California Plant Pest & Disease Report

Volume 25
Covering Jan. 2008 - Dec. 2009

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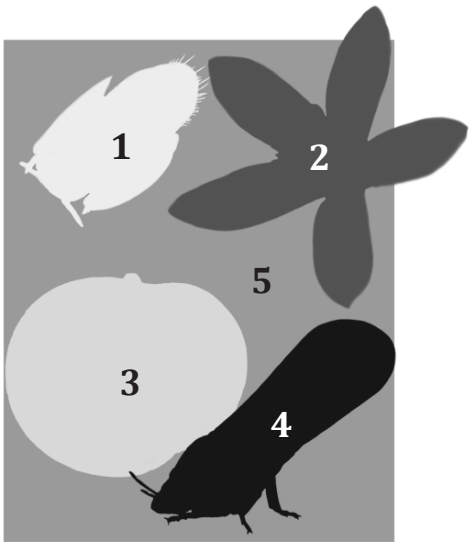

Cover illustration: Megan O'Donnell, PPDC, CDFA.

1) Asian Citrus Psyllid (ACP) nymph; 2) Citrus flower; 3) lime fruit showing symptoms of Citrus Greening Disease (HLB); 4) adult ACP; 5) HLB particles.

Photo credits: 1)Jeffrey W. Lotz, Florida Department of Agriculture & Consumer Services, Bugwood.org; 2) Forest & Kim Starr, Starr Environmental, Bugwood.org; 3) Jeffrey W. Lotz; 4) M. E. Rogers, UF / IFAS / Citrus Research & Education Center; 5) Monique Garnier.

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INTRODUCTION

The California Plant Pest & Disease Report (CPPDR) was last printed and issued as Volume 24, in 2008, covering the period of January through December 2007. Since that time, there have been many significant pest finds in California not published through this medium. The current installment (Volume 25) covers the time period from January 2008 through December 2009.

California Plant Pest & Disease Report, volumes 1-25 are freely available at:
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The Plant Pest Diagnostic Center Annual Report

A year by year summary of the PPDC activities. 2001-2010 available for download.
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Cooperative Plant Pest Report for California (CPPR)

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Significant Records in Botany

BRANCHED BROOMRAPE

Lamiales: Orobanchaceae: *Orobanche ramosa*

Prepared by F. Hrusa

Branched broomrape, an achlorophyllous parasitic annual plant species known to use more than 300 other plant species as its host, was discovered in San Benito County in 2009. This is the first find of branched broomrape in California since 1983, and significantly the same site was the location for that infestation.

Many of the parasitized species are crop plants or their wild or weedy relatives, with the most severely attacked being tomato (*Lycopersicon esculentum*), hemp, both European and Chinese (*Cannabis sativa* L. and *Cannabis indica* Lam. respectively) and tobacco (*Nicotiana tabacum*) - three of the world's most important crops, although only the first is a major crop in California.

Hemp is not a crop in California. Despite the use of its scientific name, *Cannabis sativa*, for cultivated marijuana; the intoxicating species is *Cannabis indica* (Hillig & Mahlberg 2004). *Cannabis indica* is also bred and grown for seed and fiber (and thus as hemp) in eastern Asia, particularly China, and *Orobanche ramosa* is a parasite of Chinese hemp and therefore *Cannabis indica*. In fact, the original introduction of branched broomrape to North America was through import of Chinese hemp seed (McPartland et al. 2000). At that time these Chinese hemp varieties were thought to be *Cannabis sativa*, but are now known to be conspecific with the intoxicant species *C. indica* and are not the industrial non-intoxicant *C. sativa* (Hillig & Mahlberg op cit.). Thus it is a parasite or potentially serious parasite of two of California's largest crops, even if one is only unofficially the largest in the state (*Cannabis*).

History

Orobanche ramosa may have first been recognized by the ancient Greeks who described plants attached to the roots of legumes. However, it is not known if they were referencing *Orobanche ramosa* or other species such as *O. cruenta* that preferentially parasitize legumes. It was definitely described by herbalists of the 16th-17th centuries, who, despite not knowing its biology, were aware of its requirement for a specific companion crop (Wilhelm 1962). These names and descriptions have no nomenclatural bearing, and the current name of *Orobanche ramosa* L. dates from Linnaeus' Species Plantarum of 1753.

Its indigenous region is thought to be the Caucasus of southern Russia (Wilhelm 1962.). The earliest reports of branched broomrape did not mention hosts, and it is unclear what it parasitizes in the indigenous non-agricultural setting. It was introduced to Europe at an early date, apparently as a contaminant in hemp seed, and it is likely that it came to North America via the same host (Wilhelm op. cit; McPartland et al. 2000). When and how it first arrived in California is not known but the first report from the state was in Butte County in 1903. The host was not specified, but the specimen label stated "a very destructive root parasite on hemp, Gridley", suggesting that hemp was being cultivated then in the northern Sacramento Valley, and contaminants in hemp seed could have thus been the source of the first California branched broomrape infestations. Later, in 1928 (reported to CDFA in 1929) it was found on tomatoes growing in the Centerville region of Alameda County, a location where it persisted at least until the 1970s. The original find stated that only about 1.5 (one and one-half) acres were infested, with a second small infestation about 500 yards distant. These fields were abandoned, but in 1934 they were replanted to tomato and the parasite recurred. Again abandoned, there were subsequent flood events that washed over the local region apparently spreading seed downstream. In 1942 a local infestation was found, but not reported at the time. In 1949-52 it was found on at least 100 acres in the flooded zone, plus in smaller patches upstream of the original 1929 find. These upstream sites were farmed by the same family who farmed the original find (Stout and Wagnon, 1953). It is not known whether hemp was cultivated in that region prior to 1929, and thus how the seed first arrived in Alameda County is unknown.

In 1959 *O. ramosa* was found in two regions in and about the Sacramento Delta. In both locations it was parasitizing tomato. Surveys continued from then until the middle 1970s with finds continuing over all those years. Wilhelm et al. (1965) suggested that these infestations, described as in "heavy concentrations" on Grand and Roberts Islands in the mid-1960s had been present for a long period, perhaps many decades. Again,

Branched Broomrape, *Orobanche ramosa*, an A-rated, non-native parasite infesting a tomato plant. (Photos: D. Kelch, CDFA PPDB)

it is not known if hemp had ever been grown on Grand or Roberts Islands.

In 1976 *O. ramosa* appeared in San Benito County near Frazier Lake and Shore Rds, just south of the State Highway 152 and State Highway 256 intersection. In 1982 a second infestation was discovered in the adjacent township and comprised almost 60 acres of a larger field. This location was found continuously infested for two years (1982 and 1983), then was put out of cultivation. Until 2009, this was the last known active location in California. In September of 2009 a specimen from San Benito County was received from the same township and range as previous, but a different section was reported. It later was confirmed that the 1983 and 2009 sites were the exact same locality and that the site had been fallow since 1983 (observed records are not available to confirm that no agricultural enterprise had subsequently occurred on the land, but it had not grown tomatoes). In 2009, following a request from the tomato industry for additional acreage, the 60 acres known infested in 1983 were planted to tomatoes. The result was an exact replication of the 1983 infestation, including almost the exact same boundaries.

Biology

Plants of the genus *Orobanche* are non-photosynthesizing annual root parasites. Seeds in the soil germinate when triggered by root exudate from a compatible host. The root tips force themselves into the host root stele where they establish a vascular connection. The parasite then grows above the soil, flowers, sets and disperses seed. Seed is actually dispersed both before and at the time of senescence. Depending on the crop, the yellow-colored parasite with white or blue flowers may be readily visible or hidden beneath dense foliage. Although the plants are not typically self-pollinated, in California fertility ranges around 10% (Wilhelm 1962) suggesting that most of its seeds are the result of self-fertilization, and that an effective pollinator is likely not present. The effective pollinators in its indigenous range are not known.

The seeds are small— they have been compared to grains of ground pepper and each fully fertile flower produces several hundred with vigorous single plants producing up to at least 50,000 (Wilhelm et al. 1965). They are generally spread abiotically (soil, water, wind), but human assistance in both these natural processes and via anthropogenic mechanisms such as harvesting and cultivation equipment have been responsible for its long-distance dispersal. The seeds are long-lived. Considering their small size, this is somewhat surprising, but literature sources citing anecdotal evidence, reveal that known infestations remain viable in the absence of the living parasite for at least 13 years (Wilhelm op cit.; Wilhelm et al. 1965). It is not known if a host was present in the 2009 infested area between 1983 and 2009, but in 2004 a tomato patch was planted and tended by Agricultural Commissioners staff in San Benito Co. on the site where in 1983 boots that had been worn during broomrape surveys were cleaned of mud (pers. comm. R. Ross, San Benito Co. Ag. Comm. office) . These tomatoes were attacked by *Orobanche ramosa*, proving that the seeds are viable for at least 21 years. Seed has been observed to germinate at highest frequency in the top 3-6 inches of soil (Wilhelm op cit.) suggesting the possibility of physical control through burial of the top soil layers. This proved ineffective however (Wilhelm op cit.). Branched broomrape has an affinity for clay soils in California, and deliberate infestations have been uneven in their establishment, often diminishing over time (Wilhelm 1979). How these observations can be applied in a control protocol is not yet clear.

The Future

Branched broomrape is considered a serious pest of its three main hosts. In California at present we are concerned strictly with tomatoes. It has been reported to cause up to 50% crop loss on tomatoes in particular fields or parts of them (Stout and Wagnon, 1955). Effective control involves soil fumigation with methyl bromide. Because of costs and generally incomplete control even with methyl bromide, the most efficacious management method to date has been to abandon infested fields. Even alternative, non-host crops are problematic due to the potential for seed bank seed dissemination in the absence of the living parasite. Host crops partially resistant to several herbicides or combinations thereof, have been used as a "trap crop" to stimulate germination and then kill the parasite with the systemic herbicide applied to the at least partially resistant host crop (Haidar et al. 2005). Moreover, the advent of genetically engineered, and specifically, "roundup-ready" crops, could make the use of glyphosate as a general application over the resistant crop, potentially useful.

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SIGNIFICANT RECORDS IN ENTOMOLOGY

BLATTODEA

A Cockroach

New Federal Record

BLATELLIDAE: *ECTOBIUS LUCIDUS* (HAGENBACH)

PREPARED BY R. GARRISON

E. Richard Hoebeke and Maureen E. Carter report the introduction of this Old World species. From their abstract:

> *Ectobius lucidus* (Hagenbach), a Palearctic cockroach, is reported for the first time from North America. Characters are given to distinguish it from other species of the genus known from eastern North America. Photographs of the adult male and female, and nymphs are provided and contrasted with photographs of adults of other *Ectobius* species occurring in North America. Its seasonal history and habits are summarized based on field observations, and additional distribution records of other *Ectobius* species established in eastern North America are listed and mapped.

CDFA has yet to see examples of this species. Excellent color photographs of the species accompany the article on www.bioone.org

LITERATURE CITED

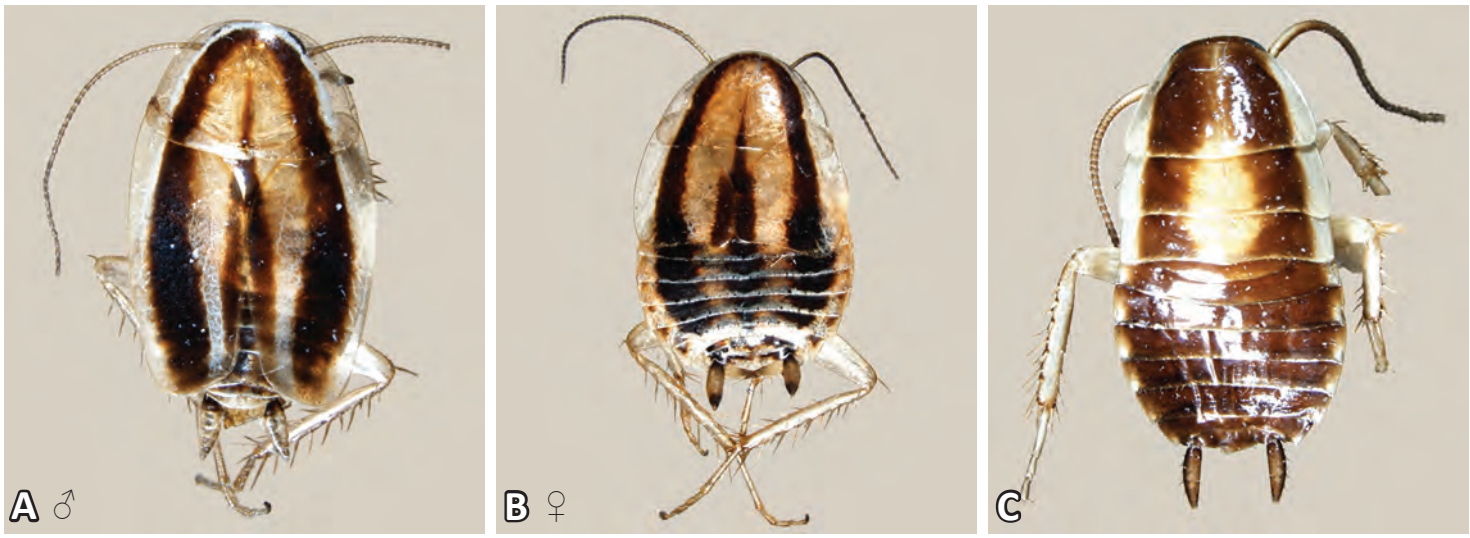
Hoebeke, E.R. & M. E. Carter. 2010. First North American record of *Ectobius lucidus* (Hagenbach) (Blattodea: Blattellidae: Ectobiinae), with notes on recognition characters and seasonal history, and additional records for other *Ectobius* species in the northeastern United States. *Proceedings of the Entomological Society of Washington* 112(2):229-238)

Three-lined cockroach

New State Record

BLATELLIDAE: *PHYLLODROMICA (LURIDIBLATTA) TRIVITTATA* (SERVILLE)

PREPARED BY R. GARRISON



LEFT: Three-lined Cockroach, *Phyllodromica trivittata* adult male, **CENTER:** adult female *P. trivittata* which resembles the larva of the German cockroach, *Blatella germanica*, **RIGHT.** (Photos: R. Garrison CDFA, PPDC)

Dr. William Shepard of the University of California submitted examples of this small (ca. 5mm.) cockroach from his residence in Pinole, Contra Costa County in September, 2009. Although this find constitutes a new US record (first official submittal to CDFA), the species was known to be resident elsewhere in the Bay Area (Marin County) as early as 2004. However, despite attempts at securing identification from specialists in Europe, it was identified only recently by Dr. George Beccaloni of Natural History Museum (London) who writes that it "...is known from dry habitats around the Mediterranean. It has been recorded from Morocco, Algeria, Spain, Italy (Sardinia Island), Italy (Sicily), Libya, and Israel. Given that it has not been recorded as being a pest in buildings in those countries (as far as I'm aware) it is unlikely to invade buildings in the USA..."

Dr. Sheppard reports the species as common among litter and plant debris. Photos of the roach can be found on the Cockroach Forum at http://www.blattodea.net/showthread.php?p=2612

This small species is similar to larvae of the German cockroach, *Blatella germanica* but only has two dark lines (vittae) instead of three (Fig. A-C).

COLEOPTERA

The Gold-spotted Oak Borer: a Threat to Native Oak Trees in California

BUPRESTIDAE: *AGRILUS COXALIS* SSP. *AUROGUTTATUS* SCHAEFFER 1905

PREPARED BY C. L. BELLAMY

LEFT: Adult *Agrilus coxalis* ssp. *auroguttatus*, **RIGHT:** larva of the same. (Photos: T. Coleman, USDA Forest Service)

As part of the on-going Exotic Wood-boring Beetle Project collaboration between CDFA and USDA, a specimen of a strange *Agrilus* was shown to me by Dick Penrose in late 2004. It had been collected in a Lindgren funnel trap baited with exotic *Ips* lure and was from near Lake Cuyamaca near Julian, San Diego County. A second specimen was collected in the same manner at another locality near Julian in 2006. Little did we suspect those two specimens would represent the leading edge of an approaching storm.

Increasing and extensive mortality to three species of native oaks had been noticed by U.S. Forest Service personnel in the southern Cleveland National Forest since 2002, but without a causal agent identified. The pathogen causing sudden oak death was suspected but not detected. Then in the spring of 2008, buprestid larvae were observed and collected from infested trees and eventually adults were reared. The beetle was identified by colleague R. L. Westcott (Oregon Dept. of Agriculture) and confirmed by H. A. Hespenheide (UCLA) and myself as *Agrilus coxalis* spp. *auroguttatus*. Good summaries of the background and current situation can be found in recent papers by Coleman & Seybold (2008, 2009, 2010a, 2010b).

Speculation as to the origin of this beetle in San Diego Co. suggests that the most likely cause is one or more emergence events from imported oak firewood, perhaps cut in southeastern Arizona, the suspected closest natural locality for the beetle and carried by campers who visited Cleveland National Forest camping or recreational areas early in this decade.

The threat to native oaks in California cannot be overstated considering the extensive damage and mortality to three *Quercus* spp. in San Diego Co. already observed and apparently caused by this beetle. It appears to be established and will certainly continue to increase its range as there are likely no natural parasitoids or predators that would check or slow expansion north.

A recent nomenclatural change (Hespenheide & Bellamy 2009) to this beetle saw the junior synonym *Agrilus auroguttatus* resurrected to a subspecies of *A. coxalis*. and it is currently known as *A. coxalis* ssp. *auroguttatus*. This will likely change again as a study of the genus *Agrilus* for the entire Baja California peninsula (Hespenheide, Westcott & Bellamy, in prep.) will probably elevate this subspecies back to its original species-level status.

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DIPTERA

Review Of Pest Fruit Flies Detected In California In 2009, With A Review Of The Previous Five Years

TEPHRITIDAE

PREPARED BY S. D. GAIMARI & M. HAUSER

Detections of pest fruit flies detected in 2009 are mapped and reviewed. Overall, these flies feed on more than 250 kinds of fruit, resulting in spoilage and making fruit unfit for consumption. California is in a constant state of alert for fly finds, because they can cause enormous amounts of damage to California and US agriculture. In any given year, more than 100,000 detection traps are deployed during peak season, using 5 primary lures and 3 different trap types. Besides the 2009 data, maps and information are provided for the time period from 2004-2008.

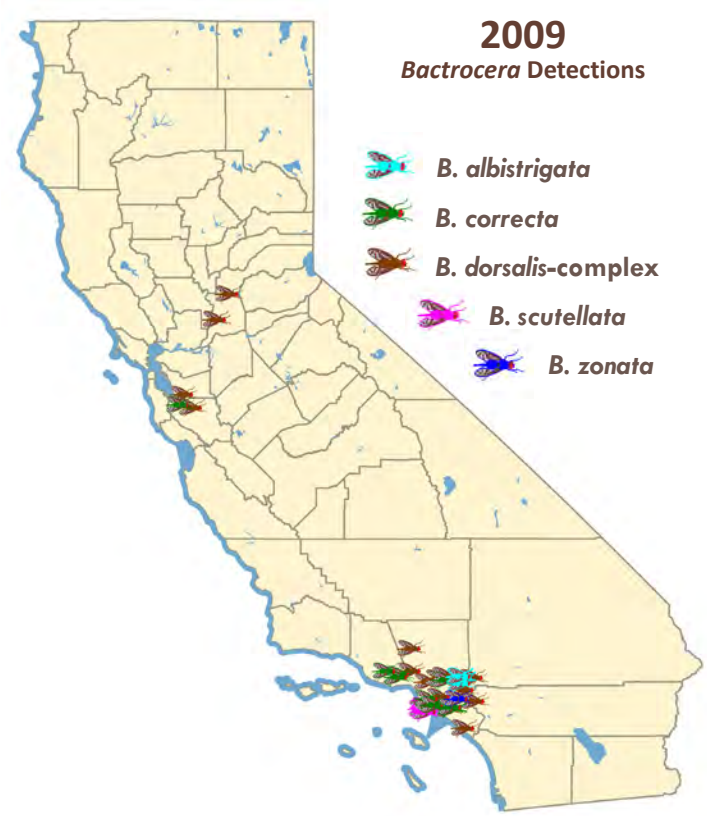
2009 was a particularly difficult year for fruit flies (see map). Although a light year for *Anastrepha* (only one detection, in August – Mex fly, *Anastrepha ludens*), it has been a heavy year for both Med fly (*Ceratitis capitata*) and *Bactrocera* species. For Med fly, there were detections in each month except January, April and August, with a total of 10 wild males, 4 unmated females and 10 sexually mature and mated females, in addition to 4 larval properties totaling 125 larvae. All of these detections were in San Diego County, except for 1 in Los Angeles County in October. All detections of Med fly in 2009 year had the AAAB mitotype, which is consistent with populations distributed in Central America and most previously recorded detections in Southern California. Populations of this type are also known from Africa and the Mediterranean Region.

For *Bactrocera* species, there has been an unusual high diversity in 2009 year, with 5 species detected (not including *Bactrocera oleae*, which is established in California). Among these was the first New World record of *Bactrocera albistrigata* (white striped fruit fly), detected in Los Angeles County, with a total of 6 males and 2 females (of which 1 was mated), all in July. After the April detection of *Bactrocera scutellata* (striped fruit fly) in Los Angeles County, a total of 9 males were detected through May. A surprise came in mid-November, with the detection of a single female, also in Los Angeles County. For *Bactrocera correcta* (guava fruit fly), 16 males have been detected in total. Of these, 7 were from Orange County, collected in July; 6 were from Los Angeles County, collected in April, June, August and September; and 1 each was collected in Ventura County (August), Santa Clara County (September) and San Mateo County (November). For the *Bactrocera dorsalis*-group (Oriental fruit fly complex), 23 males and 2 females (both in July from Los Angeles County, of which 1 was mated) have been detected each month from June through October, inclusive. Los Angeles County was hardest hit, with detections in each of these months. In July, the most different counties were hit, with 1 in Alameda County, 2 in Orange County, 1 in Riverside County and 2 in San Bernardino County. Sacramento County had 4 detections – 1 in July and 3 in August, while Santa Clara County had 1 in October. For *Bactrocera zonata* (peach fruit fly), 1 male was detected in August in Orange County.

The following fruit flies have been detected from 2004-2008 and are reflected on the maps below: *Anastrepha ludens* (all years), *Anastrepha obliqua* (West Indian fruit fly) (2004; 2005), *Anastrepha suspensa* (Caribbean fruit fly) (2004), *Bactrocera correcta* (all years), *Bactrocera cucurbitae* (melon fly) (2004; 2006), *Bactrocera dorsalis*-group (all years), *Bactrocera zonata* (2006; 2007), *Ceratitis capitata* (all years except 2006). For *Ceratitis capitata*, the following mitotypes were determined: 2004 (AAA-), 2005 (AAAB, AABB), 2007 (AAAB, AABB, BBBB), 2008 (AAAA, AAAB). Going back to 1998, the following additional species have been detected: *Anastrepha striata* (no common name), *Bactrocera facialis* (no common name), *Bactrocera latifrons* (Malaysian fruit fly), and *Bactrocera oleae* (olive fruit fly; since established in the State).

Pest fruit flies of concern to California agriculture. **LEFT:** Adult female Oriental fruit fly (OFF), *Bactrocera dorsalis*, laying eggs in a papaya, **CENTER:** Female *Anastrepha ludens*, Mexican fruit fly (Mex Fly), **RIGHT:** *Ceratitis capitata*, Mediterranean fruit fly (Med fly). (Photos A & C: S. Bauer, USDA-ARS; Photo B: J. Dykinga, USDA-ARS)

Pest Fruit Flies Detected in California, 2009-2007



Pest Fruit Flies Detected in California, 2006-2004

Maps prepared by Casey Estep, CDFA.

Spotted-winged Drosophila

New Federal Record

DROSOPHILIDAE: *DROSOPHILA SUZUKII*

PREPARED BY M. HAUSER & S. D. GAIMARI

In September of 2008 the PPDC received a sample of a drosophilid fly larvae from Santa Cruz County, collected in a raspberry field. It was identified as a *Drosophila* sp., but because drosophilids are very commonly submitted in the Fall months in association with rotting fruit, it was categorized as a harmless species. What was not clear from the submitted specimen was that fresh raspberries and strawberries were infested with these larvae, causing serious damage in this area.

In the Spring of 2009 the PPDC received several samples of maggots found in otherwise healthy cherries, with western cherry fruit fly (*Rhagoletis indifferens*) being the main suspect. This was a great concern to local farmers, because this fruit fly is not known from that area. The submitted larvae were clearly drosophilids and it was still assumed that they were only secondary invaders, and that the primary damage had a different cause. But after more and more reports of massive infestations in cherries came into the lab and the only larvae submitted were *Drosophila*, we suspected that the normally harmless *Drosophila* might be the primary cause. Unfortunately there were only larvae submitted in alcohol and identification of immatures is not possible to the species level in this family. Despite trying to match gene sequences (COI) with sequences in the

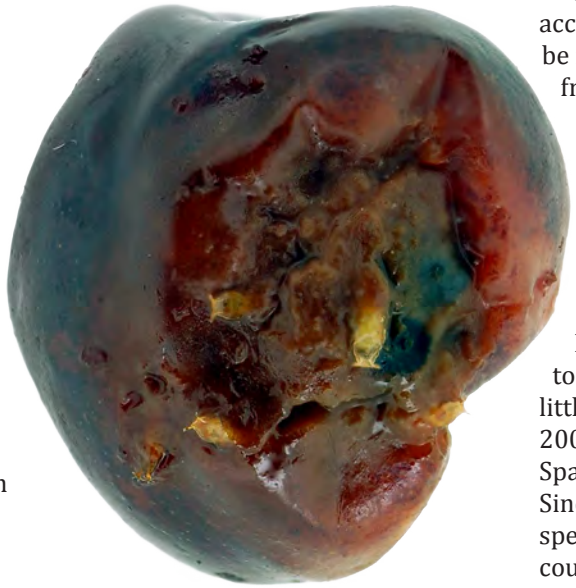


FIGURE 1. A Cherry with multiple *D. suzukii* pupae inside. (Photo: M. Hauser, CDFA, PPDC)

GenBank and BOLD databases, the results were inconclusive at the species level, only confirming that they were *Drosophila*. As it turned out, there were no sequences in these databases for *Drosophila suzukii*.

In the meantime many samples came in from Santa Cruz County and the cherry growing areas of the Central Valley. Finally the lab received adults and the species could be identified by morphology, turning out to be the Asian species *Drosophila suzukii*.

With a species name on hand, several accounts of damage by this fly could be found in the literature, particularly from Japan. In Japan the flies seem to have a preference for cherries and blueberries. The species was also known from Korea, Thailand and India, with the Asian host list also including grapes, Japanese apricots, mulberries, raspberries and strawberries. The species was reported in Hawai'i in 1980, and has since spread to several of the islands despite having little affect on crop plants. In the Fall of 2008, the species was also reported from Spain, so far with no reported damage. Since its first detection in California, this species has been found in 2009 in 27 counties, as well as in Oregon, Washington, British Columbia, and Florida.

The main host in California is cherries, but there are confirmed reports from raspberries, strawberries, boysenberries, plums, Asian plums, nectarines, plumcots, Satsuma plums and blackberries. Amy Dreves recently reported *D. suzukii* from wine grapes in Oregon. Because this species can also feed in decaying fruit (the more typical substrate for *Drosophila* species), combined with the typical high fecundity and short generation time, this small fly has a high potential to become established and widely distributed.

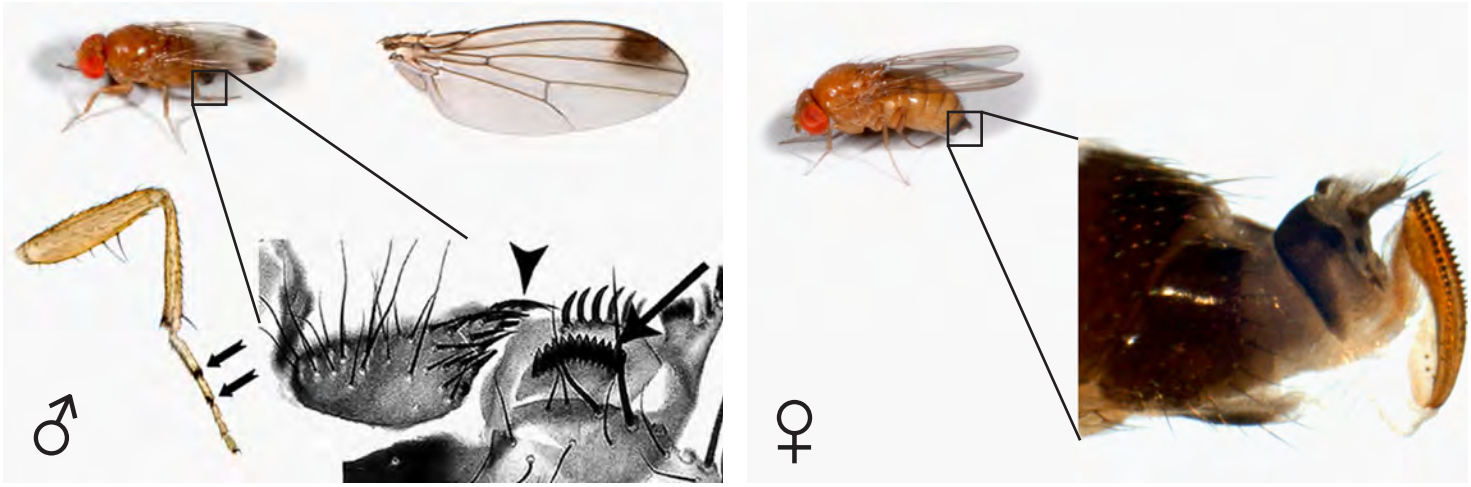


FIGURE 2. Distinguishing characters of *Drosophila suzukii*, **LEFT:** male and **RIGHT:** female. For more information please see the pest sheet on page 25. (Photos: M. Hauser, CDFA, PPDC)

HEMIPTERA: AUCHENORRYNCHA

Ligurian Leafhopper

CICADELLIDAE: *EUPTERYX DECEMNOTATA* REY

New Federal & State Record

PREPARED BY A. RUNG

Eupteryx decemnotata Rey, known as the Ligurian leafhopper in Europe, has been discovered for the first time in California. This find represents a new North American record for this species. The first sample collected was intercepted by the Florida Department of Agriculture and Consumer Services, Division of Plant Industry (DPI) by inspector Sol F. Looker on topiary rosemary plants from a discount store in Palatka, California (Putnam County) on 3 December 2008. Since then, confirmed populations of *E. decemnotata* have been found outside of nurseries in four California counties: Napa, Riverside, Los Angeles and Santa Barbara. See Rung et al. (2009) for identification, hosts, biology and distribution records.

LITERATURE CITED

Rung, A., S. Halbert, D.C. Ziesk, and R. Gill. 2009. A leafhopper pest of plants in the mint family, *Eupteryx decemnotata* Rey (Hemiptera: Auchenorryncha: Cicadellidae), Ligurian leafhopper, new to North America. *Insecta Mundi* 88: 1-4

The Ligurian leafhopper, *Eupteryx decemnotata*. (Photos: A. Rung, CDFA, PPDC)

HEMIPTERA: HETEROPTERA

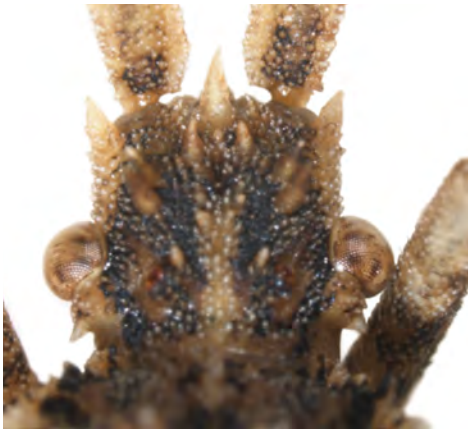
A Leaf-footed or Coreid Bug

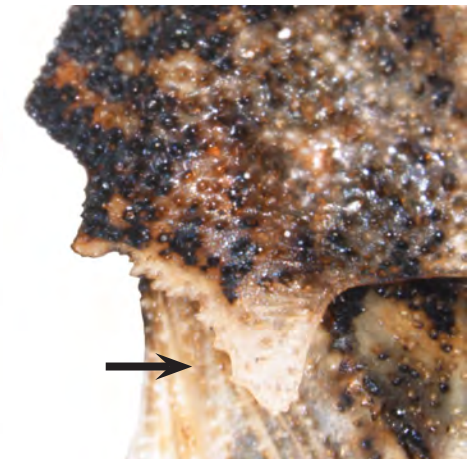
COREIDAE: *CENTROCORIS VARIEGATUS* KOLENATI

New State Record

PREPARED BY R. GARRISON

This medium sized (1cm) Palearctic bug was first detected in the city of Santa Clara, Santa Clara County, in May 2009. It is currently known from Alameda, Contra Costa, Santa Clara, & Sacramento counties and it is expected to spread. The posterior lappet on the pronotum and spiny head differentiate this species from any other coreid bugs in our area.





Adult male *Centrocoris variegatus*, LEFT: Dorsal habitus; TOP RIGHT: head displaying spiny projections, BOTTOM RIGHT: pronotum with characteristic posterior lappet (arrow). (Photos: R. Garriosn, CDFA, PPDC)

A Seed Bug

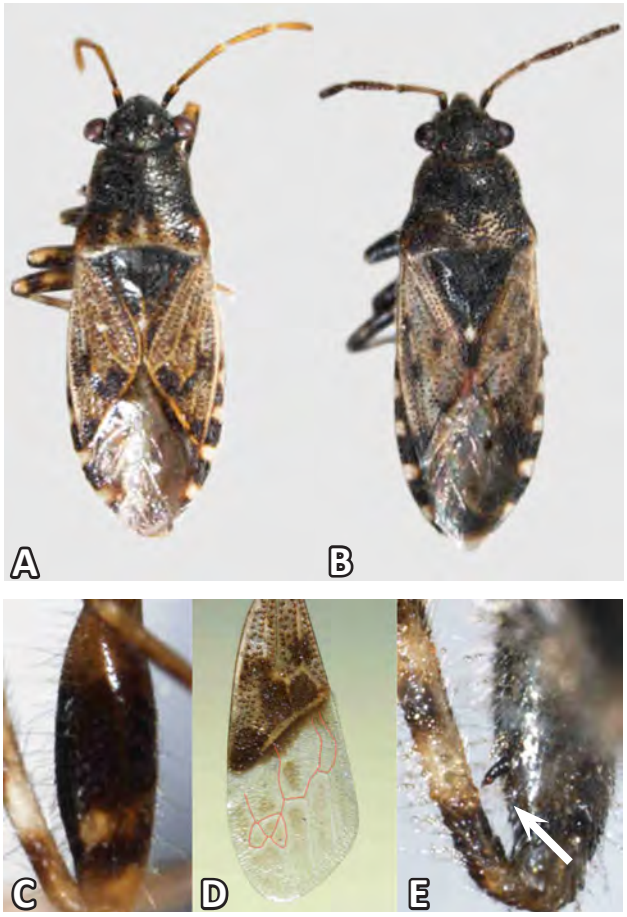
LYGAEOIDEA/HETEROGASTRIDAE: *HETEROGASTER URTICAE* (FABRICIUS)

An Interesting Find

PREPARED BY R. GARRISON

On the 24th of July, 2008, CDFA received from the Yermo border station a "live beetle found on returning nursery stock. Shipper left plants at station and swept out trailer bed" which accompanied Star Jasmine plants (*Trachelospermum jasminoides*). The nursery shipment originated from Lake Las Vegas, Nevada. The specimen was identified as *Heterogaster urticae*, a well-known Palearctic species not known from the Western Hemisphere. The specimen was sent to Thomas J. Henry, SEL who confirmed the identification.

Heterogaster has two or more enclosed cells at the base of the hemelytral membrane (Fig. D). Our common species, *Heterogaster behrensii* lacks any spination on the inflated fore tibiae (Fig. C); but are present on *H. urticae* (Fig. E).



A: *Heterogaster behrensii*, a common species in the Western United States, B: *H. urticae*, a new find for the Western US. C: Profemer of *H. behrensii* displays no spines. D: hemyletron of *H. behrensii* with closed cells outlined in red. E: Profemer of *H. urticae* with a descriptive spine (Photos: R. Garisson, CDFA, PPDC).

Name Changes

Hemiptera
Heteroptera
Lygaeidae

Family Lygaeidae was the subject of a phylogenetic analysis by Dr. Thomas J. Henry (1997. Phylogenetic Analysis of Family Groups within the Infraorder Pentatomorpha (Hemiptera: Heteroptera), with Emphasis on the Lygaeoidea. *Annals of the Entomological Society of America*, 90(3): 275-301) who determined it to be paraphyletic. As a result, Henry separated the family into 11 monophyletic groups (families) of which one, Heterogastridae, is included here.

Bagrada Bug

PENTATOMIDAE: *BAGRADA HILARIS* (BURMEISTER)

New State Record

PREPARED BY R. GARRISON

Dr. James N. Hogue, Entomologist and manager of biological collections in the Department of Biology, California State University, Northridge, submitted samples of this distinctive stink bug to CDFA in early September, 2008. The bugs, which were first observed in June, were infesting *Brassica napus* in Eagle Rock, Los Angeles County. Both Dr. Hogue and CDFA specialist Rosser Garrison identified the species as *Bagrada hilaris* and their identifications were confirmed by Dr. Thomas J. Henry, SEL.

Shortly thereafter, Los Angeles County Entomologist Dr. Gevork Arakelian submitted specimens from a homeowner in La Crescenta, Los Angeles County, who saw them feeding on her Alyssum plants. Dr. Arakelian also identified the pest as this species. Dr. Arakelian reports that the homeowner had seen them on her plants a year before, but thought that they were lady bugs. In September and October, general entomology surveys by Los Angeles County Agricultural Inspectors A. Zavala and A. Pomjanek found them on daikons, turnips, and broccoli in several organic vegetable farms in Pico Rivera, Bell Gardens, Altadena and Long Beach. Arakelian later observed heavy infestations of larvae (nymphs) and adults which seemed less active during hot times of the day and preferred feeding in early morning and late afternoon hours. They were also observed in November actively feeding during 43° F and in heavy rain. Infested plants were dry, wilted and had white puncture spots turning into larger dry patches. In December, Orange County Entomologist Nick Nisson submitted specimens from the City of Orange which were also feeding on Alyssum.

The species has spread east into the Coachella Valley where it was observed in large numbers attacking lemons and it has also been reported as a pest of *Brassica* weeds, seed crops, canola, and cotton in the Yuma region of Arizona.

This small but colorful stink bug is similar to the common Harlequin stink bug (see figure), *Murgantia histrionica* (Hahn) but is smaller (4-6 mm) and can be distinguished by its distinctive color pattern. According to Derzhanchi. & Péricart (2005) *Bagrada hilaris* occurs in the eastern Mediterranean, Asiatic, and Afrotropical regions.

A pest sheets prepared by Dr. Arakelian can be found on pages 24-26.

Literature Cited

Derzhanchi, V. & Péricart, J. 2005. *Hémiptères Pentatomoidea Euro-Méditerranéens*. Volume 1. Faune de France

LEFT: the Bagrada bug, *Bagrada hilaris* & **RIGHT:** the harlequin stink bug, *Murgantia histrionica* (Photos: R. Garrison, CDFA PPDB).

Red Bug

Pyrrhocoridae: *Scantius aegyptius* (Linnaeus)

New State Record

Prepared by R. Garrison

LEFT: Dorsal and **RIGHT:** lateral of *Scantius aegyptius* (Photos: R. Garrison, CDFA CPPDB)

In June 2009, Dr. Rosser Garrison received specimens of this Old World cotton stainer from Orange County entomologist Nick Nisson where they were taken in San Juan Capistrano accompanied by a note stating that there were "thousands" everywhere." Garrison identified these as *Scantius aegypticus* (Linnaeus), a common Euro-Mediterranean pyrrhocorid, and Dr. Tom Henry of SEL confirmed his identification. This distinctive red and black species has spread throughout the southern California counties where it has become a noticeable nuisance pest.

Dr. Thomas Henry added the following: "This is a common, mostly ground-inhabiting species that feeds on fallen seeds. Its Old World distribution, based on the recent Palearctic Heteroptera catalog by Kerzhner (2001) is as follows:

> Europe: Italy, Malta, Portugal, and Spain. Northern Africa: Algeria, Egypt, Canary Islands, Liberia, Morocco, and Tunisia. Asia: Afghanistan, Turkey, Cyprus, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Saudi Arabia, Sinai, Syria, Turkmensitan, and Yemen. Also reported extralimitally from Pakistan.

Further information on this species can be found in Bryant (2009).

An online article plus photographs by Nick Nisson can be found on the Center for Invasive Species Research webpage at: http://cisr.ucr.edu/red_bug.html

Literature Cited

Bryant, P. J. 2009. Invasion of southern California by the Palearctic pyrrhocorid *Scantius aegypticus* (Hemiptera: Heteroptera: Pyrrhocoridae). The *Pan-Pacific Entomologist* 85(4): 190-193

Kerzhrer. 2001. Pyrrhocoridae. pp. 248-258. *In*: B. Aukema & C. Reiger, eds. Catalogue of the Heteroptera of the Palaearctic Region, Volume 4. Pentatomomorpha I. The Netherlands Entomological Society

HEMIPTERA: STERNORRYNCHA

Giant Whitefly

New County Record

ALEYRODIDAE: *ALEURODICUS DUGESII* (COCKERELL)

PREPARED BY G. WATSON

Aleurodicus dugesii continues to extend its range slowly in California. It was first recorded from Contra Costa County on *Xylosma* sp. in a residence garden in Antioch by Agricultural Biologist Jorge Vargas on 11 August 2008. For the previous history of giant whitefly in California, and its range of host plants, see CPPDR 22(1): 17-18, 23: 11 and 24: 12. An Insect Pest Sheet on this insect is available online at: http://www.cdfa.ca.gov/plant/PPD/pest_sheets.html

Giant whitefly, *Aleurodicus dugesii*, nymphs. (Photo: D.Cappaert, Michigan State Univ., Bugwood.org)

Urban Soft Scale

New County Record

COCCIDAE: *PULVINARIA URBICOLA* COCKERELL

PREPARED BY G. WATSON

Pulvinaria urbicola is known to be present outdoors in San Diego and Orange counties. It was first recorded from Santa Barbara County in Santa Maria, on trumpet vine outdoors by the Deputy Agricultural Commissioner, Joe Karl, on 11 May 2005.

Green Shield Scale

A Record of Interest

COCCIDAE: *PULVINARIA PSIDII* MASKELL

PREPARED BY G. WATSON

An extremely heavy infestation of *P. psidii* was collected by Ed Pearson (Agricultural Standards Officer) on 24 July 2009 in San Bernardino Co., Chino, on *Schinus terebinthifolius* in a back yard. This was the second record from San Bernardino Co.; the previous outdoor record was in 1996.

Name Changes

Hemiptera: Sternorrhyncha
Aleyrodoidea
Aleyrodidae

Numerous new combinations and synonymies of whitefly names have been made in the last few years. These are summarized by Martin, J.H. & Mound, L.A. (2007) (An annotated check list of the world's whiteflies (Insecta: Hemipera: Aleyrodidae). *Zootaxa* 1492: 1-84), available online for free at: http://www.mapress.com/zootaxa/2007f/zt01492p084.pdf

An Asian Aphid

New State Record

APHIDIDAE: *SINOMEGOURA CITRICOLA* (VAN DER GOOT)

PREPARED BY G. WATSON

Sinomegoura citricola adult aptera. (Photo: Halbert, S.E., 2009)

In early April 2009, Dr. Susan Halbert (DOACS, Florida) was visiting California, Riverside Co., for citrus greening business. She accompanied CDFA inspectors on some follow-up visits for the citrus greening hotline. At a residence in Hemet, she found unusual aphids on a lemon tree, identified as *Sinomegoura citricola.* Her species identification was confirmed by Dr. Gary Miller, USDA (Halbert 2009). This was a new hemisphere, continental, state and Riverside County record. Surveys by state and county crews have failed to find the aphid again, and no adverse effects of its presence in California have been noticed so far.

Sinomegoura citricola is native to Asia, occurring in both Southeast Asia and the Indian subcontinent. It feeds on many plants including citrus, camellia, *Ficus*, mango and avocado. This aphid is not known to transmit citrus tristeza virus, but a report from Taiwan indicates that it is among the many species that transmit papaya ringspot virus (Wang 1981). Fortunately it is not known to cause much damage or to transmit either plant pathogens. The unsettling implication is that some infested plant material, possibly citrus, had entered California from Asia undetected.

In life, adult apterae of *S. citricola* are shiny chestnut brown with a black cauda longer than a siphunculus. Each siphunculus has a pale base and dark tip, and the antenna is banded in both nymphs and adults (see figure below).

LITERATURE CITED

Halbert, S.E. 2009. Entomology section. *Tri-ology* 48(2): 2, available online at: http://www.doacs.state.fl.us/pi/enpp/triology/4802/triology_4802_entomology.html

Wang, H.L. 1981. Aphid transmission of papaya ringspot virus in Taiwan. *Plant Protection Bulletin* 23: 229-233

Name Changes

Hemiptera
Sternorrhyncha
Coccoidea
Margarodidae sensu lato

The higher classification of Hemiptera: Sternorrhyncha: Coccoidea has been undergoing major revision in recent years. The Margarodidae (sensu lato) has been divided into 11 families on the basis of male morphology (see Hodgson, C. & Foldi, I. (2006) A review of the Margarodidae sensu Morrison (Hemiptera: Coccoidea) and some related taxa based on the morphology of adult males. *Zootaxa* 1263: 1-250), available online for free at: http://www.mapress.com/zootaxa/2006f/z01263p250f.pdf

The generic classification of one of the newly-erected margarodid families, Monophlebidae, has been revised (see Unruh, C.M. & Gullan, P.J. (2008) Molecular data reveal convergent reproductive strategies in iceryine scale insects (Hemiptera: Coccoidea: Monophlebidae), allowing re-interpretation of morphology and a revised generic classification. *Systematic Entomology* 33: 8–50), available online for free at:

http://entomology.ucdavis.edu/gullanandcranstonlab/Gullanpublications.html

Within the Monophlebidae, the genera *Gigantococcus, Crypticerya* and *Icerya* have been revised, resulting in numerous generic reassignments of species such as *Steatococcus samaraius* Morrison to the genus *Icerya*, as *I. samaraia* (Morrison) (see Unruh, C.M. & Gullan, P.J. (2008) Identification guide to species in the scale insect tribe Iceryini (Coccoidea: Monophlebidae). *Zootaxa* 1803: 1–106), available online for free at:

http://entomology.ucdavis.edu/gullanandcranstonlab/Gullanpublications.html

Numerous other papers on scale insects are available from this website also.

Coniferous Fiorinia Scale

DIASPIDIDAE: *FIORINIA JAPONICA* KUWANA

New State & County Record

PREPARED BY G. WATSON

Fiorinia japonica was first recorded in California from Bakersfield, Kern County (Essig 1910) and from some nurseries in Los Angeles and Alameda Counties in 1938 and 1942 (McKenzie 1956). It was not collected subsequently and was thought to have been eradicated from California (Gill 1997).

On 24 November 2008, a resident submitted a sample of armored scales damaging a fir tree *(Abies* sp.) from a back yard in Long Beach to the Los Angeles County Agricultural Commissioner's office for identification. This sample, identified as *F. japonica*, is regarded as a new introduction of the species to California. Re-sampling by the Los Angeles County Entomologist, Dr Gevork Arakelian, confirmed this new state and Los Angeles county record. The level of infestation suggested that it had been there for some time, and delimitation surveys and eradication activities took place in March and April 2009.

Coniferous fiorinia scale is native to Asia and was accidentally introduced to the United States on ornamental plants; it is established in the District of Colombia, Maryland and Virginia. It is apparently restricted to coniferous hosts, e.g. species of *Abies, Cephalotaxus, Cupressus, Juniperus, Picea, Pinus, Podocarpus, Sciadopitys, Taxus, Torreya* and *Tsuga* (Miller & Davidson 2005). Early host records included non-coniferous hosts like species of *Aucuba*, *Chrysalidocarpus,*

TOP: Needle chlorosis and premature drop on *Abies* sp. caused by *Fiorinia japonica*. **BOTTOM LEFT:** Immature scale covers, male above and adult female below, note dark dorsal patch on female scale cover. **BOTTOM RIGHT:** An infestation of *F. japonica* on undersides of leaves. Photos: Dr G. Arakelian, Los Angeles County Entomologist

Eurya, Ficus, Phoenix, Pittosporum and *Thea*, but these may have been based on misidentifications.

Coniferous fiorinia scale is an occasional pest of conifers in Washington D.C., causing chlorosis, leaf drop and an unsightly appearance (Miller & Davidson 2005, see top figure). It can be a serious pest of pine trees in Beijing, China (Tang 1984).

In the field, adult female coniferous fiorinia scales often have a dark brown to black dorsal patch on the scale cover (see Figure), and may occur on either surface of the leaf or needle. The cover of the immature male scale is smaller than the adult female, elongate oval, made of white felted material with a yellow cast skin at one end.

Literature Cited

Essig, E.O. 1910. Notes on California Coccidae, V. *Pomona College Journal of Entomology* **2**: 210

Gill, R.J. 1997. *The Scale Insects of California*. Part 3. The Armored Scales: 145).

McKenzie, H.L. (1956) The armored scale insects of California. *Bulletin of the California Insect Survey* 5: 111-113

Miller, D.R. & Davidson, J.A. 2005. Armored Scale Insect Pests of Trees and Shrubs. Cornell University Press, Ithaca, NY, p. 206

Tang, F-D. 1984. Observation on the scale insects injurious to forestry of North China. *Shanxi Agricultural University Press Research Publication* 2: 122-133

Coccoidea: Pseudococcidae:

Gill's Mealybug

New County Record

Ferrisia gilli Gullan

Prepared by G. Watson

Gill's mealybug, *F. gilli*, was recorded for the first time from grapevines in a vineyard in Kelseyville, Lake County, by Kristine Eutenier (Deputy Agricultural Commissioner) and Brock Zoller (Farm Advisor) on 21 May 2009.

Pink Hibiscus Mealybug

New County Record

Maconellicoccus hirsutus (Green)

Prepared by G. Watson

Pink hibiscus mealybug (PHB) was collected outdoors in a small growing nursery in the Coachella Valley, Riverside County, on 6 February 2008 by Agricultural Standards Investigators Richard Shaffer and Charles Hardesty during a regulatory inspection. The mealybugs were damaging and in some cases killing jujube trees. Eradication measures were taken and no more PHB were found in subsequent inspections of the area.

***Maconellicoccus hirsutus* on white mulberry, showing characteristic stunted growth and leaf distortion. (Photo: W. Rolstch, CDFA IPC)**

Tipu Psyllid

New Fedral & State Record

Psyllidae: *Platycorypha nigrivirga* Burckhardt

Preparded By A. Rung

Platycorypha nigrivirga Burckhardt, native to South America, has been discovered for the first time in California. The find also represents a new North American record. The first sample, containing immatures and adults, was collected in October, 2008 in Carlsbad, San Diego Co. A larger infestation was later found in West Hollywood, Los Angeles Co. where more than 400 Tipu trees were planted on the sidewalks and in city parks. Since then, *P. nigrivirga* has also been found also in Orange and Santa Barbara counties. See Rung et al. (2009) for identification, hosts, biology and distribution records. An Insect Pest Sheet can be found on page 31.

Literature Cited

Rung, A., G. Arakelian, R. Gill and N. Nisson. 2009. *Platycorypha nigrivirga* Burckhardt (Hemiptera: Sternorrhyncha: Psylloidea), Tipu Psyllid, New to North America. *Insecta Mundi* 97: 1-5.

Tipu psyllid, *Platycorypha nigrivirga*, adults. (Photo: G. Arakelian, Senior Biologist, Los Angeles Co.)

Asian Citrus Psyllid - A Threat to California Citrus

PSYLLIDAE: *DIAPHORINA CITRI* KUWAYAMA

New State & County Record

PREPARED BY A. RUNG

The Asian Citrus Psyllid (ACP), *Diaphorina citri* Kuwayama is one of the most serious pests of citrus when pathogens that cause citrus greening disease (huanglongbing, herein abbreviated as "HLB") are present (Halbert and Manjunath 2004). Native to Asia, ACP has been known in the Western Hemisphere for several decades in Brazil, having also spread to northern South America, the Caribbean and Southern continental US in the last decade (Halbert and Nunez 2004). Though present in several U.S. states, ACP had not been found in California until fall of 2008. On June 23, 2008, USDA confirmed the presence of ACP in the city of Tijuana, Mexico. The initial ACP specimens were found on a residential property approximately two miles from Mexico's border with California. In the end of August, a single specimen was found in a trap placed in a citrus tree near Sweetwater Reservoir (San Diego Co.), approximately 11 miles north of the international border with Mexico. Since then, breeding populations of ACP have been found in the following counties: San Diego, Imperial, Riverside, Orange and Los Angeles.

Asian citrus psyllid is found throughout southeast Asia and the Indian subcontinent, the islands of Réunion and Mauritius, Saudi Arabia, southern Iran near the border with Pakistan, Brazil, Venezuela, Argentina, the islands of Guadeloupe and Puerto Rico in the Caribbean, Mexico, the Hawaiian Islands and Guam in the Pacific (Halbert and Manjunath 2004). Within the continental United States, it is also found in Alabama, Florida, Georgia, Louisiana, Mississippi, South Carolina and Texas.

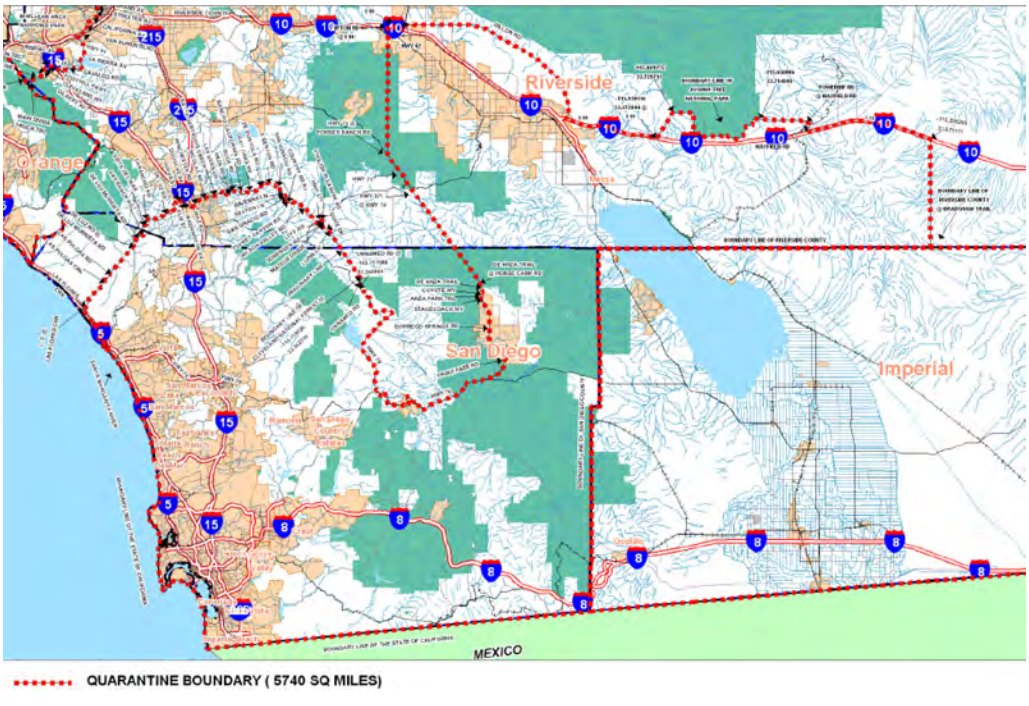
Citrus greening disease, spread primarily by infected ACPs, is one of the worst diseases of citrus caused by a vectored pathogen (Halbert and Manjunath 2004). First reported in China in the late 1800s, the deadly citrus greening disease has already caused devastation in Asia, Africa, the Arabian Peninsula and Brazil. Discovered in Florida in 2005, citrus greening disease has negatively impacted the state's citrus industry in just a few years. Within the United States, HLB is present only in Florida, Georgia, Louisiana and South Carolina.

All citrus and closely-related species in the family Rutaceae are susceptible hosts for both the ACP insect and the HLB disease. A list of hosts, with literature sources, can be found in Halbert and Manjunath (2004) An Insect Pest Sheet can be found on page 29.

LITERATURE CITED

Halbert, S. E.; Nunez, C. A., 2004. Distribution of the Asian citrus psyllid, *Diaphorina citri* Kuwayama (Rhynchota: Psyllidae) in the Caribbean basin. *Florida Entomologist* 87(3): 401-402.

Halbert, S. E.; Manjunath, K. L. 2004. Asian Citrus Psyllids (Sternorryncha, Psyllidae) and greening disease of citrus: a literature review and access of risk in Florida. *Florida Entomologist* 87(3): 330-353.



LEFT: Asian citrus psyllid adult (Photo: Dr G. Arakelian, LA County). The first ACP in California was caught on August 27th, 2008 in San Diego county. Since then it has spread to Imperial, Orange & Los Angeles County. **RIGHT:** Map of quarantine boundaries in Riverside and San Diego Counties, as of Nov. 30th 2009.

LEPIDOPTERA

A Close-up View of the Larva of the European Grapevine Moth

TORTRICIDAE: *LOBESIA BOTRANA* DENIS & SCHIFFERMÜLLER

New Fedral & State Record

PREPARED BY M. EPSTEIN & O. SAGE

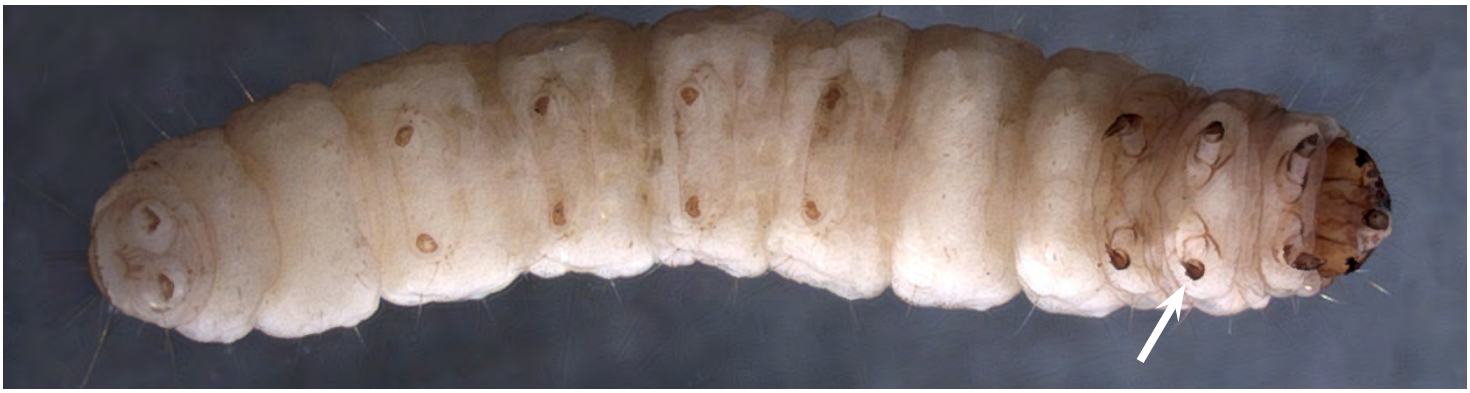
The European grape vine moth, *Lobesia botrana* (Denis and Schiffermüller), is one of the most serious grape pests. Their caterpillars feed on grape flowers and berries, causing direct damage as well as promoting secondary infection by *Botrytis cinerea* Persoon (botrytis bunch rot or gray mold). On September 30, 2009, larvae damaging grapes in the Napa Valley were identified as *L. botrana*, representing the first records of this species in North American. The presence of *L. botrana* could have a significant impact on California agriculture—wine, table, and raisin grapes are grown on more than 800,000 acres throughout the state and it has been recorded on over 40 families of plants (Gilligan et al, 2011).

Lobesia botrana is native to the Palearctic Region and has a wide distribution in Western Europe, Central Asia, and northern Africa. In April 2008 *L. botrana* was discovered in Chile, where it quickly spread to all grape growing regions. It was subsequently found in Argentina and adult *L. botrana* were collected in pheromone traps in Napa and Sonoma Counties through late October, 2009.

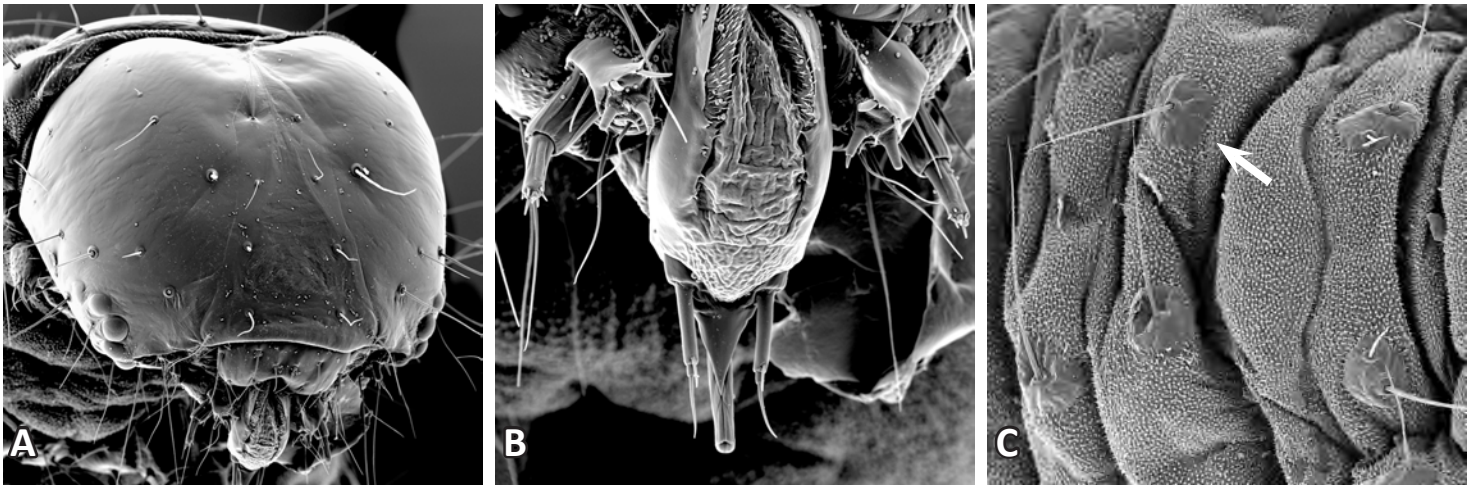
LITERATURE CITED

Gilligan, T. M., B. W. Brown, M. E. Epstein, S. C. Passoa, J. A. Powell and O. C. Sage. 2011. Discovery of *Lobesia botrana* (Denis & Schiffermüller) in California: an invasive species new to North America (Lepidoptera: Tortricidae). *Proceedings of the Entomological Society of Washington*. 113(1): 14-30.

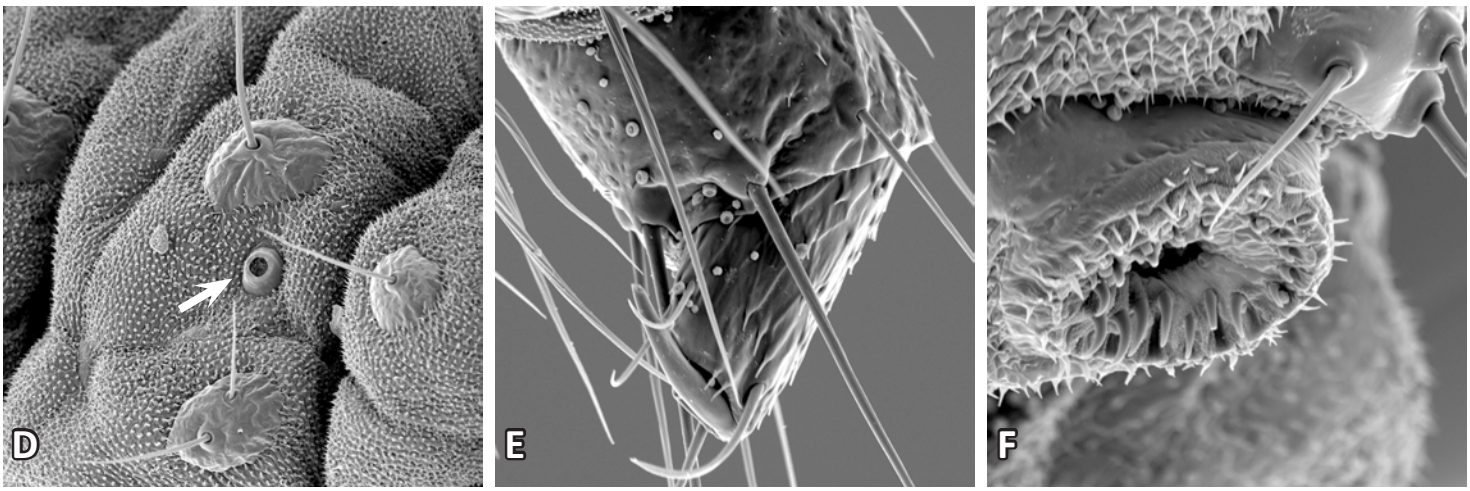
Detailed images of the caterpillars of the European grapevine moth are surprisingly lacking in the literature of this invasive species. This article shows detailed views of various body regions, some critical to proper diagnosis. In life these caterpillars take on the color of the grape berries they feed on. The detailed images presented on the following page were taken with a scanning electron microscope (SEM) which does not measure color and thus the images on the following page are presented in black and white.



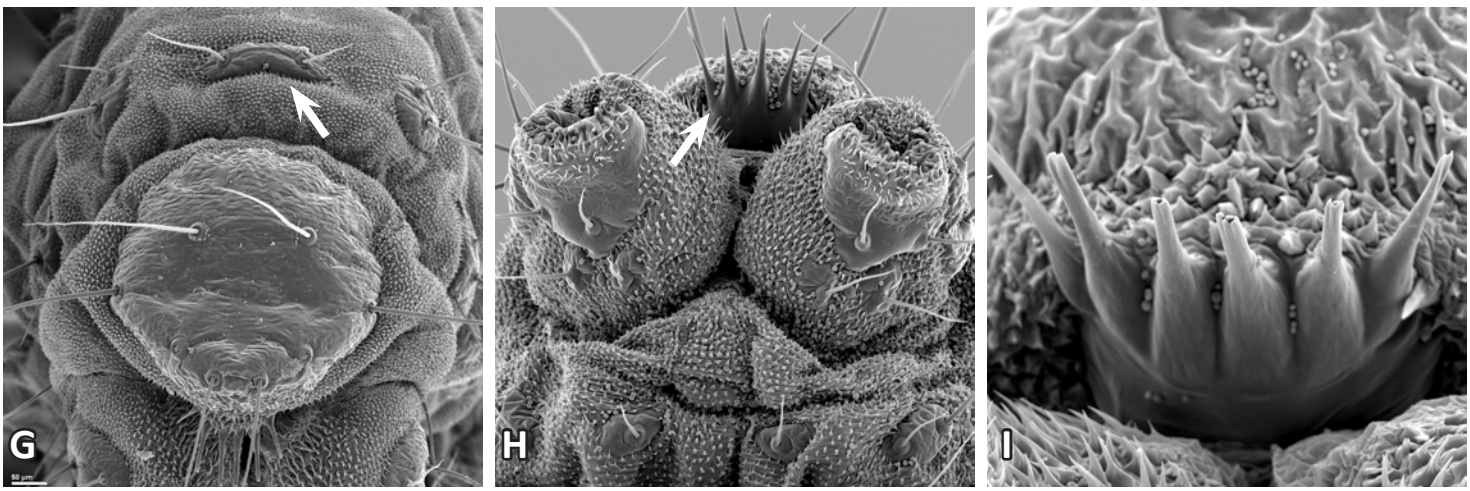
TOP: The back (dorsum). Behind the head is the prothorax with dark color along the edges. The amount of dark can vary from the amount shown to covering most of the upper surface. **BOTTOM:** The underbelly (ventrum). Note: the darkened "true" legs, which separate it from many related species. (Photos: M. Epstein, CDFA PPDB)



A. The head. Note: the round eyes (stemmata) on each side, and arrangement of hairs (setae) in the middle portion. B. The straw-like structure (spinneret) is used to put silk on the grape vines. It is located below the oral cavity. C. Detail view of textured skin (cuticle) on the dorsum. Smooth areas around the setae (hairs) are called the pinacula.



D. A breathing opening (spiracle) on the side of the body is visible (arrow). E. One of six "true" legs on the thorax. Note: the claw on the end. F. One of ten prolegs on the abdomen. Note: the many hooks in the circular structure.



G. Smooth plate on the dorsum of the rear (posterior) end. Note: the small and smooth plate above, on the previous segment (arrow). H. Spines on the ventrum at end of the abdomen are called the anal fork. I. Close-up of the anal fork. Note: The number of spines is a useful diagnostic feature.

SEM Photomicrographs by M. Epstein & O. Sage, CDFA PPDB.

ORTHOPTERA

Southern Mole Cricket

An Interesting Find

GRYLLOTALPIDAE: *SCAPTERISCUS BORELLII* GIGLIO-TOS

PREPARED BY R. GARRISON

Since our last report (2008. California Plant Pest and Disease Report (CPPDR) 24: 14), adults of this species have been collected at the Agricultural Inspection Station at Blythe, Riverside County as well as in moist sandy areas next to the Colorado River. Specimens were originally sent to the lab with the remark "Live mole crickets were found at the Blythe station crawling around the lanes." A pest sheet prepared by Dr. Gevork Arakelian can be found on page 35.

THYSANOPTERA

Myoporum Thrips

New County Record

PHLAEOTHRIPIDAE: *KLAMBOTHRIPS MYOPORI* MOUND & MORRIS

PREPARED BY G. WATSON

Klambothrips myopori continues to extend its range in California. It was first recorded from Santa Cruz County on *Myoporum* sp. in a residence garden in Scotts Valley by Tony Dennis (Agricultural Weights and Measures Inspector) on 24 July 2008. The first record from San Mateo County was found on *Myoporum* spp. in a residence garden in Redwood City by Leonard Kuwahara (Agricultural Biologist) on 22 August 2008. Another new county record, in Marin County, was found on *Myoporum* sp. in an amenity area in Tiburon by Al Powell (Agricultural Weights and Measures Inspector) on 30 September 2008. The first record of myoporum thrips from Contra Costa Co. was collected on *Myoporum* sp. in a back yard in Pleasant Hill by Susie Somers (glassy winged sharpshooter Specialist) on 22 April 2009. This pest now occurs in 12 counties: Contra Costa, Los Angeles, Marin, Orange, Riverside, San Diego, Santa Barbara, San Luis Obispo, Santa Clara, Santa Cruz, San Mateo and Ventura. For the previous history of myoporum thrips in California, and its range of host plants, see CPPDR 24: 17 and 23: 14-15. An Insect Pest Sheet on this pest is available on page 33.

INSECT PEST SHEETS

We continue our color pest sheets documenting new or interesting pests relevant to California agriculture. In this issue, we present eight sheets which include:

- Small Hive Beetle, *Aethina tumida*
- Harlequin Bug, *Murgantia histrionica*
- Bagrada Bug, *Bagrada hilaris*
- Spotted Winged Drosophila, *Drosophila suzukii*
- Asian Citrus Psyllid, *Diaphorina citri* - NOTE: Pest sheet indicated not present in California, but is under eradication.
- Tipu Psyllid, *Platycorypha nigrivirga*
- Myoporum Thrips, *Klambothrips myopori*
- Southern Mole Cricket, *Scapteriscus borellii*

All these and past pest sheets can be freely downloaded from the CDFA's Plant Pest Diagnostic Center website available at: http://www.cdfa.ca.gov/plant/ppd/pest_sheets.html

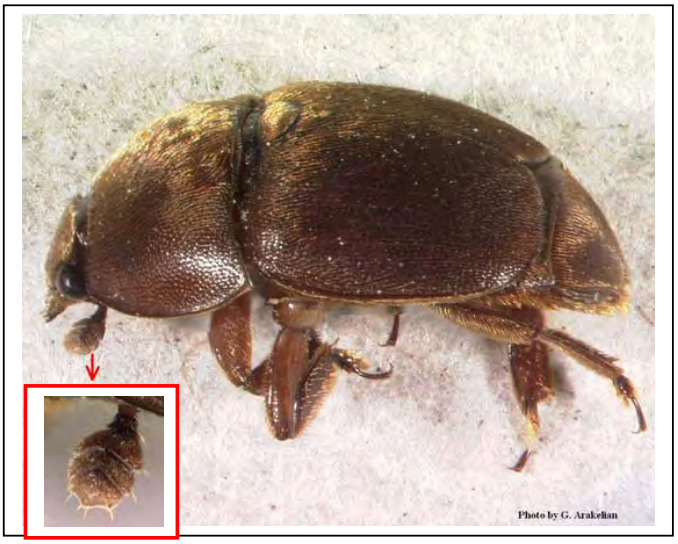
We would like to thank our colleague, Dr. Gevork Arakelian, Los Angeles County Entomologist for making many of the presented pest sheets.

COUNTY OF LOS ANGELES
AGRICULTURAL COMMISSIONER/WEIGHTS AND MEASURES DEPARTMENT

Small Hive Beetle *(Aethina tumida)*

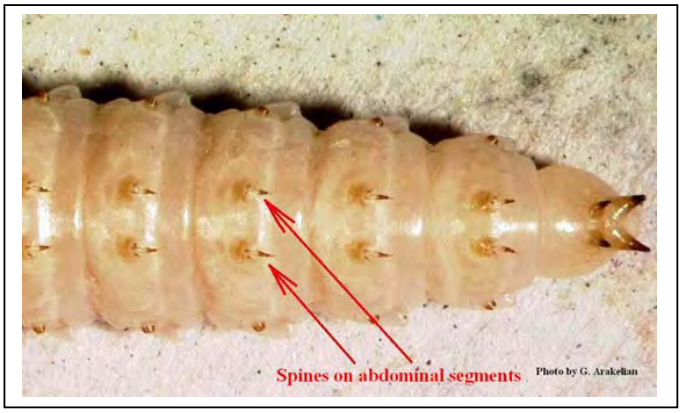
Distribution: Native to South Africa. Introduced to Australia and U.S. (several southeastern and northern states and California).
Damage: Pollen, wax, brood and honey are consumed by larvae (the most damaging stage) and adults. Excrements produced by *A. tumida* may cause honey to ferment and drip out of cells. Heavy infestations threaten the survival of the colony and in some cases force the bees to abandon the nest. It has been shown that *A. tumida* can use various fruits as alternative food sources and complete its life cycle on them.
Field ID: Adult (5-7 mm) has oval shape, reddish-brown to black body. Elytra are short and do not cover the entire abdomen. Antennae with 3-segmented, rounded clubs.
Larva (10-11 mm when fully grown) has cream color body with light brown legs and head. Body segments are armed with prominent, paired, brown dorsal spines.
Pupa light tan to brown color and can be found in the soil not far from the beehives.

Adult (dorsal view)



Adult (lateral view) and antennal club (magnified)

Larva (lateral view)



Larva (dorsal view)

Los Angeles County Agricultural Commissioner/Weights & Measures Department – Prepared by Dr. Gevork Arakelian, January, 2008

COUNTY OF LOS ANGELES
AGRICULTURAL COMMISSIONER/WEIGHTS AND MEASURES DEPARTMENT

Harlequin Bug *(Murgantia histrionica)*

Other common names: Calico bug, Fire bug, Terrapin back.
Distribution: Originated in Central America and Mexico. Introduced and widespread in southern U.S. (from Florida to California) reaching north to Colorado, Minnesota, and New Hampshire. Found also in Hawaii.
Hosts and damage: A pest of crop plants from *Brassicaceae (Cruciferae)* family (watercress, cabbage, cauliflower, broccoli, kale, turnip, mustard, radish, etc.). May also attack okra, beans, tomato, squash, potato and others. Adults and nymphs suck juices of host plants producing stippled, wilted areas on the leaves.
Field ID: Adults (7.5-11.0 mm long) have black, shield-shaped bodies with variable pattern of yellow, orange and red. **Nymphs** pass through 5 instars. First instar has light orange abdomen with black markings and brown head and thorax. Later instars add more black color to their bodies with contrasting bright yellow and red. **Eggs** are barrel-shaped, grayish-yellow with two black bands. Females lay them in clusters beneath the leaves.

Prepared by Dr. Gevork Arakelian, Senior Biologist, Los Angeles County Agricultural Commissioner/Weights and Measures Department
- October, 2008 -

COUNTY OF LOS ANGELES
AGRICULTURAL COMMISSIONER/WEIGHTS AND MEASURES DEPARTMENT

Bagrada Bug *(Bagrada hilaris)*

Other common name: Painted bug.
Distribution: Known from Africa, southern Asia and southern Europe. In the U.S.: California.
Hosts and damage: A major pest of crop plants from *Brassicaceae (Cruciferae)* family (cabbage, kale, turnip, cauliflower, mustard, broccoli, radish, etc.) in many parts of the Old World. Attacks also papaya, potato, maize, sorghum, cotton and others. Adults and nymphs suck juices of host plants, leave large stippled or wilted areas on the leaves and often stunt the growth of newly formed central shoots or heads of plants. Populations can built up quickly reaching pest proportions.
Field ID: Adults (5-7 mm long) have black, shield-shaped bodies with distinctive white and orange markings. Females are larger than males. **Nymphs** pass through 5 instars. First instar has reddish-brown head, thorax and bright red abdomen. Later instars become darker (adding black color to their body) and develop wing pads. **Eggs** are oval, creamy-white and turn orange as they age. Females lay them in the soil beneath host plants, but may also oviposit on the leaves.

10/07/2008

Damage on Japanese radish (Daikon)

Adults in copulation

Adults & nymphs on Alyssum plants

Prepared by Dr. Gevork Arakelian, Senior Biologist, Los Angeles County Agricultural Commissioner/Weights and Measures Department
- October, 2008 -

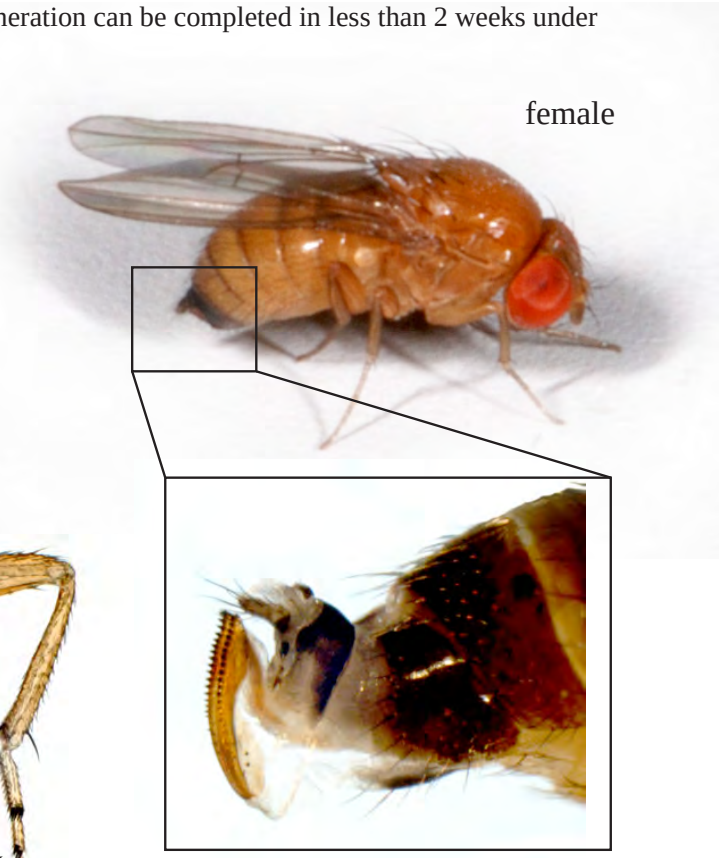
Spotted Winged Drosophila

Drosophila suzukii, (Matsumura 1931)

Distribution: Japan, Korea, Russia (Far East), China, Myanmar, Thailand, India. Recently reported from Spain (2008) and Italy (2009). Known from Hawaii (1983) and North America, USA (CA, OR, WA, FL) and Canada (BC) (2009).

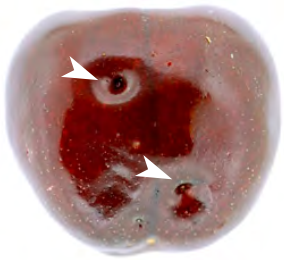
Host and Damage: Unlike most Drosophila, this species lays eggs in healthy fruit and can cause significant damage, but also can breed in rotting fruit. The preferred hosts in California are various cherries and raspberries, but also strawberries, nectarines, boysenberries, Asian plums, plums, plumcots, Satsuma plums and blackberries. In Japan significant damage is reported from blueberries, as well as grapes and mulberries.

Field identification: Adults brownish orange with red eyes, 2.5 - 3 mm, males with conspicuous black apical wing spot, and two rows of black combs on the front leg; females with distinct sawing ovipositor. Infected cherries have dimple like ovipositon scars. Larvae white elongate cylindrical, tapered apically, up to 3.5 mm. Pupa brown oval shaped with a pair of antler like spiracles at one end. Pupation in or on fruit or in the soil. Adults can be active all year around. One generation can be completed in less than 2 weeks under favorable conditions.



male genitalia

ovipositor



cherry with
oviposition scars

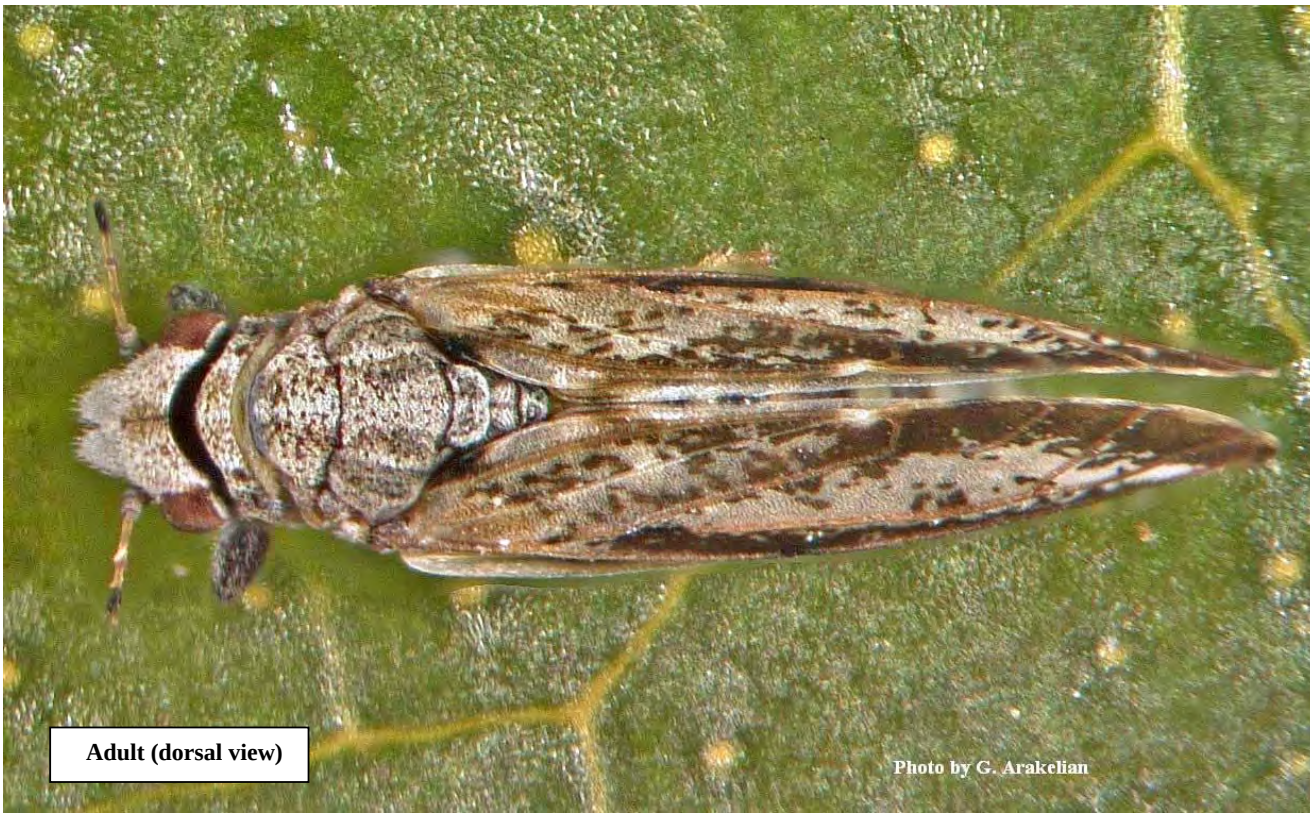
California Department of Food and Agriculture - Prepared by M. Hauser April 2010


Spotted Wing Drosophila Detections in California 2009
Del Norte
Siskiyou
Modoc
Humboldt
Trinity
Shasta
Lassen
Tehama
Plumas
Butte
Glenn
Sierra
Mendocino
Colusa
Yuba
Placer
Lake
Sutter
Yolo
El Dorado
Alpine
Sonoma
Napa
Sacramento
Amador
Solano
Calaveras
Tuolumne
Mono
Marin
Contra Costa
San Joaquin
San Francisco
Alameda
Stanislaus
Mariposa
San Mateo
Santa Clara
Merced
Madera
Santa Cruz
Fresno
San Benito
Inyo
Monterey
Tulare
Kings
San Luis Obispo
Kern
Santa Barbara
San Bernardino
Ventura
Los Angeles
Orange
Riverside
San Diego
Imperial
Nevada
Mexico
Drosophila suzukii Detection
County with Detection
County
Map Printed: 3-10-2010
Made By: Ceema Feizollahi
MapInfo 10.0 Streetpro v 10
cdfa
CALIFORNIA DEPARTMENT OF FOOD & AGRICULTURE

COUNTY OF LOS ANGELES
AGRICULTURAL COMMISSIONER/WEIGHTS AND MEASURES DEPARTMENT

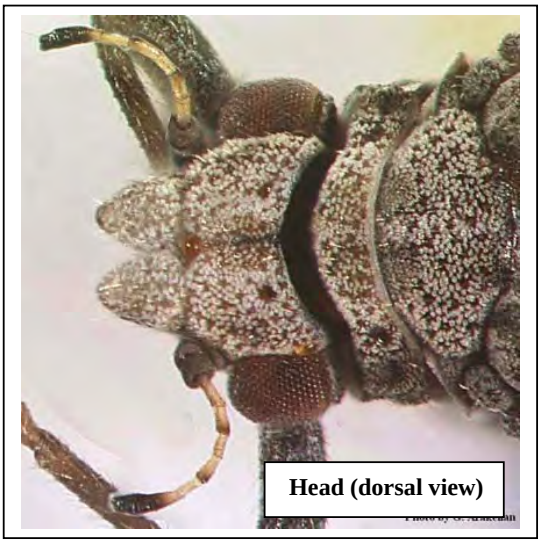
Asian citrus psyllid *(Diaphorina citri)*

Other common names: Citrus psylla, Oriental citrus psyllid, Asiatic citrus psyllid.
Distribution: Widely distributed from southeastern Asia to Iran. Found also in Saudi Arabia, on the islands of Reunion and Mauritius, in South and Central America, Mexico, and in the Caribbean Basin. In the U.S.: Florida, Texas and Hawaii. **Not present in California.**
Hosts and damage: Feeds on citrus and some closely related plants of the *Rutaceae* family. Feeding may cause distortion of leaves and young shoots. Infested plant parts are often covered with wax and honeydew (upon which sooty molds grow) produced by nymphs. High populations are able to stunt the growth of young citrus trees. *D. citri* is a vector of the bacterium causing citrus greening disease or huanglongbing ("yellow dragon disease" in Chinese).
Field ID: Adults (about 3-4 mm) have grayish-tan bodies with brown markings and mottled brown wings. Last two segments of antennae are black. Feed with posterior parts of their bodies raised at 45° angle to the substrate. Jump or fly readily when approached.
Nymphs have yellow to brown oval bodies with well-developed wing pads. Pass through 5 instars.
Eggs: Yellow to orange color; almond-shaped.



Adult (dorsal view)

Adult (lateral view)



Head (dorsal view)

Forewing

Female genitalia

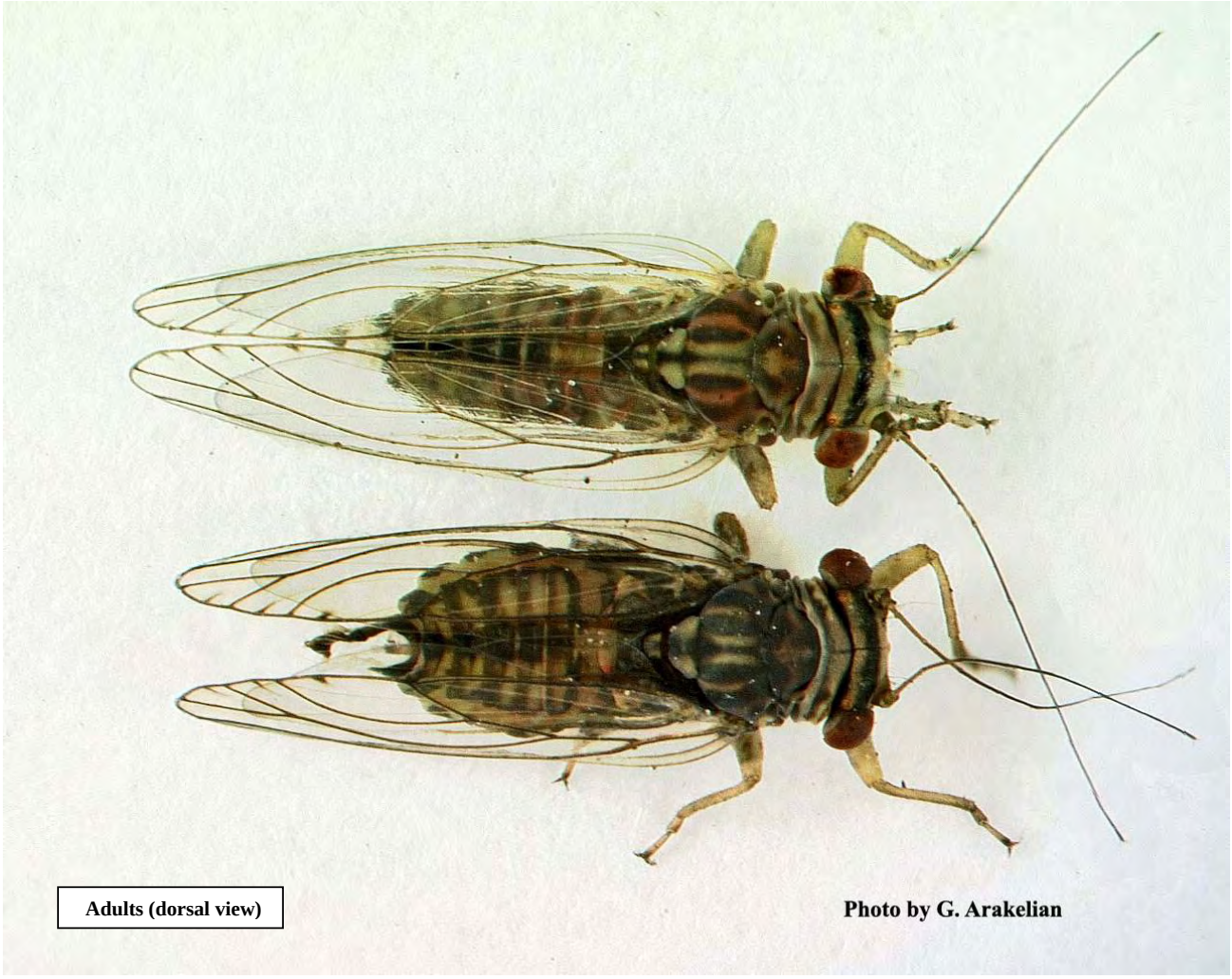
Male genitalia

Los Angeles County Agricultural Commissioner/Weights & Measures Department – Prepared by Dr. Gevork Arakelian, February 2008

COUNTY OF LOS ANGELES
AGRICULTURAL COMMISSIONER/WEIGHTS AND MEASURES DEPARTMENT

Tipu Psyllid *(Platycorypha nigrivirga)*

Distribution: Known from Argentina, Bolivia, Brazil, Uruguay, and Spain. In the U.S.: California.
Hosts: Tipu tree *(Tipuana tipu)*.
Damage: Adults and nymphs suck juices of host plants, leave stippled, distorted leaves and cause defoliation. Infested trees are contaminated with masses of wax and sticky honeydew produced by nymphs. Honeydew deposits are often covered with black sooty mold. Tipu psyllid populations can build up quickly and reach pest proportions.
Field ID: Adults (3.0-4.0 mm long) have yellowish-green bodies with distinct brown, black or orange markings. Females are larger than males. Adults jump or fly readily when disturbed.
Nymphs have shiny, yellowish-orange bodies with contrasting black markings. Wing pads are well developed, dark brown to black.



Adults (dorsal view)

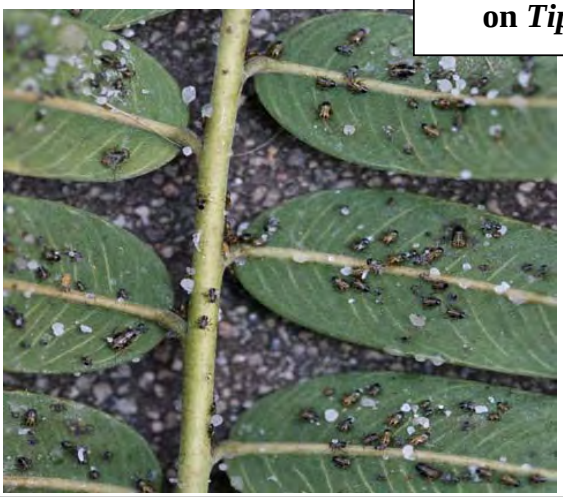
Photo by G. Arakelian

March, 2009

Nymphs in various stages of development

Photo by G. Arakelian

Infestation and damage on *Tipuana tipu*



Prepared by Dr. Gevork Arakelian, Senior Biologist, Los Angeles County Agricultural Commissioner/Weights and Measures Department
- March, 2009 -

COUNTY OF LOS ANGELES
AGRICULTURAL COMMISSIONER/WEIGHTS AND MEASURES DEPARTMENT

New Agricultural Pest for Southern California

Myoporum Thrips *(Klambothrips myopori)*

Distribution: Originated in Australia or New Zealand. Accidentally introduced and now widespread in Southern California. Described as a new species (and under a new genus name) from specimens collected in California.
Hosts: Attacks various species of *Myoporum*.
Damage: Feeds on foliage, causing distortion and inducing leaf-galls (where adults lay eggs and larvae develop) on host plants. *Myoporum* generally tolerates the leaf damage, but heavy infestations can retard the growth, and lead to defoliation and plant death.
Field ID: Adults (about 2-2.5mm) shiny brown to dark brown, with wings and long posterior tube.
Larvae from white to orange color, wingless.

Larva

Leaf-galls

Dead *Myoporum laetum* plants

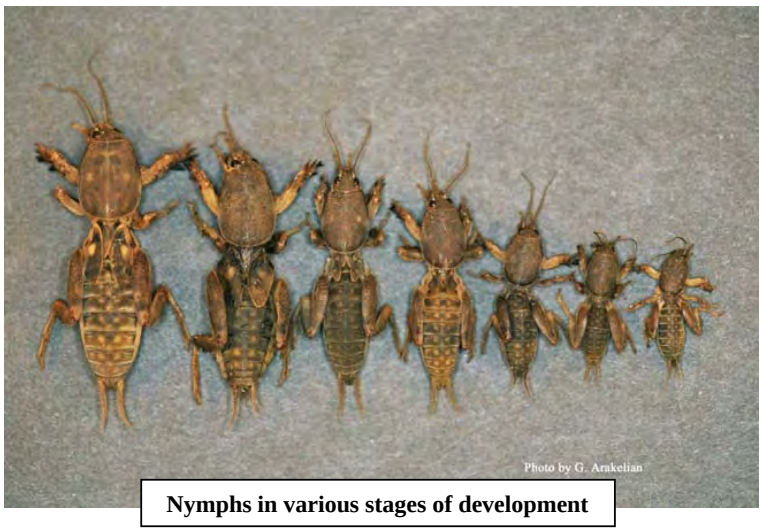
Los Angeles County Agricultural Commissioner/Weights & Measures Department – Prepared by Dr. Gevork Arakelian, July, 2007

COUNTY OF LOS ANGELES
AGRICULTURAL COMMISSIONER/WEIGHTS AND MEASURES DEPARTMENT

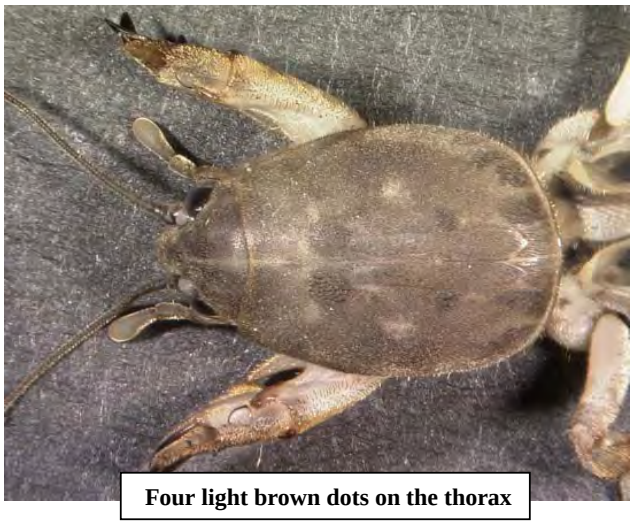
Southern Mole Cricket *(Scapteriscus borellii)*

Distribution: Originated in South America. Introduced into the U.S. and currently widespread from Florida to Texas with isolated population located in southwestern Arizona. In California, *S. borellii* was found in October 2007, in Downey, Los Angeles County.
Diet and damage: *S. borellii* diet mainly consists of various, mostly soil-dwelling, invertebrates, and it can also include some plant material. Tunneling and excavation of soil may cause damage to turf and destroy seedlings of plants.
Field ID & life cycle: Adults and nymphs have mostly dark brown bodies with some light brown markings. Dorsal side of the thorax often with four distinctive light brown dots. Forelegs are enlarged and designed for digging. Tibiae on the forelegs are armed with two dactyls that have widely separated bases. The forewings of adults do not reach the tip of the abdomen. The hind wings are pointed (when at rest), longer than forewings, and overlap the abdomen. Adults are able to fly. Flights usually start soon after sunset and last about an hour. Young nymphs resemble adults, but are wingless and develop short wings in later juvenile stages. Normally, *S. borellii* has one generation per year, but in some tropical regions it may have a two-generation life cycle.
Eggs light brown, oval. They are laid in groups (25-60 eggs) in underground chambers.

Adult

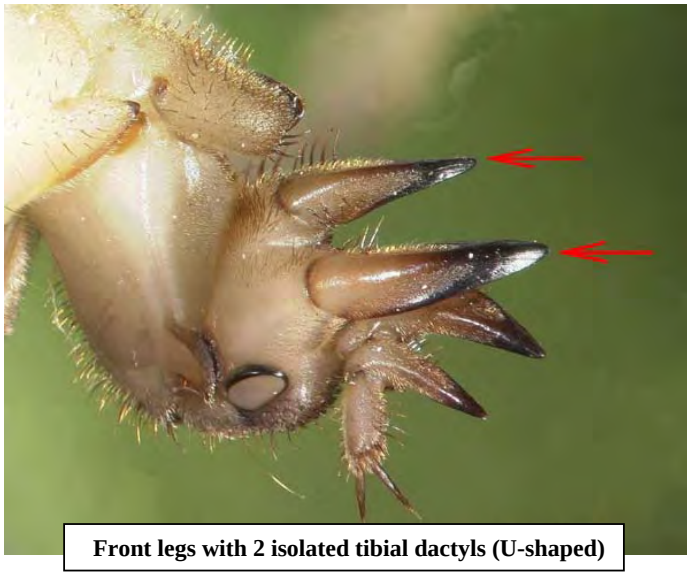


Nymphs in various stages of development



Four light brown dots on the thorax

Anterior view of the body



Front legs with 2 isolated tibial dactyls (U-shaped)

S. borellii excavations and tunneling on the golf course

Prepared by Dr. Gevork Arakelian, Senior Biologist, Los Angeles County Agricultural Commissioner/Weights and Measures Department
- May, 2008 -

SIGNIFICANT RECORDS IN NEMATOLOGY

DETECTION OF PLANT PARASITIC NEMATODES IN CALIFORNIA

2008 - 2009

J. J. CHITAMBAR, K. DONG, S. SUBBOTIN & R. LUNA

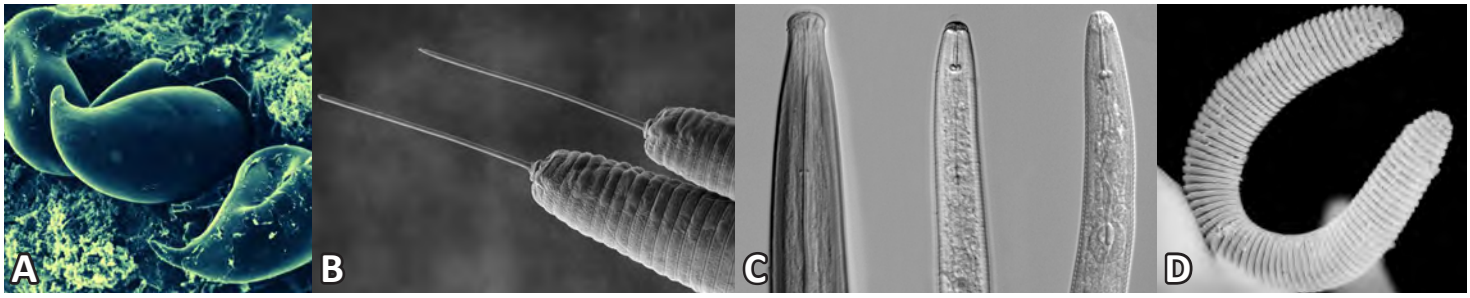


FIGURE 1. Plant parasitic nematodes. **A:** Citrus nematode, *Tylenchulus semipenetrans* females feeding on citrus root; **B:** *Hemicycliophora poranga*; **C:** from left to right, anterior ends of *Longidorus* sp., *Radopholus similis*, & *Rotylenchulus reniformis*; **D:** *Mesocriconema xenoplax*.

In 2008 and 2009 a total of 13,743 samples were diagnosed at the CDFA Plant Pest Detection Center, Nematology Laboratory. A breakdown of sample type per program is presented in Table 1. The bulk of quarantine samples included those entering the State through the External Quarantine for Burrowing and Reniform Nematodes program and those exported to other countries through the Quarantine Phytosanitary Certification Program. The bulk of nursery samples included plants for sale by growers, mainly garlic, strawberries, grape and stone fruit collected through the State's Registration and Certification, and Nematode Control programs. Quarantine and nursery samples comprised of plant tissue and rhizosphere soils.

Nematode Detection Program	Samples
Quarantine (total)	*5,268*
Incoming External Quarantine	3,761
Border Station Interceptions	203
Export Phytosanitary Certification	1,295
Others	9
Nursery (total)	*3,300*
Registration and Certification*	2,605
Nematode Control†	691
Others	4
Commercial (total)	*5,159*
Potato Cyst Nematode Survey	3,734
Golden Nematode Trace-forward Survey	470
CAPS California Nematode Survey‡	876
Assistance to other agencies	31
Others	48
Miscellaneous	
Dooryard/Residential	17
Total	**13,744**

* Includes garlic & strawberry
† Includes stone-fruit & nut trees
‡ '05 -'08 deficit samples

TABLE 1. Total number of samples per program received by the Nematology Laboratory in 2008 & 2009.

SPECIAL SURVEYS

In 2008 and 2009, CDFA's Nematology Laboratory was involved in three major survey projects which were sponsored by the United States Department of Agriculture (USDA). Those projects were:

- CAPS Statewide Nematode Survey
- Potato Cyst Nematode Survey
- Golden Nematode Trace-forward Survey

The operational responsibilities for the three projects (sample collection) were undertaken by the Pest Detection/Emergency Projects Branch (PDEP), while survey planning, sample processing and nematode diagnostics were conducted by the Nematology Laboratory. In addition, CDFA nematologists were involved both individually and collectively in research, training, consultations, professional seminars and committee participatory responsibilities related to the projects.

CAPS STATEWIDE SURVEY

The survey was re-funded by the National Cooperative Agricultural Pest Survey (CAPS) of USDA-APHIS and continued in 2008 having commenced in spring 2005 and funded through 2006, although the work continued well into 2007. The main goal in 2008-2009 was to fill the deficit of samples not collected in 2006-2007 due to a sudden stop in funding of the project, as well as to survey new and old sites of the previous survey. Twenty-two plant parasitic nematode species were targeted for detection. Several of the target species were known to be invasive to the USA and California. Only six of the target species are already known to be present in California namely, *Aphelenchoides besseyi* (white tip of rice nematode), *Ditylenchus destructor* (potato rot nematode), *D. dipsaci* (stem and bulb nematode), *Meloidogyne chitwoodi* (Columbia rootknot nematode), *M. hapla* (Northern rootknot nematode), and *M. javanica* (Javanese rootknot nematode).

A total of 876 survey samples were processed and diagnosed in 2008. Of those 876 samples, 531 were deficit samples of the 2005-2006 surveys and 345 were from new sample sites. Table 2 lists forty-two nematode species belonging to 17 nematode genera detected in the 2008-2009 survey. One thousand and two detections of plant parasitic nematodes were made of which *Mesocriconema xenoplax* and *Xiphinema americanum* sensu lato ranked the highest, followed by six *Pratylenchus* spp. (*P. brachyurus, P. neglectus, P. penetrans, P. scribneri, P. thornei,* and *P. vulnus)*, and collectively, by over six *Paratylenchus* spp. The results of the survey (2005-2009) will be included in a later intended publication on the occurrence, distribution and associated hosts of plant parasitic nematodes

Nematode Species	No.	Nematode Species	No.	Nematode Species	No.
Criconema sp.	1	*Meloidogyne javanica*	33	*Pratylenchus penetrans*	10
Criconemella sp.	5	*Meloidogyne* sp.	4	*Pratylenchus scribneri*	2
Helicotylenchus digonicus	29	*Merlinius brevidens*	108	*Pratylenchus thornei*	47
Helicotylenchus dihystera	29	*Merlinius* sp.	3	*Pratylenchus vulnus*	55
Helicotylenchus pseudorobustus	9	*Paratrichodorus* sp.	17	*Quinisulcius capitatus*	19
Helicotylenchus sp.	4	*Paratylenchus bukowinensis*	15	*Scutellonema clathricaudatum*	1
Hemicycliophora vidua	1	*Paratylenchus dianthus*	3	*Scutellonema conicephalum*	2
Heterodera cruciferae	2	*Paratylenchus hamatus*	116	*Tylenchorhynchus clarus*	2
Heterodera schachtii	31	*Paratylenchus holdemani*	1	*Tylenchorhynchus elegans*	9
Longidorus sp.	5	*Paratylenchus neoamblycephalus*	6	*Tylenchorhynchus mashhoodi*	28
Mesocriconema xenoplax	147	*Paratylenchus similis*	1	*Tylenchorhynchus* sp.	8
Meloidogyne arenaria	1	*Paratylenchus* sp.	3	*Tylenchulus semipenetrans*	5
Meloidogyne hapla	13	*Pratylenchus brachyurus*	12	*Xiphinema americanum*	150
Meloidogyne incognita	10	*Pratylenchus neglectus*	54	*Xiphinema index*	1

Total: *No Plant Parasitic Nematode Found* 340
Total: *Survey Sample Detections* 1,342

TABLE 2. Plant parasitic nematode species detected the 2008-2009 CAPS Survey in California

in California.

Only two of the CAPS target nematode species, namely, *Meloidogyne hapla* and *M. javanica*, already known to be present in California's agricultural production sites, were detected in 2008-2009. The California dagger nematode, *Xiphinema index* was found in Fresno County. This species was not detected in Fresno County in the 2005-2006 CAPS surveys and is of regulatory concern (B-rated pest) to CDFA. All other plant parasitic nematode species are already known to be present and commonly detected to varying degrees within California.

Potato Cyst Nematode Survey

The Potato Cyst Nematode (PCN) Survey was in accordance with USDA's plan to re-convene surveys for the potato cyst nematode every two years. The plan was initiated in 2006 after the first detection of the pale cyst potato nematode, *Globodera pallida*, in Idaho. The 2009 survey was based on California's 2008 potato acreage cultivated to seed and production potatoes. In addition to the 2008 acreage, 11 seed potato fields representing California's potato acreage of 2009, were included. Seed potato was cultivated in four counties, viz., Kern, San Joaquin, San Luis Obispo and Santa Barbara, while production potato was cultivated in seven counties: Kern, Marin, Modoc, San Benito, Siskiyou, Sonoma and Yolo. Unlike the 2006 sampling protocol whereby only perimeter regions of fields were sampled, entire fields were sampled in 2009. All fields per county cultivated for seed potato were sampled, while only ten percent of production potato fields per county were randomly selected for the survey. In both types of fields, soil sampling was done at a rate of three one-pound composite soil samples per acre. Samples were sent in their entirety to the Nematology Laboratory for processing and cyst nematode diagnosis. Soil samples were processed specifically for the extraction of nematode cysts using a combination of the gravity sieving and sugar centrifugation techniques.

A total of 3,734 soil samples were processed and examined. Potato cyst nematodes were not found in any samples, however, cabbage cyst nematode, *Heterodera cruciferae* was found in soil samples collected from a single field in Santa Barbara County.

Golden Nematode Trace-forward Survey

The 2007 detection of the Golden nematode in two potato fields in Alberta, Canada led to the development of USDA-APHIS sponsored "Golden Nematode Trace-forward Survey" of US states that received seed and/or production potatoes from Alberta, possibly traceable from 1998 and forward, or at least, three

FIGURE 2. Certain target species of the CAPS Statewide Nematode Survey. A: Anhydrobiotic, coiled fourth-stage larvae of stem and bulb nematode, *Ditylenchus dipsaci*; B: Sugarbeet cyst nematode, *Heterodera schachtii*, cyst with eggs; C: PCR profle of Columbia root knot nematode, *Meloidogyne chitwoodi* (LN1-LN3) and Northern root knot nematode, *Meloidogyne hapla*, (LN4); D: Pale potato cyst nematode, *Globodera pallida*, white cysts.

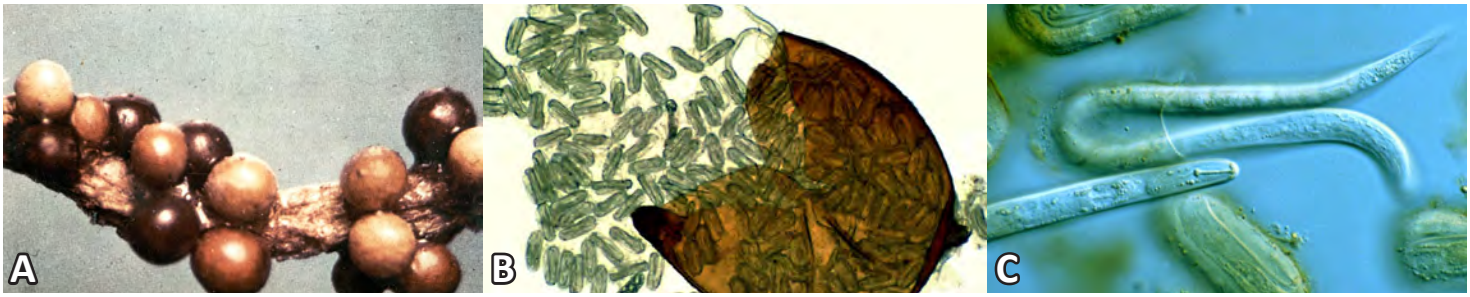


FIGURE 3. Golden nematode, *Globodera rostochiensis*. **A:** cysts; **B:** crushed cyst with eggs; **C:** second stage larvae.

years back for seed and one year back for commercial production. The objective was to determine whether or not potato cyst nematodes had spread from Alberta, Canada to US soils. The survey was necessary in order to achieve early detection of possible GN introductions into California. This would allow CDFA and its cooperators to respond quickly and effectively, and eradicate the pest before it spread to large areas of the state. Pest-free samples would validate the assumption that California is free of GN, and boost confidence of trading partners in California agriculture.

Details of California fields that were planted with Alberta seed potato, year and number of potato shipments from Alberta, field acreage, number of fields, receiving counties and growers in California, and disposition of shipments were worked out by USDA-Surveillance and Internal Trade Compliance (SITC) and communicated to CDFA. Fourteen fields belonging to three California counties (Kern, San Joaquin, and Tulare), had received seed potato from the two infested farms in Alberta. CDFA commenced survey of targeted California potato fields in spring 2008. Entire fields were sampled in accordance to USDA protocol and thereby, resulted in a greater collection of soil per acre for seed potato fields (5lb/acre) than production fields (1lb/acre).

A total of 470 potato soil samples were collected and diagnosed for the golden nematode, pale cyst nematode and any other cyst-forming nematode species associated with potato. No cyst nematodes of any kind were found in the survey.

County	No. of Fields Sampled	Total Area in Acres	No. of Samples Processed	Positive Samples
Kern	11	1,183	341	0
San Joaquin*	2	12	121	0
Tulare	1	40	8	0
Total	14	1,235	470	0

* both fields in San Joaquin were cultization for seed potato. All other fields were in cultivation for production potato.

TABLE 3. California Golden Nematode Trace-forward Summary for 2008-2009.

PHOTO CREDITS

Fig. 1 A: M. MCClure, University of Arizona, Tucson, AZ, Nemapix Ed. J. D. Eisenback & U. Zunke, 1997 slide no. MCC057

Fig. 1 B & D: J. Chitambar, CDFA, PPDB

Fig. 1 C: S. Subbotin, CDFA, PPDB

Fig. 2 A: M. MCClure, University of Arizona, Tucson, AZ. Nemapix, Ed. J. D. Eisenback & U. Zunke, 1997 slide no. MCC016.

Fig. 2 B: Unknown.

Fig. 2 C: K. Dong, CDFA, PPDB.

Fig. 2 D: Uncredited.

Fig. 3 A: Uncredited.

Fig. 3 B: U. Zunke, Institute fuer Angewandte Botanik Pflanzenschutzamt, Hamburg, Germany.

Fig. 3 C: U. Zunke, Institute fuer Angewandte Botanik Pflanzenschutzamt, Hamburg, Germany. Nemapix, Ed. J. D. Eisenback & U. Zunke, 1997 slide no. ZUN123.

PLANT PARASITIC NEMATODE DETECTIONS OF INTEREST & SIGNIFICANCE

J. J. CHITAMBAR, K. DONG, S. SUBBOTIN & R. LUNA

Three quarantine nematode pests namely, white-tip of rice nematode (*Aphelenchoides besseyi*), burrowing nematode (*Radopholus similis*), and reniform nematode (*Rotylenchulus reniformis*) were detected in 2008-2009.

WHITE-TIP OF RICE NEMATODE

Aphelenchoides besseyi was detected from paddy rice seed grown in Sutter County and sampled from shipments intended for export. The nematode species is of very limited distribution within California. The capability of the species to infest and reside dormant in paddy rice glumes and husk makes it a non-desired target pest of several countries that import paddy rice from California.

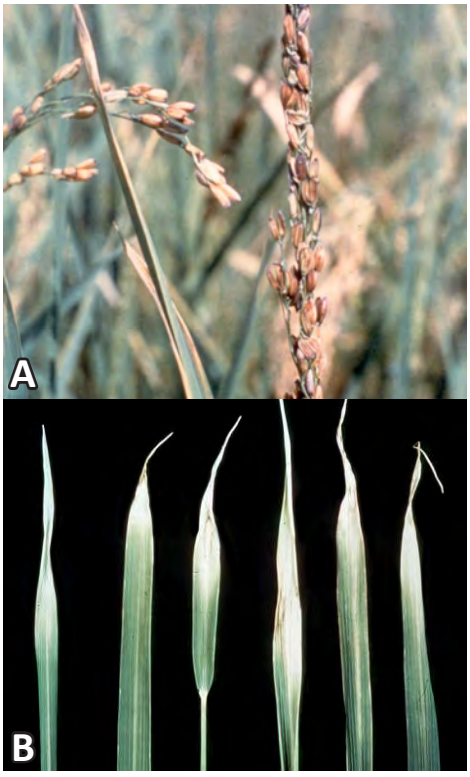


FIGURE 1. White-tip of rice nemataodes, *Aphelenchoides besseyi*. **A:** infested rice panicle; **B:** white tips of infested rice leaves.

BURROWING NEMATODE

Radopholus similis was detected in imported quarantine plant shipments destined to San Diego and San Mateo Counties. The species is not present in California and is a migratory endoparasite of plant roots. CDFA's quarantine program has successfully prevented the long-term establishment of this devastating nematode pest within California agriculture. If allowed entry, establishment and spread, the burrowing nematode can cause serious economic loss, primarily to the State's citrus, strawberry, carrot and ornamental production.

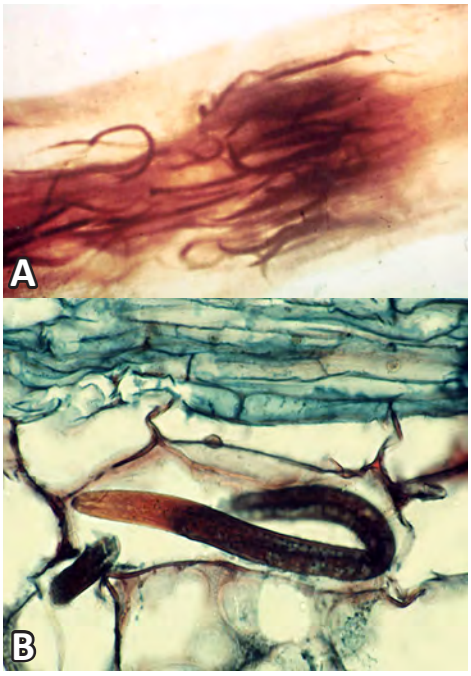


FIGURE 2. Burrowing nematode, *Radopholus similis*, infesting plant roots.

RENIFORM NEMATODE

Rotylenchulus reniformis was detected in eleven shipments of *Dracaena* spp. plants from Hawaii to San Diego, San Francisco and Orange Counties. The quarantine nematode was also detected in two shipments of ornamental plants from Florida destined to Orange County. *R. reniformis* is not present in California agriculture and is a threat primarily to the State's cotton, grape and citrus production.

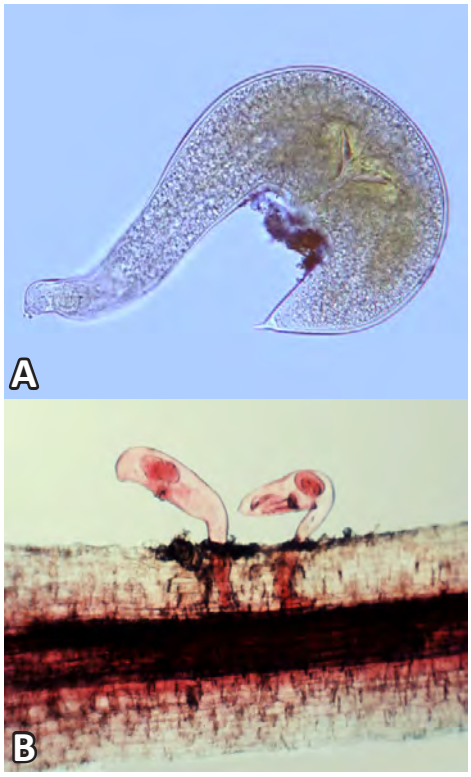


FIGURE 3. Reniform nematode, *Rotylenchulus reniformis*. **A:** Adult female; **B:** female, stained red, feeding on a plant root.

PHOTO CREDITS

1A: M. MCClure, University of Arizona, Tucson, AZ

1B: Nemapix, Ed. J. D. Eisenback & U. Zunke, 1997 slide no. SON057.

2A: Uncredited.

2B: M. MCClure, University of Arizona, Tucson, AZ. Nemapix, Ed. J. D. Eisenback & U. Zunke, 1997 slide no. MCC052.

3A: U. Zunke, Institute fuer Angewandte Botanik Pflanzenschutzamt, Hamburg, Germany. Nemapix, Ed. J. D. Eisenback & U. Zunke, 1997 slide no. ZUN198.

3B: Nemapix, Ed. J. D. Eisenback & U. Zunke, 1997 slide no. SON047.

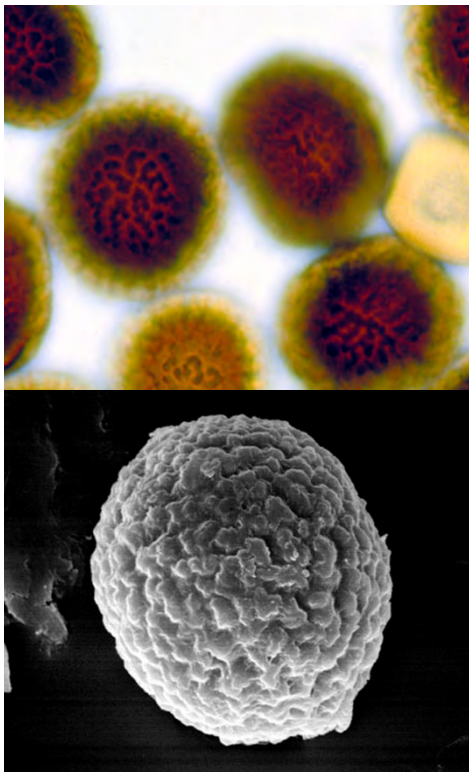
SIGNIFICANT RECORDS IN PLANT PATHOLOGY

KARNAL BUNT OF WHEAT TESTING
2008 & 2009

PREPARED BY T.E. TIDWELL & YUNPING ZHANG

Following is a summary of the Karnal Bunt (KB) wheat testing activities of the CDFA Plant Pest Diagnostics Branch for the Calendar Years 2008 and 2009. This report covers the period from March 1, 2008 through February 28, 2009 and is in partial fulfillment of the Karnal Bunt Contract with the USDA APHIS.

During the 2008 Wheat growing season there were eighty-nine wheat fields in the Palo Verde Valley region (near Blythe, CA, Riverside County) which remains in the Karnal Bunt Federal Quarantine area. A total of eighty-nine wheat fields in this region were tested for the Karnal Bunt pathogen, *Tilletia indica*, at the temporary USDA/CDFA laboratory located at Blythe, CA. Wheat from fields within the federal quarantine area must be tested for the presence of the pathogen, and have no *Tilletia indica* detected, before any wheat is permitted to leave the region. The Karnal Bunt pathogen was not detected in any of the 2008 Blythe wheat samples. During the 2009 wheat-growing season the amount of wheat planted in the quarantine area was sharply reduced. A total of thirty fields were tested for the Karnal Bunt pathogen and the Karnal Bunt fungus was not detected in any of the samples. Thus, by the end of the 2009 season, the Karnal Bunt pathogen had not been detected in any of the wheat fields from the quarantine area for five consecutive years.



TOP: Teliospores of *Tilletia indica*, karnal bunt, in surface view, 160 x (Photo: R. Durán, Washington State Univ., Bugwood.org); **BOTTOM:** A scanning electron micrograph of a Karnal bunt, *Tilletia indica*, spore (Photo: J. Plaskowitz, USDA Ag. Research Service, Bugwood.org)

National Karnal Bunt Survey activities and sample numbers were consistent with those of previous years. In 2008 a total of fifty-four samples from California were tested for the Karnal Bunt pathogen as part of the annual National Karnal Bunt Survey. The Karnal Bunt pathogen was not detected in any of these wheat samples. In 2009 a total of fifty-three samples from California were tested and the Karnal Bunt pathogen was not detected in any of the samples.

A table which summarize the testing activities for the National Karnal Bunt Survey in California can be found below.

NATIONAL KARNAL BUNT SURVEY FOR 2008 & 2009

County	2008	2009	Determination	County	2008	2009	Determination
Alameda	1	0	*T. indica* not detected	Riverside	2	2	*T. indica* not detected
Butte	1	0	*T. indica* not detected	Sacramento	1	1	*T. indica* not detected
Colusa	2	2	*T. indica* not detected	San Joaquin	3	0	*T. indica* not detected
Contra Costa	1	1	*T. indica* not detected	Santa Barbara	1	1	*T. indica* not detected
Fresno	5	5	*T. indica* not detected	Shasta	1	0	*T. indica* not detected
Glenn	1	1	*T. indica* not detected	Sonoma	0	1	*T. indica* not detected
Imperial	10	10	*T. indica* not detected	Stanislaus	1	1	*T. indica* not detected
Kern	3	3	*T. indica* not detected	Sutter	1	1	*T. indica* not detected
Kings	5	5	*T. indica* not detected	Siskiyou	1	1	*T. indica* not detected
Lassen	0	1	*T. indica* not detected	Solano	2	2	*T. indica* not detected
Madera	1	1	*T. indica* not detected	Tehama	1	1	*T. indica* not detected
Merced	1	1	*T. indica* not detected	Tulare	3	3	*T. indica* not detected
Monterey	1	1	*T. indica* not detected	Yolo	4	6	*T. indica* not detected
Placer	1	1	*T. indica* not detected	Yuba	0	1	*T. indica* not detected

TABLE 1. Wheat samples tested and diagnosed for the Karnal Bunt National Survey in 2008 & 2009

DOGWOOD ANTHRACNOSE

PREPARED BY C. BLOMQUIST

Dogwood anthracnose caused by *Discula destructiva* is an important disease of flowering dogwood (*Cornus florida*) and western dogwood (*Cornus nutalii*) in the eastern and the pacific northwestern United States. In the east, the disease has been reported as far north as Massachusetts and as far south as South Carolina and Georgia in gardens and native forest stands of *C. florida*. In the west it is found in Washington, Oregon, Idaho, British Columbia and very northern California where *Cornus nutalii* grows in native stands. It is also widespread in gardens on *C. nutalii* and *C. florida* in the pacific northwest. Dogwood anthracnose was probably introduced separately to both Washington State and Connecticut sometime in the mid 1970's, but its origin is unknown. Genetic data suggests that *Discula destructiva* is an exotic pathogen.

Symptoms appear as leaf spots on newly-expanded leaves in the spring. Leaf spots are tan with reddish to purple margins on sun exposed leaves and dark blotches on shaded leaves. Twig dieback is also a symptom of the disease. In general, symptoms of dogwood anthracnose start in the lower branches and progress up the tree. In time, the infected tree responds to the severe dieback with the production of epicormic shoots which form at the base of the tree. These shoots also become blighted as the fungal infection moves through the shoots into the base of the tree, causing cankers. Symptoms of dogwood anthracnose occur in cool, wet weather usually in spring or fall, but can occur any time of year if conditions are favorable. In wet weather, *Discula destructiva* produces large numbers of small, colorless spores in a pinhead-sized fruiting body called an acervulus. Spores, which are spread by splashing rain, are produced on blighted shoots that have remained attached from the previous year, or on twig cankers. The disease is much more severe on trees that are grown in the shade than in full sun. The host range of the disease appears to be limited to *C. florida*, *C. nutalii* and *C. kousa*, although symptoms on *C. kousa* are much less severe than on the other two species. Dogwood anthracnose in private gardens is managed by planting trees with adequate sun exposure, applying fungicidal sprays when necessary and planting of more resistant species such as *C. mas* and *C. kousa*. There are some partially resistant hybrids of *C. florida* and *C. kousa* that are available now in the 'Stellar' series and a promising resistant *C. florida* selection called 'Appalachian Spring' that may be available soon.

Dogwood anthracnose is rare throughout most of California, presumably because there is little rain to allow for spore dispersal in the spring. Dogwoods are grown as an ornamental in the foothills of the Sierra Nevada and in coastal California where the summer temperatures are moderate, but the lack of summer rain is probably why this disease is rarely seen in the Bay Area and foothills regions. Dogwood anthracnose is probably more prevalent in northern California where there are native stands of *Cornus nutalii* and the climate is similar to the Pacific Northwest.

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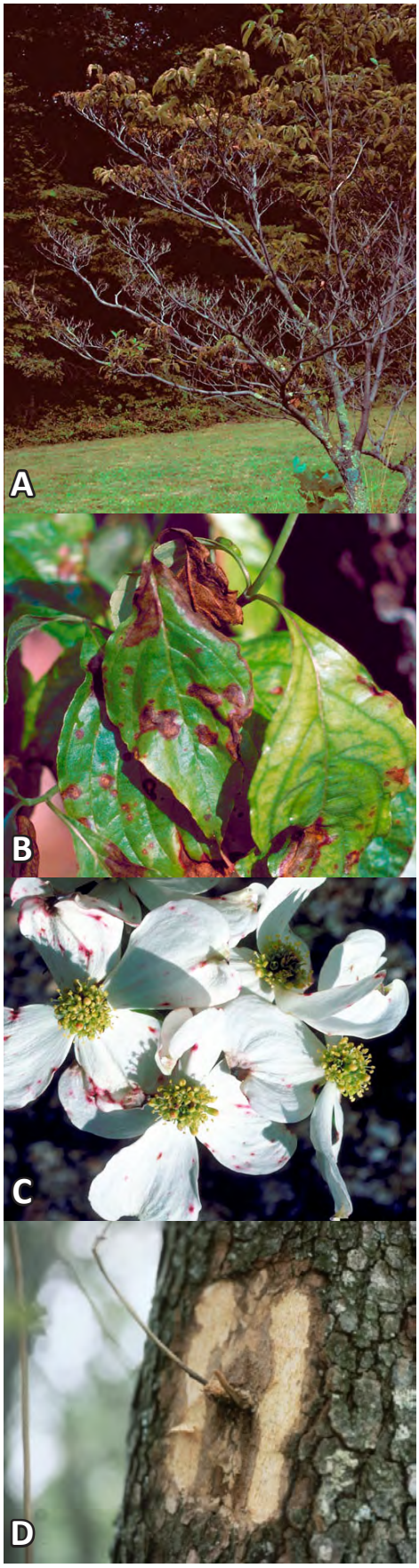

A: Typical pattern of necrosis and foliar decline of *Discula destructiva* , Dogwood Anthracnose, on *Cornus* sp. **B:** Irregular shaped brown lesions with distinctive smoky, purple-brown margins develop on both upper & lower leaf surfaces. **C:** Dogwood flower bracts exhibiting reddish spots & blotches prevalent during wet conditions (Photos: R. L. Anderson, USDA Forest Service, Bugwood.org). **D:** Trunk canker caused by advanced Dogwood Anthracnose disease may cause death of the tree. The fungal pathogen may also invade a trunk thru succulent young shoots prone to infection, or may enter the trunk directly. (Photo: D. Hoysa, Virgnia Cooperative Extension)

AN OVERVIEW OF DISTINCTIVE & DESTRUCTIVE DOWNY MILDEWS

PREPARED BY J. WHITE, C. BLOMQUIST & S. ROONEY-LATHAM

Downy mildews comprise one of the largest groups of phytopathogenic organisms on flowering plants. The mildews are more closely related to the water mold fungi (*Phytophthora* spp.) and brown algae than the true fungi (mushrooms and molds). Downy mildews produce hyphae similar to the true fungi and lead a "fungal lifestyle" and therefore have historically been classified by plant pathologists as fungi. As a group, they are obligate, biotrophic parasites that cause significant destruction and economic loss to a wide range of crops including alfalfa, corn, sorghum, lettuce, grapes, onion, sunflower, spinach, and numerous plant species in the Fabaceae and Brassicaceae plant families. Floricultural and herb crops such as rose, salvia, viola, snapdragon, coleus, coneflower, basil, and fenugreek, etc., are also susceptible to harmful infections by the downy mildews. These phytopathogens produce distinctive branched fruiting structures (conidiophores) and diverse asexual spores (conidia) features visible by microscopy (Figure 1). Specific species also produce thick-walled sexual spores (oospores), which over-winter on plant debris. Morphological characters such as these are critical for identifying a downy mildew to the correct genus and species.

FIGURE 1. Downy mildew on basil, *Peronospora belbahrii*, showing distinctive phytopathogens - branched conidiophores producing ovoid conidia on terminal dichotomous branches. (Photomicrograph: Cornell U. Gallery of Greenhouse Pests & Diseases, M. Daughtrey & D. Gilrein, Long Island Horticultural & Research Extension Center)

Downy mildews primarily infect Dicotyledonous plants, but may also cause disease on hosts in *Allium* spp. as well as the Poaceae family. They are biotrophic, typically evolving with specific host plants. In general the downy mildews may be separated taxonomically by host-specificity, although recent studies have shown that frequent host-jumping between plant species rather than exclusive co-evolution with a single host plant, as typical in the rust fungi, also occurs. Consequently some species have only a narrow host range whereas others may infect a wide range of plants. Currently there are approximately 10 recognized genera of downy mildew fungi. Some names of the genera and their respective hosts include *Pseudoperonospora* spp. on cucurbits; *Peronosclerospora* spp. on sorghum and corn; *Sclerospora* spp. on grasses and millet; *Sclerophthora* spp. on corn, rice, and wheat; *Peronospora* spp. on alfalfa, onion, basil, fenugreek, and pea; *Bremia* sp. on lettuce; and *Hyaloperonospora* sp. on broccoli, cauliflower and other members of the family Brassicaceae.

Wild plants (including weeds) may serve as collateral hosts of downy mildews providing reservoirs for the pathogen during unfavorable growth conditions and non-crop seasons. Destruction of wild host species near agricultural areas may be necessary to disrupt the source of primary inoculum as well as reduce field re-infection of the primary host/crop. Wild (native) hosts perform a significant role in the origin, development, and perpetuation of downy mildew diseases.

Symptoms of downy mildew infection vary depending on the species, host, disease severity, environmental conditions, and geographical location. Common symptoms include, chlorotic streaking, angular vein-delimited or blotchy leaf spots, leaf distortion and blistering, and foliar blight on upper leaf surfaces. Severe infections may become systemic within a host plant causing dwarfing (as in sunflower), defoliation, and even death of seedlings. The loss of photosynthetic tissue due to infection results in stunting of plants and reduction of fruit size and set. As the disease progresses, numerous fruiting structures (conidiophores) emerge through stomata of the host plant to form "downy" cottony areas, which develop initially on lower leaf surfaces, a characteristic sign for which this group derives the common name, downy mildew (Figure 2). Characteristic colors of this "fungal matrix" range from white, tan and brown to purple. Flowers, fruits, stems, and other aerial plant parts may also exhibit symptoms of infection. Less frequently, infection of seeds may occur (e.g. fenugreek and sunflower). Infection of sunflower seed and ensuing spread of the pathogen in seed lots is a significant industry problem causing seed importing countries to impose expensive requirements such as seed health testing and phytosanitary field inspections. Infected seeds have the potential of causing long-range spread of downy mildews both domestically and internationally.

Optimum conditions for disease development include availability of susceptible host plants; high humidity and wet environments; conducive weather patterns

FIGURE 2. *Peronospora antirrhini*, downy mildew colonizing the underside of a snapdragon, *Antirrhinum majus*. The Leaf exhibits "downy" cottony brownish-gray area composed of fruiting structures, conidiophores & conidia. (Photo: T. Smith, Extension Floricultural Specialist, Umass, Amherst, from Floriculture Greenhouse Update website)

FIGURE 3. Scanning electron micrograph of a conidiophore emerging thru leaf stomata producing clustered conidia attached to short dichotomous terminal branches typical of *Peronospora* spp. *Peronospora belbahrii*, downy mildew on basil. (image: S. Kinee, CDFA, PPDB)

(e.g. wind for dissemination); and over-wintering survival capabilities (e.g. plant debris and wild collateral hosts). Organisms in the Peronosporaceae require wet plant surfaces for infection. Prolonged periods of leaf wetness promote spore germination. Cool (50-75° F), wet conditions with high relative humidity (85% or higher) are most conducive to disease outbreaks. The time from initial infection to the production of mature spores is generally seven to ten days, but may be as short as four days under optimal conditions and can vary between mildew species. Conidia (spores) germinate via germ tubes on leaves, petioles, etc., that grow thru leaf stomata into intercellular spaces within the leaf tissue eventually penetrating the plant cells by producing differentiated infection structures called haustoria. Subsequently conidiophores emerge thru leaf stomata expanding, branching, and reaching maturity to produce all of the conidia simultaneously forming the characteristic "downy" sign.

Condia are primarily disseminated by wind, but may also be carried by water or insect pollinator vectors, to other parts of the same plant or to new host plants. Oospores over-winter in plant debris from the agricultural host or the weed host and can germinate to re-infect new host plants in the spring. Cultural and mechanical control of downy mildew includes crop rotation, utilization of different plant debris removal techniques, and suppression of wild host plants (e.g. deep plowing, mechanical cultivation, grazing, etc.). Various fungicides are registered for chemical control of disease depending on the mildew species and the host plant.

Laboratory analysis of downy mildew fungal species begins with the identification of the host plant, followed by examination of symptomatic tissue (e.g. necrotic tissue/lesions/spots, "downy" areas with fungal fruiting or infection structures), and preparation of slide mounts for examination with a compound microscope. Ultimate and terminal branching patterns, color, size and shape of conidiophores and color, size, shape, and cell wall morphology of conidia are all important characteristics of each genus with many variances between genera. *Peronospora* spp. form conidiophores exhibiting distinctive dichotomous branching patterns at acute angles and bear conidia on pointed, delicately recurved tips. *Plasmopara* spp. form random-patterned branched conidiophores where each branch terminates in two to four short, truncate branches. Conidia of all genera are deciduous and typically germinate by forming germ tubes visible via microscopy. Infection structures such as haustoria, when visible, are also morphological features that may aid identification. SEM (scanning electron microscopy) examination may be used as an additional tool to closely examine fungal fruiting and infection structures as well as clarify interactions between host and pathogen such as conidiophore elongation thru leaf stomata, branching and conidial development (Figure 3).

Traditionally the description, identification, taxonomy, and phylogeny of the downy mildews were based on morphological characteristics. As a result of DNA sequence information generated from the development of molecular biology techniques, new genera and species within genera have been described. Additionally, changes in genera and species have been implemented due to taxonomic studies based on nuclear ribosomal ITS sequence analysis combined with morphological characters and host specificity. ITS sequencing is a valuable tool used to differentiate species that lack distinct morphological features and to identify evolutionary relationships between species. New genera have been described and named to accommodate the most current evaluations and information. For example, *Peronospora* spp., which infect Brassicaceae hosts, have been renamed *Hyaloperonospor*a spp. (a newly recognized genus) as a result of ITS sequence analysis, as well as unique morphological features such as hyaline conidia, which are typical of this particular group that infect the Brassicaceae. Another recent change moved one of the traditional *Plasmopara* species, *Plasmopara oplismeni* (which infects grasses) to the new genus, *Viennotia*, based on differences in morphology and molecular analysis.

In 2008, two new species of downy mildews in California were detected at the CDFA Plant Pest Diagnostics Center: *Peronospora belbahrii*, downy mildew on basil (Blomquist, Rooney-Latham & Nolan, 2009), and *Peronospora trigonellae* (Rooney-Latham, Blomquist & Turney, 2009), downy mildew on fenu-

DOWNY MILDEWS IDENTIFIED IN 2008

Pathogen	Common Name	Host	County	City	Rating
Bremia lactucae	Downy Mildew on Lettuce	*Lactuca sativa*	Santa Cruz	Santa Cruz	C
Bremia lactucae	Downy Mildew on Lettuce	*Lactuca sativa*	Santa Cruz	Watsonville	C
Hyaloperonospora parasitica	Downy Mildew on Broccoli/Cauliflower	*Brassica oleracea*	Monterey	Monterey	C
Hyaloperonospora parasitica	Downy Mildew on Broccoli/Cauliflower	*Brassica oleracea*	San Luis Obispo	Arroyo Grande	C
Hyaloperonospora parasitica	Downy Mildew on Broccoli	*Brassica oleracea*	San Luis Obispo	Nipomo	C
Hyaloperonospora parasitica	Downy Mildew on Cauliflower	*Brassica oleracea*	Santa Barbara	Lompoc	C
Hyaloperonospora parasitica	Downy Mildew on Broccoli	*Brassica oleracea*	Santa Clara	Morgan Hill	C
Peronospora belbahrii	Downy Mildew on Basil	*Oscimum basilicum*	San Diego	Escondido	Q
Peronospora belbahrii	Downy Mildew on Basil	*Oscimum basilicum*	San Diego	Ramona	Q
Peronospora destructor	Downy Mildew on Onion	*Allium cepa*	Colusa	Colusa	C
Peronospora destructor	Downy Mildew on Onion	*Allium cepa*	San Benito	San Juan Batista	C
Peronospora destructor	Downy Mildew on Onion	*Allium cepa*	Santa Clara	Gilroy	C
Peronospora destructor	Downy Mildew on Onion	*Allium cepa*	Sutter	Parma	C
Peronospora lamii	Downy Mildew on Salvia	*Salvia* sp.	San Luis Obispo	Arroyo Grande	C
Peronospora lamii	Downy Mildew on Salvia	*Salvia farinacea*	Santa Barbara	Carpinteria	C
Peronospora lamii	Downy Mildew on Salvia	*Salvia greggii*	Santa Cruz	Santa Cruz	C
Peronospora lamii	Downy Mildew on Salvia	*Salvia farinacea*	Ventura	Santa Paula	C
Peronospora pulveracea	Downy Mildew on Hellebore	*Hellebore* sp.	San Mateo	Half Moon Bay	Q
Peronospora trifoliorum	Downy Mildew on Alfalfa	*Medicago sativa*	Fresno	Fresno	C
Peronospora trifoliorum	Downy Mildew on Alfalfa	*Medicago sativa*	Imperial	El Centro	C
Peronospora trifoliorum	Downy Mildew on Alfalfa	*Medicago sativa*	Imperial	Holtville	C
Peronospora trifoliorum	Downy Mildew on Alfalfa	*Medicago sativa*	Madera	Chowchilla	C
Peronospora trifoliorum	Downy Mildew on Alfalfa	*Medicago sativa*	Yolo	Woodland	C
Peronospora trigonellae	Downy Mildew on Fenugreek	*Trigonella foenum*	Los Angeles	Bellflower	Q
Peronospora viciae	Downy Mildew on Pea	*Pisum sativum*	Santa Clara	Morgan Hill	C

TABLE 1. Downy Mildews Identified in 2008 by the Plant Pest Diagnostic Center's Plant Pathology Laboratory.

greek. In addition, a new race of *Peronospora farinosa* f. sp. *spinaceae* which causes downy mildew of spinach, was investigated by University of California Cooperative Extension (UCCE) Farm Advisor, Steve Koike in Monterey County. This new race was eventually designated as race eleven. The economically important downy mildew group offers great challenges in phylogenetic classification and identification (Bryant, D., 2009).

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SELECTED PHOTOGRAPHS OF THE DOWNY MILDEWS

Including 2008 PPDC Detections & Other Important Mildew Pathogens

PREPARED BY J.WHITE

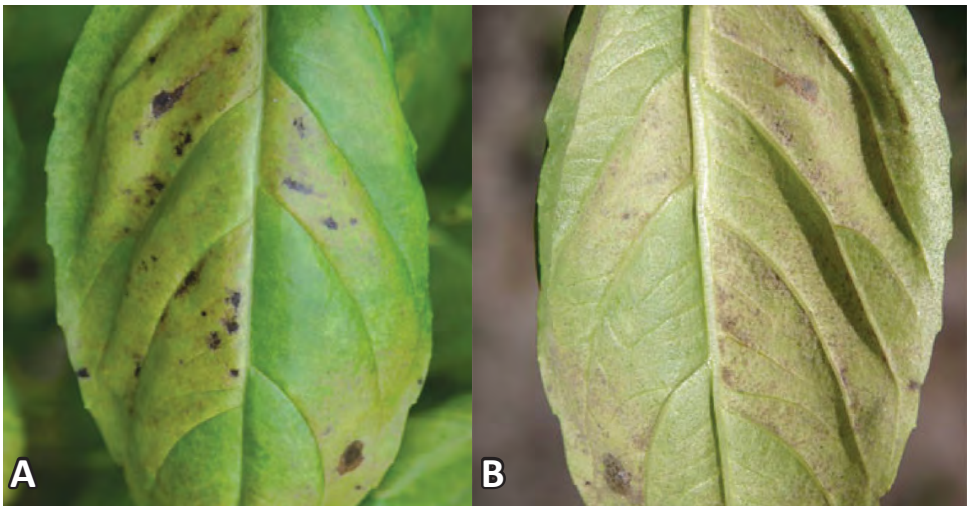

FIGURE 1. A basil leaf infected by downy mildew shows symptoms on the upper and lower surfaces. A: The upper surface; B: the lower surface of an infected leaf. (Photos: P. Roberts, R. Raid, & P. Harmon from UF/FAS Pest Alert Website: http://pestalert.ifas.ufl.edu/)

On Basil

Downy mildew on basil, *Oscimum basilicum*. Typical foliar symptoms on the upper leaf surface are characteristic chlorotic areas often delineated by the veins, sometimes covering the entire leaf surface (Figure 1A).

Typical gray, fuzzy, "downy" areas of sporulation (conidiophores and conidia) on the underside of the leaf surface when infected with *Peronospora belbahrii* (Figure 1B). Basil herb plants are grown in greenhouses as well as field sites.

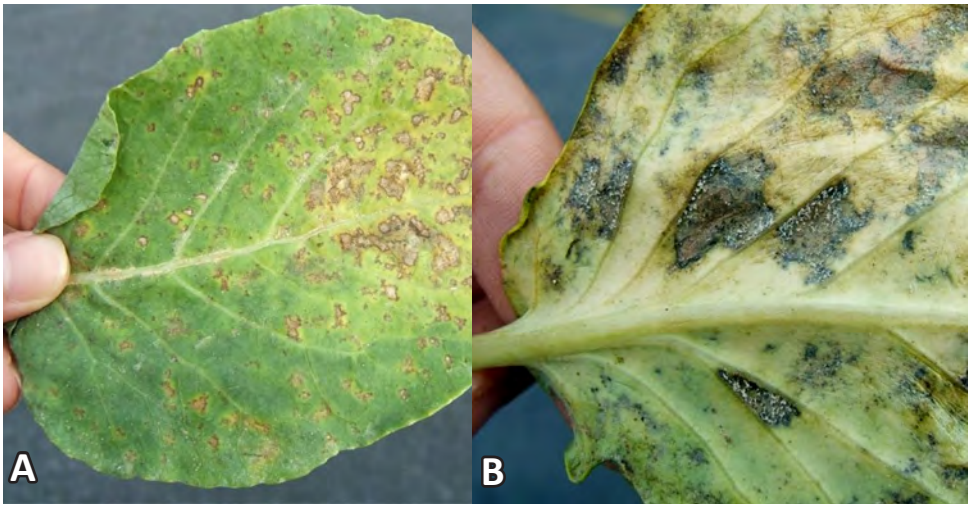

FIGURE 2. Cabbage leaves infected with downy mildew. A: Showing typical lesions on the upper leaf surface; B: dark, necrotic lesions on the underside. (Photos: S. J. Colucci, Cc, NC State U., Cooperative Extension)

On Cabbage

Downy mildew on cabbage (*Brassica oleracea* var. *capitata*) caused by *Hyaloperonspora parasitica*. Typical tan-brown vein-delineated angular lesions on upper leaf surface (Figure 2A). The *Hyaloperonospora* produce specialized oospores that can overwinter in soil and plant debris to re-infect new plants during subsequent growing seasons.

Typical sign of *Hyaloperonospora parasitica* downy mildew on cabbage exhibited by the cottony growth (conidia and conidiophores emerging thru leaf stomata) developing from necrotic angular lesion areas on the abaxial leaf surface (Figure 2B).

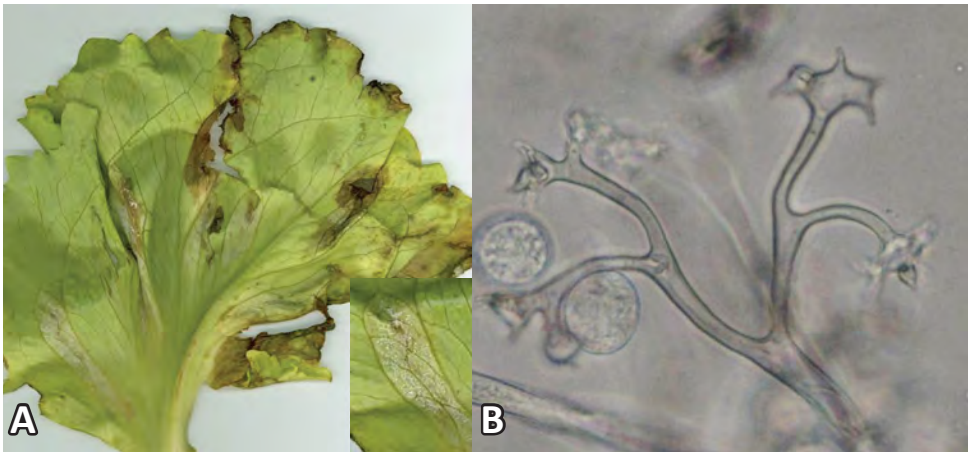

FIGURE 3. A: Lettuce infected with downy mildew; B: Micrograph of a conidiophires taken from infected lettuce. (Photo & photomicrograph S. Rooney-Latham, PPDB, CDFA)

On Lettuce

Lettuce downy mildew caused by *Bremia lactucae*. Foliar symptoms include angular, pale, areas that are delineated by veins (Figure 3A).

Sporulation through leaf stomata occurs as the disease progresses (Figure 3A, inset). Dichotomously branched conidiophores with swollen tips that form a vesicle (Figure 3B). Each vesicle bears 3-5 sterigmata that produce a single conidium.

On Onion

Field infections caused by *Peronospora destructor* may occur from systemically infected bulbs or windborne conidia germinating on wet leaves in humid weather. The pathogen attacks various species of onion and is very destructive to the common onion species, *Allium cepa* (Figures 4 A, B).

Lesions appear as pale chloroticspots, oval to elongate in shape and variable in size (Figure 4C). Elongated lesions with layers of downy mildew sporulation may appear zonate. Under humid conditions spores germinate, conidiophores develop and emerge thru leaf stomata and the symptomatic areas become covered with a grayish-tan to violet, fine downy growth. Leaves may exhibit distortion, curling, shriveling, then collapse and die.

FIGURE 4 A & B: Infected leaves of *Allium* sp. (Photos: H. F. Schwartz, Colorado State U., Bugwood.org) **C.** Infected onion leaves exhibiting a varying range of typical symptoms. (Photo: C. Blomquist, PPDB, CDFA)

On Grape

Infections caused by *Plasmopara viticola* in grape, *Vitis* sp., may affect all parts of a vine including leaves, petioles, tendrils and cluster stems. Typical foliar symptoms are chlorotic to reddish-brown angular vein delineated lesions that form on upper leaf surfaces (Figure 5A). Sporulation thru leaf stomata produces a delicate, dense white cottony growth on the under surfaces of leaves (Figure 5B). Young berries are most susceptible to infection becoming more resistant when mature. (Figure 5C).

Due to limited rainfall in spring and summer and less humid conditions, grape downy mildew is not a problem in California where isolated infections have occurred but are uncommon and limited to small areas.

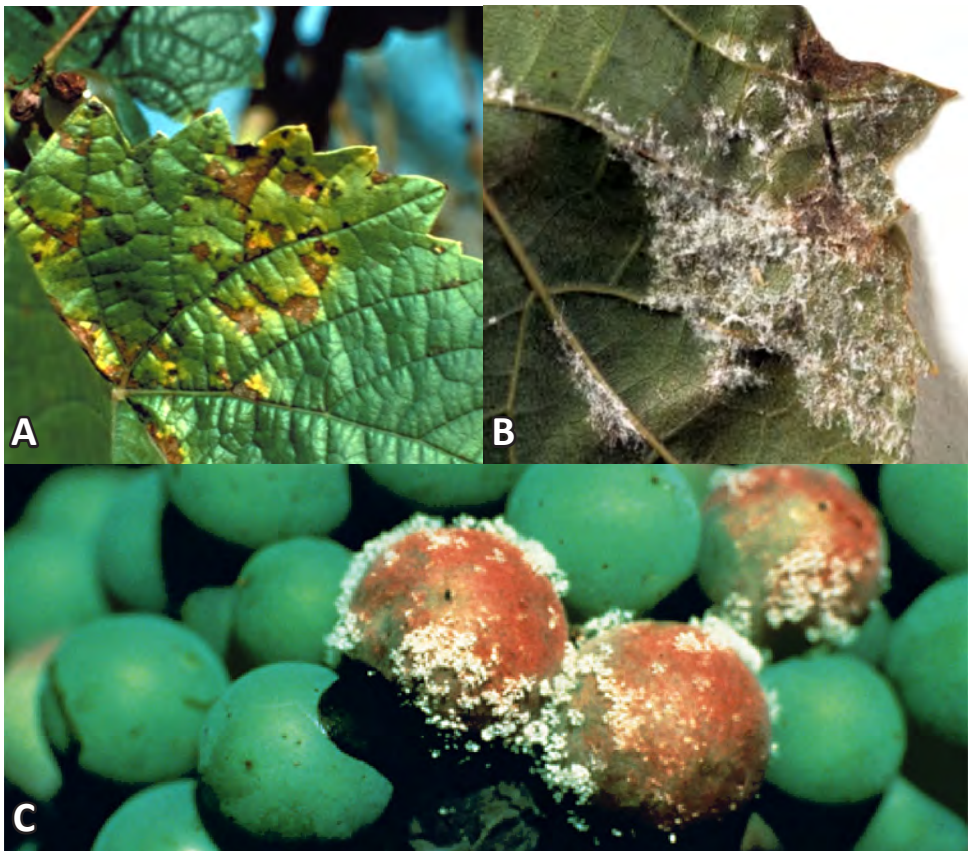

FIGURE 5 A: Infected upper surface of a grape leaf (Photo: H. Thorton, U. of Georgia, Dept. of Plant Pathology Archive, Bugwood.org), **B:** Infected lower surface (Photo: D. Davison, FL Dept. of Agric., and Consumer Services Div.of Plant Industry, Bugwood.org). **C:** White cottony sporulation on young berries (Photo: Department of Plant Pathology, New York State Agricultural Experiment Station, Geneva, NY)

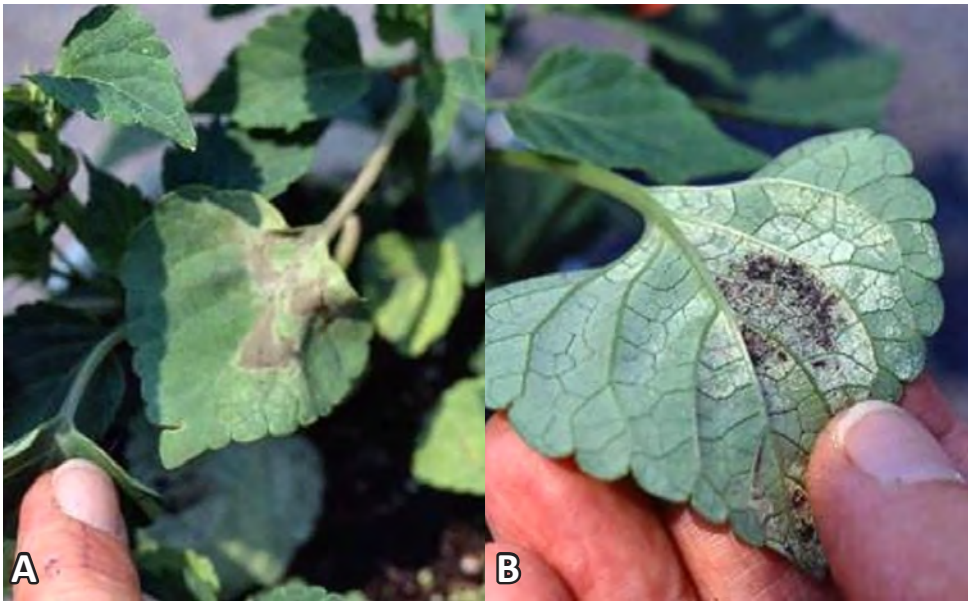

FIGURE 6 A: Upper leaf symptoms of an infected *Salvia* spp., B: Infected lower leaf surfaces form dark brown "downy" patches.(Photos: L. Pundt, Extn Educator, U. Connecticut, IPM: Greenhouse: Plant Diseases: Downy Mildew, website - http://hort.unconn.edu/Ipm/greenhs/downymlgh.htm)

On *Salvia*

Salvia is a genus of plants in the mint family including common sage, *Salvia officinalis*, and many ornamental species. Downy mildew on *Salvia* species is caused by *Peronospora lamii*. Typical foliar symptoms on upper leaf of angular lesions formed between the leaf veins (vein delineated), usually brownish and chlorotic (Figure 6A). Sporulation thru leaf stomata occurs with progression of the disease forming dark brown "downy" areas on the abaxial leaf surface (Figure6B). Dichotomously branched conidiophores bearing conidia on terminal branches, typical of *Peronospora* spp., are visible with microscopic examination of the downy areas.

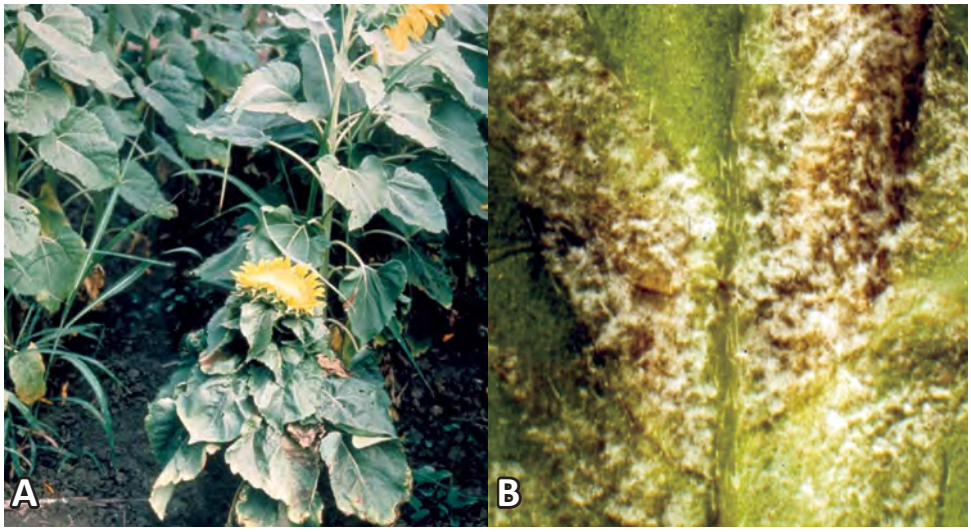

FIGURE 7 A: Symptoms of infected sunflowers include stunted growth. B: lower leaf surfaces are covered with "downy" spores. (Photos: Ferenc Viranyi, Godollo U. of Agric. Sciences & David Davison, FLA Dept of Agric. Div. Plant Industry, Bugwood.org)

On Sunflower

Downy mildew on sunflower, *Helianthus annuus*, caused by *Plasmopara halstedii.* Sunflower exhibiting severe symptoms of infection including stunted growth, leaf chlorosis, necrosis and leaf spotting, and development of an atypical erect flower head which produces very little seed (Figure 7A).

Typical white fuzzy sporulation occurring thru leaf stomata on lower leaf surface (Figure 7B).

FIGURE 8 Infected leaves, upper (left) and lower surfaces (right). (Photo: M. Putnam, OR State U. Online Guide to Plant Disease Control, OR State U. Extension)

On Spinach

Peronospora farinose f.sp. *spinaciae* downy mildew on spinach, *Spinacia oleracea*. Foliar symptoms initially appear on upper leaf surfaces of leaves as light green to pale yellow areas. Conidia germinate when leaf surfaces become wet from substantial dew, rainfall or irrigation. Subsequently sporulation occurs thru leaf stomata as the disease progresses and a blue-gray downy growth (conidiophores & conidia) develops on abaxial leaf surfaces. This *Peronospora* species has a narrow host range, infecting only Spinach and a few *Chenopodium* wild, weed species.

THE POWDERY MILDEWS

An Overview of California's Most Prevalent & Biologically Complex Fungi

PREPARED BY C. BLOMQUIST & J. WHITE

Powdery mildews are obligate, biotrophic, phytopathogens classified in the phylum Ascomycota and order Erysiphales. They comprise some of the California's most diverse, frequently noticed fungi, infecting approximately 10,000 species of cultivated and native angiosperms worldwide. Signs of powdery mildew diseases are easily recognized by the conspicuous development of abundant mycelium and conidia on the host plant surface which appear white to gray and powdery (Figure 1). In the past decade there have been fundamental changes in our understanding of the Erysiphales, and consequently in the taxonomy of this group. Research on molecular phylogeny using DNA sequencing has resulted in the creation of new genera and the description of many new powdery mildew fungi. As part of this taxonomic revision, familiar species have undergone changes in genus names.

The powdery mildew fungi (PM) are obligate parasitic species that generally infect specific host plants within individual plant families (e.g. Cucurbitaceae, Apiaceae, Solanaceae, Brassicaceae, etc). Individual PM species tend to have narrow host ranges. There are, however, different PM species that may infect the same host plant species within a specific plant family (e.g. *Podosphaera xanthii* and *Golovinomyces cichoracearum* both infect Cucurbitaceae). Conversely, and less commonly, a PM species may infect more than one host belonging to completely different families (e.g. Leveillula taurica infects both onion and tomato). Identification of the host plant species is an important consideration for PM species determination.

FIGURE 1. Powdery white mycelium & condia developing on leaf surfaces is a typical sign of powerdy mildew disease - seen here on the leaf of *Syringa vulgaris*, the commen lilac.

Powdery mildews are a diverse group of fungi that cause economic loss and harm to a wide range of agricultural crops including grape, onion, tomato, cucumber, watermelon, pepper, sugar beet, strawberry, fruit trees, small grains, hops, and sunflower. Many ornamental and culinary herb crops are also susceptible to infection. Historically the PMs in North America, except those infecting the most important agricultural hosts, have not been well described. One of the reasons was that the powdery mildew experts worked in Europe and Japan, not North America. This has changed recently with Dr. Dean Glawe in Washington State taking on this important group as his area of specialty. Over the last several years, Dr Glawe has described the PMs in the Pacific Northwest and developed an on-line key for powdery mildew identification. Due to his work and the work of collaborators, new mildews and mildew hosts are being identified every year in the United States including weed hosts such as fringed willowherb, poison-hemlock (Koike 2009), cut leaf geranium, and garlic mustard. PM species that infect weeds and native plants are especially important to identify and characterize if they share hosts with economically important crops. PM-infected weeds and native plants can provide an initial and continuing source of inoculum for neighboring agricultural and nursery crops.

Symptoms of powdery mildew infection depend on the species, host and environmental conditions. Common signs on a host plant include the conspicuous hyphae and powdery conidial production on leaf surfaces, stems, flowers, and fruits. This growth is usually whitish sometimes turns grayish to yellow or light brown with age. Moderate to severe infections can cause disfiguration or distortion of leaves and scarring of leaves, stems, petioles and buds. Fruit can also be infected directly as in the case of *Erysiphe necator*

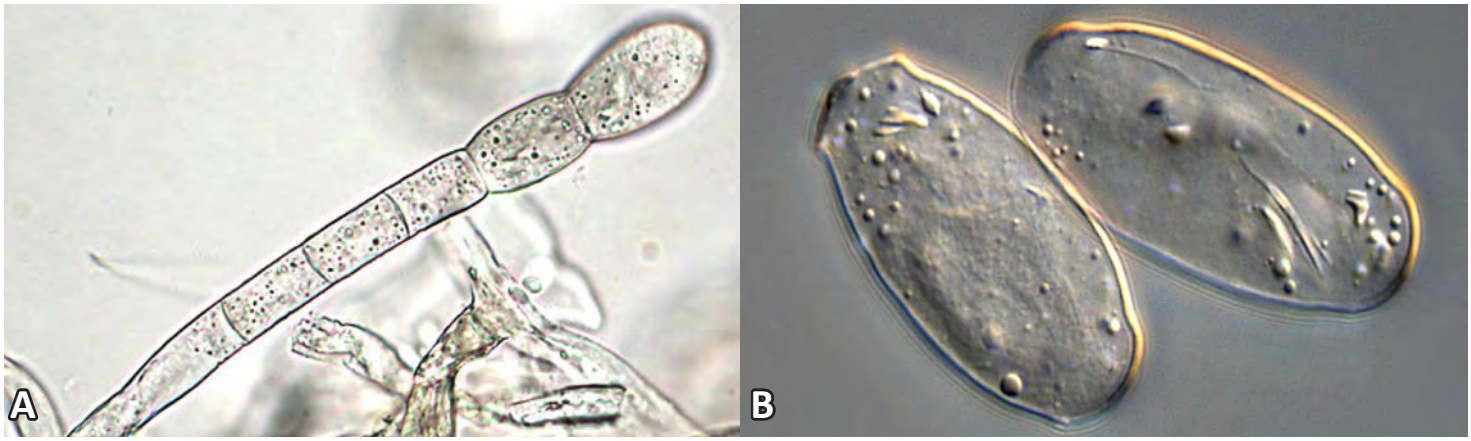

FIGURE 2. A: Conidiophore developing from vegetative hyphae on the leaf surface. This species of powdery mildew, *Sphaerotheca dipsacearum* on *Dipsacus sylvestris* (noxious weed host) produces conidial chains and is formed on a cylindric shaped foot-cell. B: Condia (spores) that exhibit presence of fibrosin bodies (comma or rod-shaped) are characteristic of this particular species.

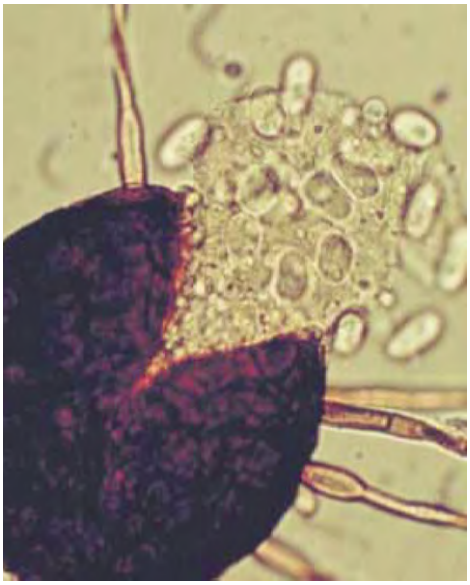

FIGURE 3. *Erysiphe necator*, grape PM teleomorphic state. Chasmothecium (ascocarp) fruiting body, exhibiting surface appendages, releasing ascospores.

on grape. With fruits such as muskmelon and honeydew severe foliar infections of powdery mildew can result in decreased fruit sugar content, reducing fruit quality and marketability.

Initial infection starts after a spore germinates on a susceptible host and vegetative hyphae grows superficially on the plant epidermal surface. Appressoria are specialized lateral outgrowths of hyphae that function by attaching mycelium firmly to host tissue. Appressoria form from the vegetative hyphae and initiate the production of haustorial feeding/infection structures which degrade and penetrate the plant cells. Mycelia grows and develops into conidiophores which produce conidia (spores). Conidiophores develop either on the plant surface or emerge thru plant stomata producing single conidia or conidial chains (Figure 2). Conidia are usually produced on the plant and released during the growing season. At the end of the growing season the powdery mildew fungus may produce sexual spores, known as ascospores, in a sac-like ascus enclosed in a fruiting body, which forms unique types of surface appendages, called a chasmothecium (ascocarp). Ascospores are released when a crack develops in the ascocarp wall (Figure 3 & 4). The appendages may aid in attaching the fruiting bodies to hosts, particularly to the bark of woody plants, where they may overwinter. This fungal state may over summer also when green host tissue is not available. *Erysiphe necator*, formerly *Uncinula necator*, grape powdery mildew, survives and overwinters as mycelium in dormant grapevine buds and as chasmothecium in the Central Valley of California. Powdery mildews are polycyclic diseases that impair photosynthesis, stunt growth, and increase the rate of host tissue senescence. In regions with severe winters, both anamorphic and teleomorphic stages commonly occur in infection cycles, but in regions with mild winters such as the Pacific Northwest and much of California, teleomorphic states may occur less frequently.

During most of the agricultural growing season a powdery mildew pathogen reproduces by air-dispersed conidia. One of the reasons that PM diseases are more common and severe in warm, dry climates is that spores can germinate, infect and disperse in the absence of free water on the leaves if the relative humidity is high enough. Conidia are released on a daily cycle from midmorning to midday. Optimal spore development and dissemination tend to be associated with relatively low humidity, surface dryness and high temperatures. Available water from the host plant, guttation, dew, rain and limited overhead irrigation increases host susceptibility to infection. Conidial production is more prevalent in shaded areas as in powdery mildew of cucumber, *Podosphaera xanthii*, where infection increases under the shade of the large overlapping leaves in greenhouse grown plants.

Currently there are five major tribes and approximately 17- 20 described genera within each of the clades classified in the order Erysiphales. The tribes include Erysipheae, Golovinomyceteae, Cystotheceae, Phyllactinieae, and Blumerieae. These taxonomic classifications are based on rDNA and ITS sequencing, morphological characters, life cycle characteristics and plant hosts. In the lab the Erysiphales can be identified by their anamorphic (asexual) or teleomorph (sexual) forms. Anamorphs are identified by the type of conidial development, singly or in chains, size, shape, and color of conidia, appressoria and conidiophore foot cell morphology, and presence or absence of distinct fibrosin bodies within conidia. Fibrosin bodies are refractive structures in conidia that are visible under light microscopy. Teleomorphs (sexual state) are identified by chasmothecial (ascocarp) morphology. Characteristics would include size and shapes of attached appendages, the number,

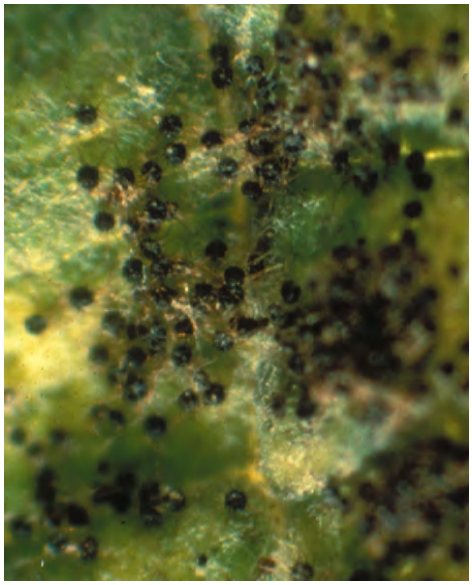

FIGURE 4. *Erysiphe necator*, grape PM teleomorphic state.Advanced severe infections exhibit typical mature dark chasmothecia on lower leaf surface.

size and shape of ascospores and spore release mechanisms. Contrary to most fungi, morphology of the anamorphic state is now used to distinguish between genera and teleomophic morphology is used to identify species within specific genera in a group. Host family specificity and geographical distribution are also important for correct species identifications.

Laboratory analysis of powdery mildew fungal species begins with identification of the host plant, followed by examination of symptomatic tissue with a compound microscope. for signs of the pathogen such as conspicuous white to gray powdery patches of *mycelia, chlorotic* to necrotic tissues/lesions/spots with characteristic hyphae, and fungal fruiting structures including conidiophores and chasmothecial ascocarps. Morphological characters of both the anamorph and teleomorph states may be examined. Formation of conidiophores producing conidia (spores) singly or in chains (multiples), size, shape, color of conidia, development of superficial hyphae on host surface or internal hyphae (endophytic) within host tissue producing conidiophores that emerge thru stomata (as in *Leveillula taurica* on tomato), morphology of appressoria as lobed, nipple-shaped or nonexistent, characteristics of conidiophore foot cells (inflated or cylindrical base and size), presence or absence of fibrosin bodies within conidia, are some common characteristics of the anamorphic state used for determinations. Size

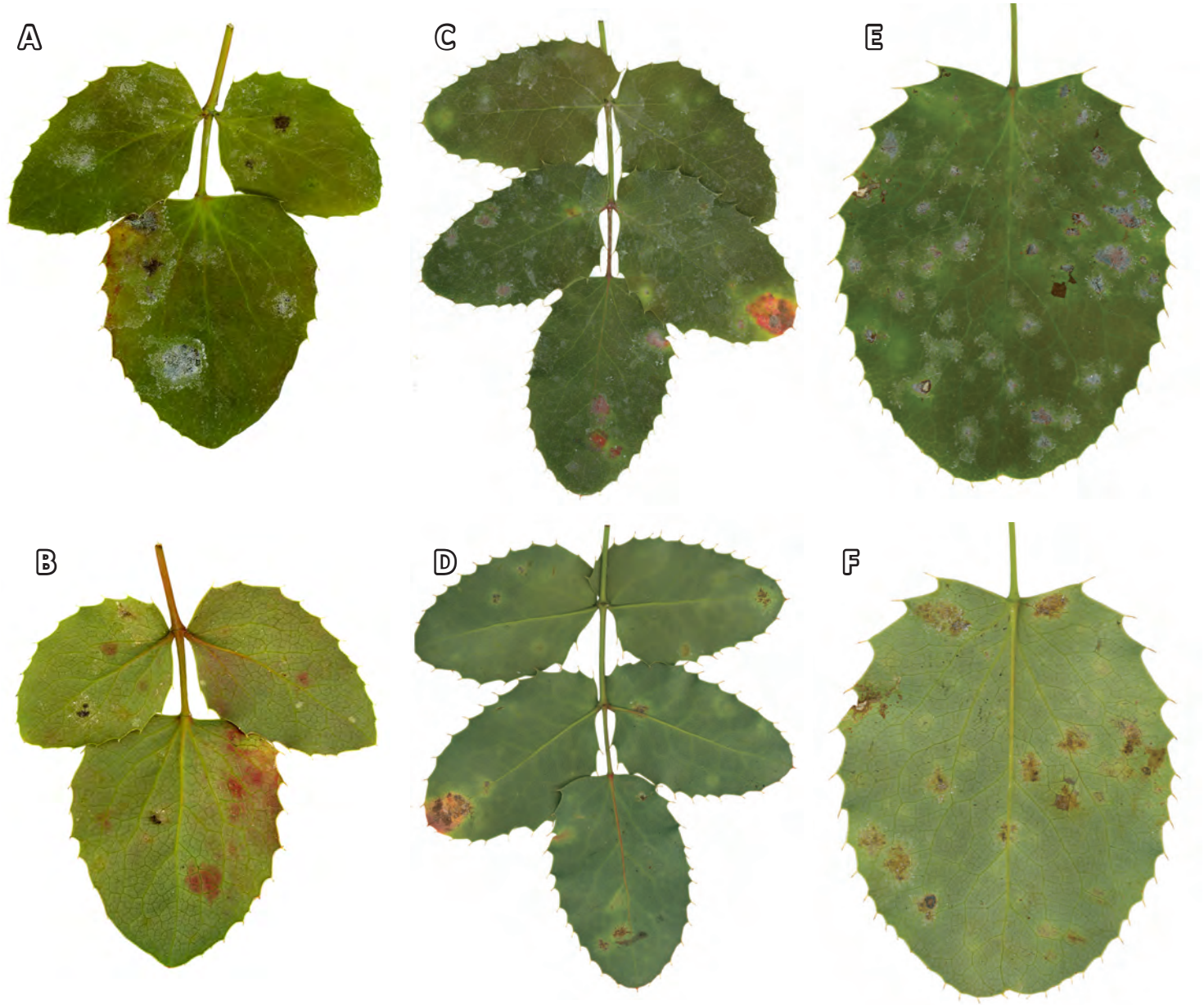

FIGURE 5. *Microsphaera berberidis* powdery mildew of *Mahonia* sp., was reported from Riverside Co. in 2009. *Mahonia* sp. are evergreen shrubs that are often planted as ornamentals. Powdery mildew was identified from three species of *Mahonia*, with the upper leaf surfaces pictured on the top row and and lower leaf surfaces on the bottom row. A & B: *M. fremontii*, C & D: *M. repens*, & E & F: *M. aquifolium*.

and shape of the chasmothecial fruiting structure, number, size, shape and color of ascospores and asci produced, type of ascocarp appendages (e.g. acicular or mycelioid, dichotomous branching, etc.), as well as ascocarp cell wall structure, are all important characteristics of a teleomorph state. Monographs, new reports and an online database named WSU Erysiphales Database are used to assist in pathogen determinations. At the Plant Pest Diagnostics Branc we are also working on being able to obtain rDNA sequences for PMs. In the past many PM specimens sent to the Plant Pathology laboratory were described as Oidium sp. because few descriptions of specific anamorphic PMs were available. Look for that to change this year. We will be increasingly able to put full names on PMs and add new pathogens to our pest ratings list.

During the past decade there have been fundamental changes in our understanding of powdery mildews. Molecular phylogenetic research has shown that Erysiphales belong to the Leotiomyces (inoperculate discomycetes) rather than Pyrenomycetes or Plectomycetes as previously thought. Analysis of rDNA sequences indicate that identification of major lineages and classification are more closely correlated with anamorphic (asexual) morphology rather than by teleomorph (sexual) morphology. This change in taxonomy will enable us at the Plant Pest Diagnostics branch to give complete determinations on more PM species because on most of the samples we receive; only the asexual state is present.

POWDERY MILDEWS IDENTIFIED IN 2009

Fungi Pathogen	Common Name	Host	County	City	Rating
Erysiphe necator	Grape powdery mildew	*Vitis vinifera; Vitis spp.*	Lake	Kelseyville	C
Leveillula taurica	Powdery mildew	*Lycopersicon esculentum*	Fresno	Firebaugh, Three Rocks	C
Microsphaera berberidis	Mahonia powdery mildew	*Mahonia fremontii, M. repens, M.aquifolium*	Riverside	San Jacinto	C
Erysiphe syringae	Lilac powdery mildew	*Syringa sp.* (Lilac)	Stanislaus	Patterson	C
Oidium sp.	Powdery mildew	*Brassica sp.* (Mustard)	Colusa	Maxwell	C
Oidium sp.	Powdery mildew	*Lycopersicon esculentum*	Fresno	Huron	C
Oidium sp.	Powdery mildew	*Verbena sp.*	Imperial	El Centro	C
Oidium sp.	Powdery mildew	*Rosa sp.*	Riverside	Palm Springs	C
Oidium sp.	Powdery mildew	*Cucumis melo*	San Joaquin	Acampo	C
Oidium sp.	Powdery mildew	*Salvia spathacea* (Sage)	Santa Barbara	Santa Barbara	C
Oidium sp.	Powdery mildew	*Penstemon sp.* (Beard Tongue)	Santa Barbara	Santa Barbara	C
Oidium sp.	Powdery mildew	*Nandina sp.* (Heavenly bamboo)	Santa Clara	San Jose	C
Oidium sp.	Powdery mildew	*Pyrus sp.*	Santa Cruz	Watsonville	C
Oidium sp.	Powdery mildew	*Cucurbita maxima*	Solano	Davis	C
Oidium sp.	Powdery mildew	*Cucumis melo*	Solano	Davis	C
Oidium sp.	Powdery mildew	*Helianthus annuus*	Solano	Dixon	C
Oidium sp.	Powdery mildew	*Helianthus annuus*	Sutter	Glenn	C
Oidium sp.	Powdery mildew	*Capsicum annuum*	Yolo	Not listed	C
Oidium sp.	Powdery mildew	*Citrullus lanatus*	Yolo	Colusa	C
Oidium sp.	Powdery mildew	*Cucurbita pepo*	Yolo	Williams, Woodland	C
Oidium sp.	Powdery mildew	*Helianthus annuus*	Yolo	Woodland	C
Oidium sp.	Powdery mildew	*Cucumis melo*	Yuba	Glenn	C
Oidiopsis sp.*	Powdery mildew	*Lisianthus sp.*	San Luis Obispo	Arroyo Grande	C
*Oidiopsis sicula**	Powdery mildew	*Capsicum annuum*	Yolo	Woodland	C
Podosphaera xanthii	Powdery mildew	*Cucurbita maxima* (Pumpkin)	Solano	Dixon	C

*Asexual stage of *Leveillula taurica.*

TABLE 1 Powdery Mildews Identified in 2009 by the Plant Pest Diagnostic Center's Plant Pathology Laboratory.

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Koike, S. 2010. Update on Powdery Mildew Diseases From the Central Coast Region of California. *2009 Plant Pest Diagnostics Center Annual Report*. 2010: 68-69 http://www.cdfa.ca.gov/plant/ppd/publications/annual_reports.html

WSU Erysiphales Database http://www.erysiphales.wsu.edu/

PHOTO CREDITS

Figure 1: W. M. Clesia, Forest Health Management International, Bugwood.org

Figure 2A & B: Frank M. Dugan and Dean A. Glawe, from "First Report of Powdery Mildew on *Dipsacus sylvestris* Caused by *Sphaerotheca dipsacearum* in North America". 2006. Plant Management Network.

Figure 3: B. Emmett, "Powdery Mildew in Wine Grapes in Western Australia", by Diana Fisher, & Dr. T. Wicks. Bull. No. 4575, ISSN 1448-0352, May 2003.

Figure 4: University of Georgia Plant Pathology Archive, Bugwood.org

Figure 5: Cheryl Blomquist, Plant Pathologist, CDFA, CPPDC, Plant Pathology laboratory.

UPDATE ON POWDERY MILDEW DISEASES FROM THE CENTRAL COAST REGION OF CALIFORNIA

PREPARED BY STEVEN T. KOIKE
UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION, MONTEREY COUNTY

Powdery mildew is perhaps one of the most common and readily diagnosed diseases of plants. The familiar white to gray mycelial and conidial growth is well known to almost everyone. In fact, this extensive familiarity may cause many people to overlook powdery mildews, fail to recognize undocumented powdery mildew-host plant cases, and fail to remain current regarding powdery mildew taxonomy and pathogen names. In recent years, a number of powdery mildew developments (see Table) have taken place on the central coast region of California.

RECENTLY DESCRIBED PM

On a number of plants, previously unreported powdery mildew diseases have been observed and described. All of these cases appear to be first-time reports for the state. For a few of these diseases, they appear to be first-time reports for North America. Precise identification of the pathogen and the completion of other tests, such as pathogenicity tests and host range evaluations, are needed to fully appreciate the importance of such reports. For example, the recent documentation of powdery mildew on poison-hemlock weed provided us with epidemiological links to powdery mildew of celery. Along with confirming that poison-hemlock and celery are hosts of the same mildew, we found that poison-hemlock isolates can cause disease on celery but apparently not on parsley. Diseased weeds may therefore be an inoculum source for powdery mildew of celery.

INCREASED SEVERITY OR CROP DAMAGE

For some vegetable crops, powdery mildew has been observed for many years but never caused any concern to growers. However, in recent years some of these powdery mildews are becoming more severe and are starting to cause crop damage. Lettuce and celery crops were rarely affected by powdery mildew until recently. For pepper, powdery mildew severity goes up and down throughout the years; currently, disease levels have been moderate to high.

CHRONIC PM CONCERNS

For crops such as grape and strawberry, powdery mildew is an annual concern and is always an economic threat to production. Currently, grape and strawberry continue to be plagued by powdery mildew and growers must rely on integrated pest management practices to obtain control of the problem. It is notable that these two crops are examples of name changes of the pathogens: grape powdery mildew caused by *Erysiphe necator* (formerly *Uncinula necator*); strawberry powdery mildew caused by *Podosphaera aphanis* (formerly *Sphaerotheca macularis*).

FIGURE 1 *Erysiphe heraclei*, powdery mildew on leaves of poison-hemlock (weed) growing in coastal California, first report of this powdery mildew in North America (photo: by S.T. Koike & D. A. Glawe).

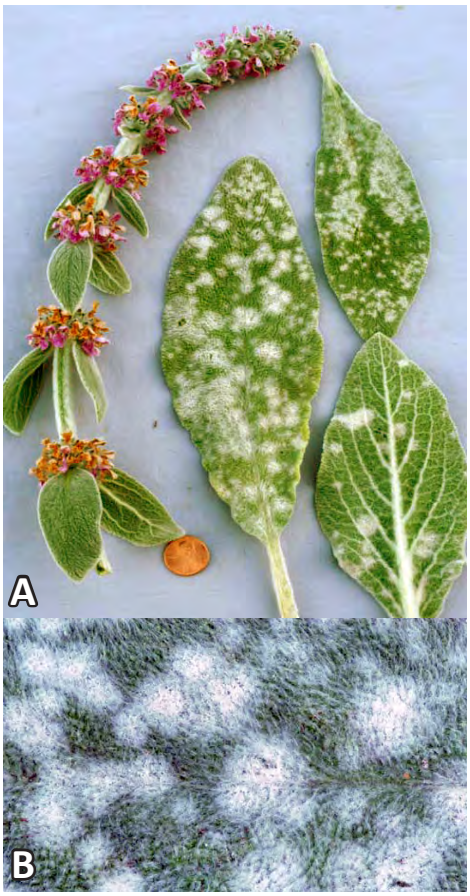


FIGURE 2 A: Signs of powdery mildew on *Stachys byzantine*, Lamb's Ear, caused by *Neoerysiphe galeopsidis*. **B:** Disease signs of white to grayish patches of mycelia on leaf surface. Observed in Salinas, Monterey County. First report in North America (Photos: S.T. Koike & D. A. Glawe).

Recent powdery mildew developments from the central coast region of California from 2007 to 2009.

INCREASED POWDERY MILDEW SEVERITY OR CROP DAMAGE

Host	Powdery Mildew
Celery	*Erysiphe heraclei*
Lettuce	*Golovinomyces cichoracearum*
Pepper	*Leveillula taurica*

CHRONIC POWDERY MILDEW CONCERNS

Host	Powdery Mildew
Grape	*Erysiphe necator*
Strawberry	*Podosphaera aphanis*

RECENTLY DESCRIBED POWDERY MILDEWS FOR CALIFORNIA

Host	Powdery Mildew
Lamb's ear	*Neoerysiphe galeopsidis*
Matilija poppy	*Leveillula taurica*
Periwinkle	*Golovinomyces orontii*
Rosemary	*Oidium* spp. (ID pending)
Fringed willowherb*	*Podosphaera epilobii*
Poison-hemlock*	*Erysiphe heraclei*
Cutleaf geranium*	*Oidium* spp. (ID pending)

* weed

SELECTED PHOTOGRAPHS OF POWDERY MILDEWS

Including 2009 PPDC Detections & Other Interesting Powdery Pathogens

PREPARED BY J. WHITE

On Oak

Erysiphe alphitoides powdery mildew on a *Quercus* sp., an oak (Fagaceae family). Typical signs of powdery white mycelium cover oak leaf surfaces (Figure 1A), with black chasmothecial fruiting bodies (Figure 1B). Only young developing leaves are susceptible to infection by *E. alphitoides*. Native oaks growing wild among the weeds may serve as sources of inoculum to adjacent agricultural fields.

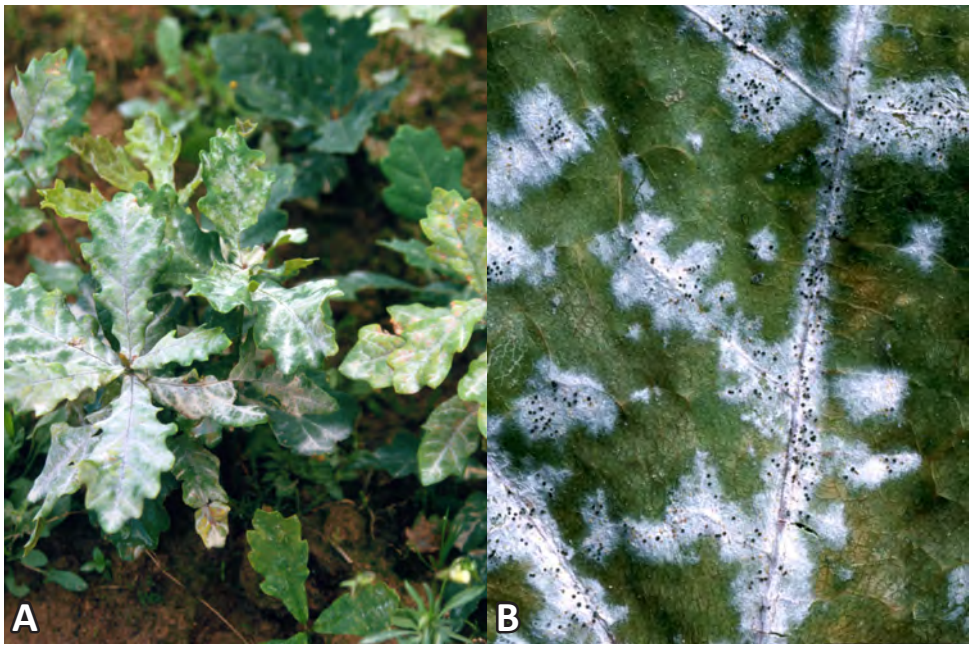


FIGURE 1 A *Quercus* sp., oak, infected with *Erysiphe alphitoides*. A: Typical signs of powdery white mycelium on oak leaf surfaces Photo: A. Kunca, National Forest Centre - SlovakiaState), B: Black chasmothecial fruiting structures are visible. (S. K. Mohan, both from Bugwood.org)

On Grape

Flag shoots (stunted shoots) and shaded areas are characteristic infection sites with ash-gray to powdery white mycelia growth (Figure 2 A & B). Grape PM is an economically important persistent fungal problem and if uncontrolled it may cause serious crop losses and impair wine quality. Severely infected and damaged fruit often splits open (Figure 2C). When berries of purple or red cultivars become infected during ripening the fruit fails to color properly resulting in blotchy appearance and less marketability of whole fruit. Early season infections on canes produce typical blackish lesions on immature canes which develop reddish-brown on the mature canes. Losses caused by PM may include leaf, shoot and stalk damage which interferes with vine metabolism and fruit quality; infected flowers with poor fruit set and reduced yield; berry cracking/splitting which predisposes plants to other infections; and general reduction in vine vigor and productivity.

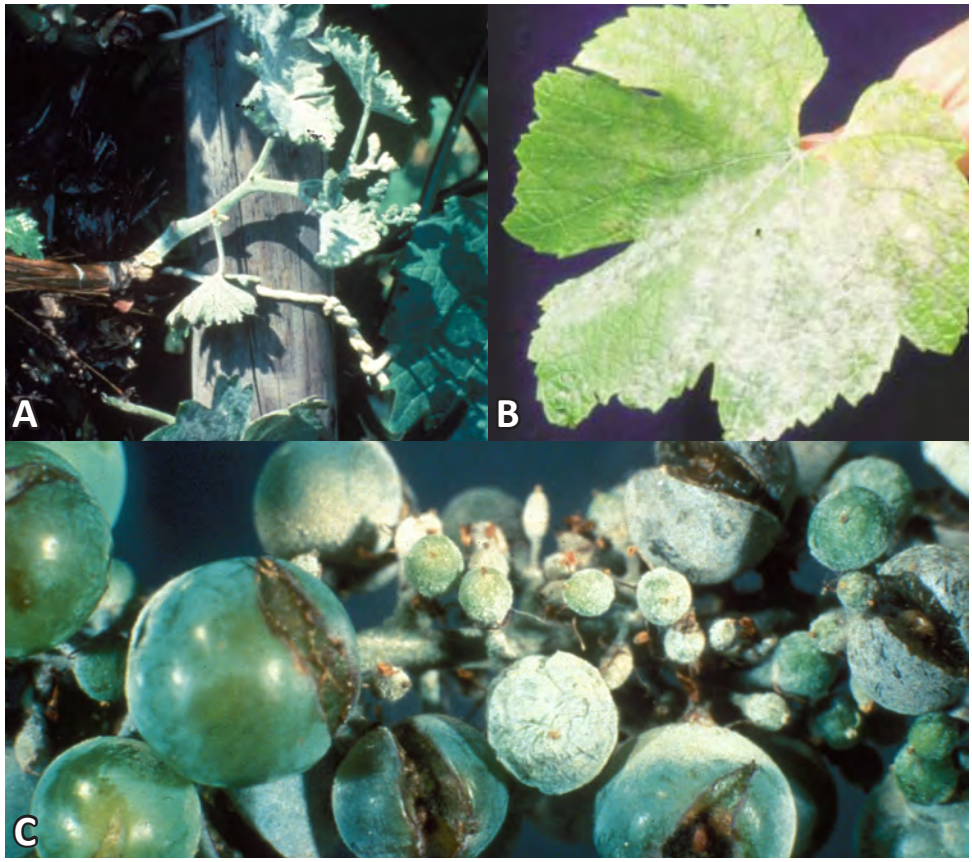


FIGURE 2. *Erysiphe necator* powdery mildew on *Vitis* sp., grape. A: an infected vine, B: symptoms of an infected leaf include a white, "powdery" appearance, C: berries split by a PM infection (Photos: U. of Georgia Plant Pathology Archive, Bugwood.org)

On Cucumber

Greenhouse powdery mildew infections of cucumber are a serious problem. Both *Podosphaera xanthii* & *Golovinomyces cichoracearum* infect the Cucurbitaceae plant family (Figure 3A) and may infect the same host plants. Conidia are produced in chains, hyaline (clear), ellipsoid to ovoid or doliform, developing from unbranched conidiophores with cylindrical foot cells (Figure 3B). Some of the morphological characteristics of the fungus that can be identified with the compound microscope.

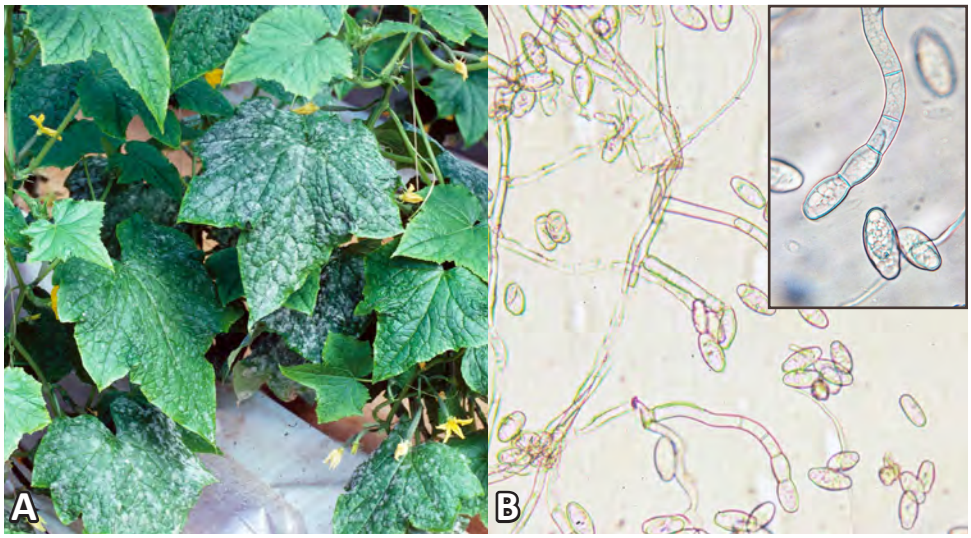


FIGURE 3. A: An infected Cucurbitaceae plant. **B:** Conidia of *Podosphaera xanthi* from infected cucumber. 200x, clear tape water mount, & inset 400x. (Photomicrographs: C. Averre, North Carolina State U., Bugwood.org).

On Tomato

Leveillula taurica, powdery mildew on tomato, *Lycopersicon esculentum*. Powdery mildew commonly infects tomatoes grown in greenhouses and high tunnels, but may be detected on feld grown tomatoes during dry summers. Profuse white to gray mycelium, necrosis and blighting of tomato leaves are typical symptoms (Figure 4).

FIGURE 4. A tomato plant exhibiting symptoms of PM infection. (Photo: T. Coolong (ed.), J. Masabni, et. al., Extension Horticulturists. From "An IPM Scouting Guide for Common Pests of Solanaceous Crops in Kentucky." Univ. of Kentucky IPM & Cooperative Extension Service)

On Onion & Pepper

Leveillula taurica, powdery mildew on *Allium cepa* (onion) and *Capsicum annum* (pepper). Early infection symptoms appear on older leaves as whitish powdery lesions late in the growing season (Figure 5A). As the infection progresses the leaves become chlorotic, necrotic and exhibit distortion. Mycelium (hyphae) develop on the epidermal surface or intercellularly (endophytic) among mesophyll cells producing conidiophores (Figure 5B) within host tissue which emerge thru leaf stomata. Two types of conidia (spores) are produced (dimorphic) characteristic of this fungus. *L. taurica* has a wide host range including Solanaceous crops such as tomato and pepper.

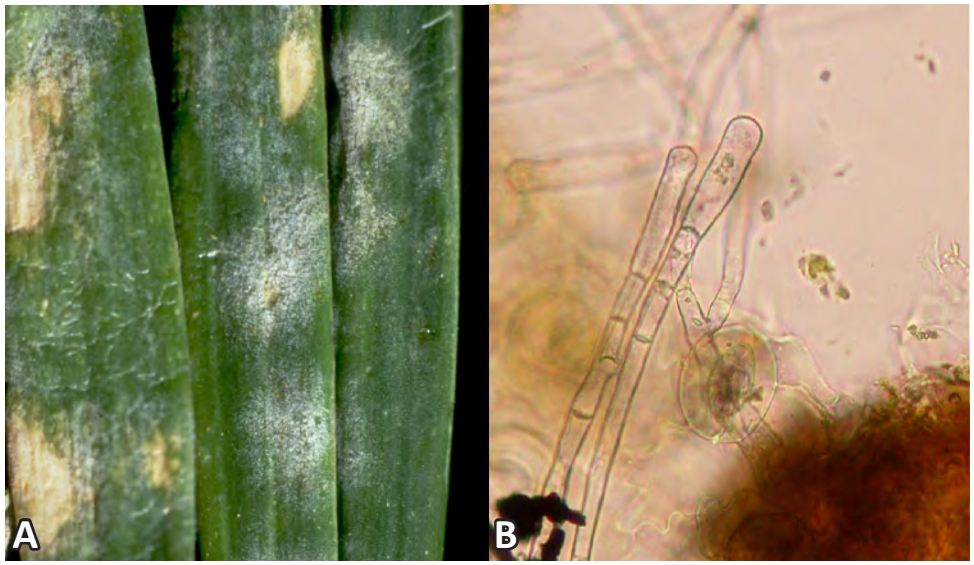


FIGURE 5. A: Onion, *Allium cepa*, infected with powdery mildew (Photo: S. K. Mohan, Bugwood.org). **B:** Conidiophores of *Oidiopsis sicula*, the anamorph state of *Leveillula taurica*, emerging from leaf stomata of a pepper plant, *Capsicum annum*. (Photomicrograph: C. Blomquist, CDFA, CPPDC)

CHRYSANTHEMUM WHITE RUST

PREPARED BY C. BLOMQUIST

Chrysanthemum white rust (CWR) caused by *Puccinia horiana* is a significant disease of cultivated chrysanthemum. It was first described in 1895 in Japan and is now established in Europe, Africa, Australia, Central America and other parts of eastern Asia. Because CWR is not established in the United States and Canada, and considered a disease that is possible to eradicate when found, it is a disease of quarantine significance. If CWR is found it requires state and federal regulatory action; infected plants are destroyed and asymptomatic plants are sprayed with fungicidal sprays until the disease is no longer present. The area surrounding the detection location is also surveyed and infected plants are traced back to their origin. Because the disease's host range is limited to cultivated chrysanthemums and close relatives, eradication from a site is possible.

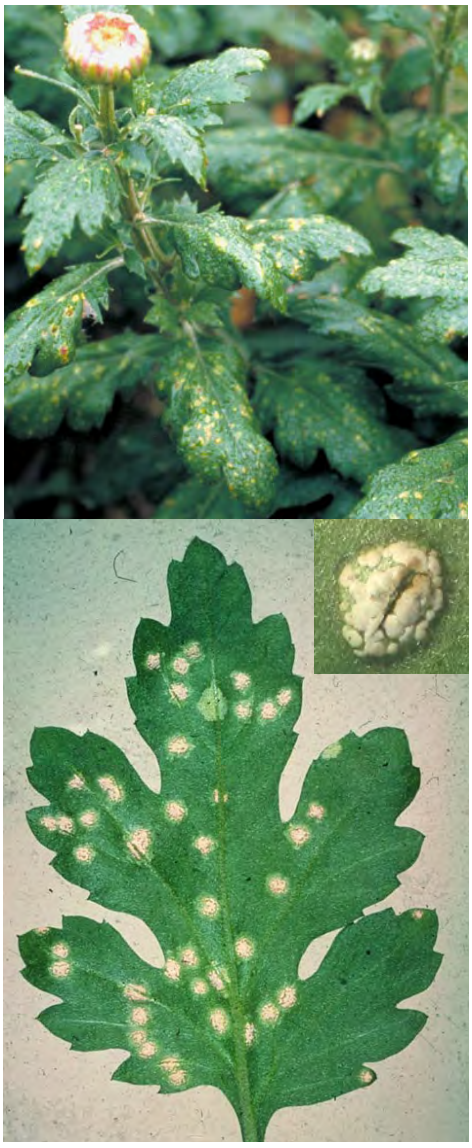
Symptoms of CWR are 4-5 mm buff-colored pustules on the leaf underside. These pustules cause a yellow spot, which is sometimes dimpled on the upper side of the leaf. Pustules can occur on all plant parts except flowers. CWR is favored by cool, wet weather or in greenhouses where humidity is very high. CWR produces two kinds of spores in the pustule. Thick, two-celled, colorless teliospores allow the rust to survive in dry, unfavorable conditions. During cool, wet conditions small, fragile infectious basidiospores are produced from the teliospores which can be splashed or brushed onto susceptible plants. Basidiospores are very susceptible to drying and survive only 5 minutes if the humidity is less than 80%, and one hour if the humidity is between 81 and 90%. Under high humidity (between 96-100%) and a film of water on the leaf, basidiospores can germinate and penetrate the leaf tissue in 2 hours at 17° C, the hyphae eventually growing into a pustule. In 2008, three California nurseries shipped CWR infected plants throughout the state.

REFERENCES

http://www.umass.edu/umext/floriculture/fact_sheets/pest_management/chrys_white_rust.htm

http://www.agf.gov.bc.ca/cropprot/cwrust.htm

http://www.aphis.usda.gov/plant_health/plant_pest_info/cwr/index.shtml



TOP: Blister symptoms are visable on the upper leaf (photo: SRPV, Bourgogne Archive, Les Services Regionaux de la Protection des Vegetaux, www.Bugwood.org), **BOTTOM:** Underside of leaf with telial pustules turning white due to sporidia. (Photo: Central Science Lab., Harpenden Archive, British Crown, www.Bugwood.org). **INSET:** Typical white telial sorus on leaf underside (Photo: J. W. Dooley, USDA/APHIS PPQ, www.Bugwood.org).

CHRYSANTHEMUM WITE RUST DETECTIONS IN 2008

County	City	No.	County	City	No.	County	City	No.
Alameda	Fremont	1	Riverside	Hemet	1	San Diego	Santee	1
Alameda	Livermore	1	Riverside	Lake Elsinore	1	Santa Barbara	Lompoc	1
Alameda	Pleasanton	1	Riverside	Riverside	1	San Luis Obispo	San Luis Obispo	1
Alameda	San Leandro	1	Sacramento	Antelope	2	Santa Barbara	Santa Maria	4
Kings	Hanford	1	Sacramento	Citrus Heights	1	Santa Clara	San Jose	1
Lake	Clearlake	1	Sacramento	Elk Grove	1	Santa Clara	Sunnyvale	1
Los Angeles	Pico Rivera	1	Sacramento	Folsom	1	Shasta	Anderson	1
Merced	Los Banos	1	Sacramento	Rancho Cordova	1	Sonoma	Rohnert Park	1
Monterey	Salinas	27	Sacramento	Sacramento	3	Sonoma	Windsor	1
Napa	American Canyon	1	San Diego	Chula Vista	2	Stanislaus	Modesto	1
Napa	Napa	1	San Diego	Fallbrook	1	Sutter	Yuba City	1
Riverside	Corona	1	San Diego	San Diego	1	Yolo	West Sacramento	1

Detections of Chrysanthemum White Rust in 2008 by the PPDB Plant Pathology Laboratory

GLADIOLUS RUST

PREPARED BY C. BLOMQUIST

INTRODUCTION

Gladiolus rust, caused by the pathogen *Uromyces transversalis*, was first detected in California in a small gladiolus grower's plot in San Diego County, in 2006 (Blomquist 2007). As a result of this find, a survey was conducted within a one-mile radius and the pathogen was found in some residential areas. Gladiolus rust is thought to have been initially introduced into California on cut flowers from Mexico. In 2007, gladiolus rust was found by a homeowner in San Mateo County where it was reported to the county's plant pathology farm advisor, Dr. Colleen Warfield. Gladiolus rust is considered by the USDA to be a pathogen of quarantine significance, so a survey was undertaken to identify the extent of the infection in residential areas and nurseries in the San Francisco Bay area. This survey was a cooperative effort between the San Mateo County Department of Agriculture, USDA APHIS PPQ and CDFA.

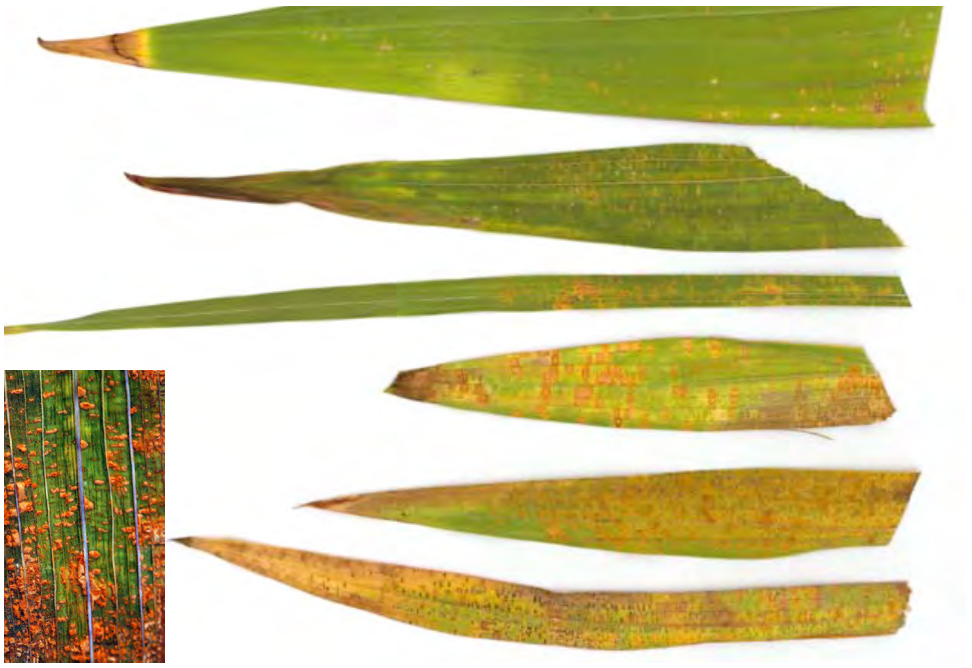


FIGURE 1. Typical leaf symptoms of *Uromyces transversalis* on gladiolus leaves exhibiting bright orange uredinial pustules (sori). **INSET:** This rust is named for its characteristic transverse sori that develop horizontally across the veins of infected leaves. (Photos: C. Blomquist, CDFA, CPPDB)

BACKGROUND

Gladiolus rust is native to Africa and was first reported in Europe in the late 1960's. The disease caused severe epidemics in Italy in the late 1970's, and was reported in Argentina and Brazil and finally in Mexico by 2005 (Rodriguez-Alvarado 2006). In 2004, the disease was intercepted in cut flower shipments from Mexico to ports in Texas and California. In 2006, the disease was confirmed to be present in Florida and in San Diego County, California. Commercial hybrid cultivars of gladiolus show varying levels of susceptibility to infection. Resistance to this rust is quantitative and not controlled by a single gene or by a small number of genes (Littlejohn 1997). The center of diversity of Gladiolus species is considered to be the southwestern area of South Africa.

DISEASE DESCRIPTION

The disease symptoms are that of typical leaf rust with bright orange uredinial pustules present on the leaf blades, unlike most rusts of monocots, where the rust pustules extend along the leaf veins, the rust pustules of *U. transversalis* tend to cross the veins of the leaf (Figure 1). As the disease progresses, blackish-brown telia form under the epidermis, sometimes surrounding the uredia. Teliospores are single-celled, brown and smooth (Figure 2A). Although teliospores are typically thought of as overwintering spores that allow the pathogen to survive in harsh environmental conditions, it is not known what function they play in the disease cycle of this rust. The urediniospores (Figure 2B) are infectious, powdery, and can be spread by wind and water splash.

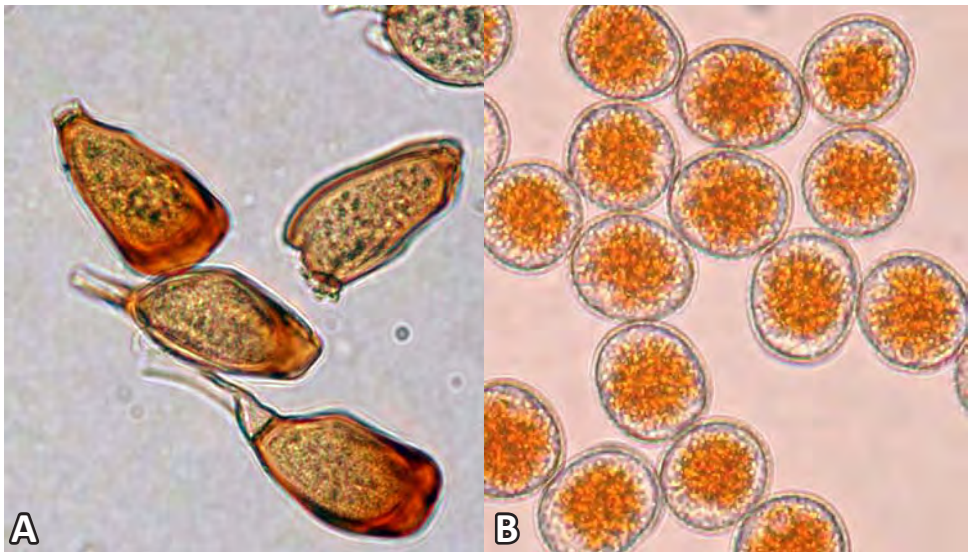


FIGURE 2. A: Single-celled, brown, smooth teliospores borne singly on pedicels, exhibiting apical wall thickening. As the disease progresses blackish-brown telia are formed under the leaf epidermis & may surround existing uredinia. **B:** Bright orange urediniospores are infectious, powdery & may be disseminated by wind and water. (Photomicrographs: C. Blomquist, CDFA, CPPDB)

County	City	No.
San Diego	Bonsall	2
San Diego	Carlsbad	10
San Diego	La Jolla	1
San Diego	Oceanside	15
San Diego	San Marcos	2
San Diego	Valley Center	1
San Diego	Vista	17
San Francisco	San Francisco	1
San Mateo	San Bruno	19
San Mateo	So. San Francisco	18

TABLE 1. Detections of Gladiolus Rust in 2008 by the PPDB Plant Pathology Laboratory.

BIOLOGY

Urediniospores germinate at an optimum temperature of 15–20°C and require between 6–12 hours of leaf wetness for infection to occur. It takes from 8–23 days for new lesions to develop after infection, depending on temperature (Garibaldi 1997). In South Africa the disease has been reported to reach epidemic proportions with temperatures between 16 and 23°C with 1–2 days of fog (Ferreira 1989). The San Francisco Bay area has a climate ideal for this rust.

RESULTS

No gladiolus rust was found in nurseries, but the rust was found to be widespread in private residences in the San Francisco Bay area (Figure 3).

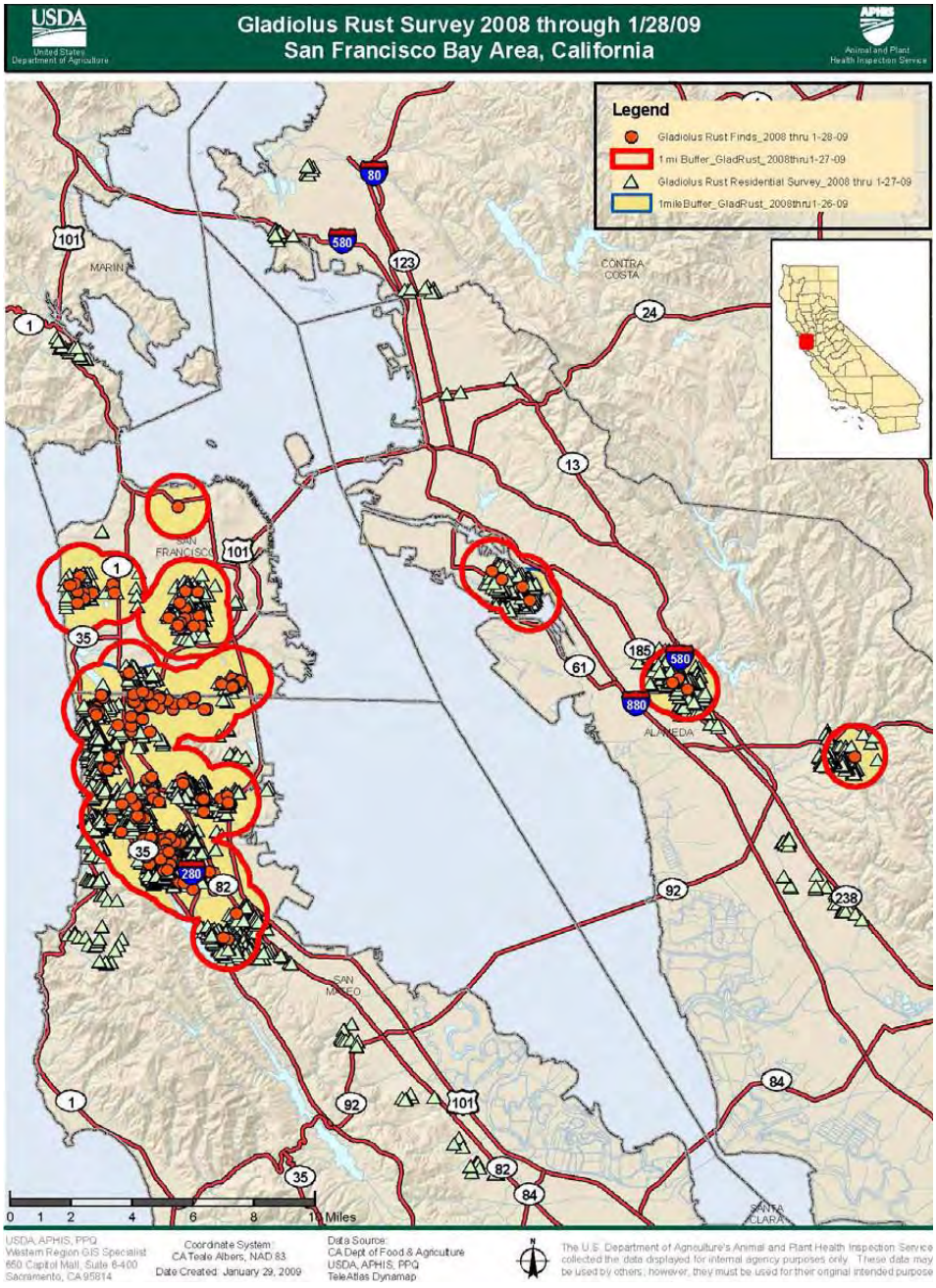


FIGURE 3. 2008 Distribution of Gladiolus Rust in the San Francisco Bay Area of Northern California.

REFRENCES

Blomquist, C.L. and Thomas, S.L., McKemy, J.M., Nolan, P.A., Luque-Williams, M. 2007. First report of *Uromyces transversalis* causal agent of gladiolus rust in San Diego County, California. *Plant Disease* 91:1202.

Ferreira, J.F. and W.G. Nevukk 1989. Evaluation and Bitertanol and Triadimefon for the control of Gladiolus Rust caused by *Uromyces transversalis*. *Plant Disease* 73:987-990.

Garibaldi, A. and Aloj, B. 1980. Observations on biology and control of *Uromyces transversalis* (Thum.) Winter on gladiolus in Southern Italy. *Acta Hortic*. 109:409-411.

Littlejohn, G.M. and Blomerus, L.M. 1997. Studies on Gladiolus resistance to transverse rust. *Acta Hortic*. 430:509-514.

Rodriguez-Alvarado, G.,Fernandez-Pavia, S.P., Valenzuela-Vazquez, M., Loya-Ramirez, J.G. 2006. First report of Gladiolus Rust caused by *Uromyces transversalis* in Michoacan, Mexico. *Plant Disease* 90:687.

SELECTED PHOTOGRAPHS OF DETECTED RUST FUNGI

PREPARED BY J. WHITE

Pine-Aster Rust

COLESPORIUM ASTERUM

Heavy infections may cause severe needle loss and resultant growth reduction (Figure 1A). The rust fungus is heteroecious (requires two host plant species for life cycle completion) and macrocyclic (the life cycle includes all five spore states). The aecia (Figure 1B-C) produce yellow-orange colored aecio-spores that are dispersed by wind and infect the alternate hosts, *Aster* sp. (Aster) and *Solidago* sp. (Goldenrod). Teliospores (Figure 1D) will eventually germinate producing basidia and basidiospores which are dispersed by wind and will re-infect the needles of the primary *Pinus* sp. host. The uredium stage of the fungus is also produced on the alternate host.

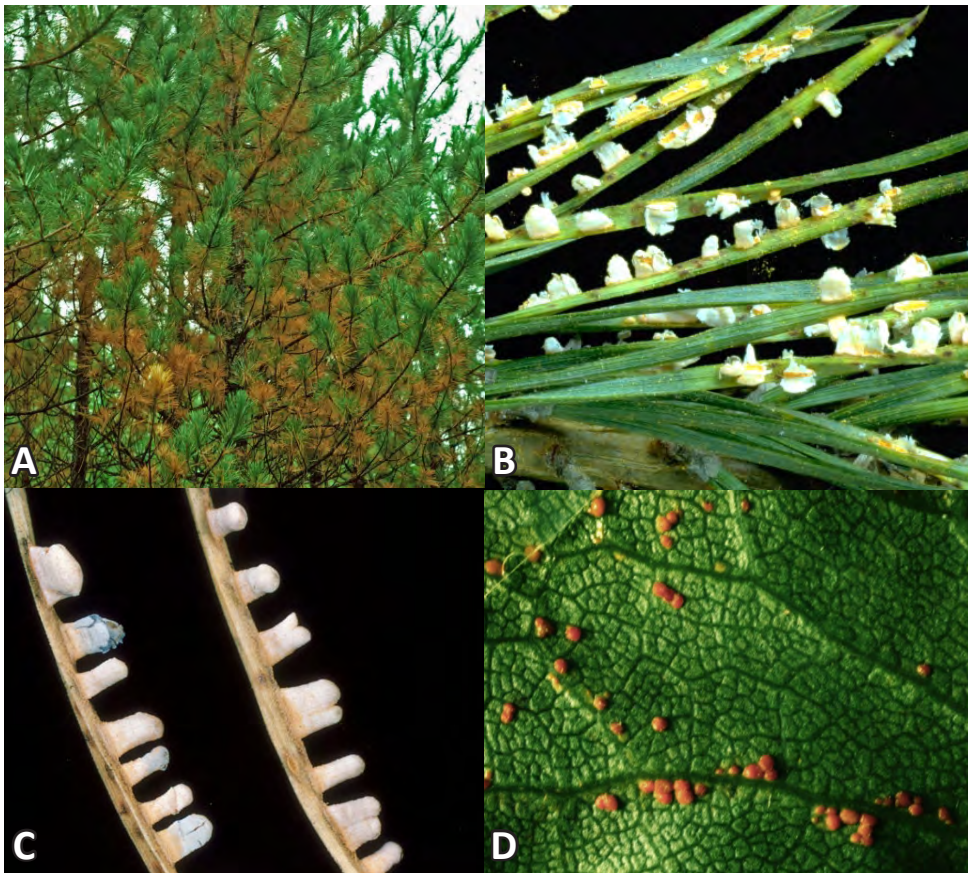


FIGURE 1. A: Infection on Red pine, *Pinus resinosa*, exhibiting typical symptoms of needle cast & discoloration. (Photo: M. Ostry, USDA Forest Service, North Central Research Station, www.Bugwood.org); **B:** Close-up of aecial pustules lining needles & producing yellow-orange aeciospores on *Coleosporium* sp., Scots Pine, *Pinus sylvestris*. (Photo: P. Kapitola, State Phytosanitary Administration, www.Bugwood.org); **C:** Aecial stage of *Coleosporium asterum* forming white aecium on pine needles commonly in late spring or early summer. (Photo: R. L. Anderson, USDA Forest Service, www.Bugwood.org); **D:** Erumpent orange telium produced on the underside of an alternate host, Big leaf Aster (Photo: M. Ostry).

FIGURE 2. Infected *Plumeria* sp. with typical yellow-orange, powdery rust pustules (uredium) on undersides of leaves (Photos: Hawaii Pest & Disease Image Gallery, S. C. Nelson, U. of Hawaii, Manoa)

Plumeria Rust

COLEOSPORIUM PLUMERIAE

Infections are caused by windborne urediniospores that adhere to moist leaves under wet and humid conditions (Figure 2). The rust fungus overwinters on infected leaves and leaf debris.

Orange Rust

GYMNOCONIA NITENS

On Blackberry, *Rubus ursinus* & *Rubus argutus*. Bright orange aecia are produced on lower leaf surfaces in the spring (Figure 3A). Aeciosporesare disseminated by wind and infect mature berry leaves. The rust fungus becomes systemic in plants and infected canes will bear little or no fruit (Figure 3B).

FIGURE 3. A: On *Rubus ursinus* **(Photo: J. W. Pscheidt, Oregon State U. Online Guide to Plant Disease Control); B: Infected *Rubus argutus* growing wild in pasture land (Photo: Pathogens of plants of Hawaii, website by K. & F. Starr)**

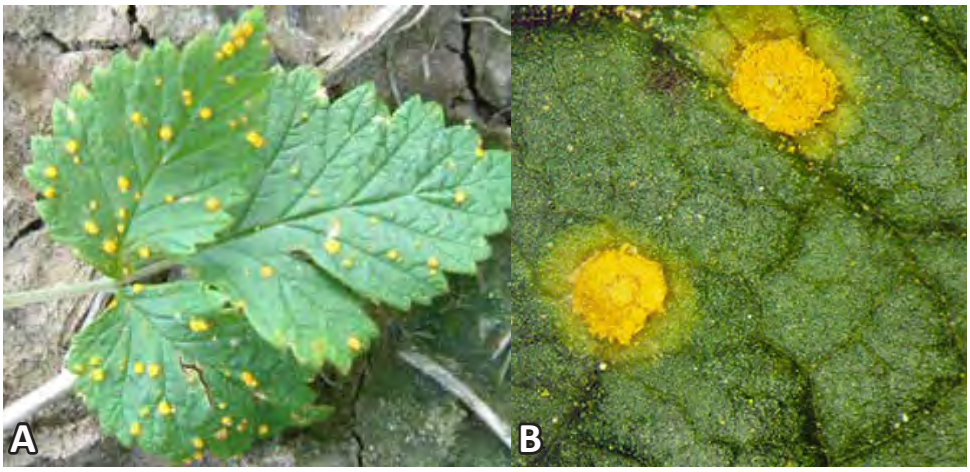


FIGURE 4. A: Infected Raspbery leaves (Photo: T. Peerbolt, NWIPM, Peerbolt Crop Management); B: aecium develop in a ring around the spermagonia on the upper leaf surface (Photo: P. R. Bristow, Oregon State U. Online Guide to Plant Disease Control)

Yellow Rust

PHRAGMIDIUM RUBI-IDAEI

On Raspberry, *Rubus idaeus*. Infections in spring and early summer form small yellowish/orange raised pustules (spermagonia) on upper leaf surfaces (Figure 4A). Spore producing aecium develop in a ring around the spermagonia (Figure 4B). In the summer a third spore stage (uredial) develops on the lower leaf surfaces followed by the black overwintering telial stage produced during harvest season.

Rose Rust

PHRAGMIDIUM TUBERCULATUM

This rust fungus is autoecious (requiring only one host to complete a life cycle) and macrocyclic. The spermagonial-aecial stage is short-lived and the rust survives in the uredial/telial stages during most of the growing season. Both the uredium (orange pustules, Figure 5) and telium (black fruiting structures) stages can be found during any part of the growing season on various *Rosa* spp.

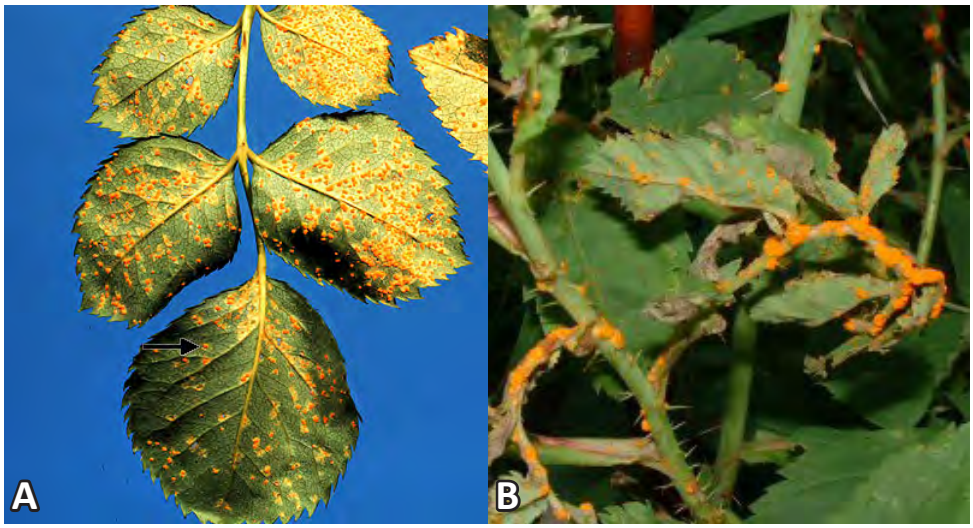


FIGURE 5 A: Infected Rose stem (Photo: P. Northover, Crops Knowledge Centre, Manitoba Agriculture, Food and Rural Initiatives). B: Infected Rose leaves and stems (Photo: B. D. Hudelson, Dept. of Plant Pathology, U. of Wisconsin-Madison/Extension/General Master Gardener Training)

RUST FUNGI IDENTIFIED IN 2008

By the PPDC Plant Pathology Laboratory

Detected Rust Fungi from 2008, not including Chrysanthemum White Rust or Gladiolus Rust which can be found in individual reports.

Rust Pathogen	Common Name	Host	County	City	Rating
Coleosporium asterum	Rust of Aster & Pine	*Pinus* sp.	San Diego	Arroyo Grande	C
Coleosporium asterum	Rust of Aster & Pine	*Pinus* sp.	San Diego	San Diego	C
Coleosporium asterum	Rust of Aster & Pine	*Solidago* sp.	Fresno	Pinedale	C
Coleosporium plumeriae	Plumeria Rust	*Plumeria* sp.	Contra Costa	Oakley	C
Cumminsiella mirabilissima	Rust on Mahonia	*Mahonia* sp.	Santa Barbara	Carpinteria	C
Gymnoconia nitens	Rust on Rubus spp.	*Rubus eubatus*	Madera	Madera	C
*Gymnosporangium juniperi-virginianae**	Cedar-Apple Rust	*Malus pumila*	Solano-Interception-NC	Vallejo	A
*Gymnosporangium juniperi-virginianae**	Cedar-Apple Rust	*Malus* sp.	Redwood Hwy Insp.Sta.		A
Gymnosporangium libocedri	Incense Cedar Rust/Pear Rust	*Calocedrus decurrens*	Los Angeles	Glendora	C
Gymnosporangium libocedri	Incense Cedar Rust/Pear Rust	*Cedrus* sp.	Amador	Jackson	C
Melampsora epitea	Willow Conifer Rust	*Salix* sp.	San Luis Obispo	Arroyo Grande	C
Melampsora epitea	Willow Conifer Rust	*Salix* sp.	Santa Clara	Palo Alto	C
Melampsora hypericorum	Hypericum Rust	*Hypericum calycinum*	Santa Cruz	Watsonville	C
Melampsora monticola	Rust on Euphorbia sp.	*Euphorbia* sp.	San Diego	Bonsall	C
Melampsora monticola	Rust on Euphorbia sp.	*Euphorbia* sp.	San Mateo	S. San Francisco	C
Melampsora occidentalis	Rust on Populus spp.	*Populus deltoides*	Santa Barbara	Santa Ynez	C
Melampsora occidentalis	Rust on Populus spp.	*Populus fremontii*	Los Angeles	Woodland Hills	C
Phragmidium rubi-idaei	Yellow Rust/Rust on Rubus spp.	*Rubus idaeus*	San Luis Obispo	Arroyo Grande	C
Phragmidium rubi-idaei	Yellow Rust/Rust on Rubus spp.	*Rubus ursinus*	Santa Cruz	Watsonville	C
*Phragmidium tuberculatum***	Rose Rust	*Rosa* sp.	Contra Costa	Alamo	Q
*Phragmidium tuberculatum***	Rose Rust	*Rosa* sp.	Monterey	Salinas	Q
*Phragmidium tuberculatum***	Rose Rust	*Rosa* sp.	Orange	Santa Ana	Q
*Phragmidium tuberculatum***	Rose Rust	*Rosa* sp.	Sacramento	Orangevale	Q
*Phragmidium tuberculatum***	Rose Rust	*Rosa* sp.	San Diego	La Mesa	Q
*Phragmidium tuberculatum***	Rose Rust	*Rosa* sp.	San Diego	Rancho Santa Fe	Q
*Phragmidium tuberculatum***	Rose Rust	*Rosa* sp.	Santa Barbara	Carpinteria	Q
*Phragmidium tuberculatum***	Rose Rust	*Rosa* sp.	Santa Barbara	Santa Barbara	Q
*Phragmidium tuberculatum***	Rose Rust	*Rosa* sp.	Santa Barbara	Santa Ynez	Q
*Phragmidium tuberculatum***	Rose Rust	*Rosa* sp.	Santa Barbara	Solvang	Q
*Phragmidium tuberculatum***	Rose Rust	*Rosa* sp.	Santa Cruz	Soquel	Q
*Phragmidium tuberculatum***	Rose Rust	*Rosa* sp.	Santa Cruz	Watsonville	Q
Puccinia allii	Onion Rust	*Allium sativum*	Monterey	Royal Oaks	C
Puccinia antirrhini	Snapdragon Rust	*Antirrhinum* sp.	Contra Costa	Richmond	C
Puccinia antirrhini	Snapdragon Rust	*Antirrhinum* sp.	Santa Cruz	Aptos	C
Puccinia canaliculata	Rust on Sedges		Los Angeles	Rosemead	C
Puccinia carthami	Safflower Rust	*Carthamus tinctorious*	San Joaquin	Stockton	C
Puccinia carthami	Safflower Rust	*Carthamus tinctorious*	Yolo	Woodland	C
Puccinia carthami	Safflower Rust	*Carthamus tinctorious*	Yuba		C
Puccinia convolvuli	Rust of Convolvulus spp.	*Convolvulus tricolor*	Contra Costa	Richmond	C
Puccinia coronata	Crown Rust of Grains	*Festuca* sp.	San Mateo	San Bruno	C
Puccinia dioicae var. *extensicola*	Rust of Carex	*Carex pansa*	Santa Barbara	Carpinteria	C
Puccinia evadens	Rust of Baccharis	*Baccharis pilularis*	Monterey	Salinas	C
Puccinia farinacea	Salvia Rust	*Salvia greggii*	Santa Barbara	Carpinteria	Q
Puccinia farinacea	Salvia Rust	*Salvia greggii*	Santa Barbara	Goleta	Q

*Intercepted Pests **Currently under review to receive a "C" Rating

Rust Pathogen	Common Name	Host	County	City	Rating
Puccinia farinacea	Salvia Rust	*Salvia greggii*	Santa Barbara	Santa Barbara	Q
Puccinia farinacea	Salvia Rust	*Salvia greggii*	Santa Clara	San Jose	Q
Puccinia farinacea	Salvia Rust	*Salvia greggii*	Santa Cruz	Santa Cruz	Q
Puccinia farinacea	Salvia Rust	*Salvia greggii*	Ventura	Ventura	Q
Puccinia farinacea	Salvia Rust	*Salvia microphylla*	Ventura	Ventura	Q
Puccinia hemerocallidis	Daylilly Rust	*Hemerocallis* sp.	Santa Cruz	Watsonville	C
Puccinia heucherae	Heuchera Rust	*Heuchera* sp.	Santa Cruz	Aptos	C
Puccinia iridis	Rust of Iris	*Iris germanica*	Santa Cruz	Watsonville	C
Puccinia iridis	Rust of Iris	*Iris hexagone*	Mendocino	Fort Bragg	C
Puccinia iridis	Rust of Iris	*Iris* sp.	Mendocino	Fort Bragg	C
Puccinia iridis	Rust of Iris	*Iris* sp.	San Mateo	San Bruno	C
Puccinia lagenophorae	Rust of Senecio	*Bellis perennis*	Merced	Merced	C
Puccinia malvacearum	Rust of Hollyhock/Malva Rust	*Alcea* sp.	San Mateo	San Mateo	C
Puccinia malvacearum	Rust of Hollyhock/Malva Rust	*Lavatera* sp.	Santa Cruz	Santa Cruz	C
Puccinia malvacearum	Rust of Hollyhock/Malva Rust	*Malva* sp. (weed)	San Benito	Hollister	C
Puccinia menthae	Mint Rust on Oregano	*Origanum vulgare*	San Mateo	S. San Francisco	C
Puccinia psidii	Rust of Eucalyptus & Guava	*Syzgium samarangense*	Orange	Anaheim	B
Puccinia sorghi	Rust of Corn	*Zea mays*	San Bernardino	Chino Hills	C
Puccinia striiformis	Stripe Rust of Cereals & Grasses	*Festuca* sp.	Sacramento	Sacramento	C
Puccinia striiformis	Stripe Rust of Cereals & Grasses	*Poa* sp.	San Mateo	Daly City	C
Puccinia vincae	Rust of Vinca	*Vinca minor*	Contra Costa	San Ramon	C
Puccinia vincae	Rust of Vinca	*Vinca* sp.	Alameda	Oakland	C
Pucciniastrum epilobii	Fuschsia, Fir & Fireweed Rust	*Fuchsia sp.*	Santa Cruz	Watsonville	C
Tranzschelia discolor	Rust of Prunus spp. & Anemone	*Prunus domestica*	San Luis Obispo	San Luis Obispo	C
Tranzschelia discolor	Rust of Prunus spp. & Anemone	*Prunus* sp.	Riverside	Riverside	C
Uromyces dianthi	Carnation Rust	*Dianthus* sp.	Santa Cruz	Watsonville	C
Uromyces epicampis	Rust on Muhlenbergia	*Muhlenbergia rigens*	Santa Barbara	Lompoc	Q
Uromyces fabae	Rust on Broadbean, Pea & Vetch	*Vicia faba*	Fresno	San Joaquin	C
Uromyces trifolii-repentis	Rust of Clover	*Trifolum* sp.	Sacramento	Galt	C

*Intercepted Pests **Currently under review to receive a "C" Rating

PALM WILT

PREPARED BY S. ROONEY-LATHAM & C. BLOMQUIST

Palm wilt is a lethal vascular wilt disease caused by the fungus *Fusarium oxysporum* f. sp. *canariensis*. The disease was first documented in 1970 in France and has since been reported in France, Italy, Greece, Australia, Japan and the U.S. (Florida and California). Worldwide, the most susceptible host is the Canary Island date palm (*Phoenix canariensis*). The disease has also been reported on other palm species including true date palm (*Phoenix dactylifera*), Senegal date palm (*P. reclinata*), silver date palm (*P. sylvestris*), and California fan palm (*Washingtonia filifera*) (Simone & Cashion 1996). Disease symptoms include one-sided dieback of the leaflets as well as dark discoloration and streaking of the vascular tissue. Palm trees can take one to 2 years to show symptoms after infection and will eventually die of this disease. Spread of the disease is primarily through movement of infected trees and contaminated soil or from contaminated pruning equipment. Proper disinfection of pruning and propagation tools between palms prevents healthy trees from becoming infected by asymptomatic, infected trees.

In April 2007, a survey was undertaken to determine the distribution of palm wilt disease in California. Suspect *Fusarium* isolates cultured from symptomatic fronds were tested using an established molecular assay (Pyler et al. 1999) This diagnostic assay can distinguish between non-pathogenic strains of *Fusarium oxysporum* and the lethal *F. oxysporum* f. sp. *canariensis* strain. To date, the CDFA lab has confirmed this "A"-rated pathogen from 15 different California counties, predominantly on *P. canariensis*. Palm wilt appears to be established and widely distributed throughout the state of California. Palm wilt was found in Marin, Riverside, San Deigo, Santa Barbara, Santa Clara, and Ventura counties in 2008.

FIGURE 1. Isolation plate from an infected tree. Colonies of this strain can vary in color from white (shown) to pink to violet (Photo: S. Rooney-Latham, CDFA, PPDB)

REFRENCES

Simone, G.W. and Cashion, G. 1996. Fusarium Wilt of Canary Island Date Palm in Florida. *Plant Pathology Fact Sheet* PP-44. University of Florida, Cooperative Extension Service, Gainesville, FL.

Plyler, T.R., Simone, G.W., Fernandez, D., and H.C. Kistler. 1999. Rapid detection of the *Fusarium oxysporum* lineage containing the Canary island date palm wilt pathogen. *Phytopathology*. 89:407-413.

FIGURE 2. A: Palm Wilt of *Phoenix canariensis*, in Santa Barbara County caused by *Fusarium oxysporum* f. sp. *canariensis*. (Photo: H. Scheck, Santa Barbara Co. Plant Pathologist); B & C: Brown vascular streaking of the petiole from fronds exhibiting one-sided dieback (Photos: S. Rooney-Latham, CDFA, PPDB).

CITRUS GREENING (HUANGLONGBING) TESTING IN CALIFORNIA

PREPARED BY I. MOHAMMED

In August 2008, *Diaphorina citri,* Asian Citrus Psyllid (ACP), was discovered in San Diego County. This insect is a known vector for two strains of the bacterium that causes Huanglongbing (HLB, also referred to as Citrus Greening [CG]), which is presently considered the most destructive disease for citrus plants worldwide. ACP has been found previously in the southeastern United States, Texas, Hawaii, and Mexico. In addition, HLB has been detected in Florida, Georgia, South Carolina, and Louisiana.

There are three known strains of the bacterium causing HLB. The first two, *Candidatus Liberibacter asiaticus* (first discovered in Asia) and *Ca. L. americanus* (first discovered in Brazil) are both vectored by ACP. A third strain, *Candidatus Liberibacter africanus* (first discovered in Africa), is vectored by *Trioza erytreae*, African Citrus Psyllid.

Symptoms of HLB include areas of yellow spots (mottling) and yellow midribs and veins. Once infected, the trees slowly deteriorate, producing fruit unsuitable for resale due to their appearance and taste. The disease eventually kills the host, shortening its life span significantly.

There is no known cure for HLB, but biological control of the vectors will be the first line of defense. If HLB is found in California, then internal and external quarantines would most likely be imposed. Diseased trees would also have a significant economic impact due to lost crops and expenses paid to protect healthy trees.

Because of the substantial impact of finding HLB in California, plant samples found within a 100 meter radius of any ACP find site are tested for for both bacterial strains of HLB vectored by ACP. To test plant samples, midribs are isolated from samples and the DNA is extracted and tested. The preferred method for molecular diagnostics for HLB is currently real-time PCR (qPCR) due to its efficiency and sensitivity. To ensure that samples were tested in a timely matter five seasonal employees were trained on the proper sampling of citrus tissue. In addition, five technicians and two scientists worked on DNA extractions and performed the real-time PCR tests.

In 2008, 131 ACP samples were tested, with San Diego and Imperial Counties

The number of citrus samples submitted to the PPDC had nearly doubled by the end of 2009, see Table 1. The majority of ACP samples submitted in 2008 and 2009 originated from Los Angeles but there were finds as far north as Fresno and Sacramento counties.

County	2008	2009	Total
Fresno	0	2	2
Imperial	8	328	336
Los Angeles	0	1266	1266
Orange	0	37	37
Sacramento	0	2	2
San Diego	20	287	307
Ventura	0	1	1
Unknown	103	0	103
Total	***131***	***1923***	***2054***

TABLE 1. Number of citrus samples tested for HLB starting from August, 2008 through December, 2009.

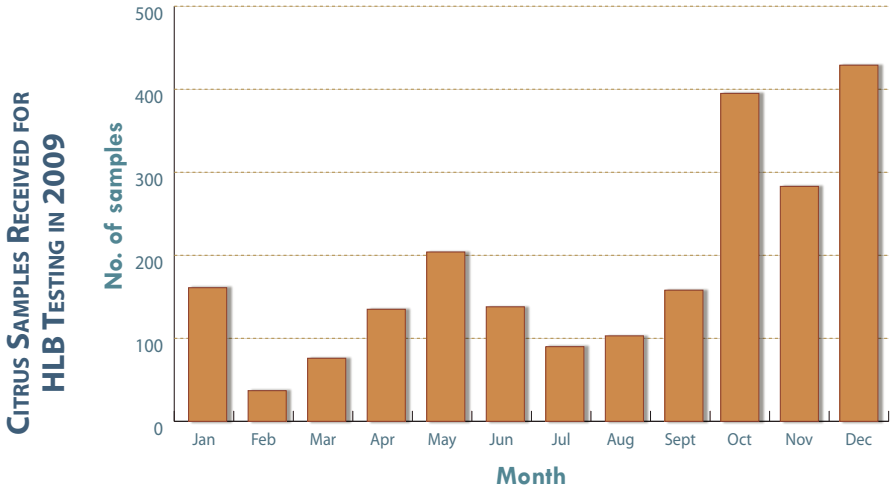


FIGURE 1. Citrus samples received by month for HLB Testing in 2009.

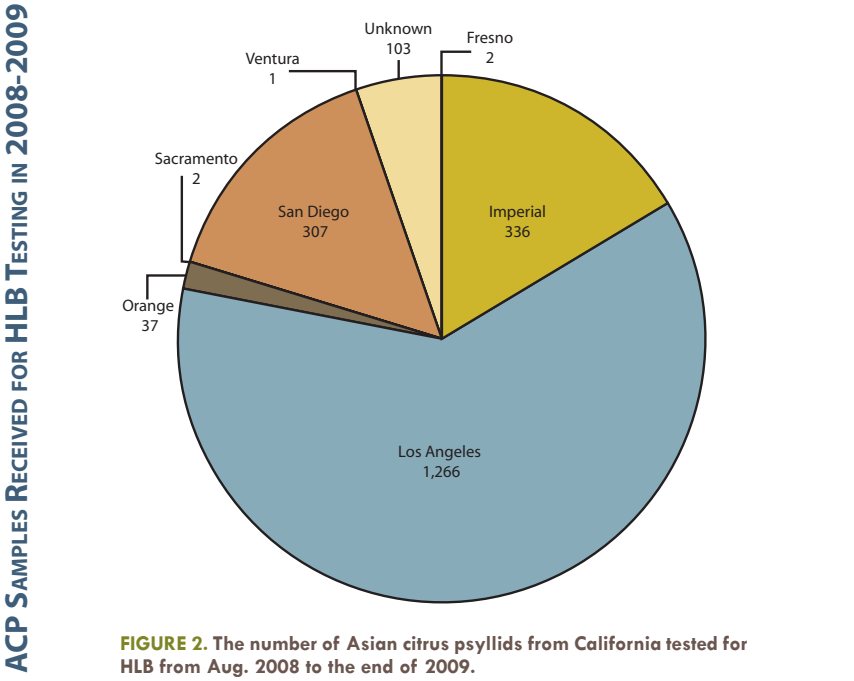


FIGURE 2. The number of Asian citrus psyllids from California tested for HLB from Aug. 2008 to the end of 2009.

being the only known counties of origin. In 2009, this number increased to 1,923 with new sites found in other counties but with the majority of psyllids originating from Los Angeles County (Figure 2). In August 2009, one ACP nymph found at a shipping facility in Fresno County tested positive for *Ca. L. asiaticus* and was confirmed by USDA. Since this was not an environmental sample, further precautions were not taken.

In addition to host samples found within a 100 meter radius of a psyllid find site, other counties and border stations sent samples for testing as a precaution and to ensure that incoming samples from other states do not have the disease. From October to January 2009, averages of 160 plant samples were sent to lab each month. During February to September 2009, incoming samples were sporadically sent to the lab, with only May 2009 having more than 200 samples received. However, in October 2009 incoming samples increased to 395, beginning a trend that has carried into 2010.

In 2008, there were 472 plant samples tested for HLB, with the majority coming from San Diego County. The following year, 2009, the number of samples increased to 2,212. Imperial and Los Angeles Counties sent over 650 samples each (Table 1). No plant samples tested positive in either year.

REFERENCES

http://www.cdfa.ca.gov/plant/factsheets/ACP_FactSheet.pdf

Gottwald, Tim R., 2010. Current Epidemiological Understanding of Citrus Huanglongbing. *Annu. Rev. Phytopathol*. 48:119-39.

DETECTION/INTERCEPTION TABLES

The A, B, and Q-rated pest identifications that were made during 2008 and 2009 by the PPDC are listed in the following tables. The identifications made by each lab are separated into three sections: 1) County Detections, 2) County Interceptions, and 3) Border Protection Station Interceptions.

All identifications listed herein were submitted to the lab through the Pest and Damage Record (PDR) system - other diagnostic services preformed by the laboratories are not part of the PDR system and are not included in the follow tables. Note that the numbers in the table do not reflect the workloads of the laboratories, only positive pest finds that merit an A, B, or Q-rating.

BOTANY

A, B, & Q Rated Detections by County, 2008-2009

Order	Family	Scientific Name	County	2008	2009	Rating
Apiales	Apiaceae	*Bupleurum rotundifolium*	Contra Costa		1	B
Apiales	Apiaceae	*Bupleurum rotundifolium*	Contra Costa	1		Q
Apiales	Apiaceae	*Bupleurum rotundifolium*	Santa Cruz	1		Q
Arales	Araceae	*Pistia stratiotes*	Shasta	1		B
Asterales	Asteraceae	*Acroptilon repens*	Mariposa		1	B
Asterales	Asteraceae	*Acroptilon repens*	Napa	1		B
Asterales	Asteraceae	*Acroptilon repens*	Sacramento	1		B
Asterales	Asteraceae	*Acroptilon repens*	Santa Barbara		1	B
Asterales	Asteraceae	*Acroptilon repens*	Santa Clara		1	B
Asterales	Asteraceae	*Acroptilon repens*	Shasta	1		B
Asterales	Asteraceae	*Acroptilon repens*	Yolo	1		B
Asterales	Asteraceae	*Arctotheca calendula*	Marin		1	A
Asterales	Asteraceae	*Arctotheca calendula*	Merced	1		A
Asterales	Asteraceae	*Carthamus baeticus*	Solano		1	B
Asterales	Asteraceae	*Centaurea calcitrapa*	Amador	1		B
Asterales	Asteraceae	*Centaurea calcitrapa*	Contra Costa		1	B
Asterales	Asteraceae	*Centaurea calcitrapa*	El Dorado	1		B
Asterales	Asteraceae	*Centaurea calcitrapa*	Glenn		1	B
Asterales	Asteraceae	*Centaurea calcitrapa*	Madera	1		B
Asterales	Asteraceae	*Centaurea calcitrapa*	Mendocino		1	B
Asterales	Asteraceae	*Centaurea calcitrapa*	Santa Clara	1		B
Asterales	Asteraceae	*Centaurea calcitrapa*	Yolo		1	B
Asterales	Asteraceae	*Centaurea diffusa*	Mariposa	1		A
Asterales	Asteraceae	*Centaurea diffusa*	Placer		1	A
Asterales	Asteraceae	*Centaurea diffusa**	Trinity		1	A
Asterales	Asteraceae	*Centaurea iberica*	Sonoma		1	A
Asterales	Asteraceae	*Centaurea maculosa*	Amador	1		A
Asterales	Asteraceae	*Centaurea maculosa*	Humboldt	1		A
Asterales	Asteraceae	*Centaurea maculosa*	Mariposa	1	1	A
Asterales	Asteraceae	*Centaurea maculosa*	Shasta	1		A
Asterales	Asteraceae	*Centaurea squarrosa*	Trinity		1	A
Asterales	Asteraceae	*Centaurea x moncktonii*	Siskiyou	1		A
Asterales	Asteraceae	*Chondrilla juncea*	Alameda		1	A
Asterales	Asteraceae	*Chondrilla juncea*	Calaveras		1	A
Asterales	Asteraceae	*Chondrilla juncea*	Del Norte	1		A
Asterales	Asteraceae	*Chondrilla juncea*	Fresno		4	A
Asterales	Asteraceae	*Chondrilla juncea*	Glenn	1		A
Asterales	Asteraceae	*Chondrilla juncea*	Lake	1		A
Asterales	Asteraceae	*Chondrilla juncea*	Napa		1	A
Asterales	Asteraceae	*Chondrilla juncea*	Shasta		1	A
Asterales	Asteraceae	*Chondrilla juncea**	Napa		1	A
Asterales	Asteraceae	*Cirsium arvense*	Alpine	1		B
Asterales	Asteraceae	*Cirsium arvense*	El Dorado	1		B
Asterales	Asteraceae	*Cirsium arvense*	Mendocino		2	B
Asterales	Asteraceae	*Cirsium arvense*	Tehama		3	B
Asterales	Asteraceae	*Cirsium arvense*	Yolo	1		B
Asterales	Asteraceae	*Cirsium arvense**	Sacramento		1	B
Asterales	Asteraceae	*Cirsium ochrocentrum*	Modoc	1		A
Asterales	Asteraceae	*Cynara cardunculus*	Mendocino		1	B
Asterales	Asteraceae	*Dittrichia graveolens*	Sacramento	1		Q
Asterales	Asteraceae	*Erechtites quadridentata*	Santa Barbara		1	Q
Asterales	Asteraceae	*Onopordum acanthium*	Calaveras		2	A
Asterales	Asteraceae	*Onopordum acanthium*	Lake	2		A
Asterales	Asteraceae	*Onopordum acanthium*	Placer	1		A
Asterales	Asteraceae	*Onopordum acanthium*	Shasta	1		A
Asterales	Asteraceae	*Onopordum illyricaum*	Santa Clara	1		A
Asterales	Asteraceae	*Parthenium hysterophorus*	San Joaquin		1	Q
Asterales	Asteraceae	*Senecio linearifolius*	Orange	1		Q
Asterales	Asteraceae	*Sonchus arvensis* ssp. *uliginosus*	Santa Barbara	1		A
Capparales	Brassicaceae	*Lepidium latifolium*	Santa Barbara		1	B

* Indicates Confer (cf.), "compare to." Indicates a degree of uncertainty in the identification. The material in hand may represent this taxon, but may be something else quite similar.

BOTANY

A, B, & Q Rated Detections by County, 2008-2009

Order	Family	Scientific Name	County	2008	2009	Rating
Capparales	Brassicaceae	*Rorippa* sp.	Santa Barbara		1	Q
Capparales	Brassicaceae	*Rorippa* sp.*	Santa Barbara		1	Q
Capparales	Brassicaceae	*Coronopus squamatus*	Imperial	1		B
Capparidales	Brassicaceae	*Cardaria chalepensis*	Fresno	1		B
Capparidales	Brassicaceae	*Cardaria chalepensis*	Napa	1		B
Capparidales	Brassicaceae	*Cardaria draba*	Santa Clara	2		B
Capparidales	Brassicaceae	*Cardaria draba*	Yolo	1		B
Capparidales	Brassicaceae	*Cardaria pubescens*	Shasta	1		B
Capparidales	Brassicaceae	*Isatis tinctoria*	Del Norte	1		B
Capparidales	Brassicaceae	*Isatis tinctoria*	Shasta		1	B
Capparidales	Brassicaceae	*Lepidium latifolium*	Amador	3	2	B
Capparidales	Brassicaceae	*Lepidium latifolium*	Fresno	1	1	B
Capparidales	Brassicaceae	*Lepidium latifolium*	Los Angeles		2	B
Capparidales	Brassicaceae	*Lepidium latifolium*	Madera	2		B
Capparidales	Brassicaceae	*Lepidium latifolium*	San Diego	1		B
Capparidales	Brassicaceae	*Lepidium latifolium*	San Mateo		1	B
Capparidales	Brassicaceae	*Lepidium latifolium*	Santa Clara	1		B
Caryophyllales	Amaranthaceae	*Alternanthera* sp.	Los Angeles		2	Q
Caryophyllales	Amaranthaceae	*Amaranthus albus*	Imperial	1		B
Caryophyllales	Chenopodiaceae	*Salsola australis*	San Diego	2	1	Q
Cyperales	Cyperaceae	*Cyperus esculentus*	Contra Costa	1		B
Cyperales	Cyperaceae	*Cyperus esculentus*	Los Angeles	1		B
Cyperales	Cyperaceae	*Cyperus esculentus*	Madera	1		B
Cyperales	Cyperaceae	*Cyperus esculentus*	San Diego	4	11	B
Cyperales	Cyperaceae	*Cyperus rotundus*	Imperial		1	B
Cyperales	Cyperaceae	*Cyperus rotundus*	Orange		1	B
Cyperales	Cyperaceae	*Cyperus rotundus*	San Diego	6		B
Cyperales	Cyperaceae	*Cyperus* sp.	Riverside		1	Q
Cyperales	Poaceae	*Aegilops triuncialis*	Amador	1		B
Cyperales	Poaceae	*Aegilops triuncialis*	El Dorado	1		B
Cyperales	Poaceae	*Aegilops triuncialis*	Napa	2		B
Cyperales	Poaceae	*Aegilops triuncialis*	Yolo	1	1	B
Cyperales	Poaceae	*Arundo donax*	Imperial		2	B
Cyperales	Poaceae	*Arundo donax*	Los Angeles		1	B
Cyperales	Poaceae	*Arundo donax*	Siskiyou		1	B
Cyperales	Poaceae	*Arundo donax* ssp. *variegata*	Shasta	1		B
Cyperales	Poaceae	*Avena sterilis*	Marin		1	Q
Cyperales	Poaceae	*Panicum* sp.	Contra Costa	1		Q
Cyperales	Poaceae	*Sorghum* sp.	Los Angeles	1		Q
Cyperales	Poaceae	*Elytrigia repens*	Lassen	1		B
Cyperales	Poaceae	*Elytrigia repens*	Placer	1		B
Cyperales	Poaceae	*Elytrigia repens*	Sonoma		2	B
Cyperales	Poaceae	*Elytrigia repens**	Placer	1		B
Euphorbiales	Euphorbiaceae	*Euphorbia oblongata*	Contra Costa	1	1	B
Euphorbiales	Euphorbiaceae	*Euphorbia oblongata*	Mendocino	1		B
Euphorbiales	Euphorbiaceae	*Euphorbia oblongata*	Santa Cruz	2		B
Euphorbiales	Euphorbiaceae	*Euphorbia oblongata*	Yolo		1	B
Euphorbiales	Euphorbiaceae	*Euphorbia terracina*	Los Angeles		2	B
Euphorbiales	Euphorbiaceae	*Sapium sebiferum*	Sacramento	1		Q
Fabales	fabaceae	*Sesbania punicea*	Contra Costa		5	B
Fabales	fabaceae	*Sesbania punicea*	Contra Costa	2	1	Q
Fabales	Fabaceae	*Sesbania* sp.	Contra Costa	1		Q
Fabales	Fabceae	*Ulex europaeus*	San Mateo		2	B
Gentianales	Asclepiadaceae	*Araujia sericifera*	Sacramento		1	B
Gentianales	Asclepiadaceae	*Araujia sericifera*	Santa Clara	1		B
Hydrocharitales	Hydrocharitaceae	*Egeria najas*	Los Angeles		1	Q
Hydrocharitales	Hydrocharitaceae	*Hydrilla verticillata*	Lake	7	6	A
Hydrocharitales	Hydrocharitaceae	*Limnobium laevigatum*	Fresno	6		A
Hydrocharitales	Hydrocharitaceae	*Limnobium laevigatum*	Merced	3		A
Hydrocharitales	Hydrocharitaceae	*Limnobium laevigatum*	Sacramento	1	1	A
Hydrocharitales	Hydrocharitaceae	*Limnobium laevigatum*	Shasta	1		A
Hydrocharitales	Hydrocharitaceae	*Limnobium spongia**	Merced	1		Q
Hydropteridales	Salviniaceae	*Salvinia auriculata*	San Diego		1	A
Lamiales	Scrophulariaceae	*Lindernia* sp.	Fresno	1		Q
Liliales	Iridaceae	*Iris pseudacorus*	Siskiyou	1		Q
Misc.		indeterminable	Fresno	1		Q
Misc.		indeterminable	Shasta	1		Q
Nymphaeales	Cabombaceae	*Cabomba caroliniana**	Mono		1	Q
Rosales	Rosaceae	*Acaena novae-zelandiae**	Sonoma		1	A
Scrophulariales	Acanthaceae	*Hygrophila polysperma*	El Dorado		1	A
Scrophulariales	Orobanchaceae	*Orobanche ramosa*	San Benito		1	A
Scrophulariales	Scrophulariaceae	*Linaria genistifolia* ssp. *dalmatica*	Shasta	3		A

* Indicates Confer (cf.), "compare to." Indicates a degree of uncertainty in the identification. The material in hand may represent this taxon, but may be something else quite similar.

BOTANY

A, B, & Q Rated Detections by County, 2008-2009

Order	Family	Scientific Name	County	2008	2009	Rating
Solanales	Cuscutaceae	*Cuscuta japonica*	Contra Costa	1		A
Solanales	Cuscutaceae	*Cuscuta japonica*	Sacramento	2	3	A
Solanales	Cuscutaceae	*Cuscuta japonica*	Yuba	2		A
Solanales	Cuscutaceae	*Cuscuta japonica**	Alameda	4	3	A
Solanales	Cuscutaceae	*Cuscuta japonica**	Contra Costa	8	1	A
Solanales	Cuscutaceae	*Cuscuta japonica**	Fresno		2	A
Solanales	Cuscutaceae	*Cuscuta japonica**	Merced		1	A
Solanales	Cuscutaceae	*Cuscuta japonica**	Sacramento	11	8	A
Solanales	Cuscutaceae	*Cuscuta japonica**	Tulare		1	A
Solanales	Cuscutaceae	*Cuscuta* sp.	El Dorado		1	Q
Solanales	Solanaceae	*Solanum elaeagnifolium*	Contra Costa		1	B
Solanales	Solanaceae	*Solanum elaeagnifolium*	Imperial		1	B
Solanales	Solanaceae	*Solanum elaeagnifolium*	Santa Barbara	1	1	B
Solanales	Solanaceae	*Solanum lanceolatum*	Los Angeles	1		B
Theales	Hypericaceae	*Hypericum canariense*	San Mateo	1		Q
Urticales	Moraceae	*Fatoua villosa*	Los Angeles		3	B
Urticales	Moraceae	*Fatoua villosa*	Los Angeles	16	1	Q
Urticales	Moraceae	*Fatoua villosa*	San Diego		1	Q
Violales	Tamaricaceae	*Tamarix parviflora*	Contra Costa	2		B
Violales	Tamaricaceae	*Tamarix ramosissima*	Riverside	1		B
Violales	Tamaricaceae	*Tamarix ramosissima*	San Diego	1	1	B
Violales	Tamaricaceae	*Tamarix* sp.	Riverside	1		B
			Grand Total	***163***	***125***	

BOTANY

A, B, & Q Rated Interceptions by County, 2008-2009

Order	Family	Scientific Name	County	2008	2009	Rating
Arales	Araceae	*Colocasia esculenta**	Contra Costa	1		Q
Arales	Araceae	*Pistia stratiotes*	Alameda	1		B
Arales	Araceae	*Pistia stratiotes*	San Bernadino	1		B
Arales	Araceae	*Pistia stratiotes*	San Luis Obispo		1	B
Asterales	Asteraceae	indeterminable	San Diego	1		Q
Asterales	Asteraceae	*Centaurea calcitrapa*	Lassen	1		A
Asterales	Asteraceae	*Centaurea maculosa*	Glenn	1		A
Asterales	Asteraceae	*Centaurea maculosa*	San Bernardino		1	A
Asterales	Asteraceae	*Cirsium arvense*	Glenn	1		A
Asterales	Asteraceae	*Cirsium arvense**	Tuolumne	1		B
Caryophyllales	Amaranthaceae	*Alternanthera* sp.	San Diego	1		Q
Cyperales	Cyperaceae	*Cyperus esculentus*	Los Angeles	1		B
Cyperales	Cyperaceae	*Cyperus rotundus*	Los Angeles	1		B
Cyperales	Cyperaceae	*Cyperus rotundus*	Riverside	1		B
Cyperales	Cyperaceae	*Kyllinga* sp.	Riverside	1		Q
Cyperales	Poaceae	indeterminable	Riverside	2		Q
Cyperales	Poaceae	*Digitaria ciliaris*	Riverside	1		Q
Cyperales	Poaceae	*Elytrigia repens*	Contra Costa		1	B
Cyperales	Poaceae	*Elytrigia repens*	Sacramento	1		B
Cyperales	Poaceae	*Elytrigia repens*	Sonoma	1	1	B
Cyperales	Poaceae	*Elytrigia repens*	Yolo	1		B
Fabales	Fabaceae	indeterminable	Tulare	1		Q
Fabales	Fabaceae	*Desmodium* sp.	Tulare	2		Q
Gentianales	Asclepiadaceae	*Araujia sericifera*	Fresno		1	B
Gentianales	Asclepiadaceae	*Morrenia* sp.	San Bernadino	1		Q
Hydrocharitales	Hydrocharitaceae	indeterminable	Fresno	1		A
Hydrocharitales	Hydrocharitaceae	*Egeria najas*	Sacramento		1	Q
Hydrocharitales	Hydrocharitaceae	*Hydrilla verticillata*	San Diego	1		A
Hydrocharitales	Hydrocharitaceae	*Limnobium laevigatum*	Los Angeles	1		A
Hydrocharitales	Hydrocharitaceae	*Limnobium laevigatum*	San Luis Obispo	1		A
Hydrocharitales	Hydrocharitaceae	*Limnobium spongia*	Alameda	1		Q
Hydrocharitales	Hydrocharitaceae	*Limnobium spongia*	San Bernadino	1		Q
Misc.		indeterminable	Riverside	1		Q
Misc.		indeterminable	Tulare	1		Q
Myrtales	Onagraceae	*Lindernia* sp.	San Diego	1		Q
Nymphaeales	Nymphaeaceae	*Nymphaea, hybrid*	Siskiyou	1		Q
Polygonales	Polygonaceae	*Polygonum aubertii*	Alameda		1	Q
Polypodiales	Parkeriaceae	*Ceratopteris thalictroides*	Contra Costa	1		Q
Rosales	Rosaceae	*Potentilla* sp.	Fresno		1	Q
Scrophulariales	Orobanchaceae	*Orobanche ramosa*	San Benito		1	A
Solanales	Convolvulaceae	indeterminable	Contra Costa	1		Q
Solanales	Convolvulaceae	*Ipomoea* sp.	Contra Costa	1		Q

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BOTANY

A, B, & Q Rated Interceptions by County, 2008-2009

Order	Family	Scientific Name	County	2008	2009	Rating
Solanales	Cuscutaceae	*Cuscuta japonica*	Contra Costa	1		A
Solanales	Cuscutaceae	*Cuscuta japonica*	Fresno		1	A
Solanales	Cuscutaceae	*Cuscuta japonica**	Fresno	3	6	A
Urticales	Moraceae	*Fatoua villosa*	Los Angeles	1		Q
Urticales	Moraceae	*Fatoua villosa*	San Diego	2		Q
			Grand Total	***50***	***17***	

BOTANY

A, B, & Q Rated Interceptions by Border Stations, 2008-2009

				2008		2009		
Order	Family	Scientific Name	Station	Pers[1]	Comm[2]	Pers[1]	Comm[2]	Rating
Alismatales	Alismataceae	*Echinodorus sp.**	NE			1		Q
Arales	Araceae	*Pistia stratiotes*	NE			1		B
Arales	Lemnaceae	*Lemna sp.*	NE			1		Q
Asterales	Asteraceae	- -	YE				1	Q
Asterales	Asteraceae	*Acroptilon repens*	AL		25			B
Asterales	Asteraceae	*Acroptilon repens*	LV		3			B
Asterales	Asteraceae	*Acroptilon repens*	TR		2		1	B
Asterales	Asteraceae	*Acroptilon repens**	HO		1			B
Asterales	Asteraceae	*Carduus acanthoides*	AL				1	A
Asterales	Asteraceae	*Carduus acanthoides*	TR	1	1			A
Asterales	Asteraceae	*Carduus nutans*	DO	1	1		1	A
Asterales	Asteraceae	*Carduus nutans*	HO			1		A
Asterales	Asteraceae	*Carduus nutans*	LV	4		1		A
Asterales	Asteraceae	*Carduus nutans*	RH			2		A
Asterales	Asteraceae	*Carduus nutans*	TO			1		A
Asterales	Asteraceae	*Carduus nutans*	TR	1	1			A
Asterales	Asteraceae	*Carduus nutans*	YE		1		1	A
Asterales	Asteraceae	*Centaurea diffusa*	DO	1	3			A
Asterales	Asteraceae	*Centaurea maculosa*	DO		1		4	A
Asterales	Asteraceae	*Centaurea maculosa*	HO	1		2		A
Asterales	Asteraceae	*Centaurea maculosa*	LV			2	2	A
Asterales	Asteraceae	*Centaurea maculosa*	TR	2				A
Asterales	Asteraceae	*Centaurea pratensis*	RH				1	A
Asterales	Asteraceae	*Centaurea x moncktonii*	RH			4		A
Asterales	Asteraceae	*Cirsium arvense*	AL		5		5	B
Asterales	Asteraceae	*Cirsium arvense*	DO	1	3		7	B
Asterales	Asteraceae	*Cirsium arvense*	LV			1	1	B
Asterales	Asteraceae	*Cirsium arvense*	NE				1	B
Asterales	Asteraceae	*Cirsium arvense*	RH			1	2	B
Asterales	Asteraceae	*Cirsium arvense*	TR	2	2		2	B
Asterales	Asteraceae	*Cirsium arvense*	YE				1	B
Asterales	Asteraceae	*Cirsium arvense**	AL				1	B
Asterales	Asteraceae	*Cirsium ochrocentrum*	DO		1			A
Asterales	Asteraceae	*Cirsium ochrocentrum*	SR	1				A
Asterales	Asteraceae	*Cirsium or Carduus sp.*	AL				1	Q
Asterales	Asteraceae	*Cirsium sp.*	AL				1	Q
Asterales	Asteraceae	*Cirsium vulgare*	AL				1	B
Asterales	Asteraceae	*Cynara cardunculus*	AL				1	B
Asterales	Asteraceae	*Onopordum acanthium*	AL	1	8		12	A
Asterales	Asteraceae	*Onopordum acanthium*	DO		1			A
Asterales	Asteraceae	*Onopordum acanthium*	LV			1		A
Asterales	Asteraceae	*Onopordum acanthium*	RH				1	A
Asterales	Asteraceae	*Onopordum acanthium*	TR	1	1		2	A
Asterales	Asteraceae	*Onopordum acanthium*	YE		1		1	A
Asterales	Asteraceae	*Onopordum acanthium**	AL		1			A
Asterales	Asteraceae	*Onopordum sp.*	AL		1		1	A
Asterales	Asteraceae	*Senecio jacobaea*	HO			2	1	B
Asterales	Asteraceae	*Senecio jacobaea*	RH			1		B
Asterales	Asteraceae	*Senecio jacobaea*	SR			1		B
Capparidales	Brassicaceae	*Cardaria chalepensis*	TO			1		B
Capparidales	Brassicaceae	*Cardaria draba*	LV				1	B
Capparidales	Brassicaceae	*Cardaria draba*	TR				1	B
Capparidales	Brassicaceae	*Cardaria pubescens*	LV	2	1	1		B
Capparidales	Brassicaceae	*Cardaria pubescens*	TO			1		B
Capparidales	Brassicaceae	*Cardaria pubescens*	TR		1			B
Capparidales	Brassicaceae	*Isatis tinctoria*	HO	1				B

Inspection Station Codes

- **AL** Alturas
- **BE** Benton
- **BL** Blythe
- **DO** Dorris
- **HB** Hornbrook
- **LV** Long Valley
- **ME** Meyers
- **NE** Needles
- **RH** Redwood Hwy
- **SR** Smith River
- **TO** Topaz
- **TR** Truckee
- **TU** Tulelake
- **VI** Vidal
- **WI** Winterhaven
- **YE** Yermo

[1] Personal vehicles including: automobiles and light trucks, moving vans and trailers, campers and other recreational vehicles, and buses.

[2] Commercial vehicles including: semi-trailer trucks and tractor-trailers.

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BOTANY

A, B, & Q Rated Interceptions by Border Stations, 2008-2009

Order	Family	Scientific Name	Station	2008 Pers[1]	2008 Comm[2]	2009 Pers[1]	2009 Comm[2]	Rating
Capparidales	Brassicaceae	*Isatis tinctoria*	TU	1		1		B
Capparidales	Brassicaceae	*Lepidium latifolium*	LV		1			B
Capparidales	Brassicaceae	*Lepidium latifolium*	TR	1		1		B
Caryophyllales	Caryophyllaceae	*Gypsophila paniculata*	RH			1		B
Caryophyllales	Chenopodiaceae	*Halogeton glomeratus*	BE			3		A
Caryophyllales	Chenopodiaceae	*Halogeton glomeratus*	LV	2				A
Caryophyllales	Chenopodiaceae	*Halogeton glomeratus*	RH	1				A
Caryophyllales	Chenopodiaceae	*Halogeton glomeratus*	TO			1		A
Caryophyllales	Chenopodiaceae	*Halogeton glomeratus*	TR			1		A
Caryophyllales	Chenopodiaceae	*Halogeton glomeratus*	YE			1		A
Caryophyllales	Chenopodiaceae	*Salsola collina*	NE	4		1		Q
Cyperales	Poaceae	*Cortaderia jubata*	SR	1				B
Cyperales	Poaceae	*Cortaderia jubata**	SR			1		B
Cyperales	Poaceae	*Panicum sp.*	TR				1	Q
Cyperales	Poaceae	*Setaria adhaerens*	VI		1			Q
Haloragales	Haloragaceae	*Myriophyllum sp.*	NE			1		Q
Hydrocharitales	Hydrocharitaceae	*Vallisneria sp.*	NE			1		Q
Hydrocharitales	Hydrocharitaceae	*Vallisneria sp.**	NE			1		Q
Lamiales	Lamiaceae	*Salvia aethiopis*	AL	1		3	1	B
Lamiales	Lamiaceae	*Salvia aethiopis*	DO				1	B
Lamiales	Verbenacea	*Verbena* sp.	NE	1				Q
Scrophulariales	Acanthaceae	*Hygrophila polysperma**	NE			1		Q
Solanales	Solanaceae	*Solanum carolinense*	NE	1				B
Solanales	Solanaceae	*Solanum elaeagnifolium*	BE			1		B
Solanales	Solanaceae	*Solanum elaeagnifolium*	RH	1				B
Solanales	Solanaceae	*Solanum sp.*	RH			1		Q
		Grand Totals		**34**	**67**	**46**	**59**	

Inspection Station Codes

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ENTOMOLOGY

A, B, & Q Rated Detections by County, 2008-2009

Order	Family	Scientific Name	County	2008	2009	Rating
Acari	--	--	Yolo		1	Q
Acari	Eriophyidae	--	Mariposa	1		Q
Acari	Eriophyidae	--	Shasta		1	Q
Acari	Eriophyidae	*Aceria* sp.	Yolo	1		Q
Acari	Tarsonemidae	--	Yolo		1	Q
Acari	Tarsonemidae	*Steneotarsonemus* sp.	Yolo		1	Q
Acari	Tarsonemidae	*Steneotarsonemus spinki*	Yolo	1	14	Q
Acari	Tarsonemidae	*Tarsonemus* sp.	Colusa		1	Q
Acari	Tetranychidae	*Oligonychus* sp.	San Luis Obispo	1		Q
Blattodea	Blattidae	*Gomphadorina* sp.	Shasta	1		Q
Coleoptera	Anthribidae	*Araecerus coffeae*	San Luis Obispo		1	B
Coleoptera	Bostrichidae	*Sinoxylon anale*	Humboldt	1		A
Coleoptera	Bostrichidae	Tribe: Bostrichini	Shasta		1	Q
Coleoptera	Bostrichidae	*Xylothrips* sp.	Placer		1	Q
Coleoptera	Buprestidae	*Agrilus coxalis auroguttatus*	San Diego		1	Q
Coleoptera	Buprestidae	*Dicerca callosa*	Riverside		1	Q
Coleoptera	Cerambycidae	--	Riverside	1		Q
Coleoptera	Cerambycidae	--	San Diego		1	Q
Coleoptera	Cerambycidae	--	San Francisco		2	Q
Coleoptera	Cerambycidae	--	Stanislaus	1		Q
Coleoptera	Cerambycidae	*Chlorophorus annularis*	Los Angeles		1	Q
Coleoptera	Cerambycidae	*Phoracantha* sp.	Shasta		1	B
Coleoptera	Chrysomelidae	*Chrysolina bankii*	Alameda		1	B[1]
Coleoptera	Chrysomelidae	*Chrysolina bankii*	El Dorado		1	B
Coleoptera	Chrysomelidae	*Chrysolina bankii*	San Mateo		1	B
Coleoptera	Chrysomelidae	*Chrysolina bankii*	Santa Cruz		1	B
Coleoptera	Chrysomelidae	*Chrysolina bankii**	Alameda	1		Q
Coleoptera	Chrysomelidae	*Chrysophtharta m-fuscum*	San Diego	1		C[1]
Coleoptera	Chrysomelidae	*Chrysophtharta m-fuscum*	Santa Clara		2	C[1]
Coleoptera	Chrysomelidae	*Trachymela sloanei*	Napa		1	B
Coleoptera	Chrysomelidae	*Trachymela sloanei*	Riverside	1		B
Coleoptera	Chrysomelidae	*Trachymela sloanei*	San Joaquin	1		B
Coleoptera	Chrysomelidae	*Trachymela sloanei*	Santa Clara	1		B
Coleoptera	Chrysomelidae	*Trachymela sloanei*	Santa Cruz	1		B
Coleoptera	Curculionidae	--	Los Angeles		1	Q
Coleoptera	Curculionidae	*Diaprepes abbreviatus*	Los Angeles	193	11	B[1]
Coleoptera	Curculionidae	*Diaprepes abbreviatus*	Madera	2		B[1]
Coleoptera	Curculionidae	*Diaprepes abbreviatus*	Orange	230	18	B[1]
Coleoptera	Curculionidae	*Diaprepes abbreviatus*	San Diego		5	B[1]
Coleoptera	Curculionidae	*Diaprepes abbreviatus*	San Diego	445	128	B[1]
Coleoptera	Curculionidae	*Euwallacea fornicatus*	San Diego	1		Q
Coleoptera	Curculionidae	*Gonipterus* sp.	Sonoma	1		Q
Coleoptera	Curculionidae	*Tranes internatus*	Los Angeles		1	B
Coleoptera	Nitidulidae	*Aethina tumida*	Placer		1	B
Coleoptera	Nitidulidae	*Aethina tumida*	Sacramento		1	B
Coleoptera	Nitidulidae	*Aethina tumida*	Sonoma	1	1	B
Coleoptera	Nitidulidae	*Aethina tumida*	Stanislaus		1	B
Coleoptera	Nitidulidae	*Aethina tumida*	Yolo		1	B
Coleoptera	Scarabaeidae	*Popillia japonica*	Alameda	2		A
Coleoptera	Scarabaeidae	*Popillia japonica*	Kings		1	A
Coleoptera	Scarabaeidae	*Popillia japonica*	Los Angeles	8	1	A
Coleoptera	Scarabaeidae	*Popillia japonica*	Merced	1		A
Coleoptera	Scarabaeidae	*Popillia japonica*	Riverside	2		A
Coleoptera	Scarabaeidae	*Popillia japonica*	San Bernardino	3		A
Coleoptera	Scarabaeidae	*Popillia japonica*	San Diego	3		A
Diptera	--	--	Yolo		1	Q
Diptera	Agromyzidae	*Liriomyza* sp.	Santa Barbara	1		Q
Diptera	Agromyzidae	*Liriomyza* sp.*	San Luis Obispo	1		Q
Diptera	Drosophilidae	*Drosophila* sp.	San Joaquin		1	Q
Diptera	Drosphilidae	*Drosophila suzukii*	Alameda		6	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	Calaveras		1	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	Contra Costa		2	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	Fresno		1	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	Kings		1	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	Los Angeles		40	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	Marin		6	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	Merced		1	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	Monterey		1	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	Napa		1	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	Orange		17	C[1]

[1] Rating has changed since identification. The current rating is given.

* "or near" - identified to this taxonomic group or one closely related. Specimen may not have characteristics needed for further identification.

** DNA did not amplify, no further ID possible.

† "Possible LBAM" - larval specimen with similar morphology to LBAM; DNA did not amplify, no further ID possible.

‡ "Probable LBAM" - larval specimen with similar morphology to LBAM but was identified before a morphological key was developed; No further ID possible.

ENTOMOLOGY

A, B, & Q Rated Detections by County, 2008-2009

Order	Family	Scientific Name	County	2008	2009	Rating
Diptera	Drosphilidae	*Drosophila suzukii*	Placer		1	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	Sacramento		1	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	San Benito		6	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	San Bernardino		1	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	San Diego		4	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	San Francisco		1	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	San Joaquin		3	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	San Luis Obispo		1	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	San Mateo		9	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	Santa Barbara		14	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	Santa Clara		13	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	Santa Cruz		3	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	Stanislaus		1	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	Ventura		28	C[1]
Diptera	Drosphilidae	*Drosophila suzukii**	Marin		1	C[1]
Diptera	Stratiomyidae	*Inopus rubriceps*	Santa Cruz	1		B
Diptera	Stratiomyidae	*Inopus rubriceps*	Sonoma	1		B
Diptera	Tephritidae	*Anastrepha ludens*	Los Angeles	5		A
Diptera	Tephritidae	*Anastrepha ludens*	Sacramento		1	A
Diptera	Tephritidae	*Bactrocera albistrigata*	Los Angeles		8	A
Diptera	Tephritidae	*Bactrocera correcta*	Los Angeles	3	6	A
Diptera	Tephritidae	*Bactrocera correcta*	Orange	2	7	A
Diptera	Tephritidae	*Bactrocera correcta*	San Mateo		1	A
Diptera	Tephritidae	*Bactrocera correcta*	Santa Clara		1	A
Diptera	Tephritidae	*Bactrocera correcta*	Ventura		1	A
Diptera	Tephritidae	*Bactrocera dorsalis*- group	Alameda	1	1	A
Diptera	Tephritidae	*Bactrocera dorsalis*- group	Los Angeles	23	14	A
Diptera	Tephritidae	*Bactrocera dorsalis*- group	Orange		2	A
Diptera	Tephritidae	*Bactrocera dorsalis*- group	Riverside		1	A
Diptera	Tephritidae	*Bactrocera dorsalis*- group	Sacramento		4	A
Diptera	Tephritidae	*Bactrocera dorsalis*- group	San Bernardino	6	2	A
Diptera	Tephritidae	*Bactrocera dorsalis*- group	San Diego	2		A
Diptera	Tephritidae	*Bactrocera dorsalis*- group	Santa Clara	7	1	A
Diptera	Tephritidae	*Bactrocera oleae*	Alameda	14		A
Diptera	Tephritidae	*Bactrocera oleae*	Butte	1		A
Diptera	Tephritidae	*Bactrocera oleae*	Contra Costa		2	A
Diptera	Tephritidae	*Bactrocera oleae*	Kern	4	2	A
Diptera	Tephritidae	*Bactrocera oleae*	Marin	1		A
Diptera	Tephritidae	*Bactrocera oleae*	Placer	2		A
Diptera	Tephritidae	*Bactrocera oleae*	Riverside		2	A
Diptera	Tephritidae	*Bactrocera oleae*	Sacramento	1	1	A
Diptera	Tephritidae	*Bactrocera oleae*	San Bernardino	1		A
Diptera	Tephritidae	*Bactrocera oleae*	San Joaquin	1	2	A
Diptera	Tephritidae	*Bactrocera oleae*	San Luis Obispo	3		A
Diptera	Tephritidae	*Bactrocera oleae*	Santa Barbara	1		A
Diptera	Tephritidae	*Bactrocera oleae*	Solano		1	A
Diptera	Tephritidae	*Bactrocera oleae*	Ventura	1		A
Diptera	Tephritidae	*Bactrocera oleae*	Yolo	1		A
Diptera	Tephritidae	*Bactrocera scutellata*	Los Angeles		9	A
Diptera	Tephritidae	*Bactrocera zonata*	Orange		1	A
Diptera	Tephritidae	*Ceratitis capitata*	Los Angeles	1	1	A
Diptera	Tephritidae	*Ceratitis capitata*	San Diego	19	24	A
Diptera	Tephritidae	*Ceratitis capitata*	Santa Clara	1		A
Diptera	Tephritidae	*Ceratitis capitata*	Tulare	1		A
Diptera	Tephritidae	*Rhagoletis pomonella*	Contra Costa	1	1	B
Diptera	Tephritidae	*Rhagoletis pomonella*	San Benito	1		B
Diptera	Tephritidae	*Rhagoletis pomonella*	San Joaquin	2	4	B
Diptera	Tephritidae	*Rhagoletis pomonella*	San Luis Obispo		2	B
Diptera	Tephritidae	*Rhagoletis pomonella*	San Mateo	1		B
Diptera	Tephritidae	*Rhagoletis pomonella*	Santa Clara	2	2	B
Diptera	Tephritidae	*Rhagoletis pomonella*	Solano	4		B
Gastropoda	--	--	Madera		1	Q
Gastropoda	Ampullariidae	*Pomacea canaliculata*	Orange	1		A
Gastropoda	Bradybaenidae	*Bradybaena similaris*	Ventura		1	B
Gastropoda	Camaenidae	*Zachrysia provisoria*	Santa Barbara	1		Q
Gastropoda	Helicidae	*Theba pisana*	Santa Clara		10	B
Gastropoda	Hydrobiidae	*Potamopyrgus antipodarum*	Mendocino	1		Q
Hemiptera: Auchenorrhyncha	Cicadellidae	--	Imperial		3	B
Hemiptera: Auchenorrhyncha	Cicadellidae	--	Santa Barbara		1	B
Hemiptera: Auchenorrhyncha	Cicadellidae	--	Santa Clara		10	B

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ENTOMOLOGY

A, B, & Q Rated Detections by County, 2008-2009

Order	Family	Scientific Name	County	2008	2009	Rating
Hemiptera: Auchenorrhyncha	Cicadellidae	*Eupteryx decemnotata*	Los Angeles		1	Q
Hemiptera: Auchenorrhyncha	Cicadellidae	*Eupteryx decemnotata*	Napa		5	Q
Hemiptera: Auchenorrhyncha	Cicadellidae	*Eupteryx decemnotata*	Riverside		1	Q
Hemiptera: Auchenorrhyncha	Cicadellidae	*Eupteryx* sp.	Riverside		1	Q
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca* sp.	Santa Barbara		1	B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	Alameda	1	2	B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	Amador	1	1	B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	Contra Costa		1	B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	El Dorado		1	B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	Fresno		1	B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	Imperial	4	4	B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	Kern	5	1	B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	Madera	2	2	B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	Marin		1	B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	Riverside	4	3	B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	Sacramento		8	B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	San Bernardino		1	B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	San Joaquin	3	1	B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	San Luis Obispo	2	2	B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	Santa Barbara	1		B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	Santa Clara	94	96	B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	Santa Clara	1		B[1]
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	Shasta	1		B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	Stanislaus	2	1	B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	Tulare	3	1	B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	Ventura	1	3	B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis**	Santa Clara	1		B
Hemiptera: Heteroptera	Coreidae	*Centrocoris variegatus*	Alameda		1	Q
Hemiptera: Heteroptera	Coreidae	*Centrocoris variegatus*	Sacramento		1	Q
Hemiptera: Heteroptera	Coreidae	*Centrocoris variegatus*	Yolo		1	Q
Hemiptera: Heteroptera	Pentatomidae	- -	San Luis Obispo		1	Q
Hemiptera: Heteroptera	Pentatomidae	*Bagrada hilaris*	Imperial		2	B
Hemiptera: Heteroptera	Pentatomidae	*Bagrada hilaris*	Riverside		3	B
Hemiptera: Heteroptera	Pentatomidae	*Bagrada hilaris*	San Bernardino		1	B
Hemiptera: Heteroptera	Pentatomidae	*Bagrada hilaris**	Los Angeles	9		B[1]
Hemiptera: Heteroptera	Pentatomidae	*Bagrada hilaris**	Orange		1	B[1]
Hemiptera: Heteroptera	Pentatomidae	*Bagrada hilaris**	Orange	1		B[1]
Hemiptera: Heteroptera	Pentatomidae	*Halyomorpha halys*	Los Angeles	3		Q
Hemiptera: Heteroptera	Pentatomidae	*Halyomorpha halys*	San Joaquin	1		Q
Hemiptera: Heteroptera	Pyrrhocoridae	*Scantius aegyptius*	Orange		2	C[1]
Hemiptera: Heteroptera	Pyrrhocoridae	*Scantius aegyptius*	Riverside		1	C[1]
Hemiptera: Heteroptera	Pyrrhocoridae	*Scantius aegyptius*	Riverside		2	C[1]
Hemiptera: Heteroptera	Pyrrhocoridae	*Scantius aegyptius*	San Bernardino		1	C[1]
Hemiptera: Heteroptera	Pyrrhocoridae	*Scantius aegyptius*	San Diego		1	C[1]
Hemiptera: Sternorrhyncha	Aphididae	- -	Fresno		1	Q
Hemiptera: Sternorrhyncha	Aphididae	- -	Riverside		1	Q
Hemiptera: Sternorrhyncha	Aphididae	- -	Sacramento	1		Q
Hemiptera: Sternorrhyncha	Aphididae	- -	Sonoma	1		Q
Hemiptera: Sternorrhyncha	Aphididae	*Aphis* sp.	Fresno		1	Q
Hemiptera: Sternorrhyncha	Aphididae	*Eriosoma* sp.	Sacramento	1		Q
Hemiptera: Sternorrhyncha	Aphididae	*Greenidea ficicola*	Orange	1		Q
Hemiptera: Sternorrhyncha	Aphididae	*Greenidea ficicola*	Santa Barbara		1	Q
Hemiptera: Sternorrhyncha	Aphididae	*Hyalopterus* sp.	Butte		1	Q
Hemiptera: Sternorrhyncha	Aphididae	*Macrosiphum hellebori*	Santa Barbara		1	Q
Hemiptera: Sternorrhyncha	Aphididae	*Sipha maydis*	Merced		1	Q
Hemiptera: Sternorrhyncha	Aphididae	*Sipha maydis*	Santa Barbara		1	Q
Hemiptera: Sternorrhyncha	Aphididae	*Sitobion luteum*	Santa Barbara	2		Q
Hemiptera: Sternorrhyncha	Aphididae	Tribe: Pemphigini	Sacramento		1	Q
Hemiptera: Sternorrhyncha	Asterolecaniidae	*Bambusaspis miliaris*	Orange		1	Q
Hemiptera: Sternorrhyncha	Coccidae	*Ceroplastes rubens*	San Francisco	1		A
Hemiptera: Sternorrhyncha	Coccidae	*Ceroplastes rusci*	Alameda		1	A
Hemiptera: Sternorrhyncha	Coccidae	*Ceroplastes* sp.	San Diego	6		Q
Hemiptera: Sternorrhyncha	Coccidae	*Coccus viridis*	Orange		1	A
Hemiptera: Sternorrhyncha	Coccidae	*Prococcus acutissmus*	Orange	1		Q
Hemiptera: Sternorrhyncha	Coccidae	*Pulvinaria psidii*	Orange		1	B
Hemiptera: Sternorrhyncha	Coccidae	*Pulvinaria psidii*	San Bernardino		1	B
Hemiptera: Sternorrhyncha	Coccidae	*Pulvinaria urbicola*	San Diego	1		B
Hemiptera: Sternorrhyncha	Coccidae	*Pulvinaria urbicola*	San Francisco	1		B
Hemiptera: Sternorrhyncha	Coccidae	*Pulvinaria urbicola*	San Luis Obispo		1	B
Hemiptera: Sternorrhyncha	Coccidae	*Pulvinaria urbicola*	Santa Barbara	1		B

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ENTOMOLOGY

A, B, & Q Rated Detections by County, 2008-2009

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Hemiptera: Sternorrhyncha	Coccidae	*Pulvinaria urbicola**	San Diego		1	B
Hemiptera: Sternorrhyncha	Coccidae	*Toumeyella liriodendri*	Santa Clara	1		B
Hemiptera: Sternorrhyncha	Diaspididae	--	Los Angeles		1	Q
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella aurantii*	Alameda		1	B
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella aurantii*	Contra Costa		1	B
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella aurantii*	Riverside	1	1	B
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella aurantii*	San Benito		1	B
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella aurantii*	San Diego	1		B
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella aurantii*	San Joaquin		1	B
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella aurantii*	Shasta		1	B
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella aurantii*	Solano	1	4	B
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella inornata*	Orange	1		Q
Hemiptera: Sternorrhyncha	Diaspididae	*Aspidiotus destructor*	Sonoma	1		A
Hemiptera: Sternorrhyncha	Diaspididae	*Aulacaspis yasumatsui*	Orange		1	Q
Hemiptera: Sternorrhyncha	Diaspididae	*Aulacaspis yasumatsui*	San Diego		1	Q
Hemiptera: Sternorrhyncha	Diaspididae	*Fiorinia japonica*	Lake		1	Q
Hemiptera: Sternorrhyncha	Diaspididae	*Fiorinia japonica*	Los Angeles	1	33	Q
Hemiptera: Sternorrhyncha	Diaspididae	*Hemiberlesia palmae*	Riverside	1		A
Hemiptera: Sternorrhyncha	Diaspididae	*Lepidosaphes beckii*	Orange		1	B
Hemiptera: Sternorrhyncha	Diaspididae	*Pinnaspis* sp.	San Benito	1		Q
Hemiptera: Sternorrhyncha	Diaspididae	*Pinnaspis strachani*	San Luis Obispo	2	11	A
Hemiptera: Sternorrhyncha	Diaspididae	*Pinnaspis strachani*	Santa Barbara		1	A
Hemiptera: Sternorrhyncha	Diaspididae	*Poliaspis cycadis*	Los Angeles		1	Q
Hemiptera: Sternorrhyncha	Diaspididae	*Poliaspis cycadis*	Orange	1	2	Q
Hemiptera: Sternorrhyncha	Diaspididae	*Pseudaulacaspis cockerelli*	Orange	7	5	A
Hemiptera: Sternorrhyncha	Diaspididae	*Pseudaulacaspis cockerelli*	Riverside		1	A
Hemiptera: Sternorrhyncha	Diaspididae	*Pseudaulacaspis cockerelli*	San Diego	19	10	A
Hemiptera: Sternorrhyncha	Diaspididae	*Pseudaulacaspis cockerelli*	San Francisco	1		A
Hemiptera: Sternorrhyncha	Diaspididae	*Rutherfordia major*	Orange		1	Q
Hemiptera: Sternorrhyncha	Diaspididae	*Thysanofiorinia nephelii*	Orange	1		Q
Hemiptera: Sternorrhyncha	Pseudococcidae	--	San Luis Obispo		1	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Delottococcus confusus*	San Luis Obispo	1	2	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Delottococcus confusus*	Santa Barbara		1	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Delottococcus* sp.	San Luis Obispo	1		Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Ferrisia gilli*	El Dorado		2	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Ferrisia gilli*	Lake		2	B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Ferrisia virgata*	Santa Barbara	1		B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Maconellicoccus hirsutus*	Riverside	1		A
Hemiptera: Sternorrhyncha	Pseudococcidae	*Nipaecoccus nipae*	Los Angeles		1	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Nipaecoccus* sp.	Los Angeles	2	9	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Nipaecoccus* sp.	San Bernardino		2	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Palmicultor lumpurensis*	San Diego	3	3	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Paracoccus interceptus**	San Luis Obispo		1	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Phenacoccus* sp.	Lake	1		Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Phenacoccus* sp.	San Luis Obispo	1		B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus ficus*	El Dorado		1	B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus ficus*	Fresno	1		B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus ficus*	Kern	4		B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus ficus*	Monterey	14	9	B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus ficus*	Napa	12	11	B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus ficus*	San Benito	5		B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus ficus*	San Joaquin	1		B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus ficus*	San Luis Obispo		2	B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus ficus*	Santa Barbara	1		B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus ficus*	Sonoma	5		B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus ficus*	Yolo		1	B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus ficus**	Kern		2	B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus ficus**	Lake		2	B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus ficus**	Merced	1		B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus ficus**	Monterey	16	5	B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus ficus**	Napa	14	6	B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus ficus**	Sonoma	1		B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus* sp.	Kern	1	12	B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus* sp.	Lake	5		B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus* sp.	Merced	1	2	B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus* sp.	Monterey	46	53	B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus* sp.	Monterey	3		Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus* sp.	Napa	10	23	B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus* sp.	Napa	1		Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus* sp.	San Benito		10	B

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Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus* sp.	San Diego	1		Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus* sp.	San Francisco	2		Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus* sp.	San Joaquin		2	B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus* sp.	San Luis Obispo	4	4	B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus* sp.	Santa Barbara	1		B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus* sp.	Sonoma	8	24	B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus* sp.	Tulare	1		B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Pseudococcus importatus*	San Luis Obispo		1	A[1]
Hemiptera: Sternorrhyncha	Pseudococcidae	*Pseudococcus importatus*	San Luis Obispo		11	A[1]
Hemiptera: Sternorrhyncha	Pseudococcidae	*Pseudococcus* sp.	Napa	1		Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Pseudococcus* sp.	San Luis Obispo		1	A
Hemiptera: Sternorrhyncha	Pseudococcidae	*Pseudococcus* sp.	San Luis Obispo		1	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Rhizoecus* sp.	Riverside	1		Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Ripersiella hibisci*	San Diego		1	Q
Hemiptera: Sternorrhyncha	Psyllidae	--	Alameda		1	Q
Hemiptera: Sternorrhyncha	Psyllidae	--	Imperial		1	Q
Hemiptera: Sternorrhyncha	Psyllidae	--	Los Angeles		3	Q
Hemiptera: Sternorrhyncha	Psyllidae	--	San Francisco	1		Q
Hemiptera: Sternorrhyncha	Psyllidae	*Boreioglycaspis melaleucae*	Los Angeles		1	Q
Hemiptera: Sternorrhyncha	Psyllidae	*Cacopsylla tobirae**	Los Angeles	1		Q
Hemiptera: Sternorrhyncha	Psyllidae	*Diaphorina citri*	Imperial	82	327	A[1]
Hemiptera: Sternorrhyncha	Psyllidae	*Diaphorina citri*	Imperial	1	2	A[1]
Hemiptera: Sternorrhyncha	Psyllidae	*Diaphorina citri*	Los Angeles		1170	A[1]
Hemiptera: Sternorrhyncha	Psyllidae	*Diaphorina citri*	Los Angeles		1	A[1]
Hemiptera: Sternorrhyncha	Psyllidae	*Diaphorina citri*	Orange		31	A[1]
Hemiptera: Sternorrhyncha	Psyllidae	*Diaphorina citri*	San Diego	184	281	A[1]
Hemiptera: Sternorrhyncha	Psyllidae	*Diaphorina citri*	San Diego		1	A[1]
Hemiptera: Sternorrhyncha	Psyllidae	*Diaphorina citri*	Ventura		1	A[1]
Hemiptera: Sternorrhyncha	Psyllidae	*Diaphorina citri**	Imperial	2		Q
Hemiptera: Sternorrhyncha	Psyllidae	*Diaphorina citri**	Los Angeles		1	A[1]
Hemiptera: Sternorrhyncha	Psyllidae	*Diaphorina citri**	Los Angeles		22	Q
Hemiptera: Sternorrhyncha	Psyllidae	*Diaphorina citri**	San Diego	7		Q
Hemiptera: Sternorrhyncha	Psyllidae	*Diaphorina* sp.*	San Diego	1		Q
Hemiptera: Sternorrhyncha	Psyllidae	*Euphyllura olivina*	Orange	1		Q
Hemiptera: Sternorrhyncha	Psyllidae	insect egg(s)	Imperial		1	Q
Hemiptera: Sternorrhyncha	Psyllidae	*Platycorpha nigrivirga*	Los Angeles		1	Q
Hemiptera: Sternorrhyncha	Psyllidae	*Platycorpha nigrivirga*	Orange		1	Q
Hemiptera: Sternorrhyncha	Psyllidae	*Platycorpha nigrivirga*	San Diego		1	Q
Hemiptera: Sternorrhyncha	Psyllidae	*Platycoryphza* sp.	San Diego	1		Q
Hymenoptera	--	--	Shasta		1	Q
Hymenoptera	Apidae	*Aphis mellifera*, Africanized mitotype	Imperial	2		B
Hymenoptera	Apidae	*Aphis mellifera*, Africanized mitotype	Kern		1	B
Hymenoptera	Eulophidae	--	Los Angeles	1		Q
Hymenoptera	Eulophidae	*Ophelimus* sp.	Los Angeles		3	Q
Hymenoptera	Eulophidae	*Selitrichodes* sp.	Los Angeles	2	1	Q
Hymenoptera	Eulophidae	*Selitrichodes* sp.*	Los Angeles	1		Q
Hymenoptera	Formicidae	*Solenopsis invicta*	Los Angeles	3		A
Hymenoptera	Formicidae	*Solenopsis invicta*	Madera	2	5	A
Hymenoptera	Formicidae	*Solenopsis invicta*	Merced	25	95	A
Hymenoptera	Formicidae	*Solenopsis invicta*	Orange	236	3	A
Hymenoptera	Formicidae	*Solenopsis invicta*	Riverside	115	9	A
Hymenoptera	Formicidae	*Solenopsis invicta*	San Bernardino	14		A
Hymenoptera	Formicidae	*Solenopsis invicta*	San Diego	5		A
Hymenoptera	Formicidae	*Solenopsis invicta*	Stanislaus		1	A
Hymenoptera	Formicidae	*Solenopsis* sp.	San Bernardino	1		A
Hymenoptera	Formicidae	*Technomyrmex albipes*	Santa Barbara	1		Q
Hymenoptera	Formicidae	*Tetramorium* sp.	Sacramento	1		Q
Hymenoptera	Pteromalidae	--	Los Angeles		1	Q
Lepidoptera	--	--	San Luis Obispo		1	Q
Lepidoptera	Geometridae	*Disclisioprocta stellata*	Los Angeles	1		Q
Lepidoptera	Geometridae	*Disclisioprocta stellata*	Santa Barbara	1		Q
Lepidoptera	Gracillariidae	--	Sacramento	1		Q
Lepidoptera	Gracillariidae	--	Santa Clara	1		B
Lepidoptera	Gracillariidae	*Phyllocnistis citrella*	Alameda		1	B
Lepidoptera	Gracillariidae	*Phyllocnistis citrella*	Contra Costa	1		B
Lepidoptera	Gracillariidae	*Phyllocnistis citrella*	Kern		5	B
Lepidoptera	Gracillariidae	*Phyllocnistis citrella*	San Benito		2	B
Lepidoptera	Gracillariidae	*Phyllocnistis citrella*	San Luis Obispo	3		B
Lepidoptera	Gracillariidae	*Phyllocnistis citrella*	Santa Clara	12		B
Lepidoptera	Gracillariidae	*Phyllocnistis citrella*	Santa Cruz	1		B

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Lepidoptera	Gracillariidae	*Phyllocnistis citrella*	Tulare		3	B
Lepidoptera	Gracillariidae	*Phyllocnistis citrella**	Santa Cruz	1		B
Lepidoptera	Gracillariidae	*Phyllocnistis citrella**	Solano		1	B
Lepidoptera	Gracillariidae	*Phyllocnistis* sp.	Santa Clara		1	B
Lepidoptera	Gracillariidae*	- -	San Joaquin	1		Q
Lepidoptera	Hepialidae	- -	El Dorado		1	Q
Lepidoptera	Limacodidae	*Darna pallivitta*	Santa Barbara	2		A
Lepidoptera	Lymantriidae	*Lymantria dispar*	Alameda	1		A
Lepidoptera	Lymantriidae	*Lymantria dispar*	Contra Costa		1	A
Lepidoptera	Lymantriidae	*Lymantria dispar*	Los Angeles	1	2	A
Lepidoptera	Lymantriidae	*Lymantria dispar*	Orange	1		A
Lepidoptera	Lymantriidae	*Lymantria dispar*	Placer	1		A
Lepidoptera	Lymantriidae	*Lymantria dispar*	Santa Clara		1	A
Lepidoptera	Lymantriidae	*Lymantria dispar*	Trinity	1		A
Lepidoptera	Lymantriidae	*Lymantria dispar*	Ventura	9	1	A
Lepidoptera	Megalopygidae	- -	Orange	1		Q
Lepidoptera	Noctuidae	*Noctua pronuba*	Alameda	1		Q
Lepidoptera	Noctuidae	*Noctua pronuba*	Marin	1		Q
Lepidoptera	Noctuidae	*Noctua pronuba*	Sacramento	1		Q
Lepidoptera	Noctuidae	*Noctua pronuba*	Santa Clara	1		Q
Lepidoptera	Noctuidae	*Noctua pronuba*	Shasta	2		Q
Lepidoptera	Noctuidae	*Noctua pronuba*	Sonoma	1		Q
Lepidoptera	Noctuidae	*Noctua pronuba*	Yuba	1		Q
Lepidoptera	Tortricidae	- -	Monterey		3	Q
Lepidoptera	Tortricidae	- -	San Mateo		2	Q
Lepidoptera	Tortricidae	- -	Santa Cruz	1	3	Q
Lepidoptera	Tortricidae	*Epinotia opposita*	Santa Cruz	1		A
Lepidoptera	Tortricidae	*Epiphyas postvittana*	Alameda	1222	5781	A
Lepidoptera	Tortricidae	*Epiphyas postvittana*	Contra Costa	725	2568	A
Lepidoptera	Tortricidae	*Epiphyas postvittana*	Los Angeles		77	A
Lepidoptera	Tortricidae	*Epiphyas postvittana*	Marin	511	2186	A
Lepidoptera	Tortricidae	*Epiphyas postvittana*	Monterey	1638	3346	A
Lepidoptera	Tortricidae	*Epiphyas postvittana*	Napa	15	235	A
Lepidoptera	Tortricidae	*Epiphyas postvittana*	San Benito	9	24	A
Lepidoptera	Tortricidae	*Epiphyas postvittana*	San Francisco	2076	4530	A
Lepidoptera	Tortricidae	*Epiphyas postvittana*	San Joaquin		9	A
Lepidoptera	Tortricidae	*Epiphyas postvittana*	San Luis Obispo		16	A
Lepidoptera	Tortricidae	*Epiphyas postvittana*	San Mateo	729	1998	A
Lepidoptera	Tortricidae	*Epiphyas postvittana*	Santa Barbara	6	1	A
Lepidoptera	Tortricidae	*Epiphyas postvittana*	Santa Clara	125	354	A
Lepidoptera	Tortricidae	*Epiphyas postvittana*	Santa Cruz	5188	7508	A
Lepidoptera	Tortricidae	*Epiphyas postvittana*	Shasta	1		A
Lepidoptera	Tortricidae	*Epiphyas postvittana*	Solano	19	143	A
Lepidoptera	Tortricidae	*Epiphyas postvittana*	Sonoma	22	142	A
Lepidoptera	Tortricidae	*Epiphyas postvittana*	Ventura		1	A
Lepidoptera	Tortricidae	*Epiphyas postvittana*	Yolo		7	A
Lepidoptera	Tortricidae	*Epiphyas postvittana*†	Alameda	5		Q
Lepidoptera	Tortricidae	*Epiphyas postvittana*†	Los Angeles		2	Q
Lepidoptera	Tortricidae	*Epiphyas postvittana*†	Monterey	20	22	Q
Lepidoptera	Tortricidae	*Epiphyas postvittana*†	San Francisco	1		Q
Lepidoptera	Tortricidae	*Epiphyas postvittana*†	San Mateo	12	8	Q
Lepidoptera	Tortricidae	*Epiphyas postvittana*†	Santa Barbara	1		Q
Lepidoptera	Tortricidae	*Epiphyas postvittana*†	Santa Cruz	64	21	Q
Lepidoptera	Tortricidae	*Epiphyas postvittana*†	Sonoma	2	3	Q
Lepidoptera	Tortricidae	*Epiphyas postvittana*‡	Contra Costa		14	A
Lepidoptera	Tortricidae	*Epiphyas postvittana*‡	Los Angeles		10	Q
Lepidoptera	Tortricidae	*Epiphyas postvittana*‡	Marin		5	Q
Lepidoptera	Tortricidae	*Epiphyas postvittana*‡	Monterey	33	85	Q
Lepidoptera	Tortricidae	*Epiphyas postvittana*‡	San Francisco	10	10	Q
Lepidoptera	Tortricidae	*Epiphyas postvittana*‡	San Luis Obispo		1	Q
Lepidoptera	Tortricidae	*Epiphyas postvittana*‡	San Mateo	65	60	Q
Lepidoptera	Tortricidae	*Epiphyas postvittana*‡	Santa Cruz	349	296	Q
Lepidoptera	Tortricidae	*Epiphyas postvittana*‡	Solano		14	Q
Lepidoptera	Tortricidae	*Lobesia botrana*	Napa		22	Q
Lepidoptera	Tortricidae	*Lobesia* sp.	Napa		24	Q
Lepidoptera	Tortricidae	*Lobesia* sp.*	Napa		2	Q
Lepidoptera	Tortricidae	*Rhyacionia frustrana*	Merced		1	B
Lepidoptera	Tortricidae	*Rhyacionia* sp.	Santa Clara		1	B
Lepidoptera	Tortricidae	*Thaumatotibia leucotreta*	Ventura	1		A
Lepidoptera	Tortricidae*	- -	Santa Barbara	1		Q

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A, B, & Q Rated Detections by County, 2008-2009

Order	Family	Scientific Name	County	2008	2009	Rating
Lepidoptera	Tortricidae**	--	Contra Costa	1		Q
Lepidoptera	Tortricidae**	--	San Mateo	2		Q
Lepidoptera	Tortricidae**	--	Santa Cruz	5		Q
Lepidoptera	Zygaenidae	*Harrisina metallica*	Riverside	1	1	B
Misc.	--	arthropod egg(s)	Yolo		2	Q
Misc.	--	insect egg(s)	Los Angeles		1	Q
Orthoptera	Gryllotalpidae	*Scapteriscus borellii*	Los Angeles	2		Q
Orthoptera	Gryllotalpidae	*Scapteriscus borellii*	Riverside	7		Q
Orthoptera	Tettigoniidae	insect egg(s)	San Luis Obispo		1	Q
Pelecypoda	Dreisseniidae	*Dreissena polymorpha*	San Benito	1		Q
Phasmatodea	Phasmatidae	*Medauroidea extradentata*	Shasta		1	Q
Thysanoptera	Phlaeothripidae	*Klambothrips myopori*	Riverside	3		Q
Thysanoptera	Phlaeothripidae	*Klambothrips myopori*	San Luis Obispo	2		Q
Thysanoptera	Phlaeothripidae	*Klambothrips myopori*	Santa Clara	1		Q
Thysanoptera	Thripidae	--	Madera		1	Q
Thysanoptera	Thripidae	*Dichromothrips* sp.	San Luis Obispo		8	Q
Thysanoptera	Thripidae	*Thrips* sp.	San Luis Obispo		1	Q
		Grand Total		**15,010**	**32,502**	

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A, B, & Q Rated Interceptions by County, 2008-2009

Order	Family	Scientific Name	County	2008	2009	Rating
Acari	--	--	Yolo		1	Q
Acari	Eriophyidae	--	Mariposa	1		Q
Acari	Eriophyidae	--	Shasta		1	Q
Acari	Eriophyidae	*Aceria* sp.	Yolo	1		Q
Acari	Tarsonemidae	--	Yolo		1	Q
Acari	Tarsonemidae	*Steneotarsonemus* sp.	Yolo		1	Q
Acari	Tarsonemidae	*Steneotarsonemus spinki*	Yolo	1	14	Q
Acari	Tarsonemidae	*Tarsonemus* sp.	Colusa		1	Q
Acari	Tetranychidae	*Oligonychus* sp.	San Luis Obispo	1		Q
Blattodea	Blattidae	*Gomphadorina* sp.	Shasta	1		Q
Coleoptera	Anthribidae	*Araecerus coffeae*	San Luis Obispo		1	B
Coleoptera	Bostrichidae	*Sinoxylon anale*	Humboldt	1		A
Coleoptera	Bostrichidae	Tribe: Bostrichini	Shasta		1	Q
Coleoptera	Bostrichidae	*Xylothrips* sp.	Placer		1	Q
Coleoptera	Buprestidae	*Agrilus coxalis auroguttatus*	San Diego		1	Q
Coleoptera	Buprestidae	*Dicerca callosa*	Riverside		1	Q
Coleoptera	Cerambycidae	--	Riverside	1		Q
Coleoptera	Cerambycidae	--	San Diego		1	Q
Coleoptera	Cerambycidae	--	San Francisco		2	Q
Coleoptera	Cerambycidae	--	Stanislaus	1		Q
Coleoptera	Cerambycidae	*Chlorophorus annularis*	Los Angeles		1	Q
Coleoptera	Cerambycidae	*Phoracantha* sp.	Shasta		1	B
Coleoptera	Chrysomelidae	*Chrysolina bankii*	Alameda		1	B[1]
Coleoptera	Chrysomelidae	*Chrysolina bankii*	El Dorado		1	B
Coleoptera	Chrysomelidae	*Chrysolina bankii*	San Mateo		1	B
Coleoptera	Chrysomelidae	*Chrysolina bankii*	Santa Cruz		1	B
Coleoptera	Chrysomelidae	*Chrysolina bankii**	Alameda	1		Q
Coleoptera	Chrysomelidae	*Chrysophtharta m-fuscum*	San Diego	1		C[1]
Coleoptera	Chrysomelidae	*Chrysophtharta m-fuscum*	Santa Clara		2	C[1]
Coleoptera	Chrysomelidae	*Trachymela sloanei*	Napa		1	B
Coleoptera	Chrysomelidae	*Trachymela sloanei*	Riverside	1		B
Coleoptera	Chrysomelidae	*Trachymela sloanei*	San Joaquin	1		B
Coleoptera	Chrysomelidae	*Trachymela sloanei*	Santa Clara	1		B
Coleoptera	Chrysomelidae	*Trachymela sloanei*	Santa Cruz	1		B
Coleoptera	Curculionidae	--	Los Angeles		1	Q
Coleoptera	Curculionidae	*Diaprepes abbreviatus*	Los Angeles	193	11	B[1]
Coleoptera	Curculionidae	*Diaprepes abbreviatus*	Madera	2		B[1]
Coleoptera	Curculionidae	*Diaprepes abbreviatus*	Orange	230	18	B[1]
Coleoptera	Curculionidae	*Diaprepes abbreviatus*	San Diego		5	B[1]
Coleoptera	Curculionidae	*Diaprepes abbreviatus*	San Diego	445	128	B[1]
Coleoptera	Curculionidae	*Euwallacea fornicatus*	San Diego	1		Q
Coleoptera	Curculionidae	*Gonipterus* sp.	Sonoma	1		Q
Coleoptera	Curculionidae	*Tranes internatus*	Los Angeles		1	B
Coleoptera	Nitidulidae	*Aethina tumida*	Placer		1	B
Coleoptera	Nitidulidae	*Aethina tumida*	Sacramento		1	B
Coleoptera	Nitidulidae	*Aethina tumida*	Sonoma	1	1	B
Coleoptera	Nitidulidae	*Aethina tumida*	Stanislaus		1	B
Coleoptera	Nitidulidae	*Aethina tumida*	Yolo		1	B
Coleoptera	Scarabaeidae	*Popillia japonica*	Alameda	2		A
Coleoptera	Scarabaeidae	*Popillia japonica*	Kings		1	A
Coleoptera	Scarabaeidae	*Popillia japonica*	Los Angeles	8	1	A
Coleoptera	Scarabaeidae	*Popillia japonica*	Merced	1		A
Coleoptera	Scarabaeidae	*Popillia japonica*	Riverside	2		A
Coleoptera	Scarabaeidae	*Popillia japonica*	San Bernardino	3		A
Coleoptera	Scarabaeidae	*Popillia japonica*	San Diego	3		A
Diptera	--	--	Yolo		1	Q
Diptera	Agromyzidae	*Liriomyza* sp.	Santa Barbara	1		Q
Diptera	Agromyzidae	*Liriomyza* sp.*	San Luis Obispo	1		Q
Diptera	Drosophilidae	*Drosophila* sp.	San Joaquin		1	Q
Diptera	Drosphilidae	*Drosophila suzukii*	Alameda		6	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	Calaveras		1	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	Contra Costa		2	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	Fresno		1	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	Kings		1	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	Los Angeles		40	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	Marin		6	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	Merced		1	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	Monterey		1	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	Napa		1	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	Orange		17	C[1]

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ENTOMOLOGY

A, B, & Q Rated Interceptions by County, 2008-2009

Order	Family	Scientific Name	County	2008	2009	Rating
Diptera	Drosphilidae	*Drosophila suzukii*	Placer		1	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	Sacramento		1	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	San Benito		6	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	San Bernardino		1	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	San Diego		4	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	San Francisco		1	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	San Joaquin		3	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	San Luis Obispo		1	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	San Mateo		9	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	Santa Barbara		14	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	Santa Clara		13	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	Santa Cruz		3	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	Stanislaus		1	C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	Ventura		28	C[1]
Diptera	Drosphilidae	*Drosophila suzukii**	Marin		1	C[1]
Diptera	Stratiomyidae	*Inopus rubriceps*	Santa Cruz	1		B
Diptera	Stratiomyidae	*Inopus rubriceps*	Sonoma	1		B
Diptera	Tephritidae	*Anastrepha ludens*	Los Angeles	5		A
Diptera	Tephritidae	*Anastrepha ludens*	Sacramento		1	A
Diptera	Tephritidae	*Bactrocera albistrigata*	Los Angeles		8	A
Diptera	Tephritidae	*Bactrocera correcta*	Los Angeles	3	6	A
Diptera	Tephritidae	*Bactrocera correcta*	Orange	2	7	A
Diptera	Tephritidae	*Bactrocera correcta*	San Mateo		1	A
Diptera	Tephritidae	*Bactrocera correcta*	Santa Clara		1	A
Diptera	Tephritidae	*Bactrocera correcta*	Ventura		1	A
Diptera	Tephritidae	*Bactrocera dorsalis*- group	Alameda	1	1	A
Diptera	Tephritidae	*Bactrocera dorsalis*- group	Los Angeles	23	14	A
Diptera	Tephritidae	*Bactrocera dorsalis*- group	Orange		2	A
Diptera	Tephritidae	*Bactrocera dorsalis*- group	Riverside		1	A
Diptera	Tephritidae	*Bactrocera dorsalis*- group	Sacramento		4	A
Diptera	Tephritidae	*Bactrocera dorsalis*- group	San Bernardino	6	2	A
Diptera	Tephritidae	*Bactrocera dorsalis*- group	San Diego	2		A
Diptera	Tephritidae	*Bactrocera dorsalis*- group	Santa Clara	7	1	A
Diptera	Tephritidae	*Bactrocera oleae*	Alameda	14		A
Diptera	Tephritidae	*Bactrocera oleae*	Butte	1		A
Diptera	Tephritidae	*Bactrocera oleae*	Contra Costa		2	A
Diptera	Tephritidae	*Bactrocera oleae*	Kern	4	2	A
Diptera	Tephritidae	*Bactrocera oleae*	Marin	1		A
Diptera	Tephritidae	*Bactrocera oleae*	Placer	2		A
Diptera	Tephritidae	*Bactrocera oleae*	Riverside		2	A
Diptera	Tephritidae	*Bactrocera oleae*	Sacramento	1	1	A
Diptera	Tephritidae	*Bactrocera oleae*	San Bernardino	1		A
Diptera	Tephritidae	*Bactrocera oleae*	San Joaquin	1	2	A
Diptera	Tephritidae	*Bactrocera oleae*	San Luis Obispo	3		A
Diptera	Tephritidae	*Bactrocera oleae*	Santa Barbara	1		A
Diptera	Tephritidae	*Bactrocera oleae*	Solano		1	A
Diptera	Tephritidae	*Bactrocera oleae*	Ventura	1		A
Diptera	Tephritidae	*Bactrocera oleae*	Yolo	1		A
Diptera	Tephritidae	*Bactrocera scutellata*	Los Angeles		9	A
Diptera	Tephritidae	*Bactrocera zonata*	Orange		1	A
Diptera	Tephritidae	*Ceratitis capitata*	Los Angeles	1	1	A
Diptera	Tephritidae	*Ceratitis capitata*	San Diego	19	24	A
Diptera	Tephritidae	*Ceratitis capitata*	Santa Clara	1		A
Diptera	Tephritidae	*Ceratitis capitata*	Tulare	1		A
Diptera	Tephritidae	*Rhagoletis pomonella*	Contra Costa	1	1	B
Diptera	Tephritidae	*Rhagoletis pomonella*	San Benito	1		B
Diptera	Tephritidae	*Rhagoletis pomonella*	San Joaquin	2	4	B
Diptera	Tephritidae	*Rhagoletis pomonella*	San Luis Obispo		2	B
Diptera	Tephritidae	*Rhagoletis pomonella*	San Mateo	1		B
Diptera	Tephritidae	*Rhagoletis pomonella*	Santa Clara	2	2	B
Diptera	Tephritidae	*Rhagoletis pomonella*	Solano	4		B
Gastropoda	--	--	Madera		1	Q
Gastropoda	Ampullariidae	*Pomacea canaliculata*	Orange	1		A
Gastropoda	Bradybaenidae	*Bradybaena similaris*	Ventura		1	B
Gastropoda	Camaenidae	*Zachrysia provisoria*	Santa Barbara	1		Q
Gastropoda	Helicidae	*Theba pisana*	Santa Clara		10	B
Gastropoda	Hydrobiidae	*Potamopyrgus antipodarum*	Mendocino	1		Q
Hemiptera: Auchenorrhyncha	Cicadellidae	--	Imperial		3	B
Hemiptera: Auchenorrhyncha	Cicadellidae	--	Santa Barbara		1	B
Hemiptera: Auchenorrhyncha	Cicadellidae	--	Santa Clara		10	B

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ENTOMOLOGY

A, B, & Q Rated Interceptions by County, 2008-2009

Order	Family	Scientific Name	County	2008	2009	Rating
Hemiptera: Auchenorrhyncha	Cicadellidae	*Eupteryx decemnotata*	Los Angeles		1	Q
Hemiptera: Auchenorrhyncha	Cicadellidae	*Eupteryx decemnotata*	Napa		5	Q
Hemiptera: Auchenorrhyncha	Cicadellidae	*Eupteryx decemnotata*	Riverside		1	Q
Hemiptera: Auchenorrhyncha	Cicadellidae	*Eupteryx* sp.	Riverside		1	Q
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca* sp.	Santa Barbara		1	B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	Alameda	1	2	B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	Amador	1	1	B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	Contra Costa		1	B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	El Dorado		1	B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	Fresno		1	B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	Imperial	4	4	B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	Kern	5	1	B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	Madera	2	2	B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	Marin		1	B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	Riverside	4	3	B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	Sacramento		8	B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	San Bernardino		1	B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	San Joaquin	3	1	B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	San Luis Obispo	2	2	B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	Santa Barbara	1		B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	Santa Clara	94	96	B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	Santa Clara	1		B[1]
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	Shasta	1		B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	Stanislaus	2	1	B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	Tulare	3	1	B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	Ventura	1	3	B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis**	Santa Clara	1		B
Hemiptera: Heteroptera	Coreidae	*Centrocoris variegatus*	Alameda		1	Q
Hemiptera: Heteroptera	Coreidae	*Centrocoris variegatus*	Sacramento		1	Q
Hemiptera: Heteroptera	Coreidae	*Centrocoris variegatus*	Yolo		1	Q
Hemiptera: Heteroptera	Pentatomidae	--	San Luis Obispo		1	Q
Hemiptera: Heteroptera	Pentatomidae	*Bagrada hilaris*	Imperial		2	B
Hemiptera: Heteroptera	Pentatomidae	*Bagrada hilaris*	Riverside		3	B
Hemiptera: Heteroptera	Pentatomidae	*Bagrada hilaris*	San Bernardino		1	B
Hemiptera: Heteroptera	Pentatomidae	*Bagrada hilaris**	Los Angeles	9		B[1]
Hemiptera: Heteroptera	Pentatomidae	*Bagrada hilaris**	Orange		1	B[1]
Hemiptera: Heteroptera	Pentatomidae	*Bagrada hilaris**	Orange	1		B[1]
Hemiptera: Heteroptera	Pentatomidae	*Halyomorpha halys*	Los Angeles	3		Q
Hemiptera: Heteroptera	Pentatomidae	*Halyomorpha halys*	San Joaquin	1		Q
Hemiptera: Heteroptera	Pyrrhocoridae	*Scantius aegyptius*	Orange		2	C[1]
Hemiptera: Heteroptera	Pyrrhocoridae	*Scantius aegyptius*	Riverside		1	C[1]
Hemiptera: Heteroptera	Pyrrhocoridae	*Scantius aegyptius*	Riverside		2	C[1]
Hemiptera: Heteroptera	Pyrrhocoridae	*Scantius aegyptius*	San Bernardino		1	C[1]
Hemiptera: Heteroptera	Pyrrhocoridae	*Scantius aegyptius*	San Diego		1	C[1]
Hemiptera: Sternorrhyncha	Aphididae	--	Fresno		1	Q
Hemiptera: Sternorrhyncha	Aphididae	--	Riverside		1	Q
Hemiptera: Sternorrhyncha	Aphididae	--	Sacramento	1		Q
Hemiptera: Sternorrhyncha	Aphididae	--	Sonoma	1		Q
Hemiptera: Sternorrhyncha	Aphididae	*Aphis* sp.	Fresno		1	Q
Hemiptera: Sternorrhyncha	Aphididae	*Eriosoma* sp.	Sacramento	1		Q
Hemiptera: Sternorrhyncha	Aphididae	*Greenidea ficicola*	Orange	1		Q
Hemiptera: Sternorrhyncha	Aphididae	*Greenidea ficicola*	Santa Barbara		1	Q
Hemiptera: Sternorrhyncha	Aphididae	*Hyalopterus* sp.	Butte		1	Q
Hemiptera: Sternorrhyncha	Aphididae	*Macrosiphum hellebori*	Santa Barbara		1	Q
Hemiptera: Sternorrhyncha	Aphididae	*Sipha maydis*	Merced		1	Q
Hemiptera: Sternorrhyncha	Aphididae	*Sipha maydis*	Santa Barbara		1	Q
Hemiptera: Sternorrhyncha	Aphididae	*Sitobion luteum*	Santa Barbara	2		Q
Hemiptera: Sternorrhyncha	Aphididae	Tribe: Pemphigini	Sacramento		1	Q
Hemiptera: Sternorrhyncha	Asterolecaniidae	*Bambusaspis miliaris*	Orange		1	Q
Hemiptera: Sternorrhyncha	Coccidae	*Ceroplastes rubens*	San Francisco	1		A
Hemiptera: Sternorrhyncha	Coccidae	*Ceroplastes rusci*	Alameda		1	A
Hemiptera: Sternorrhyncha	Coccidae	*Ceroplastes* sp.	San Diego	6		Q
Hemiptera: Sternorrhyncha	Coccidae	*Coccus viridis*	Orange		1	A
Hemiptera: Sternorrhyncha	Coccidae	*Prococcus acutissmus*	Orange	1		Q
Hemiptera: Sternorrhyncha	Coccidae	*Pulvinaria psidii*	Orange		1	B
Hemiptera: Sternorrhyncha	Coccidae	*Pulvinaria psidii*	San Bernardino		1	B
Hemiptera: Sternorrhyncha	Coccidae	*Pulvinaria urbicola*	San Diego	1		B
Hemiptera: Sternorrhyncha	Coccidae	*Pulvinaria urbicola*	San Francisco	1		B
Hemiptera: Sternorrhyncha	Coccidae	*Pulvinaria urbicola*	San Luis Obispo		1	B
Hemiptera: Sternorrhyncha	Coccidae	*Pulvinaria urbicola*	Santa Barbara	1		B

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A, B, & Q Rated Interceptions by County, 2008-2009

Order	Family	Scientific Name	County	2008	2009	Rating
Hemiptera: Sternorrhyncha	Coccidae	*Pulvinaria urbicola**	San Diego		1	B
Hemiptera: Sternorrhyncha	Coccidae	*Toumeyella liriodendri*	Santa Clara	1		B
Hemiptera: Sternorrhyncha	Diaspididae	--	Los Angeles		1	Q
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella aurantii*	Alameda		1	B
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella aurantii*	Contra Costa		1	B
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella aurantii*	Riverside	1	1	B
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella aurantii*	San Benito		1	B
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella aurantii*	San Diego	1		B
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella aurantii*	San Joaquin		1	B
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella aurantii*	Shasta		1	B
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella aurantii*	Solano	1	4	B
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella inornata*	Orange	1		Q
Hemiptera: Sternorrhyncha	Diaspididae	*Aspidiotus destructor*	Sonoma	1		A
Hemiptera: Sternorrhyncha	Diaspididae	*Aulacaspis yasumatsui*	Orange		1	Q
Hemiptera: Sternorrhyncha	Diaspididae	*Aulacaspis yasumatsui*	San Diego		1	Q
Hemiptera: Sternorrhyncha	Diaspididae	*Fiorinia japonica*	Lake		1	Q
Hemiptera: Sternorrhyncha	Diaspididae	*Fiorinia japonica*	Los Angeles	1	33	Q
Hemiptera: Sternorrhyncha	Diaspididae	*Hemiberlesia palmae*	Riverside	1		A
Hemiptera: Sternorrhyncha	Diaspididae	*Lepidosaphes beckii*	Orange		1	B
Hemiptera: Sternorrhyncha	Diaspididae	*Pinnaspis* sp.	San Benito	1		Q
Hemiptera: Sternorrhyncha	Diaspididae	*Pinnaspis strachani*	San Luis Obispo	2	11	A
Hemiptera: Sternorrhyncha	Diaspididae	*Pinnaspis strachani*	Santa Barbara		1	A
Hemiptera: Sternorrhyncha	Diaspididae	*Poliaspis cycadis*	Los Angeles		1	Q
Hemiptera: Sternorrhyncha	Diaspididae	*Poliaspis cycadis*	Orange	1	2	Q
Hemiptera: Sternorrhyncha	Diaspididae	*Pseudaulacaspis cockerelli*	Orange	7	5	A
Hemiptera: Sternorrhyncha	Diaspididae	*Pseudaulacaspis cockerelli*	Riverside		1	A
Hemiptera: Sternorrhyncha	Diaspididae	*Pseudaulacaspis cockerelli*	San Diego	19	10	A
Hemiptera: Sternorrhyncha	Diaspididae	*Pseudaulacaspis cockerelli*	San Francisco	1		A
Hemiptera: Sternorrhyncha	Diaspididae	*Rutherfordia major*	Orange		1	Q
Hemiptera: Sternorrhyncha	Diaspididae	*Thysanofiorinia nephelii*	Orange	1		Q
Hemiptera: Sternorrhyncha	Pseudococcidae	--	San Luis Obispo		1	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Delottococcus confusus*	San Luis Obispo	1	2	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Delottococcus confusus*	Santa Barbara		1	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Delottococcus* sp.	San Luis Obispo	1		Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Ferrisia gilli*	El Dorado		2	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Ferrisia gilli*	Lake		2	B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Ferrisia virgata*	Santa Barbara	1		B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Maconellicoccus hirsutus*	Riverside	1		A
Hemiptera: Sternorrhyncha	Pseudococcidae	*Nipaecoccus nipae*	Los Angeles		1	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Nipaecoccus* sp.	Los Angeles	2	9	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Nipaecoccus* sp.	San Bernardino		2	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Palmicultor lumpurensis*	San Diego	3	3	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Paracoccus interceptus**	San Luis Obispo		1	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Phenacoccus* sp.	Lake	1		Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Phenacoccus* sp.	San Luis Obispo	1		B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus ficus*	El Dorado		1	B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus ficus*	Fresno	1		B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus ficus*	Kern	4		B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus ficus*	Monterey	14	9	B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus ficus*	Napa	12	11	B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus ficus*	San Benito	5		B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus ficus*	San Joaquin	1		B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus ficus*	San Luis Obispo		2	B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus ficus*	Santa Barbara	1		B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus ficus*	Sonoma	5		B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus ficus*	Yolo		1	B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus ficus**	Kern		2	B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus ficus**	Lake		2	B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus ficus**	Merced	1		B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus ficus**	Monterey	16	5	B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus ficus**	Napa	14	6	B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus ficus**	Sonoma	1		B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus* sp.	Kern	1	12	B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus* sp.	Lake	5		B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus* sp.	Merced	1	2	B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus* sp.	Monterey	46	53	B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus* sp.	Monterey	3		Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus* sp.	Napa	10	23	B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus* sp.	Napa	1		Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus* sp.	San Benito		10	B

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Order	Family	Scientific Name	County	2008	2009	Rating
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus* sp.	San Diego	1		Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus* sp.	San Francisco	2		Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus* sp.	San Joaquin		2	B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus* sp.	San Luis Obispo	4	4	B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus* sp.	Santa Barbara	1		B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus* sp.	Sonoma	8	24	B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus* sp.	Tulare	1		B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Pseudococcus importatus*	San Luis Obispo		1	A[1]
Hemiptera: Sternorrhyncha	Pseudococcidae	*Pseudococcus importatus*	San Luis Obispo		11	A[1]
Hemiptera: Sternorrhyncha	Pseudococcidae	*Pseudococcus* sp.	Napa	1		Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Pseudococcus* sp.	San Luis Obispo		1	A
Hemiptera: Sternorrhyncha	Pseudococcidae	*Pseudococcus* sp.	San Luis Obispo		1	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Rhizoecus* sp.	Riverside	1		Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Ripersiella hibisci*	San Diego		1	Q
Hemiptera: Sternorrhyncha	Psyllidae	--	Alameda		1	Q
Hemiptera: Sternorrhyncha	Psyllidae	--	Imperial		1	Q
Hemiptera: Sternorrhyncha	Psyllidae	--	Los Angeles		3	Q
Hemiptera: Sternorrhyncha	Psyllidae	--	San Francisco	1		Q
Hemiptera: Sternorrhyncha	Psyllidae	*Boreioglycaspis melaleucae*	Los Angeles		1	Q
Hemiptera: Sternorrhyncha	Psyllidae	*Cacopsylla tobirae**	Los Angeles	1		Q
Hemiptera: Sternorrhyncha	Psyllidae	*Diaphorina citri*	Imperial	82	327	A[1]
Hemiptera: Sternorrhyncha	Psyllidae	*Diaphorina citri*	Imperial	1	2	A[1]
Hemiptera: Sternorrhyncha	Psyllidae	*Diaphorina citri*	Los Angeles		1170	A[1]
Hemiptera: Sternorrhyncha	Psyllidae	*Diaphorina citri*	Los Angeles		1	A[1]
Hemiptera: Sternorrhyncha	Psyllidae	*Diaphorina citri*	Orange		31	A[1]
Hemiptera: Sternorrhyncha	Psyllidae	*Diaphorina citri*	San Diego	184	281	A[1]
Hemiptera: Sternorrhyncha	Psyllidae	*Diaphorina citri*	San Diego		1	A[1]
Hemiptera: Sternorrhyncha	Psyllidae	*Diaphorina citri*	Ventura		1	A[1]
Hemiptera: Sternorrhyncha	Psyllidae	*Diaphorina citri**	Imperial	2		Q
Hemiptera: Sternorrhyncha	Psyllidae	*Diaphorina citri**	Los Angeles		1	A[1]
Hemiptera: Sternorrhyncha	Psyllidae	*Diaphorina citri**	Los Angeles		22	Q
Hemiptera: Sternorrhyncha	Psyllidae	*Diaphorina citri**	San Diego	7		Q
Hemiptera: Sternorrhyncha	Psyllidae	*Diaphorina* sp.*	San Diego	1		Q
Hemiptera: Sternorrhyncha	Psyllidae	*Euphyllura olivina*	Orange	1		Q
Hemiptera: Sternorrhyncha	Psyllidae	insect egg(s)	Imperial		1	Q
Hemiptera: Sternorrhyncha	Psyllidae	*Platycorpha nigrivirga*	Los Angeles		1	Q
Hemiptera: Sternorrhyncha	Psyllidae	*Platycorpha nigrivirga*	Orange		1	Q
Hemiptera: Sternorrhyncha	Psyllidae	*Platycorpha nigrivirga*	San Diego		1	Q
Hemiptera: Sternorrhyncha	Psyllidae	*Platycoryphza* sp.	San Diego	1		Q
Hymenoptera	--	--	Shasta		1	Q
Hymenoptera	Apidae	*Aphis mellifera*, Africanized mitotype	Imperial	2		B
Hymenoptera	Apidae	*Aphis mellifera*, Africanized mitotype	Kern		1	B
Hymenoptera	Eulophidae	--	Los Angeles	1		Q
Hymenoptera	Eulophidae	*Ophelimus* sp.	Los Angeles		3	Q
Hymenoptera	Eulophidae	*Selitrichodes* sp.	Los Angeles	2	1	Q
Hymenoptera	Eulophidae	*Selitrichodes* sp.*	Los Angeles	1		Q
Hymenoptera	Formicidae	*Solenopsis invicta*	Los Angeles	3		A
Hymenoptera	Formicidae	*Solenopsis invicta*	Madera	2	5	A
Hymenoptera	Formicidae	*Solenopsis invicta*	Merced	25	95	A
Hymenoptera	Formicidae	*Solenopsis invicta*	Orange	236	3	A
Hymenoptera	Formicidae	*Solenopsis invicta*	Riverside	115	9	A
Hymenoptera	Formicidae	*Solenopsis invicta*	San Bernardino	14		A
Hymenoptera	Formicidae	*Solenopsis invicta*	San Diego	5		A
Hymenoptera	Formicidae	*Solenopsis invicta*	Stanislaus		1	A
Hymenoptera	Formicidae	*Solenopsis* sp.	San Bernardino	1		A
Hymenoptera	Formicidae	*Technomyrmex albipes*	Santa Barbara	1		Q
Hymenoptera	Formicidae	*Tetramorium* sp.	Sacramento	1		Q
Hymenoptera	Pteromalidae	--	Los Angeles		1	Q
Lepidoptera	--	--	San Luis Obispo		1	Q
Lepidoptera	Geometridae	*Disclisioprocta stellata*	Los Angeles	1		Q
Lepidoptera	Geometridae	*Disclisioprocta stellata*	Santa Barbara	1		Q
Lepidoptera	Gracillariidae	--	Sacramento	1		Q
Lepidoptera	Gracillariidae	--	Santa Clara	1		B
Lepidoptera	Gracillariidae	*Phyllocnistis citrella*	Alameda		1	B
Lepidoptera	Gracillariidae	*Phyllocnistis citrella*	Contra Costa	1		B
Lepidoptera	Gracillariidae	*Phyllocnistis citrella*	Kern		5	B
Lepidoptera	Gracillariidae	*Phyllocnistis citrella*	San Benito		2	B
Lepidoptera	Gracillariidae	*Phyllocnistis citrella*	San Luis Obispo	3		B
Lepidoptera	Gracillariidae	*Phyllocnistis citrella*	Santa Clara	12		B
Lepidoptera	Gracillariidae	*Phyllocnistis citrella*	Santa Cruz	1		B

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Lepidoptera	Gracillariidae	*Phyllocnistis citrella*	Tulare		3	B
Lepidoptera	Gracillariidae	*Phyllocnistis citrella**	Santa Cruz	1		B
Lepidoptera	Gracillariidae	*Phyllocnistis citrella**	Solano		1	B
Lepidoptera	Gracillariidae	*Phyllocnistis* sp.	Santa Clara		1	B
Lepidoptera	Gracillariidae*	- -	San Joaquin	1		Q
Lepidoptera	Hepialidae	- -	El Dorado		1	Q
Lepidoptera	Limacodidae	*Darna pallivitta*	Santa Barbara	2		A
Lepidoptera	Lymantriidae	*Lymantria dispar*	Alameda	1		A
Lepidoptera	Lymantriidae	*Lymantria dispar*	Contra Costa		1	A
Lepidoptera	Lymantriidae	*Lymantria dispar*	Los Angeles	1	2	A
Lepidoptera	Lymantriidae	*Lymantria dispar*	Orange	1		A
Lepidoptera	Lymantriidae	*Lymantria dispar*	Placer	1		A
Lepidoptera	Lymantriidae	*Lymantria dispar*	Santa Clara		1	A
Lepidoptera	Lymantriidae	*Lymantria dispar*	Trinity	1		A
Lepidoptera	Lymantriidae	*Lymantria dispar*	Ventura	9	1	A
Lepidoptera	Megalopygidae	- -	Orange	1		Q
Lepidoptera	Noctuidae	*Noctua pronuba*	Alameda	1		Q
Lepidoptera	Noctuidae	*Noctua pronuba*	Marin	1		Q
Lepidoptera	Noctuidae	*Noctua pronuba*	Sacramento	1		Q
Lepidoptera	Noctuidae	*Noctua pronuba*	Santa Clara	1		Q
Lepidoptera	Noctuidae	*Noctua pronuba*	Shasta	2		Q
Lepidoptera	Noctuidae	*Noctua pronuba*	Sonoma	1		Q
Lepidoptera	Noctuidae	*Noctua pronuba*	Yuba	1		Q
Lepidoptera	Tortricidae	- -	Monterey		3	Q
Lepidoptera	Tortricidae	- -	San Mateo		2	Q
Lepidoptera	Tortricidae	- -	Santa Cruz	1	3	Q
Lepidoptera	Tortricidae	*Epinotia opposita*	Santa Cruz	1		A
Lepidoptera	Tortricidae	*Epiphyas postvittana*	Alameda	1222	5781	A
Lepidoptera	Tortricidae	*Epiphyas postvittana*	Contra Costa	725	2568	A
Lepidoptera	Tortricidae	*Epiphyas postvittana*	Los Angeles		77	A
Lepidoptera	Tortricidae	*Epiphyas postvittana*	Marin	511	2186	A
Lepidoptera	Tortricidae	*Epiphyas postvittana*	Monterey	1638	3346	A
Lepidoptera	Tortricidae	*Epiphyas postvittana*	Napa	15	235	A
Lepidoptera	Tortricidae	*Epiphyas postvittana*	San Benito	9	24	A
Lepidoptera	Tortricidae	*Epiphyas postvittana*	San Francisco	2076	4530	A
Lepidoptera	Tortricidae	*Epiphyas postvittana*	San Joaquin		9	A
Lepidoptera	Tortricidae	*Epiphyas postvittana*	San Luis Obispo		16	A
Lepidoptera	Tortricidae	*Epiphyas postvittana*	San Mateo	729	1998	A
Lepidoptera	Tortricidae	*Epiphyas postvittana*	Santa Barbara	6	1	A
Lepidoptera	Tortricidae	*Epiphyas postvittana*	Santa Clara	125	354	A
Lepidoptera	Tortricidae	*Epiphyas postvittana*	Santa Cruz	5188	7508	A
Lepidoptera	Tortricidae	*Epiphyas postvittana*	Shasta	1		A
Lepidoptera	Tortricidae	*Epiphyas postvittana*	Solano	19	143	A
Lepidoptera	Tortricidae	*Epiphyas postvittana*	Sonoma	22	142	A
Lepidoptera	Tortricidae	*Epiphyas postvittana*	Ventura		1	A
Lepidoptera	Tortricidae	*Epiphyas postvittana*	Yolo		7	A
Lepidoptera	Tortricidae	*Epiphyas postvittana*†	Alameda	5		Q
Lepidoptera	Tortricidae	*Epiphyas postvittana*†	Los Angeles		2	Q
Lepidoptera	Tortricidae	*Epiphyas postvittana*†	Monterey	20	22	Q
Lepidoptera	Tortricidae	*Epiphyas postvittana*†	San Francisco	1		Q
Lepidoptera	Tortricidae	*Epiphyas postvittana*†	San Mateo	12	8	Q
Lepidoptera	Tortricidae	*Epiphyas postvittana*†	Santa Barbara	1		Q
Lepidoptera	Tortricidae	*Epiphyas postvittana*†	Santa Cruz	64	21	Q
Lepidoptera	Tortricidae	*Epiphyas postvittana*†	Sonoma	2	3	Q
Lepidoptera	Tortricidae	*Epiphyas postvittana*‡	Contra Costa		14	A
Lepidoptera	Tortricidae	*Epiphyas postvittana*‡	Los Angeles		10	Q
Lepidoptera	Tortricidae	*Epiphyas postvittana*‡	Marin		5	Q
Lepidoptera	Tortricidae	*Epiphyas postvittana*‡	Monterey	33	85	Q
Lepidoptera	Tortricidae	*Epiphyas postvittana*‡	San Francisco	10	10	Q
Lepidoptera	Tortricidae	*Epiphyas postvittana*‡	San Luis Obispo		1	Q
Lepidoptera	Tortricidae	*Epiphyas postvittana*‡	San Mateo	65	60	Q
Lepidoptera	Tortricidae	*Epiphyas postvittana*‡	Santa Cruz	349	296	Q
Lepidoptera	Tortricidae	*Epiphyas postvittana*‡	Solano		14	Q
Lepidoptera	Tortricidae	*Lobesia botrana*	Napa		22	Q
Lepidoptera	Tortricidae	*Lobesia* sp.	Napa		24	Q
Lepidoptera	Tortricidae	*Lobesia* sp.*	Napa		2	Q
Lepidoptera	Tortricidae	*Rhyacionia frustrana*	Merced		1	B
Lepidoptera	Tortricidae	*Rhyacionia* sp.	Santa Clara		1	B
Lepidoptera	Tortricidae	*Thaumatotibia leucotreta*	Ventura	1		A
Lepidoptera	Tortricidae*	- -	Santa Barbara	1		Q

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Order	Family	Scientific Name	County	2008	2009	Rating
Lepidoptera	Tortricidae**	--	Contra Costa	1		Q
Lepidoptera	Tortricidae**	--	San Mateo	2		Q
Lepidoptera	Tortricidae**	--	Santa Cruz	5		Q
Lepidoptera	Zygaenidae	*Harrisina metallica*	Riverside	1	1	B
Misc.	--	arthropod egg(s)	Yolo		2	Q
Misc.	--	insect egg(s)	Los Angeles		1	Q
Orthoptera	Gryllotalpidae	*Scapteriscus borellii*	Los Angeles	2		Q
Orthoptera	Gryllotalpidae	*Scapteriscus borellii*	Riverside	7		Q
Orthoptera	Tettigoniidae	insect egg(s)	San Luis Obispo		1	Q
Pelecypoda	Dreisseniidae	*Dreissena polymorpha*	San Benito	1		Q
Phasmatodea	Phasmatidae	*Medauroidea extradentata*	Shasta		1	Q
Thysanoptera	Phlaeothripidae	*Klambothrips myopori*	Riverside	3		Q
Thysanoptera	Phlaeothripidae	*Klambothrips myopori*	San Luis Obispo	2		Q
Thysanoptera	Phlaeothripidae	*Klambothrips myopori*	Santa Clara	1		Q
Thysanoptera	Thripidae	--	Madera		1	Q
Thysanoptera	Thripidae	*Dichromothrips* sp.	San Luis Obispo		8	Q
Thysanoptera	Thripidae	*Thrips* sp.	San Luis Obispo		1	Q
		Grand Total		**15,010**	**32,502**	

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ENTOMOLOGY

A, B, & Q Rated Interceptions by Border Stations, 2008-2009

Order	Family	Scientific Name	Station	2008 Pers[2]	2008 Comm[3]	2009 Pers[2]	2009 Comm[3]	Rating
Acari	--	--	BL	1				Q
Acari	--	--	HO			1		Q
Acari	--	--	LV		2			Q
Acari	--	--	NE	1		2	1	Q
Acari	--	--	TR	2				Q
Acari	--	--	TU	1		1		Q
Acari	--	--	WI				1	Q
Acari	--	egg(s)	AL	1				Q
Acari	--	egg(s)	NE		1			Q
Acari	--	damaged specimen	NE	1				Q
Acari	--	damaged specimen	TR	1				Q
Acari	--	suborder: Astigmata	NE			1	1	Q
Acari	Eriophyidae	--	TR			1		Q
Acari	Phytoseiidae	--	NE	1				Q
Acari	Tarsonemidae	--	HO			1		Q
Acari	Tarsonemidae	--	NE			1		Q
Acari	Tenuipalpidae	--	NE	2		1		Q
Acari	Tenuipalpidae	--	TU	1				Q
Acari	Tenuipalpidae	*Brevipalpus* sp.	HO	1				Q
Acari	Tenuipalpidae	*Brevipalpus* sp.	NE	1				Q
Acari	Tenuipalpidae	*Brevipalpus* sp.	TU			1		Q
Acari	Tenuipalpidae	*Tenuipalpus* sp.	YE				1	Q
Acari	Tetranychidae	--	HO	1				Q
Acari	Tetranychidae	--	TU	1				Q
Acari	Tetranychidae	*Bryobia* sp.	ME			1		Q
Acari	Tetranychidae	*Oligonychus* sp.	VI				1	Q
Acari	Tetranychidae	*Tetranychus pacificus*	NE			1		Q
Acari	Tetranychidae	*Tetranychus* sp.	NE		1	2		Q
Acari	Tetranychidae*	--	BL		1			Q
Blattodea	--	superfamily: Blattoidea	BL		1			Q
Blattodea	--	superfamily: Blattoidea	YE	1				Q
Blattodea	Blattidae	--	YE	1				Q
Coleoptera	--	--	BL		1		1	Q
Coleoptera	Alleculidae	*Allecula* sp.	BL				1	Q
Coleoptera	Anthicidae	*Formicilla* sp.	VI				1	Q
Coleoptera	Bostrichidae	--	AL	1				Q
Coleoptera	Bostrichidae	--	RH	1				Q
Coleoptera	Bostrichidae	--	TR	1				Q
Coleoptera	Bostrichidae	--	VI	1				Q
Coleoptera	Buprestidae	--	BL	1	1	1		Q
Coleoptera	Buprestidae	--	LV			1		Q
Coleoptera	Buprestidae	--	ME				1	Q
Coleoptera	Buprestidae	--	NE	23		5		Q
Coleoptera	Buprestidae	--	RH	12				Q
Coleoptera	Buprestidae	--	SR	1				Q
Coleoptera	Buprestidae	--	TR	7				Q
Coleoptera	Buprestidae	--	TU	1				Q
Coleoptera	Buprestidae	--	VI				1	Q
Coleoptera	Buprestidae	--	WI	1				Q
Coleoptera	Buprestidae	--	YE	1		2		Q
Coleoptera	Buprestidae	*Chrysobothris femorata*	NE	1				Q
Coleoptera	Buprestidae	*Chrysobothris femorata*	YE	1				Q
Coleoptera	Buprestidae	*Chrysobothris* sp.	TR		1			Q
Coleoptera	Cerambycidae	--	AL	2				Q
Coleoptera	Cerambycidae	--	BL	1		2		Q
Coleoptera	Cerambycidae	--	DO	1	1			Q
Coleoptera	Cerambycidae	--	LV	3				Q
Coleoptera	Cerambycidae	--	NE	37		9		Q
Coleoptera	Cerambycidae	--	RH	9				Q
Coleoptera	Cerambycidae	--	SR	1				Q
Coleoptera	Cerambycidae	--	TO	1				Q
Coleoptera	Cerambycidae	--	TR	16	3			Q
Coleoptera	Cerambycidae	--	WI	4				Q
Coleoptera	Cerambycidae	--	YE	1				Q
Coleoptera	Cerambycidae	*Aneflus* sp.	NE	1				Q
Coleoptera	Cerambycidae	*Aneflus* sp.	VI		1			Q
Coleoptera	Cerambycidae	*Methia* sp.	RH	1				Q
Coleoptera	Cerambycidae	*Monochamus* sp.	LV	1				Q

Inspection Station Codes

AL Alturas
BE Benton
BL Blythe
DO Dorris
HB Hornbrook
LV Long Valley
ME Meyers
NE Needles
RH Redwood Hwy
SR Smith River
TO Topaz
TR Truckee
TU Tulelake
VI Vidal
WI Winterhaven
YE Yermo

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A, B, & Q Rated Interceptions by Border Stations, 2008-2009

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Coleoptera	Cerambycidae	*Monochamus* sp.	TR		1			Q
Coleoptera	Cerambycidae	*Neoclytus* sp.	BE	1				Q
Coleoptera	Cerambycidae	*Neoclytus* sp.	ME	2				Q
Coleoptera	Cerambycidae	*Neoclytus* sp.	NE	1				Q
Coleoptera	Cerambycidae	*Oncideres* sp.	NE			1		Q
Coleoptera	Cerambycidae	*Oncideres* sp. [non-native]	WI				1	Q
Coleoptera	Cerambycidae	*Phymatodes* sp.	NE	2				Q
Coleoptera	Cerambycidae	*Xylotrechus* sp.	YE	1				Q
Coleoptera	Chrysomelidae	--	BL				1	Q
Coleoptera	Chrysomelidae	--	HO	1				Q
Coleoptera	Chrysomelidae	--	NE	1	1		1	Q
Coleoptera	Chrysomelidae	--	YE	1				Q
Coleoptera	Chrysomelidae	*Diabrotica* sp.	VI		1			Q
Coleoptera	Chrysomelidae	*Leptinotarsa decemlineata**	ME		1			A
Coleoptera	Chrysomelidae	*Oulema melanopus*	HO	1				A
Coleoptera	Chrysomelidae	*Oulema melanopus*	LV	1				A
Coleoptera	Chrysomelidae	*Oulema melanopus*	RH	1				A
Coleoptera	Chrysomelidae	*Oulema melanopus*	TR		1			A
Coleoptera	Chrysomelidae	pupa	BL				1	Q
Coleoptera	Cicindelidae	--	BL			1		Q
Coleoptera	Curculionidae	--	BL	7	1	1	1	Q
Coleoptera	Curculionidae	--	LV	1				Q
Coleoptera	Curculionidae	--	ME	1		1		Q
Coleoptera	Curculionidae	--	NE	16		18	1	Q
Coleoptera	Curculionidae	--	TR	6			1	Q
Coleoptera	Curculionidae	--	VI	2		1		Q
Coleoptera	Curculionidae	--	WI	4	1	2		Q
Coleoptera	Curculionidae	--	YE	1				Q
Coleoptera	Curculionidae	[non-native]	BL				1	Q
Coleoptera	Curculionidae	*Anthonomus* sp.	YE				1	Q
Coleoptera	Curculionidae	*Conotrachelus* sp.	VI				1	Q
Coleoptera	Curculionidae	*Curculio caryae*	NE			1		A
Coleoptera	Curculionidae	*Curculio* sp.	BL	2				Q
Coleoptera	Curculionidae	*Curculio* sp.	WI		1			Q
Coleoptera	Curculionidae	*Cylas formicamus**	BL		1			Q
Coleoptera	Curculionidae	*Cylas formicarius*	BL		1			A
Coleoptera	Curculionidae	*Myllocerus* sp.	BL				1	Q
Coleoptera	Curculionidae	subfamily: Conoderinae	NE		1			Q
Coleoptera	Elateridae	--	NE	1				Q
Coleoptera	Elateridae	--	TR	3				Q
Coleoptera	Nitidulidae	*Aethina tumida*	BL		2		1	B
Coleoptera	Nitidulidae	*Aethina tumida*	NE	1	8	6	35	B
Coleoptera	Nitidulidae	*Aethina tumida*	TR		19			B
Coleoptera	Nitidulidae	*Aethina tumida*	VI		4		17	B
Coleoptera	Nitidulidae	*Aethina tumida*	YE		4		2	B
Coleoptera	Nitidulidae	*Aethina tumida**	VI		1			B
Coleoptera	Ptilodactylidae	--	NE	1				Q
Coleoptera	Scarabaeidae	--	BL	8	3	2		Q
Coleoptera	Scarabaeidae	--	LV			1		Q
Coleoptera	Scarabaeidae	--	NE	16	2	8		Q
Coleoptera	Scarabaeidae	--	TR	1	1			Q
Coleoptera	Scarabaeidae	*Anomala* sp.	WI				1	Q
Coleoptera	Scarabaeidae	*Cyclocephala* sp.	NE	1			1	Q
Coleoptera	Scarabaeidae	*Cyclocephala* sp.	TR	1				Q
Coleoptera	Scarabaeidae	*Cyclocephala* sp.	WI			1		Q
Coleoptera	Scarabaeidae	*Diplotaxis* sp.	BL			1		Q
Coleoptera	Scarabaeidae	*Diplotaxis* sp.	NE	1				Q
Coleoptera	Scarabaeidae	*Diplotaxis* sp.*	VI	1				Q
Coleoptera	Scarabaeidae	*Diplotaxis* sp.*	WI		1			Q
Coleoptera	Scarabaeidae	*Ligyrus* sp.	NE	1				Q
Coleoptera	Scarabaeidae	*Macrodactylus* sp.	WI				1	Q
Coleoptera	Scarabaeidae	*Onthophagus* sp.	NE		1			Q
Coleoptera	Scarabaeidae	*Phyllophaga* sp.	NE	1				A
Coleoptera	Scarabaeidae	*Phyllophaga* sp.	HO				4	Q
Coleoptera	Scarabaeidae	*Phyllophaga* sp.	LV		1			Q
Coleoptera	Scarabaeidae	*Phyllophaga* sp.	NE	12	1	2		Q
Coleoptera	Scarabaeidae	*Phyllophaga* sp.	TR	1				Q
Coleoptera	Scarabaeidae	*Phyllophaga* sp.	VI		2			Q

Inspection Station Codes

- **AL** Alturas
- **BE** Benton
- **BL** Blythe
- **DO** Dorris
- **HB** Hornbrook
- **LV** Long Valley
- **ME** Meyers
- **NE** Needles
- **RH** Redwood Hwy
- **SR** Smith River
- **TO** Topaz
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Coleoptera	Scarabaeidae	*Phyllophaga* sp.	WI	2				Q
Coleoptera	Scarabaeidae	*Phyllophaga* sp.*	BL	1				Q
Coleoptera	Scarabaeidae	*Phyllophaga* sp.*	NE	1		3	1	Q
Coleoptera	Scarabaeidae	*Phyllophaga* sp.*	WI	2				Q
Coleoptera	Scarabaeidae	*Polyphaga* sp.*	NE	2				Q
Coleoptera	Scarabaeidae	*Popillia japonica*	BL	1				A
Coleoptera	Scarabaeidae	*Popillia japonica*	HO				1	A
Coleoptera	Scarabaeidae	*Popillia japonica*	LV	1		3		A
Coleoptera	Scarabaeidae	*Popillia japonica*	ME			1		A
Coleoptera	Scarabaeidae	*Popillia japonica*	NE	2		25		A
Coleoptera	Scarabaeidae	*Popillia japonica*	TR			1		A
Coleoptera	Scarabaeidae	*Popillia japonica*	YE	1				A
Coleoptera	Scolytidae	--	NE			1		Q
Coleoptera	Scolytidae	--	TR	2				Q
Coleoptera	Scolytidae	damaged specimen	ME	1				Q
Coleoptera	Scolytidae	*Dendroctonus* sp.	TR	1				Q
Coleoptera	Scolytidae	*Hylastes* sp.	TR	1				Q
Coleoptera	Scolytidae	*Hylesinus* sp.*	BL	1				Q
Coleoptera	Scolytidae	*Hypothenemus* sp.	BL		1			Q
Coleoptera	Scolytidae	fragment(s)	ME			1		Q
Coleoptera	Scolytidae	*Ips* sp.	BE	1				Q
Coleoptera	Scolytidae	*Ips* sp.	YE	1				Q
Coleoptera	Scolytidae	*Phloeotribus* sp.	ME	1				Q
Coleoptera	Scolytidae	*Phloeotribus* sp.	NE	1				Q
Coleoptera	Scolytidae	*Xyloborus* sp. [non-native]	NE			1		Q
Coleoptera	Tenebrionidae	--	NE	2				Q
Coleoptera	Tenebrionidae	--	RH	1				Q
Coleoptera	Tenebrionidae	--	TR	1				Q
Dermaptera	Forficulidae	--	NE	1				Q
Diptera	--	--	BL		2			Q
Diptera	--	--	HO	1				Q
Diptera	--	--	NE	1				Q
Diptera	--	damaged specimen	AL			1		Q
Diptera	--	damaged specimen	NE			1		Q
Diptera	--	fragment(s)	TR		1			Q
Diptera	Agromyzidae	--	NE			1		Q
Diptera	Agromyzidae	--	TR		1			Q
Diptera	Agromyzidae	--	TU			1		Q
Diptera	Agromyzidae	--	WI		1			Q
Diptera	Agromyzidae	*Liriomyza* sp.	WI				5	Q
Diptera	Agromyzidae	*Liriomyza* sp.	YE			1		Q
Diptera	Agromyzidae*	--	BL			1		Q
Diptera	Cecidomyiidae	--	BL			1		Q
Diptera	Cecidomyiidae	--	TR	1	1			Q
Diptera	Cecidomyiidae	--	TU	1				Q
Diptera	Cecidomyiidae	--	YE				1	Q
Diptera	Cecidomyiidae	*Contarinia nucicola*	NE			1		Q
Diptera	Cecidomyiidae	*Dasineura gibsoni*	HO		1			Q
Diptera	Cecidomyiidae	*Dasineura mali*	WI		1			Q
Diptera	Cecidomyiidae	*Polystepha sp.*	LV	1				Q
Diptera	Cecidomyiidae*	--	NE	1				Q
Diptera	Drosophilidae	*Drosophila suzukii**	RH	1				C[1]
Diptera	Drosphilidae	*Drosophila suzukii*	TR	1				C[1]
Diptera	Drosophilidae	*Drosophila suzukii**	TU	1				C[1]
Diptera	Otitidae	--	BE			1		Q
Diptera	Psychodidae	--	TR				1	Q
Diptera	Tephritidae	--	BL		1			Q
Diptera	Tephritidae	--	HO	1				Q
Diptera	Tephritidae	--	NE			1		Q
Diptera	Tephritidae	*Anastrepha ludens*	BL		2		1	A
Diptera	Tephritidae	*Anastrepha* sp.	BL		4		1	A
Diptera	Tephritidae	*Anastrepha* sp.	WI				1	A
Diptera	Tephritidae	*Ceratitis capitata*	NE		2			A
Diptera	Tephritidae	*Ceratitis capitata*	TR	1	1			A
Diptera	Tephritidae	*Ceratitis capitata*	YE		1			A
Diptera	Tephritidae	*Rhagoletis indifferens**	HO	1				A
Diptera	Tephritidae	*Rhagoletis cingulata*	TR			1		A
Diptera	Tephritidae	*Rhagoletis indifferens*	AL	15				A

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Diptera	Tephritidae	*Rhagoletis indifferens*	BE	8				A
Diptera	Tephritidae	*Rhagoletis indifferens*	DO	16				A
Diptera	Tephritidae	*Rhagoletis indifferens*	HO	58			2	A
Diptera	Tephritidae	*Rhagoletis indifferens*	LV	1				A
Diptera	Tephritidae	*Rhagoletis indifferens*	ME			1		A
Diptera	Tephritidae	*Rhagoletis indifferens*	NE	1				A
Diptera	Tephritidae	*Rhagoletis indifferens*	RH	66		8		A
Diptera	Tephritidae	*Rhagoletis indifferens*	SR	6				A
Diptera	Tephritidae	*Rhagoletis indifferens*	TO	7		1		A
Diptera	Tephritidae	*Rhagoletis indifferens*	TR	24		9		A
Diptera	Tephritidae	*Rhagoletis indifferens*	TU	3		2		A
Diptera	Tephritidae	*Rhagoletis indifferens*	YE	6	1	3		A
Diptera	Tephritidae	*Rhagoletis pomonella*	AL			1		B
Diptera	Tephritidae	*Rhagoletis pomonella*	BL	2				B
Diptera	Tephritidae	*Rhagoletis pomonella*	HO	22		23		B
Diptera	Tephritidae	*Rhagoletis pomonella*	LV			1		B
Diptera	Tephritidae	*Rhagoletis pomonella*	NE	1		4		B
Diptera	Tephritidae	*Rhagoletis pomonella*	RH	26		36		B
Diptera	Tephritidae	*Rhagoletis pomonella*	SR	1				B
Diptera	Tephritidae	*Rhagoletis pomonella*	TO			2		B
Diptera	Tephritidae	*Rhagoletis pomonella*	TR	12		2		B
Diptera	Tephritidae	*Rhagoletis pomonella*	TU	5		7		B
Diptera	Tephritidae	*Rhagoletis pomonella*	WI	1		1		B
Diptera	Tephritidae	*Rhagoletis pomonella*	YE	1		4	1	B
Diptera	Tephritidae	*Rhagoletis* sp.	BL	1				Q
Diptera	Tephritidae	*Rhagoletis* sp.	NE	1		1		Q
Diptera	Tephritidae	*Rhagoletis* sp.	RH	1				B
Diptera	Tephritidae	*Rhagoletis* sp.	RH	1				Q
Diptera	Tephritidae	*Rhagoletis* sp.	TR	1				A
Diptera	Tephritidae	*Rhagoletis* sp.	YE	1				Q
Diptera	Tephritidae	*Rhagoletis* sp.	AL	2				A
Diptera	Tephritidae	*Rhagoletis* sp.	LV	2				A
Diptera	Tephritidae	*Rhagoletis* sp.	RH	3		1		A
Diptera	Tephritidae	*Rhagoletis* sp.	TR			1		B
Diptera	Tephritidae	*Rhagoletis* sp.	YE	1				A
Diptera	Tephritidae	*Rhagoletis* sp.*	YE			1		Q
Diptera	Tephritidae	*Rhagoletis suavis*	NE	1		2		A
Diptera	Tephritidae	*Rhagoletis suavis*	WI			2		A
Diptera	Tephritidae	*Zonosemata* sp.	RH			1		Q
Diptera	Tipulidae*	--	HO	1				Q
Gastropoda	--	--	BL	1	1		1	Q
Gastropoda	--	--	LV	2				Q
Gastropoda	--	--	NE		1	1	1	Q
Gastropoda	--	--	TR	1				Q
Gastropoda	--	--	VI		1			Q
Gastropoda	--	--	WI	1				Q
Gastropoda	--	--	YE				1	Q
Gastropoda	--	damaged specimen	NE		1		1	Q
Gastropoda	--	egg(s)	HO	1				Q
Gastropoda	Bradybaenidae	*Bradybaena similaris*	BL	1	4	4	4	B
Gastropoda	Bradybaenidae	*Bradybaena similaris*	HO			2	2	B
Gastropoda	Bradybaenidae	*Bradybaena similaris*	NE	3	1	7	2	B
Gastropoda	Bradybaenidae	*Bradybaena similaris*	TR		2			B
Gastropoda	Bradybaenidae	*Bradybaena similaris*	WI		1		1	B
Gastropoda	Bradybaenidae	*Bradybaena similaris*	YE		1		3	B
Gastropoda	Bradybaenidae	*Bradybaena* sp.	NE		1			B
Gastropoda	Camaenidae	*Zachrysia provisoria*	BL			1		Q
Gastropoda	Camaenidae	*Zachrysia provisoria*	WI	1			1	Q
Gastropoda	Camaenidae	*Zachrysia provisoria*	YE			1		Q
Gastropoda	Camaenidae*	--	YE		1			Q
Gastropoda	Dreisseniidae*	--	BL			1		Q
Gastropoda	Helicidae	*Cepaea nemoralis*	HO				4	Q
Gastropoda	Helicidae	*Cepaea nemoralis*	NE			1		Q
Gastropoda	Hydrobiidae	*Potamopyrgus anbillarum*	SR	1				B
Gastropoda	Hydrobiidae	*Potamopyrgus antipodarum*	SR	10		7		Q
Gastropoda	Subulinidae	--	NE	1				Q
Gastropoda	Subulinidae	*Allopeas* sp.	NE			3		Q
Gastropoda	Succineidae	*Succinea luteola*	YE		1			Q

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- **NE** Needles
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ENTOMOLOGY

A, B, & Q Rated Interceptions by Border Stations, 2008-2009

Order	Family	Scientific Name	Station	2008 Pers[2]	2008 Comm[3]	2009 Pers[2]	2009 Comm[3]	Rating
Gastropoda	Succineidae	*Succinea luteola**	BL		1			Q
Gastropoda	Succineidae	*Succinea luteola**	YE		1			Q
Gastropoda	Succineidae	*Succinea* sp.	BL				1	Q
Gastropoda	Veronicellidae	--	BL				1	Q
Gastropoda	Veronicellidae	--	HO			1		Q
Gastropoda	Veronicellidae	--	NE			2		Q
Gastropoda	Veronicellidae	*Leidyula floridana*	WI				1	Q
Hemiptera	--	--	NE			1		Q
Hemiptera	--	--	NE			2		Q
Hemiptera	--	egg(s)	NE			1		Q
Hemiptera	--	egg(s)	TR			1		Q
Hemiptera	--	egg(s)	VI				1	Q
Hemiptera: Auchenorrhyncha	--	--	BL			1		Q
Hemiptera: Auchenorrhyncha	--	superfamily: Fulgoroidea	BL			2	1	Q
Hemiptera: Auchenorrhyncha	--	superfamily: Fulgoroidea	ME			1		Q
Hemiptera: Auchenorrhyncha	--	superfamily: Fulgoroidea	NE	1		3		Q
Hemiptera: Auchenorrhyncha	--	superfamily: Fulgoroidea	YE				2	Q
Hemiptera: Auchenorrhyncha	--	superfamily: Fulgoroidea	YE				1	Q
Hemiptera: Auchenorrhyncha	Acanaloniidae	*Acanalonia* sp.	HO				1	Q
Hemiptera: Auchenorrhyncha	Aphrophoridae	--	NE		1			Q
Hemiptera: Auchenorrhyncha	Aphrophoridae	--	SR	1				Q
Hemiptera: Auchenorrhyncha	Cercopidae	--	NE	1				Q
Hemiptera: Auchenorrhyncha	Cercopidae	--	WI			1		Q
Hemiptera: Auchenorrhyncha	Cicadellidae	--	AL	1				Q
Hemiptera: Auchenorrhyncha	Cicadellidae	--	BE	1				Q
Hemiptera: Auchenorrhyncha	Cicadellidae	--	BL	1	1	6	1	Q
Hemiptera: Auchenorrhyncha	Cicadellidae	--	DO	1			1	Q
Hemiptera: Auchenorrhyncha	Cicadellidae	--	HO	8		4	2	Q
Hemiptera: Auchenorrhyncha	Cicadellidae	--	LV			2		Q
Hemiptera: Auchenorrhyncha	Cicadellidae	--	NE	23		10	1	Q
Hemiptera: Auchenorrhyncha	Cicadellidae	--	RH	2		1		Q
Hemiptera: Auchenorrhyncha	Cicadellidae	--	SR	5				Q
Hemiptera: Auchenorrhyncha	Cicadellidae	--	TR	5	2		1	Q
Hemiptera: Auchenorrhyncha	Cicadellidae	--	TU	2	2			Q
Hemiptera: Auchenorrhyncha	Cicadellidae	--	VI		1			Q
Hemiptera: Auchenorrhyncha	Cicadellidae	--	WI	2			2	Q
Hemiptera: Auchenorrhyncha	Cicadellidae	--	YE	1			2	Q
Hemiptera: Auchenorrhyncha	Cicadellidae	*Agallia* sp.	HO				1	Q
Hemiptera: Auchenorrhyncha	Cicadellidae	*Cuerna kaloostiani*	NE	1				Q
Hemiptera: Auchenorrhyncha	Cicadellidae	*Cuerna* sp.	HO	1				Q
Hemiptera: Auchenorrhyncha	Cicadellidae	*Cuerna* sp.	NE			1		Q
Hemiptera: Auchenorrhyncha	Cicadellidae	*Draeculacephala* sp.	BL				1	Q
Hemiptera: Auchenorrhyncha	Cicadellidae	egg(s)	YE	2				Q
Hemiptera: Auchenorrhyncha	Cicadellidae	*Empoasca* sp.	HO	1				Q
Hemiptera: Auchenorrhyncha	Cicadellidae	*Empoasca* sp.	LV	1				Q
Hemiptera: Auchenorrhyncha	Cicadellidae	*Empoasca* sp.	NE			1		Q
Hemiptera: Auchenorrhyncha	Cicadellidae	*Empoasca* sp.	SR	1				Q
Hemiptera: Auchenorrhyncha	Cicadellidae	*Empoasca* sp.	TR		1			Q
Hemiptera: Auchenorrhyncha	Cicadellidae	*Empoasca* sp.	WI				1	Q
Hemiptera: Auchenorrhyncha	Cicadellidae	*Graphocephala* sp.	SR	1				Q
Hemiptera: Auchenorrhyncha	Cicadellidae	*Gyponana* sp.	HO				1	Q
Hemiptera: Auchenorrhyncha	Cicadellidae	*Gyponana* sp.	NE	2				Q
Hemiptera: Auchenorrhyncha	Cicadellidae	*Gyponana* sp.	YE	1				Q
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca* sp.	BL			1		Q
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	BL			2	1	B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Homalodisca vitripennis*	NE			3		B
Hemiptera: Auchenorrhyncha	Cicadellidae	*Neocoelidiana* sp.	NE			1		Q
Hemiptera: Auchenorrhyncha	Cicadellidae	*Paragonia* sp.	VI		1			Q
Hemiptera: Auchenorrhyncha	Cicadellidae	*Pieces ota*	LV			1		Q
Hemiptera: Auchenorrhyncha	Cicadellidae	subfamily: Agalliinae	NE			1		Q
Hemiptera: Auchenorrhyncha	Cicadellidae	subfamily: Cicadellinae	HO			1		Q
Hemiptera: Auchenorrhyncha	Cicadellidae	subfamily: Cicadellinae	NE	1				Q
Hemiptera: Auchenorrhyncha	Cicadellidae	subfamily: Deltocephclinae	HO				1	Q
Hemiptera: Auchenorrhyncha	Cicadellidae	subfamily: Deltocephclinae	NE			2		Q
Hemiptera: Auchenorrhyncha	Cicadidae	--	NE			1		Q
Hemiptera: Auchenorrhyncha	Cixiidae	--	HO	1				Q
Hemiptera: Auchenorrhyncha	Cixiidae	--	NE	2				Q
Hemiptera: Auchenorrhyncha	Cixiidae	--	YE		1			Q

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ENTOMOLOGY

A, B, & Q Rated Interceptions by Border Stations, 2008-2009

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Hemiptera: Auchenorrhyncha	Cixiidae	*Cixius* sp.	VI				1	Q
Hemiptera: Auchenorrhyncha	Flatidae	--	TR	1				Q
Hemiptera: Auchenorrhyncha	Flatidae	egg(s)	YE	1				Q
Hemiptera: Auchenorrhyncha	Flatidae*	egg(s)	WI			1		Q
Hemiptera: Auchenorrhyncha	Fulgoridae	--	YE				1	Q
Hemiptera: Auchenorrhyncha	Membracidae	--	BL			1		Q
Hemiptera: Auchenorrhyncha	Membracidae	--	LV			1		Q
Hemiptera: Auchenorrhyncha	Membracidae	--	NE			2		Q
Hemiptera: Auchenorrhyncha	Membracidae	--	WI			1		Q
Hemiptera: Heteroptera	Coreidae	*Acanthocephala declivis*	BL		1	1		Q
Hemiptera: Heteroptera	Coreidae	*Acanthocephala declivis*	NE	1				Q
Hemiptera: Heteroptera	Coreidae	fragment(s)	NE	1				Q
Hemiptera: Heteroptera	Coreidae	*Mozena* sp.	BL	1				Q
Hemiptera: Heteroptera	Coreidae*	--	ME				1	Q
Hemiptera: Heteroptera	Cydnidae	--	BL			1		Q
Hemiptera: Heteroptera	Cydnidae	--	HO			1	1	Q
Hemiptera: Heteroptera	Cydnidae	--	NE	4		4		Q
Hemiptera: Heteroptera	Cydnidae	--	TR	1				Q
Hemiptera: Heteroptera	Cydnidae	--	VI		1			Q
Hemiptera: Heteroptera	Lygaeidae	--	BL	1				Q
Hemiptera: Heteroptera	Lygaeidae	--	LV		1			Q
Hemiptera: Heteroptera	Lygaeidae	--	NE	1	1	5		Q
Hemiptera: Heteroptera	Lygaeidae	--	YE	1	1	1		Q
Hemiptera: Heteroptera	Lygaeidae	*Blissus* sp.	BL			1		Q
Hemiptera: Heteroptera	Lygaeidae	*Blissus* sp.	NE		2	3	2	Q
Hemiptera: Heteroptera	Lygaeidae	*Blissus* sp.	WI		1			Q
Hemiptera: Heteroptera	Lygaeidae	*Cnemodus mavortius*	NE			1		Q
Hemiptera: Heteroptera	Lygaeidae	*Heterogaster* sp.	YE				1	Q
Hemiptera: Heteroptera	Lygaeidae	fragment(s)	NE			1		Q
Hemiptera: Heteroptera	Lygaeidae	*Ischnodemus* sp.	NE			1		Q
Hemiptera: Heteroptera	Lygaeidae	*Myodocha serripes*	NE		1	2		Q
Hemiptera: Heteroptera	Lygaeidae	*Nysius* sp.	BL				1	Q
Hemiptera: Heteroptera	Lygaeidae	*Nysius* sp.	NE	4		2		Q
Hemiptera: Heteroptera	Lygaeidae	*Nysius* sp.	TR		1			Q
Hemiptera: Heteroptera	Lygaeidae	*Ozophora* sp.*	NE	1				Q
Hemiptera: Heteroptera	Lygaeidae or Coreidae	egg(s)	BL	1	1			Q
Hemiptera: Heteroptera	Lygaeidae*	--	NE	1				Q
Hemiptera: Heteroptera	Miridae	--	BL		1		2	Q
Hemiptera: Heteroptera	Miridae	--	HO	1				Q
Hemiptera: Heteroptera	Miridae	--	NE	12		9		Q
Hemiptera: Heteroptera	Miridae	--	WI	1	1			Q
Hemiptera: Heteroptera	Miridae	fragment(s)	NE			1		Q
Hemiptera: Heteroptera	Miridae	fragment(s)	TR	1				Q
Hemiptera: Heteroptera	Miridae	*Lygus* sp.	NE	1				Q
Hemiptera: Heteroptera	Miridae	*Phytocoris* sp.	NE			1		Q
Hemiptera: Heteroptera	Pentatomidae	--	HO	1				Q
Hemiptera: Heteroptera	Pentatomidae	--	NE	1		1	2	Q
Hemiptera: Heteroptera	Pentatomidae	--	RH			1		Q
Hemiptera: Heteroptera	Pentatomidae	--	VI	1				Q
Hemiptera: Heteroptera	Pentatomidae	--	YE				1	Q
Hemiptera: Heteroptera	Pentatomidae	*Bagrada hilaris*	YE		1			B
Hemiptera: Heteroptera	Pentatomidae	egg(s)	AL	1				Q
Hemiptera: Heteroptera	Pentatomidae	egg(s)	BL		1			Q
Hemiptera: Heteroptera	Pentatomidae	egg(s)	TR	1				Q
Hemiptera: Heteroptera	Pentatomidae	*Halyomorpha halys*	LV			1		B[1]
Hemiptera: Heteroptera	Pentatomidae	*Halyomorpha halys*	NE	2		4	1	B[1]
Hemiptera: Heteroptera	Pentatomidae	*Halyomorpha halys*	NE			1		B[1]
Hemiptera: Heteroptera	Pentatomidae	fragment(s)	LV			1		Q
Hemiptera: Heteroptera	Scutelleridae	*Dioleus chrysorrhoeus**	NE			1		Q
Hemiptera: Heteroptera	Thyreocoridae	*Corimelaena* sp.	NE	1				Q
Hemiptera: Heteroptera	Tingidae	--	NE			2		Q
Hemiptera: Heteroptera	Tingidae	*Corythucha* sp.	BL	2				Q
Hemiptera: Heteroptera	Tingidae	*Corythucha* sp.	ME	1				Q
Hemiptera: Heteroptera	Tingidae	*Corythucha* sp.	TR		1			Q
Hemiptera: Heteroptera	Tingidae	egg(s)	NE	1				Q
Hemiptera: Sternorrhyncha	--	--	BL				1	Q
Hemiptera: Sternorrhyncha	--	superfamily: Coccoidea	BL	1				Q
Hemiptera: Sternorrhyncha	Aleyrodidae	--	BL				4	Q

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Hemiptera: Sternorrhyncha	Aleyrodidae	--	LV				1	Q
Hemiptera: Sternorrhyncha	Aleyrodidae	--	NE		2	3		Q
Hemiptera: Sternorrhyncha	Aleyrodidae	--	WI			2		Q
Hemiptera: Sternorrhyncha	Aleyrodidae	--	YE	2	2		3	Q
Hemiptera: Sternorrhyncha	Aleyrodidae	*Aleurocerus palmae*	BL				2	Q
Hemiptera: Sternorrhyncha	Aleyrodidae	*Aleurocerus palmae*	NE				1	Q
Hemiptera: Sternorrhyncha	Aleyrodidae	*Aleurocerus palmae*	YE				4	Q
Hemiptera: Sternorrhyncha	Aleyrodidae	*Aleurocerus* sp.	BL				1	Q
Hemiptera: Sternorrhyncha	Aleyrodidae	*Aleurocerus* sp.	YE		1		3	Q
Hemiptera: Sternorrhyncha	Aleyrodidae	*Aleurodicus* sp.	NE	1				Q
Hemiptera: Sternorrhyncha	Aleyrodidae	*Aleurodicus* sp.	WI			1		Q
Hemiptera: Sternorrhyncha	Aleyrodidae	*Aleurothrixus* sp.	YE				1	Q
Hemiptera: Sternorrhyncha	Aleyrodidae	*Aleurotrachelus* sp.	ME			1		Q
Hemiptera: Sternorrhyncha	Aleyrodidae	*Aleurotrachelus* sp.	NE			1		Q
Hemiptera: Sternorrhyncha	Aleyrodidae	*Aleurotrachelus* sp.	YE				2	Q
Hemiptera: Sternorrhyncha	Aleyrodidae	*Aleurotulus* sp.	NE				1	Q
Hemiptera: Sternorrhyncha	Aleyrodidae	*Aleurotulus* sp.	YE				3	Q
Hemiptera: Sternorrhyncha	Aleyrodidae	*Bemisia* sp.	YE				1	Q
Hemiptera: Sternorrhyncha	Aleyrodidae	*Trialeurodes* sp.	NE	1				Q
Hemiptera: Sternorrhyncha	Aleyrodidae*	--	ME			1		Q
Hemiptera: Sternorrhyncha	Aleyrodidae*	--	YE				1	Q
Hemiptera: Sternorrhyncha	Aphididae	--	AL	6		1		Q
Hemiptera: Sternorrhyncha	Aphididae	--	BE	8		4		Q
Hemiptera: Sternorrhyncha	Aphididae	--	BL	12	4	5	2	Q
Hemiptera: Sternorrhyncha	Aphididae	--	DO	1				Q
Hemiptera: Sternorrhyncha	Aphididae	--	HO	45	1	4	4	Q
Hemiptera: Sternorrhyncha	Aphididae	--	LV	1	2	4		Q
Hemiptera: Sternorrhyncha	Aphididae	--	ME	1		15		Q
Hemiptera: Sternorrhyncha	Aphididae	--	NE	43	5	95	8	Q
Hemiptera: Sternorrhyncha	Aphididae	--	RH	2				Q
Hemiptera: Sternorrhyncha	Aphididae	--	SR	1		2		Q
Hemiptera: Sternorrhyncha	Aphididae	--	TO	1		1		Q
Hemiptera: Sternorrhyncha	Aphididae	--	TR	20	9	3	1	Q
Hemiptera: Sternorrhyncha	Aphididae	--	TU	11	2			Q
Hemiptera: Sternorrhyncha	Aphididae	--	VI		2	4		Q
Hemiptera: Sternorrhyncha	Aphididae	--	WI	5	5	1	2	Q
Hemiptera: Sternorrhyncha	Aphididae	--	YE	20	7	7	4	Q
Hemiptera: Sternorrhyncha	Aphididae	*Cinara* sp.	NE			1		Q
Hemiptera: Sternorrhyncha	Aphididae	fragment(s)	NE	1		1		Q
Hemiptera: Sternorrhyncha	Aphididae	*Sitobion* sp.	YE		1			Q
Hemiptera: Sternorrhyncha	Asterolecaniidae	--	HO	1				Q
Hemiptera: Sternorrhyncha	Asterolecaniidae	--	TU			1		Q
Hemiptera: Sternorrhyncha	Asterolecaniidae	*Asterolecanium* sp.	YE				3	Q
Hemiptera: Sternorrhyncha	Asterolecaniidae	*Asterolecanium* sp.*	YE				1	Q
Hemiptera: Sternorrhyncha	Coccidae	--	AL			1		Q
Hemiptera: Sternorrhyncha	Coccidae	--	BL	3	2	5	1	Q
Hemiptera: Sternorrhyncha	Coccidae	--	DO	1				Q
Hemiptera: Sternorrhyncha	Coccidae	--	HO	2		1		Q
Hemiptera: Sternorrhyncha	Coccidae	--	LV	1	1			Q
Hemiptera: Sternorrhyncha	Coccidae	--	ME			1		Q
Hemiptera: Sternorrhyncha	Coccidae	--	NE	5		6		Q
Hemiptera: Sternorrhyncha	Coccidae	--	RH	1				Q
Hemiptera: Sternorrhyncha	Coccidae	--	TR		1	1	1	Q
Hemiptera: Sternorrhyncha	Coccidae	--	TU	3				Q
Hemiptera: Sternorrhyncha	Coccidae	--	WI	1		1	1	Q
Hemiptera: Sternorrhyncha	Coccidae	--	YE	3			1	Q
Hemiptera: Sternorrhyncha	Coccidae	*Ceroplastes floridensis*	NE				1	A
Hemiptera: Sternorrhyncha	Coccidae	*Ceroplastes floridensis*	WI			1		A
Hemiptera: Sternorrhyncha	Coccidae	*Ceroplastes rubens*	BL				1	A
Hemiptera: Sternorrhyncha	Coccidae	Ceroplastes sp.	BL	3				Q
Hemiptera: Sternorrhyncha	Coccidae	*Ceroplastes* sp.	NE			3		Q
Hemiptera: Sternorrhyncha	Coccidae	*Coccus* sp.*	BL			1		Q
Hemiptera: Sternorrhyncha	Coccidae	damaged specimen	NE			1		Q
Hemiptera: Sternorrhyncha	Coccidae	egg(s)	YE				1	Q
Hemiptera: Sternorrhyncha	Coccidae	*Prococcus acutissmus*	BL	1				Q
Hemiptera: Sternorrhyncha	Coccidae	*Prococcus acutissmus*	NE			1		Q
Hemiptera: Sternorrhyncha	Coccidae	*Protopulvinaria pyriformis*	BL	1				B
Hemiptera: Sternorrhyncha	Coccidae	*Pulvinaria psidii*	LV		1			B

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Hemiptera: Sternorrhyncha	Coccidae	*Pulvinaria* sp.	YE		1			Q
Hemiptera: Sternorrhyncha	Coccidae	*Pulvinaria urbicola*	BL	1				B
Hemiptera: Sternorrhyncha	Coccidae	*Saissetia* sp.	HO	1				Q
Hemiptera: Sternorrhyncha	Coccidae	*Saissetia* sp.	WI		1			Q
Hemiptera: Sternorrhyncha	Dactylopiidae	*Dactylopius* sp.	BL				1	Q
Hemiptera: Sternorrhyncha	Diaspididae	--	AL	14	1	3		Q
Hemiptera: Sternorrhyncha	Diaspididae	--	BL		4	3	8	Q
Hemiptera: Sternorrhyncha	Diaspididae	--	DO	5		1		Q
Hemiptera: Sternorrhyncha	Diaspididae	--	HO	23	1	7		Q
Hemiptera: Sternorrhyncha	Diaspididae	--	LV	6	4			Q
Hemiptera: Sternorrhyncha	Diaspididae	--	ME			1		Q
Hemiptera: Sternorrhyncha	Diaspididae	--	NE	17	1	9	2	Q
Hemiptera: Sternorrhyncha	Diaspididae	--	RH	5		2		Q
Hemiptera: Sternorrhyncha	Diaspididae	--	SR	14		26	1	Q
Hemiptera: Sternorrhyncha	Diaspididae	--	TO			1		Q
Hemiptera: Sternorrhyncha	Diaspididae	--	TR	4	7	1	3	Q
Hemiptera: Sternorrhyncha	Diaspididae	--	TU	48		20		Q
Hemiptera: Sternorrhyncha	Diaspididae	--	VI		1		2	Q
Hemiptera: Sternorrhyncha	Diaspididae	--	WI	2	6	3	1	Q
Hemiptera: Sternorrhyncha	Diaspididae	--	YE	6	5	1	4	Q
Hemiptera: Sternorrhyncha	Diaspididae	*Abgrallaspis aguacate*	AL	1	1			Q
Hemiptera: Sternorrhyncha	Diaspididae	*Abgrallaspis aguacate*	HO	1				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Abgrallaspis aguacate*	LV	1	5			Q
Hemiptera: Sternorrhyncha	Diaspididae	*Abgrallaspis aguacate*	NE	2				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Abgrallaspis aguacate*	RH	4				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Abgrallaspis aguacate*	SR	5				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Abgrallaspis aguacate*	TU	6				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Abgrallaspis aguacate**	TU	1				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Abgrallaspis* or *Diaspidiotus* sp.	NE			6	1	Q
Hemiptera: Sternorrhyncha	Diaspididae	*Abgrallaspis* sp.	AL	1	1	2		Q
Hemiptera: Sternorrhyncha	Diaspididae	*Abgrallaspis* sp.	BE	1				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Abgrallaspis* sp.	BL			1		Q
Hemiptera: Sternorrhyncha	Diaspididae	*Abgrallaspis* sp.	HO	3			1	Q
Hemiptera: Sternorrhyncha	Diaspididae	*Abgrallaspis* sp.	NE	4				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Abgrallaspis* sp.	RH	2				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Abgrallaspis* sp.	SR	14		3		Q
Hemiptera: Sternorrhyncha	Diaspididae	*Abgrallaspis* sp.	TU	9				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Abgrallaspis* sp.	YE				1	Q
Hemiptera: Sternorrhyncha	Diaspididae	*Acutaspis albopicta*	NE		1			A
Hemiptera: Sternorrhyncha	Diaspididae	*Acutaspis albopicta*	SR			3		A
Hemiptera: Sternorrhyncha	Diaspididae	*Acutaspis albopicta*	TU	1				A
Hemiptera: Sternorrhyncha	Diaspididae	*Acutaspis aliena*	TU			1		Q
Hemiptera: Sternorrhyncha	Diaspididae	*Acutaspis* sp.	BL		1			Q
Hemiptera: Sternorrhyncha	Diaspididae	*Acutaspis* sp.	NE	1				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Acutaspis* sp.	SR	1		2		Q
Hemiptera: Sternorrhyncha	Diaspididae	*Acutaspis* sp.	TU	1		1		Q
Hemiptera: Sternorrhyncha	Diaspididae	*Acutaspis* sp.	VI		1			Q
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella aurantii*	AL	30		6		B
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella aurantii*	BE				1	B
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella aurantii*	BL	1		1		B
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella aurantii*	DO	15		6		B
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella aurantii*	HO	73		6	2	B
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella aurantii*	LV	11	2	2		B
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella aurantii*	ME			1		B
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella aurantii*	NE	12		43	1	B
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella aurantii*	RH	8				B
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella aurantii*	SR	39		145	1	B
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella aurantii*	TO	1				B
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella aurantii*	TR	8	1	7	6	B
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella aurantii*	TU	90	1	17		B
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella aurantii*	VI		1			B
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella aurantii*	WI	2	1			B
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella aurantii*	YE	1		2		B
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella comperei*	TR	1				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella orientalis*	BL	2	1	1		A
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella orientalis*	HO	1				A
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella orientalis*	NE	2		3		A

Inspection Station Codes

- **AL** Alturas
- **BE** Benton
- **BL** Blythe
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- **HB** Hornbrook
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- **ME** Meyers
- **NE** Needles
- **RH** Redwood Hwy
- **SR** Smith River
- **TO** Topaz
- **TR** Truckee
- **TU** Tulelake
- **VI** Vidal
- **WI** Winterhaven
- **YE** Yermo

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ENTOMOLOGY

A, B, & Q Rated Interceptions by Border Stations, 2008-2009

Order	Family	Scientific Name	Station	2008 Pers[2]	2008 Comm[3]	2009 Pers[2]	2009 Comm[3]	Rating
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella orientalis*	WI			2		A
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella* sp.	NE			1		Q
Hemiptera: Sternorrhyncha	Diaspididae	*Aonidiella* sp.	TU			1		B
Hemiptera: Sternorrhyncha	Diaspididae	*Aspidiotus destructor*	BL	1				A
Hemiptera: Sternorrhyncha	Diaspididae	*Aspidiotus destructor*	NE			1		A
Hemiptera: Sternorrhyncha	Diaspididae	*Aspidiotus destructor*	YE		1			A
Hemiptera: Sternorrhyncha	Diaspididae	*Aulacaspis tubercularis*	DO	3		1		Q
Hemiptera: Sternorrhyncha	Diaspididae	*Aulacaspis tubercularis*	HO	4		1		Q
Hemiptera: Sternorrhyncha	Diaspididae	*Aulacaspis tubercularis*	LV	1	4			Q
Hemiptera: Sternorrhyncha	Diaspididae	*Aulacaspis tubercularis*	ME			2		Q
Hemiptera: Sternorrhyncha	Diaspididae	*Aulacaspis tubercularis*	NE	10	1	4		Q
Hemiptera: Sternorrhyncha	Diaspididae	*Aulacaspis tubercularis*	SR	1				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Aulacaspis tubercularis*	TU	6		3		Q
Hemiptera: Sternorrhyncha	Diaspididae	*Aulacaspis tubercularis*	VI			1		Q
Hemiptera: Sternorrhyncha	Diaspididae	*Aulacaspis yasumatsui*	BL			4		Q
Hemiptera: Sternorrhyncha	Diaspididae	*Chileputo* sp.	BL				1	Q
Hemiptera: Sternorrhyncha	Diaspididae	*Chionaspis* sp.*	LV			1		Q
Hemiptera: Sternorrhyncha	Diaspididae	*Chrysomphalus aonidum*	TU	1				B
Hemiptera: Sternorrhyncha	Diaspididae	damaged specimen	NE	1				Q
Hemiptera: Sternorrhyncha	Diaspididae	damaged specimen	WI			1		Q
Hemiptera: Sternorrhyncha	Diaspididae	*Diaspis diospyri**	BL				1	Q
Hemiptera: Sternorrhyncha	Diaspididae	*Diaspis* sp.	HO	1				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Diaspis* sp.	NE				1	Q
Hemiptera: Sternorrhyncha	Diaspididae	*Diaspis* sp.	RH	1				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Diaspis* sp.	SR	1				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Diaspis* sp.	TO	1				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Diaspis* sp.	TU	3				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Diaspis* sp.	WI		1			Q
Hemiptera: Sternorrhyncha	Diaspididae	*Diaspis* sp.*	BL	1				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Fiorinia theae*	WI			1		A
Hemiptera: Sternorrhyncha	Diaspididae	*Furcaspis palmaria*	BL			1		Q
Hemiptera: Sternorrhyncha	Diaspididae	*Hemiberlesia* sp.	AL	2	2	9		Q
Hemiptera: Sternorrhyncha	Diaspididae	*Hemiberlesia* sp.	BE		1			Q
Hemiptera: Sternorrhyncha	Diaspididae	*Hemiberlesia* sp.	BL	1	1		1	Q
Hemiptera: Sternorrhyncha	Diaspididae	*Hemiberlesia* sp.	DO	1				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Hemiberlesia* sp.	HO	8		1	1	Q
Hemiptera: Sternorrhyncha	Diaspididae	*Hemiberlesia* sp.	LV	1	8			Q
Hemiptera: Sternorrhyncha	Diaspididae	*Hemiberlesia* sp.	NE	21	2	9		Q
Hemiptera: Sternorrhyncha	Diaspididae	*Hemiberlesia* sp.	RH	13				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Hemiberlesia* sp.	SR	25		5		Q
Hemiptera: Sternorrhyncha	Diaspididae	*Hemiberlesia* sp.	TO	2				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Hemiberlesia* sp.	TR		4			Q
Hemiptera: Sternorrhyncha	Diaspididae	*Hemiberlesia* sp.	TU	31		15		Q
Hemiptera: Sternorrhyncha	Diaspididae	*Hemiberlesia* sp.	VI				2	Q
Hemiptera: Sternorrhyncha	Diaspididae	*Hemiberlesia* sp.	WI	1			4	Q
Hemiptera: Sternorrhyncha	Diaspididae	*Hemiberlesia* sp.	YE	1	1		1	Q
Hemiptera: Sternorrhyncha	Diaspididae	*Howardia biclavis*	NE			2	1	A
Hemiptera: Sternorrhyncha	Diaspididae	*Howardia biclavis*	YE				1	A
Hemiptera: Sternorrhyncha	Diaspididae	*Howardia biclavis**	NE			1		A
Hemiptera: Sternorrhyncha	Diaspididae	*Ischnaspis longirostris*	BL		1		1	A
Hemiptera: Sternorrhyncha	Diaspididae	*Ischnaspis longirostris*	HO	1				A
Hemiptera: Sternorrhyncha	Diaspididae	*Ischnaspis longirostris*	LV	1	1			A
Hemiptera: Sternorrhyncha	Diaspididae	*Ischnaspis longirostris*	TU			3		A
Hemiptera: Sternorrhyncha	Diaspididae	*Ischnaspis longirostris*	YE				1	A
Hemiptera: Sternorrhyncha	Diaspididae	*Lepidosaphes beckii*	AL	11				B
Hemiptera: Sternorrhyncha	Diaspididae	*Lepidosaphes beckii*	BE	4				B
Hemiptera: Sternorrhyncha	Diaspididae	*Lepidosaphes beckii*	BL	3			1	B
Hemiptera: Sternorrhyncha	Diaspididae	*Lepidosaphes beckii*	DO	12		1		B
Hemiptera: Sternorrhyncha	Diaspididae	*Lepidosaphes beckii*	HO	34		4	2	B
Hemiptera: Sternorrhyncha	Diaspididae	*Lepidosaphes beckii*	LV	10	6	2		B
Hemiptera: Sternorrhyncha	Diaspididae	*Lepidosaphes beckii*	ME	2				B
Hemiptera: Sternorrhyncha	Diaspididae	*Lepidosaphes beckii*	NE	11		61		B
Hemiptera: Sternorrhyncha	Diaspididae	*Lepidosaphes beckii*	RH	2		1		B
Hemiptera: Sternorrhyncha	Diaspididae	*Lepidosaphes beckii*	SR	27		21		B
Hemiptera: Sternorrhyncha	Diaspididae	*Lepidosaphes beckii*	TO	1				B
Hemiptera: Sternorrhyncha	Diaspididae	*Lepidosaphes beckii*	TR	25	6	7	8	B
Hemiptera: Sternorrhyncha	Diaspididae	*Lepidosaphes beckii*	TU	17		3		B
Hemiptera: Sternorrhyncha	Diaspididae	*Lepidosaphes beckii*	VI			2		B

Inspection Station Codes

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- **BE** Benton
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- **DO** Dorris
- **HB** Hornbrook
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- **NE** Needles
- **RH** Redwood Hwy
- **SR** Smith River
- **TO** Topaz
- **TR** Truckee
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ENTOMOLOGY

A, B, & Q Rated Interceptions by Border Stations, 2008-2009

Order	Family	Scientific Name	Station	2008 Pers[2]	2008 Comm[3]	2009 Pers[2]	2009 Comm[3]	Rating
Hemiptera: Sternorrhyncha	Diaspididae	*Lepidosaphes beckii*	WI	1	3	5		B
Hemiptera: Sternorrhyncha	Diaspididae	*Lepidosaphes beckii*	YE	2	1	3	2	B
Hemiptera: Sternorrhyncha	Diaspididae	*Lepidosaphes gloverii*	NE			1		B
Hemiptera: Sternorrhyncha	Diaspididae	*Lepidosaphes gloverii*	YE			1		B
Hemiptera: Sternorrhyncha	Diaspididae	*Lepidosaphes* sp.	BL		1			Q
Hemiptera: Sternorrhyncha	Diaspididae	*Lepidosaphes* sp.	TU	1				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Lopholeucaspis* sp.	WI			1		Q
Hemiptera: Sternorrhyncha	Diaspididae	*Malleolaspis mammata*	BL			1		Q
Hemiptera: Sternorrhyncha	Diaspididae	*Morganella longispina*	AL	1				A
Hemiptera: Sternorrhyncha	Diaspididae	*Mycetaspis personata*	DO	3				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Mycetaspis personata*	HO	10				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Mycetaspis personata*	NE	2		3		Q
Hemiptera: Sternorrhyncha	Diaspididae	*Mycetaspis personata*	SR	3				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Mycetaspis personata*	TR				1	Q
Hemiptera: Sternorrhyncha	Diaspididae	*Mycetaspis personata*	TU	13		1		Q
Hemiptera: Sternorrhyncha	Diaspididae	*Mycetaspis personatus*	NE	1				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Mycetaspis personatus*	SR	1				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Mycetaspis* sp.	HO	1				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Mycetaspis* sp.	ME	1				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Mycetaspis* sp.	SR			1		Q
Hemiptera: Sternorrhyncha	Diaspididae	*Parlatoria pergandii*	TR				1	B[1]
Hemiptera: Sternorrhyncha	Diaspididae	*Parlatoria pergandii*	AL	6		6		B[1]
Hemiptera: Sternorrhyncha	Diaspididae	*Parlatoria pergandii*	BE	2				B[1]
Hemiptera: Sternorrhyncha	Diaspididae	*Parlatoria pergandii*	BL	4	6	1	5	B[1]
Hemiptera: Sternorrhyncha	Diaspididae	*Parlatoria pergandii*	DO	9		6	1	B[1]
Hemiptera: Sternorrhyncha	Diaspididae	*Parlatoria pergandii*	DO			2		B[1]
Hemiptera: Sternorrhyncha	Diaspididae	*Parlatoria pergandii*	HO	60	1	11	2	B[1]
Hemiptera: Sternorrhyncha	Diaspididae	*Parlatoria pergandii*	LV	16	12	12		B[1]
Hemiptera: Sternorrhyncha	Diaspididae	*Parlatoria pergandii*	ME	2		1		B[1]
Hemiptera: Sternorrhyncha	Diaspididae	*Parlatoria pergandii*	NE	44	1	119	1	B[1]
Hemiptera: Sternorrhyncha	Diaspididae	*Parlatoria pergandii*	RH	2				B[1]
Hemiptera: Sternorrhyncha	Diaspididae	*Parlatoria pergandii*	SR	37	1	97		B[1]
Hemiptera: Sternorrhyncha	Diaspididae	*Parlatoria pergandii*	TO	1		2		B[1]
Hemiptera: Sternorrhyncha	Diaspididae	*Parlatoria pergandii*	TR	15	11	7	10	B[1]
Hemiptera: Sternorrhyncha	Diaspididae	*Parlatoria pergandii*	TU	41		28		B[1]
Hemiptera: Sternorrhyncha	Diaspididae	*Parlatoria pergandii*	VI	1		3	1	B[1]
Hemiptera: Sternorrhyncha	Diaspididae	*Parlatoria pergandii*	WI	6	2	7	1	B[1]
Hemiptera: Sternorrhyncha	Diaspididae	*Parlatoria pergandii*	YE	1		3	4	B[1]
Hemiptera: Sternorrhyncha	Diaspididae	*Parlatoria pergandii**	NE			1		B
Hemiptera: Sternorrhyncha	Diaspididae	*Parlatoria pseudaspidiotus*	DO	1				A
Hemiptera: Sternorrhyncha	Diaspididae	*Parlatoria pseudaspidiotus*	HO	10		1		A
Hemiptera: Sternorrhyncha	Diaspididae	*Parlatoria pseudaspidiotus*	LV	4				A
Hemiptera: Sternorrhyncha	Diaspididae	*Parlatoria pseudaspidiotus*	NE	1		1		A
Hemiptera: Sternorrhyncha	Diaspididae	*Parlatoria pseudaspidiotus*	RH	1		1		A
Hemiptera: Sternorrhyncha	Diaspididae	*Parlatoria pseudaspidiotus*	SR	3		17		A
Hemiptera: Sternorrhyncha	Diaspididae	*Parlatoria pseudaspidiotus*	TO	1				A
Hemiptera: Sternorrhyncha	Diaspididae	*Parlatoria pseudaspidiotus*	TR			2	7	A
Hemiptera: Sternorrhyncha	Diaspididae	*Parlatoria pseudaspidiotus*	TU	14	1	13		A
Hemiptera: Sternorrhyncha	Diaspididae	*Parlatoria pseudaspidiotus*	YE	1		1		A
Hemiptera: Sternorrhyncha	Diaspididae	*Parlatoria* sp.	BL	1				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Parlatoria* sp.	WI		1			Q
Hemiptera: Sternorrhyncha	Diaspididae	*Pinnaspis buxi*	YE		1			A
Hemiptera: Sternorrhyncha	Diaspididae	*Pinnaspis* or *Unaspis* sp.	AL	1				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Pinnaspis* or *Unaspis* sp.	HO	1				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Pinnaspis* or *Unaspis* sp.	NE	1				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Pinnaspis* or *Unaspis* sp.	TR	1				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Pinnaspis* or *Unaspis* sp.	TU	1				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Pinnaspis* sp.	BL		1		1	Q
Hemiptera: Sternorrhyncha	Diaspididae	*Pinnaspis* sp.	DO	2				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Pinnaspis* sp.	LV		1			Q
Hemiptera: Sternorrhyncha	Diaspididae	*Pinnaspis* sp.	NE	1		1		Q
Hemiptera: Sternorrhyncha	Diaspididae	*Pinnaspis* sp.	RH	1				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Pinnaspis* sp.	SR			2		Q
Hemiptera: Sternorrhyncha	Diaspididae	*Pinnaspis* sp.	TO			1		Q
Hemiptera: Sternorrhyncha	Diaspididae	*Pinnaspis* sp.	TR		1		1	Q
Hemiptera: Sternorrhyncha	Diaspididae	*Pinnaspis* sp.	TU	3		1		Q
Hemiptera: Sternorrhyncha	Diaspididae	*Pinnaspis* sp.	WI				3	Q
Hemiptera: Sternorrhyncha	Diaspididae	*Pinnaspis* sp.	YE		1		4	Q

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Hemiptera: Sternorrhyncha	Diaspididae	*Pinnaspis* sp.*	WI				1	Q
Hemiptera: Sternorrhyncha	Diaspididae	*Pinnaspis* sp.*	YE				1	Q
Hemiptera: Sternorrhyncha	Diaspididae	*Pinnaspis strachani*	AL			1		A
Hemiptera: Sternorrhyncha	Diaspididae	*Pinnaspis strachani*	BL	1		1		A
Hemiptera: Sternorrhyncha	Diaspididae	*Pinnaspis strachani*	LV		1			A
Hemiptera: Sternorrhyncha	Diaspididae	*Pinnaspis strachani*	NE		1	2		A
Hemiptera: Sternorrhyncha	Diaspididae	*Pinnaspis strachani*	TR		4		2	A
Hemiptera: Sternorrhyncha	Diaspididae	*Pinnaspis strachani*	TU	8		4		A
Hemiptera: Sternorrhyncha	Diaspididae	*Pinnaspis strachani*	WI		2		1	A
Hemiptera: Sternorrhyncha	Diaspididae	*Pinnaspis strachani*	YE		3		3	A
Hemiptera: Sternorrhyncha	Diaspididae	*Pseudaonidia duplex*	LV	1	1			Q
Hemiptera: Sternorrhyncha	Diaspididae	*Pseudaonidia duplex*	NE	1		2		Q
Hemiptera: Sternorrhyncha	Diaspididae	*Pseudaonidia trilobitiformis*	NE			1	1	Q
Hemiptera: Sternorrhyncha	Diaspididae	*Pseudaonidia trilobitiformis*	TR				1	Q
Hemiptera: Sternorrhyncha	Diaspididae	*Pseudaulacaspis cockerelli*	BL	1		3	1	A
Hemiptera: Sternorrhyncha	Diaspididae	*Pseudaulacaspis cockerelli*	NE	2		1		A
Hemiptera: Sternorrhyncha	Diaspididae	*Pseudaulacaspis cockerelli*	WI	1			1	A
Hemiptera: Sternorrhyncha	Diaspididae	*Pseudaulacaspis cockerelli*	YE				3	A
Hemiptera: Sternorrhyncha	Diaspididae	*Pseudaulacaspis pentagona*	LV		5			A
Hemiptera: Sternorrhyncha	Diaspididae	*Pseudaulacaspis pentagona*	NE	3		12	7	A
Hemiptera: Sternorrhyncha	Diaspididae	*Pseudaulacaspis pentagona*	SR			2		A
Hemiptera: Sternorrhyncha	Diaspididae	*Pseudaulacaspis pentagona*	TO		1			A
Hemiptera: Sternorrhyncha	Diaspididae	*Pseudaulacaspis pentagona*	TR	3	2		9	A
Hemiptera: Sternorrhyncha	Diaspididae	*Pseudaulacaspis pentagona*	TU	2		2		A
Hemiptera: Sternorrhyncha	Diaspididae	*Pseudaulacaspis pentagona*	WI	1	1		4	A
Hemiptera: Sternorrhyncha	Diaspididae	*Pseudaulacaspis pentagona*	YE				1	A
Hemiptera: Sternorrhyncha	Diaspididae	*Pseudoparlatoria parlatorioides*	YE				1	A
Hemiptera: Sternorrhyncha	Diaspididae	*Radionaspis indica*	AL			2		Q
Hemiptera: Sternorrhyncha	Diaspididae	*Radionaspis indica*	SR			1		Q
Hemiptera: Sternorrhyncha	Diaspididae	*Radionaspis indica*	TU	2		1		Q
Hemiptera: Sternorrhyncha	Diaspididae	*Radionaspis indica*	VI				1	Q
Hemiptera: Sternorrhyncha	Diaspididae	*Selenaspidus articulatus*	HO	1				A
Hemiptera: Sternorrhyncha	Diaspididae	*Selenaspidus articulatus*	NE		1			A
Hemiptera: Sternorrhyncha	Diaspididae	*Selenaspidus articulatus*	SR			1		A
Hemiptera: Sternorrhyncha	Diaspididae	*Selenaspidus articulatus*	YE				2	A
Hemiptera: Sternorrhyncha	Diaspididae	*Thysanofiorinia nephelii*	HO	2				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Thysanofiorinia nephelii*	YE	1				Q
Hemiptera: Sternorrhyncha	Diaspididae	*Thysanofiorinia* sp.	BL			1		Q
Hemiptera: Sternorrhyncha	Diaspididae	*Unaspis citri*	AL	2		2		A
Hemiptera: Sternorrhyncha	Diaspididae	*Unaspis citri*	DO	2				A
Hemiptera: Sternorrhyncha	Diaspididae	*Unaspis citri*	HO	2		2		A
Hemiptera: Sternorrhyncha	Diaspididae	*Unaspis citri*	LV	2	2			A
Hemiptera: Sternorrhyncha	Diaspididae	*Unaspis citri*	NE			5		A
Hemiptera: Sternorrhyncha	Diaspididae	*Unaspis citri*	RH	1				A
Hemiptera: Sternorrhyncha	Diaspididae	*Unaspis citri*	SR	1		9		A
Hemiptera: Sternorrhyncha	Diaspididae	*Unaspis citri*	TO			1		A
Hemiptera: Sternorrhyncha	Diaspididae	*Unaspis citri*	TR		1	1		A
Hemiptera: Sternorrhyncha	Diaspididae	*Unaspis citri*	TU	5		6		A
Hemiptera: Sternorrhyncha	Diaspididae	*Unaspis citri*	VI				1	A
Hemiptera: Sternorrhyncha	Diaspididae	*Unaspis citri*	WI	1				A
Hemiptera: Sternorrhyncha	Diaspididae	*Unaspis citri*	YE	1				A
Hemiptera: Sternorrhyncha	Diaspididae	*Unaspis euonymi*	NE	5		2		B
Hemiptera: Sternorrhyncha	Diaspididae*	--	LV	1				Q
Hemiptera: Sternorrhyncha	Margarodidae	--	WI				1	Q
Hemiptera: Sternorrhyncha	Margarodidae	*Icerya* sp.	BL		1		1	Q
Hemiptera: Sternorrhyncha	Margarodidae	*Icerya* sp.	WI			1		Q
Hemiptera: Sternorrhyncha	Margarodidae	*Icerya* sp.	YE				1	Q
Hemiptera: Sternorrhyncha	Margarodidae	*Icerya* sp.*	AL			1		Q
Hemiptera: Sternorrhyncha	Margarodidae	*Neosteingelia texana*	NE	1				Q
Hemiptera: Sternorrhyncha	Ortheziidae	--	YE		1			Q
Hemiptera: Sternorrhyncha	Pseudococcidae	--	AL	2		4		Q
Hemiptera: Sternorrhyncha	Pseudococcidae	--	BL	8	228	10	249	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	--	DO	4				Q
Hemiptera: Sternorrhyncha	Pseudococcidae	--	HO	12		5		Q
Hemiptera: Sternorrhyncha	Pseudococcidae	--	LV	4	1	1		Q
Hemiptera: Sternorrhyncha	Pseudococcidae	--	NE	28	8	30	11	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	--	TO	2				Q
Hemiptera: Sternorrhyncha	Pseudococcidae	--	TR	4	11	5	3	Q

Inspection Station Codes

- **AL** Alturas
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- **BL** Blythe
- **DO** Dorris
- **HB** Hornbrook
- **LV** Long Valley
- **ME** Meyers
- **NE** Needles
- **RH** Redwood Hwy
- **SR** Smith River
- **TO** Topaz
- **TR** Truckee
- **TU** Tulelake
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ENTOMOLOGY

A, B, & Q Rated Interceptions by Border Stations, 2008-2009

Order	Family	Scientific Name	Station	2008 Pers[2]	2008 Comm[3]	2009 Pers[2]	2009 Comm[3]	Rating
Hemiptera: Sternorrhyncha	Pseudococcidae	--	TU	5		3		Q
Hemiptera: Sternorrhyncha	Pseudococcidae	--	VI		24	2	11	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	--	WI	4	20	13	20	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	--	YE	7	5		3	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	damaged specimen	BL			1		Q
Hemiptera: Sternorrhyncha	Pseudococcidae	damaged specimen	NE			1		Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Dysmicoccus grassii*	BL		3	1	8	A
Hemiptera: Sternorrhyncha	Pseudococcidae	*Dysmicoccus grassii*	VI		1		1	A
Hemiptera: Sternorrhyncha	Pseudococcidae	*Dysmicoccus grassii*	WI		1			A
Hemiptera: Sternorrhyncha	Pseudococcidae	*Dysmicoccus grassii**	BL				1	A
Hemiptera: Sternorrhyncha	Pseudococcidae	Dysmicoccus hurdi*	TR		1			Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Dysmicoccus* sp.	BL		4	1	9	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Dysmicoccus* sp.	TR		1			Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Dysmicoccus* sp.	VI		2		4	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Dysmicoccus* sp.*	BL				1	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Dysmicoccus texensis*	BL		9		5	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Dysmicoccus texensis*	NE	1				Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Dysmicoccus texensis*	WI		3			Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Dysmicoccus texensis**	BL		1			Q
Hemiptera: Sternorrhyncha	Pseudococcidae	egg(s)	BL	1	2			Q
Hemiptera: Sternorrhyncha	Pseudococcidae	egg(s)	NE			1		Q
Hemiptera: Sternorrhyncha	Pseudococcidae	egg(s)	TR	2				Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Ferrisia gilli*	NE			1		B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Ferrisia* sp.	BL				1	B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Ferrisia* sp.	BL		1			Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Ferrisia* sp.	LV		1			Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Ferrisia virgata*	BL	1	1		2	B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Ferrisia virgata*	VI		1			B
Hemiptera: Sternorrhyncha	Pseudococcidae	*Nipaecoccus gilli*	BL		1			Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Nipaecoccus* sp.	BL				1	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Nipaecoccus* sp.	TR		1			Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Palmicultor palmarum*	BL		1			Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Palmicultor palmarum*	NE	1		3		Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Paracoccus burnerae*	NE				1	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Paracoccus marginatus*	WI		1			Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Phenacoccus* sp.	BL			1		Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Phenacoccus* sp.	NE			1		Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Phenacoccus* sp.	TR		1			Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus citri*	BL				1	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus* sp.	BL		4		5	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus* sp.	DO			1		Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus* sp.	NE			1		Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus* sp.	WI			1		Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Planococcus* sp.	YE	2				Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Pseudococcus elisae*	BL		6		13	A[1]
Hemiptera: Sternorrhyncha	Pseudococcidae	*Pseudococcus elisae*	WI		2		1	A[1]
Hemiptera: Sternorrhyncha	Pseudococcidae	*Pseudococcus elisae**	BL				1	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Pseudococcus jackbeardsleyi*	BL		6		7	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Pseudococcus jackbeardsleyi*	VI				1	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Pseudococcus jackbeardsleyi*	WI		2			Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Pseudococcus jackbeardsleyi**	BL		2			Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Pseudococcus landoi*	BL				1	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Pseudococcus landoi**	BL		1			Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Pseudococcus odermatti*	NE			2		Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Pseudococcus odermatti*	TR			1		Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Pseudococcus odermatti*	WI			1		Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Pseudococcus odermatti*	YE			1		Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Pseudococcus* sp.	BL		5		11	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Pseudococcus* sp.	HO	1				Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Pseudococcus* sp.	NE	2		1	1	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Pseudococcus* sp.	TU	1				Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Pseudococcus* sp.	VI		1			Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Pseudococcus* sp.	WI		2			Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Pseudococcus* sp.	YE	1				Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Pseudococcus* sp.*	BL				1	Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Puto* sp.	BL	1				Q
Hemiptera: Sternorrhyncha	Pseudococcidae	*Ripersiella hibisci*	NE		1			Q
Hemiptera: Sternorrhyncha	Pseudococcidae*	--	AL	1				Q

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ENTOMOLOGY

A, B, & Q Rated Interceptions by Border Stations, 2008-2009

Order	Family	Scientific Name	Station	2008 Pers[2]	2008 Comm[3]	2009 Pers[2]	2009 Comm[3]	Rating
Hemiptera: Sternorrhyncha	Pseudococcidae*	--	YE			1		Q
Hemiptera: Sternorrhyncha	Pseudococcidae*	damaged specimen	VI			1		Q
Hemiptera: Sternorrhyncha	Psyllidae	--	NE		1			Q
Hemiptera: Sternorrhyncha	Psyllidae	--	NE	5		1	1	Q
Hemiptera: Sternorrhyncha	Psyllidae	--	WI		1		1	Q
Hemiptera: Sternorrhyncha	Psyllidae	--	TO		1			Q
Hemiptera: Sternorrhyncha	Psyllidae	--	TR	1	4			Q
Hemiptera: Sternorrhyncha	Psyllidae	--	YE	1				Q
Hemiptera: Sternorrhyncha	Psyllidae	*Diaphorina citri*	NE			1		A
Hemiptera: Sternorrhyncha	Psyllidae	*Pachypsylla* sp.	BL			1	1	Q
Hemiptera: Sternorrhyncha	Psyllidae	*Pachypsylla* sp.	NE			1		Q
Hymenoptera	--	--	NE	1		2		Q
Hymenoptera	--	--	TR	1				Q
Hymenoptera	--	--	WI		1			Q
Hymenoptera	--	fragment(s)	NE			1		Q
Hymenoptera	--	suborder: Symphyta	NE	1				Q
Hymenoptera	--	superfamily: Chalcidoidea	BL				1	Q
Hymenoptera	--	superfamily: Cynipoidea	NE			1		Q
Hymenoptera	Cynipidae*	--	NE			1		Q
Hymenoptera	Formicidae	--	BL	3	6	2	1	Q
Hymenoptera	Formicidae	--	HO			2	1	Q
Hymenoptera	Formicidae	--	LV		1	4	3	Q
Hymenoptera	Formicidae	--	ME			2		Q
Hymenoptera	Formicidae	--	NE	17	5	27	2	Q
Hymenoptera	Formicidae	--	RH			1		Q
Hymenoptera	Formicidae	--	SR			1		Q
Hymenoptera	Formicidae	--	TR	4		2		Q
Hymenoptera	Formicidae	--	TU		1	1		Q
Hymenoptera	Formicidae	--	VI				6	Q
Hymenoptera	Formicidae	--	WI	6		2	2	Q
Hymenoptera	Formicidae	--	YE		1	3	3	Q
Hymenoptera	Formicidae	*Acromyrmex versicolor*	BL				1	Q
Hymenoptera	Formicidae	*Brachymyrmex* sp.	NE	1				Q
Hymenoptera	Formicidae	*Brachymyrmex* sp.	WI	1				Q
Hymenoptera	Formicidae	*Camponotus abdominalis floridensis*	BL				1	Q
Hymenoptera	Formicidae	*Camponotus abdominalis floridensis*	NE		1		1	Q
Hymenoptera	Formicidae	*Camponotus abdominalis floridensis*	VI				2	Q
Hymenoptera	Formicidae	*Camponotus* sp.	BE		1			Q
Hymenoptera	Formicidae	*Camponotus* sp.	BL	2	6	2	9	Q
Hymenoptera	Formicidae	*Camponotus* sp.	HO	1			1	Q
Hymenoptera	Formicidae	*Camponotus* sp.	LV	1	1			Q
Hymenoptera	Formicidae	*Camponotus* sp.	NE	8	3	5	6	Q
Hymenoptera	Formicidae	*Camponotus* sp.	TO			1		Q
Hymenoptera	Formicidae	*Camponotus* sp.	TR	1	1		3	Q
Hymenoptera	Formicidae	*Camponotus* sp.	VI		3		3	Q
Hymenoptera	Formicidae	*Camponotus* sp.	WI		1	3	4	Q
Hymenoptera	Formicidae	*Camponotus* sp.	YE	2	2		1	Q
Hymenoptera	Formicidae	*Crematogaster* sp.	NE				1	A
Hymenoptera	Formicidae	*Crematogaster* sp.	NE			1		Q
Hymenoptera	Formicidae	*Hypoponera* sp.	BL			1		Q
Hymenoptera	Formicidae	fragment(s)	BL			1		Q
Hymenoptera	Formicidae	fragment(s)	DO		1			Q
Hymenoptera	Formicidae	fragment(s)	LV			4	1	Q
Hymenoptera	Formicidae	fragment(s)	NE		1	1		Q
Hymenoptera	Formicidae	fragment(s)	TR			1		Q
Hymenoptera	Formicidae	fragment(s)	WI				1	Q
Hymenoptera	Formicidae	*Monomorium floricola*	BL				1	Q
Hymenoptera	Formicidae	*Monomorium* sp.	YE		1			Q
Hymenoptera	Formicidae	*Myrmicini* sp.	BL		1		3	Q
Hymenoptera	Formicidae	*Myrmicini* sp.	NE			2		Q
Hymenoptera	Formicidae	*Myrmicini* sp.	VI			1	3	Q
Hymenoptera	Formicidae	*Myrmicini* sp.	WI			1		Q
Hymenoptera	Formicidae	*Odontomachus* sp.	NE			3		Q
Hymenoptera	Formicidae	*Odontomachus* sp.	TU		1			Q
Hymenoptera	Formicidae	*Odontomachus* sp.	VI				1	Q
Hymenoptera	Formicidae	*Odontomachus* sp.	YE			1		Q
Hymenoptera	Formicidae	*Paratrechina* sp.	BL	1				Q
Hymenoptera	Formicidae	*Paratrechina* sp.	NE				1	Q

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Hymenoptera	Formicidae	*Pheidole megacephala*	BL	1	2	1	1	Q
Hymenoptera	Formicidae	*Pheidole megacephala*	NE			4		Q
Hymenoptera	Formicidae	*Pheidole megacephala*	VI	1				Q
Hymenoptera	Formicidae	*Pheidole* sp.	AL	1				Q
Hymenoptera	Formicidae	*Pheidole* sp.	BL	8	9	13	10	Q
Hymenoptera	Formicidae	*Pheidole* sp.	DO	1				Q
Hymenoptera	Formicidae	*Pheidole* sp.	HO				1	Q
Hymenoptera	Formicidae	*Pheidole* sp.	ME	3		1		Q
Hymenoptera	Formicidae	*Pheidole* sp.	NE	29	6	35	4	Q
Hymenoptera	Formicidae	*Pheidole* sp.	RH	3				Q
Hymenoptera	Formicidae	*Pheidole* sp.	TO			1		Q
Hymenoptera	Formicidae	*Pheidole* sp.	TR	3		1	1	Q
Hymenoptera	Formicidae	*Pheidole* sp.	VI		2		3	Q
Hymenoptera	Formicidae	*Pheidole* sp.	WI	7	4	7		Q
Hymenoptera	Formicidae	*Pheidole* sp.	YE	4	2		1	Q
Hymenoptera	Formicidae	*Ponera* sp.	BL	3		3	1	Q
Hymenoptera	Formicidae	*Ponera* sp.	HO	1				Q
Hymenoptera	Formicidae	*Ponera* sp.	LV	1				Q
Hymenoptera	Formicidae	*Ponera* sp.	NE	9		9		Q
Hymenoptera	Formicidae	*Ponera* sp.	TR	1		1		Q
Hymenoptera	Formicidae	*Ponera* sp.	VI				1	Q
Hymenoptera	Formicidae	*Ponera* sp.	WI		1	1		Q
Hymenoptera	Formicidae	*Pseudomyrmex* sp.	NE	1				Q
Hymenoptera	Formicidae	*Pseudomyrmex* sp.	VI		1			Q
Hymenoptera	Formicidae	*Solenopsis geminata*	BL		1			A
Hymenoptera	Formicidae	*Solenopsis invicta*	BL	2	27	5	30	A
Hymenoptera	Formicidae	*Solenopsis invicta*	HO			2	1	A
Hymenoptera	Formicidae	*Solenopsis invicta*	LV			1	3	A
Hymenoptera	Formicidae	*Solenopsis invicta*	NE	9	6	18	15	A
Hymenoptera	Formicidae	*Solenopsis invicta*	SR			1		A
Hymenoptera	Formicidae	*Solenopsis invicta*	TR			3	4	A
Hymenoptera	Formicidae	*Solenopsis invicta*	VI		4		27	A
Hymenoptera	Formicidae	*Solenopsis invicta*	WI	3	7	5	10	A
Hymenoptera	Formicidae	*Solenopsis invicta*	YE				1	A
Hymenoptera	Formicidae	*Solenopsis invicta**	NE				1	Q
Hymenoptera	Formicidae	*Solenopsis* sp.	NE			1		A
Hymenoptera	Formicidae	*Solenopsis* sp.	BL				1	Q
Hymenoptera	Formicidae	*Solenopsis* sp.	HO			1		Q
Hymenoptera	Formicidae	*Solenopsis* sp.	LV			1	2	Q
Hymenoptera	Formicidae	*Solenopsis* sp.	NE	3	1	8	1	Q
Hymenoptera	Formicidae	*Solenopsis* sp.	TR	1		1		Q
Hymenoptera	Formicidae	*Solenopsis* sp.	VI				1	Q
Hymenoptera	Formicidae	*Solenopsis* sp.	WI		3		1	Q
Hymenoptera	Formicidae	*Technomyrmex albipes*	BL		2	4	3	Q
Hymenoptera	Formicidae	*Technomyrmex albipes*	NE			3	1	Q
Hymenoptera	Formicidae	*Technomyrmex albipes*	TR	1				Q
Hymenoptera	Formicidae	*Technomyrmex albipes*	VI		1			Q
Hymenoptera	Formicidae	*Technomyrmex albipes*	WI		3	1	2	Q
Hymenoptera	Formicidae	*Technomyrmex* sp.	BL		1			Q
Hymenoptera	Formicidae	tribe: Myrmicini	BL		1			Q
Hymenoptera	Formicidae	tribe: Myrmicini	NE	1				Q
Hymenoptera	Formicidae	tribe: Ponerini	WI	1				Q
Hymenoptera	Siricidae	--	RH	1				Q
Hymenoptera	Tenthredinidae	--	NE				1	Q
Hymenoptera	Tenthredinidae	--	TR	1				Q
Hymenoptera	Vespidae	--	HO				1	Q
Isoptera	--	--	BL	1		2	1	Q
Isoptera	--	--	LV			1		Q
Isoptera	--	--	NE	7		2	2	Q
Isoptera	--	--	RH	1				Q
Isoptera	--	--	VI				1	Q
Isoptera	--	--	YE	1				Q
Isoptera	Kalotermitidae	*Cryptotermes* sp.	BL				1	Q
Isoptera	Kalotermitidae*	--	BL				1	Q
Isoptera	Rhinotermitidae	*Reticulitermes* sp.	NE	2	1	1		Q
Isoptera	Rhinotermitidae*	--	ME			1		Q
Isoptera	Termitidae	--	NE				1	Q
Lepidoptera	--	--	BL				2	Q

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ENTOMOLOGY

A, B, & Q Rated Interceptions by Border Stations, 2008-2009

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Lepidoptera	--	--	HO			1		Q
Lepidoptera	--	--	LV		1		2	Q
Lepidoptera	--	--	ME				1	Q
Lepidoptera	--	--	NE	3		3		Q
Lepidoptera	--	--	TR	1	2			Q
Lepidoptera	--	--	TU	1				Q
Lepidoptera	--	--	YE	2	1			Q
Lepidoptera	--	egg(s)	NE			1		Q
Lepidoptera	--	egg(s)	TU	1				Q
Lepidoptera	--	egg(s)	WI				1	Q
Lepidoptera	--	egg(s)	YE		2			Q
Lepidoptera	--	fragment(s)	LV				1	Q
Lepidoptera	--	pupa	RH			1		Q
Lepidoptera	--	pupa	TR	1			1	Q
Lepidoptera	--	pupa	YE		3		2	Q
Lepidoptera	Arctiidae	--	NE	1		1		Q
Lepidoptera	Arctiidae	--	TR				1	Q
Lepidoptera	Arctiidae	--	YE				1	Q
Lepidoptera	Arctiidae*	--	YE				1	Q
Lepidoptera	Blastobasidae	--	NE				1	Q
Lepidoptera	Coleophoridae	--	BL		1			Q
Lepidoptera	Coleophoridae	--	YE	1				Q
Lepidoptera	Cosmopterigidae	--	TR				2	Q
Lepidoptera	Cosmopterigidae	--	VI		1			Q
Lepidoptera	Cosmopterigidae	--	WI		1			Q
Lepidoptera	Cosmopterygidae*	--	WI				1	Q
Lepidoptera	Gelechiidae	--	BE	1				Q
Lepidoptera	Gelechiidae	--	BL		1			Q
Lepidoptera	Gelechiidae	--	NE		1	2	1	Q
Lepidoptera	Gelechiidae	--	WI		1		1	Q
Lepidoptera	Gelechiidae*	--	BL				2	Q
Lepidoptera	Gelechiidae*	--	NE			1	1	Q
Lepidoptera	Geometridae	--	LV	1				Q
Lepidoptera	Geometridae	--	NE	1				Q
Lepidoptera	Geometridae	--	YE		1			Q
Lepidoptera	Gracillariidae	--	BL			1		Q
Lepidoptera	Gracillariidae	--	HO	1		1		Q
Lepidoptera	Gracillariidae	--	YE				1	Q
Lepidoptera	Gracillariidae	pupa	VI			1		Q
Lepidoptera	Gracillariidae	*Marmara* sp.	HO			1		Q
Lepidoptera	Gracillariidae	*Phyllocnistis citrella*	NE	1		2		B
Lepidoptera	Gracillariidae	*Phyllocnistis citrella**	BL			1		B
Lepidoptera	Gracillariidae*	--	HO	1				Q
Lepidoptera	Gracillariidae*	--	WI			1		Q
Lepidoptera	Hepialidae	--	NE			1		Q
Lepidoptera	Hesperiidae	--	NE				5	Q
Lepidoptera	Hesperiidae	--	YE				4	Q
Lepidoptera	Lasiocampidae	*Malacosoma americanum*	TR		1			A
Lepidoptera	Lasiocampidae	*Malacosoma* sp.	BE	1				Q
Lepidoptera	Lasiocampidae	*Malacosoma* sp.	HO	1				Q
Lepidoptera	Lasiocampidae	*Malacosoma* sp.	LV	3		1		Q
Lepidoptera	Lasiocampidae	*Malacosoma* sp.	NE	1	1	3	1	Q
Lepidoptera	Lasiocampidae	*Malacosoma* sp.	TO	1				Q
Lepidoptera	Lasiocampidae	*Malacosoma* sp.	TR		3			Q
Lepidoptera	Lasiocampidae	*Malacosoma* sp.	TU			1		Q
Lepidoptera	Lasiocampidae	*Malacosoma* sp.*	DO			1		Q
Lepidoptera	Limacodidae	*Monoleuca semifuscia**	YE				1	Q
Lepidoptera	Lymantriidae	--	NE	1		1		Q
Lepidoptera	Lymantriidae	*Lymantria dispar*	LV	1		2	1	A
Lepidoptera	Lymantriidae	*Lymantria dispar*	NE	2		6	1	A
Lepidoptera	Lymantriidae	*Lymantria dispar*	TR	2		5	1	A
Lepidoptera	Noctuidae	--	BL	2	2		1	Q
Lepidoptera	Noctuidae	--	NE	2	1	4		Q
Lepidoptera	Noctuidae	--	TR				1	Q
Lepidoptera	Noctuidae	--	WI		1			Q
Lepidoptera	Noctuidae	egg(s)	BL		1			Q
Lepidoptera	Noctuidae	subfamily: Heliothinae*	NE			1		Q
Lepidoptera	Noctuidae	subfamily: Plusiinae	VI				1	Q

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Lepidoptera	Noctuidae*	--	BL		1			Q
Lepidoptera	Notodontidae	--	BL			1		Q
Lepidoptera	Oecophoridae	--	BL				1	Q
Lepidoptera	Psychidae	--	BE	1				Q
Lepidoptera	Psychidae	--	BL	2				Q
Lepidoptera	Psychidae	--	HO			2		Q
Lepidoptera	Psychidae	--	LV			1		Q
Lepidoptera	Psychidae	--	NE	1	1	2	2	Q
Lepidoptera	Psychidae	--	TR	4	7	1	2	Q
Lepidoptera	Psychidae	--	NE	1				A
Lepidoptera	Pyralidae	--	BL	1	1			Q
Lepidoptera	Pyralidae	--	HO	1				Q
Lepidoptera	Pyralidae	--	NE		4	1	2	Q
Lepidoptera	Pyralidae	--	TR				1	Q
Lepidoptera	Pyralidae	--	YE	1				Q
Lepidoptera	Pyralidae	*Diaphania nitidalis*	YE				2	B
Lepidoptera	Pyralidae	*Diatraea saccharalis*	BL			1		A
Lepidoptera	Pyralidae	pupa	NE	1	1			Q
Lepidoptera	Pyralidae	*Moodna bisinnella*	NE	1				Q
Lepidoptera	Pyralidae	*Moodna* sp.*	NE			1		Q
Lepidoptera	Pyralidae	*Ostrinia nubilalis*	YE	1				A
Lepidoptera	Pyralidae	*Spectrobates ceratoniae*	WI	1				B
Lepidoptera	Pyralidae	subfamily: Crambinae	YE	1				Q
Lepidoptera	Pyralidae*	--	LV			1		Q
Lepidoptera	Saturniidae	--	TR		1			Q
Lepidoptera	Sphingidae	--	NE	1				Q
Lepidoptera	Tineidae	--	BL	2				Q
Lepidoptera	Tineidae	*Opogana* sp.*	NE			1		Q
Lepidoptera	Tortricidae	--	BL		2	1	1	Q
Lepidoptera	Tortricidae	--	NE	1			1	Q
Lepidoptera	Tortricidae	--	TR	1				Q
Lepidoptera	Tortricidae	--	WI				1	Q
Lepidoptera	Tortricidae	--	YE		1			Q
Lepidoptera	Tortricidae	*Cydia caryana*	BL	2		5		A
Lepidoptera	Tortricidae	*Cydia caryana*	LV			1		A
Lepidoptera	Tortricidae	*Cydia caryana*	NE	11		67	1	A
Lepidoptera	Tortricidae	*Cydia caryana*	WI	1		3		A
Lepidoptera	Tortricidae	*Cydia caryana*	YE			2		A
Lepidoptera	Tortricidae	*Cydia caryana**	NE			1		A
Lepidoptera	Tortricidae	*Grapholita* sp.	BL				1	Q
Lepidoptera	Tortricidae	*Grapholita* sp.	TR	1				Q
Lepidoptera	Tortricidae	pupa	BL				1	Q
Lepidoptera	Tortricidae	pupa	NE	1				Q
Lepidoptera	Tortricidae	pupa	TR		1			Q
Lepidoptera	Tortricidae	pupa	YE				1	Q
Lepidoptera	Tortricidae	*Olethreutes* sp.	BL		1			Q
Lepidoptera	Tortricidae	subfamily: Tortricinae	HO				1	Q
Lepidoptera	Tortricidae	*Thaumatotibia leucotreta*	NE		1		1	A
Lepidoptera	Tortricidae	*Thaumatotibia leucotreta*	YE		1			A
Lepidoptera*	--	--	NE			1		Q
Lepidoptera*	--	--	VI		1			Q
Misc.	--	arthropod egg(s)	BL		1			Q
Misc.	--	arthropod egg(s)	HO			1		Q
Misc.	--	arthropod egg(s)	ME				1	Q
Misc.	--	arthropod egg(s)	NE	1		1		Q
Misc.	--	arthropod egg(s)	TU	1				Q
Misc.	--	arthropod egg(s)	WI		1			Q
Misc.	--	damaged specimen	AL		1			Q
Misc.	--	damaged specimen	YE		1			Q
Misc.	--	damaged specimen	NE			1		Q
Misc.	--	insect damage	YE	1				Q
Misc.	--	insect egg(s)	AL	5		2		Q
Misc.	--	insect egg(s)	BE	1				Q
Misc.	--	insect egg(s)	BL	10	7	2	5	Q
Misc.	--	insect egg(s)	DO	1	1			Q
Misc.	--	insect egg(s)	HO	5		3		Q
Misc.	--	insect egg(s)	LV	2		1		Q
Misc.	--	insect egg(s)	ME			2		Q

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Misc.	--	insect egg(s)	NE	20	7	28	7	Q
Misc.	--	insect egg(s)	SR			1		Q
Misc.	--	insect egg(s)	TR	3	5	1		Q
Misc.	--	insect egg(s)	TU	5		4		Q
Misc.	--	insect egg(s)	VI	2	1	1		Q
Misc.	--	insect egg(s)	WI	1	10	1	8	Q
Misc.	--	insect egg(s)	YE	5	4		8	Q
Misc.	--	insect fragment(s)	AL	1	1			Q
Misc.	--	insect fragment(s)	BE	1				Q
Misc.	--	insect fragment(s)	LV	2		1	1	Q
Misc.	--	insect fragment(s)	ME				1	Q
Misc.	--	insect fragment(s)	NE	3		3		Q
Misc.	--	insect fragment(s)	TO	1				Q
Misc.	--	insect fragment(s)	TR		3			Q
Misc.	--	insect fragment(s)	YE	1	4	1	2	Q
Misc.	--	insect galls	HO	1				Q
Misc.	--	insect pupa	BL		1			Q
Misc.	--	insect pupa	DO	1				Q
Misc.	--	insect pupa	LV			1		Q
Misc.	--	insect pupa	NE	4		6	1	Q
Misc.	--	insect pupa	TR	1			1	Q
Misc.	--	insect pupa	VI				1	Q
Misc.	--	insect pupa	WI		1			Q
Misc.	--	insect pupa	YE	2	1		1	Q
Misc.	--	insect silk	BL		1			Q
Misc.	--	plant galls	LV				1	Q
Mollusca	--	--	BL				1	Q
Mollusca	--	--	NE	1				Q
Orthoptera	Acrididae	--	NE	1				Q
Orthoptera	Gryllotalpidae	*Scapteriscus borellii*	BL			3		Q
Orthoptera	Tettigoniidae	--	BL				1	Q
Orthoptera	Tettigoniidae	--	ME			1		Q
Orthoptera	Tettigoniidae	--	NE	1				Q
Orthoptera	Tettigoniidae	--	YE		2			Q
Orthoptera	Tettigoniidae	egg(s)	BL				1	Q
Orthoptera	Tettigoniidae	egg(s)	NE			1		Q
Orthoptera	Tettigoniidae	*Meconema thalassinum*	HO				1	Q
Pelecypoda	Dreisseniidae	--	BL	3				Q
Pelecypoda	Dreisseniidae	--	VI	1				Q
Pelecypoda	Dreisseniidae	--	WI	1				Q
Pelecypoda	Dreisseniidae	*Dreissena leucophaeata*	TR	1				Q
Pelecypoda	Dreisseniidae	*Dreissena leucophaeata*	WI	1				Q
Pelecypoda	Dreisseniidae	*Dreissena polymorpha*	BL			1		A[1]
Pelecypoda	Dreisseniidae	*Dreissena polymorpha*	LV	1				A[1]
Pelecypoda	Dreisseniidae	*Dreissena polymorpha*	NE	2		2		A[1]
Pelecypoda	Dreisseniidae	*Dreissena polymorpha*	TR	3		2	1	A[1]
Pelecypoda	Dreisseniidae	*Dreissena polymorpha*	YE	3		1		A[1]
Pelecypoda	Dreisseniidae	*Dreissena rostriformis bugensis*	BL	8		9	4	A[1]
Pelecypoda	Dreisseniidae	*Dreissena rostriformis bugensis*	LV	2				A[1]
Pelecypoda	Dreisseniidae	*Dreissena rostriformis bugensis*	ME		1			A[1]
Pelecypoda	Dreisseniidae	*Dreissena rostriformis bugensis*	NE	28		56		A[1]
Pelecypoda	Dreisseniidae	*Dreissena rostriformis bugensis*	TR	1	1		1	A[1]
Pelecypoda	Dreisseniidae	*Dreissena rostriformis bugensis*	VI	124		81		A[1]
Pelecypoda	Dreisseniidae	*Dreissena rostriformis bugensis*	WI	3		2		A[1]
Pelecypoda	Dreisseniidae	*Dreissena rostriformis bugensis*	YE	46	3	46	3	A[1]
Pelecypoda	Dreisseniidae	*Mytilopsis leucophaeata*	BL	4		2		Q
Pelecypoda	Dreisseniidae	*Mytilopsis leucophaeata*	WI	1		1		Q
Pelecypoda	Dreisseniidae	*Mytilopsis leucophaeata*	YE	2				Q
Pelecypoda	Dreisseniidae*	--	BL			1		Q
Thysanoptera	--	--	AL			1		Q
Thysanoptera	--	--	BL				2	Q
Thysanoptera	--	--	LV			1		Q
Thysanoptera	--	--	WI				1	Q
Thysanoptera	Aeolothripidae	--	NE	1				Q
Thysanoptera	Aeolothripidae	*Aeolothrips* sp.	NE			1		Q
Thysanoptera	Phlaeothripidae	--	AL	2				Q
Thysanoptera	Phlaeothripidae	--	BE			1		Q
Thysanoptera	Phlaeothripidae	--	BL	1	6	1	3	Q

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Thysanoptera	Phlaeothripidae	--	HO	6		1		Q
Thysanoptera	Phlaeothripidae	--	LV			1	1	Q
Thysanoptera	Phlaeothripidae	--	ME	1		2		Q
Thysanoptera	Phlaeothripidae	--	NE	18		15	1	Q
Thysanoptera	Phlaeothripidae	--	RH	1				Q
Thysanoptera	Phlaeothripidae	--	TR	4	6		2	Q
Thysanoptera	Phlaeothripidae	--	TU	1		1		Q
Thysanoptera	Phlaeothripidae	--	VI		2		1	Q
Thysanoptera	Phlaeothripidae	--	WI	1		1		Q
Thysanoptera	Phlaeothripidae	--	YE			2		Q
Thysanoptera	Phlaeothripidae	*Cephalothrips* sp.	NE			1		Q
Thysanoptera	Phlaeothripidae	damaged specimen	NE	1				Q
Thysanoptera	Phlaeothripidae	damaged specimen	TR				1	Q
Thysanoptera	Phlaeothripidae	fragment(s)	TR				1	Q
Thysanoptera	Phlaeothripidae	*Liothrips* sp.	NE	1				Q
Thysanoptera	Thripidae	--	AL	1				Q
Thysanoptera	Thripidae	--	BE			1		Q
Thysanoptera	Thripidae	--	BL	1	1		1	Q
Thysanoptera	Thripidae	--	HO	2				Q
Thysanoptera	Thripidae	--	LV	1				Q
Thysanoptera	Thripidae	--	ME			2		Q
Thysanoptera	Thripidae	--	NE	25	5	12		Q
Thysanoptera	Thripidae	--	TO	1	4			Q
Thysanoptera	Thripidae	--	TR	4	6	1	1	Q
Thysanoptera	Thripidae	--	TU	1		2		Q
Thysanoptera	Thripidae	--	VI		1	1		Q
Thysanoptera	Thripidae	--	WI	1	4		1	Q
Thysanoptera	Thripidae	--	YE	1				Q
Thysanoptera	Thripidae	*Frankliniella schultzei*	NE			1		Q
Thysanoptera	Thripidae	*Frankliniella* sp.	HO	1				Q
Thysanoptera	Thripidae	*Frankliniella* sp.	NE	1		1		Q
Thysanoptera	Thripidae	*Frankliniella* sp.	YE			1		Q
Thysanoptera	Thripidae	*Frankliniella tritici*	NE		1	3	1	A
Thysanoptera	Thripidae	*Frankliniella tritici*	TR	1	1			A
Thysanoptera	Thripidae	pupa	BE	1				Q
Thysanoptera	Thripidae	pupa	ME			1		Q
Thysanoptera	Thripidae	*Plesiothrips* sp.	NE	1				Q
Thysanoptera	Thripidae	*Scirtothrips dorsalis*	HO			1		Q
Thysanoptera	Thripidae	*Scirtothrips dorsalis*	NE	1		1		Q
Thysanoptera	Thripidae	*Thrips palmae*	NE			1		A
Thysanoptera	Thripidae	*Thrips palni*	WI		1			A
Thysanoptera	Thripidae	*Thrips* sp.	TR	1				Q
		Grand Totals		**2,876**	**993**	**2,275**	**1,075**	

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- **NE** Needles
- **RH** Redwood Hwy
- **SR** Smith River
- **TO** Topaz
- **TR** Truckee
- **TU** Tulelake
- **VI** Vidal
- **WI** Winterhaven
- **YE** Yermo

[1] Rating has changed since identification. The current rating is given.
[2] Personal vehicles including: automobiles and light trucks, moving vans and trailers, campers and other recreational vehicles, and buses.
[3] Commercial vehicles including: semi-trailer trucks and tractor-trailers.
* "Or near" - identified to this taxonomic group or one closely related. Specimen may not have characteristics needed for further identification.
** DNA did not amplify, no further ID possible.
† "Possible LBAM" - larval specimen with similar morphology to LBAM; DNA did not amplify, no further ID possible.
‡ "Probable LBAM" - larval specimen with similar morphology to LBAM but was identified before a morphological key was developed; No further ID possible.

NEMATOLOGY

A, B, & Q Rated Detections by County, 2008-2009

Order	Family	Scientific Name	Common Name	County	2008	2009	Rating
Dorylaimida	Longidoridae	*Xiphinema index*	California dagger nematode	Fresno	1		B
Tylenchida	Aphelenchoididae	*Aphelenchoides besseyi*	rice white-tip nematode	Sutter	2		A
			Grand Totals		***3***	***0***	

NEMATOLOGY

A, B, & Q Rated Interceptions by County, 2008-2009

Order	Family	Scientific Name	Common Name	County	2008	2009	Rating
Dorylaimida	Longidoridae	*Xiphinema* sp.	dagger nematode	San Diego	1		Q
Tylenchida	Heteroderidae	subfamily: *Heteroderinae*	- -	Alameda		1	Q
Tylenchida	Hoplolaimidae	*Helicotylenchus multicinctus*	Northern root-knot nematode	San Mateo	1		Q
Tylenchida	Hoplolaimidae	*Rotylenchulus reniformis*	reniform nematode	Orange		4	A
Tylenchida	Hoplolaimidae	*Rotylenchulus reniformis*	reniform nematode	San Diego		7	A
Tylenchida	Hoplolaimidae	*Rotylenchulus reniformis*	reniform nematode	San Francisco		3	A
Tylenchida	Hoplolaimidae	*Rotylenchulus* sp.	- -	Orange		1	Q
Tylenchida	Hoplolaimidae	*Rotylenchulus* sp.	- -	San Diego		1	Q
Tylenchida	Hoplolaimidae	*Rotylenchulus* sp.	- -	San Mateo	1		Q
Tylenchida	Pratylenchidae	*Pratylenchus* sp.	- -	San Diego	1		Q
Tylenchida	Pratylenchidae	*Radopholus similis*	burrowing nematode	San Diego	2		A
Tylenchida	Pratylenchidae	*Radopholus similis*	burrowing nematode	San Mateo	1		A
			Grand Totals		***7***	***17***	

NEMATOLOGY

A, B, & Q Rated Interceptions by Border Stations, 2008-2009

Order	Family	Scientific Name	Common Name	Station	2008	2009	Rating	Vechicle
Tylenchida	Hoplolaimidae	*Helicotylenchus multicinctus*	Northern root-knot nematode	RH	1		Q	Pers[1]
			Grand Totals		***1***			

[1] Personal vehicles including: automobiles and light trucks, moving vans and trailers, campers and other recreational vehicles, and buses.

[2] Commercial vehicles including: semi-trailer trucks and tractor-trailers.

PLANT PATHOLOGY

A, B, & Q Rated Detections by County, 2008-2009

Pathogen		Host					
Scientific Name	Common Name	Common Name	Scientific Name	County	2008	2009	Rating
Althelia rolfsii (Sclerotium rolfsii)	Southern root rot/Stem Rot	Unknown - plant	--	Yuba	2		B
Angelonia flower break virus	--	Angelonia flower	*Angelonia angustifolia*	Monterey		1	Q
Armillaria mellea	Oak Root Disease	Ash	*Fraxinus* sp.	San Mateo	1		B
Armillaria mellea	Armillaria root rot	Grape	*Vitus* sp.	Santa Clara	1		B
Armillaria sp.	--	unknown - tree	--	Santa Clara		1	B
Athelia rolfsii	Southern Root Rot	Wooly Thyme	*Thymus pseudolanuginosus*	Sacramento		1	B
Botrytis hyacinthi	--	Pineapple Flower	*Eucomis* sp.	Monterey		1	Q
Citrus Tristeza virus	Citrus Tristeza virus	Citrus	*Citrus* spp.	Tulare		6	A
Coniothyrium sp.	Coniothyrium on Tillandsia	Rhododendron	*Rhododendron* sp.	Madera		1	Q
Cucurbit Yellow Stunting Disorder	Cucurbit Yellow Stunting Disorder	Cantaloupe	*Cucumis melo* var. *cantalupensis*	Imperial	1		Q
Cylindrocarpon destructans	Root & Crown Rot	--	*Escallonia* sp.	Santa Barbara	1		B*
Cylindrocarpon liriodendri	--	Avocado	*Persea americana*	Santa Barbara	1		B*
Cylindrocarpon macrodidymum	--	--	*Cistus* sp.	Santa Barbara	1		B*
Cylindrocarpon macrodidymum	--	Avocado	*Persea americana*	Santa Barbara	1		B*
Cylindrocarpon macrodidymum	--	Ceanothus	*Ceanothus* sp.	Santa Barbara	2		B*
Cylindrocarpon macrodidymum	--	Sumac	*Rhus* sp.	Santa Barbara	1		B*
Cylindrocarpon sp.	--	Fig tree	*Ficus* sp.	Santa Barbara	1		B*
Cylindrocarpon sp.	--	Podacarpus	*Podacarpus sp*	Santa Barbara	1		B*
Cylindrocladium spathulatum	--	Myrtle	*Myrtus communis*	Santa Barbara	1		Q
Cytospora eucalypticola	--	Canary Island Date Palm	*Phoenix canariensis*	Ventura	1		Q
Diplodia corticola	Canker fungus	Canyon Live Oak	*Quercus chrysolepis*	Plumas		1	Q
Discula destructiva	Dogwood Athracnose	Dogwood	*Cornus sp.*	Santa Clara	1		Q
Exserohilum rostratum	Helminthosporium Leaf Spot	Canary Island Date Palm	*Phoenix canariensis*	San Diego		1	Q
Fusarium anthophilum	--	Queen Palm	*Syagrus romanzoffiana*	Fresno	1		Q
Fusarium oxysporium f. sp. *canariensis*	Palm Wilt	Canary Island Date Palm	*Phoenix canariensis*	Imperial		1	A
Fusarium oxysporium f. sp. *canariensis*	Palm Wilt	Canary Island Date Palm	*Phoenix canariensis*	Marin	1	1	A
Fusarium oxysporium f. sp. *canariensis*	Palm Wilt	Canary Island Date Palm	*Phoenix canariensis*	Orange	7	1	A
Fusarium oxysporium f. sp. *canariensis*	Palm Wilt	Canary Island Date Palm	*Phoenix canariensis*	Riverside	34	5	A
Fusarium oxysporium f. sp. *canariensis*	Palm Wilt	Canary Island Date Palm	*Phoenix canariensis*	Sacramento		1	A
Fusarium oxysporium f. sp. *canariensis*	Palm Wilt	Canary Island Date Palm	*Phoenix canariensis*	San Diego	4	6	A
Fusarium oxysporium f. sp. *canariensis*	Palm Wilt	Canary Island Date Palm	*Phoenix canariensis*	San Mateo	1		A
Fusarium oxysporium f. sp. *canariensis*	Palm Wilt	Canary Island Date Palm	*Phoenix canariensis*	Santa Barbara	1	5	A
Fusarium oxysporium f. sp. *canariensis*	Palm Wilt	Canary Island Date Palm	*Phoenix canariensis*	Santa Clara	2		A
Fusarium oxysporium f. sp. *canariensis*	Palm Wilt	Canary Island Date Palm	*Phoenix canariensis*	Stanislaus		1	A
Fusarium oxysporium f. sp. *canariensis*	Palm Wilt	Canary Island Date Palm	*Phoenix canariensis*	Ventura	34	30	A
Fusarium oxysporium f. sp. *canariensis*	Palm Wilt	Date palm	*Phoenix dactylifera*	Imperial		1	A
Fusarium oxysporium f. sp. *canariensis*	Palm Wilt	Palm	*Phoenix* sp.	Riverside		1	A
Fusarium oxysporium f. sp. *canariensis*	Palm Wilt	Rhododendron	*Rhododendron* sp.	San Diego	1		A
Fusarium thapsinum	Grain Mold	Milo	*Sorgum* sp.	Tulare	1		Q
Geosmithia morbida	Thousand Cankers Disease of Walnut	California Black Walnut	*Juglans californica*	Yolo		1	Q
Geosmithia morbida	Thousand Cankers Disease of Walnut	Walnut tree	*Juglans* sp.	Sutter		1	Q
Grapevine Fanleaf virus	Grapevine Fanleaf virus	unknown	--	Solano		1	B
Microsphaera berberidis	Powdery mildew of Mahonia sp.	Creeping Mahonia	*Mahonia repens*	Riverside		1	Q
Mycosphaerella buckinghamiae	Leaf Spot	Arbutus	*Arctostaphylos pillida* & *A. gabilanensis*	Contra Costa		2	Q
Nimbya celosiae	Leaf Spot on Celosia Sp.	Cockscomb	*Celosia* sp.	Madera	2		Q
Pea Seed-borne Mosaic virus	--	Pea	*Pisum sativum*	Monterey	1		Q
Peronospora pulveracea	Downy Mildew	Rhododendron	*Rhododendron* sp.	San Mateo	1		Q
Peronospora trigonellae	Downy Mildew	Fenugreek	*Trigonella foenum*	Los Angeles	2		Q
Phaeomoniella sp.	--	Canary Island Date Palm	*Phoenix canariensis*	Santa Barbara		1	Q
Phaeomoniella sp.	--	Olive	*Olea europaea*	Santa Barbara		1	Q
Phragmidium tuberculatum	Rose Rust	Rhododendron	*Rhododendron* sp.	Monterey	1		Q
Phragmidium tuberculatum	Rose Rust	Rhododendron	*Rhododendron* sp.	Orange	1		Q
Phragmidium tuberculatum	Rose Rust	Rhododendron	*Rhododendron* sp.	Sacramento	1		Q
Phragmidium tuberculatum	Rose Rust	Rhododendron	*Rhododendron* sp.	San Diego	2		Q
Phragmidium tuberculatum	Rose Rust	Rhododendron	*Rhododendron* sp.	Santa Cruz	2		Q
Phragmidium tuberculatum	Rose Rust	Rose	*Rosa* sp.	Santa Barbara	4		Q
Phytophthora hibernalis	--	Drooping Leucothoe	*Leucothoe fontanesiana*	Contra Costa		1	Q
Phytophthora porri	--	Rhododendron	*Rhododendron* sp.	Los Angeles		2	Q
Phytophthora ramorum	Sudden Oak Death	Banana shrub	*Michelia figo*	Contra Costa	1		Q
Phytophthora ramorum	Sudden Oak Death	Bay Tree	*Laurus nobilis*	Santa Clara	1		Q
Phytophthora ramorum	Sudden Oak Death	California Bay Laurel	*Umbellularia californica*	Alameda	2	1	Q
Phytophthora ramorum	Sudden Oak Death	California Bay Laurel	*Umbellularia californica*	Monterey	1	4	Q
Phytophthora ramorum	Sudden Oak Death	California Bay Laurel	*Umbellularia californica*	San Mateo	3		Q
Phytophthora ramorum	Sudden Oak Death	California Bay Laurel	*Umbellularia californica*	Santa Clara	1		Q
Phytophthora ramorum	Sudden Oak Death	California Bay Laurel	*Umbellularia californica*	Sonoma	2		Q
Phytophthora ramorum	Sudden Oak Death	Camellia	*Camellia japonica*	Alameda	3		Q
Phytophthora ramorum	Sudden Oak Death	Camellia	*Camellia japonica*	Los Angeles	2		Q
Phytophthora ramorum	Sudden Oak Death	Camellia	*Camellia japonica*	San Mateo	10		Q
Phytophthora ramorum	Sudden Oak Death	Camellia	*Camellia sasanqua*	Alameda	4		Q
Phytophthora ramorum	Sudden Oak Death	Camellia	*Camellia sasanqua*	Los Angeles	2		Q
Phytophthora ramorum	Sudden Oak Death	Camellia	*Camellia sasanqua*	Sacramento		1	Q
Phytophthora ramorum	Sudden Oak Death	Camellia	*Camellia sinensis*	Los Angeles	1		Q

* Pathogen rating updated to "C"

** *Sclerotium cepivorum*

PLANT PATHOLOGY

A, B, & Q Rated Detections by County, 2008-2009

Pathogen		Host					
Scientific Name	Common Name	Common Name	Scientific Name	County	2008	2009	Rating
Phytophthora ramorum	Sudden Oak Death	Camellia	*Camellia* sp.	Sacramento		1	Q
Phytophthora ramorum	Sudden Oak Death	Camellia	*Camellia* sp.	San Joaquin	3		Q
Phytophthora ramorum	Sudden Oak Death	Camellia	*Camellia* sp.	San Mateo	3		Q
Phytophthora ramorum	Sudden Oak Death	Camellia	*Camellia* sp.	Santa Barbara	15		Q
Phytophthora ramorum	Sudden Oak Death	Camphor	*Cinnamomom camphora*	Sacramento		1	Q
Phytophthora ramorum	Sudden Oak Death	Chinese Fringe Flower	*Loropetalum chinense*	Los Angeles	1		Q
Phytophthora ramorum	Sudden Oak Death	Chinese Fringe Flower	*Loropetalum chinense*	Sacramento		2	Q
Phytophthora ramorum	Sudden Oak Death	Coast Live Oak	*Quercus agrifolia*	Alameda	3		Q
Phytophthora ramorum	Sudden Oak Death	Coast Live Oak	*Quercus agrifolia*	San Mateo	22	6	Q
Phytophthora ramorum	Sudden Oak Death	Drooping Leucothoe	*Leucothoe fontanesiana*	Contra Costa		1	Q
Phytophthora ramorum	Sudden Oak Death	Drooping Leucothoe	*Leucothoe fontanesiana*	San Mateo	2		Q
Phytophthora ramorum	Sudden Oak Death	Forest Flame	*Pieris japonica*	Sacramento		1	Q
Phytophthora ramorum	Sudden Oak Death	Forest Flame	*Pieris japonica*	San Mateo	2		Q
Phytophthora ramorum	Sudden Oak Death	Forest Flame	*Pieris japonica*	Alameda	1		Q
Phytophthora ramorum	Sudden Oak Death	Grecian Laurel	*Laurus nobilis*	Sacramento		1	Q
Phytophthora ramorum	Sudden Oak Death	Loropetalum	*Loropetalum* sp.	Contra Costa	1		Q
Phytophthora ramorum	Sudden Oak Death	Michelia	*Michelia sp.*	Contra Costa	1		Q
Phytophthora ramorum	Sudden Oak Death	Other - gravel	--	Humboldt	7		Q
Phytophthora ramorum	Sudden Oak Death	Other - soil	--	Contra Costa	1		Q
Phytophthora ramorum	Sudden Oak Death	Other - soil	--	Los Angeles	1		Q
Phytophthora ramorum	Sudden Oak Death	Other - soil	--	Sacramento		4	Q
Phytophthora ramorum	Sudden Oak Death	Rhododendron	*Rhododendron* sp.	Alameda		1	Q
Phytophthora ramorum	Sudden Oak Death	Rhododendron	*Rhododendron* sp.	Contra Costa	1		Q
Phytophthora ramorum	Sudden Oak Death	Rhododendron	*Rhododendron* sp.	Marin	1		Q
Phytophthora ramorum	Sudden Oak Death	Rhododendron	*Rhododendron* sp.	Mendocino	1		Q
Phytophthora ramorum	Sudden Oak Death	Rhododendron	*Rhododendron* sp.	Placer		1	Q
Phytophthora ramorum	Sudden Oak Death	Rhododendron	*Rhododendron* sp.	Sacramento	3	6	Q
Phytophthora ramorum	Sudden Oak Death	Rhododendron	*Rhododendron* sp.	San Mateo	7		Q
Phytophthora ramorum	Sudden Oak Death	Unknown	--	Marin		1	Q
Phytophthora ramorum	Sudden Oak Death	Unknown	--	Santa Clara	1		Q
Plasmodiophora brassicae	Club root of crucifers	Chinese Mustard & Bok Choy	*Brassica juncea* & *B. rapa*	Santa Clara		1	B
Pseudocercospora liquidambaricola	Leaf Spot	Chinese Fringe Flower	*Loropetalum chinense*	Los Angeles	1		Q
Pseudocercospora liquidambaricola	Leaf Spot	Chinese Fringe Flower	*Loropetalum chinense*	Santa Barbara		1	Q
Puccinia farinacea	Salvia Rust	Autumn Sage	*Salvia greggii*	Santa Barbara	16		Q
Puccinia farinacea	Salvia Rust	Rhododendron	*Rhododendron* sp.	Santa Cruz	3		Q
Puccinia farinacea	Salvia Rust	Sage plant	*Salvia* sp.	Santa Barbara	2		Q
Puccinia farinacea	Salvia Rust	Sage plant	*Salvia x jamensis*	Santa Barbara	1		Q
Puccinia horiana	Chrysanthemum White Rust	Chrysanthemum	*Chrysanthemum* sp.	Alameda	4		Q
Puccinia horiana	Chrysanthemum White Rust	Chrysanthemum	*Chrysanthemum* sp.	Kings	1		Q
Puccinia horiana	Chrysanthemum White Rust	Chrysanthemum	*Chrysanthemum* sp.	Lake	1		Q
Puccinia horiana	Chrysanthemum White Rust	Chrysanthemum	*Chrysanthemum* sp.	Los Angeles	1		Q
Puccinia horiana	Chrysanthemum White Rust	Chrysanthemum	*Chrysanthemum* sp.	Merced	1		Q
Puccinia horiana	Chrysanthemum White Rust	Chrysanthemum	*Chrysanthemum* sp.	Monterey	39		Q
Puccinia horiana	Chrysanthemum White Rust	Chrysanthemum	*Chrysanthemum* sp.	Napa	2		Q
Puccinia horiana	Chrysanthemum White Rust	Chrysanthemum	*Chrysanthemum* sp.	Riverside	4		Q
Puccinia horiana	Chrysanthemum White Rust	Chrysanthemum	*Chrysanthemum* sp.	Sacramento	9		Q
Puccinia horiana	Chrysanthemum White Rust	Chrysanthemum	*Chrysanthemum* sp.	San Diego	6		Q
Puccinia horiana	Chrysanthemum White Rust	Chrysanthemum	*Chrysanthemum* sp.	San Mateo	1		Q
Puccinia horiana	Chrysanthemum White Rust	Chrysanthemum	*Chrysanthemum* sp.	Santa Barbara	5		Q
Puccinia horiana	Chrysanthemum White Rust	Chrysanthemum	*Chrysanthemum* sp.	Santa Clara	3		Q
Puccinia horiana	Chrysanthemum White Rust	Chrysanthemum	*Chrysanthemum* sp.	Shasta	1		Q
Puccinia horiana	Chrysanthemum White Rust	Chrysanthemum	*Chrysanthemum* sp.	Sonoma	2		Q
Puccinia horiana	Chrysanthemum White Rust	Chrysanthemum	*Chrysanthemum* sp.	Stanislaus	1		Q
Puccinia horiana	Chrysanthemum White Rust	Chrysanthemum	*Chrysanthemum* sp.	Sutter	1		Q
Puccinia horiana	Chrysanthemum White Rust	Chrysanthemum	*Chrysanthemum* sp.	Yolo	1		Q
Ramularia didyma	Leaf Spot	Ranunculus	*Ranunculus asiaticus*	San Mateo		1	Q
Septoria darrowii	Leaf & cane spot	Blackberry	*Rubus sp.*	Madera		1	Q
*Stromatinia cepivorum***	White Rot	Garlic	*Allium sativum*	Mono	1		B
Tomato Yellow Leaf Curl virus	Tomato Yellow Leaf Curl virus	Tomato plant	*Solanum lycopersicum*	Imperial	7		Q
Tomato Yellow Leaf Curl virus	Tomato Yellow Leaf Curl virus	Tomato plant	*Solanum lycopersicum*	Riverside	1	1	Q
Tomato Yellow Leaf Curl virus	Tomato Yellow Leaf Curl virus	unknown	--	Imperial	3		Q
Uromyces epicampis	Rust fungus on Muhlenbergia rigens	Deergrass	*Muhlenbergia rigens*	Santa Barbara	1		Q
Uromyces transversalis	Gladiolus Rust	--	*Medicago* sp.	San Mateo	1		Q
Uromyces transversalis	Gladiolus Rust	--	*Watsonia* sp.	San Francisco		1	Q
Uromyces transversalis	Gladiolus Rust	Gladiolus	*Gladiolus* sp.	Alameda		34	Q
Uromyces transversalis	Gladiolus Rust	Gladiolus	*Gladiolus* sp.	Contra Costa		28	Q
Uromyces transversalis	Gladiolus Rust	Gladiolus	*Gladiolus* sp.	San Diego	1		Q
Uromyces transversalis	Gladiolus Rust	Gladiolus	*Gladiolus* sp.	San Francisco	34	148	Q
Uromyces transversalis	Gladiolus Rust	Gladiolus	*Gladiolus* sp.	San Mateo	105	49	Q
Uromyces transversalis	Gladiolus Rust	Gladiolus	*Gladiolus* sp.	Santa Barbara		1	Q
Uromyces transversalis	Gladiolus Rust	Gladiolus	*Gladiolus* sp.	Santa Clara		2	Q
				Grand Totals	**491**	**177**	

* Pathogen rating updated to "C"

** *Sclerotium cepivorum*

PLANT PATHOLOGY

A, B, & Q Rated Interceptions by County, 2008-2009

Pathogen		Host					
Scientific Name	Common Name	Common Name	Scientific Name	County	2008	2009	Rating
Candidatus Liberibacter asiaticus	Citrus Greening (Huanglongbing)	unknown - leaves	- -	Fresno		1	A
Coccodiella sp.	- -	unknown - leaves	- -	San Bernardino		1	Q
Corynespora cassicola	Leaf Spot	- -	*Mandevilla sp.*	Santa Barbara	1		Q
Fusarium oxysporium f. sp. *canariensis*	Palm Wilt	Canary Island Date Palm	*Phoenix canariensis*	Imperial		8	A
Fusarium oxysporium f. sp. *dianthi*	Palm Wilt	Carnation	*Dianthus sp.*	San Luis Obispo		1	Q
Gymnosporangium juniperi-virginianae	Cedar-Apple Rust	Dwarf Yellow Delicious Apple	*Malus pumila*	Solano	1		A
Kutilakesa pironii	Stem gall	Rhododendron	*Rhododendron sp.*	Sacramento		1	Q
Phytophthora ramorum	Sudden Oak Death	Forest Flame	*Pieris japonica*	Mendocino	1		Q
Puccinia farinacea	Salvia Rust	Rhododendron	*Rhododendron sp.*	Santa Clara	4		Q
Puccinia horiana	Chrysanthemum White Rust	Chrysanthemum	*Chrysanthemum sp.*	Los Angeles	1		Q
Puccinia horiana	Chrysanthemum White Rust	Chrysanthemum	*Chrysanthemum sp.*	San Luis Obispo	1		Q
Puccinia horiana	Chrysanthemum White Rust	Chrysanthemum	*Chrysanthemum sp.*	Santa Clara	1		Q
Puccinia psidii	Eucalyptus & Guava Rust	Rhododendron	*Rhododendron sp.*	Orange	1		B
Uromyces transversalis	Gladiolus Rust	Gladiolus	*Gladiolus sp.*	Santa Barbara		1	Q
Uromyces transversalis	Gladiolus Rust	Gladiolus	*Gladiolus sp.*	Santa Cruz		1	Q
			Grand Totals		***11***	***14***	

PLANT PATHOLOGY

A, B, & Q Rated Interceptions by Border Stations, 2008-2009

Pathogen		Host						
Scientific Name	Common Name	Common Name	Scientific Name	Station	2008	2009	Rating	Vechicle
Gymnosporangium juniperi-virginianae	Cedar-Apple Rust	Apple Tree Leaves	*Malus domestica*	Redwood Hwy	1		A	Pers[1]
Therrya fuckelii		Red Pine	*Pinus resinosa*	Redwood Hwy		1	Q	Pers[1]
			Grand Totals		***1***	***1***		

[1] Personal vehicles including: automobiles and light trucks, moving vans and trailers, campers and other recreational vehicles, and buses.

[2] Commercial vehicles including: semi-trailer trucks and tractor-trailers.

SEED

A, B, & Q Rated Detections by County, 2008-2009

Order	Family	Scientific Name	County	2008	2009	Rating
Asterales	Asteraceae	*Cirsium arvense*	Contra Costa		1	B
Solanales	Solanaceae	*Solanum* sp.	Glenn		1	Q
Cyperales	Poaceae	*Setaria faberi*	Imperial	1		B
Asterales	Asteraceae	*Carthamus lanatus*	Los Angeles		1	B
Cyperales	Poaceae	*Elytrigia repens*	Modoc		1	B
Cyperales	Poaceae	*Elytrigia repens*	Riverside	7		B
Sapindales	Zygophyllaceae	*Peganum harmala**	Riverside	1		A
Asterales	Asteraceae	*Cirsium arvense*	Tuolumne		2	B
			Grand Total	***9***	***6***	

* Indicates *Sensu lato* (s.l.) -"In the broad sense." When used following a name it is an indication that the name is being used in a wide taxonomic sense (including variations that may be recognized as taxonomically distinct by some authors). For example *Pisum sativum* s.l. would include all subspecies and varieties of garden and field peas. Liliaceae s.l. would indicate the more inclusive concept of what is included in this family.

SEED

A, B, & Q Rated Interceptions by County, 2008-2009

Order	Family	Scientific Name	County	2008	2009	Rating
Asterales	Asteraceae	*Ambrosia trifida*	Riverside	1		B
Asterales	Asteraceae	*Cirsium arvense*	Sacramento	2		B
Asterales	Asteraceae	*Cirsium arvense*	Stanislaus		7	B
Cyperales	Poaceae	*Aegilops cylindrica*	Riverside	7		B
Cyperales	Poaceae	*Digitaria* sp.	San Mateo		1	Q
Cyperales	Poaceae	*Elytrigia repens*	Riverside	3		B
Cyperales	Poaceae	*Elytrigia repens*	Stanislaus		1	B
Cyperales	Poaceae	*Ischaemum rugosum**	Riverside	1		Q
Cyperales	Poaceae	*Paspalum scrobiculatum**	San Joaquin		6	Q
Cyperales	Poaceae	*Setaria faberi*	San Joaquin		1	B
Fabales	Fabaceae	*Aeschynomene* sp.	San Joaquin	3	5	Q
Liliales	Liliaceae	*Asphodelus fistulosus*	Riverside	1		Q
Sapindales	Zygophyllaceae	*Peganum harmala*	Riverside	1		A
Solanales	Cuscutaceae	*Cuscuta* sp. [non-native]	Riverside	1		A
			Grand Total	***20***	***21***	

* Indicates *Sensu lato* (s.l.) -"In the broad sense." When used following a name it is an indication that the name is being used in a wide taxonomic sense (including variations that may be recognized as taxonomically distinct by some authors). For example *Pisum sativum* s.l. would include all subspecies and varieties of garden and field peas. Liliaceae s.l. would indicate the more inclusive concept of what is included in this family.

SEED

A, B, & Q Rated Interceptions by Border Inspection Stations

Order	Family	Scientific Name	Station	2008 Pers[1]	2008 Comm[2]	2009 Pers[1]	2009 Comm[2]	Rating
Asterales	Asteraceae	*Acroptilon repens*	LV				1	B
Asterales	Asteraceae	*Acroptilon repens*	NE		1		1	B
Asterales	Asteraceae	*Acroptilon repens*	TR	1	20	5	40	B
Asterales	Asteraceae	*Acroptilon repens*	YE		1			B
Asterales	Asteraceae	*Ambrosia trifida*	NE			1		B
Asterales	Asteraceae	*Carduus nutans*	ME	2				A
Asterales	Asteraceae	*Carduus nutans*	NE		1			A
Asterales	Asteraceae	*Carduus nutans*	TO	1				A
Asterales	Asteraceae	*Carduus nutans*	TR	1	1		1	A
Asterales	Asteraceae	*Carduus nutans*	YE				1	A
Asterales	Asteraceae	*Carduus nutans*†	HO			2		A
Asterales	Asteraceae	*Carduus nutans*†	YE			1		A
Asterales	Asteraceae	*Centaurea diffusa*	NE	1		2		A
Asterales	Asteraceae	*Centaurea maculosa*	DO			1		A
Asterales	Asteraceae	*Centaurea maculosa*	LV			1	1	A
Asterales	Asteraceae	*Centaurea maculosa*	ME	1				A
Asterales	Asteraceae	*Centaurea maculosa*	NE	2	1		2	A
Asterales	Asteraceae	*Centaurea maculosa*	TR		1	4	5	A
Asterales	Asteraceae	*Centaurea maculosa*	TU	1		2		A
Asterales	Asteraceae	*Centaurea squarrosa*	HO	1				A
Asterales	Asteraceae	*Cirsium arvense*	AL		3			B
Asterales	Asteraceae	*Cirsium arvense*	DO		1		5	B
Asterales	Asteraceae	*Cirsium arvense*	LV			1		B
Asterales	Asteraceae	*Cirsium arvense*	ME	1				B
Asterales	Asteraceae	*Cirsium arvense*	NE		5	1		B
Asterales	Asteraceae	*Cirsium arvense*	TR		17	1	2	B
Asterales	Asteraceae	*Cirsium arvense*	TU		1			B
Asterales	Asteraceae	*Onopordum acanthium*	DO	1				A
Asterales	Asteraceae	*Onopordum acanthium*	TR	1	2		3	A
Asterales	Asteraceae	*Onopordum acanthium*	YE		2			A
Asterales	Asteraceae	*Onopordum acanthium*†	TR		1		1	A
Asterales	Asteraceae	*Onopordum acanthium*†	YE		1			A
Asterales	Asteraceae	*Senecio jacobaea*	SR	1				B
Asterales	Asteraceae	*Sonchus arvensis*	NE				1	A
Capparidales	Brassicaceae	*Cardaria chalepensis*	NE	1	1			B
Capparidales	Brassicaceae	*Cardaria chalepensis*	TR		1			B
Capparidales	Brassicaceae	*Cardaria chalepensis**	LV				1	B
Capparidales	Brassicaceae	*Cardaria draba*	NE		1			B
Capparidales	Brassicaceae	*Cardaria pubescens*	TR	1	1	1	8	B
Capparidales	Brassicaceae	*Lepidium latifolium*	LV			1		B
Capparidales	Brassicaceae	*Lepidium latifolium*	TR			1		B
Caryophyllales	Chenopodiaceae	*Halogeton glomeratus*	ME	1				A
Caryophyllales	Chenopodiaceae	*Salsola collina*	NE	1	1	8		Q
Cyperales	Poaceae	*Setaria faberi*	NE		1	1		B
Fabales	Fabaceae	*Aeschynomene* sp.	NE		2			Q
Solanales	Solanaceae	*Solanum dimidiatum*	NE	1				A
Solanales	Solanaceae	*Solanum elaeagnifolium*	LV			1		B
Solanales	Solanaceae	*Solanum elaeagnifolium*	NE	1				B
		Grand Totals		**21**	**67**	**35**	**73**	

Inspection Station Codes

AL Alturas
BE Benton
BL Blythe
DO Dorris
HB Hornbrook
LV Long Valley
ME Meyers
NE Needles
RH Redwood Hwy
SR Smith River
TO Topaz
TR Truckee
TU Tulelake
VI Vidal
WI Winterhaven
YE Yermo

[1] Personal vehicles including: automobiles and light trucks, moving vans and trailers, campers and other recreational vehicles, and buses.

[2] Commercial vehicles including: semi-trailer trucks and tractor-trailers.

* Confer (cf.) - "compare to." Indicates a degree of uncertainty in the identification. The material in hand may represent this taxon, but may be something else quite similar.

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