TRI-OLOGY

A Publication of the Florida Department of Agriculture and Consumer Services, Division of Plant Industry
Adam H. Putnam, Commissioner — Richard D. Gaskalla, Division Director

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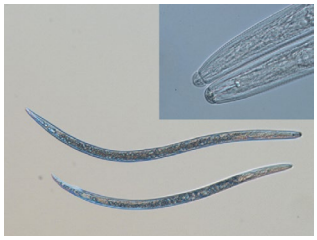
DPI's Bureau of Entomology, Nematology and Plant Pathology (the botany section is included in this bureau) produces TRI-OLOGY six times a year, covering two months of activity in each issue. The report includes detection activities from nursery plant inspections, routine and emergency program surveys, and requests for identification of plants and pests from the public. Samples are also occasionally sent from other states or countries for identification or diagnosis.

***Caloptilia prosticta*, a leafmining moth**
Photograph courtesy of Dr. James E. Hayden.

***Chromolaena odorata* (Jack-in-the-bush)**
Photograph courtesy of Bob Upcavage, Atlas of Florida Vascular Plants
http://florida.plantatlas.usf.edu/Photo.aspx?id=13496



***Radopholus similis*, dimorphic male and female specimens**
Photography courtesy of Jason D. Stanley, DPI.

Highlights

***Caloptilia prosticta*, a leafmining moth, a new Western Hemisphere record.** This is a South African species of no economic importance. This leafminer causes damage on *Cajanus, Vigna* and other herbaceous legumes.

***Fiorinia proboscidaria*, an armored scale, a new Continental USA record.** Samples of residential citrus leaves were forwarded to DPI by IFAS staff in Tampa for determination of an armored scale that appears to be becoming more common on citrus in the area. The genus *Fiorinia*, which contains the tea scale (*F. teae*), is globally diverse, but species known from Florida are not affiliated with citrus.

***Chromolaena odorata* (Jack-in-the-bush, Siam weed, Christmas bush)** is native from Texas and Florida south throughout most of tropical America, but it has become naturalized widely in the Old World tropics as well. In Florida, it is occasionally found in hammocks, thickets, pinelands, canal banks and other disturbed sites in the central and southern peninsula. Having wind-dispersed propagules is a characteristic of many weedy plants, and this one is no exception. The Jack-in-the-bush is a serious weed of 13 crops in more than 20 countries.

***Radopholus similis*, the burrowing nematode,** was found infecting the roots of *Phoenix dactylifera*, a date palm used as an ornamental. The burrowing nematode is a polyphagous endoparasite of many plants, including palms.

***Rose rosette amaravirus* (rose rosette disease)** was reported from Alachua, Gadsden and Levy counties in December 2013. For many decades, multiflora roses (*Rosa multiflora*) in the Midwest, South and eastern United States have been afflicted by this fatal malady. The disease has arrived in Florida, but so far is without any presence of the mite vector. In fact, the vector has never been reported in Florida.

Section Reports

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Acknowledgements:
The editors would like to acknowledge the work of all those who contributed information and explanations by providing data, photographs or text and by carefully reading early drafts. We also thank Reid Carswell for his skillful use of web authoring tools to produce this report.

We welcome your suggestions for improvement of TRIOLOGY. Please feel free to contact me or Dr. Patti Anderson with your comments.
Dr. Wayne N. Dixon, editor
Assistant Director, DPI

Botany Section

Compiled by Patti J. Anderson, Ph.D.

This section identifies plants for the Division of Plant Industry, as well as for other governmental agencies and private individuals. The Botany Section maintains a reference herbarium with over 11,000 plants and nearly 1,400 vials of seeds.

Some of the samples received for identification are discussed below:

***Chromolaena odorata* (L.) R. M. King & H. Robinson (Jack-in-the-bush, Siam weed, Christmas bush),** a genus of 165 species native to tropical and subtropical areas of the Americas; sometimes included in *Eupatorium*. Compositae/Asteraceae. This weedy species is native to Texas and Florida south throughout most of tropical America, but it has become naturalized widely in the Old World tropics as well. In Florida, it is occasionally found in hammocks, thickets, pinelands, canal banks and other disturbed sites in the central and southern peninsula. It is a thicket-forming, often scandent, shrub, seldom more than 3 m tall when free-standing, but climbing to as much as 7 m when supported. The opposite, three-nerved, hairy or glabrous leaves are ovate to triangular with an acuminate apex, a broadly truncate base and a coarsely toothed margin. The leaves are usually 8-13 cm long, 5-8 cm broad and have a medicinal odor when crushed. The cylindrical flower heads are about 1 cm long and are arranged in terminal and axillary, flat-topped clusters; they consist entirely of white, pale blue or pale lavender disc florets. The achenes are crowned with a pappus of finely barbed bristles, allowing them to be dispersed widely by the wind. Having wind-dispersed propagules is a characteristic of many weedy plants, and this one is no exception. The Jack-in-the-bush is a serious weed of 13 crops in more than 20 countries. On the other hand, it has proved an efficacious green manure in cassava cultivation and a nematode control in black pepper and is used to make a tea in Caribbean countries. (Miami-Dade County; B2013-1006; Jake M. Farnum; 16 December 2013 and Brevard County; B2013-1010; Megan R. Lynch; 18 December 2013.) (Holm *et al*. 1977; Wunderlin and Hansen 2011; http://efloras.org/florataxon.aspx?flora_id=1&taxon_id=242312602 accessed 2014 January 27.)

Diospyros L., a genus of 550 species. Ebenaceae. This genus includes both Florida native and introduced species, several of which have been sent for identification during this period. The information below is presented to provide a guide to the more commonly encountered species of *Diospyros* species growing in Florida. The name of the genus is composed of the Greek words "*Dios*" (meaning Zeus) and "*pyros*" (grain or fruit of the earth) to suggest "food of the gods." The popularity of some cultivated species suggests this might be an apt name. Several characteristics are typical of the genus: wood that is black or streaked with black; alternate, entire leaves; unisexual flowers with staminate (male) flowers in small clusters and solitary pistillate (female) flowers, with occasional bisexual flowers also found; a four-lobed (sometimes 5-lobed), calyx that is persistent on the fruit, giving each fleshy berry the appearance of having a stiff crown; the fruit is often seedless in cultivated varieties, but can have several brown to black seeds.
Differences among the species commonly cultivated or native to Florida are provided below. Other less common species that are found growing in Florida, but not described in detail, include *Diospyros ebenum* and *Diospyros maritima;* the shrubby *Diospyros texana* is also sometimes planted, but is not common in cultivation.

Sample Submissions

	November December	Year to date
Samples submitted by other DPI sections	1,167	**8,198**
Samples submitted for botanical identification only	136	**1,033**
Total samples submitted	1,303	**9,231**
Specimens added to the herbarium	38	**190**

***Chromolaena odorata* (Jack-in-the-bush)**
Photograph courtesy of Bob Upcavage, Atlas of Florida Vascular Plants
http://florida.plantatlas.usf.edu/Photo.aspx?id=13496

***Diospyros blancoi* (mabolo)**
Photograph courtesy of Dr. Chiranjit Parmar, fruitipedia
http://www.fruitipedia.com/mabolo.htm

ORIGIN LOCATION	HEIGHT	FORM	LEAVES	FLOWERS ♂ (staminate) ♀ (pistillate)	FRUIT	FLAVOR
Evergreen, Tropical Origin						
***Diospyros blancoi* (mabolo)**						
Philippines (Indonesia?)/ S. Florida only	20-40 m	variable; straight specimen or untidy & low-growing	15-23 cm long; oblong to lanceolate; coriaceous; upper surface, glabrous, glossy green; silky hairs below	urn-shaped; creamy white; ♂ 2-7 in cluster, 6mm wide, dense pubescence. ♀ solitary; 12 mm wide	globose to flattened; 5-10 cm across; red to orange or purple peel with unpleasant "cheesy" smell; golden brown/orange felty; dull green persistent calyx; seeds brown, 4-8 or seedless	sweet, odorless white flesh; eaten without peel
***Diospyros digyna* (chocolate pudding fruit)**						
Mexico, south to Columbia/coastal West Palm to Ft. Myers	to 25 m	ornamental/shade tree usually shorter in cultivation	10-30 cm long; elliptical-oblong to oblong-lanceolate; coriaceous; glossy green	urn-shaped; pale yellow-green to white; ♂ 3-7 in cluster, 1-1.6 cm wide, gardenia fragrance. ♀ & ♂ solitary; 1-1.6 cm wide	globose to oblate (shaped like a beefsteak tomato); 5-12 cm across; bright green, turning olive, then muddy-green; persistent green calyx; seedless to 10 brown seeds	mild (or bland), sweet dark brown to black pulp
Deciduous, temperate origin						
***Diospyros kaki* (Japanese persimmon)**						
Japan, China, India; widely cultivated/throughout Florida, but commercial orchards in northern areas	to 18 m	numerous (100s) cultivars; erect or slightly crooked trunk; kept shorter in cultivation	7-25 cm long; ovate-elliptic to obovate, glossy blue-green upper surface; silky brown pubescent below; colorful fall foliage	cream to white; ♂ 3 in cluster; ♀ solitary; pale yellow; many cultivars with only female flowers	varies by cultivar: globose, oblate, cylindrical; thin peel, yellow to red-orange; persistent leaflike calyx; seedless to 8 brown seeds	cultivars may be astringent until fully ripe or sweetly crisp before full ripening; yellow to orange pulp
***Diospyros virginiana* (common persimmon)**						
Eastern United States/most of the state, but not Collier County	to 24 m	straight and relatively slender stem	7-15 cm long; ovate to elliptic or sometimes oblong; usually glabrous, but variable; black spots form in autumn especially after color changes in autumn	yellow-green to white; ♂ 2-4 in cluster, urn-shaped; ♀ solitary; bell-shaped	when ripe, globose orange berry, 4-5 cm across; persistent calyx	edible when fully mature; very astringent until the yellow-orange pulp is soft

(Diospyros blancoi; Indian River County; 2013-1020; Andres Llanas, USDA; 17 December 2013; *Diospyros digyna*; Miami-Dade County; 2013-907; Juan M. Menendez; 31 October 2013 and *Diospyros kaki*; Broward County; 2013-1027; Miguel L. Justiz, USDA; 20 December 2013.) (Boning 2006; Morton 1987; Staples and Herbst 2005; Wunderlin and Hansen 2011; http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=29 accessed 2014 February 3.)

***Graptophyllum pictum* (L.) Griffith (caricature-plant),** from a genus of 10 species native to Australia and the South Pacific. Acanthaceae. Although this tropical evergreen is grown primarily for its variegated foliage, it has terminal panicles (8-10 cm long) of purple or red tubular flowers. The two-lipped corolla is trumpet-shaped with two lobes on the upper lip and three lobes on the lower. There are two fertile and two sterile stamens. Pale marks on the leaves, sometimes thought to resemble the profile of a human face, inspired the colorful common name of this New Guinea native shrub. In Thailand, the variegated leaves are prized because they are thought to suggest silver and gold, thus wealth. These coriaceous leaves are ovate, glossy green or purple, and up to 15 cm long. As with many plants grown for foliage, frequent pruning stimulates new leaf growth, but discourages flowering. Its foliage color is best when this species is planted in bright light, and since high humidity and moist, well-drained soil encourage growth, it can find a home outdoors in Florida. It is a colorful container plant farther north. The plant is often cultivated in the tropics as an ornamental, but occasional medicinal use has been reported. In New Guinea, the young leaves are eaten, and the flowers are used to make tea. (Collier County; B2013-1012; Jake M. Farnum; 18 December 2013.) (Huxley 1992; Kunkel 1984; Mabberley 1997; Staples and Herbst 2005; http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=a519 accessed 2014 January 27.)

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***Diospyros digyna* (chocolate pudding fruit, black sapote)**
Photograph courtesy of Alesh Houdek, wikipedia
http://upload.wikimedia.org/wikipedia/commons/f/f9/Diospyros_digyna_2.jpg.

***Diospyros kaki* (Japanese persimmon) fruit**
Photograph courtesy of Nesnad, wikipedia
http://en.wikipedia.org/wiki/File:Threekakifruit-cutopen.jpg

***Diospyros virginiana* (common persimmon) fruit**
Photograph courtesy of Denis Girard, Atlas of Florida Vascular Plants
http://en.wikipedia.org/wiki/File:Threekakifruit-cutopen.jpg

***Diospyros virginiana* (common persimmon) colorful fall foliage with typical black spots**
Photograph courtesy of Shirley Denton, Atlas of Florida Vascular Plants
http://florida.plantatlas.usf.edu/Photo.aspx?id=10241

***Graptophyllum pictum* (caricature-plant)**
Photograph courtesy of Joel Timyan, Atlas of Florida Vascular Plants

http://florida.plantatlas.usf.edu/Photo.aspx?id=14083

Sample/Specimen Submissions

November	
Samples Submitted	716
Specimens Identified	16,785
December	
Samples Submitted	586
Specimens Identified	9,823
Year to Date	
Samples Submtted	9,228
Specimens Identified	140,013

***Caloptilia prosticta,* a leafmining moth**
Photograph courtesy of James E. Hayden, DPI

***Agrilus subrobustus,* a buprestid beetle**
Photograph courtesy of Kyle E. Schnepp, DPI

Undetermined big-eyed schizopterid bug
Photograph courtesy of Rochelle Hoey-Chamberlain, University of California, Riverside

Entomology Section

Compiled by Susan E. Halbert, Ph.D.

This section provides the division's plant protection specialists and other customers with accurate identifications of arthropods. The entomology section also builds and maintains the arthropod reference and research collection (the Florida State Collection of Arthropods with over 9 million specimens), and investigates the biology, biological control and taxonomy of arthropods.

***Caloptilia prosticta,* a leafmining moth, a new Western Hemisphere record.** This is a South African species of no economic importance. This leafminer causes damage on *Cajanus, Vigna* and other herbaceous legumes. Early instars mine leaves; the last instar rolls tip of leaf. (Palm Beach County; E2013-7297; Michael L. Cartrett; 30 September 2013.) (Dr. James E. Hayden.)

***Fiorinia proboscidaria,* an armored scale, a new Continental USA record.** Samples of residential citrus leaves were forwarded to DPI by IFAS staff in Tampa for determination of an armored scale that appears to be becoming more common on citrus in the area. The genus *Fiorinia*, which contains tea scale *(F. teae)*, is globally diverse, but species known from Florida are not affiliated with citrus. *Fiorinia proboscidaria* is a very distinctive species known from the Austropacific region, but also recorded from Hawaii. The primary reported host is citrus. A subsequent sample from Santa Rosa County had this species sparsely distributed among a severe infestation of Florida red scale *(Chrysomphalus aonidum)*. None of the specimens appeared viable and some showed signs of parasitism. (Hillsborough County; E2013-9087; homeowner; 16 December 2013.) (Dr. Ian C. Stocks.)

***Agrilus subrobustus,* a buprestid beetle, a new Florida state record.** This beetle is native to southeastern Asia and was first collected in North America in Georgia in 2007. It has since been reported from Alabama, South Carolina and Tennessee. The host for *A. subrobustus* is *Albizia julibrissin*, also called silk tree or mimosa. The host tree, also non-native from Asia, has escaped from ornamental plantings and is now generally considered a weed. (Escambia County; E2013-8181; J. Mikaela Anderson; 8 May 2013.) (Kyle E. Schnepp.)

Undetermined big-eyed schizopterid bug, a new Florida state record. This is the first record for Florida of the Hypselosematinae, a subfamily of Schizopteridae. These tiny bugs are thought to be predaceous in leaf letter. (Collier County; 2013-8962; Scott D. Croxton, University of Florida, Southwest Florida Research and Education Center; 11 July 2013.) (Dr. Christiane Weirauch, University of California, Riverside, and Dr. Susan E. Halbert.)

Entomology Specimen Report

Following are tables with entries for records of new hosts or new geographical areas for samples identified in the current volume's time period as well as samples of special interest. An abbreviated table, with all the new records, but less detail about them, is presented in the body of this web page and another version with more complete data is downloadable as a PDF or an Excel spreadsheet.

The tables are organized alphabetically by plant host if the specimen has a plant host. Some arthropod specimens are not collected on plants and are not necessarily plant pests. In the table below, those entries that have no plant information included are organized by arthropod name.

Plant Name	Plant Common Name	Arthropod	Arthropod Common Name	County	Records
Abies fraseri	Fraser's fir, southern balsam fir	*Fiorinia externa*	an armored scale	Broward	REGULATORY INCIDENT
Abies fraseri	Fraser's fir, southern balsam fir	*Fiorinia externa*	an armored scale	Citrus	REGULATORY INCIDENT
Abies fraseri	Fraser's fir, southern balsam fir	*Fiorinia externa*	an armored scale	Columbia	REGULATORY INCIDENT
Abies fraseri	Fraser's fir, southern balsam fir	*Fiorinia externa*	an armored scale	Lee	REGULATORY INCIDENT
Abies fraseri	Fraser's fir, southern balsam fir	*Fiorinia externa*	an armored scale	Broward	REGULATORY INCIDENT
Abies fraseri	Fraser's fir, southern balsam fir	*Fiorinia externa*	an armored scale	Hillsborough	REGULATORY INCIDENT
Abies fraseri	Fraser's fir, southern balsam fir	*Fiorinia externa*	an armored scale	Broward	REGULATORY INCIDENT
Apium graveolens	celery	*Cavariella aegopodii*	carrot aphid	Escambia	INTERDICTION INTERCEPTION
Brassica oleracea	kale, decorative kale, flowering kale, flowering cabbage, collards, cole, borecole	*Bagrada hilaris*	bagrada bug	Escambia	INTERDICTION INTERCEPTION
Brassica rapa	pak-choi, bok-choi, pak-choy, bok-choy, Chinese mustard, celery mustard	*Liriomyza langei*	California pea leafminer	Suwannee	INTERDICTION INTERCEPTION
Brosimum alicastrum	breadnut	*Phalacrococcus howertoni*	croton scale	Miami-Dade	HOST
Cajanus cajan	pigeonpea; gandul; Congo bean	*Caloptilia prosticta*	a leafmining moth	Palm Beach	HEMISPHERE
Capsicum annuum	poblano pepper	*Bactericera cockerelli*	potato psyllid	Escambia	INTERDICTION INTERCEPTION
Carya floridana	scrub hickory	*Aleurodicus rugioperculatus*	a whitefly	Brevard	HOST
Cichorium endivia	cultivated endive	*Liriomyza langei*	California pea leafminer	Escambia	INTERDICTION INTERCEPTION
Citrus reticulata	clementine tangerine	*Ceratitis capitata*	Mediterranean fruit fly	Broward	REGULATORY INCIDENT
Citrus reticulata	clementine tangerine	*Ceratitis capitata*	Mediterranean fruit fly	Broward	REGULATORY INCIDENT
Citrus reticulata	clementine tangerine	*Ceratitis capitata*	Mediterranean fruit fly	Broward	REGULATORY INCIDENT
Citrus sinensis	navel orange	*Fiorinia proboscidaria*	an armored scale	Hillsborough	CONTINENTAL USA
Conradina etonia	Eton false rosemary	*Ceroplastes floridensis*	Florida wax scale	Putnam	HOST
Crotalaria incana	rattlebox; shakeshake	*Hyalopsallus diaphanus*	a plant bug	Collier	COUNTY
Dioscorea bulbifera	air potato; potato yam; air yam	*Spodoptera pulchella*	Caribbean armyworm moth	St. Lucie	HOST
Ensete ventricosum	Abyssinian banana	*Spodoptera eridania*	southern armyworm	Alachua	HOST
Euphorbia pulcherrima	Christmas flower, poinsettia	*Paracoccus* sp.	a mealybug	Alachua	NOTABLE FIND
Fragaria x *ananassa*	garden strawberry	*Myzus cymbalariae*	an aphid	Escambia	INTERDICTION INTERCEPTION
Hesperethusa crenulata	hesperethusa, thanaka	*Diaphorina citri*	Asian citrus psyllid	Polk	HOST
Hydrangea sp.		*Pleuroptya silicalis*	a crambid moth	Alachua	HOST
Illicium verum	staranise tree	*Autographa californica*	alfalfa looper	Escambia	INTERDICTION INTERCEPTION
Lactuca sativa	lettuce, romaine lettuce, leaf lettuce	*Acyrthosiphon lactucae*	lettuce aphid	Escambia	INTERDICTION INTERCEPTION
Lactuca sativa	lettuce, romaine lettuce, leaf lettuce	*Acyrthosiphon lactucae*	lettuce aphid	Escambia	INTERDICTION INTERCEPTION
Lactuca sativa	green leaf lettuce	*Acyrthosiphon lactucae*	lettuce aphid	Suwannee	INTERDICTION INTERCEPTION
Lactuca sativa	lettuce, romaine lettuce, leaf lettuce	*Brachycorynella asparagi*	asparagus aphid	Escambia	INTERDICTION INTERCEPTION
Lactuca sativa	lettuce, romaine lettuce, leaf lettuce	*Ceratagallia californica*	a leafhopper	Escambia	INTERDICTION INTERCEPTION
Lactuca sativa	red leaf lettuce	*Ceratagallia californica*	a leafhopper	Escambia	INTERDICTION INTERCEPTION
Lactuca sativa	lettuce, romaine lettuce, leaf lettuce	*Ceratagallia longula*	a leafhopper	Escambia	INTERDICTION INTERCEPTION
Lactuca sativa	lettuce, romaine lettuce, leaf lettuce	*Ceratagallia* sp.	a leafhopper	Hamilton	INTERDICTION INTERCEPTION
Lactuca sativa	green leaf lettuce	*Cixius cultus*	a cixiid planthopper	Escambia	INTERDICTION INTERCEPTION
Lactuca sativa	lettuce, romaine lettuce, leaf lettuce	*Deltocephalus fuscinervosus*	a leafhopper	Escambia	INTERDICTION INTERCEPTION
Lactuca sativa	lettuce, romaine lettuce, leaf lettuce	*Deltocephalus fuscinervosus*	a leafhopper	Escambia	INTERDICTION INTERCEPTION
Lactuca sativa	lettuce, romaine lettuce, leaf lettuce	*Liriomyza langei*	California pea leafminer	Escambia	INTERDICTION INTERCEPTION
Lactuca sativa	lettuce, romaine lettuce, leaf lettuce	*Liriomyza langei*	California pea leafminer	Escambia	INTERDICTION INTERCEPTION
Lactuca sativa	lettuce, romaine lettuce, leaf lettuce	*Liriomyza langei*	California pea leafminer	Brevard	REGULATORY INCIDENT
Lactuca sativa	lettuce, romaine lettuce, leaf lettuce	*Liriomyza langei*	California pea leafminer	Suwannee	INTERDICTION INTERCEPTION
Lactuca sativa	red leaf lettuce	*Liriomyza langei*	California pea leafminer	Escambia	INTERDICTION INTERCEPTION
Lactuca sativa	lettuce, romaine lettuce, leaf lettuce	*Lygus elisus*	pale legume bug	Escambia	INTERDICTION INTERCEPTION
Lactuca sativa	lettuce, romaine lettuce, leaf lettuce	*Nasonovia ribisnigri*	currant-lettuce aphid	Polk	REGULATORY INCIDENT
Lactuca sativa	lettuce, romaine lettuce, leaf lettuce	*Rhinachloa forticornis*	a plant bug	Escambia	INTERDICTION INTERCEPTION
Licania michauxii	gopher apple	NA	a leafmining moth	Brevard	NOTABLE FIND

Plant Name	Plant Common Name	Arthropod	Arthropod Common Name	County	Records
Lyonia lucida	fetterbush; glossy lyonia	*Platynota rostrana*	eastern omnivorous leafroller	Brevard	HOST
Mentha spicata	spearmint	*Ovatus mentharius*	a European mint aphid	Hillsborough	COUNTY
Myrcianthes fragrans	Simpson's stopper, nakedwood, twinberry	*Chilocampyla dyariella*	a leafmining moth	Brevard	COUNTY & HOST
Panicum dichotomiflorum	fall panicum	*Eoreuma loftini*	Mexican rice borer	Marrion	NOTABLE FIND
Persea americana	avocado; alligator pear; aguacate	*Stethoconus praefectus*	a lace bug predator	Lee	COUNTY
Picea sp.		*Synanthedon pini*	pitch mass borer	Lake	REGULATORY INCIDENT
Podocarpus henkelii	fern-pine; Henkel's yellowwood	*Neophyllaphis* sp. nr. *fransseni*	a podocarpus aphid	Miami-Dade	HOST
Polygala rugelii	yellow milkwort	*Merocoris typhaeus*	a coreid bug	Brevard	COUNTY
Protea cynaroides	king protea	*Delottococcus confusus*	a mealybug	Miami-Dade	REGULATORY INCIDENT
Protea cynaroides	king protea	*Delottococcus confusus*	a mealybug	Miami-Dade	REGULATORY INCIDENT
Protea cynaroides	king protea	*Goniopterus scutellatus*	Eucalyptus snout beetle	Miami-Dade	REGULATORY INCIDENT
Pseudotsuga menziesii	Douglas fir	*Xanthochilus saturnius*	Mediterranean seed bug	Escambia	INTERDICTION INTERCEPTION
Psidium cattleianum	cattley guava; strawberry guava	*Nymphocixia unipunctata*	a cixiid planthopper	Collier	COUNTY
Pueraria montana	kudzu; kudzu vine; foot-a-night-vine; vine-that-ate-the-south; ko-hemp	*Megacopta cribraria*	bean plataspid	Orange	COUNTY
Quercus shumardii	shumard oak	*Melanaspis obscura*	obscure scale	Flagler	COUNTY
Quercus sp.	oak	*Acanalonia excavata*	an acanaloniid planthopper	Lee	COUNTY
Quercus virginiana	live oak	*Trachelas volutus*	a red sac spider	Hillsborough	COUNTY
Ravenia spectabilis	lemonia	*Chaetanaphothrips leeuwenii*	a thrips	Miami-Dade	NOTABLE FIND
Rhynchospora sp.	beaksedge	*Pseudoferrisia floridana*	a mealybug	Miami-Dade	NOTABLE FIND
Saccharum officinarum	sugarcane	*Abacarus officinari*	eriophyid mite	Broward	COUNTY
Senna pendula	Christmas cassia, velamuerto	NA	a leafminer fly	Brevard	HOST
Sundacarpus amara	Indian podocarpus	*Phalacrococcus howertoni*	croton scale	Miami-Dade	HOST
Tillandsia sp.		*Diaspis gilloglyi*	an armored scale	Lake	REGULATORY INCIDENT
Ulmus sp.	elm	*Euwallacea fornicatus*	tea shot hole borer	Hillsborough	COUNTY
Ximenia americana	tallowwood; hog plum	*Parochromolopis floridana*	an epermeniid moth	Brevard	COUNTY
Zea mays	corn; maize; Indian corn; elote	*Oligonychus stickneyi*	spider mite	Manatee	COUNTY
		Froggattiella n. sp. (?)	an armored scale	Alachua	COUNTY
		Acanthepeira stellata	a star-bellied orbweaver	Charlotte	COUNTY
		Admestina tibialis	a jumping spider	Hillsborough	COUNTY
		Agrilus subrobustus	a buprestid beetle	Escambia	STATE
		Clastoptera sp.	a spittlebug	Broward	COUNTY
		Crypticerya genistae	a scale insect	Hillsborough	COUNTY
		Eriophora ravilla	tropical orbweaver	Escambia	COUNTY
		Eubule spartocerana	a coreid bug	Collier	COUNTY
		Habronattus calcaratus	a jumping spider	Broward	COUNTY
		Hentzia palmarum	a jumping spider	Charlotte	COUNTY
		Loxosceles rufescens	Mediterranean recluse spider	Hillsborough	REGULATORY INCIDENT
		Megacopta cribraria	bean plataspid	Escambia	COUNTY
		Mesophleps adustipennis	a gelechiid moth	Manatee	COUNTY
		Microlynchia pusilla	a louse fly	Monroe	COUNTY
		Nacoleia charesalis	a crambid moth	Collier	COUNTY
		Nacoleia charesalis	a crambid moth	Sarasota	COUNTY
		Peucetia viridans	green lynx spider	Charlotte	COUNTY
		Semium hirtum	a plant bug	Collier	COUNTY
		Tinocallis ulmiparvifoliae	Asian elm aphid	Collier	COUNTY
		Undetermined	a big-eyed schizopterid bug	Collier	STATE

Nematology Section

Compiled by R. N. Inserra, J. D. Stanley, J. B. Brito, L. L. Violett and S. A. Subbotin (California Department of Food and Agriculture)

This section analyzes soil and plant samples for nematodes, conducts pest detection surveys and provides diagnoses of plant problems, in addition to completing identification of plant parasitic nematodes involved in regulatory and certification programs. State of Florida statutes and rules mandate the predominant regulatory activities of the section. Analyses of plant and soil samples include those from in-state programs, plant shipments originating in Florida destined for other states and countries, as well as samples intercepted in Florida from outside the United States.

Nematodes of Special Interest

***Radopholus similis* Thorne, 1949, the burrowing nematode,** was found infecting the roots of *Phoenix dactylifera*, a date palm used as an ornamental. (Lake County; N13-01087; Charles L. Spriggs; 25 October 2013 and Orange County; N13-01354; Larry L. Violett; 25 November 2013.)

The burrowing nematode, *Radopholus similis*, is a polyphagous endoparasite of many plants, including palms. Although coconut palm (*Cocos nucifera*) is the preferred palm host, many other palm species in the genera *Archontophoenix*, *Areca*, *Chamaedorea*, *Elaeis, Phoenix, Raphis, Roystonea* and *Syagrus* are damaged by this nematode species in many tropical areas (Griffith *et al.* 2005). Three species of *Phoenix*, Canary Island date palm (*P. canariensis*), date palm (*P. dactylifera*) and Senegal date palm (*P. reclinata*), have been found infested by the nematode in Florida. The burrowing nematode infestations of these *Phoenix* palms have been found mainly in Florida counties with records of burrowing nematode infestations on citrus. In recent months, date palms (*P. dactylifera*) infested by the nematode have been detected in Lake and Orange counties where the coarse, sandy soil is conducive to burrowing nematode infestations on citrus. The sampled date palms were not vigorous and showed symptoms of decline; however, the role played by the burrowing nematode in the decline was not determined.

Sample Submissions

	November December	Year to date
Morphological Identifications	1,452	11,603
Molecular Identifications	221	1,263
Total Samples Submitted	1,673	12,866

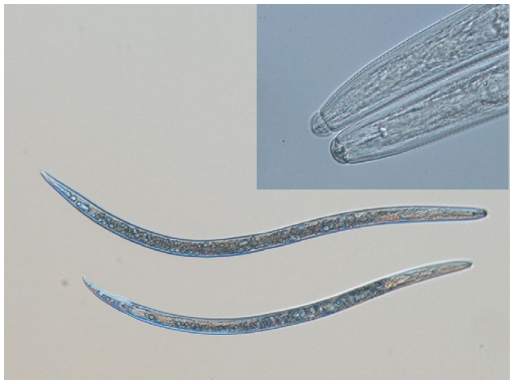
Certification and Regulatory Samples

	November December	Year to date
Multistate Certification for National and International Export	890	7,746
California Certification	293	2,153
Pre-movement (Citrus Nursery Certification)	10	228
Site or Pit Approval (Citrus Nursery and Other Certifications)	21	103

Other Samples

	November December	Year to date
Identifications (invertebrate)	0	8
Plant Problems	10	104
Intrastate Survey, Random	228	1,261
Molecular Identifica-tions*	221	1,042

* The majority of these analyses involved root-knot nematode species.



***Radopholus similis,* dimorphic male and female specimens**
Photography courtesy of Jason D. Stanley, DPI.

Collectors submitting five or more samples that were processed for nematological analysis during November - December 2013.

Bentley, Michael A.	5		LeBoutillier, Karen W.	45
Berryman, Scott D.	13		Ochoa, Ana L.	61
Burgos, Frank A.	149		Spriggs, Charles L.	147
Clanton, Keith B.	66		Terrell, Mark R.	14
Golden, Walter W.	5		Violett, Larry L.	146
Keen, Emily I.	21			

Phoenix dactylifera planted in a shopping mall in Orange County
Photography courtesy of Larry L. Violett, DPI

References

Griffith, R., R.M. Giblin-Davis, P.K. Kosby and V.K. Sosamma. 2005. Nematode parasites of coconut and other palms. Pp. 493-527 In M. Luc, R. A. Sikora and J. Bridge (eds.). Plant parasitic nematodes in subtropical and tropical agriculture, 2nd edition. CAB Publishing: Wallingford, U.K.

Plant Pathology Section

Compiled by Timothy S. Schubert, Ph.D.

This section provides plant disease diagnostic services and conducts a citrus germplasm introduction program. The agency-wide goal of protecting Florida agriculture very often begins with accurate diagnosis of plant problems. Disease management recommendations are offered where appropriate and available. Our plant pathologists are dedicated to keeping informed about plant diseases outside Florida in order to be prepared for potential introductions of new pathogens.

For many decades, multiflora roses (*Rosa multiflora*) in the Midwest, South and eastern United States have been afflicted by a fatal malady known as Rose rosette disease. After introduction of the multiflora rose from Japan to the United States in 1866 to use for rootstock for cultivated roses, the species was put to use for additional purposes such as soil erosion control, bird habitat, living fences for livestock containment, crash barriers for highway safety and strip mine land reclamation. *R. multiflora* proved too invasive after widespread planting, so Rose rosette afforded a serendipitous biocontrol, albeit accompanied with some apprehension about what might happen if it were to move into cultivated roses. Recently, at about the same time as concerns for cultivated roses (especially the popular low-maintenance Knock Out® roses) were proving well-founded, plant virologists at the University of Arkansas were able to link an *Amaravirus* transmitted by the eriophyid mite *Phyllocoptes fructiphylus* to the disease. How the disease and vector made the dramatic move from wild into commercial rose production in the eastern United States after years of relatively peaceful co-existence is not known with certainty, but that truce could not be expected to prevail indefinitely. Furthermore, as we have emphasized in previous Tri-ology reports, viral diseases are a common problem on asexually propagated ornamental plants. All things considered, we should have seen this coming.

A new Pest Alert announcing the arrival of Rose rosette virus in Florida in late 2013 is now available. The Florida appearance of the disease is so far without any presence of the mite vector. In fact, the vector has never been reported in Florida. This may imply that the vector is not fit for our Florida environment and that propagation of roses from non-indexed, infected but asymptomatic, stock plants is the source of the problem. Further investigations will clarify the facts. Meanwhile, rose nursery stock in Florida will require thorough inspection to detect any additional infections. Consult the Pest Alert for a full description and many illustrations of the syndrome. The University of Florida has information available at this website: http://entnemdept.ufl.edu/creatures/ORN/ph_fructiphilus.htm.

Sample Submissions

	November December	Year to date
Pathology	426	2,962
Bee	1	17
Black Spot	20	107
Box Blight	0	6
Citrus Canker	230	1,743
Greening	559	3,284
Interdiction	10	76
Laurel Wilt	5	89
Soil	0	34
Sudden Oak Death	8	36
Sweet Orange Scab-like Disease	1	12
Water	11	12
Miscellaneous	27*	8,438
Total	1,298	16,816

* includes 16 for Rose Rosette Virus

Rose rosette virus symptoms of on low-maintenance landscape rose
Photograph courtesy of Mathews Paret, University of Florida

Plant Species	Common Name	Causal Agent	Disease Name	Location	County	Specimen #	Collector	Date	New Records	Comments
Buxus semperivens	common boxwood	*Macrophoma candollei*	Boxwood leaf blight	Florida FFA Assocation	Union	76081	Thresa R. Estok	11/13/2013		A rather common twig blighter on boxwood, found during inspections for the new boxwood blight (Calonectria pseudonaviculata) active elsewhere in the United States. http://americanhort.theknowledgecenter.com/OnDemand/index.cfm?view=category&colid=142&cid=324
Capsicum annuum	pepper	*Chino del tomate begomovirus*	Chino del tomate virus	Seed company	Collier	76225	Scott D. Krueger	12/4/2013	State	This whitefly-transmitted virus of Solanaceae is new to Florida. http://www.eppo.int/QUARANTINE/Alert_List/deleted%20files/virus/Chino_del_tomate.doc
Loropetalum chinense	fringe bush, loropetalum	*Cylindrocladium* sp.	Cylindrocladium stem canker	Commercial farm	Orange	76780	Bryce J. Merrit	12/16/2013	Host	Fungus is causing a stem canker, a new host record.
Loropetalum chinense	fringe bush, loropetalum	*Diachea leucopodia*	Slime mold	Commercial farm	Orange	76780	Bryce J. Merrit	12/16/2013	Host	Slime molds, indicative of wet conditions, can can be showy, but are harmless on their substrate.
Persea borbonia	red bay	*Raffaelea lauricola*	Laurel wilt	Dooryard	Pasco	75996	Arthur M. Clothier, Florida Forest Service	11/14/2013	County	This represents a new county record.
Rosa sp.	rose	*Rose rosette amaravirus*	Rose rosette virus	Nursery	Gadsden	76637	Michael A. Bentley, Stephen A. Hildebrandt, M. Janie Echols, Christine A. Zamora and Dr. Mathews L. Paret, University of Florida	12/11/2013	State	This serious viral pathogen of rose has been known in more northern states for some time. This represents the initial detection in Florida, first found by UF-IFAS pathologists at Quincy.

Plant Species	Common Name	Causal Agent	Disease Name	Location	County	Specimen #	Collector	Date	New Records	Comments
Rosa sp.	rose	*Rose rosette amaravirus*	Rose rosette virus	Commercial farm	Alachua	76714	Cheryl A. Jones	12/18/2013	County	This host was an heirloom, repeat blooming variety (Marie Van Houtte) in the landscape; all other records have been on Knock-Out® roses in commerical nurseries. This represents a new county record.
Rosa sp.	rose	*Rose rosette amaravirus*	Rose rosette virus	Nursery	Gadsden	76716	Michael A. Bentley	12/18/2013		An additional find in Gadsden County
Rosa sp.	rose	*Rose rosette amaravirus*	Rose rosette virus	Discount store	Levy	76779	W. Wayne Bailey	12/18/2013	County	This represents a new county record.

TRI-OLOGY

Our Mission

The mission of the Division of Plant Industry is to protect Florida's native and commercially grown plants and the State's apiary industry from harmful pests and diseases. Perhaps you'd be interested in some of the things we do to protect the state's tree farms that produce trees for the Christmas season.

In Florida, growers market trees for holiday decorations by common names, typically including red cedar (*Juniperus virginiana*), Virginia pine (*Pinus virginiana*), sand pine (*Pinus clausa*), spruce pine (*Pinus glabra*), Arizona cypress (*Cupressus arizonica*, often the cultivar 'Carolina sapphire') and Leyland cypress (*Cupressus* × *leylandii*). DPI inspectors visit these farms to look for plant pests that could cause damage to the trees and the entomologists in our bureau identify these pests. If an infestation is found, the tree farmers can take measures to control the insects and prevent damage to future crops. In addition, many trees are imported from farther north and west to meet the demand for holiday cheer. Pests from other states can hitch a ride to Florida on these trees and possible become problems here. Trucks loaded with trees are stopped at inspection stations on the Interstate highways at entry points to the state.

In this issue of Tri-ology, pests of Frasier's fir (*Abies fraseri*), spruce (*Picea* sp.) and Douglas fir (*Pseudotsuga menziesii*) are reported by the Entomology section. Every year at this time, our team of plant inspectors must be vigilant in searching for unwelcome holiday guests amid the foliage, both home grown and from out of state, that are then identified by our experts in entomology.