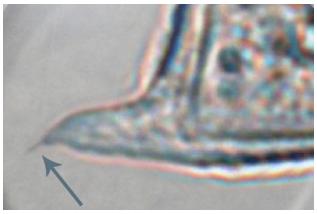
# TRI-OLOGY

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

**DACS-P-00124 Volume 53, Number 6, November - December 2014**


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.

***Paratelenomus saccharalis***, a parasitoid wasp
Photograph courtesy of Kevin A. Williams, DPI.



***Helicotylenchus paxilli*** (a spiral nematode) female posterior portion of the body. Note the ventral projection of the tail with a mucro (arrow).
Photograph courtesy of J. D. Stanley, DPI.

***Raffaelea lauricola*** (laurel wilt) damage spreads to new Florida counties.
Photograph courtesy of Jeffrey W. Lotz, DPI

## Highlights

***Paratelenomus saccharalis,* a parasitoid wasp, a new Florida state record.** Researchers from the Florida Department of Agriculture and Consumer Services, Division of Plant Industry collected the European parasitoid wasp, *Paratelenomus saccharalis,* in Florida for the first time. This species was found recently in Georgia and is a recognized parasitoid of kudzu bug, *Megacopta cribraria*.

**New County Records for Plants.** The year 2014 was one of remarkable effort by DPI staff, and notably from the perspective of the botany section, those of our co-workers in the Bureau of Plant Inspection. By working together to collect and document the presence of native and naturalized plants, we have provided new county records for 77 plant species. These records are listed in the Botany section of this issue of Tri-ology.

***Helicotylenchus paxilli*** is a species closely related to *H. pseudorobustus*, one of the most frequently reported spiral nematodes in world literature. In Florida, *H. pseudorobustus* has been implicated in growth suppression of the turfgrasses. Recent morphological and molecular analyses of putative *H. pseudorobustus* populations collected on turfgrass in Alachua and Volusia counties indicates that these populations belong to *H. paxilli* rather than *H. pseudorobustus*.

***Raffaelea lauricola* (laurel wilt)** appeared in two new counties (Holmes and Walton) in the Panhandle of Florida for the first time. Gaps in the geographic range of this pathogen are filling in as it moves west. Outposts of this disease are already as far west as coastal Mississippi.

## Section Reports



Photograph courtesy of Patti J. Anderson, DPI

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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:

The year 2014 was one of remarkable effort by DPI staff, and notably from the perspective of the botany section, those of our co-workers in the Bureau of Plant Inspection. This year, by working together to collect and document the presence of native and naturalized plants, we have provided new county records for 77 plant species. Marc S. Frank coordinated the project for the DPI herbarium and guided our inspectors as they learned the rules for collecting voucher specimens required to verify the geographic range of plants in Florida. The focus was on noxious weeds and invasive species, but more benign naturalized plants and some natives were also recorded in counties where they had not previously been documented.

How does this process work? Readers of Tri-ology might have noticed photographs of plants from the Atlas of Florida Vascular Plants website. Not only is this site a valuable source of excellent photographs of accurately identified plant species, it is a repository of plant location information. A map associated with each species of native or naturalized plants in Florida indicates each county in which the plant has been collected and vouchered (a specimen placed in a recognized herbarium to document the existence of the species at a known location). With inspectors working in every Florida county, DPI is in a unique position to improve the accuracy of distribution information on the Plant Atlas website. Understanding the distribution of plant species is important for research and for regulatory purposes. For example, knowing the geographic extent of invasive species may lead to increased funding for research on impacts and biocontrols and may also increase potential for regulation.

To be accepted as a new county record, the sample submission form should indicate that this plant is growing and reproducing in the wild, and not merely persisting from cultivation. Information about how to determine whether a plant has become naturalized (growing on its own without human cultivation) and how to submit a voucher specimen is available by contacting the Botany staff of DPI: Dr. Patti Anderson or Marc S. Frank.

Two of the species most commonly received as part of the effort to expand our understanding of the distribution of plants in Florida are discussed below. A list of the new county records follows these descriptions. Congratulations to our hard-working staff!

***Dioscorea alata* L. (white yam, water yam),** from a genus of about 630 species, found in the tropics and warm temperate regions worldwide. Dioscoreaceae. This stout, high-climbing vine grows from a massive tuber up to 2.5 m long. The stem is 2 to 4-winged (from which the common name “winged yam” is derived), tinged with red or purple, twining clockwise, often with small axillary bulbils (small bulbs in the angle between a leaf and stem and capable of vegetative reproduction). Leaves are mainly opposite, but often alternate leaves are found at the base of the vine. The leaf blades are broadly ovate to sagittate-cordate, 7-15 cm long, with a cordate base, palmately seven- to nine-veined and acuminate at the apex. The bulbils are generally elongated, with a rough-textured surface, growing as long as 10 cm. The plant is dioecious, with

### Sample Submissions

| | November December | Year to date |
|---|---|---|
| Samples submitted by other DPI sections | 670 | **7,384** |
| Samples submitted for botanical identification only | 111 | **996** |
| Total Samples Submitted | 781 | **8,380** |
| Specimens added to the herbarium | 49 | **323** |

***Dioscorea alata* (white yam, water yam)** leaf and bulbil
Photograph courtesy of Patricia Howell, Atlas of Florida Vascular Plants http://florida.plantatlas.usf.edu/Photo.aspx?id=15153

***Dioscorea alata* (white yam, water yam)** stem and underground tuber
Photograph courtesy of Patricia Howell, Atlas of Florida Vascular Plants http://florida.plantatlas.usf.edu/Photo.aspx?id=11844

***Dioscorea bulbifera* (air potato, potato yam)** leaf and bulbil Photograph courtesy of Fred Nation, Atlas of Florida Vascular Plants http://florida.plantatlas.usf.edu/Photo.aspx?id=3394

***Dioscorea bulbifera* (air potato, potato yam)** leaf and bulbil Photograph courtesy of Dennis Girard, Atlas of Florida Vascular Plants http://florida.plantatlas.usf.edu/Photo.aspx?id=16161

male (staminate) flowers borne in panicles; female (pistillate ) flowers, in simple spikes. The fruit is a glossy, three-winged, capsule 1.5-2 cm long and nearly 3 cm in diameter. This species is native from India to Malay Peninsula and widely cultivated in tropics, primarily as food. The boiled tubers become grayish-white and are eaten as a starch. This yam is listed as a noxious weed by the state of Florida and as a Category I invasive by the Florida Exotic Pest Plant Council. It differs from *Dioscorea bulbifera* (the air-potato; see below), another exotic, invasive yam, in its winged stems, opposite leaves and underground tubers as well as aerial bulbils. Native Florida yams, sporadically distributed from Hillsborough County northward, lack aerial tubers and have smaller leaves than these exotics. As of January 8, 2015, nine of 27 accepted county vouchers were held in the DPI Herbarium. (Correll and Correll 1982; Langeland *et al*. 2008; Mabberley 2008; Wunderlin and Hansen 2011; http://florida.plantatlas.usf.edu/Plant.aspx?id=1750 [accessed 2015 January 8].)

***Dioscorea bulbifera* L. (air potato, potato yam),** from a genus of about 630 species, found in the tropics and warm temperate regions worldwide. Dioscoreaceae. This robust, high-climbing, twining (counter-clockwise) vine has stems that produce numerous, smooth or warty bulbils, to about 10 cm thick. This species sometimes grows from a small underground tuber. The glossy green, alternate leaves have petioles about as long as its broadly ovate-cordate blades, 7-15 cm broad, cuspidate-acuminate at apex and usually nine curving nerves. The inflorescences may be slender, staminate spikes 3-10 cm long, or simple pistillate spikes, 10-25 cm long. The fruit is an oblong capsule, 2.5 cm long and 1.5 cm broad. The species is native to tropical Asia, but has been introduced throughout the tropics, subtropics and warm temperate climates. This yam is also listed as a noxious weed in Florida and as a Category I invasive by the Florida Exotic Pest Plant Council. With the success of the air potato weevil (*Liliocersis cheni*), as a biocontrol agent, the number of counties with *D. bulbifera* might eventually be reduced. As of January 8, 2015, nine of 45 accepted county vouchers were held in the DPI Herbarium. (Langeland *et al*. 2008; Wunderlin and Hansen 2011; http://florida.plantatlas.usf.edu/Plant.aspx?id=1726 [accessed 2015 January 8].)

## References

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**Langeland, K.A., H.M.Cherry, C.M.McCormick and K.A.Craddock Burks. 2008.** Nonnative plants in Florida's natural areas. The University of Florida, IFAS Communications Services, Gainesville, Florida. 193 p.

**Mabberley, D.J. 2008.** Mabberley's plant-book: a portable dictionary of plants, their classification and uses, 3rd edition. Cambridge University Press, New York, New York. 1,021 p.

**Wunderlin, R.P. and B.F.Hansen. 2011.** Guide to the vascular plants of Florida, 3rd edition. University Press of Florida, Gainesville, Florida. 783 p.

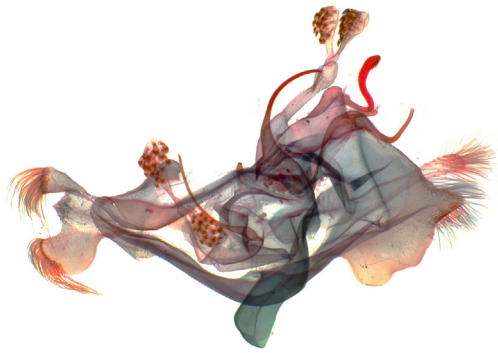
| Collector | Plant genus | Plant species | County | Sample # | Date |
|---|---|---|---|---|---|
| Albert L. Wright | *Colocasia* | *esculenta* (L.) Schott | Polk | B2014-411 | May 29, 2014 |
| Anthony Gubler | *Atriplex* | *cristata* Humb. & Bonpl. ex Willd. | Indian River | B2014-566 | Jul 29, 2014 |
| Bobbe A. Rose | *Aristolochia* | *elegans* Mast. | Pinellas | B2014-501 | Jun 24, 2014 |
| Bobbe A. Rose | *Solanum* | *seaforthianum* Andrews | Pinellas | B2014-714 | Sep 16, 2014 |
| Bryce J. Merritt | *Oeceoclades* | *maculata* (Lindl.) Lindl. | Lake | B2014-944 | Nov 17, 2014 |
| Carrie L. Karppe | *Solanum* | *viarum* Dunal | Hernando | B2014-867 | Oct 28, 2014 |
| Christopher G. Gibbard | *Casuarina* | *cunninghamiana* Miq. | Polk | B2014-427 | Jun 5, 2014 |
| Christopher G. Gibbard | *Cupaniopsis* | *anacardioides (A. Rich.) Radlk.* | Polk | B2014-555 | Jul 18, 2014 |
| Christopher G. Gibbard | *Leucaena* | *leucocephala* (Lam.) de Wit | Polk | B2014-440 | Jun 6, 2014 |
| Christopher G. Gibbard & Albert L. Wright | *Nymphoides* | *indica* (L.) Kuntze | Polk | B2014-398 | May 23, 2014 |
| Daniel Merced | *Cupaniopsis* | *anacardioides* (A. Rich.) Radlk. | Pasco | B2014-222 | Apr 9, 2014 |
| Daniel Merced | *Lygodium* | *microphyllum* (Cav.) R. Br. | Pasco | B2014-285 | Apr 28, 2014 |
| Daniel Merced | *Sapium* | *sebiferum* (L.) Roxb. | Pasco | B2014-232 | Apr 10, 2014 |
| Daniel Merced | *Xanthosoma* | *sagittifolium* (L.) Schott | Pasco | B2014-241 | Apr 16, 2014 |
| Diana E. Bozeman & Jodie Bixler | *Prunus* | *angustifolia* Marshall | Pasco | B2014-449 | Jun 10, 2014 |
| Harry L. Morrison, Mary C. Sellers & Stacey S. Simmons | *Imperata* | *cylindrica* (L.) P. Beauv. | Lake | B2014-815 | Oct 15, 2014 |
| J.Mikaela Anderson | *Dioscorea* | *bulbifera* L. | Santa Rosa | B2014-588 | Jul 29, 2014 |
| James E. (Eddie) Anderson | *Argemone* | *mexicana* L. | Manatee | B2014-293 | Apr 30, 2014 |
| Jason B. Sharp | *Bidens* | *pilosa* L. | Sarasota | B2014-076 | Feb 12, 2014 |
| Jason B. Sharp | *Chromolaena* | *odorata* (L.) R.M. King & H. Rob. | Manatee | B2014-943 | Nov 19, 2014 |
| Jason B. Sharp | *Cissus* | *verticillata* (L.) Nicolson & C.E. Jarvis | Manatee | B2014-322 | May 7, 2014 |
| Jason B. Sharp | *Crotalaria* | *lanceolata* E. Mey. | Manatee | B2014-056 | Feb 3, 2014 |
| Jason B. Sharp | *Dioscorea* | *alata* L. | Sarasota | B2014-690 | Sep 10, 2014 |
| Jason B. Sharp | *Dioscorea* | *bulbifera* L. | Manatee | B2014-750 | Sep 30, 2014 |
| Jason B. Sharp | *Krigia* | *virginica* (L.) Willd. | Manatee | B2014-183 | Mar 18, 2014 |
| Jason B. Sharp | *Paspalum* | *praecox* Walt. | Sarasota | B2014-445 | Jun 11, 2014 |
| Jason B. Sharp | *Pisonia* | *aculeata* L. | Manatee | B2014-311 | May 5, 2014 |
| Jason B. Sharp | *Randia* | *aculeata* L. | Manatee | B2014-751 | Sep 30, 2014 |
| Jason B. Sharp | *Veronica* | *peregrina* L. | Sarasota | B2014-074 | Feb 12, 2014 |
| Jeanie P. Frechette | *Capparis* | *jamaicensis* Jacq. | Indian River | B2014-351 | May 12, 2014 |
| Jeanie P. Frechette & Carlos Averhoff-Chirino | *Odontonema* | *cuspidatum* (Nees) Kuntze | Indian River | B2014-611 | Aug 13, 2014 |
| Larry W. Smith | *Dioscorea* | *alata* L. | Jackson | B2014-708 | Sep 5, 2014 |
| Larry W. Smith | *Dioscorea* | *bulbifera* L. | Bay | B2014-706 | Sep 9, 2014 |
| Larry W. Smith | *Dioscorea* | *bulbifera* L. | Gulf | B2014-889 | Oct 31, 2014 |
| Larry W. Smith | *Dioscorea* | *bulbifera* L. | Washington | B2014-707 | Sep 5, 2014 |
| Larry W. Smith | *Lygodium* | *japonicum* (Thunb.) Sw. | Bay | B2014-909 | Nov 4, 2014 |
| Larry W. Smith | *Pueraria* | *montana* (Lour.) Merr. var. lobata (Willd.) Maesen & S.M. Almeida | Gulf | B2014-888 | Oct 31, 2014 |
| LeAnn M. West | *Clerodendrum* | *indicum* (L.) Kuntze | Martin | B2014-810 | Oct 14, 2014 |
| LeAnn M. West | *Colocasia* | *esculenta* (L.) Schott | Martin | B2014-840 | Oct 21, 2014 |
| LeAnn M. West | *Dioscorea* | *bulbifera* L. | Martin | B2014-335 | May 7, 2014 |
| Lee Barnwell, FFS | *Saccharum* | *coarctatum* (Fern.) R. Webster | Baker | B2014-736 | Sep 24, 2014 |
| Lia Sansom, GTMNERR | *Schinus* | *terebinthifolia* Raddi | Flagler | B2014-839 | Oct 23, 2014 |
| Linda G. McRay | *Alysicarpus* | *vaginalis* (L.) DC. | Pinellas | B2014-795 | Oct 14, 2014 |
| Linda G. McRay | *Coccinia* | *grandis* (L.) Voigt | Pinellas | B2014-730 | Sep 23, 2014 |
| Linda G. McRay | *Eleocharis* | *equisetoides* (Elliott) Torr. | Pinellas | B2014-905 | Nov 4, 2014 |
| Linda G. McRay | *Randia* | *aculeata* L. | Pinellas | B2014-729 | Sep 23, 2014 |

| Collector | Plant genus | Plant species | County | Sample # | Date |
|---|---|---|---|---|---|
| Linda G. McRay | *Sabatia* | *stellaris* Pursh | Pinellas | B2014-473 | Jun 17, 2014 |
| Lisa M. Hassell | *Lygodium* | *japonicum* (Thunb.) Sw. | Nassau | B2014-310 | May 5, 2014 |
| M. 'Janie' Echols | *Prunus* | *caroliniana* (Mill.) Aiton | Baker | B2014-884 | Oct 30, 2014 |
| Michael Bentley & Cheryl A. Jones | *Dioscorea* | *bulbifera* L. | Jefferson | B2014-710 | Sep 16, 2014 |
| Michael Bentley & Cheryl A. Jones | *Jacquemontia* | *tamnifolia* (L.) Griseb. | Madison | B2014-595 | Jul 29, 2014 |
| Mona Lisa Payne, USDA | *Prunus* | *serotina* Ehrh. | Hardee | B2014-346 | May 12, 2014 |
| P. Karen Coffey & Kaleigh Hire | *Pistia* | *stratiotes* L. | Flagler | B2014-803 | Oct 15, 2014 |
| Roberto Delcid | *Macfadyena* | *unguis-cati* (L.) A.H. Gentry | Hendry | B2014-196 | Mar 20, 2014 |
| Shelly M. Wayte | *Parthenium* | *hysterophorus* L. | Marion | B2014-660 | Aug 26, 2014 |
| Sol F. Looker | *Commelina* | *benghalensis* L. | Putnam | B2014-836 | Oct 22, 2014 |
| Sol F. Looker | *Dioscorea* | *alata* L. | Clay | B2014-552 | Jul 23, 2014 |
| Sol F. Looker | *Dioscorea* | *alata* L. | Flagler | B2014-585 | Jul 24, 2014 |
| Sol F. Looker | *Dioscorea* | *bulbifera* L. | Clay | B2014-587 | Jul 30, 2014 |
| Sol F. Looker | *Dioscorea* | *bulbifera* L. | Flagler | B2014-553 | Jul 22, 2014 |
| Sol F. Looker | *Dioscorea* | *bulbifera* L. | Putnam | B2014-542 | Jul 17, 2014 |
| Sol F. Looker | *Dioscorea* | *bulbifera* L. | St. Johns | B2014-554 | Jul 22, 2014 |
| Sol F. Looker | *Eichhornia* | *crassipes* (Mart.) Solms | Clay | B2014-171 | Mar 4, 2014 |
| Sol F. Looker & Kaleigh Hire | *Ipomoea* | *triloba* L. | Putnam | B2014-825 | Oct 20, 2014 |
| Sol F. Looker & Kaleigh Hire | *Ludwigia* | *peruviana* (L.) H. Hara | Putnam | B2014-831 | Oct 20, 2014 |
| Stacey S. Simmons | *Imperata* | *cylindrica* (L.) P. Beauv. | Sumter | B2014-865 | Oct 20, 2014 |
| Stephen R. Jenner | *Dioscorea* | *alata* L. | Hernando | B2014-789 | Oct 14, 2014 |
| Susan B. Youngblood | *Bischofia* | *javanica* Blume | Manatee | B2014-817 | Oct 20, 2014 |
| Susan B. Youngblood | *Thunbergia* | *fragrans* Roxb. | Hillsborough | B2014-255 | Apr 22, 2014 |
| Susan C. Distelberg | *Casuarina* | *glauca* Sieber ex Spreng. | Osceola | B2014-468 | Jun 16, 2014 |
| Susan C. Distelberg | *Smilax* | *tamnoides* L. | Osceola | B2014-407 | May 27, 2014 |
| Susan C. Distelberg | *Syagrus* | *romanzoffiana* (Cham.) Glassman | Osceola | B2014-824 | Oct 21, 2014 |
| Susan C. Distelberg & Christopher G. Gibbard | *Xanthosoma* | *sagittifolium* (L.) Schott | Osceola | B2014-822 | Oct 21, 2014 |
| Theresa R. Estok | *Lupinus* | *perennis* L. | Baker | B2014-223 | Apr 9, 2014 |
| Theresa R. Estok | *Lupinus* | *villosus* Willd. | Baker | B2014-224 | Apr 9, 2014 |
| W. Wayne Bailey | *Dioscorea* | *alata* L. | Dixie | B2014-948 | Nov 19, 2014 |
| W. Wayne Bailey | *Imperata* | *cylindrica* (L.) P. Beauv. | Dixie | B2014-949 | Nov 19, 2014 |
| W. Wayne Bailey | *Pueraria* | *montana* (Lour.) Merr. var. lobata (Willd.) Maesen & S.M. Almeida | Levy | E2014-6056 | Aug 29, 2014 |

## Sample/Specimen Submissions

| | |
|---|---|
| **November** | |
| Samples Submitted | **361** |
| Specimens Identified | **7,675** |
| **December** | |
| Samples Submitted | **369** |
| Specimens Identified | **7,100** |
| **Year to Date** | |
| Samples Submtted | **8,316** |
| Specimens Identified | **157,132** |

***Dryadaula* sp., a dryadaulid moth** male habitus, immersed in alcohol
Photograph courtesy of James E. Hayden, DPI



***Dryadaula* sp., a dryadaulid moth male genitalia,** which are asymmetrical and distinctive
Photograph courtesy of James E. Hayden, DPI

***Paratelenomus saccharalis*, a parasitoid wasp**
Photograph courtesy of Kevin A. Williams, DPI

# 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.

***Acarhynchus filamentus,* an eriophyid mite, a new Florida state record.** This mite was found on *Arundinaria gigantea*, giant cane, in Guana Tolomato Matanzas Estuarine Research Reserve, Ponte Vedra Beach, Florida. This mite originally was described from this host in Virginia by Keifer in 1959, and it was reported from the same host in Georgia by Barké and Davis in 1971. This mite is a leaf vagrant and not of economic importance. (St. Johns County; E-2014-7319; W. C. 'Cal' Welbourn, James E. Hayden, Kyle E. Schnepp, Ian C. Stocks, Marc S. Frank, Lia K. Sansom, University of North Florida, Nicole 'Nikki' G. Dix, University of North Florida, and Alicia A. Zeluff, Florida Department of Environmental Protection; 21 October 2014.) (Dr. W. C. 'Cal' Welbourn.)

***Dryadaula* sp., a dryadaulid moth, a new Florida state record.** This moth could be an undescribed native or an adventive tropical species. It probably feeds on fungi. There are two known species of *Dryadaula* in Florida: the adventive *D. terpsichorella* (Busck) and an undescribed native species (see E2014-8087). This specimen appears to be neither. (Miami-Dade County; E2014-8293; Misael E. Igarza; 22 December 2014.) (Dr. James E. Hayden.)

***Paratelenomus saccharalis*, a parasitoid wasp, a new Florida state record.** Researchers from the Florida Department of Agriculture and Consumer Services, Division of Plant Industry collected the European parasitoid wasp *Paratelenomus saccharalis* in Florida for the first time. This species was found recently in Georgia and is a recognized parasitoid of kudzu bug, *Megacopta cribraria* (Gardner *et al.* 2013). It has not been associated with any native Hemiptera, making it a great candidate for biological control. (Alachua County; E2014-7818; Andrew Santa Cruz and Julio Medal; 20 August 2014.)(Dr. Kevin A. Williams.)

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**Gardner, W.A., J.L.Blount, J.R.Golec., W.A.Jones, X.P.Hu, E.J.Talamas, R.M Evans, X.-l.Dong, C.H.Ray, Jr., G.D.Buntin, N.M.Gerardo, and J.Couret, 2013.** Discovery of *Paratelenomus saccharalis* (Dodd) (Hymenoptera: Platygastridae), an egg parasitoid of *Megacopta cribraria* F. (Hemiptera: Plataspidae) in its expanded North American range. Journal of Entomological Science 48 (4): 355-359. http://www.ag.auburn.edu/enpl/directory/faculty/hu/documents/MegacoptaParasitoidNot-GarnderEtAl-201310.pdf [accessed 2015 January 12].

**Keifer, H.H. 1959.** Eriophyiod Studies XXVII. Occasional Papers I. California Department of Agriculture 1:1-18.

**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 | Duval | Lisa M. Hassell | REGULATORY INCIDENT |
| *Abies fraseri* | Fraser's fir, southern balsam fir | *Otiorhynchus rugosostriatus* | rough strawberry root weevil | Escambia | Randal E. St. Louis | INTERDICTION INTERCEPTION |
| *Abies procera* | noble fir | *Tachygyna ursina* | a dwarf sheetweaver | Escambia | Randal E. St. Louis | REGULATORY INCIDENT |
| *Abies procera* | noble fir | *Xanthochilus saturnius* | Mediterranean seed bug | Escambia | Randal E. St. Louis | INTERDICTION INTERCEPTION |
| *Ananas comosus* | pineapple | *Steneotarsonemus comosus* | pineapple multiple crown mite | Escambia | Johanna K. Welch; Randal E. St. Louis | INTERDICTION INTERCEPTION |
| *Ananas comosus* | pineapple | *Steneotarsonemus comosus* | pineapple multiple crown mite | Escambia | Johanna K. Welch; Randal E. St. Louis | INTERDICTION INTERCEPTION |
| *Annona cherimola* | cherimoya | *Tetranychina californica* | a spider mite | Escambia | Randal E. St. Louis | INTERDICTION INTERCEPTION |
| *Arundinaria gigantea* | giant cane; canebrake bamboo; southern cane; switch cane | *Acarhynchus filamentus* | an eriophyid mite | St. Johns | W. C. 'Cal' Welbourn; James E. Hayden; Kyle E. Schnepp; Ian C. Stocks; Marc S. Frank; Lia K. Sansom; Nicole 'Nikki' G. Dix; Alicia A. Zeluff | STATE |
| *Arundinaria gigantea* | giant cane; canebrake bamboo; southern cane; switch cane | *Aceria* sp. | an eriophyid mite | St. Johns | W. C. 'Cal' Welbourn; James E. Hayden; Kyle E. Schnepp; Ian C. Stocks; Marc S. Frank; Lia K. Sansom; Nicole 'Nikki' G. Dix; Alicia A. Zeluff | HOST |
| *Arundinaria gigantea* | giant cane; canebrake bamboo; southern cane; switch cane | *Schizotetranychus* sp. | a spider mite | St. Johns | W. C. 'Cal' Welbourn; James E. Hayden; Kyle E. Schnepp; Ian C. Stocks; Marc S. Frank; Lia K. Sansom; Nicole 'Nikki' G. Dix; Alicia A. Zeluff | COUNTY |
| *Brassica juncea* | mustard greens; leaf mustard; indian mustard; brown mustard | *Lygus elisus* | pale legume bug | Suwannee | Harrell Randolph | INTERDICTION INTERCEPTION |
| *Cichorium endivia* | cultivated endive | *Erasmoneura variabilis* | western grape leafhopper | Escambia | Randal E. St. Louis | INTERDICTION INTERCEPTION |
| *Citrus* sp. | | *Camponotus sexguttatus* | carpenter ant | Martin | Jorge P. Gomez | COUNTY |
| *Cynara cardunculus* | cardoon, artichoke, globe artichoke | *Lygus hesperus* | a western lygus bug | Escambia | Randal E. St. Louis | INTERDICTION INTERCEPTION |
| *Erica* sp. | | *Lygus* sp. | a lygus bug | Miami-Dade | Ives Lopez | REGULATORY INCIDENT |
| *Euthamia caroliniana* | slender flattop goldenrod, coastal plain goldentop | *Vanduzea segmentata* | a treehopper | Alachua | Susan E. Halbert; Jeffrey D. Capehart | HOST |
| *Juniperus virginiana* | eastern red cedar | *Sufetula diminutalis* | palm rootworm moth | Seminole | Jesse M. Krok | COUNTY |
| *Lactuca sativa* | romaine lettuce | *Ceratagallia californica* | a leafhopper | Escambia | Randal E. St. Louis | INTERDICTION INTERCEPTION |
| *Lactuca sativa* | romaine lettuce | *Empoasca setata* | a leafhopper | Escambia | Randal E. St. Louis; Johanna K. Welch | INTERDICTION INTERCEPTION |
| *Lactuca sativa* | lettuce, romaine lettuce, leaf lettuce | *Lygus elisus* | pale legume bug | Escambia | Johanna K. Welch; Randal E. St. Louis | INTERDICTION INTERCEPTION |
| *Lactuca sativa* | romaine lettuce | *Lygus elisus* | pale legume bug | Escambia | Randal E. St. Louis | INTERDICTION INTERCEPTION |
| *Olea europaea* | olive | *Lepidomys irrenosa* | devilwood leaftier | Volusia | Jennifer L. Gillett-Kaufman | HOST |
| *Olea europaea* | olive | *Nacoleia charesalis* | a crambid moth | Marion | Jennifer L. Gillett-Kaufman | COUNTY |
| *Olea europaea* | olive | *Palpita persimilis* | olive shootworm | Marion | Jennifer L. Gillett-Kaufman | COUNTY and HOST |
| *Persea americana* | avocado; alligator pear; aguacate | *Abgrallaspis aguacatae* | an armored scale | Seminole | Ian C. Stocks | REGULATORY INCIDENT |

| Plant Name | Plant Common Name | Arthropod | Arthropod Common Name | County | Records | |
|---|---|---|---|---|---|---|
| *Persea americana* | avocado; alligator pear; aguacate | *Encarsia noyesi* | aphelinid wasp | Broward | Olga Garcia | COUNTY |
| *Persea americana* | avocado; alligator pear; aguacate | *Menemerus bivittatus* | gray wall jumper | Hendry | Roberto Delcid | COUNTY |
| *Persea americana* | avocado; alligator pear; aguacate | *Stethoconus praefectus* | a lace bug predator | Martin | LeAnn M. West | COUNTY |
| *Persea palustris* | swamp bay | *Trioza magnoliae* | red bay psyllid | Santa Rosa | J. Mikaela Anderson | COUNTY |
| *Phoenix dactylifera* | date palm | *Phoenicococcus marlatti* | red date scale | St. Johns | Theresa R. Estok; Kaleigh Hire | REGULATORY INCIDENT |
| *Phoenix dactylifera* | date palm | *Phoenicococcus marlatti* | red date scale | Suwannee | Roaida C. Said Gonzalez | INTERDICTION INTERCEPTION |
| *Pinus* sp. | pine | *Xyleborus intrusus* | a scolytid beetle | St. Lucie | Brian D. Saunders | COUNTY |
| *Platanus occidentalis* | sycamore | *Xyleborus similis* | a scolytid beetle | Duval | Bradley A. Danner; Robert M. Leahy | COUNTY |
| *Protea cynaroides* | king protea | *Delottococcus confusus* | a mealybug | Miami-Dade | Ives Lopez | REGULATORY INCIDENT |
| *Pueraria montana* | kudzu; kudzu vine; foot-a-night-vine; vine-that-ate-the-south; ko-hemp | *Megacopta cribraria* | bean plataspid | Liberty | Larry W. Smith | COUNTY |
| *Pueraria montana* | kudzu; kudzu vine; foot-a-night-vine; vine-that-ate-the-south; ko-hemp | *Megacopta cribraria* | bean plataspid | Bay | Larry W. Smith | COUNTY |
| *Quercus* sp. | oak | *Anotia bonnetii* | a derbid planthopper | Volusia | Lauren L. Dorval | COUNTY |
| *Quercus* sp. | | *Diploschizia kimballi* | sedge moth | Manatee | Kevin E. Everhart | COUNTY |
| *Rhizophora mangle* | red mangrove, american mangrove | *Myllocerus undecimpustulatus* | Sri Lankan weevil | Martin | Eduardo Solis | HOST |
| *Spartina alterniflora* | saltmarsh cordgrass, smooth cordgrass | *Ogmotarsonemus erepsis* | a tarsonemid mite | St. Johns | W. C. 'Cal' Welbourn; James E. Hayden; Kyle E. Schnepp; Ian C. Stocks; Marc S. Frank; Lia K. Sansom; Nicole 'Nikki' G. Dix; Alicia A. Zeluff | COUNTY |
| *Tabebuia* sp. | | *Rabela tabebuiae* | tabebuia leafhopper | Orange | Jesse M. Krok | COUNTY |
| *Terminalia catappa* | tropical-almond | *Dryadaula* sp. | a dryadaulid moth | Miami-Dade | Misael E. Igarza | STATE |
| *Tridens flavus* | purpletop tridens | *Hyalopterus pruni* | mealy plum aphid | Citrus | Olga Garcia | HOST |
| X *Citrofortunella mitis* | calamondin | *Bothriocera datuna* | a cixiid planthopper | Hillsborough | Kathleen A. Miller | COUNTY |
| | | *Carposina sasakii ottawana* | peach fruit moth | St. Johns | James E. Hayden; W. C. 'Cal' Welbourn; Kyle E. Schnepp; Ian C. Stocks; Mark S. Frank; Lia K. Sansom, Nicole 'Nikki' G. Dix, Alicia A. Zeluff | COUNTY |
| | | *Diploschizia kimballi* | sedge moths | Pinellas | Douglas A. Restom-Gaskill; K evin E. Everhart | COUNTY |
| | | *Dryadaula* n. sp. | tineid moth | St. Johns | James E. Hayden; W. C. 'Cal' Welbourn; Kyle E. Schnepp; Ian C. Stocks; Mark S. Frank; Lia K. Sansom, Nicole 'Nikki' G. Dix, Alicia A. Zeluff | COUNTY |
| | | *Dryadaula terpsichorella* | dancing moth | St. Johns | James E. Hayden; W. C. 'Cal' Welbourn; Kyle E. Schnepp; Ian C. Stocks; Mark S. Frank; Lia K. Sansom, Nicole 'Nikki' G. Dix, Alicia A. Zeluff | COUNTY |
| | | *Glena plumosaria* | inchworm moths | St. Johns | James E. Hayden; W. C. 'Cal' Welbourn; Kyle E. Schnepp; Ian C. Stocks; Mark S. Frank; Lia K. Sansom, Nicole 'Nikki' G. Dix, Alicia A. Zeluff | COUNTY |
| | | *Hylocurus binodatus* | a scolytid beetle | Duval | Robert M. Leahy; Bradley A. Danner | COUNTY |
| | | *Ischnodemus conicus* | a lygaeid bug | Escambia | J. Mikaela Anderson | COUNTY |
| | | *Ischnodemus variegatus* | West Indian marsh grass bug | Collier | Scott D. Croxton | COUNTY |
| | | *Nacoleia charesalis* | a crambid moth | Alachua | James E. Hayden | COUNTY |
| | | *Paratelenomus saccharalis* | parasitoid wasp | Alachua | Andrew Santa Cruz; Julio C. Medal | STATE |
| | | *Parmarion martensi* | semi-slug | Broward | Ives Lopez | REGULATORY INCIDENT |
| | | *Phoenicococcus marlatti* | red date scale | Suwannee | Roaida C. Said Gonzalez | INTERDICTION INTERCEPTION |

| Plant Name | Plant Common Name | Arthropod | Arthropod Common Name | County | Records | |
|---|---|---|---|---|---|---|
| | | *Rhinacloa cardini* | a plant bug | Miami-Dade | Haydee I. Escobar | COUNTY |
| | | *Rhytidoporus compactus* | a burrowing bug | Collier | Scott D. Croxton | COUNTY |
| | | *Smeringopus pallidus* | a longlegged spider | Seminole | Homeowner | COUNTY |
| | | *Spodoptera pulchella* | Caribbean armyworm moth | Manatee | Kevin E. Everhart | COUNTY |
| | | *Sufetula diminutalis* | palm rootworm | St. Johns | James E. Hayden; W. C. 'Cal' Welbourn; Kyle E. Schnepp; Ian C. Stocks; Mark S. Frank; Lia K. Sansom, Nicole 'Nikki' G. Dix, Alicia A. Zeluff | COUNTY |

## Nematology Section

Compiled by Jason D. Stanley, M.S., Renato N. Inserra, Ph.D., Janete A. Brito, Ph.D. and Charles L Spriggs, B.S

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

***Helicotylenchus paxilli* Yuen, 1964, a spiral nematode**, was found in the rhizosphere of sourgrass, *Paspalum conjugatum* P. J. Bergius. (Volusia County; N14-01557; Charles L. Spriggs; 15 December 2014.)

*Helicotylenchus paxilli* is a species closely related to *H. pseudorobustus* (Steiner, 1914) Golden, 1956, which is one of the most frequently reported spiral nematodes in world literature. In Florida, *H. pseudorobustus* has been implicated in growth suppression of the turfgrasses Bermudagrass (*Cynodon dactylon* (L.) Pers. x *C. transvaalensis* Burtt Davy) and seashore paspalum (*Paspalum vaginatum* Elliott) (Crow *et al.* 2013). Recent morphological and molecular analyses of putative *H. pseudorobustus* populations collected from seashore paspalum and sourgrass (*P. conjugatum*) in Alachua and Volusia counties, respectively, indicates that these populations belong to *H. paxilli* rather than *H. pseudorobustus*. The molecular characteristics of Florida populations of *H. paxilli* matched those of topotytpe specimens collected from unidentified grasses in a hard wood forest in England and those of another population, also from undetermined grasses, in California. Morphologically, *H. paxilli* can be differentiated from *H. pseudorobustus* in having the ventral projection of the tail with a mucro (a short, sharp point at the end of the tail projection), which is lacking in *H. pseudorobustus*. The geographical distribution of *H. paxilli* includes England, the United States and New Zealand, where a population morphologically similar to Florida *H. paxilli* has been reported from a native Australian shrub, *Hymenanthera* sp. The finding of this spiral nematode in Florida validates an unconfirmed record (B-5235, 1969) of *H. paxilli* in Lake County and provides evidence of the potential economic importance of this spiral nematode as a damaging parasite of turf.

### Sample Submissions

| | November December | Year to date |
|---|---|---|
| Morphological Identifications | 1,315 | **11,574** |
| Molecular Identifications | 246 | **1,764** |
| Total Samples Submitted | 1,561 | **13,338** |

### Certification and Regulatory Samples

| | November December | Year to date |
|---|---|---|
| Multistate Certification for National and International Export | 853 | **7,910** |
| California Certification | 202 | **1,747** |
| Pre-movement (Citrus Nursery Certification) | 12 | **232** |
| Site or Pit Approval (Citrus Nursery and Other Certifications) | 47 | **188** |

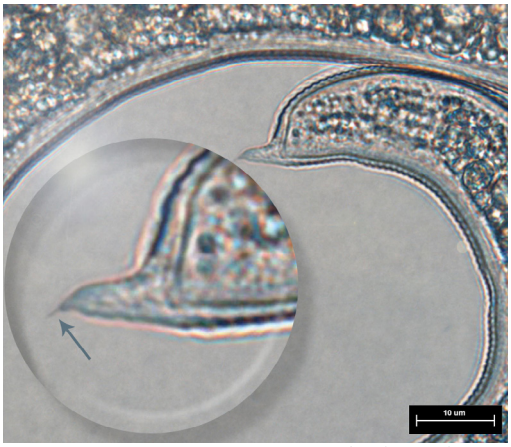
### Other Samples

| | November December | Year to date |
|---|---|---|
| Identifications (invertebrate) | 1 | 27 |
| Plant Problems | 16 | **142** |
| Intrastate Survey, Random | 184 | **1,328** |

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

***Helicotylenchus paxilli* (a spiral nematode)** female recovered from *Paspalum conjugatum* (sourgrass)
Photograph courtesy of J. D. Stanley, DPI

***Paspalum conjugatum* (sourgrass).**
Photograph courtesy of Wikimedia Commons http://commons.wikimedia.org/wiki/File:Paspalum_conjugatum_ogswrssmhy04.jpg



***Helicotylenchus paxilli* (a spiral nematode)** female posterior portion of the body. Note the ventral projection of the tail with a mucro.
Photograph courtesy of J. D. Stanley, DPI.

Collectors submitting five or more samples that were processed for nematological analysis November - December 2014.

| | | | | |
|---|---|---|---|---|
| Burgos, Frank A. | **93** | | LeBoutillier, Karen W. | **51** |
| Clanton, Keith B. | **22** | | Ochoa, Ana L. | **56** |
| Echols, Mary J. | **5** | | Southerland, Lane P. | **11** |
| Keen, Emily I. | **13** | | Spriggs, Charles L. | **87** |
| Krueger, Scott D. | **12** | | Violett, Larry L. | **42** |

## References

**Crow, W.T., J.E.Luc, N.S.Sekora and W.Pang. 2013.** Interaction between *Belonolaimus longicaudatus* and *Helicotylenchus pseudorobustus* on bermudagrass and seashore paspalum hosts. Journal of Nematology 45: 17-20.

**Subbotin, S.A., N.Vovlas, G.W.Yeates, J.Hallmann, S.Kiewnick, V.N.Chizhov, R.H.Manzanilla-López, R.N.Inserra and P.Castillo. 2015.** Morphological and molecular charcterisation of *Helicotylenchus pseudorobustus* (Steiner, 1914) Golden, 1956 and related species (Tylenchida: Hoplolaimidae) with a phylogeny of the genus. Nematology 17: (In press).

## 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 diagnoses 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.

**Brief Updates on Recent Important Pathogens in Florida**

During this reporting period, three diseases that have been the subject of considerable attention in recent years continue to surface:

***Raffaelea lauricola* (laurel wilt)** appeared in two new counties in the Panhandle of Florida for the first time. Gaps in the geographic range as the pathogen moves west are filling in. Outposts of this disease are already as far west as coastal Mississippi. (Walton County; 82694; Larry W. Smith; 26 November 20014 and Holmes County; 82848; Larry W. Smith; 2 December 2014.)

***Potyvirus passionfruit woodiness virus*** turned up again in plants at a butterfly farm in Bradford County in North Florida. This potyvirus, one of three known on this host, can be very damaging. The virus was unknown in the United States until popularity of this plant as a fruit crop and forage plant for butterfly larvae increased in the 1980s and 1990s. A survey for the virus in 1991 was negative; however, in 2009, *Passiflora* samples from a Broward county butterfly garden tested positive for the virus. Since that discovery, we now have additional reports from Bradford, plus Miami-Dade, Duval, Alachua, Polk, Nassau, Collier and Palm Beach counties. (Bradford County; 82491; M. Jane Echols; 7 November 2014.)

***Pseudomonas* sp. (undescribed)**, the new bacterial canker and gall on stems of *Loropetalum chinense* caused by an undetermined or undescribed species of *Pseudomonas* continues to show up at low, but steady, levels. By careful attention to the health of propagation materials and roguing of symptomatic liners, this disease will decline to minor levels quickly. Several growers note poor growth and some mortality of infected plants as they age. In a few cases, older plants installed in landscapes before the disease was recognized show some potential to perform satisfactorily when given optimal care. Taxonomic work on this bacterial pathogen continues. (Nassau County; 82409; Lisa M. Hassell; 4 November 2014 and St. John's County; 82655; Kaleigh N. Hire and Sol F. Looker; 25 November 2014.)

### Sample Submissions

| | November December | Year to date |
|---|---|---|
| Citrus Black Spot | 3 | 58 |
| Citrus Canker | 167 | 1,178 |
| Citrus greening HLB | 36 | 1,562 |
| Honey Bees | 17 | 54 |
| Interdictions | 3 | 48 |
| Laurel Wilt | 4 | 81 |
| General Pathology | 414 | 2,835 |
| Soil | 3 | 23 |
| Sudden Oak Death | 0 | 13 |
| Sweet Orange Scab-like Disease | 2 | 12 |
| Texas Phoenix Palm Decline | 0 | 32 |
| Water | 0 | 9 |
| Miscellaneous | 3 | 41 |
| **Total** | **652** | **5,946** |

| Plant Species | Plant Common Name | Causal Agent | Disease Name | Location Type | Sample Number | County | Collector | Date | New Records | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| *Ajuga reptans* | creeping bugleweed | unidentified Potyvirus | leaf stunt and thickening | nursery | 82458 | Duval | Theresa R. Estok | 11/4/2014 | | The potyvirus detected here will require more work to identify with certainty. |
| *Buxus sempervirens* | common boxwood | *Thielaviospsis basicola* | black root rot | nursery | 82513 | Gadsden | Michael A. Bentley | 11/4/2014 | Host | Black root rot is a new record on this host in Florida. Only California in the US has reported it before. This plant was also infected with *Volutella buxi*. Boxwood is under regulatory scrutiny for the boxwood blight pathogen *Cylindrocladium pseudonaviculatum*, known from host range farther north, but not present in Florida. |
| *Canna* sp. | canna | *Puccinia thaliae* | leaf rust | nursery | 82443 | Orange | Jodi L. Hansen, Carlye A. Baker, David A. Davison, Susan E. Halbert, Ian C. Stocks, Anthony Puppelo and George A Warden | 11/4/2014 | | This rust also infects the wetland plant *Thalia geniculata* (bent alligator flag) and plants in the Marantaceae. An invalid name for the pathogen is *Puccinia cannae*. |
| *Cassia fistula* | golden shower cassia | *Phyllachora canafistulae* | tar spot | landscape | 82523 | Orange | Property owner | 11/6/2014 | | This tar spot pathogen is restricted to this particular host genus. Defoliation can occur if severe. |
| *Fragaria* x *ananassa* | strawberry | *Xanthomonas fragariae* | bacterial leaf spot | IFAS breeding and variety trial plots | 82892 | Marion | Janine M. Razze, University of Florida | 12/16/2014 | | Unusually severe bacterial leaf spot was accompanied by the red stele pathogen of strawberry, *Phytophthora fragariae*. Both pathogens are host specific and have the potential for serious damage. |

| Plant Species | Plant Common Name | Causal Agent | Disease Name | Location Type | Sample Number | County | Collector | Date | New Records | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| *Ilex cassine* | dahoon holly | *Sphaeropsis tumefaciens* | Sphaeropsis gall witches' broom | nursery | 82451 | Collier | Scott D. Krueger | 11/5/2014 | | The Sphaeropsis gall and witches' broom fungal pathogen infects at least 33 genera of woody plants in Florida. It is particularly damaging to *Ilex* and *Callistemon* spp. |
| *Loropetalum chinense* | Chinese fringe bush, loropetalum | *Pseudomonas* sp. | Loropetalum stem gall and canker | nursery | 82409; 82655 | Nassau; St. Johns | Lisa M. Hassell; Kaleigh N. Hire and Sol F. Looker | 11/4/2014; 11/25/14 | | Taxonomic work to assign or describe a new species continues on this new bacterial pathogen of loropetalum. |
| *Musa* sp. | ornamental banana | *Deightoniella torulosa* | leaf spot and necrosis | nursery | 82138 | Orange | Lance A. Brown | 11/5/2014 | | An occasionally encountered fungal leaf spotter of *Musa* sp. |
| *Passiflora* sp. | passion vine | *Potyvirus Passionfruit woodiness virus* | leaf mottle and distortion | butterfly display farm | 82491 | Bradford | M. Janie Echols | 11/7/2014 | | This serious virus of *Passiflora* is transmitted by aphids and especially by careless asexual propagation of infected plants. |
| *Persea palustris* | swamp bay | *Raffaelea lauricola* | laurel wilt | natural areas | 82694; 82848 | Walton; Holmes | Larry W. Smith (both samples) | 11/26/14; 12/2/14 | County (both) | New fill-in counties in the Panhandle for laurel wilt incidence in Florida |
| *Pilocereus robinii* | Key tree cactus | *Botryosphaeria dothidea* | stem canker | nursery | 82906 | Miami-Dade | Owner | 12/16/2014 | | Attempts to propagate this threatened cactus of the Florida Keys is hampered by this fungal pathogen which takes advantage of vigorously growing well-watered plants. |
| *Psychotria nervosa* | wild-coffee | *Pseudocercospora* sp. | leaf spot | dooryard | 82723 | Miami-Dade | Olga Garcia | 12/3/2014 | | Fungal pathogen appears to be an undescribed species of *Pseudocercospora* on this host |
| *Punica granatum* | pomegranate | *Pseudocercospora punicae* | leaf spot | farm | 82520 | Hardee | Scott D. Berryman and Richard T. Bloom | 11/13/2014 | | This fungal pathogen is usually restricted to leaf spot, but was blighting new shoots in this case. |