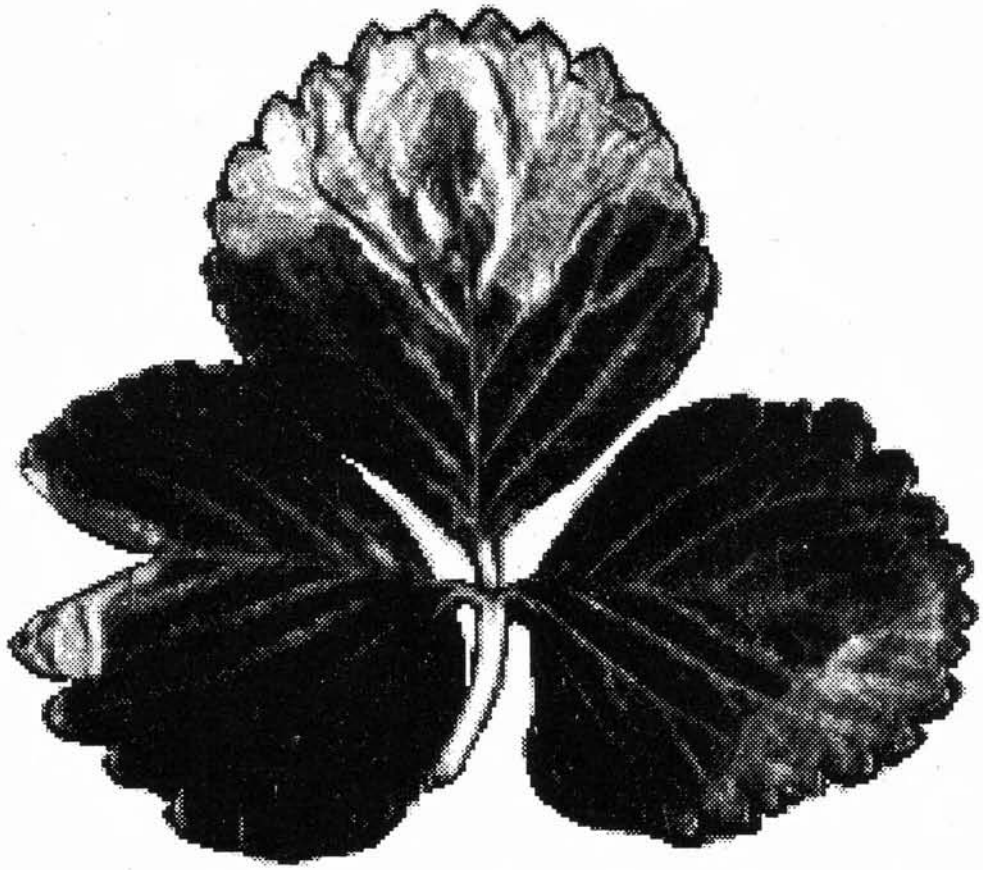
CALIFORNIA PLANT PEST and DISEASE REPORT

Vol. 10 Numbers 1-2
January to May, 1991

What's Inside:

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



Severe leaf blight symptoms of *Hainesia lythri* on strawberry
(see article on page 27).

Correspondence should be addressed to the editorial staff of the California Plant Pest and Disease Report (see address below).

California Plant Pest and Disease Report
Editor: Raymond J. Gill
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The editor acknowledges the contributions of numerous individuals within the department, without whose cooperation and assistance this project would not be possible.

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The California Plant Pest and Disease Report, Volume 10, Numbers 1-2, was issued on May 31, 1991.

ENTOMOLOGY HIGHLIGHTS

ERRATA

The editorial staff had serious problems with the last issue of this publication (CPPDR , Volume 9, numbers 5-6). No matter how hard one tries, these kinds of errors seem to find their way into publications of all kinds. The particular errors, some serious mistakes, were not readily apparent during proofreading sessions. The editorial staff apologizes for these errors and for the inconveniences they caused others. Important corrections for the last issue of CPPDR are as follows:

On page 161, under Significant Finds for Mediterranean fruit fly, the specimen collected on September 24, 1990 in Los Altos, Santa Clara County was not a significant find since it was a sterile female with dye present in its head. The find was incorrectly rated "A" in the state computer and we compounded the error by printing the record as a wild fly find.

On page 161, under the San Bernardino Medfly find reports, State trappers Walker and Kendall were incorrectly listed as County trappers. This error was brought to our attention by state trapping supervisor Marcella Vita. The computer printout was clearly marked as to the affiliation. We apologize to Marcella and the trappers and we will be more careful in the future.

On page 166, under Significant Finds for Western cherry fruit fly , the second find should read "On October 2, San Joaquin County trapper Andorf found a single male western cherry fruit fly in Lodi. It was in an apple maggot trap placed in a fig tree." Our account inadvertently said "apple maggot" instead of western cherry fruit fly.

NAME CHANGES

CORN EARWORM, *Helicoverpa zea*, -(C)- The generic name of this common pest of corn and cotton was changed in 1965. However, the change was overlooked until a recent publication of a catalogue on the Noctuidae. The new name is now coming into general usage. Two other California *Heliothis* species, *virescens* and *phloxiphaga*, will remain in *Heliothis*.

NESTING WHITEFLY, *Paraleyrodes minei*, -(Q)- This whitefly was first found established in California in 1985 in San Diego, and has since been found established in Orange and Los Angeles counties. The species had been undescribed, until this formality was recently taken care of by a scientist in Italy. For more information, see the article on page 7 of this issue.

PHORMIUM MEALYBUG, *Balanococcus diminutus*, -(C)- This mealybug has been known in California by the name *Trionymus diminutus* for many years. It is a rarely collected native of New Zealand and occurs sparingly in coastal California on New Zealand flax (*Phormium tenax*). Related species in New Zealand were recently revised (1987) by Jennifer Cox and placed in this new genus. Although the name change was made earlier, the species had not been collected for some time prior to this revision, and no attempt was made to notify anyone of the change until specimens were collected this May in Livermore, Alameda County and in quarantine from New Zealand in Santa Barbara County.

RATING CHANGES

An exotic mealybug, *Miscanthicoccus miscanthi*, the miscanthus mealybug, has been changed from a "Q" to a "C" rating. The mealybug is apparently resticted to grass hosts in the genus *Miscanthus* only, an uncommon grass used in landscaping situations. It has been found on this host in several southern California counties. Although it has never been found outside the nursery situation and is not considered to be officially established in California, it is assumed that infested plant material has been sold and the mealybug is therefore established here. The fact that the species is probably present in California but apparently has no agricultural significance resulted in the down-rating. For more information on this mealybug see CPPDR 9(3-4):140-141, 1990 and 8(1-2):16, 1989.

SIGNIFICANT FINDS

MEXICAN FRUIT FLY, *Anastrepha ludens*, -(A)- There were three finds of this exotic pest between April and May, 1991; two occurred in **San Diego** County and one in **Los Angeles** County.

On April 11, CDFA trapper Allan Limesand found a sexually mature male Mexican fruit fly in Chula Vista. It was recovered from a McPhail trap placed in a lemon tree.

On April 18, CDFA trapper Marco Amaro detected a female Mexican fruit fly in a McPhail trap placed in a sapote tree in San Diego. The specimen was sexually immature and unmated. It is approximately seven miles north of the Mexican fruit fly trapped in Chula Vista.

On May 2, County trapper David Falcon found a sexually immature, unmated Mexican fruit fly in City Terrace, Los Angeles County. It was found in a McPhail trap in an apricot tree.

VARROA MITE, *Varroa jacobsoni*, -(A)- There were five finds for this honey bee pest from January through May, 1991.

On January 23, County trapper Michaels detected varroa mites in an apiary located in Snelling, **Merced** County.

On March 29, there were two finds for varroa mite. County Biologist Anderson found an infested apiary in Yuba City, **Sutter** County. County Agricultural Inspector Herrera detected varroa mites in **Kings** County. The bee colonies from Kings County were destined for Tulare County.

On May 8, two more finds occurred for this pest. **El Dorado** County trapper Stewart found varroa mites in an apiary shipment going to the state of Nevada. **San Joaquin** County trapper Groner found varroa mites in an apiary located in Acampo.

WHITE GARDEN SNAIL, *Theba pisana*, -(A)- This imported snail pest has been found in a new location in **San Diego** County. The following account by John Pozzi outlines the details:

White garden snail was found April 9 in Bonita, San Diego County. This is a new location. CDFA inspector Linda Pipes spotted the snail at a residence on The Hill Road while doing her normal trapping duties.

The closest white garden snail infestation is about three miles north in Encanto.

White garden snail was first found in San Diego County at Encanto in August, 1985. Since that time, 10 infested sites have been found in the communities of Carlton Hills, Palm City, Lemon Grove, Santee, Winter Gardens, Hillcrest, Imperial Beach, Lakeside, and Oceanside. CDFA initiated a pilot project consisting of eradicative and suppressive treatments in March, 1987.

In response to the latest white garden snail find, CDFA personnel are conducting a delimiting survey and the new area will be incorporated into the eradication project area.

TULIPTREE SCALE, *Toumeyella liriodendri*, -(A)- This serious pest of tuliptree has been rediscovered in the San Leandro area of **Alameda** County. Immature specimens of this scale were collected on Victoria Street on April 4 by Alameda County Deputy Commissioner Jim Newey. Later, on the same street, mature specimens were collected by Ag Biologists Gonsalves and Blumenthal on April 25. The scale insect has been under eradication in the county.

NEW STATE RECORDS

BLUE GUM PSYLLID, *Ctenarytaina eucalypti*, -(Q)- This Australian species of psyllid is the first new state record for California in 1991. The following report gives the details of the find in **Monterey** County:

On January 25, 1991, *Ctenarytaina eucalypti* (Froggatt), blue gum psyllid, was found for the first time in North America.

Monterey County Agricultural Extension Specialist Steven Tjosvold submitted psyllids he found in some nursery growing grounds near Prunedale. The eucalyptus host plants are apparently being grown for use in the floral trade. The psyllids are said to be quite numerous in the nurseries. The sample was submitted for identification through Brad Oliver of Monterey County.

Taxonomic research indicates that this psyllid is the Australian species *Ctenarytaina eucalypti.* There are supposedly a number of eucalyptus-feeding species in this genus in Australia which have yet to be described. However, the comparison of these specimens with the descriptions and illustrations of *eucalypti* indicate that the identification is correct (the identification has been confirmed by Louise Russell at the U.S.National Museum, but specimens have not as yet been sent to Australia). There is another species in the genus, *Ctenarytaina longicauda*, restricted to the eucalyptus relative *Tristania conferta*, which was introduced into California several years ago.

In Australia, blue gum psyllid is usually found in alpine, montane, or cool to cold temperate areas. It feeds and develops on very young leaves of blue gums, *Eucalyptus globulus*, *E. bicostatus*, and *E. leucoxylon*, especially juvenile forms.

As indicated, it tends to be moved about by the nursery trade, and according to the collector, some of the involved plants in the growing grounds may have come directly from Australia.

Since the original collection at Prunedale, the psyllid has been found in numerous locations from Watsonville south to Salinas and Gonzales. While no specimens have been submitted to CDFA from Santa Cruz County, it is known to occur there. The cold temperatures of mid-December have had deleterious effects on the trees, but the psyllid seems to have survived very well.

This new psyllid is widespread in Australia, and has been introduced into several other countries. It is known throughout New Zealand including North and South Islands, Tauranga, Palmerston North and Ashburton. It is known from Papua, New Guinea and it has been introduced into South Africa and Britain. The type locality is actually New Zealand, but it is undoubtedly native to Australia. The following list covers some pertinent literature on the psyllid:

Maskell, M.W. 1890: *On some species of Psyllidae in New Zealand.* Trans. of the New Zealand Institute, 22:160-162.

Ferris, G. F. and F. D. Klyver. 1932. *Report upon a collection of Chermidae (Homoptera) from New Zealand.* Trans. of the New Zealand Institute, 63: 36.

Tuthill, L. D. 1952. *On the Psyllidae of New Zealand (Homoptera).* Pacific Science, 6:97.

Hodkinson, I. D. 1983. *The psyllids (Homoptera: Psylloidea) of the Austro-Oriental, Pacific and Hawaiian zoologeographical realms: an annotated check list.* J. of Nat. Hist. 17:345.

Morgan, F. D. 1984. *Psylloidea of South Australia. Handbook of the Flora and Fauna of South Australia.* pp. 63-64. Plate 33.

White, I. M. and Hodkinson, I. D. 1982. *The Psylloidea (nymphal stages). Handbook for identification of British Insects.* Vol 2 (56):46.

The adult psyllid is large compared with many other California psyllids. It reaches a total length from head to wing tips of 2.0 mm. The female has the ovipositor as long or longer than the rest of the abdomen. Color of the adults is tan to greenish, but the dorsum of the head and thorax is dark brown to black. The dorsal sclerotized plates of the nymphs are also dark brown or black. The nymphs produce flocculent, white, waxen secretions from glands on the dorsal surfaces of the abdomen. The closest relative of this psyllid is the species *Ctenarytaina longicauda*, the tristania psyllid, also recently introduced from Australia. The tristania psyllid is even larger, about 2.5 mm in length, with the ovipositor usually much longer than the rest of the abdomen. Tristania psyllid is restricted to *Tristania conferta*, and the coloration of the nymphs and adults is similar, but the dark dorsal coloration is restricted to the more anterior portions of the thorax in the adults. In the nymphs, the color of the dorsal sclerites is a lighter brown rather than almost black, as in *eucalypti.*

The psyllid prefers the young growing shoots of the host. According to the literature, it produces some honeydew and white flocculent secretions which make the tree unsightly, but otherwise seem to cause little harm to the host. However, in the infested area in California, the eucalyptus trees were being used to supply the floral trade with cut, aromatic foliage for decorative purposes. Any possible effects that this psyllid will have on this industry remains to be seen.

Figure 1 shows some of the morphological characteristics of the new psyllid. Comparable illustrations for *Ctenarytaina longicauda* can be found in CPPDR 6(3-4):39, 1987.

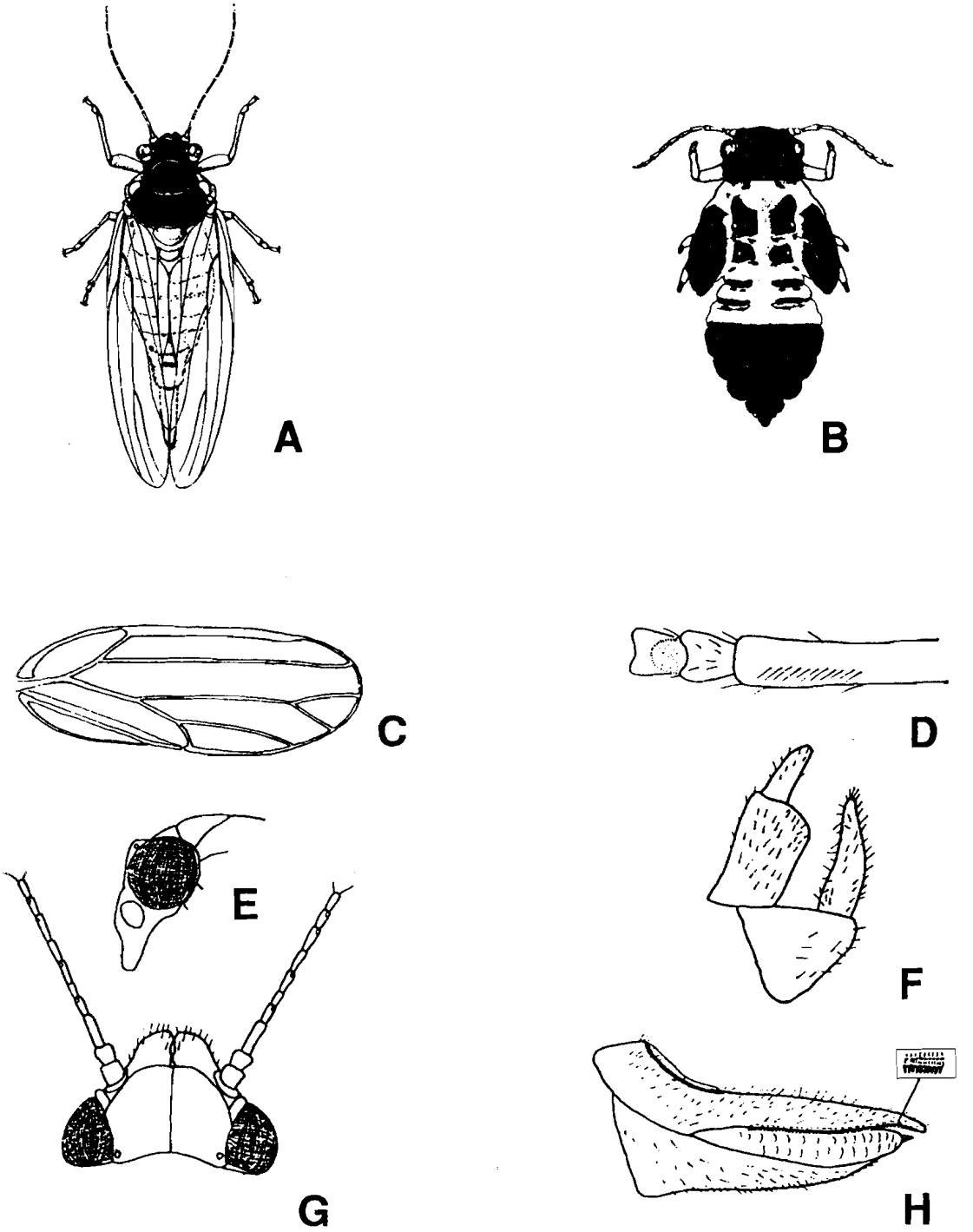


Fig. 1: *Ctenarytaina eucalypti.* A. Adult. B. Nymph. C. Forewing indicating venation. D. Dorsal view of foretibia indicating position of setal brush (generic characteristic). E. Lateral view of head. F. Lateral view male terminal segments. G. Dorsal view of head. H. Lateral view of ovipositor (inset shows position of diagnostic three-rowed peg-like setae).

NEW COUNTY RECORDS

EUCALYPTUS LONGHORNED BORER, *Phoracantha semipunctata*, -(B)- Eucalyptus longhorned borer was found in **San Mateo** County for the first time on March 27. This pest was detected on a eucalyptus tree located on Avy Avenue and Monte Rosa Drive in Menlo Park. State personnel Martin and Scott are credited with this find. Eucalyptus trees throughout California are in very poor condition due to the severity of the mid-December frost. It will probably result in serious infestations of this beetle and subsequent loss of many of the trees that otherwise may have been immune to attack. See also CPPDR 4(3):80-84.

NESTING WHITEFLY, *Paraleyrodes minei*, -(Q)- This whitefly was first collected by Belinda Moss in San Diego County in 1985 [see CPPDR 4(4):111]. In April 1989, it was discovered in Santa Ana, Orange County, by Nick Nisson and M. Tafresnia. It has now been found in **Los Angeles** County. The whitefly was collected from a citrus tree by a home owner in Long Beach who submitted it to the Agricultural Commissioner's office for identification. The whitefly has developed large populations in San Diego in the past and also produces large amounts of waxy material and honeydew. Because of this, it has caused San Diego County officials some concern about its economic potential to citrus and avocados.

Until 1989, the species had been undescribed, and was referred to simply as *Paraleyrodes* species. American taxonomists had been somewhat reluctant to describe the whitefly because there are a large number of species in this genus known from Central and South America. Many of these are undescribed, but also, some of the described ones are so poorly treated in the original articles that positive identifications cannot be made from the descriptions. However, prior to 1989, the species was introduced into citrus plantings in Syria, and it was then described by an Italian worker, Dr. F.M. Iaccarino at the University of Naples, Italy. Although the description was in a publication dated 1989, the reprints for this article did not actually appear until May of 1991. With this publication in hand, we can now begin calling this interesting species by its correct name. We will also give the species a common name of "nesting whitefly," based on the habit of the adults of laying eggs in dense rings, then nesting down in the centers of the rings (see Fig. 2B).

Paraleyrodes minei is the first species of whitefly to establish in California that belongs in the subfamily Aleurodicinae. This subfamily is made up of a group of primarily tropical species which have unique wax-producing pores in the immature stages. These pores are called "large compound wax pores" and are multi-loculed (multiple partitioned) pores which produce long crystalline rods of wax. The wax is produced in such large amounts that only a few immatures per leaf can make the leaf appear to be covered with spaghetti.

Paraleyrodes minei is know to occur in southern Texas, Florida, southern Mexico and Guatemala. Closely related species occur in Florida, Hawaii, and most of Mexico, Central and South America.

Now that the species is described, it is appropriate to include some morphological illustrations to aid in the recognition of this species. *Paraleyrodes minei* is unique in the placement of the compound wax pores and in the number of loculae of the pores in the pupal stage. The compound aedeagus of the male is also distinctive. Adults of the genus are unique in that the number of antennal segments are reduced (to three in males and four in females). Morphological illustrations will be found on pages 9-11.

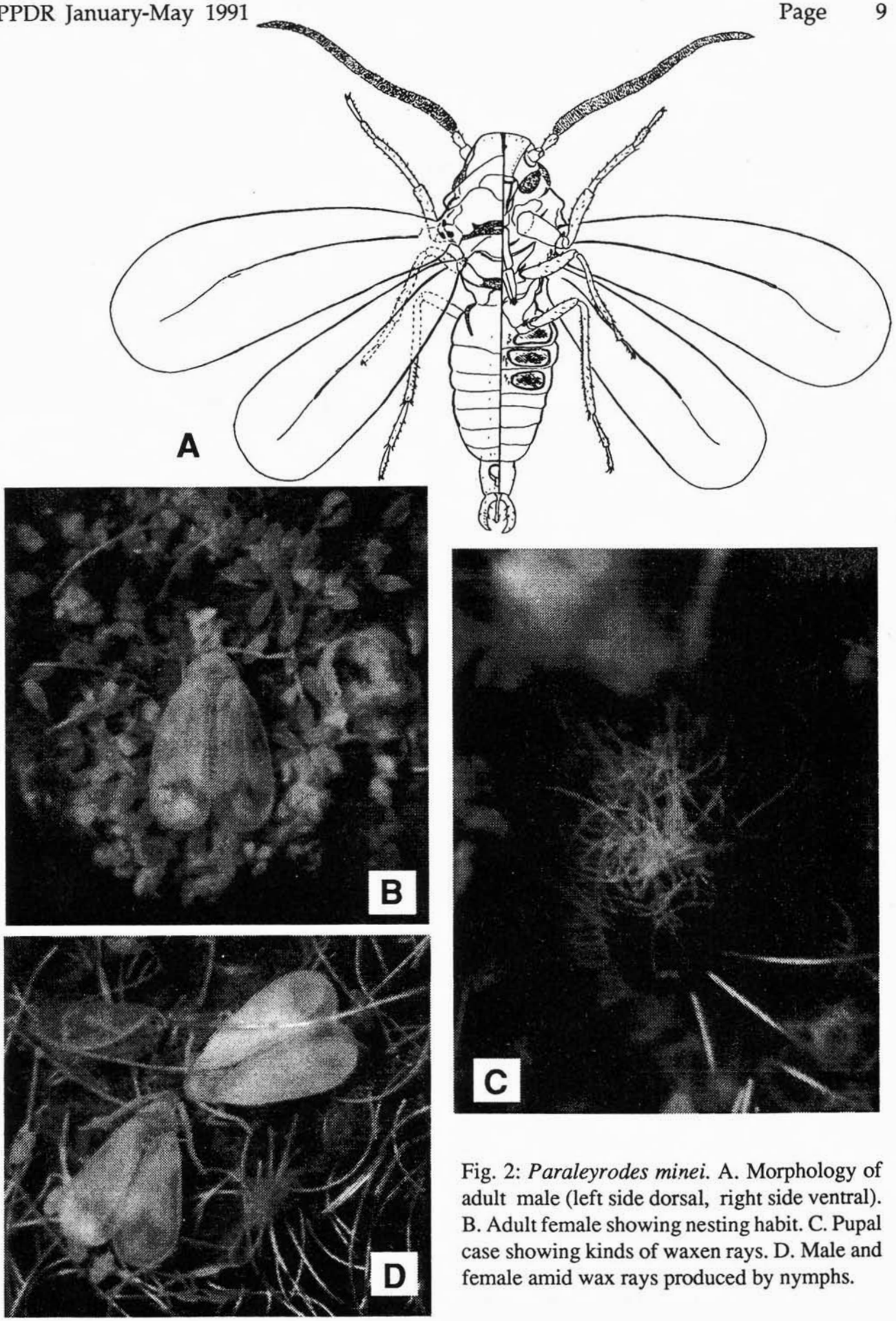


Fig. 2: *Paraleyrodes minei*. A. Morphology of adult male (left side dorsal, right side ventral). B. Adult female showing nesting habit. C. Pupal case showing kinds of waxen rays. D. Male and female amid wax rays produced by nymphs.

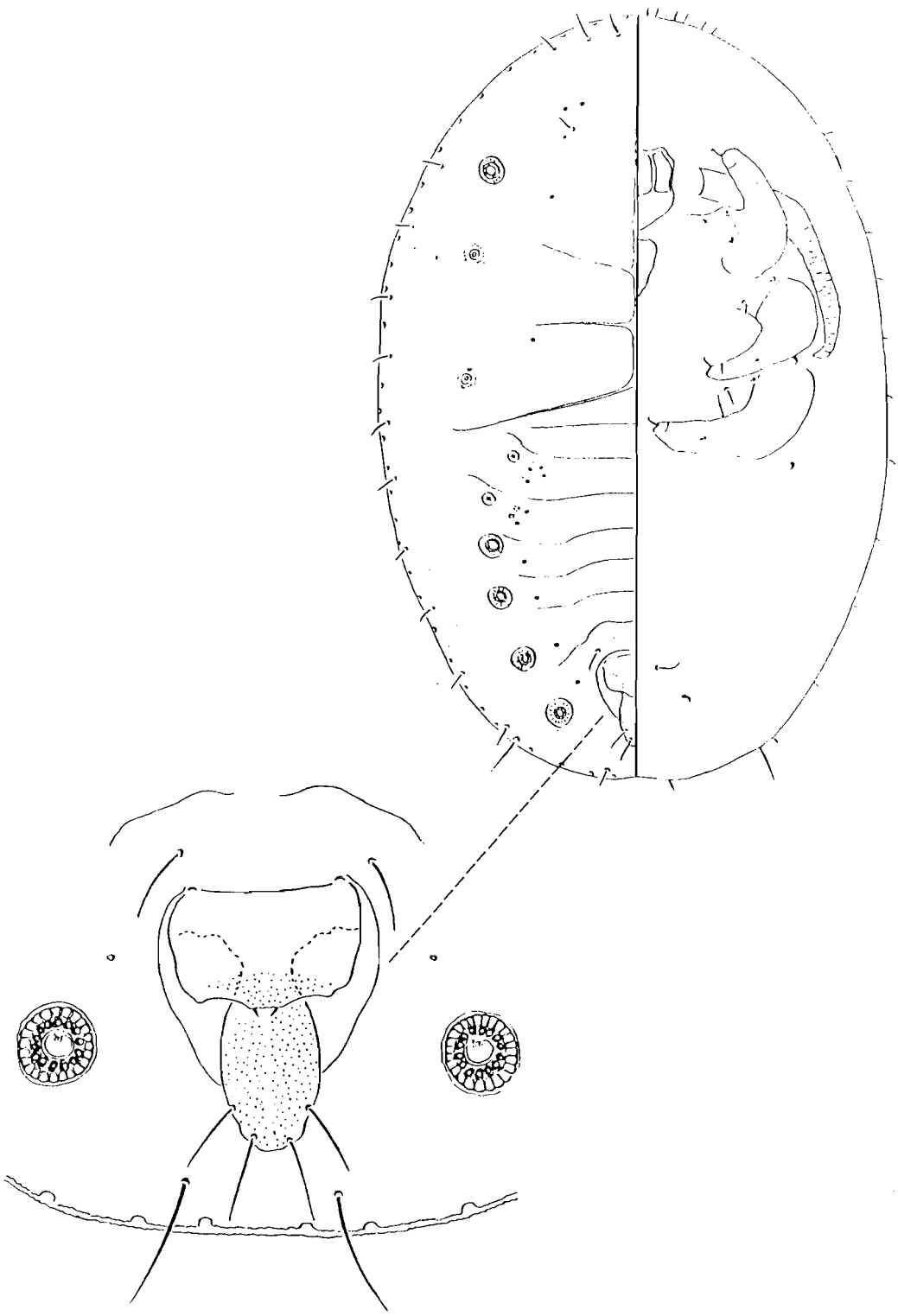


Fig. 3: Morphology of the pupa of *Paraleyrodes minei.*

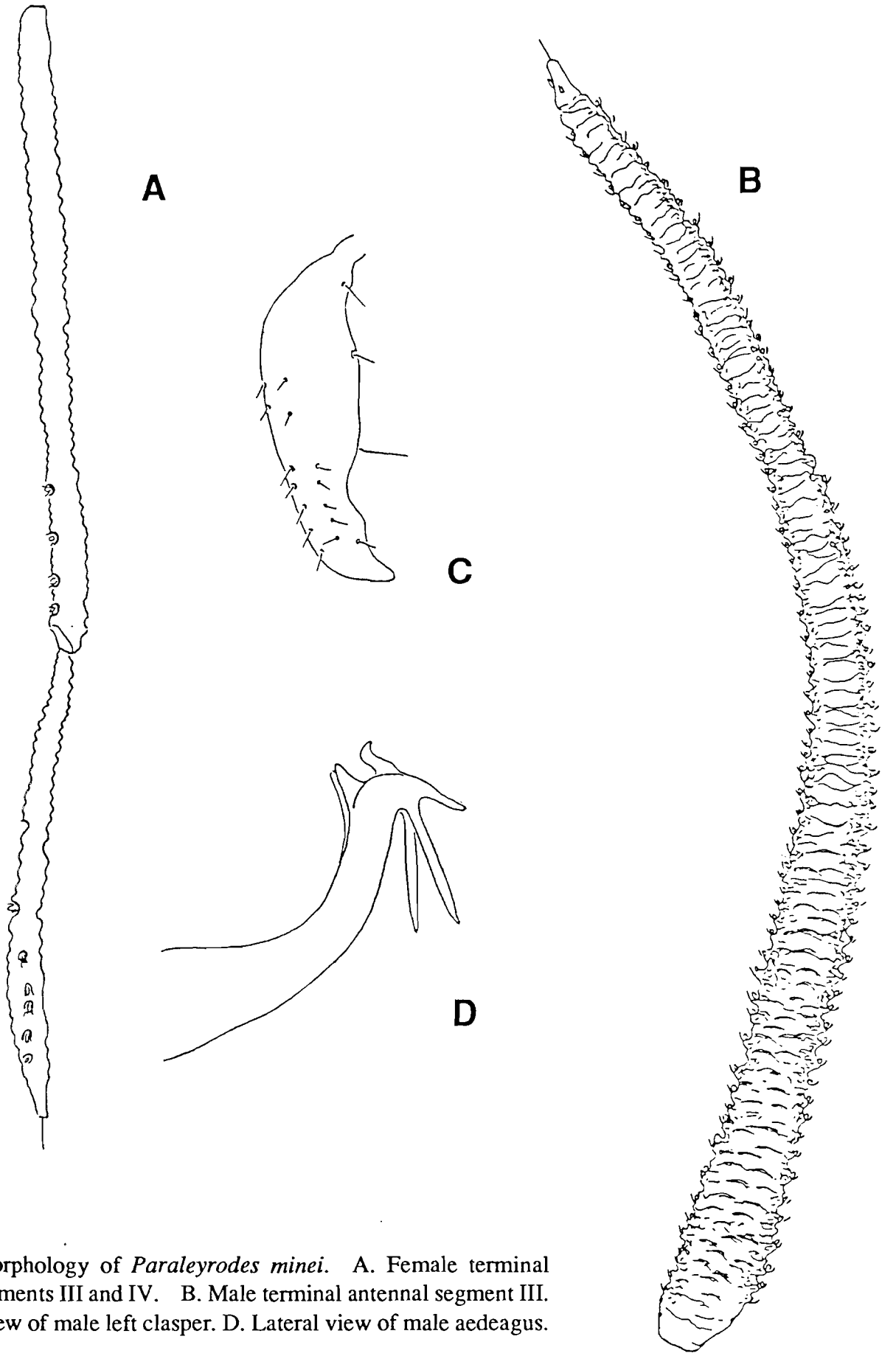


Fig. 4: Morphology of *Paraleyrodes minei*. A. Female terminal antennal segments III and IV. B. Male terminal antennal segment III. C. Dorsal view of male left clasper. D. Lateral view of male aedeagus.

NEW COUNTY RECORDS (continued)

ASH WHITEFLY, *Siphoninus phillyreae*, -(C)- Ash whitefly has been found for the first time in **San Benito** County. On January 8, County Biologist Earl detected this pest on a citrus plant in Hollister. See map on page 13 for the current distribution of ash whitefly.

BAILEYANA PSYLLID, *Acizzia acaciae-baileyanae*, -(C)- The first detection of this pest in **Monterey** County occurred on February 6. County Entomologist Brad Oliver found baileyana psyllid on an acacia tree located in Carmel. This species now occurs in Alameda, Solano, Santa Barbara, San Luis Obispo, Orange, San Diego, Sacramento, Santa Cruz and Monterey Counties.

KUWANA OAK SCALE, *Kuwania quercus*, -(C)- This pest, possibly associated with bark exfoliation in blue oaks, was found for the first time in **Sonoma** County on March 11. Pest Control Advisor Ted Swiecki detected the scale on *Quercus douglasii*. This species now occurs in Napa, Yolo, Solano, San Joaquin and Sonoma Counties.

RED BANDED WHITEFLY, *Tetraleurodes* sp., -(B)- This as yet undescribed whitefly was found for the first time in **Riverside** County on April 25. It was found on Los Gatos Road in Temecula by County Biologist Bill Tracy. Red banded whitefly now occurs in San Diego, Los Angeles, and Riverside Counties.

The first collection of red banded whitefly in California occurred on October 5, 1983. It was found infesting avocados at a residence in San Diego by Ginsky and Blocker. The infestation averaged about eight to twelve specimens per leaf. Steve Nakahara, whitefly specialist at the U.S. National Museum, identified the specimens.

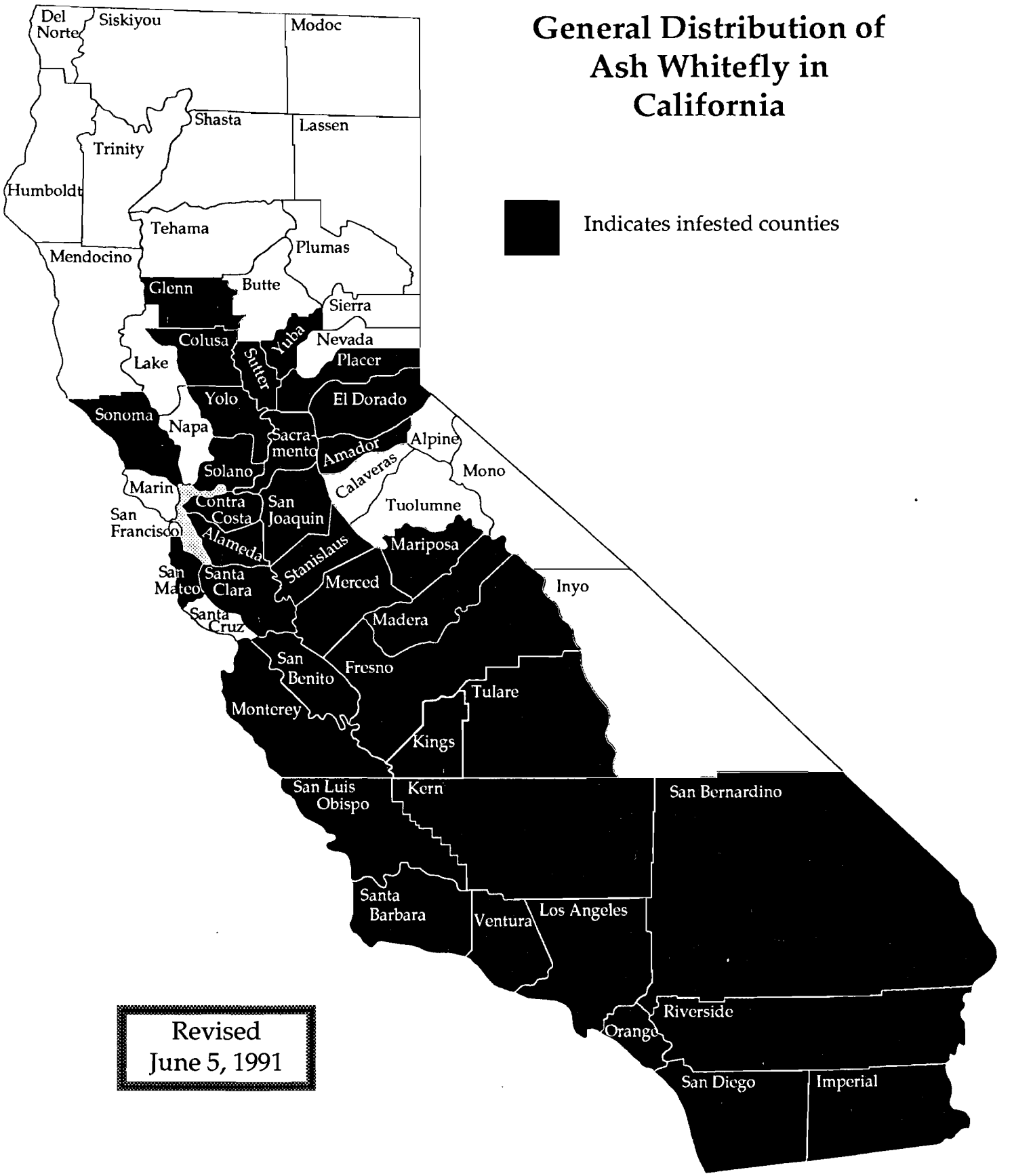
This whitefly is easy to recognize in the field. The name given to this whitefly comes from its red wing markings. Wings of young adults have three brownish markings on the apical half of the wing, a vermillion zig-zag mark at mid-wing and two small vermillion spots near the base. The wing markings become brown with age, except the zig-zag mark, which remains reddish brown. The pupal cases are about 1mm long and are jet black with a fringe of white marginal wax. The wax fringe in the pupa, instead of extending outward horizontally as in the mulberry whitefly, extends instead straight upward perpendicular to the leaf surface, then curls inward over the dorsum of the pupa. It should be noted however that the wax fringe of the nymphal stages are horizontal as they are in mulberry whitefly.

CHINESE WAX SCALE, *Ceroplastes sinensis*, -(B)- On April 12, Chinese wax scale was found for the first time in **San Luis Obispo** County. County Inspector Perez is credited with the find.

ASH PSYLLID, *Psyllopsis fraxinicola*, -(C)- This rarely collected psyllid has been found for the first time in **Santa Clara** County. County Biologist Larry Yamasaki detected this pest on Modesto ash in Morgan Hill. The first collection of ash psyllid in California was recorded in the early 1920s. Since then, it has been found in Solano County in1987 [see CPPDR 6(1-2):9, 1987] and in Alameda County in 1990 [see CPPDR 9(3-4): 137, 1990]. Ash psyllid now occurs in Solano, Alameda, and Santa Clara Counties.

SEVENSPOTTED LADY BEETLE, *Coccinella septempunctata*,-(D)- On May 23, *Coccinella septempunctata*, a Russian wheat aphid predator, was recovered in central California at a previous release site in

General Distribution of Ash Whitefly in California



Indicates infested counties

Revised
June 5, 1991

San Joaquin County. This recovery was made two years post-release. Original releases of *C. septempunctata* were made by the USDA from April to July 1989. There was one previous recovery of this beetle in California which occurred at Lookout, Modoc County, on July 26, 1990.

OTHER FINDS OF SIGNIFICANCE

MADRONE PSYLLID, *Neophyllura arbuti*,-(C)- This psyllid species is a native form that is restricted primarily to the madrone tree, *Arbutus menziesii*. The adult psyllids are reddish brown in color and resemble the coloration of the bark of the host tree. The nymphs feed on the twigs and leaves. The nymphs form a circular white waxen cover which often causes them to be mistaken for scale insects. This cover is technically called a "lerp." The madrone psyllid is one of the few North American psyllids that form such a cover. Certain psyllid generic groups native to Australia commonly form these, and the group has received considerable notoriety because of the unique and ornamental characteristics of the lerps.

The madrone psyllid has been abundant and destructive to madrone trees in coastal areas of California, particularly in the Santa Cruz area. Recently, Dr. Dave Adams, California Department of Forestry Pathologist, submitted samples in May of the madrone psyllid from a residential subdivision in the Mace Meadows area of **Amador** County. The psyllid population had been very high, and damage has been extremely severe. Many trees, including some with trunk diameters of a foot or more, are being severely damaged and killed. The psyllid also produces copious amounts of honeydew and the resultant sooty mold makes the trees sticky and unsightly. Ken Peek, Agricultural Biologist for **Alameda** County, has also submitted a heavily infested sample from Castro Valley that was collected May 20.

It is normally unusual for native insects to develop serious economic population levels. The cause of this population upsurge is unknown, unless the ongoing drought has meant better survivorship of the nymphs during the winter months. Comparison of population levels with those in previous years have also not been made.

LAVATERA PSYLLID, *Paratrioza lavaterae* , -(C)- This native psyllid is restricted primarily to the native plant *Lavatera assurgentiflora*. A small endemic population of this plant on San Miguel Island off the coast of southern California is considered endangered. The psyllid population had reached serious levels on the island and were actually threatening the small endemic patch of the host. Specimens of the psyllid were collected by staff of the National Marine Fisheries Institute on the island. The specimens were collected on February 13 and forwarded to Dr. Scott Miller of the Bishop Museum in Hawaii, who forwarded them to CDFA for identification. The identification was made and the interested parties were put in touch with Richard Tassan, specialist in psyllid biological control at the University of California Gill Tract. Control strategies for the psyllid are now being implemented.

RASPBERRY ROOT GALL WASP, *Diastrophus radicum*, -(Q)-This cynipid wasp creates galls on the rootlets of raspberry plants in the Midwest. Specimens were collected from a nursery in **Placer** County on January 14 by Doug Mitani. The infested plants originated from Huntingburg, Indiana two years ago. It is not known whether the insect has escaped from these plants into nearby *Rubus* plants. Delimitation and evaluation are continuing.

EXCLUSION

The first few months of 1991 have had the usual number of samples identified from quarantine interceptions. However, also during this period there have been an unusually large number of interceptions of unique and rarely encountered organisms, particularly from foreign countries. The following examples exemplify some of the diversity of organisms encountered:

SCIENTIFIC NAME	FAMILY	ORIGIN	DATE	COUNTY	COLLECTORS	HOST
Philomycus sp.	Phylomycidae	Hilo, Hawaii	12/27/90	San Joaquin	Reed	*Dracaena marginata*
Aulacaspis tubercularis	Diaspididae	Ecuador	12/31/90	Ventura	Sulentich	*Mangifera indica*
Malleolaspis sp.	Diaspididae	Mexico via Texas	1/7/91	San Diego	Worcester	Palm
Aulacaspis tubercularis	Diaspididae	Equador	1/15/91	Ventura	Laird	*Mangifera indica*
Dyscinetus morator	Scarabeidae	Norfolk, Virgina	1/16/91	Solano	Lyon	Plastic pots
Cathaica sp.	Bradybaenidae	China	1/30/91	San Francisco	Gonzalez	Wooden crates
Dysmicoccus mackenziei	Pseudococcidae	Guatemala	2/4/91	San Diego	Neville	*Monstera* sp.
Sclerosococcus tillandsiae	Asterolecaniidae	Hawaii	2/8/91	San Diego	Neville	*Tillandsia* sp.
Philephedra tuberculosa	Coccidae	Florida	2/11/91	San Mateo	Buerer	Vegetable
Vinsonia stellifera	Coccidae	Guatemala	2/19/91	San Joaquin	Williamson	*Schefflera*
Tetraleurodes sp.	Aleyrodidae	Brazil	2/21/91	San Diego	Neville	*Tillandsia* sp.
Phenacoccus emansor	Pseudococcidae	Holland	3/12/91	San Luis Obispo	Frank	*Iris* sp.
Helionothrips errans	Thripidae	Hawaii	3/27/91	San Francisco	Eaton	Orchid
Unachionaspis tenuis	Diaspididae	Japan	3/28/91	San Diego	Sims	Bamboo
Pseudococcus citriculus	Pseudococcidae	Hilo, Hawaii	4/2/91	Kern	Acosta/Kamara	Flowers
Echinothrips americanus	Thripidae	Hawaii	4/18/91	San Joaquin	Giesing	*Schefflera* sp.
Sclerosococcus tillandsiae	Asterolecaniidae	Guatemala	4/17/91	San Diego	Neville	*Tillandsia* sp.
Icerya pulcher	Margarodidae	Southeast Asia	5/8/91	Orange	Clark/Ellis/Do	*Citrus hystrix*
Parlatoria ziziphi	Diaspididae	Southeast Asia	5/8/91	Orange	Clark/Ellis/Do	*Citrus hystrix*
Pulvinaria polygonata	Coccidae	Southeast Asia	5/8/91	Orange	Sudduth/Clark/Do	*Citrus hystrix*
Icerya pulcher	Margarodidae	Southeast Asia	5/8/91	Orange	Sudduth/Clark	*Citrus hystrix*
Limonia sp.	Tipulidae	Costa Rica	5/16/91	San Joaquin	Giesing	*Dracaena* sp.
Rhytidoporus indentatus	Cydnidae	Hawaii	5/22/91	San Joaquin	Eed	Truck floor

The early part of 1991 has also produced a number of interceptions of "A, B and Q" rated pests on stock in California nurseries. These infestations are not considered to be establishments of the species, and eradication procedures have been implemented in most cases. The following list outlines the finds and brings credit to the nursery inspectors and other personnel who made the discoveries:

Pest	County	City	Date	Collectors
Aspidiotus excisus	San Joaquin	Ripon	1/13/91	Art Morello
Pseudaulacaspis cockerelli	Santa Barbara	Santa Barbara	1/30/91	Cummins
Pseudaulacaspis cockerelli	Orange	Costa Mesa	1/29/91	L. Fernandez
Ischnaspis longirostris	Fresno	Fresno	4/22/91	R. Shayer
Pinnaspis buxi	Fresno	Fresno	4/22/91	R. Shayer
Pseudaulacaspis cockerelli	San Diego	Escondido	4/17/91	Devery/Kenyon/Wilcock
Pseudaulacaspis cockerelli	Santa Barbara	Summerland	3/28/91	Cummins
Diaspis boisduvalii	Santa Barbara	Summerland	3/28/91	Cummins
Pinnaspis strachani	San Diego	San Diego	4/12/91	J. Wilcock/ J. Kenyon
Pseudaulacaspis cockerelli	San Diego	Oceanside	4/11/91	Worcester

BLACK CURRANT GALL MITE, *Cecidophyopsis ribis*, -(Q)- This mite is in the family Eriophyidae. It has been collected recently in a California high school project nursery, and its collection has touched off an

intensive delimitation survey in several western states. The following report outlines the California interception:

On April 11, Mendocino County Agricultural Biologist Jim Xerogeanes collected specimens of gooseberry plants originally shipped from England to the agricultural department of the Anderson Valley High School in Booneville. Apparently, several of the plants were still under hold order and were found to be infested with this mite. In addition, the nursery is apparently a growing ground for various clones of gooseberries and is the site of a small community-wide project to develop thornless fruit varieties. Numerous mite collections have been made from the growing grounds and from native gooseberries and currants in the area, but these collections have yet to be confirmed by late May. It is also known that several lots of material were sent from Booneville and from England to the U.S.D.A. Clonal Germ Plasm Repository in Corvallis, Oregon. These lots are not known to be infested at this time, although the mite is thought to be common in domestic material nearby.

The mite is currently known from British Columbia, Canada and, when first identified from the Booneville location, was thought to be of limited distribution in western North America. It was not previously known to occur in California. Although the mite is currently thought to be in Washington and Oregon, reversion disease apparently is not. The U.S.D.A. is currently cooperating with the western states in a delimitaion survey during April and May to determine the true status of this mite in the U.S. It is believed to be native to Europe.

The mite is very similar to another eriophyid species, *E. breakeyii,* which is already known from currants in California. The two mite species are impossible to separate in the field, and their separation is not all that easy in the taxonomy laboratory.

Further information is supplied by Donna Cunningham:

The specimens were taken from gooseberry and currant plants (*Ribes* sp.) being held under post-entry quarantine by permittee Steve McKay at his approved site at Anderson Valley High School in Booneville, Mendocino County.

At that site, several lots of different species of *Ribes* plants have been imported during the last five years. Steve McKay belongs to the International Ribes Association and is said to have one of the largest collections of *Ribes* plants and germplasm in the U.S.

The majority of plants at that location are infested with the mite. He also has plants at his residence, not under quarantine, which will be given a thorough inspection to determine their pest status. A preliminary inspection was negative, but it was difficult to do a thorough inspection due to quantities of plants and excessive weediness. He also has an approved post-entry site in Watsonville, which is being inspected by CDFA with U.S.D.A. cooperation.

The International Ribes Association has distributed cuttings of their plants in California, other states and foreign countries. We will be tracing these distributions with follow-up inspections, looking for the mite and symptoms of reversion disease, a serious virus disease of currants vectored by the mite.

The mite damages buds (causing a big bud) and is the vector of black currant reversion disease, so-called because the character of the leaf reverts to the wild form. The mite feeds and reproduces only on *Ribes.*

Fruits of infected plants either do not form, the flowers shrivel up and drop off, or if fruits do form, development is arrested and the berries soon fall off. The big buds may contain from five to 30,000 mites. Visual inspection for plant symptoms is the only survey method available. Big buds are common from September to March, and leaf symptoms are common from June to September. Mites disperse in April-May.

The mites disperse by crawling, by wind currents, or by attaching to other insects. The disease is less important in England now because certified bushes are planted widely, infected plants are rogued, new plantings are upwind of contaminated holdings, and acaricides are routinely applied. Reversion virus can be transmitted by various grafting methods. A non-gall forming strain of *C. ribis* is in England and the mite is considered a minor pest when reversion disease is present. A delimitation survey is planned as several (>five) native *Ribes* occur in the coastal counties and many dooryard *Ribes* also are planted because of suitable climatic conditions.

SIGNIFICANT FINDS IN OTHER STATES AND COUNTRIES

MEDITERRANEAN FRUIT FLY, *Ceratitis capitata* -- On May 16, a single male Medfly, *Ceratitis capitata*, was trapped in Altamonte Springs, Seminole County, **Florida**. The Medfly was recovered from a Jackson trap placed in a grapefruit tree. Trapping levels are being increased to protocol levels surrounding this detection.

Altamonte Springs is a residential area located north of Orlando. There are no commercial citrus groves in the general vicinity.

GYPSY MOTHS, *Lymantria dispar asiatica* and *L. japonica* -- The following Pest Alert message is being circulated to all concerned field locations in the United States by the U.S.D.A.:

Canada is reporting finding viable gypsy moth egg masses on Russian ships visiting Pacific coast ports. *Lymantria dispar asiatica* or *Lymantria japonica* are implicated. The females of these are strong fliers in contrast to our North Americanized gypsy moth.

We have received additional information from Agriculture Canada that a Soviet vessel SU Pavel Rybin sailed from Canada infested with hatched larvae. All ports should be on the lookout for the vessel should it call at a U.S. port. Careful inspection of the vessel would be required.

A THRIPS, *Thrips palmi* -- A new thrips pest has been found in the continental U.S. The following report from Stephen Brown recounts the find:

The U.S.D.A. has reported that the first infestation of *Thrips palmi* in the continental U.S. has been detected in **Florida**. Two specimens collected on hairy beggerlice on January 2 in Homestead, Florida, were submitted for verification by Harold A. Denmark, Florida Department of Agriculture and Consumer Services. Also from the Homestead area, specimens were collected on January 29 infesting cultivated peppers and on February 4 infesting zucchini squash. The Florida Department of Agriculture and Consumer Services is currently conducting visual surveys to determine the extent of the infestation.

T. palmi was reported in Hawaii in 1982 on watermelon and was first found in the New World in Martinique and Guadeloupe in 1985. Subsequently, it has been found in the Dominican Republic, Puerto Rico, St. Lucia, Antigua, Barbados, Trinidad, Tobago, and Venezuela.

This is a serious pest of various crops in the Cucurbitaceae, Solanaceae, Leguminosae, and several other vegetable and floral crops. *T. palmi* has been reported to cause losses of between 50 to 90 percent for cucumber in Trinidad. The following information was contained in a Florida Entomology Circular on this pest: *T. palmi* quickly builds up heavy infestations causing severe injury. Both larvae and adults feed gregariously on leaves (first along midribs and veins), stems (particularly at or near the growing tips), flowers (among the petals and developing ovaries) and fruits (on the surface), leaving numerous scars and deformities, and finally killing the entire plant.

Crop plants reported to have been damaged, often severely, are: Solanaceae: eggplant, pepper, potato, tobacco, ground cherry (but strangely tomato escapes); Cucurbitaceae: cucumber, watermelon, muskmelon, cantaloupe, pumpkin, bitter melon, squash, hairy gourd; Leguminosae: kidney bean, broad bead, cowpea, soybean, whiteclover; Misc: chrysanthemum, dahlia, sesame, morning glory, sweet potato, cotton, cyclamen, and amaranth spinach. In additon, various weeds are also attacked. Heavy damage could be caused to melon and vegetable crops in the warmer areas of the U.S., specifically the Gulf Coast states and parts of the Southwest, if this thrips becomes established in North America.

Thrips are frequently found in pockets, cracks, or crevices on host material. Look for silvery feeding scars on leaf surfaces of host plants, especially alongside the midrib and veins. Heavily infested plants are characterized by silvered or bronzed appearance of leaves, stunted leaves and terminals, and scarred and deformed fruits. Individuals may be found on all parts of many kinds of plants during the outbreak stage.

Pest Exclusion Biologist Jack Lambert has already informed some county biologists to watch for this pest on cut flowers originating from Hawaii. He has informed us that due to the fact this thrip is white and difficult to see on the flowers, tapping or shaking the flowers to dislodge the thrips over a black background is the easiest detection technique. Mr. Lambert also pointed out that two-colored mat cardboard (black and white) is available from photography supply stores. When cut to a convenient size (8-1/2 x 11 inches), this detection tool becomes portable to biologists and can be carried with their "normal" inspection supplies and equipment. It should be noted that the white background can be utilized for detecting darker colored thrips or other small insects.

Probably one of the major differences between *Thrips palmi* and many other common thrips is the nearly colorless (white to light yellow) body, with no darkening of the dorsal sclerites on the abdomen or thorax. *Thrips tabaci*, *Thrips hawaiiensis* and *Frankliniella occidentalis* all have dark dorsal bands and blotches. *Thrips tabaci* has one less pair of lateral setae on abdominal tergite II than does *T. palmi*.

AFRICANIZED HONEY BEE, *Apis mellifera scutellata* hybrids -- Numerous Africanized honey bee (AHB) swarms have been trapped and destroyed in south Texas in 1991. APHIS trap lines are being repositioned to accomplish the APHIS objective of monitoring and reporting Africanization spread.

The following is a partial list of AHB detections made in Texas since April 15:

DATE	LOCATION	METHOD OF DETECTION
4/15/91	Santa Anna, South of Alamo	ARS Trap
4/15/91	Roma, 4.1 miles SW of Hwy 83 on FM 650	APHIS Trap
4/15/91	95 Fish Hatchery Road, Brownsville, 3 miles south of Olmito	Feral-APHIS
4/15/91	3 miles west of Progreso on 281	ARS Trap
4/16/91	Las Milpas and Hwy 281	ARS Trap
4/19/91	Roma, 4.1 miles SW of Hwy 83 on FM 650	APHIS Trap
4/20/91	Laredo, Chicago and Ursula Street	Feral-APHIS
4/20/91	Santa Anna, South of Alamo Survey Area	Feral-APHIS
4/22/91	Bentsen Park-Mission	ARS Trap
4/22/91	Bentsen Park-Mission	ARS Trap
4/23/91	Santa Anna, South of Alamo Just outside of quarantine area (1.7 miles east of 907 1.1 miles south of 281).	Feral-APHIS
4/24/91	0.2 mile NW of Reforma	APHIS Trap

An Africanized honey bee delimiting survey is being implemented in a two-mile radius of each find as called for in the joint Texas/APHIS AHB action plan.

There have been numerous swarms of AHB captured in Mexico approximately 80 miles south of McAllen Texas. Recent trapping in the area produced 32 swarms of bees; 28 of these were identified as Africanized.

CHERRY BARK TORTRIX, *Enarmonia formosana*-- This tortricid moth was found recently for the first time in North America. The first record comes from British Columbia, Canada. See the last issue of CPPDR

9(5-6):170-172 for more information on that collection. The species has now been found established in the United States. The following federal pest report outlines the details:

> On February 21, cherry bark tortrix was found for the first time in the State of Washington. Five specimens of *E.formosana* were collected from an ornamental cherry tree, *Prunus* sp., in the Peace Arch Park (on the U.S./Canada border) in Blaine, Whatcom County, Washington.
>
> These larvae were collected by John Wraspir, a nursery inspector with the Washington State Department of Agriculture. Specimens were identified by R.W. Hodges, Research Entomologist at Agricultural Research Service's Systematic Entomology Laboratory.
>
> *E.formosana* feeds primarily on wood of fruit trees in the Rosaceae family and has shown considerable damage in Canada.
>
> An ad hoc meeting of the New Pest Advisory Committee has been scheduled to assess the situation in Washington and to develop a plan of action.

A TINEID MOTH, *Opogona sacchari*--In August 1990, *Opogona sacchari* (Bojer) was found in Hawaii for the first time. Through the USDA, ARS, Systematic Entomology Laboratory, Dr. D.R. Davis of the Smithsonian Institution made the determinations for this find.

Opogona and related tineids are typically known as detritus feeders and scavengers and are not regarded as very important pests. But the moth can cause extensive damage because the moth first attacks damaged or decaying plant tissues, but often feeds on nearby living tissue.

Other new Hawaiian records follow.

NEW HAWAIIAN RECORDS -- Ron Hue, State Survey Entomologist for Hawaii recently passed along a list of new state, island and host records for that State. The list contained a remarkably high number of introductions into Hawaii in 1990. Since California receives so much plant material in quarantine from Hawaii, it is probably useful to list these records The following list gives a common name if available, the scientific, family and order names, as well as the possible pest status. Ron Hue has included an extensive history of each of the new interceptions. However, this history will not be included here. If anyone is interested in more details about these new finds contact either the entomology editor of this CPPDR or Ron Hue in Hawaii.

Common name	Scientific name	Family	Order	Pest status
Minute predatory beetle	*Cybocephalus nipponicus*	Nitidulidae	Coleoptera	Beneficial
Tetrigid grasshopper	*Paratettix mexicanus*	Tetrigidae	Orthoptera	Probable pest
Shore bug	*Microcanthia humilis*	Saldidae	Heteroptera	Inocuous
Ant	*Solenopsis papuana*	Formicidae	Hymenoptera	Possible pest
Noctuid moth parasite	*Trichospilus* sp.	Eulophidae	Hymenoptera	Beneficial
Clidemia leaf beetle	*Lius poseidon*	Buprestidae	Coleoptera	Beneficial
Varied carpet beetle	*Anthrenus verbasci*	Dermestidae	Coleoptera	Pest
Hibiscus erineum mite	*Eriophyes hibisci*	Eriophyidae	Acari	Pest
Southern chinch bug	*Blissus insularis*	Lygaeidae	Heteroptera	Pest
Banana moth	*Opogona sacchari*	Tineidae	Lepidoptera	Pest
Papaya leaf edgeroller	*Calacarus brionasae*	Eriophyidae	Acari	Pest
Weevil	*Myllocerus* sp.	Curculionidae	Coleoptera	Possible pest

Root-infesting mealybug	*Rhizoecus saintpauliae*	Pseudococcidae	Homoptera	Possible pest
Cockroach	*Balta* sp.	Blattellidae	Orthoptera	Possible pest

The following insects or other arthropods were found to be new island records for Hawaii in 1990:

Common name	**Scientific name**	**Family**	**Order**	**Island**
Asian spinybacked spider	*Gasteracantha mammosa*	Araneidae	Araneae	Oahu
Grass bagworm	*Brachycyttarus griseus*	Pyschidae	Lepidoptera	Kauai, Hawaii
Leafhopper	*Sophonia* sp.	Cicadellidae	Homoptera	Hawaii
Solanaceous fruit fly	*Bactrocera latifrons*	Tephritidae	Diptera	Maui, Hawaii, and Molokai
Hibiscus thrips	*Liothrips varicornis*	Phlaeothripidae	Thysanoptera	Oahu
Sweet potato whitefly	*Bemisia tabaci*	Aleyrodidae	Homoptera	Hawaii, Maui, and Molokai

The following insects or arthropods were listed as new Hawaiian host records for 1990:

Common name	**Scientific name**	**Family**	**Order**	**Host**
Mediterranean fruit fly	*Ceratitis capitata*	Tephritidae	Diptera	*Prunus ilicifolia*, *Rhamnus californica*
Melon fly	*Bactrocera cucurbitae*	Tephritidae	Diptera	*Sicyos pachycarpus*, *S. hispidus*
Solanaceous fruit fly	*Bactrocera latifrons*	Tephritidae	Diptera	*Solanum linnaeanum*
Bombyliid fly	*Anthrax disigma*	Bombyliidae	Diptera	nests of the keyhole wasp, *Pachodynerus nasidens* and a bee, *Megachile umbripennis*

BORDER STATIONS

Imported fire ants have continued to be of concern to California, and numerous interceptions of these serious pests have been made over the years. The following report by Richard Brown outlines some of the statistics involved with these interceptions:

Imported fire ant (*Solenopsis* spp.) interceptions at the California border stations increased from 83 in Fiscal Year 1988/89 to 354 in Fiscal Year 1989/90. During the first seven months of the current fiscal year, California has recorded 128 interceptions compared to 267 for the same seven months last year.

An analysis of the 482 interceptions between July 1, 1989 and January 17, 1991 (19 months) reveals that 421 (87.3 percent) were from COMMERCIAL TRUCKS; 28 (5.8 percent) were from U-Hauls/household goods; and 33 (6.8 percent) were from autos, recreation vehicles, pickups and trailers.

Of the 421 interceptions from trucks, 148 (35 percent) of the shipments were agricultural products. The other 273 (65 percent) were either non-agricultural products or empty trucks. Of the 421 interceptions from trucks, 114 (27 percent) of the trucks were rejected and denied entry into California. The other 307 (73 percent) were permitted to enter the State under quarantine because the number of ants found was below the action level defined in the protocol. (REJECT for any live IFA in nursery stock, sod, or soil; for 5+ live IFA in other agricultural commodities; and for 25+ live IFA in any truck).

The border stations intercept a considerable amount of fruit and other plant material originating in foreign countries. Some of this fruit is of course commercial shipments, but a very large percentage of the interceptions are actually non-commercial materials intercepted from travelers. The following chart outlines some of the recent interceptions:

Origin	State origin	Border station	Type	Collector
Columbia	FL	BL	yams	Ebert
Chile	TX	BL	peaches	Ebert
Mexico	TX	BL	Tangerines	Boston
Chile	TX	NE	peaches	Vasquez
Chile	TX	NE	peaches	Tringa
Chile	TX	NE	peaches	Armstrong
Chile	TX	NE	peaches	Martinez
Chile	NJ	YE	peaches	Foster
Chile	NJ	YE	peaches	Foster
Mexico	TX	BL	oranges	Weeks
Mexico	TX	BL	tangerines	Walker
Chile	TX	BL	plums	Walker
Japan	DE	NE	pears	Atkinson
Chile	NY	BL	peaches/plums	Day
Chile	TX	VI	apric./plms./pchs	Carroll
Mexico	TX	BL	citrus	Armendariz
Chile	AZ	BL	peaches	Teskey
Mexico	AZ	BL	oranges	Perez
Mexico	AZ	BL	oranges	Teskey
Mexico	TX	BL	avocados	Parmley
Haiti	FL	BL	mangoes	Wadley
Peru	FL	BL	mangoes	Ebert
Mexico	AZ	VI	citrus	Emino-Leach
Mexico	AZ	WI	oranges	Hopkins
Haiti	FL	BL	mangoes	Moline
Mexico	AZ	VI	oranges	Emino-Leach
Mexico	AZ	VI	oranges	Walker
Haiti	FL	BL	mangoes	Kuanda
Mexico	AZ	WI	oranges	Van Horn
Chile	FL	BL	plums	Hinsley
Mexico	AZ	LO	oranges	Pastell
Mexico	NV	LO	oranges	Pastell
Mexico	NV	LO	oranges	Hamblet
Mexico	AZ	BL	oranges	Sheets
Chile	TX	BL	nectarines/plums	Ebert
Mexico	NV	LO	oranges	Leslie
Mexico	?	VI	limes	Granger
Mexico	?	VI	oranges	Granger
Mexico	AZ	WI	oranges	Draper
Mexico	AZ	BL	citrus	Sandoval
Mexico	NV	LO	oranges	Hamblet
Mexico	TX	BL	orange	Armendariz
Mexico	AZ	BL	mangoes	Armendariz
Mexico	AZ	BL	oranges	Guthrie
Haiti	FL	BL	mangoes	Parmley
Mexico	NV	LO	oranges	McCollum
Mexico	TX	LO	mangoes	Hamblet
Mexico	NV	TO	limes	Cornwall

Origin	State origin	Border station	Type	Collector
Mexico	AZ	VI	mangoes	Carroll
Chile	?	BL	nectarines	Boston
Mexico	?	LO	mangoes	Hamblet
Mexico	?	LO	oranges	Pastell
Mexico	?	LO	mangoes	Doyle
Mexico	?	LO	mangoes	Gaona
Mexico	?	SM	okra	Hart
Mexico	?	VI	mangoes	Emino-Leach
Mexico	?	VI	mangoes	Tesche
Mexico	?	VI	mangoes	Walker
Mexico	?	BL	okra	Parmley
Mexico	?	BL	mangoes	Ebert
Mexico	?	BL	mangoes	Moline
Mexico	?	BL	mangoes	Hardin
Mexico	?	LO	mangoes	Gaona
Mexico	?	TO	limes	Cornwall
Mexico	?	VI	mangoes	Emino-Leach
Mexico	?	VI	mangoes	Walker
Mexico	?	BL	mangoes	Day
Mexico	?	BL	mangoes	Sandoval
Mexico	?	BL	mangoes	Holm
Mexico	?	BL	peaches	Day
Mexico	?	BL	oranges	Day
Mexico	?	BL	mangoes	McCollum
Mexico	?	BL	oranges	Gaona
Mexico	?	BL	mangoes	Hamblet
Mexico	?	BL	mangoes	Guthrie
Mexico	?	BL	mangoes	Vega
Mexico	?	BL	mangoes	DeLeon
Mexico/FL	?	BL	mangoes/produce	DeLeon
Chile	?	BL	plums	Sheets
Haiti	?	BL	mangoes	Ebert
Bahama	?	BL	papayas	Sheets
Mexico	?	LO	mangoes	McCollum
Mexico	?	LO	mangoes	Gaona
Mexico	?	LO	peaches	Pastell
Mexico	?	NE	oranges	Cline
Mexico	?	VI	mangoes	Granger
Mexico	?	VI	mangoes	Tesche
Mexico	?	VI	mangoes	Emino-Leach
Mexico	?	WI	mangoes	Stanfield
Mexico	?	WI	mangoes	Morales
Mexico	?	WI	mangoes	Draper
Mexico	?	BL	mangoes	Kuanda
Mexico	?	BL	mangoes	Hardin
Mexico	?	BL	peaches	Ebert
Mexico	?	BL	mangoes	Perez
Mexico	?	BL	mangoes	Vega
Mexico	?	LO	mangoes	Hamblet
Mexico	?	LO	oranges	Pastell
Mexico	?	VI	okra	Emino-Leach
Mexico	?	VI	oranges	Carroll
Mexico	?	VI	mangoes	Walker
Mexico	?	VI	oranges	Walker
Mexico	?	WI	mangoes	Morales
Mexico	?	WI	mangoes	Holby
Mexico	?	BL	mangoes	Perez
Mexico	?	BL	mangoes	Ebert
Mexico	?	BL	limes/pineapples	Sandoval
Mexico	?	BL	canned coffee	Perez
Mexico	?	LO	oranges	Pastell
Mexico	?	LO	mangoes	Doyle

The border stations also intercept a large number of vertebrate animal species that are prohibited or otherwise regulated by the Department of Agriculture and the Department of Fish and Game. The following chart outlines some of the interceptions made early this year:

Origin	Border Station	Type	Collector
NM	BL	ferret	Hinsley
AZ	BL	ferret	Moline
TX	BL	gerbil	Holm
OR	HO	ferret	Whitman
OK	NE	ferrets	Johnson
UT	TR	polar bear/eland	London
AZ	BL	ring neck dove	Wadley
WA	HO	ferrets	Rojas
OR	HO	ferrets	Middleton
AR	LO	gerbils	Pastell
NV	YE	ferret	Foster
AL	BL	gerbils	Parmley
WA	HO	gerbils	Kirby

Origin	Border Station	Type	Collector
WA	HO	gerbil	Hamilton
IA	LO	ferret	Obata
AZ	WI	gerbils	Hopkins
TX	BL	gerbils	Hardin
AZ	BL	ferret	Holm
TX	BL	ferret	Sorrells
OR	HO	monk parakeet	Johnson
KY	NE	gerbils	Wadley
MO	NE	ferret	Armstrong
TN	BL	gerbils	Perez
CT	BL	ferret	Weeks
MO	NE	gerbils	Urquidi
NM	NE	ferret	Armstrong
MO	WI	ferrets	Garcia
CAN	WI	ferrets	Young
FL	BL	screech owl	Wadley
AZ	BL	blue jay	Moline
OR	HO	ferret	Johnson
IL	TR	ferret	Bobbitt
MD	BL	ferrets	Parmley
NV	LO	ferret	Pastell
IA	TR	ferret	Bienenfeld
LA	VI	ferret	Granger
AR	NE	ferret	Wadley
MD	RE	ferret	Blakely
NY	BL	ferrets	Armendariz
OR	HO	monk parakeet	Kirby
KS	TR	ferret	Rosier
NV	YE	ferret	Palomo
CA	BL	ferret	Guthrie
TN	BL	ferret	DeLeon
VA	BL	ferret	Guthrie
NJ	BL	ferret	Holm
WA	HO	gerbil	Proctor
MO	LO	elephants	McCollum
IA	NE	ferret	Martinez
FL	WI	monk parakeet	Calhoun
NY	YE	brown bears	Clark
MA	BL	Siberian dwf. Hamster	Moline
AZ	BL	ferret	Hardin
WI	BL	ferret	Guthrie
FL	BL	monk parakeet	Sandoval
CA	WI	mynah bird	Calhoun
NC	YE	gerbils	Howard
PA	TR	monkeys	Ward
NV	TR	ferret	Rosier
NY	TR	ferret	Bienenfeld
NV	TR	ferret	London
NV	AL	gerbils	Anderson
AZ	BL	gerbils	Ebert
NV	LO	ferrets	Leslie
ID	BL	mountain quail	Guthrie
AZ	BL	ferret	Vega
AZ	BL	ferret	Moline
AZ	BL	ferret	Sorrells
NM	ME	ferrets	Rianda
LA	NE	snapping turtle	Vasquez
AZ	BL	ferret	Sorrells
NV	TR	ferret	Lambirth
UT	YE	raccoon	Palomo

PLANT PATHOLOGY HIGHLIGHTS

NEW COUNTY RECORDS

A FUNGUS, *Mycosphaerella tassiana*, -(C)- This fungus, which occurs only rarely in California, caused leafspot outbreaks on *Yucca gloriosa* (Spanish dagger) in Sacramento, Yolo, and Sutter Counties, as well as on citrus leaves in Colusa County this winter. The following report by Tim Tidwell and Diana Fogle describes the yucca disease situation:

Remember the December Freeze?

The stark visions of entire plantings of flattened, flaccid herbaceous ornamentals, dead eucalyptus trees, and defoliated citrus groves are still fresh in the minds of most Californians. And we are continuing to learn more about the effects of the three week December "deep-freeze" on plants.

One interesting by-product of the freeze has been the appearance of diseases not normally found in the California regions which suffered through that inclement weather. A notable example of this phenomenon was a severe leafspot disease of the popular ornamental "Spanish Dagger" (*Yucca gloriosa*). Early in March the CDFA laboratory began receiving samples of yucca leaves which had leaf spots about 0.5 to 1.0 cm in diameter. Frequently the spots were so numerous on a given leaf that they coalesced into very large necrotic patches. On one particular 15 year-old plant which had more than 30 trunks, every leaf was affected.

The fungus was identified by Tim Tidwell and Diana Fogle of the CDFA mycology laboratory, and later was confirmed by the USDA's chief identifier, Dr. Mary Palm, in Beltsville, Maryland. CDFA detection pathologist Bill McCartney did another great job of field detection, uncovering the disease in several Central Valley counties.

The fascinating aspect of this disease, at least from an epidemiological standpoint, is that the fungus has a "vegetative" or asexual stage, *Cladosporium macrocarpum*, which has a relatively cosmopolitan distribution, generally occurring throughout temperate regions, and is usually considered to be a saprophyte on various hosts. However, the sexual stage, *Mycosphaerella tassiana*, which was consistently isolated in pure culture from the leaf spots, is a known disease agent on many hosts. But interestingly, the *Mycosphaerella* stage of this fungus primarily occurs in areas in which it is subjected to very low temperatures. In fact, *M. tassiana* occurs "chiefly in arctic and alpine regions" throughout the world —— hardly an apt description of our "normal" California Mediterranean climate! And despite the fact that it was obviously a devastating leafspot disease on local yucca plants, pathogenicity tests (inoculation of the fungus on healthy Spanish dagger plants) were unsuccessful, presumably due to the fact that CDFA pathologists were unable to artificially duplicate the conditions of the three week December freeze, which evidently was necessary to predispose the plants to infection by the fungus.

Fortunately, since only the foliage of the yucca plant is affected, the disease is easily controlled by merely pruning off the affected stem below the infected leaves. The plant pushes out new foliage from the pruned stem shortly thereafter. And fortunately we are unlikely to see this disease on yuccas again soon, —— at least not until the next equally devastating freeze!

Reference:

Barr, M. E. 1958. Life History Studies of *Mycosphaerella tassiana* and *M. typhae*. Mycologia 50:501-513.

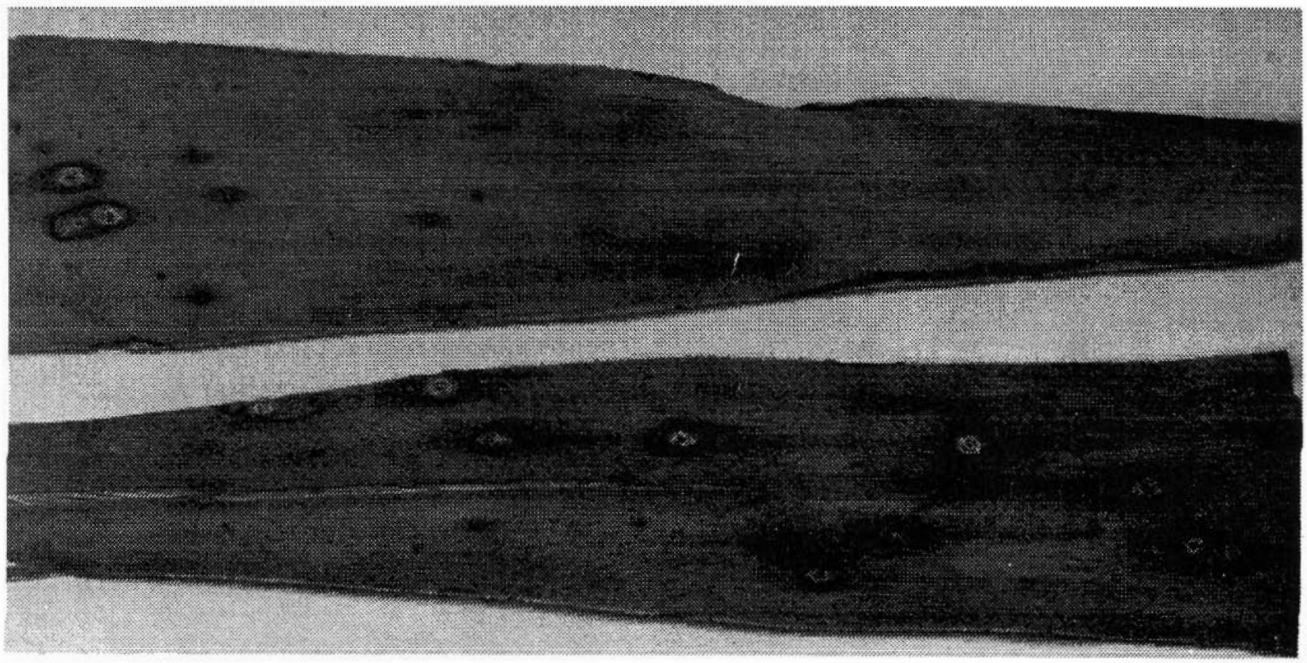


Fig. 5: Leaf spots on leaves of *Yucca gloriosa*, caused by the fungus *Mycosphaerella tassiana*.

OTHER SIGNIFICANT FINDS

Hainesia Leaf Spot on Strawberry

by

Dan Opgenorth and Jeanenne White

The fungus, *Hainesia lythri,* was collected and identified during the fall of 1990, from several strawberry fields in Shasta County. Widespread leaf spotting and necrosis was observed in numerous plantings. Symptoms ranged from small rust colored circular lesions, radiating out to 5 mm in diameter, to extensive blight of entire leaves.

H. lythri is known as a weak pathogen occurring in association with anthracnose disease or as a secondary invader to previously wounded plant tissue. This fungus has been previously reported to cause strawberry lesion root rot, fruit rot and leaf spot. The manifestation of *H. lythri* as a primary leaf blight pathogen has not been previously reported in California. The fungus was consistently isolated and identified from symptomatic leaf tissue obtained from plants that were not infected by other pathogens.

Pathogenicity studies of *H. lythri* were conducted on strawberry varieties Chandler, Selva, Hecker, Pajaro and Fern. Spore suspensions, prepared from purified cultures grown on acidified potato dextrose agar (APDA) were used as inoculum. Inoculations were made using a cotton swab dipped in a 10^6 spore suspension, then gently rubbed over the surface of healthy leaves which had been dusted with 600 mesh carborundum. Within eight to ten days, all five varieties exhibited typical leaf lesions. Strawberry varieties Fern and Pajaro exhibited the most severe leaf blighting. The fungus was easily re-isolated from infected leaves of all five inoculated strawberry varieties.

Isolates of *H. lythri* established on APDA produced rapid growing, pale to medium brown colonies consisting of branched, septate, hyaline to pale brown hyphae. Conidia, produced in an acervulus (imperfect state), were hyaline, aseptate, tapered at both apices, commonly guttulate (visible cell vacuoles), and averaged 5-7.5 µ x 1.5-2 µ. Some mature cultures, over 14 days old, also produced sporodochial structures with conidia. The perfect state of the fungus is recorded as *Pezizella oenotherae.*

H. lythri leafspot fungus appears to be easily transmissible and pathogenic to five common varieties of California grown strawberries. Further studies are required to determine the extent to which this organism may effect strawberry production alone or in conjunction with anthracnose, and to determine if there is any resistance in varieties now grown comercially.

References:

Maas, J. L. 1985. *Compendium of Strawberry Disease,* APS, p. 55.

Phatak, H. C. and Payak, M. M., 1965. *Hainesia lythri* on Strawberry - A new disease record for India. Indian Phytopathol. 18:237-239.

Sutton, B. C., Gibson I. A., 1977. Commonwealth Mycological Institute (CMI), Descriptions of Pathogenic Fungi and Bacteria, No. 535.

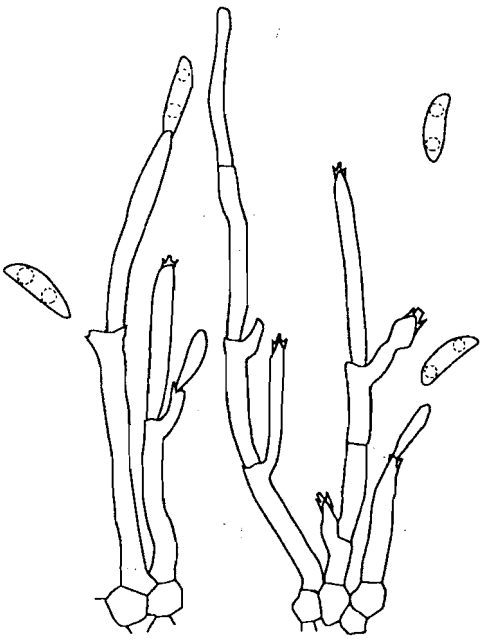


Fig. 6: Branched conidiophores of *H. lythri* forming guttulate conidia.

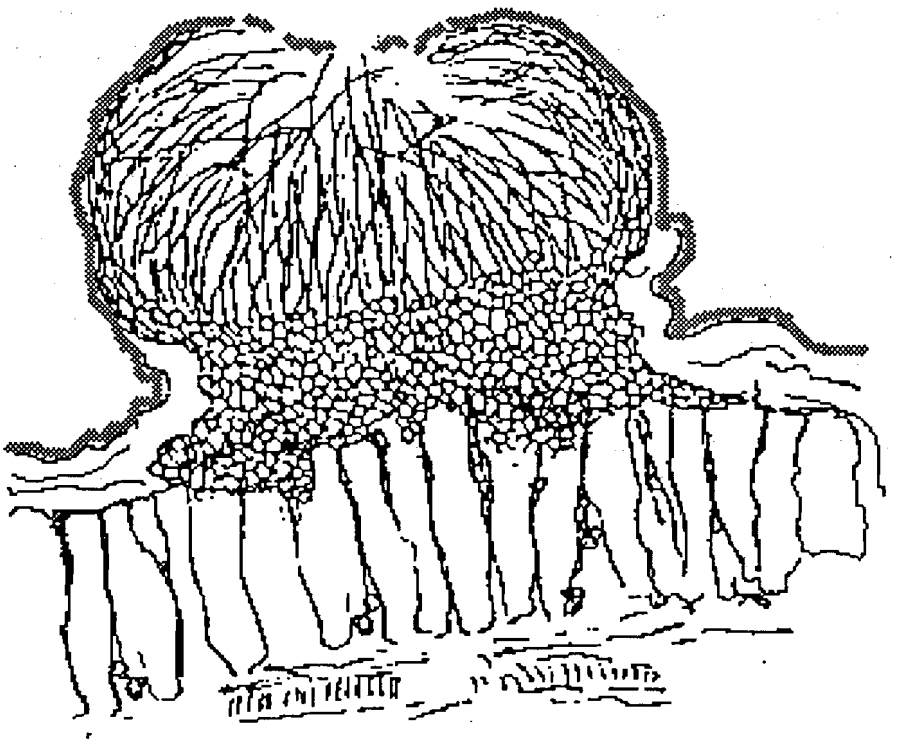


Fig. 7: Drawing of a typical globose acervulus fruiting structure produced by *H. lythri.*

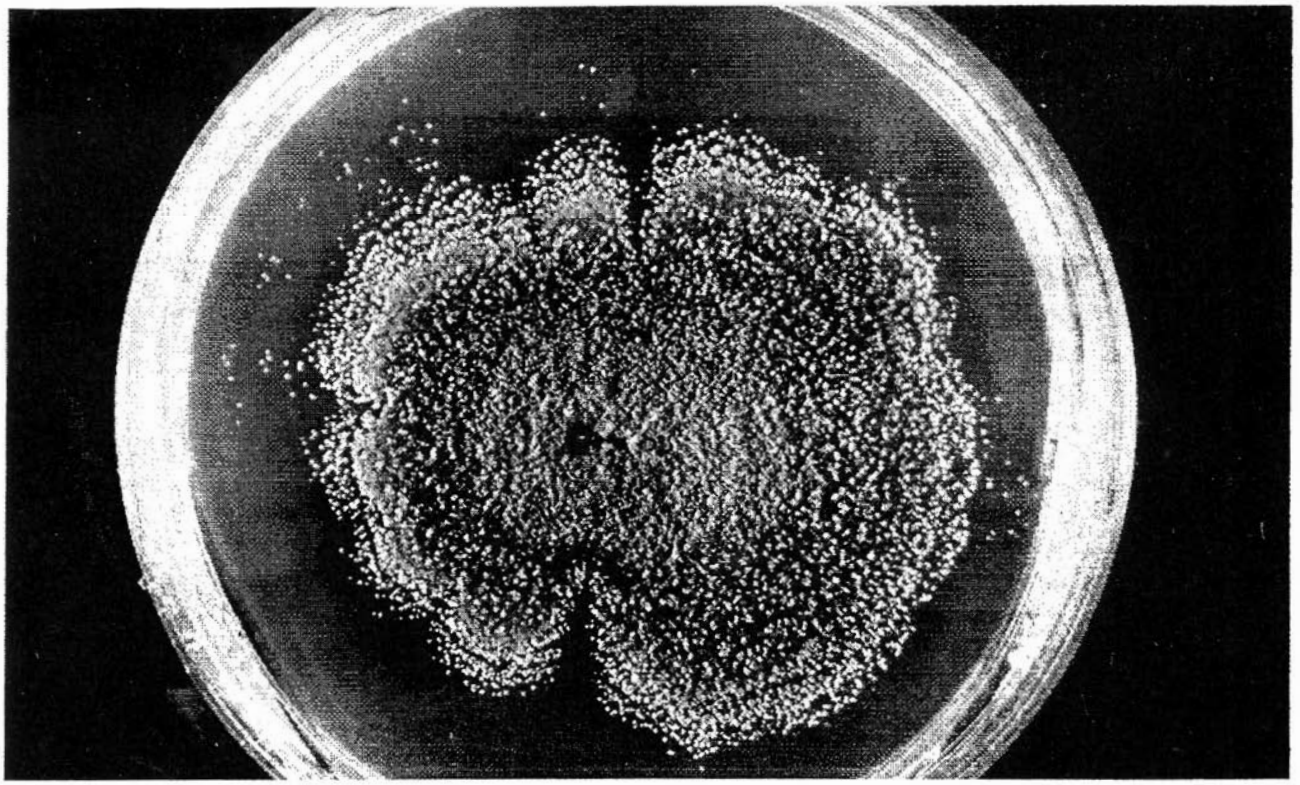


Fig. 8: Pale to medium brown *Hainesia* culture on acidified potato dextrose agar.

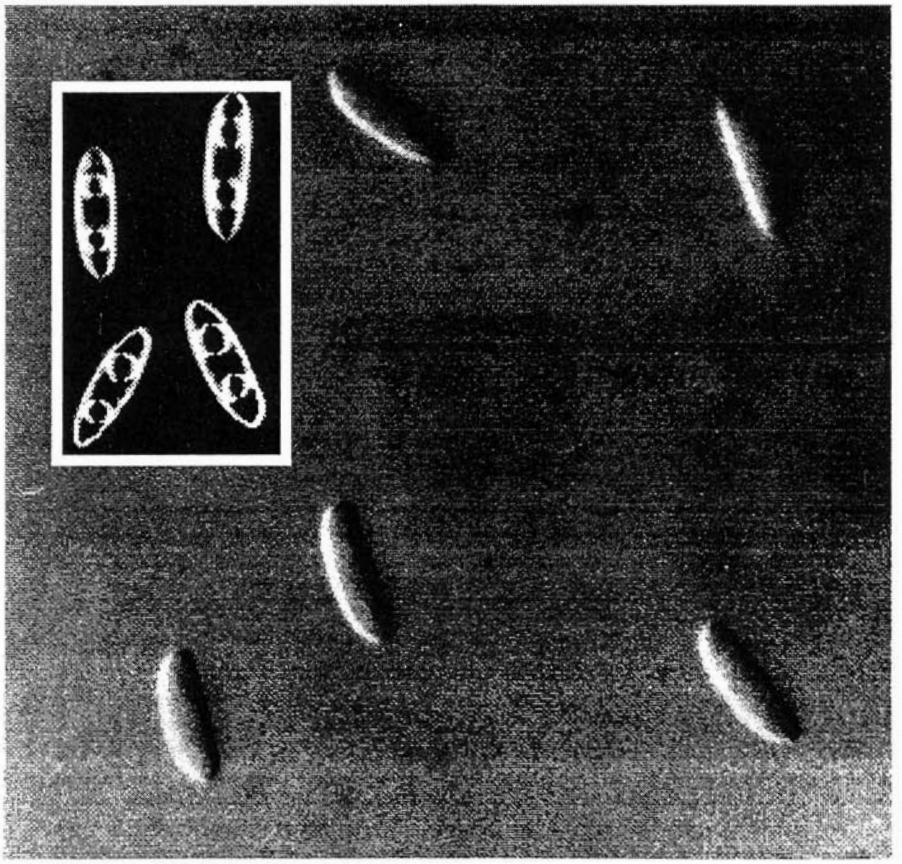


Fig. 9: Typical conidia with tapered ends (Light microscope picture). Insert exhibits guttulate characteristics (Phase contrast microscope picture). Pictures by Jim Heath, CDFA.