration and photosynthesis. Fruit decreases in value.

Biological control: Green shield scale is preyed on by *Chrysopa* sp. and the coccinellids *Cryptolaemus montrouzieri*, *Menochilus sexmaculatus*, *Orcus* spp. and *Leis* sp. The effectiveness of *Cryptolaemus montrouzieri* is from many countries on a number of crops (*Erythrina* in Puerto Rico, oleander, *Ficus* sp. and other ornamental in several localized areas of Bermuda, guava in India) (Mani and Krishnamoorthy 1990, Wolcott 1958; Bennett and Hughes 1959). Two fungi, *Cephalosporium lecanii* from Papua New Guinea and *Fusarium oxysporum* Schlecht from India are effective under laboratory conditions. Parasites include the encyrtids *Cheiloneurus* sp. and *Encyrtus* sp. found on *P. psidii* on tea. Parasites introduced, established and successful in some areas of Bermuda include *Microterys kotinskyi* Fullaway, *Metaphycus stanleyi* Compere, and the predator *Ayza lutipes* Mulsant (Bennett and Hughes 1959). *Azya orbigera* Mulsant from Columbia is being reared at Lake Alfred - CREC, Florida, for release in southern Florida where *Pulvinaria psidii* is found.

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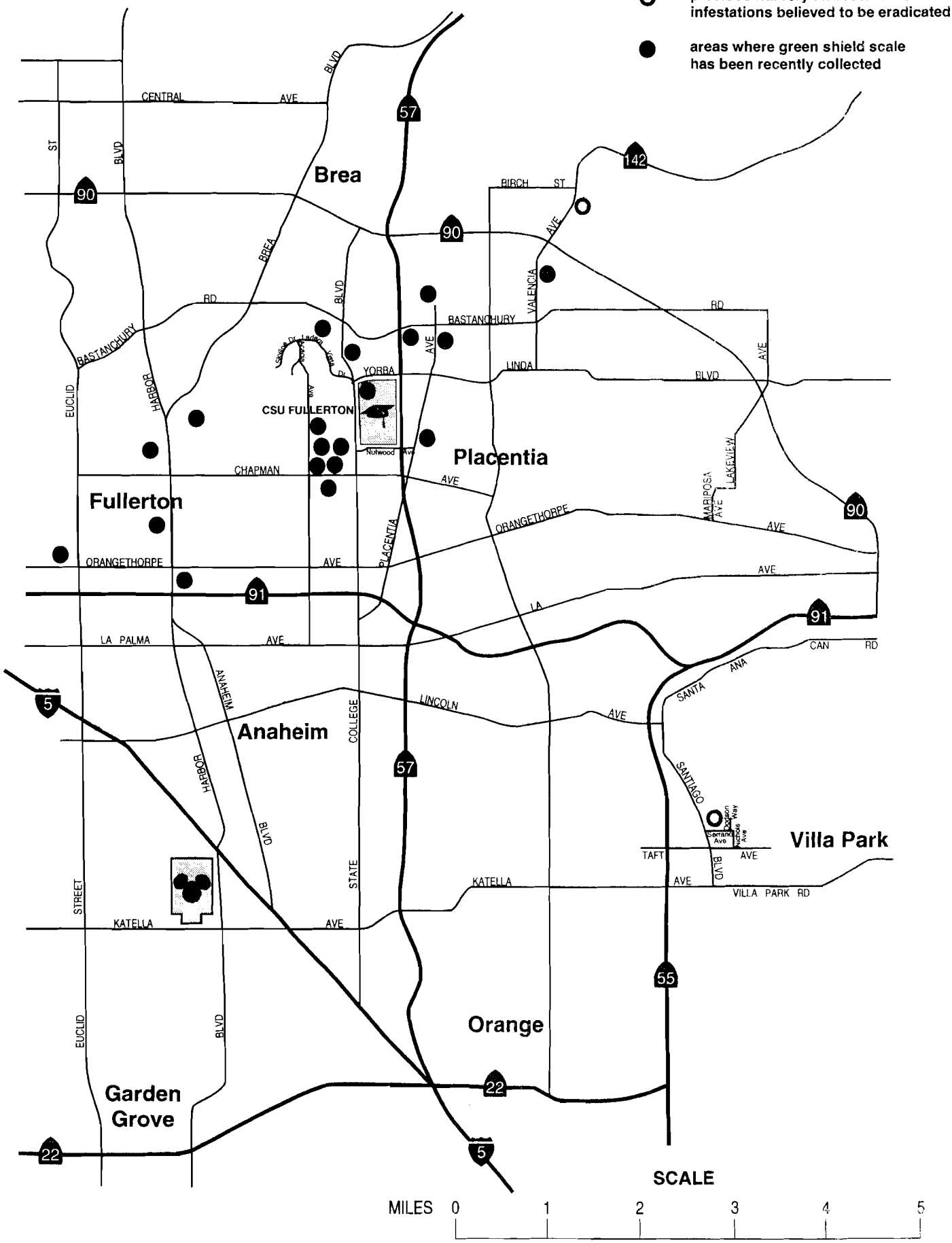
DISTRIBUTION OF GREEN SHIELD SCALE IN ORANGE COUNTY

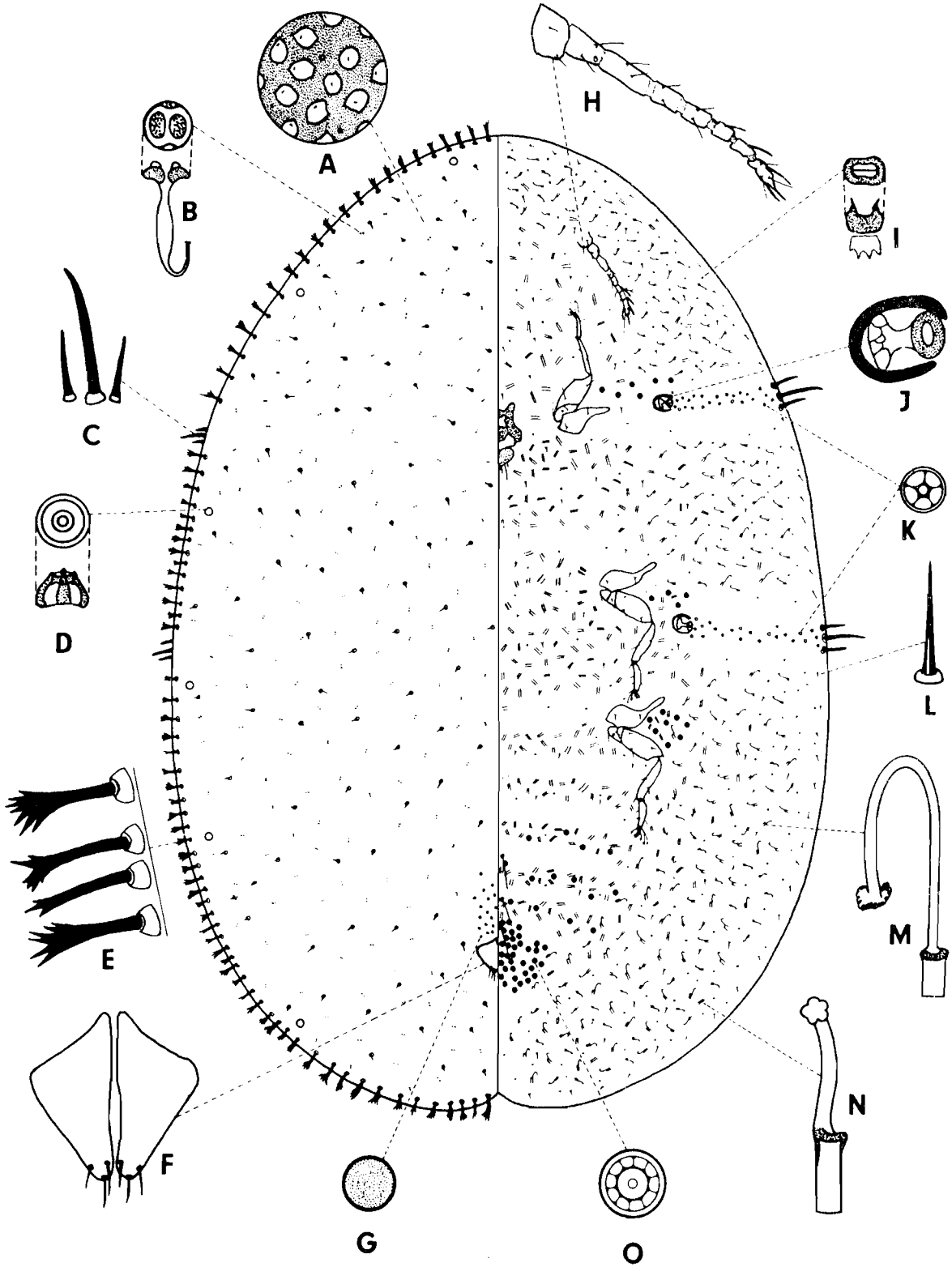
27 October 1993



Partial list of known hosts of *Pulvinaria psidii*

(From published accounts and CDFA records)
Compiled Jan. 28, 1992
by R.J. Gill

acalypha
Achras zapota
akee
alder
almond (tropical)
Alpinia purpurata
Amomum hemisphericum
Anthurium sp.
apple (mammee)
apple (rose)
apple (star)
aralia
Aralia seyboldi
Aralia sp.
avocado
bamboo-briar
Barringtonia sp.
bay (sweet)
bignay
bignonia
Bischofia javanica
bottle-brush
Bouvardia sp.
Brazilian pepper tree
bustic
cajeput
camellia
Camellia sinensis
canna
Canna indica
Capsicum frutescens
Capsicum sp.
carissa
Carissa sp.
Ceratiola ericoides
Cerberiopsis candelabrum
ceriman
chalice-vine
cherry (wild)
chinaberry
Chiococca alba
Chrysophyllum cainito
Chrysophyllum oliviforme
Chrysophyllum sp.
Citrus aurantifolia
Citrus limon
Citrus sinensis
Citrus sp.
clerodendrum
Clerodendrum sp.
Clusia rosea
Coccoloba uvifera
Codiaeum sp.
Coffea arabica
Coffea canephora
Coffea sp.
coffee (native)
coffee (wild)
Colocasia esculenta
Cordisa alliodora
Cordyline terminalis
croton
currant (tropical)
Cussonia arborea
cypress vine
Dieffenbachia amoena
Dieffenbachia picta
Diospyros sp.
Dodonea sp.
Dodonea viscosa
Dracaena marginata
elder
elder (flowering)
elder (golden)
elder (yellow)
elm (Chinese)
Eucalyptus deglupta
eugenia
Eugenia jambolana
Eugenia malaccensis
Eupatorium sp.
feijoa
fern
Ficus asahi
Ficus decora
Ficus elastica
Ficus lyrata
Ficus nitida
Ficus retusa
Ficus robusta
Ficus spp.
fiddle-wood
fig
fig (Egyptian)
firebush
flame-of-the-woods
frangipani
gardenia
Gardenia jasminoides
Gardenia veitchii
geiger tree
Gerbera jamesoni
Gerbera sp.
gerberia
Ginger
grape (sea)
groundsel
guava
Gymnospora sp.
hackberry
hamelia
Hedychium sp.
Heliconia humilis
Hibiscus rosa-sinensis
Hibiscus sp.
Hibiscus syricus
holly
honeysuckle (cape)
ice-plant
Ipomoea grandiflora
Ipomoea tuba
ixora (red)
Ixora coccinea
Ixora macrothrysa
Ixora sp.
jasmine
Lagerstroemia indica
Lansium domesticum
laurel (weeping)
lawsonia
Leucopogon sp.
lime (Spanish)
Litchi chinensis
longan
Ludwigia capitata
Macaranga
Malvaviscus arboreus
Mangifera indica
mango
marlberry
mastic
Melaleuca leucodendron
Meryta macrophylla
Mimusops sp.
mistletoe
Monstera deliciosa
Monstera sp.
Morinda citrifolia
Muehlenbeckia sp.
mulberry (English)
mulberry (French)
Myristica castaneaefolia
Myristica sp.
myrtle
myrtle (crepe)
myrtle (downey)
oak (silk)
palm
Pandanus sp.
passion vine
pepper (Brazilian)
pepper (California)
persimmon
persimmon
Philodendron pertusum
Pinus caribaea
Piper methysticum
pittosporum
Pittosporum sp.
plum (Burdekin)
plum (pigeon)
plumeria
Plumeria acutifolia
Plumeria rubra
Plumeria sp.
Pometia pinnata
Protea sp.
Psidium cattleyanum
Psidium guajava
Punica granatum
Quercus nigra
Randia tahitensis
red stopper
saltbush
sapodilla
sapota
Scaevola floribunda
Schefflera actinophylla
Schefflera arboricola
Schefflera sp.
Schinus terebinthifolius
snowberry
soapberry
Solanum sp.
soursop
Spanish needle
Spathodea campanulata
Spathodea sp.
Stachytarpheta sp.
Stenolobium sp.
Straussia sp.
Syzigium cumini
Syzygium jambos
tabernaemontana
Tarrena sambucina
tecoma
Terminalia brassii
Tetrazygia sp.
Ti
traveler's tree
Tupidanthus sp.
Uapaca kirkiana
Vanilla sp.
Wedelia biflora
Zingiber sp.



Green shield scale, *Pulvinaria psidii*. Morphology of the adult female. Illustration courtesy of Avas Hamon, Florida Department of Agriculture and Consumer Affairs, Gainesville. Florida.

NEW COUNTY RECORDS

Several homopterous insects have been found during the period of this report in locations that constitute new county records.

PYRIFORM SCALE, *Protopulvinaria pyriformis*, -(B)- Occasionally common in San Diego and Los Angeles Counties, this scale has been recorded for the first time from **Orange** County at Tustin. The collection was made on Newport Avenue on September 12 by Nick Nisson, Orange County Entomologist. The scale was infesting Australian bush cherry, *Syzygium paniculatum*.

EUCALYPTUS LONGHORNED BORER, *Phoracantha semipunctata*, -(B)- This is the first confirmed occurrence in nature of a eucalyptus longhorned borer for the central valley. The collection was made by Danny Reiswig on July 17 in Lodi, **San Joaquin** County.

NESTING WHITEFLY, *Paraleyrodes minei*, -(Q)- Now widespread in San Diego County, and occurring also in Los Angeles and Orange Counties, this pest is increasing in economic importance and distribution. It was recently discovered established in two new counties, **San Bernardino** and **Ventura**. The San Bernardino collection was made at Ontario on August 31 from orange by Scott Williams. The Ventura find was made at Somis and Oxnard by Tom Roberts, PCA, in mid-September from avocadoes. It is not known if these were commercial or residential avocado plantings. For more information on this whitefly see CPPDR 10(1-2):8-11.

SEVENSPOTTED LADY BEETLE, *Coccinella septempunctata*, -(D)- Sevenspotted lady beetle was discovered at Coyote Ridge, above Big Pine, **Inyo** County, on June 29. This lady beetle was found last summer in Mono County, and previously in Modoc and San Joaquin counties.

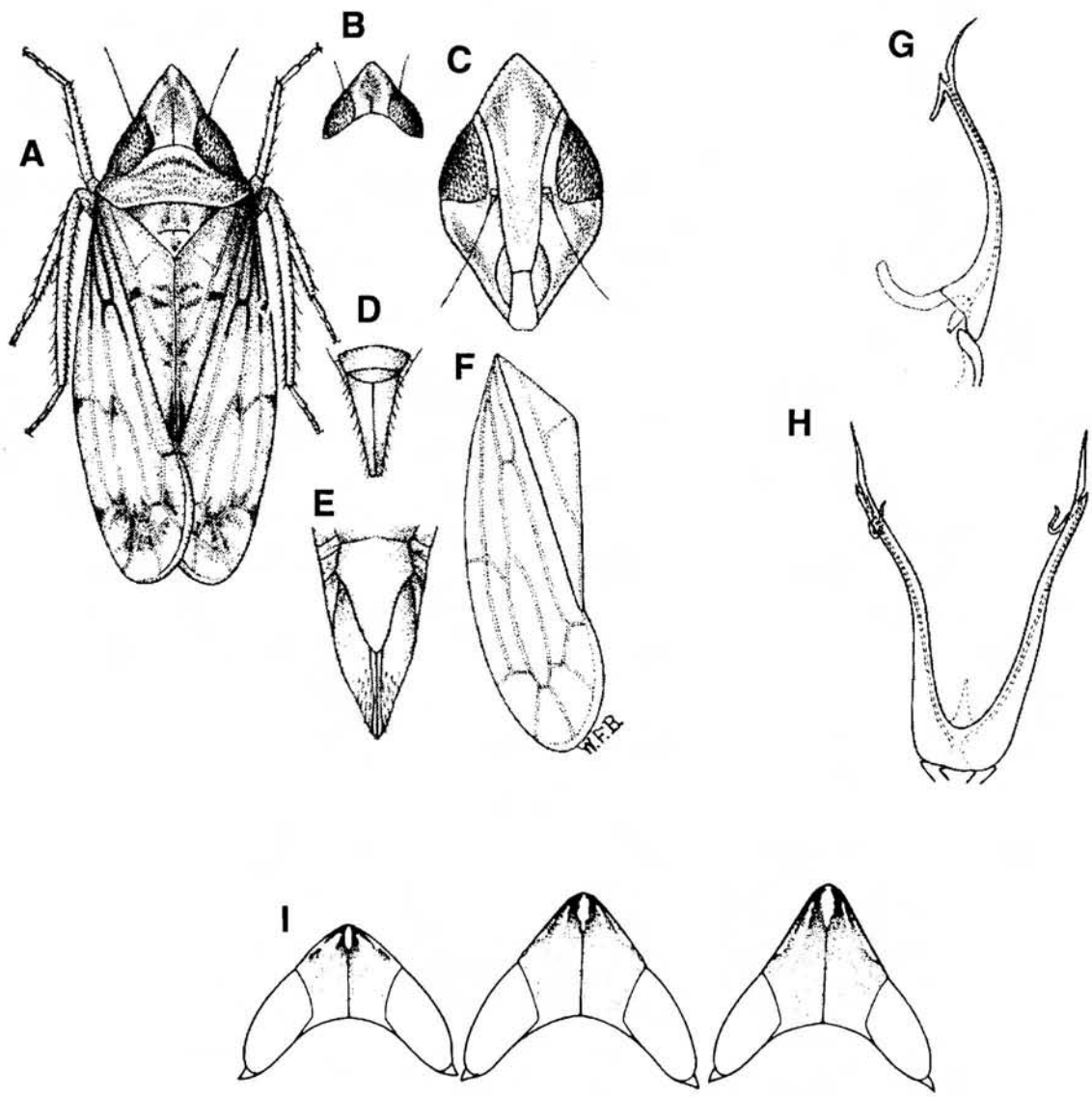
ASIAN MAPLE LEAFHOPPER, *Japananus hyalinus*, -(C)- This leafhopper is native to the Manchurian Subregion of the Palaearctic Region. It was apparently introduced into the United States sometime prior to 1897, when it was first collected at Washington D.C. on an introduced maple species. The leafhopper was described by Osborn in 1900, as *Platymetopius hyalinus*. By 1920 it was found abundently in many parts of New England. By 1909 it was attracting attention in Japan and was described as *Platymetopius cinctus* by Matsumura in 1914. The genus *Japananus* was erected by Ball in 1931. It was recorded from Oregon in 1920 and British Columbia in 1976.

In 1975, the leafhopper was found for the first time in California at Fresno, **Fresno** County on maple trees. It was collected the second time at Los Altos, **Santa Clara** County in 1977, again on maples. It was collected in another new county on June 6, 1993 by a home owner in **Sacramento** County. The sample was submitted by Pam Bone of Ag extension. Collections of this leafhopper in Stockton, **San Joaquin** County in August were thought to be a new county record, also, but later specimens were found in the San Joaquin County collection from Lodi collected by C. Cranston on August 30, 1985.

The leafhopper is apparently restricted to maples, and it is recorded at least from *Acer palmatum*, *A. platanoides* , *A. globosum*, *A. ginnala* and *A. campestre*. Little is known about its economic status. It apparently has but one generation per year. The eggs are laid singly under loose bark in the fall.

Eggs hatch the following spring. Nymphs feed on the lower leaf surfaces, particularly in shaded parts of the trees.

This leafhopper is unlike any other leafhopper commonly found in California. The most similar species are in the genus *Scaphytopius*, which are similar because they have the sharply pointed head. However, *Scaphytopius* leafhoppers usually have a yellow face, and the male genitalia are totally unlike those of *Japananus*. An illustration of the general morphology is included below.



Japanese maple leafhopper, *Japananus hyalinus*. A. Adult, dorsal view. B. Vertex. C. Face. D. Male abdominal plates. E. Ovipositor. F. Forewing. G. Aedeagus, lateral view. H. Aedeagus, dorsal view. I. Illustration of variability in the shape of the head, typical in the genus *Japananus* (primarily sexual dimorphism). Figures A-F taken from Osborn, 1928: The leafhoppers of Ohio. Bulletin Ohio Biological Survey #14, 3(4):199-374. Figures G-I taken from Lauterer, 1984: New and interesting records of leafhoppers from Czechoslvakia (Homoptera, Auchenorrhyncha) II. Acta Musei Moraviae 69:143-162.

EXCLUSION

The following pests of significance were intercepted in quarantine situations during the period of this report:

SPANISH MOSS ORTHEZIA, *Orthezia tillandsiae*, -(Q)- Spanish moss orthezia was collected in a nursery shipment from Florida at La Habra, **Orange** County. The collection was made by J. Wynn on June 6.

TROPICAL PALM SCALE, *Abgrallaspis palmae*, -(A)- J. Wynn also collected tropical palm scale on bromeliads on June 10 in Yorba Linda, **Orange** County.

LESSER SNOW SCALE, *Pinnaspis strachani*, -(A)- On June 15, lesser snow scale was collected by E. Kragh on rhapis palm in Oxnard, **Ventura** County.

NESTING WHITEFLY, *Paraleyrodes minei*, -(Q)- Nesting whitefly was found on hibiscus nursery stock by A. Moretto. This collection was made June 23 in Stockton, **San Joaquin** County.

MAGNOLIA WHITE SCALE, *Psuedaulacaspis cockerelli*, -(A)- This scale was found on *Strelitzia* sp. in Encinitas, **San Diego** County by L. Worcester on July 7. It was also found in a Westminster, **Orange** County, nursery on *Phoenix roebelenii*. D. Park made the collection on July 14. On September 27, R. Aguilar collected magnolia white scale on areca palm in Atwater, **Merced** County.

ANTHURIUM WHITEFLY, *Aleurotulus anthuricola*, -(Q)- Anthurium whitefly was collected at a nursery inspection in Santa Barbara, **Santa Barbara** County. S. Squires made the collection on August 8.

A SOFT SCALE, *Philephedra tuberculosa*, -(Q)- T. Reed and J. Allan collected this soft scale on guava on August 30 in Stockton, **San Joaquin** County.

PITTOSPORUM SCALE, *Parlatoria pittospori*, -(**B**)- This scale was found in a nursery in San Diego, **San Diego** County. K. Emino collected this pest on a *Leucadendron* hybrid on September 3.

GENISTA PSYLLID, *Arytaina genistae*, -(Q)- Genista psyllid was intercepted from Washington by M. Beauregard on September 20. This collection was made on scotch broom in Saratoga, **Santa Clara** County. Previously this psyllid was know only from the New England states, specifically Massachusetts, where it has persisted since the early 1900s. It is a common European species, where it is known to feed on Scotch broom, *Cytisus scoparius*, gorse, *Ulex europeaeus*, and Spanish broom, *Spartinum*. There have been no previous records of this psyllid from Washington. There is a possibility that this psyllid may provide some natural controls for the above weedy species.

A WEEVIL, *Oxydema longula*, -(Q)- A weevil was found on *Alpinia purpurata* at Menlo Park, **San Mateo** County, by Mulder on June 3.

A TERMITE, *Coptotermes* sp., -(Q)- Herrera found this pest on *Zingiber* sp. in Los Angeles, **Los Angeles** County on June 8.

A BARK BEETLE, *Tomicus piniperda,* -(Q)- T. Watkins intercepted a bark beetle in wood dunnage at the Port of Stockton, **San Joaquin** County, on June 15.

A BURROWING BUG, *Rhytidoporus indentatus,* -(Q)- A burrowing beetle was found in a Whittier, **Los Angeles** County, shipment on June 28 by D. Papilli.

A WEEVIL, *Orchidophilus* sp., -(Q)- J. Wynn found a weevil in cut flowers from Hawaii on June 30. The find was made in Fullerton, **Orange** County.

MEXICAN LEAFROLLER, *Amorbia emigratella,* -(Q)- Another **Orange** County find was made by F. Reyes on June 30. The Mexican leafroller larva was found on Hawaiian orchids in Corona Del Mar.

PACIFIC BEETLE COCKROACH, *Diploptera punctata,* -(Q)- An adult of this cockroach was found several times in automobiles being shipped from Hawaii to Los Angeles, **Los Angeles** County. The collections were made by Rabe on July 2 and July 21.

A SCARAB BEETLE, *Dyscinetus morator,* -(Q)- A scarab beetle was found on *Ficus* sp. in a nursery shipment by T. Do on July 12 in Brea, **Orange** County.

AN ARCTIID MOTH, *Ecpantheria scribonia,* -(Q)- Various stages of this tiger moth were intercepted at El Dorado Hills, **El Dorado** County on September 15. The collection was made by Shutler among outdoor household goods shipped from Maryland.

SIGNIFICANT FINDS IN OTHER STATES AND COUNTRIES

BROWN CITRUS APHID (BCA), *Toxoptera citricida*, -(Q)- Brown citrus aphid was discovered in Guantanamo Bay, Cuba, in April showing steady movement northward and inciting fear in Florida officials. University of Florida researchers say that this efficient transmitter of citrus tristeza virus poses an serious economic threat to Florida's $6 billion citrus industry. Florida growers have dealt mainly with mild forms of citrus tristeza virus, but the brown citrus aphid would spread two devastating forms of the virus.

The quick-decline strain already in the state attacks trees grown on sour orange rootstock, killing a full-size tree within four to eight weeks. About 25 million citrus trees, or one-fourth of Florida's producing citrus acreage, are grown on sour orange rootstock.

The stem-pitting strain causes pits and fissures in the wood of citrus trees, sapping their vitality and resulting in fewer and smaller fruit. This strain can affect all types of citrus, regardless of rootstock. It is believed that the stem-pitting strain is present but dormant in Florida because of the absence of an efficient transmitter, such as brown citrus aphid.

Scientists at the University of Florida and the USDA are testing new chemicals and searching for natural enemies to control the insect. This aphid caused an alert back in April 1992, when it was first found in Puerto Rico. For additional information on the Puerto Rico find and bioeconomic data on brown citrus aphid, see CPPDR 11(1-2): 11-14.

AFRICANIZED HONEY BEE (AHB), *Apis mellifera scutellata*, -(Q)- On June 18, a colony of Africanized honey bees, living in the exterior frame of a house, stung the property owner six times and allegedly killed a dog in Tucson, Arizona. The bees were confirmed as Africanized by the Agricultural Research Service Bee Research Laboratory in Beltsville, Maryland.

The Arizona Department of Agriculture (ADA), who has trapped along the border of Mexico extensively, conducted a door-to-door survey of the area. Fourty-two swarm traps were set within the four square mile area surrounding the detection. It is thought that the honey bees may have been transported into the state inadvertently on a vehicle.

On June 29, an Antelope Valley, Los Angeles County, resident drove himself to the hospital after being stung an estimated 125 times. Even though the behavior exhibited by the bees was highly aggressive, similar to that of the Africanized strain, the bees were identified by California Department of Food and Agriculture (CDFA) scientists as European honey bees.

BORDER STATIONS

This summer proved to be an interesting one at the highways coming into California. Border station personnel made some unusual and very significant interceptions during the period of this report. Dick Brown of Exclusion explains the most significant interception:

> On July 5, 1993 at the Hornbrook Station, PQI Jim Proctor confiscated five sugar-apple (*Annona squamosa*) fruits from a California licensed rental car. This COMMERCIAL fruit which was packed in individual plastic netting, is prohibited entry in the United States, but is permitted into Canada. When the fruit was examined, two live fruit fly larvae were found which were positively identified as Mediterranean fruit fly, (*Ceratitis capitata*). The license number of the vehicle was traced and the driver was identified. When interviewed, the driver indicated that he had traveled into Canada. The fruit may have been purchased there. This is the first time that Medfly larvae have ever been recorded from a border station interception.
>
> Further interviews with the suspect were conducted. He claimed that he purchased the fruit in the vicinity of Puget Sound, Washington, from an Asian market. He claimed to have just been exploring, happening upon this market, yet he failed to remember the store's name and location. It was later discovered that there is one sugar-apple producer on the Island of Kauai who ships fruit to western Canada. The producer ships his fruit in the same manner as that which was intercepted. It is most likely that the fruit was purchased in the Vancouver area and brought across the international border.

Other significant fruit fly finds were made by border station personnel this summer:

- Live Caribbean fruit fly (*Anastrepha suspensa*) larvae were found in Florida grapefruit. The interception was made at the Hornbrook station from a recreational vehicle. The collection was made by Don Craig on July 21.
- Live Mexican fruit fly (*Anastrepha ludens*) larvae were collected at two separate locations. The first interception was made by Donna Garrison at the Dorris Station. The larvae were found on June 1 from Texas grapefruit that were purchased from a grocery store in Bend, Oregon. The second interception came from the Blythe station. The larvae were found on August 11 by Abe Sandoval in a load of commercial mangoes from Mexico bound for Buena Park.

A beetle interception was also of interest. The following report by Dick Brown outlines the find:

> Smith River AIS Patty Adams made a startling and unexpected interception when a driver handed her a baggie containing 20 dead "Japanese beetles." It turned out that the Air Force Reserve Officer had collected the beetles on the tarmac in Okinawa and thought we might be interested. The officer stated to PQI Pat Wilson that, "The airfield there was crawling with Japanese beetles to the point of making the runways slippery from the crushed bodies."

In a further development, the "Japanese beetles" actually turned out to be the very closely related species *Popillia lewisi*. From the airman's remarks, it looks as if this species of *Popillia* also has the potential to become a very serious pest. This is just one more exotic species that California must

be alert for in order to prevent establishment here.

Actual Japanese beetles (*Popillia japonica*) were intercepted also , however. The interception was made from lily plants and soil which was found in a U-Haul trail traveling from West Virginia to Hollywood. The collection was made on May 17 by David Holman at the Yermo station.

In the last issue of the CPPDR [12(1-2):3-8], we included and extensive article on the sweet potato weevil (*Cylas formicarius*). In the article, we outlined the fact that this weevil in native to the Indian subregion of Asia along with several other species of *Cylas* weevils, and that there were a large number of species also native to eastern Africa. One of these African species was intercepted at the Needles inspection station on August 15 by Duitsman and Daniels. The following report by Dick Brown outlines the interception:

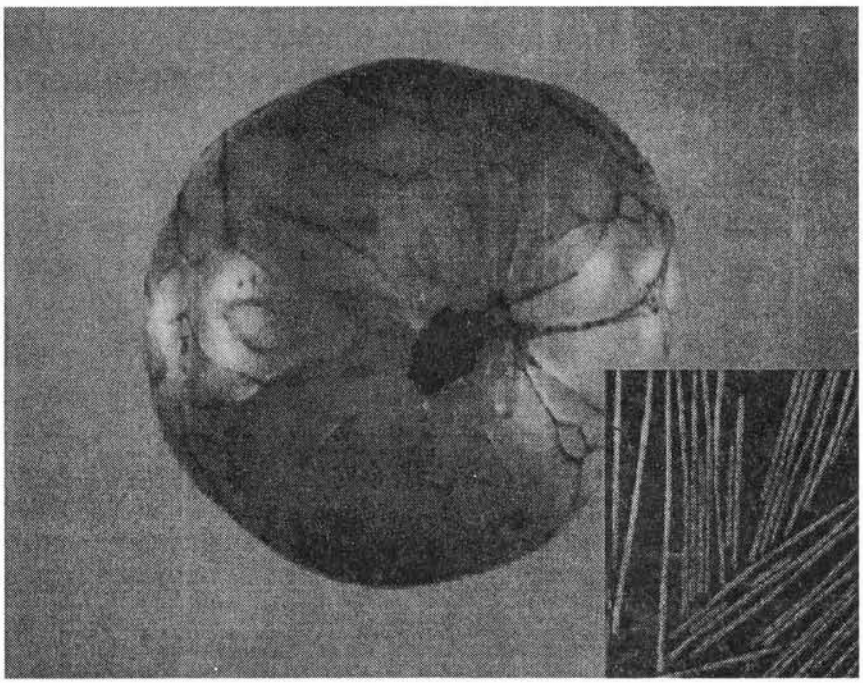
> Live Cylas sp. (NOT *formicarius*) male and female adults were found in sweet potatoes that originated in Zimbabwe, Africa. The insect, which is not a North American species, arrived in an Alabama licensed auto. The driver, and owner of the illegal host material, left the station in a hurry before more information could be obtained.

At least two important nematode species were also intercepted at the station this summer. The first interception was of reniform nematode (*Rotylenchus reniformis*), collected from Florida houseplants arriving at the Blythe inspection station. The specimens were found by Lance Ebert on June 2. The second nematode interception was by Martin DeLeon, also at the Blythe station. The species was a cyst nematode in the family Heteroderidae that was found on Florida house plants on June 20.

PLANT PATHOLOGY HIGHLIGHTS

On the following pages is an index to a group of major plant diseases, namely the plant viruses, viroids, and mycoplasma-like diseases which are known to occur in California. The index is inserted at the end of this issue of the CPPDR to enable its removal and use separately as a reference.

Index of Plant Virus, Viroid, and Mycoplasma-like Diseases in California
(December 1993)



Dennis E. Mayhew and Amy L. Wiens
Plant Virology Laboratory
California Department of Food and Agriculture

Index of Plant Virus, Viroid, and Mycoplasma-like Diseases in California
December 1993

Dennis E. Mayhew and Amy L. Wiens, CDFA Plant Virology Laboratory

The purpose of this index is to provide updated information about plant diseases caused by viruses, viroids, and mycoplasma-like organisms that are known to occur in California. The major source of the reports are the official files of the California Department of Food and Agriculture. These reports are the result of disease diagnoses made by a number of plant pathologists working for the Department or the University of California since 1950. In addition, reports listed in a number of references have been included if specific locations in California have been mentioned. Many original diagnoses are included under the currently acceptable synonym for the virus or disease named. With each report, the county or counties in which the diseases have occurred are included by number:

1. Alameda
2. Alpine
3. Amador
4. Butte
5. Calaveras
6. Colusa
7. Contra Costa
8. Del Norte
9. El Dorado
10. Fresno
11. Glenn
12. Humboldt
13. Imperial
14. Inyo
15. Kern
16. Kings
17. Lake
18. Lassen
19. Los Angeles
20. Madera
21. Marin
22. Mariposa
23. Mendocino
24. Merced
25. Modoc
26. Mono
27. Monterey
28. Napa
29. Nevada
30. Orange
31. Placer
32. Plumas
33. Riverside
34. Sacramento
35. San Benito
36. San Bernardino
37. San Diego
38. San Francisco
39. San Joaquin
40. San Luis Obispo
41. San Mateo
42. Santa Barbara
43. Santa Clara
44. Santa Cruz
45. Shasta
46. Sierra
47. Siskiyou
48. Solano
49. Sonoma
50. Stanislaus
51. Sutter
52. Tehama
53. Trinity
54. Tulare
55. Tuolumne
56. Ventura
57. Yolo
58. Yuba

Those diseases reported in more than eight counties are listed as statewide. For some reports, no specific location is designated, only the state is mentioned. Location for these reports is listed as CA.

Cover illustration:
Symptoms of the corky ringspot strain of tomato mosaic virus. Typical particles of a tobamovirus (inset).

abutilon mosaic geminivirus		
Abutilon sp.	Malvaceae	31;38
alfalfa mosaic (alfalfa mosaic virus)		
Ajuga sp.	Lamiaceae	37;43
Capsicum annuum	Solanaceae	39;43
Capsicum frutescens	Solanaceae	Statewide
Capsicum frutescens var. *grossum*	Solanaceae	39
Capsicum frutescens var. *longum*	Solanaceae	39;43
Carthamus tinctorius	Asteraceae	13
Chiococca alba	Rubiaceae	48
Cucumis melo var. *cantalupensis*	Cucurbitaceae	51
Daucus carota	Apiaceae	50
Lactuca sativa	Asteraceae	10;27
Lycopersicon esculentum	Solanaceae	Statewide
Medicago sativa	Fabaceae	Statewide
Myoporum sp.	Myoporaceae	37
Ocimum basilicum	Lamiaceae	43
Petroselinum crispum	Apiaceae	50
Phaseolus lunatus	Fabaceae	50
Quercus lobata	Fagaceae	49
Solanum tuberosum	Solanaceae	20;47
Sonchus oleraceus	Asteraceae	13
Sonchus sp.	Asteraceae	13
Tolmiea Menziesii	Saxifragaceae	44
Trifolium repens	Fabaceae	57
Viburnum dentatum	Caprifoliaceae	15
Viburnum opulus roseum	Caprifoliaceae	11
Viburnum sp.	Caprifoliaceae	23;24;34;39
Vigna unguiculata	Fabaceae	06;50
Viola sp.	Violaceae	43
almond bud failure		
Prunus dulcis	Rosaceae	06;50;57
almond mosaic		
Prunus persica	Rosaceae	24
anemone mosaic		
Anemone sp.	Ranunculaceae	37
apple chlorotic leaf spot closterovirus		
Malus floribunda	Rosaceae	41
apple flat limb nepovirus		
Malus sp.	Rosaceae	CA
apple green crinkle		
Malus sylvestris	Rosaceae	01;12;43;44
apple mosaic ilarvirus		
Malus sp.	Rosaceae	44
Malus sylvestris	Rosaceae	Statewide
Prunus avium	Rosaceae	34;51
Prunus domestica	Rosaceae	37;51
Prunus sp.	Rosaceae	34;51
Rosa sp.	Rosaceae	07;24;30;34;43;49;51
apple star cracking		
Malus sylvestris	Rosaceae	44
Pyrus communis	Rosaceae	01
apple stem pitting closterovirus		
Malus sp.	Rosaceae	CA
Malus sylvestris	Rosaceae	27
apple union necrosis		

Malus sylvestris	Rosaceae	CA
apricot ring pox		
Prunus americana	Rosaceae	19;31
Prunus armeniaca	Rosaceae	01;10;33
Prunus avium	Rosaceae	33
Prunus persica	Rosaceae	33
Prunus sultana	Rosaceae	54
artichoke curly dwarf potexvirus		
Cynara scolymus	Asteraceae	27
artichoke mosaic		
Cynara scolymus	Asteraceae	42
asparagus virus		
Asparagus officinalis	Liliaceae	33
asparagus virus II ilarvirus		
Asparagus officinalis	Liliaceae	CA
aster yellows mycoplasma		
Amaranthus retroflexus	Amaranthaceae	45
Anemone coronaria	Ranunculaceae	CA
Apium graveolens	Apiaceae	40;42;56
Apium graveolens var. *dulce*	Apiaceae	01;07;27;39;40;42;43;56
Aster sp.	Asteraceae	01
Brassica oleracea var. *botrytis*	Brassicaceae	43
Brassica oleracea var. *capitata*	Brassicaceae	19;40;50
Callistephus chinensis	Asteraceae	04;43
Chrysanthemum sp.	Asteraceae	CA
Cichorium endivia	Asteraceae	27
Cucurbita sp.	Cucurbitaceae	42
Daucus carota	Apiaceae	34;37
Fragaria X *ananassa*	Rosaceae	19;45;52
Gladiolus X *hortulanus*	Iridaceae	34
Helianthus annuus	Asteraceae	CA
Iberis sp.	Brassicaceae	19
Lactuca canadensis	Asteraceae	CA
Lactuca integrifolia	Asteraceae	CA
Lactuca sativa	Asteraceae	07;24;42;43;47;48
Lamium amplexicaule	Lamiaceae	CA
Limonium latifolium	Plumbaginaceae	56
Lycopersicon esculentum	Solanaceae	34;39
Medicago sativa	Fabaceae	06;56
Pastinaca sativa	Apiaceae	CA
Petunia hybrida	Solanaceae	36;47
Solanum tuberosum	Solanaceae	09;28;39;42
Tagetes erecta	Asteraceae	41
Tragopogon porrifolius	Asteraceae	CA
Trifolium hybridum	Fabaceae	57
Trifolium pratense	Fabaceae	57
Trifolium repens	Fabaceae	34;52;57
Vigna unguiculata	Fabaceae	39
Vinca minor	Apocynaceae	42
asteroid spot		
Prunus persica	Rosaceae	CA
Prunus persica var. *nectarina*	Rosaceae	CA
avocado sunblotch viroid		
Persea americana	Lauraceae	42;43
barley stripe mosaic hordeivirus		
Hordeum vulgare	Poaceae	47;52

barley yellow dwarf luteovirus		
Avena byzantina	Poaceae	10
Avena sativa	Poaceae	Statewide
Avena sp.	Poaceae	Statewide
Bromus rigidus	Poaceae	24
Eriochloa gracilis	Poaceae	10
Hordeum sp.	Poaceae	Statewide
Hordeum vulgare	Poaceae	Statewide
Secale cereale	Poaceae	49
Secale sp.	Poaceae	50
Triticum aestivum	Poaceae	17;18;34
Triticum sp.	Poaceae	CA
bean common mosaic potyvirus		
Phaseolus coccineus	Fabaceae	42
Phaseolus lunatus	Fabaceae	39;50
Phaseolus sp.	Fabaceae	13;42;43;51;52
Phaseolus vulgaris	Fabaceae	Statewide
Vigna sesquipedalis	Fabaceae	31
Vigna unguiculata	Fabaceae	50
Crocosmia crocosmaeflora	Iridaceae	CA
Freesia sp.	Iridaceae	01;12;27;37;43;44
Frittilaria sp.	Liliaceae	43
Gladiolus X *hortulanus*	Iridaceae	01;34;44;56
Mandevilla aquifolium	Apocynaceae	43
Masdevallia sp.	Orchidaceae	19;31;40
Narcissus sp.	Amaryllidaceae	07
Phaseolus sp.	Fabaceae	01;04;42;43;52
Phaseolus vulgaris	Fabaceae	Statewide
Pisum sativum	Fabaceae	44
Ranunculus sp.	Ranunculaceae	56
Viola odorata	Violaceae	07
beet curly top geminivirus		
Amaranthus caudatus	Amaranthaceae	CA
Amaranthus graecizans	Amaranthaceae	CA
Amaranthus retroflexus	Amaranthaceae	CA
Amaranthus sp.	Amaranthaceae	CA
Apium graveolens var. *dulce*	Apiaceae	CA
Armoracia rusticana	Brassicaceae	CA
Beta vulgaris	Chenopodiaceae	13;34;40;42;48;57
Beta vulgaris var. *cicla*	Chenopodiaceae	06;34;39;42;57
Brassica rapa	Brassicaceae	CA
Capsella bursa-pastoris	Brassicaceae	CA
Capsicum frutescens	Solanaceae	10;27;39;43;54
Capsicum frutescens var. *grossum*	Solanaceae	10;39;43;50
Capsicum frutescens var. *longum*	Solanaceae	10;27;39;43
Celosia argentea	Amaranthaceae	CA
Chenopodium ambrosioides	Chenopodiaceae	CA
Chenopodium leptophyllum	Chenopodiaceae	CA
Chenopodium murale	Chenopodiaceae	CA
Chrysanthemum coronarium	Asteraceae	CA
Chrysanthemum frutescens	Asteraceae	CA
Citrullus lanatus	Cucurbitaceae	CA
Consolida ambigua	Ranunculaceae	CA
Coreopsis tinctoria	Asteraceae	CA
Cosmos bipinnatus	Asteraceae	CA
Cucumis melo	Cucurbitaceae	11

Cucurbita sp.	Cucurbitaceae	06;11;58
Cyamopsis tetragonoloba	Fabaceae	CA
Dianthus caryophyllus	Caryophyllaceae	CA
Dianthus plumarius	Caryophyllaceae	CA
Erodium cicutarium	Geraniaceae	CA
Erodium moschatum	Geraniaceae	CA
Gnaphalium sp.	Asteraceae	CA
Helichrysum bracteatum	Asteraceae	CA
Kochia scoparia	Chenopodiaceae	CA
Lepidium campestre	Brassicaceae	CA
Linum sp.	Linaceae	10;27
Lotus sp.	Fabaceae	CA
Lycopersicon esculentum	Solanaceae	Statewide
Malva sp.	Malvaceae	CA
Matthiola incana	Brassicaceae	CA
Medicago sativa	Fabaceae	CA
Mirabilis jalapa	Nyctaginaceae	CA
Nicotiana sp.	Solanaceae	CA
Petroselinum crispum	Apiaceae	CA
Petunia hybrida	Solanaceae	CA
Phacelia sp.	Hydrophyllaceae	CA
Phaseolus lunatus	Fabaceae	CA
Phaseolus vulgaris	Fabaceae	CA
Polygonum aviculare	Polygonaceae	CA
Portulaca grandifolra	Portulacaceae	CA
Raphanus sativus	Brassicaceae	CA
Rheum rhaponticum	Polygonaceae	CA
Rumex acetosa	Polygonaceae	CA
Salsola iberica	Chenopodiaceae	CA
Scabiosa atropurpuea	Dipsacaceae	CA
Solanum tuberosum	Solanaceae	15;42
Spinacia oleracea	Chenopodiaceae	CA
Stellaria sp.	Caryophyllaceae	CA
Tetragonia expansa	Aizoaceae	CA
Tropaeolum majus	Tropaeolaceae	CA
Vicia faba	Fabaceae	CA
Vigna unguiculata	Fabaceae	10
Viola sp.	Violaceae	19
Viola tricolor	Violaceae	CA
Zinnia elegans	Asteraceae	CA
beet mosaic potyvirus		
Beta vulgaris	Chenopodiaceae	Statewide
Beta vulgaris var. *cicla*	Chenopodiaceae	21;31;39;41
Melilotus indica	Fabaceae	CA
Trifolium incarnatum	Fabaceae	CA
beet necrotic yellow vein furovirus		
Beta vulgaris	Chenopodiaceae	27;42;57
beet pseudo-yellows		
Taraxacum officinale	Asteraceae	CA
beet ring mottle		
Beta vulgaris	Chenopodiaceae	27
beet rosette		
Beta vulgaris	Chenopodiaceae	CA
beet western yellows luteovirus		
Beta vulgaris	Chenopodiaceae	39;43;57
Lactuca sativa	Asteraceae	27

Physalis floridiana	Solanaceae	CA
beet yellow net		
Beta vulgaris	Chenopodiaceae	Statewide
Beta vulgaris var. *cicla*	Chenopodiaceae	19;48;57
beet yellow stunt closterovirus		
Lactuca sativa	Asteraceae	40;42;56
beet yellow vein		
Beta vulgaris	Chenopodiaceae	33;39
beet yellows closterovirus		
Beta vulgaris	Chenopodiaceae	06;57
Beta vulgaris var. *cicla*	Chenopodiaceae	34;39;43
biden's mottle potyvirus		
Gazania sp.	Asteraceae	19;30;37;42;56
Gloriosa sp.	Liliaceae	1
Osteospermum sp.	Asteraceae	56
big bud mycoplasma		
Carica papaya	Caricaceae	CA
blackberry dwarf		
Rubus fruticosus	Rosaceae	CA
cachexia viroid		
Citrus aurantifolia	Rutaceae	CA
Citrus reticulata	Rutaceae	CA
Citrus reticulata X *C. paradisi*	Rutaceae	CA
cactus X potexvirus		
Discocactus ramulosa	Cactaceae	CA
Epiphyllum hy. 'Rainbow Beauty'	Cactaceae	CA
Epiphyllum sp.	Cactaceae	CA
Hatiora herminae	Cactaceae	CA
Nopalxochia sp.	Cactaceae	CA
Rhipsalis paradoxa	Cactaceae	CA
Schlumbergera Bridgesii	Cactaceae	01;39
Schlumbergera hy. 'Gold Charm'	Cactaceae	CA
Schlumbergera hy. 'Sonja'	Cactaceae	CA
Schlumbergera orrsichiana	Cactaceae	CA
Sedum orbatum	Cactaceae	CA
calico mosaic		
Rubus ursinus var. *loganobaccus*	Rosaceae	44
camellia yellow mottle		
Camellia japonica	Theaceae	09;12;34;37;42;44;49
canna mosaic potyvirus		
Canna generalis	Cannaceae	37;38;39
Canna pfeizer	Cannaceae	37
Zea Mays	Poaceae	01
carnation etched ring caulimovirus		
Dianthus caryophyllus	Caryophyllaceae	01;27;37;41
carnation latent carlavirus		
Dianthus caryophyllus	Caryophyllaceae	41
carnation mosaic		
Dianthus sp.	Caryophyllaceae	27
carnation mottle carmovirus		
Dianthus caryophyllus	Caryophyllaceae	01;27;37;41;43;44
Dianthus caryophyllus var. *tepsa*	Caryophyllaceae	27;37
carnation necrotic fleck closterovirus		
Dianthus caryophyllus	Caryophyllaceae	01;27;37;41;42;43;44
carnation ringspot dianthovirus		
Dianthus sp.	Caryophyllaceae	CA

carrot motley dwarf		
Daucus carota	Apiaceae	10;13;27;39;56;57
Daucus carota var. *sativa*	Apiaceae	42
carrot mottle 'umbravirus'		
Daucus carota	Apiaceae	CA
carrot red leaf		
Daucus carota var. *sativa*	Apiaceae	10
cauliflower mosaic caulimovirus		
Brassica oleracea var. *botrytis*	Brassicaceae	01;13;35;40;42;57
Brassica oleracea var. *capitata*	Brassicaceae	37
Brassica oleracea var. *gemmifera*	Brassicaceae	43
Brassica rapa	Brassicaceae	40;42
celery mosaic potyvirus		
Ammi majus	Apiaceae	27
Apium graveolens	Apiaceae	27;40;44;54;56
Apium graveolens var. *dulce*	Apiaceae	07;19;27;34;35;40;42;56
Conium maculatum	Apiaceae	56
Daucus carota	Apiaceae	CA
celery yellow spot		
Apium graveolens	Apiaceae	CA
cherry buckskin mycoplasma		
Prunus avium	Rosaceae	47;58
Prunus mahaleb	Rosaceae	48
cherry leaf roll nepovirus		
Juglans Hindsii	Juglandaceae	CA
Juglans regia	Juglandaceae	CA
cherry mottle leaf		
Prunus avium	Rosaceae	CA
Prunus cerasus	Rosaceae	CA
Prunus persica	Rosaceae	CA
cherry rasp leaf nepovirus		
Prunus avium	Rosaceae	04;07;39;49
Prunus persica	Rosaceae	39
cherry rugose mosaic		
Prunus avium	Rosaceae	50
cherry rusty mottle		
Prunus avium	Rosaceae	39
chrysanthemum stunt viroid		
Chrysanthemum sp.	Asteraceae	CA
chrysanthemum virus B carlavirus		
Chrysanthemum sp.	Asteraceae	19;24;27;42;43;44
citrus blind pocket sobemovirus		
Citrus limon	Rutaceae	CA
Citrus reticulata	Rutaceae	CA
Citrus sinensis	Rutaceae	CA
citrus crinkly leaf ilarvirus		
Citrus aurantium	Rutaceae	CA
Citrus limon	Rutaceae	CA
Citrus sinensis	Rutaceae	CA
citrus dwarf		
Citrus aurantium	Rutaceae	CA
Citrus limon	Rutaceae	34
Citrus paradisi	Rutaceae	CA
citrus exocortis viroid		
Citrus aurantifolia	Rutaceae	CA
Citrus medica	Rutaceae	CA

Poncircus trifoliata	Rutaceae	33
citrus infectious variegation ilarvirus		
Citrus limon	Rutaceae	CA
citrus psorosis		
Citrus sinensis	Rutaceae	21;34;39;50
Citrus sp.	Rutaceae	43
citrus psorosis A		
Citrus paradisi	Rutaceae	CA
Citrus sinensis	Rutaceae	19;30
citrus psorosis B		
Citrus paradisi	Rutaceae	CA
Citrus reticulata	Rutaceae	CA
Citrus sinensis	Rutaceae	CA
citrus ringspot		
Citrus limon	Rutaceae	CA
citrus stubborn mycoplasma		
Citrus sp.	Rutaceae	CA
citrus tatterleaf closterovirus?		
Citrus limon	Rutaceae	CA
citrus tristeza closterovirus		
Citrus sinensis	Rutaceae	Statewide
citrus vein enation luteovirus?		
Citrus aurantifolia	Rutaceae	CA
Citrus aurantium	Rutaceae	CA
Citrus limon	Rutaceae	CA
Citrus sinensis	Rutaceae	CA
Citrus sp.	Rutaceae	CA
citrus vein yellowing		
Citrus medica	Rutaceae	CA
Citrofortunella floridana	Rutaceae	33
Citrus aurantifolia	Rutaceae	CA
Citrus limon	Rutaceae	CA
Citrus reticulata X *C. paradisi*	Rutaceae	CA
clitoria yellow vein tymovirus		
Impatiens balsamina	Balsaminaceae	43
concave gum sobemovirus		
Citrus aurantifolia	Rutaceae	CA
Citrus aurantium	Rutaceae	CA
Citrus limon	Rutaceae	CA
Citrus reticulata	Rutaceae	CA
Citrus sinensis	Rutaceae	CA
corn stunt mycoplasma		
Zea Mays	Poaceae	CA
cotton leaf crumple geminivirus		
Gossypium hirsutum	Malvaceae	CA
cowpea mosaic comovirus		
Vigna unguiculata	Fabaceae	10;50
cucumber mosaic cucumovirus		
Antirrhinum majus	Scrophulariaceae	41
Apium graveolens var. *dulce*	Apiaceae	40;42;43;48
Aquilegia sp.	Ranunculaceae	43
Begonia sp.	Begoniaceae	37;43;44
Beta vulgaris var. *cicla*	Chenopodiaceae	27
Buddleja davidii	Buddlejaceae	19
Capsicum annuum	Solanaceae	CA
Capsicum frutescens	Solanaceae	24;27;43;45;54;57

Capsicum frutescens var. *grossum*	Solanaceae	10;34;43
Capsicum frutescens var. *longum*	Solanaceae	35;43
Carthamus tinctorius	Asteraceae	34;39;48
Citrullus lanatus	Cucurbitaceae	11
Citrullus sp.	Cucurbitaceae	11;24
Cucumis melo	Cucurbitaceae	04;12
Cucumis melo var. *cantalupensis*	Cucurbitaceae	13;31;52
Cucumis melo var. *reticulatus*	Cucurbitaceae	06
Cucumis sativus	Cucurbitaceae	Statewide
Cucurbita maxima	Cucurbitaceae	13
Cucurbita pepo	Cucurbitaceae	04;51
Cucurbita pepo var. *melopepo*	Cucurbitaceae	12;23
Cucurbita sp.	Cucurbitaceae	06;07;24;27;52;57
Dichondra repens	Convolvulaceae	57
Freesia sp.	Iridaceae	01;37
Gladiolus X *hortulanus*	Iridaceae	23;28;34;47
Hibbertia sp.	Dilleniaceae	CA
Iris sp.	Iridaceae	39
Lactuca sativa	Asteraceae	27
Lilium sp.	Liliaceae	8;12;41
Lycopersicon esculentum	Solanaceae	Statewide
Nandina compacta	Berberidaceae	43
Nandina domestica	Berberidaceae	34
Nasturium officinale	Brassicaceae	43
Ocimum basilicum	Lamiaceae	37;43
Passiflora sp.	Passifloraceae	01
Pelargonium X *Horturum*	Geraniaceae	41
Phaseolus vulgaris	Fabaceae	50
Sonchus oleraceus	Asteraceae	13
Spinacia oleracea	Chenopodiaceae	36;43
Viburnum sp.	Caprifoliaceae	54
Vigna unguiculata	Fabaceae	50
Vinca sp.	Apocynaceae	30;56
Zea Mays	Poaceae	54
cucurbit aphid-borne yellows luteovirus?		
Cucurbita sp.	Cucurbitaceae	50
currant mosaic		
Ribes sativum	Rosaceae	44
cymbidium mosaic potexvirus		
Aeranthus Henrici	Orchidaceae	34
Brassavola glauca	Orchidaceae	41
Brassavola tuberculata	Orchidaceae	07
Brassolaelia cattleya	Orchidaceae	34
Cattleya labiata	Orchidaceae	38
Cattleya sp.	Orchidaceae	Statewide
Cirrhopetalum sp.	Orchidaceae	07
Coelogyne sp.	Orchidaceae	34
Cymbidium sp.	Orchidaceae	Statewide
Cypripedium sp.	Orchidaceae	19
Dendrobium sp.	Orchidaceae	19;34;43
Epidendrum ciliare	Orchidaceae	07
Epidendrum sp.	Orchidaceae	07;34;38
Laelia sp.	Orchidaceae	34
Laeliocattleya sp.	Orchidaceae	38;39
Lockhartia sp.	Orchidaceae	07
Masdevallia sp.	Orchidaceae	34

Miltacidium sp.	Orchidaceae	07
Miltonia sp.	Orchidaceae	07;42
Oncidium cheirophorum	Orchidaceae	07
Oncidium flexuosum	Orchidaceae	01
Oncidium sp.	Orchidaceae	34
Paphiopedilum sp.	Orchidaceae	21;41;42;47
Peristeria sp.	Orchidaceae	34
Phalaenopsis sp.	Orchidaceae	42
Phragmipedium Hartwegii	Orchidaceae	07
Rhynchostylis gigantea	Orchidaceae	19
Vanda coerulca	Orchidaceae	41
Vanda teres	Orchidaceae	07
dahlia mosaic caulimovirus		
Dahlia variabilis	Asteraceae	18;19;28;34;43;44
daphne virus X potexvirus		
Daphne sp.	Asteraceae	34
dasheen mosaic potyvirus		
Dieffenbachia picta	Araceae	37
Philodendron sp.	Araceae	30
Zantedeschia aethiopica	Araceae	44;45
dodder latent mosaic		
Cuscuta californica	Convolvulaceae	33
dweet mottle		
Citrus reticulata X *C. sinensis*	Rutaceae	CA
fig mosaic		
Ficus benjamina	Moraceae	Statewide
Ficus carica	Amaryllidaceae	40;42
Ficus pandulata	Amaryllidaceae	43
Ficus sp.	Amaryllidaceae	31
Morus alba	Moraceae	31
filaree red leaf		
Erodium moschatum	Geraniaceae	27
garlic yellow stripe potyvirus		
Allium sativum	Liliaceae	10;45
gladiolus mosaic potyvirus		
Gladiolus X *hortulanus*	Iridaceae	44
grape leaf roll closterovirus		
Vitis sp.	Vitaceae	49
Vitis vinifera	Vitaceae	Statewide
grape vein-banding nepovirus		
Vitis sp.	Vitaceae	24
Vitis vinifera	Vitaceae	23;28;48;49
grapevine asteroid mosaic		
Vitis vinifera	Vitaceae	49
grapevine corky bark		
Vitis vinifera	Vitaceae	49
grapevine enation		
Vitis vinifera	Vitaceae	36
grapevine fan leaf nepovirus		
Vitis rupestris	Vitaceae	49
Vitis sp.	Vitaceae	11;27
Vitis vinifera	Vitaceae	10;12;24;27;28;42;49;52
grapevine fleck		
Vitis rupestris	Vitaceae	49
grapevine yellow mosaic		
Vitis sp.	Vitaceae	11;39

grapevine yellow mosaic		
Vitis vinifera	Vitaceae	23;28;49
grapevine yellow vein nepovirus		
Vitis vinifera	Vitaceae	10;23;24;28;35;49
hemlock ringspot		
Apium graveolens	Apiaceae	CA
Conium maculatum	Apiaceae	CA
Coriandrum sativum	Apiaceae	CA
Daucus carota	Apiaceae	CA
Pastinaca sativa	Apiaceae	CA
hippeastrum mosaic potyvirus		
Alstroemeria sp.	Alstromeriaceae	37;43;44
Amaryllis hybrida	Amaryllidaceae	15;19;36
Amaryllis sp.	Amaryllidaceae	19;30
Eucharis grandiflora	Amaryllidaceae	CA
hop mosaic carlavirus		
Humulus lupulus	Cannabaceae	34
hop ringspot		
Humulus lupulus	Cannabaceae	34;57
hop vein-banding		
Humulus lupulus	Cannabaceae	34
hydrangea ringspot potexvirus		
Hydrangea arborescens	Hydrangeaceae	30;37
Hydrangea macrophylla	Hydrangeaceae	27
Impatiens necrotic spot tospovirus		
Kalanchoe sp.	Crassulaceae	1
Phalaenopsis sp.	Orchidaceae	1
infectious chlorosis		
Jasminum sp.	Oleaceae	37
infectious variegation		
Jasminum sp.	Oleaceae	19
internal cork virosis		
Ipomoea batatas	Convolvulaceae	24;38
iris mild mosaic potyvirus		
Babiana sp.	Iridaceae	CA
Iris filifolia	Iridaceae	21
Iris sp.	Iridaceae	21;41
Iris xiphium	Iridaceae	21;38;41;44
Kalanchoe virus I		
Kalanchoe sp.	Crassulaceae	43
lettuce big vein		
Lactuca sativa	Asteraceae	Statewide
lettuce infectious yellows		
Cucumis melo	Cucurbitaceae	13
lettuce mosaic potyvirus		
Carthamus tinctorius	Asteraceae	13
Lactuca sp.	Asteraceae	16
Osteospermum fruticosum	Asteraceae	27
Picris echioides	Asteraceae	27
lily mottle mosaic		
Lilium sp.	Liliaceae	21
lily streak mottle		
Lilium auratum	Liliaceae	41
Lilium longiflorum	Liliaceae	01
Lilium rubrum	Liliaceae	41
Lilium sp.	Liliaceae	12;21

lily symptomless carlavirus		
Haemanthus sp.	Amaryllidaceae	30
Lilium longiflorum	Liliaceae	01;08;38;41
Lilium sp.	Liliaceae	04;12;41
little cherry		
Prunus avium	Rosaceae	04;12
lychnis ringspot		
Lychnis divaricata	Caryophyllaceae	CA
Stellaria media	Caryophyllaceae	CA
malva vein clearing potyvirus		
Hibiscus trionum	Malvaceae	CA
Malva parviflora	Malvaceae	CA
Malva rotundiflora	Malvaceae	CA
Malva sp.	Malvaceae	27
Malva sylvestris	Malvaceae	CA
malva yellows		
Malva sp.	Malvaceae	CA
mild mosaic		
Solanum tuberosum	Solanaceae	41
mottle necrosis		
Ipomoea batatas	Convolvulaceae	24
mulberry mosaic		
Morus alba	Moraceae	07
muskmelon necrotic spot		
Cucumis melo	Cucurbitaceae	33
muskmelon vein necrosis carlavirus		
Cucumis melo var. *inodorus*	Cucurbitaceae	50
nandina mosaic potexvirus		
Nandina compacta	Berberidaceae	43
narcissus fleck		
Narcissus pseudonarcissus	Amaryllidaceae	03;12;44
narcissus yellow stripe potyvirus		
Narcissus sp.	Amaryllidaceae	07;12
nasturtium mosaic carlavirus		
Tropaeolum majus	Tropaeolaceae	CA
Zinnia elegans	Asteraceae	CA
necrotic ringspot		
Vinca sp.	Apocynaceae	34
net necrosis		
Solanum tuberosum	Solanaceae	15;44;47
oat mosaic potyvirus		
Avena fatua	Poaceae	50;57
Avena sativa	Poaceae	07;20
Triticum sp.	Poaceae	CA
Odontoglossum ringspot tobamovirus		
Ascocenda sp.	Orchidaceae	07
Catasetum pileatum	Orchidaceae	38
Cattleya sp.	Orchidaceae	Statewide
Coelogyne sp.	Orchidaceae	34
Cymbidium sp.	Orchidaceae	Statewide
Dendrobium sp.	Orchidaceae	34
Epicattleya sp.	Orchidaceae	19
Epidendrum sp.	Orchidaceae	38;57
Epiphronitis Veitchii	Orchidaceae	34
Laeliocattleya sp.	Orchidaceae	38;39
Oncidium sp.	Orchidaceae	41

Phalaenopsis sp.	Orchidaceae	01;34;41
Pholidota imbricata	Orchidaceae	39
Phragmipedium Hartwegii	Orchidaceae	07
olallie dwarf		
Rubus vitifolius	Rosaceae	45
onion yellow dwarf potyvirus		
Allium cepa	Liliaceae	13;16;24;37;58
Allium sativum	Liliaceae	13;35;37
opuntia virus tobamovirus		
Opuntia microdasys	Cactaceae	37
palm mosaic potyvirus		
Washingtonia robusta	Arecaceae	54
papaya ringspot potyvirus		
Cucumis melo var. *cantalupensis*	Cucurbitaceae	6;33
passionfruit woodiness potyvirus		
Passiflora sp.	Passifloraceae	01
pea enation mosaic (pea enation mosaic virus)		
Melilotus indica	Fabaceae	CA
Phaseolus vulgaris	Fabaceae	50
Pisum sativum	Fabaceae	27;41;42;57
Pisum sp.	Fabaceae	27;48
Vicia faba	Fabaceae	41
pea leafroll		
Medicago sativa	Fabaceae	10;13;27;40;48;50;57
pea mosaic potyvirus		
Lathyrus odoratus	Fabaceae	44
Pisum sativum	Fabaceae	12;39;42;44;49
Pisum sp.	Fabaceae	40;43
pea streak carlavirus		
Medicago sativa	Fabaceae	10;13;27;40;48;50;57
peach blotch		
Prunus persica	Rosaceae	07;30;37;50;54
Prunus persica var. *nectarina*	Rosaceae	31
peach calico		
Prunus persica	Rosaceae	Statewide
Prunus persica var. *nectarina*	Rosaceae	10;54
peach mosaic		
Prunus armeniaca	Rosaceae	33
Prunus persica	Rosaceae	19;30;33;36
Prunus persica var. *nectarina*	Rosaceae	33
Prunus salicina	Rosaceae	36
peach stem pitting		
Prunus persica	Rosaceae	CA
peach stubby twig		
Prunus persica	Rosaceae	24;31;34
Prunus persica var. *nectarina*	Rosaceae	07
peach stunt ilarvirus		
Prunus persica	Rosaceae	39;54
peach wart		
Prunus persica	Rosaceae	36
peach western X mycoplasma		
Prunus illicifolia	Rosaceae	48
Prunus persica	Rosaceae	04;20;24;31;48;51;54;57
peach yellows		
Prunus persica	Rosaceae	36
peanut stunt cucumovirus		

Vigna unguiculata	Fabaceae	CA
pear blister canker		
Pyrus communis	Rosaceae	09
pear decline mycoplasma		
Pyrus communis	Rosaceae	31;34;37;43;48;58
pear stony pit		
Pyrus communis	Rosaceae	02;09;23;34;43
pear vein yellows		
Pyrus communis	Rosaceae	07;08;31;44;53
pelargonium leaf curl tombusvirus		
Pelargonium peltatum	Geraniaceae	41
peony ringspot		
Paeonia officinalis	Paeoniaceae	43;47
pepper mottle potyvirus		
Capsicum sp.	Solanaceae	13;39;54
petunia mosaic		
Petunia hybrida	Solanaceae	41
pittosporum ringspot		
Pittosporum sp.	Pittosporaceae	19
plum line pattern ilarvirus		
Prunus americana	Rosaceae	31;36;49;54
Prunus armeniaca	Rosaceae	07;31;41
Prunus avium	Rosaceae	07;21;43;49
Prunus cerasifera	Rosaceae	49
Prunus domestica	Rosaceae	Statewide
Prunus persica	Rosaceae	34
Prunus sp.	Rosaceae	35
Rosa sp.	Rosaceae	19
plum rusty blotch		
Prunus salicina	Rosaceae	Statewide
pod-deforming pea mosaic		
Pisum sp.	Fabaceae	40
poinsettia mosaic tymovirus		
Euphorbia pulcherrima	Euphorbiaceae	01;07
potato leaf roll		
Lycopersicon esculentum	Solanaceae	43;54
Solanum tuberosum	Solanaceae	Statewide
Liparis loeselii	Orchidaceae	33
potato purple top mycoplasma		
Solanum tuberosum	Solanaceae	29
potato rugose mosaic		
Solanum tuberosum	Solanaceae	12;39
potato stem mottle tobravirus		
Solanum tuberosum	Solanaceae	40
potato virus A potyvirus		
Lycopersicon esculentum	Solanaceae	37
Solanum tuberosum	Solanaceae	43
potato virus M carlavirus		
Solanum tuberosum	Solanaceae	41
Liparis loeselii	Orchidaceae	33
Solanum tuberosum	Solanaceae	Statewide
potato virus X potexvirus		
Capsicum annuum	Solanaceae	CA
Capsicum frutescens	Solanaceae	39
Liparis loeselii	Orchidaceae	33
Lycopersicon esculentum	Solanaceae	15;20;37

Solanum tuberosum	Solanaceae	Statewide
potato virus X and tobacco mosaic (potexvirus; tobamovirus)		
Capsicum frutescens var. *grossum*	Solanaceae	50
Lycopersicon esculentum	Solanaceae	15;37;40;43
potato virus Y potyvirus		
Capsicum annuum	Solanaceae	CA
Capsicum frutescens	Solanaceae	43;57
Liparis loeselii	Orchidaceae	33
Lycopersicon esculentum	Solanaceae	37
Solanum tuberosum	Solanaceae	15;18;37;43
potato witches' broom mycoplasma		
Solanum tuberosum	Solanaceae	37
potato yellow dwarf rhabdovirus		
Solanum tuberosum	Solanaceae	24
Vinca rosea	Apocynaceae	33
primula mosaic potyvirus		
Primula vulgaris	Primulaceae	41
prune diamond canker		
Prunus sp.	Rosaceae	31;49
prune dwarf ilarvirus		
Prunus armeniaca	Rosaceae	50
Prunus avium	Rosaceae	CA
Prunus cerasus	Rosaceae	CA
Prunus domestica	Rosaceae	CA
Prunus dulcis	Rosaceae	50
Prunus persica	Rosaceae	39;54
Prunus persica var. *nectarina*	Rosaceae	54
Prunus sp.	Rosaceae	CA
Quercus sp.	Fagaceae	05
Rosa sp.	Rosaceae	07;34
Vinca sp.	Apocynaceae	34
Vitis vinifera	Vitaceae	48;49
prune white spot		
Prunus domestica	Rosaceae	07;31;54
prunus necrotic ringspot ilarvirus		
Cotoneaster lacteus	Rosaceae	CA
Cotoneaster Parneyi	Rosaceae	49
Prunus americana	Rosaceae	49
Prunus amygdalus	Rosaceae	04;06;07;31;57
Prunus armeniaca	Rosaceae	07
Prunus avium	Rosaceae	Statewide
Prunus cerasus	Rosaceae	03;57
Prunus domestica	Rosaceae	CA
Prunus dulcis	Rosaceae	04;06;07;24;31;39;57
Prunus persica	Rosaceae	Statewide
Prunus persica var. *nectarina*	Rosaceae	24
Prunus serrulata	Rosaceae	38
Prunus sp.	Rosaceae	01;24;34;51;57
Rosa sp.	Rosaceae	Statewide
quince sooty ringspot		
Cydonia oblonga	Rosaceae	31
radish mosaic comovirus		
Raphanus sativus	Brassicaceae	CA
ranunculus mosaic		
Ranunculus sp.	Ranunculaceae	37
red clover vein mosaic carlavirus		

Medicago sativa	Fabaceae	11;27;50;57
red mottle		
Pyrus communis	Rosaceae	31
rhododendron necrotic ringspot potexvirus		
Rhododendron sp.	Ericaceae	01
rose leaf curl		
Rosa delecta	Rosaceae	10
Rosa sp.	Rosaceae	01;10;19;34;43
rose mosaic complex ilarvirus		
Rosa sp.	Rosaceae	Statewide
rose rosette		
Rosa sp.	Rosaceae	25;26
rose spring dwarf		
Rosa gaelica	Rosaceae	01
Rosa multiflora	Rosaceae	34
Rosa sp.	Rosaceae	10;17;19;24;31;34;36
rose streak		
Rosa sp.	Rosaceae	CA
rose yellow mosaic		
Rosa sp.	Rosaceae	10;21;23;34;38
rubus stunt mycoplasma		
Rubus idaeus	Rosaceae	34
rubus yellow net (cacao swollen shoot?)		
Rubus idaeus	Rosaceae	12
Rubus sp.	Rosaceae	34;49
rugose mosaic		
Prunus sp.	Rosaceae	Statewide
saguaro cactus carmovirus		
Graptopetalum pentadrum	Crassulaceae	CA
Pachyphytum werdermanii	Crassulaceae	CA
sickle leaf		
Olea europaea	Oleaceae	39
sonchus yellow net rhabdovirus		
Gazania sp.	Asteraceae	19;30;37;42;56
Sonchus oleraceus	Asteraceae	57
sorghum stunt mosaic rhabdovirus		
Sorghum vulgare	Poaceae	13
Zea mays	Poaceae	13;50
sorghum yellow banding		
Sorghum sudanense	Poaceae	33
sowthistle yellow vein rhabdovirus		
Gazania sp.	Asteraceae	56
Lactuca sativa	Asteraceae	CA
Sonchus oleraceus	Asteraceae	CA
spinach yellow dwarf		
Spinacia oleracea	Chenopodiaceae	36
squash leaf curl geminivirus		
Citrullus lanatus	Cucurbitaceae	13
Cucurbita maxima	Cucurbitaceae	13;33
Cucurbita pepo	Cucurbitaceae	13
Cucurbita sp.	Cucurbitaceae	13;33
squash mosaic comovirus		
Citrullus lanatus	Cucurbitaceae	06;11;13;31
Citrullus sp.	Cucurbitaceae	11;24
Cucumis melo	Cucurbitaceae	04;06;11;13;34;51;57
Cucumis melo var. *cantalupensis*	Cucurbitaceae	04;06;13;50;51

Cucumis melo var. *inodorus*	Cucurbitaceae	06;13;24;39;57
Cucumis melo var. *reticulatus*	Cucurbitaceae	06
Cucumis sativus	Cucurbitaceae	06;23;24;41;50;51
Cucurbita maxima	Cucurbitaceae	13;34;51;56
Cucurbita moschata	Cucurbitaceae	13;34;51
Cucurbita pepo	Cucurbitaceae	13;43
Cucurbita pepo var. *medullosa*	Cucurbitaceae	06;12;34;35;56
Cucurbita pepo var. *melopepo*	Cucurbitaceae	Statewide
Cucurbita sp.	Cucurbitaceae	Statewide
strawberry crinkle rhabdovirus		
Fragaria X *ananassa*	Rosaceae	36
strawberry latent ringspot nepovirus		
Petroselinum crispum	Apiaceae	CA
strawberry vein-banding caulimovirus		
Fragaria X *ananassa*	Rosaceae	19;37
strawberry yellow edge		
Fragaria chiloensis	Rosaceae	34
Fragaria X *ananassa*	Rosaceae	37;39
strawberry yellows		
Fragaria X *ananassa*	Rosaceae	19;34
subterranean clover red leaf		
Vicia faba	Fabaceae	27
sugarcane mosaic potyvirus		
Saccharum officinarum	Poaceae	10;13;20;30
Sorghum bicolor	Poaceae	Statewide
Sorghum bicolor var. *subglabrescens*	Poaceae	39
Sorghum bicolor var. *sudanense*	Poaceae	15;57
Sorghum halepense	Poaceae	24;36;54
Sorghum sp.	Poaceae	11;57
Zea mays var. *saccharata*	Poaceae	Statewide
Zea mays	Poaceae	Statewide
Zinnia sp.	Asteraceae	CA
sugarcane mosaic A potyvirus		
Bromus mollis	Poaceae	57
Digitaria sanguinalis	Poaceae	10;57
Echinochloa crus-galli	Poaceae	54
Eragrostis diffusa	Poaceae	10
Imperata brevifolia	Poaceae	34
Pennisetum glaucum	Poaceae	57
Setaria lutescens	Poaceae	10;54;57
Sorghum halepense	Poaceae	10;15;16;19;20;34;39;50
sweet potato feathery mottle potyvirus		
Ipomoea batatas	Convolvulaceae	01
sweet potato russet crack potyvirus		
Ipomoea batatas	Convolvulaceae	10;24;37;38;50
sweet potato yellow dwarf potyvirus		
Ipomoea batatas	Convolvulaceae	24
teasel mosaic potyvirus		
Dipsacus fullonum	Dipsacaceae	CA
Scabiosa atropurpurea	Dipsacaceae	CA
tobacco etch potyvirus		
Capsicum annuum	Solanaceae	CA
Capsicum frutescens	Solanaceae	10;37;39;43;50;54;56;57
Capsicum frutescens var. *grossum*	Solanaceae	24;43;50;56
Capsicum frutescens var. *longum*	Solanaceae	39;56
Capsicum sp.	Solanaceae	27;39;48;56;57

Datura sp.	Solanaceae	57
Lycopersicon esculentum	Solanaceae	50;57
tobacco mosaic tobamovirus		
Capsicum annuum	Solanaceae	30
Capsicum frutescens	Solanaceae	56
Capsicum frutescens var. *longum*	Solanaceae	43;56
Crossandra infundibuliformis	Acanthaceae	37
Lycopersicon esculentum	Solanaceae	Statewide
Nicotiana sp.	Solanaceae	19
Peperomia caperata	Piperaceae	08
Petunia sp.	Solanaceae	57
Tradescantia sp.	Commelinaceae	34
tobacco necrosis necrovirus		
Anemone sp.	Ranunculaceae	07
tobacco rattle tobravirus		
Capsicum annuum	Solanaceae	CA
Capsicum frutescens	Solanaceae	42;56
Capsicum sp.	Solanaceae	40
Lactuca sativa	Asteraceae	27;35;40
Solanum tuberosum	Solanaceae	15;40;54
Spinacia oleracea	Chenopodiaceae	27
tobacco ringspot nepovirus		
Anemone sp.	Ranunculaceae	07
Cuphea Hookerana	Lythraceae	57
Lactuca sativa	Asteraceae	27
Pelargonium X *hortorum*	Geraniaceae	34
Peperomia sp.	Piperaceae	08
Rosa sp.	Rosaceae	15
Tradescantia sp.	Commelinaceae	34
tobacco streak ilarvirus		
Brassica rapa	Brassicaceae	CA
Lycopersicon esculentum	Solanaceae	34
Raphanus raphanistrum	Brassicaceae	CA
Silybum marianum	Poaceae	CA
tomato aspermy cucumovirus		
Chrysanthemum sp.	Asteraceae	28;43
Lycopersicon esculentum	Solanaceae	31;57
tomato big bud mycoplasma		
Lycopersicon esculentum	Solanaceae	Statewide
tomato bushy stunt tombusvirus		
Tolmiea Menziesii	Saxifragaceae	CA
tomato mosaic tobamovirus		
Lycopersicon esculentum	Solanaceae	01;11
tomato ringspot nepovirus		
Dipsacus fullonum	Dipsacaceae	38
Erigeron glaucus	Asteraceae	38
Fragaria chiloensis	Rosaceae	38
Lycopersicon esculentum	Solanaceae	24
Malus sylvestris	Rosaceae	CA
Pelargonium X *hortorum*	Geraniaceae	34
Peperomia sp.	Piperaceae	08
Picris echioides	Asteraceae	38
Plantago sp.	Plantaginaceae	38
Prunus amygdalus	Rosaceae	38;57
Prunus armeniaca	Rosaceae	CA
Prunus avium	Rosaceae	CA

Prunus domestica	Rosaceae	07
Prunus dulcis	Rosaceae	CA
Prunus persica	Rosaceae	48;57
Prunus persica var. *nectarina*	Rosaceae	CA
Rosa sp.	Rosaceae	15;34
Vitis sp.	Vitaceae	CA
tomato spotted wilt tospovirus		
Aeschynanthus sp.	Gesneriaceae	43
Amaranthus graecizans	Amaranthaceae	CA
Amaryllis belladonna	Amaryllidaceae	CA
Amaryllis sp.	Amaryllidaceae	39
Apium graveolens var. *dulce*	Apiaceae	43
Aralia sp.	Araliaceae	CA
Asplenium bulbiferum	Aspleniaceae	37
Asplenium nidus	Aspleniaceae	37
Aster sp.	Asteraceae	CA
Begonia tuberhybrida	Begoniaceae	04;41;44
Beta vulgaris var. *cicla*	Chenopodiaceae	07
Browallia sp.	Solanaceae	CA
Browallia speciosa	Solanaceae	37
Calceolaria sp.	Scrophulariaceae	CA
Calendula officinalis	Asteraceae	CA
Callistephus chinensis	Asteraceae	CA
Campanula medium	Campanulaceae	CA
Capsicum annuum	Solanaceae	CA
Capsicum frutescens	Solanaceae	19;24;39;42;43
Capsicum frutescens var. *longum*	Solanaceae	39
Capsicum sp.	Solanaceae	CA
Cerastium arvense	Caryophyllaceae	CA
Ceropegia lineoris	Asclepiadaceae	30
Chrysanthemum morifolium	Asteraceae	56
Chrysanthemum sp.	Asteraceae	27;37;42;43;44;56
Cichorium endivia	Asteraceae	10
Cichorium intybus	Asteraceae	CA
Cineraria sp.	Asteraceae	43
Cucumis sativus	Cucurbitaceae	31
Cucurbita sp.	Cucurbitaceae	06
Datura sp.	Solanaceae	43
Delphinium sp.	Ranunculaceae	CA
Dianthus sp.	Caryophyllaceae	43
Dieffenbachia sp.	Araceae	CA
Emilia sagittata	Asteraceae	CA
Erysimum capitatum	Brassicaceae	CA
Eucharis grandiflora	Amaryllidaceae	CA
Fuchsia hybrida	Onagraceae	CA
Gaillardia aristata	Asteraceae	CA
Gerbera sp.	Asteraceae	43
Gloxinia sp.	Gesneriaceae	34
Godetia grandiflora	Onagraceae	CA
Impatiens balsamina	Balsaminaceae	43
Lactuca sativa	Asteraceae	07;10;27;34;44;48;50;56
Layia sp.	Asteraceae	CA
Lycopersicon esculentum	Solanaceae	Statewide
Malva sp.	Malvaceae	CA
Nicotiana sp.	Solanaceae	CA
Ocimum basilicum	Lamiaceae	43

Papaver nudicaule	Papaveraceae	CA
Petunia hybrida	Solanaceae	CA
Pisum sativum	Fabaceae	CA
Primula obconica	Primulaceae	CA
Salvia sp.	Lamiaceae	CA
Senecio X *hybridus*	Asteraceae	27;43
Sinningia speciosa	Gesneriaceae	43
Solanum melongena	Solanaceae	CA
Spinacia oleracea	Chenopodiaceae	CA
Stellaria sp.	Caryophyllaceae	CA
Tropaeolum majus	Tropaeolaceae	CA
Tropaeolum sp.	Tropaeolaceae	27
Vicia faba	Fabaceae	39;44
Zantedeschia aethiopica	Araceae	27;41
Zinnia elegans	Asteraceae	CA
turnip mosaic potyvirus		
Begonia sp.	Begoniaceae	30
Brassica campestris	Brassicaceae	43
Brassica chinensis	Brassicaceae	19
Brassica oleracea var. *acephala*	Brassicaceae	15
Brassica oleracea var. *alboglabra*	Brassicaceae	57
Brassica oleracea var. *botrytis*	Brassicaceae	30;43;57
Brassica oleracea var. *capitata*	Brassicaceae	19;34;41;50;57
Brassica oleracea var. *gemmifera*	Brassicaceae	41;57
Brassica oleracea var. *gongylodes*	Brassicaceae	10
Brassica rapa	Brassicaceae	10;19;42;43;56
Brassica sp.	Brassicaceae	56
Carthamus tinctorius	Asteraceae	39
Lactuca sativa	Asteraceae	27;39
Limonium latifolium	Plumbaginaceae	37
Limonium sp.	Plumbaginaceae	42
Lunaria sp.	Brassicaceae	37
Matthiola sp.	Brassicaceae	13
Nasturium officinale	Brassicaceae	40
Raphanus sativus	Brassicaceae	CA
Stachys bullata	Lamiaceae	38
veinal necrosis		
Cucumis melo	Cucurbitaceae	CA
walnut bunch mycoplasma		
Juglans ailanthifolia	Juglandaceae	CA
Juglans cinerea	Juglandaceae	CA
Juglans nigra	Juglandaceae	CA
Juglans regia	Juglandaceae	CA
watermelon mosaic potyvirus		
Citrullus lanatus	Cucurbitaceae	06;07;11;13;34;42;51;57
Citrullus lanatus	Cucurbitaceae	51
Citrullus sp.	Cucurbitaceae	24
Cucumis melo	Cucurbitaceae	10;51
Cucumis melo var. *cantalupensis*	Cucurbitaceae	Statewide
Cucumis melo var. *inodorus*	Cucurbitaceae	13
Cucumis melo var. *reticulatus*	Cucurbitaceae	06
Cucumis sativus	Cucurbitaceae	06;10;24;37;43;56;57
Cucurbita maxima	Cucurbitaceae	13;51
Cucurbita pepo	Cucurbitaceae	Statewide
Cucurbita pepo var. *melopepo*	Cucurbitaceae	24;37;39;49
Cucurbita sp.	Cucurbitaceae	Statewide

western cucumber mosaic		
Apium graveolens	Apiaceae	27;54
wheat streak mosaic potyvirus		
Avena sativa	Poaceae	57
Hordeum sp.	Poaceae	57
Triticum sp.	Poaceae	57
wild cucumber mosaic tymovirus		
Marah macrocarpus	Cucurbitaceae	CA
xyloporosis viroid		
Citrus aurantifolia	Rutaceae	CA
Citrus reticulata X *C. paradisi*	Rutaceae	CA
yellow leaf roll mycoplasma		
Prunus persica	Rosaceae	24;39;51;57
zucchini yellow mosaic potyvirus		
Citrullus lanatus	Cucurbitaceae	13;33
Cucumis melo cv. 'topmark'	Cucurbitaceae	13;33
Cucumis melo var. *cantalupensis*	Cucurbitaceae	13
Cucumis sativus	Cucurbitaceae	11