TRI-OLOGY

A Publication of the Florida Department of Agriculture and Consumer Services, Division of Plant Industry
Adam H. Putnam, Commissioner
Trevor R. Smith, 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.

***Bactrocera dorsalis,* oriental fruit fly,** male
Photograph courtesy of Gary J. Steck, DPI

***Helicoverpa armigera* (Old World bollworm) This is the third specimen collected in Florida.**
Photograph courtesy of James E. Hayden, DPI

***Tarophagus colocasiae* (a taro planthopper)**
Photograph courtesy of Susan E. Halbert, DPI

***Striga gesnerioides* (cowpea witchweed) growing in corn field**
Photograph courtesy of Bugwood

Highlights

Following are a few of the notable entries from this volume of TRI-OLOGY. These entries are reports of interesting plants or unusual pests, some of which may be problematic. See Section Reports for complete information.

***Bactrocera dorsalis*, oriental fruit fly, a regulatory incident.** One male oriental fruit fly was captured in a fruit fly detection trap in Kendall, followed by another single male about 13 miles away in the Redland Agricultural District, followed by an astounding 45 males in a single trap, also in Redland.

***Helicoverpa armigera* , Old World bollworm, a new Continental USA record.** This moth was collected in a survey trap in a tomato field. It is a major, polyphagous Old World pest that has become established in South America and, more recently, in Puerto Rico and the Dominican Republic.

***Tarophagus colocasiae,* a taro planthopper, a new Continental USA record.** This species is a well-known pest of taro, a crop also known as dasheen. It causes direct damage, and taro planthoppers have been found to transmit plant viruses.

***Tenuipalpus anonnae*, a tenuipalpid mite, a new Continental USA record**. This mite was described from *Annona* sp. from southern Mexico. In Florida, *T. anonnae* was found on *Annona muricata* L. (soursop).

***Grovesinia moricola* (a leaf pathogen) appears early this year.** This year, the leaf spot pathogen *Grovesinia moricola* made a surprisingly early appearance. Typically, this fungus shows up to mark the late summer stage of the growing season. *Lagerstroemia indica* (crape-myrtle) is the most commonly infected species we see, although pecan (*Carya illinoinensis*) is also susceptible. This year the fungus was found infecting a new host, *Carya glabra* (pignut hickory).

***Striga gesnerioides* (Willd.) Vatke (cowpea witchweed or tobacco witchweed)** was found near the margins of a tomato field. This is the first documented occurrence of this species in Manatee County. This species, like all species of *Striga,* is a hemiparasite—a parasitic plant that contains some chlorophyll and is capable of photosynthesis, but takes some resource from its host. The host was not documented, but *Indigofera hirsuta* was collected nearby.

Section Reports

Photograph courtesy of W.C. 'Cal' Welbourn, 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. Greg Hodges, 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 12,000 plants and nearly 1,400 vials of seeds.

Some of the samples received for identification are discussed below:

***Striga gesnerioides* (Willd.) Vatke (cowpea witchweed or tobacco witchweed)**, from a genus of approximately 40 species native to Africa, Asia and Australia. Orobanchaceae (traditionally placed in Scrophulariaceae). This is an annual, herbaceous, root parasite growing to 30 cm tall. The leaves are small and scalelike, opposite or subopposite, and appressed to the stem. The inflorescence is a terminal spike equaling or exceeding the vegetative stem. Flowers are opposite or rarely alternately arranged on the inflorescence, congested or spaced apart, sessile and are subtended by small, lanceolate bracts with incurved tips and ciliate margins. The calyx is tubular, five-ribbed, scarious between the ribs, with five unequal teeth and ciliate margins. The corolla may be brownish-red, pink, purple or white in color. The corolla tube is bent just below the spreading lobes. The three lower corolla lobes are larger than the two upper ones. Capsules are ovoid to oblong and contain hundreds of tiny, ridged seeds.

All species of *Striga* are hemiparasites—parasitic plants that contain some chlorophyll and are therefore capable of photosynthesis. Most are parasites on grasses, but several are restricted to dicotyledonous hosts. Five species (*S. asiatica*, S. *aspera*, *S. forbesii*, *S. hermonthica* and *S. gesnerioides*) are major pests of agronomic crops. The first four parasitize a diversity of staple grain crops including corn, sorghum, pearl millet and rice, as well as sugarcane. *Striga gesnerioides* is the most geographically widespread species in the genus, with multiple strains parasitizing a variety of dicots, including species in the Fabaceae, Euphorbiaceae, Convolvulaceae, Acanthaceae and Solanaceae. Agronomic crops affected by *S. gesnerioides* include cowpea, tobacco and sweet potato. Because of their potential agronomic impacts, all species of *Striga* are classified as noxious weeds by the United States Department of Agriculture, but to date, only two species have been found in the United States. *Striga asiatica* was reported from southern North Carolina and adjacent South Carolina in 1956, and eventually spread to 38 counties in the eastern Carolinas, but a vigorous eradication campaign has reduced its extent by 99%. *Striga gesnerioides* was discovered in Polk County, Florida in 1979, growing on two different non-native leguminous hosts—hairy indigo (*Indigofera hirsuta*) and alyce clover (*Alysicarpus ovalifolius*). It has subsequently been documented in Citrus, Hillsborough, Lake, Orange and Seminole counties. This is the first documented occurrence of this species in Manatee County, where it was found near the margins of a tomato field. The host was not documented, but *Indigofera hirsuta* was collected nearby. (Manatee County; James E. Hayden; Julieta Brambila, USDA; Kevin E. Everhart, DPI/CAPS; and Lane P. Southerland, DPI/CAPS; 23 July 2015.) (Langdon 1979; Mohamed and Musselman 2012; Mohamed *et al.* 2001.) (Marc S. Frank.)

Sample Submissions

	July August	Year to date
Samples submitted by other DPI sections	1,277	**4,513**
Samples submitted for botanical identification only	139	**616**
Total samples submitted	1,416	**5,129**
Specimens added to the herbarium	126	**319**

***Striga gesnerioides* (cowpea witchweed) flower**
Photograph courtesy of Patti J. Anderson, DPI

***Striga gesnerioides* (cowpea witchweed) growing in corn field**
Photograph courtesy of Bugwood

***Flacourtia indica* (Burm.f.) Merr.** (**governor's plum, Madagascar plum),** from a genus of 15 species native to the Old World tropics and South Africa. Salicaceae (formerly Flacourtiaceae). This bushy, dense evergreen tree, often with spines on the trunk and main branches, is widely distributed throughout tropical Africa, Madagascar and tropical Asia, and is planted as a fruit tree in warmer parts of the New World. It is hardy in South Florida and has become weedy there. In fact, the Florida Exotic Pest Plant Council (FLEPPC) has included the plant on its List of Invasive Species (Category II). Its alternate leaves are dark green and glossy, flushed reddish or coppery on the new growth. The small white flowers are inconspicuous and seldom noticed. Staminate (pollen-bearing) and pistillate (fruit-bearing) flowers are borne on separate trees. The round, 2.5 cm diameter, dark red fruits are plum-like in texture, but with 6-10 small seeds. The flesh of the fruit is variable in quality, often sweet, but sometimes bitter or astringent, and its appeal is evidently limited. In its native range, all parts of the governor's plum are important in treating ailments from snakebite to diarrhea and pneumonia. (Miami- Dade County; B2015-595; Olga Garcia; 20 August 2015 and Palm Beach County; B2015-615; Mark J. Aubry, USDA; 27 August 2015.) (Mabberley 2008; Morton 1987; http://efloras.org/florataxon.aspx?flora_id=1&taxon_id=200014454 [accessed 9 September 2015].)

Flacourtia indica (Burm.f.) Merr. (governor's plum, Madagascar plum) flower
Photograph courtesy of Pat Howell, Atlas of Florida Vascular Plants

Flacourtia indica (Burm.f.) Merr. (governor's plum, Madagascar plum) fruit
Photograph courtesy of Pat Howell, Atlas of Florida Vascular Plants

References

Langdon, K.R. 1979. Cowpea witchweed, *Striga gesnerioides*, a newly discovered root-parasitic weed introduced in Florida. Florida Department of Agriculture and Consumer Services, Division of Plant Industry, Nematology (Botany) Circular No. 48. http://www.freshfromflorida.com/Divisions-Offices/Plant-Industry/Plant-Industry-Publications/Botany-Circulars/Nema.-Botany-Cir.-48 [accessed 10 August 2015].

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Mohamed, K.I., L.J. Musselman and C.R. Riches. 2001. The genus *Striga* (Scrophulariaceae) in Africa. Annals of the Missouri Botanical Garden 88(1): 60-103.

Morton, J.F. 1987. Fruits of warm climates. Julia F. Morton, Miami, Florida. Distributed by Creative Resources Systems, Winterville, North Carolina. 505 p.

The following table provides information about samples identified during this time period.

Another table with information about all samples identified during this time is downloadable as a PDF or Excel spreadsheet. The table is organized alphabetically by collector name, with new county records listed first. (DOWNLOAD FILE)

New County Records

New Record	Collector Name 1	Collector Name 2	Plant Species	Plant Common Name	Country
*	Kaleigh Hire		*Cinnamomum camphora* (L.) J. Presl	camphortree; camphor-laurel; Japanese camphortree	St. Johns
*	Kelly K. Douglas		*Dioscorea bulbifera* L.	air potato; potato yam; air yam	Gilchrist
*	Kevin S. Loadholtz	P. Karen Coffey	*Casuarina glauca* Sieber ex Spreng.	suckering Australian-pine; swamp she-oak; gray she-oak; Brazilian beefwood	Flagler
*	Linda G. McRay		*Tradescantia zebrina* Bosse	wandering-jew; inch plant	Pinellas
*	Lisa M. Hassell		*Colocasia esculenta* (L.) Schott	dasheen; wild taro; taro; elephant's ear, cocoyam, eddo	Duval
*	M. 'Janie' Echols		*Dioscorea alata* L.	white yam; greater yam; water yam; winged yam	Bradford
*	M. 'Janie' Echols		*Ipomoea quamoclit* L.	cypress vine, starglory; cardinal climber	Union
*	M. 'Janie' Echols		*Solanum viarum Dunal*	tropical soda-apple; Sodom apple; apple-of-Sodom	Union
*	Shelly M. Wayte		*Dioscorea alata* L.	white yam; greater yam; water yam; winged yam	Marion
*	Theresa R. Estok		*Artemisia ludoviciana* Nutt.	white sagebrush, silver wormwood, Louisiana wormwood, mugwort wormwood	Alachua
*	Theresa R. Estok		*Lagerstroemia indica* L.	crape myrtle, crepe myrtle, crepeflower	Alachua
*	William J. Salway		*Nyssa ogeche* W. Bartram ex Marshall	ogeechee tupelo; ogeechee-lime	Pinellas
	Andrew Derksen, CAPS	Cristina Urbina, USDA	*Leucophyllum frutescens* (Berland.) I.M. Johnst.	Texas sage, Texas silverleaf, cenizo, purple sage, barometer bush	Miami-Dade
	Anthony Gubler		*Leucaena leucocephala* (Lam.) de Wit	leadtree, white leadtree, horse tamarind, jumbie bean	Brevard
	Bobbe A. Rose		*Galium hispidulum* Michx.	coastal bedstraw	Pinellas
	Bobbe A. Rose		*Gramineae*	grass	Pinellas
	Bobbe A. Rose		*Vaccinium myrsinites* Lam.	shiny blueberry; low bush blueberry	Pinellas
	Bryce J. Merritt		*Rhamnus caroliniana* Walter	Carolina buckthorn; Indian cherry; yellow buckthorn	Orange
	Cristina Urbina, USDA	Andrew Derksen, CAPS	*Amaranthus spinosus* L.	spiny amaranth	Miami-Dade
	Cristina Urbina, USDA	Andrew Derksen, CAPS	*Crotalaria* sp.	rattlebox	Miami-Dade

New Record	Collector Name 1	Collector Name 2	Plant Species	Plant Common Name	Country
	Cristina Urbina, USDA	Andrew Derksen, CAPS	*Toxicodendron radicans* (L.) Kuntze	poison ivy	Miami-Dade
	Dagne A. Vasquez		*Diospyros digyna* Jacq.	black sapote; chocolate pudding tree	St. Lucie
	David Davison, DPI		*Helianthus tuberosus* L.	Jerusalem artichoke	Clay
	Deborah L. Simmons		*Castanea mollissima* Blume	Chinese chestnut, Chinese hairy chestnut	Pinellas
	Doug Restom-Gaskill, USDA	Jim Walker, USDA	*Indigofera hirsuta* L.	hairy indigo, rough hairy indigo	Manatee
	Duraid I. Hanna		*Cestrum diurnum* L.	day-blooming jasmine; day jessamine	Miami-Dade
	Eric M. Cohen, USDA		*Flacourtia jangomas* (Lour.) Raeusch.	Indian plum, coffee plum, Chinese plum, kerkup	Palm Beach
	Eric M. Dougherty, CAPS	Julio Garcia, CAPS	*Solanum torvum* Sw.	Thai eggplant; turkeyberry; susumber; devil's-fig; gully-bean	Broward
	Eric M. Dougherty, CAPS	Cristina Urbina, USDA	*Trema micrantha* (L.) Blume	Florida trema; nettletree; Jamaican nettletree	Broward
	Esteban Godinez		*Persea palustris* (Raf.) Sarg.	swamp bay	Miami-Dade
	Gabriela M. Bernard		*Drimiopsis maculata* Lindl. & Paxton	African false hosta; little white soldiers; leopard plant	Pinellas
	Gabriela M. Bernard		*Ludwigia maritima* Harper	seaside primrose-willow	Pinellas
	Gabriela M. Bernard		*Polypremum procumbens* L.	juniper leaf; rustweed	Pinellas
	George Butler		*Vesicularia vesicularis* (Schwagr.) Broth.	vesicularia moss	Miami-Dade
	Glen Bupp	Anthony Gubler	*Annona* sp.		Brevard
	Glen Bupp		*Bigelowia nudata* (Michx.) DC. ssp. australis L.C. Anders.	pineland rayless goldenrod	Brevard
	Glen Bupp		*Sapium sebiferum* (L.) Roxb.	Chinese tallow tree; popcorn tree	Brevard
	Glen Bupp		*Sesbania* sp.		Brevard
	Glen Bupp	Anthony Gubler	*Stenocarpus sinuatus* (A. Cunn.) Endl.	firewheel tree; wheel-of-fire tree; white silky oak	Brevard
	Gloria Gonzalez		*Kigelia africana* (Lam.) Benth.	sausage tree; African cucumber tree	Miami-Dade
	Gordon Bonn		*Psidium guajava* L.	common guava; apple guava	Broward
	Gregg D. Farina	Serena Stornaiuolo	*Delphinium* sp.	delphinium	Orange
	Harry L. Morrison		*Clerodendrum* sp.	glorybower	Sumter
	Haylett Cruz-Escoto		*Mikania micrantha* Kunth	climbing hempweed, mile-a-minute vine	Miami-Dade
	Haylett Cruz-Escoto	Rosamaria M. Quiñones	*Mikania micrantha* Kunth	climbing hempweed, mile-a-minute vine	Miami-Dade
	Holly A. Alred		*Psidium guajava* L.	common guava; apple guava	Lake
	Holly A. Alred	Stacey S. Simmons	*Rhynchosia reniformis* DC.	dollarweed	Hernando
	Ives Lopez		*Schinus molle* L.	Peruvian peppertree; pirul; California peppertree; false pepper	Miami-Dade
	Jake M. Farnum		undetermined		Monroe
	Jake M. Farnum		*Leguminosae*	sterile legume	Miami-Dade

New Record	Collector Name 1	Collector Name 2	Plant Species	Plant Common Name	Country
	Jake M. Farnum		*Amaranthus blitum* L.	purple amaranth; livid amaranth; slender amaranth; Guernsey pigweed	Miami-Dade
	Jake M. Farnum		*Bischofia javanica* Blume	bishopwood tree; Java wood; toog	Miami-Dade
	Jake M. Farnum		*Cuscuta pentagona* Engelm.	fiveangled dodder; field dodder; prairie dodder	Miami-Dade
	Jake M. Farnum		*Dioscorea bulbifera* L.	air potato; potato yam; air yam	Monroe
	Jake M. Farnum		*Jatropha multifida* L.	coral plant; coral bush; French physic nut	Miami-Dade
	Jake M. Farnum		*Mikania micrantha* Kunth	climbing hempweed, mile-a-minute vine	Miami-Dade
	Jake M. Farnum		*Mikania micrantha* Kunth	climbing hempweed, mile-a-minute vine	Miami-Dade
	Jake M. Farnum		*Pouteria sapota* (Jacq.) H. E. Moore & Stearn	mamey sapote; mamey colorado; mammee sapote; naseberry	Miami-Dade
	Jake M. Farnum		*Pseudobombax ellipticum (*Kunth) Dugand	shaving brush tree	Monroe
	Jake M. Farnum		*Zanthoxylum fagara* (L.) Sarg.	wild-lime, lime prickly-ash, colima	Monroe
	James C. Lee		*Lagerstroemia* sp.	crape myrtle	Palm Beach
	James C. Lee		*Mimusops elengi* L.	Spanish cherry, medlar, bulletwood, maulsari, kabiki, bakul	Palm Beach
	Jason B. Sharp		*Eupatorium serotinum* Michx.	late-flowering thoroughwort, late boneset, fall boneset, late eupatorium	Manatee
	Jason B. Sharp		*Heteranthera limosa* (Sw.) Willd.	blue mudplantain	Manatee
	Jeanie P. Frechette	Carlos Averhoff-Chirino	*Conradina grandiflora* Small	largeflower false rosemary	Indian River
	Jeanie P. Frechette	Carlos Averhoff-Chirino	*Rhus copallinum* L.	winged sumac, flameleaf sumac, shining sumac, black sumac	Indian River
	Jennifer Mestas		*Citrus hystrix* DC.	kaffir lime, caffre lime, Mauritius papeda, makrut, lime leaf	Broward
	John G. Caruso, USDA		*Lauraceae*	probably *Cinnamomum* sp.	Broward
	John G. Caruso, USDA		*Piscidia piscipula* (L.) Sarg.	fish poison tree, Florida fish poison tree, Jamaican dogwood, fish fuddle	Broward
	John G. Caruso, USDA		*Terminalia muelleri Benth.*	Australian almond, Mueller's damson	Broward
	Justin K. Anto		*Ardisia elliptica* Thunb.	shoebutton ardisia	Broward
	Justin K. Anto		*Coccinia grandis* (L.) Voigt	ivy gourd, tindora	Broward
	Kaleigh Hire		*Bacopa* sp.	waterhyssop	St. Johns
	Kaleigh Hire		*Commelina* benghalensis L.	tropical spiderwort, Benghal dayflower, jio	Duval
	Kaleigh Hire		*Ipomoea* sp.	morning glory	St. Johns
	Kaleigh Hire		*Ipomoea* sp.	morning glory	St. Johns
	Kaleigh Hire		*Koelreuteria elegans* (Seem.) A.C. Sm.	golden raintree; flamegold; copperpod	Duval
	Kaleigh Hire		*Lygodium japonicum* (Thunb.) Sw.	Japanese climbing fern	Duval

New Record	Collector Name 1	Collector Name 2	Plant Species	Plant Common Name	Country
	Kaleigh Hire		*Pilea microphylla* (L.) Liebm.	rockweed, artillery plant	St. Johns
	Kaleigh Hire		*Polygonum* sp.	knotweed, smartweed	St. Johns
	Kaleigh Hire		*Smilax* sp.	catbrier, greenbrier	St. Johns
	Karen R. Destefano		*Ximenia americana* L.	tallowwood; hog plum	Pasco
	Karen W. LeBoutillier		*Ficus* sp.		Miami-Dade
	Kelly K. Douglas	Theresa R. Estok	*Commelina benghalensis* L.	tropical spiderwort, Benghal dayflower, jio	Levy
	Kelly K. Douglas		*Commelina benghalensis* L.	tropical spiderwort, Benghal dayflower, jio	Marion
	Kelly K. Douglas		*Commelina benghalensis* L.	tropical spiderwort, Benghal dayflower, jio	Levy
	Kelly K. Douglas		*Heliotropium amplexicaule* Vahl	clasping heliotrope	Levy
	Kelly K. Douglas	Cheryl A. Jones	*Ipomoea hederifolia* L.	scarlet creeper; scarlet morning glory; ivy-leaf morning glory	Lafayette
	Kelly K. Douglas	Cheryl A. Jones	*Ipomoea quamoclit* L.	cypress vine, starglory; cardinal climber	Lafayette
	Kelly K. Douglas	Cheryl A. Jones	*Macroptilium lathyroides* (L.) Urb.	wild bushbean; phasey bean; phasery bean; cow pea	Lafayette
	Kelly K. Douglas		*Paronychia rugelii* (Chapm.) Shuttlew. ex Chapm.	Rugel's nailwort, sand squares	Dixie
	Kelly K. Douglas	Theresa R. Estok	*Sapium sebiferum* (L.) Roxb.	Chinese tallow tree; popcorn tree	Levy
	Kelly K. Douglas	Cheryl A. Jones	*Sesamum indicum* L.	sesame	Suwannee
	Kelly K. Douglas		*Solanum viarum* Dunal	tropical soda-apple; Sodom apple; apple-of-Sodom	Marion
	Larry Byrd, USDA		*Syzygium cumini* (L.) Skeels	Java plum; Malabar plum; jambolan; jamun; duhat	Polk
	Linda G. McRay		*Chamaesyce hypericifolia* (L.) Mill sp.	graceful sandmat; chickenweed; graceful spurge; lechosa	Pinellas
	Linda G. McRay		*Ludwigia erecta* (L.) H. Hara	yerba de jicotea	Pinellas
	Linda G. McRay		*Rudbeckia hirta* L.	black-eyed Susan	Pinellas
	Lisa M. Hassell		*Diodia teres* Walter	poorjoe, rough buttonweed	Duval
	Lisa M. Hassell		*Eupatorium linearifolium* Walter	waxy thoroughwort	Nassau
	Lisa M. Hassell		*Lachnocaulon anceps* (Walter) Morong	whitehead bogbutton	Nassau
	Lisa M. Hassell		*Marshallia graminifolia* (Walter) Small	grassleaf Barbara's buttons	Nassau
	Lisa M. Hassell		*Physalis angulata* L.	cutleaf groundcherry, mullaca	Nassau
	Lisa M. Hassell		*Pluchea baccharis* (Mill.) Pruski	rosy camphorweed	Nassau
	M. 'Janie' Echols	Cheryl A. Jones	*Ligustrum sinense* Lour.	Chinese privet; hedge privet; small leaved privet	Bradford
	M. 'Janie' Echols		*Sarracenia* sp.	pitcherplant	Suwannee
	Marieta Figueroa		*Murraya koenigii* (L.) Spreng.	curryleaf, currybush, Indian bay	Miami-Dade
	Mark J. Aubry, USDA		*Conocarpus erectus* L.	buttonwood, button mangrove	Palm Beach

New Record	Collector Name 1	Collector Name 2	Plant Species	Plant Common Name	Country
	Mark J. Aubry, USDA		*Flacourtia indica* (Burm. f.) Merr.	governor's plum; Indian plum; Madagascar plum; ramontchi	Palm Beach
	Olga Garcia		*Flacourtia indica* (Burm. f.) Merr.	governor's plum; Indian plum; Madagascar plum; ramontchi	Miami-Dade
	Olga Garcia		*Pseuderanthemum variabile* (R. Br.) Radlk.	love flower; pastel flower	Miami-Dade
	P. Karen Coffey	Kevin S. Loadholtz	*Ampelopsis arborea* (L.) Koehne	peppervine	Flagler
	P. Karen Coffey		*Callistemon* sp.	bottlebrush	Flagler
	P. Karen Coffey		*Callistemon* sp.	bottlebrush	Flagler
	P. Karen Coffey		*Diospyros virginiana* L.	common persimmon, American persimmon	Flagler
	Rafael A. Martinez, USDA		*Eucalyptus torelliana* F. Muell.	cadaga; bloodleaf gum; Torell's eucalyptus; cadaghi gum	Broward
	Rafael A. Martinez, USDA		*Ficus pumila* L.	creeping fig; climbing fig; fig vine	Monroe
	Rafael A. Martinez, USDA		*Morinda royoc* L.	redgal, cheese shrub, yellowroot, mouse's pineapple	Monroe
	Ray Jarrett, UCF		*Pouzolzia zeylanica* (L.) Benn.	Pouzolz's bush; graceful pouzolzsbush	Orange
	Richard L. Blaney		*Apocynaceae*		Charlotte
	Richard T. Bloom	Scott D. Berryman	*Paspalum notatum* Fluegge	Bahia grass	Okeechobee
	Ritchilda V. Traya, CAPS/IMS		*Ziziphus mauritiana* Lam.	Indian jujube, cottony jujube, ber, chinee apple, Indian date	Nassau
	Roaida Said Gonzalez, CAPS/IMS	Harrell Randolph	*Moringa oleifera* Lam.	horseradish tree; drumstick tree; ben oil tree	Suwannee
	Scott D. Berryman		*Piper* sp.		Highlands
	Shelly M. Wayte		*Parthenium hysterophorus* L.	Santa Maria feverfew; white top; escoba amarga; false ragweed; ragweed parthenium	Marion
	Shelly M. Wayte		*Sesbania herbacea* (Mill.) McVaugh	danglepod, bigpod sesbania	Marion
	Sol F. Looker		*Cuscuta pentagona* Engelm.	fiveangled dodder; field dodder; prairie dodder	Clay
	Sol F. Looker		*Lonicera japonica* Thunb.	Japanese honeysuckle	Clay
	Sol F. Looker		*Lygodium japonicum* (Thunb.) Sw.	Japanese climbing fern	Clay
	Sol F. Looker		*Sabatia* sp.	rosegentian	Flagler
	Sol F. Looker		*Vigna luteola* (Jacq.) Benth.	hairypod cowpea	Flagler
	Stephen R. Jenner		*Camellia japonica* L.	common camellia	Citrus
	T.J. Coburn		*Cinnamomum camphora* (L.) J. Presl	camphortree; camphor-laurel; Japanese camphortree	Polk
	Terrence D. Williams, USDA		*Byrsonima crassifolia* (L.) Kunth	golden spoon; nance tree; craboo	Orange
	Theresa R. Estok		*Asimina angustifolia* Raf.	slimleaf pawpaw	Alachua
	Theresa R. Estok	Cheryl A. Jones	*Gossypium* sp.	cotton	Alachua
	Theresa R. Estok		*Pavonia lasiopetala* Scheele	Texas swampmallow, Texas rock rose, rose mallow, rose pavonia, Wright pavonia	Alachua
	Theresa R. Estok		*Sapium sebiferum* (L.) Roxb.	Chinese tallow tree; popcorn tree	Alachua
	Theresa R. Estok		*Selaginella apoda* (L.) Fernald	meadow spike-moss	Alachua

Sample/Specimen Submissions

July	
Samples Submitted	**878**
Specimens Identified	**13,417**
August	
Samples Submitted	**601**
Specimens Identified	**10,941**
Year to Date	
Samples Submtted	**5,005**
Specimens Identified	**84,538**

***Bactrocera dorsalis*, oriental fruit fly,** male
Photograph courtesy of Gary J. Steck, DPI

Methyl eugenol trap with 45 male oriental fruit flies
Photograph courtesy of Gary J. Steck, DPI

***Helicoverpa armigera* (Old World bollworm) This is the third specimen collected in Florida.**
Photograph courtesy of James E. Hayden, 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.

***Bactrocera dorsalis*, oriental fruit fly, a regulatory incident.** One male oriental fruit fly was captured in a fruit fly detection trap in Kendall, followed by another single male about 13 miles away in the Redland Agricultural District, followed by an astounding 45 males in a single trap, also in Redland. As of 31 August 2015, a total of 101 males and 8 larvae had been captured. Intensive delimitation trapping grids were established over approximately 80 square miles around each of the detection areas, and an eradication program was initiated in the Redland Agricultural District. Additionally, a quarantine area regulating the movement of oriental fruit fly host plants will be established once a public notification has been published. This is an unprecedented outbreak of oriental fruit fly in Florida. Based on current estimates, the eradication program and quarantine will continue until at least late December 2015. (Miami-Dade County; E2015-4798; Erik L. Aleman-Espino; 17 Aug 2015, Miami-Dade County; E2015-4945; Miguel Justiz; 26 Aug 2015, and Miami-Dade County; E2015-4946; Eugenia Orji-Okoro and Luis Bradshaw; 27 Aug 2015.) (Dr. Gary J. Steck.)

***Helicoverpa armigera* , Old World bollworm, a new Continental USA record.** This moth was collected in a survey trap in a tomato field. It is a major, polyphagous Old World pest that has become established in South America and, more recently, in Puerto Rico and the Dominican Republic. The pest was identified by Julieta Brambila, USDA-APHIS-PPQ, confirmed by Dr. James E. Hayden, and reconfirmed soon afterward by Dr. Paul Z. Goldstein, USDA ARS Systematic Entomology Laboratory, using morphological analysis, and by Dr. Norman B. Barr and Roxanne E. Farris, USDA-APHIS-PPQ-CPHST-Mission Lab, Edinburg, Texas, via molecular analysis. Subsequent processing of backlogged samples identified a second specimen from the same trap. A third specimen was collected in a trap about 3/4 miles west on July 9.

The moth's ability to fly long distances caused concern that a population could spread quickly. An intensive delimitation survey in Bradenton was organized immediately by FDACS-DPI and USDA, led by the Cooperative Agriculture Pest Survey (CAPS) program. The survey involves a large number of pheromone traps, deployed within a 25-mile radius of the original find, and larval scouting. The lure used in the traps also attracts the native *H. zea*, and these moths have been trapped in abundance. Trapping will continue through at least three calculated generations. No more specimens of *H. armigera* have been collected, and no unusual plant damage has been reported. The field with the original detection was disked immediately to inhibit the emergence of adults from pupae. The field remained fallow for the rest of the summer. (Manatee County; E2015-3526; Kevin E. Everhart, CAPS; 17 June 2015.) (Julieta Brambila, USDA-APHIS-PPQ, and Dr. James E. Hayden.)

***Tarophagus colocasiae* (a taro planthopper)**
Photograph courtesy of Susan E. Halbert, DPI

***Derelomus subcostatus* (fan palm pollinating weevil)**
Photograph courtesy of Paul E. Skelley, DPI

***Paracoccus gillianae* von Ellenrieder & Stocks** (a **mealybug)**
Photograph courtesy of Ian C. Stocks, DPI

***Tarophagus colocasiae,* a taro planthopper, a new Continental USA record.** This species is a well-known pest of taro, a crop known as dasheen or malanga. It causes direct damage, and taro planthoppers have been found to transmit plant viruses in New Guinea and the Solomon Islands. The first Florida specimen was collected in a suction trap at the DPI Citrus Arboretum in Winter Haven in June 2015. Additional specimens were found in July at a discount garden center in Winter Haven on elephant ear (*Colocasia esculenta* (L.) Schott) plants for sale. The genus *Tarophagus* includes three described species. This is the first report of any species of *Tarophagus* in the continental United States. *Tarophagus colocasiae*, the species found in Florida, is the most wide-ranging of the three species. It occurs in Southeast Asia, the Indonesian archipelago and the Pacific islands and is adventive in Hawaii (Asche and Wilson 1989). There are unconfirmed, but credible, reports that this species has been in Jamaica since 2011 (Anonymous 2013) and in Cuba since 2014 (Cabrera 2015). Please see our Pest Alert on this species for more information: http://www.freshfromflorida.com/Divisions-Offices/Plant-Industry/Plant-Industry-Publications/Pest-Alerts/Tarophagus-colocasiae. (Polk County; E2015-3549; Peggy J. Sieburth and James F. Bouie; 18 June 2015.) (Dr. Charles R. Bartlett, University of Delaware, and Dr. Susan E. Halbert.)

***Tenuipalpus anonnae*, a tenuipalpid mite, a new Continental USA record**. This mite was described from *Annona* sp. from southern Mexico. In Florida, *T. anonnae* was found on *Annona muricata* L. (soursop), a widespread plant in the Caribbean and Central America. Mite feeding does not cause observable host damage and could be overlooked easily. (Miami-Dade County; E2013-6588; Juan Garcia Lopez; 10 September 2013.) (Dr. W. C. 'Cal' Welbourn.)

***Derelomus subcostatus*, fan palm pollinating weevil, new Florida State record.** Inspectors with the Florida Department of Agriculture and Consumer Services, Division of Plant Industry, collected for the first time in Florida an adult beetle on a potato tree (*Solanum erianthum* D. Don) in Castellow Hammock Park. Members of this genus of Old World weevils are not pests, but pollinators of palms. They will feed occasionally on pollen of other plants. *Derelomus subcostatus* often is considered a subspecies of *D. chamaeropis* Fabricius, which is known to pollinate the Mediterranean fan palm (*Chamaeropus humilus* L.). This weevil has been in California for at least three years, and it now appears to be established in Florida. (Miami-Dade County; E2015-3248; Frank A. Burgos, Justin K. Anto and Olga Garcia; 17 June 2015.) (Dr. Paul E. Skelley.)

***Oxycenus maxwelli*, olive bud mite, a new Florida State record**. This mite was described from *Olea europaea* in California, but it probably originated in the Mediterranean region. It is widespread there and reported from the following additional countries: Armenia, Australia, Argentina, Brazil, Chile and Iran. *Oxycenus maxwelli* usually feeds on the upper leaf surface, but in high infestations, it can be found on lower leaf surfaces, buds, new shoots and flowers (Reis *et al.* 2011). Feeding can cause silvering and distortion of young leaves, but does not appear to cause significant damage or affect yield in mature trees. In young trees, bud infestation can lead to deficient plant growth (Castagnoli and Oldfield 1996). (Manatee County; E2014-7171; Jennifer L. Gillett-Kaufman; 6 October 2014.) (Dr. W.C. 'Cal' Welbourn.)

***Paracoccus gillianae*, a mealybug, a new Florida State record**. In 2012, an undescribed mealybug related to the papaya mealybug (*Paracoccus marginatus*) was found infesting agave plants in several nurseries throughout Florida. Trace-back investigations revealed that at least some of the plants originated in California nurseries. Intermittently, the species had been a minor pest of agave in California nurseries and apparently arrived in California from Mexico or Central America. Molecular and morphological evidence proved that this species was not one of the described species in the genus *Paracoccus*. Von Ellenrieder and Stocks (2014) published a description, additional collection information and an account of the new species. (Duval County; E2012-7417; Lisa M. Hassell; 27 September 2015.) (Dr. Ian C. Stocks, DPI.)

***Tegonotus ecovagrans,* an eriophyid mite, a new Florida state record**. This mite originally was described as *Oxypleurites ecovagrans* from pecan (*Carya illinoinensis* (Wangenh.) K.Koch) in Clark County, Georgia, and later transferred to *Tegonotus*. *Tegonotus ecovagrans* is an upper and lower leaf vagrant and is occasionally found on the young nuts (Flechtmann and Davis 1971). No reported feeding damage to the host plant. (Lafayette County; E2015-4329; Cheryl A. Jones and Kelly K. Douglas; 27 July 2015.) (Dr. W. C. 'Cal' Welbourn.)

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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
Acacia farnesiana	sweet acacia; aromo	*Heteropsylla flexuosa*	an acacia psyllid	Lee	COUNTY RECORD
Agave desmettiana	dwarf century plant	*Paracoccus gillianae*	a mealybug	Duval	STATE RECORD
Aglaonema sp.	aglaonema	*Pseudococcus elisiae*	a mealybug	Lake	REGULATORY INCIDENT
Ambrosia artemisiifolia	common ragweed	*Acanalonia excavata*	an acanaloniid planthopper	Broward	COUNTY RECORD
Annona muricata	soursop; guanabana	*Tenuipalpus anonnae*	false spider mite	Miami-Dade	US CONTINENTAL RECORD
Bambusa sp.	bamboo	*Froggattiella* n. sp. (?)	an armored scale	Duval	COUNTY RECORD
Brassica juncea	Chinese mustard; oriental mustard; gai choy	*Liriomyza langei*	California pea leafminer	Suwannee	TRUCK INTERDICTION
Brassica oleracea	broccoli, cauliflower	*Liriomyza langei*	California pea leafminer	Suwannee	TRUCK INTERDICTION
Brassica rapa	pak-choi, bok-choi, pak-choy, bok-choy, Chinese mustard, celery mustard	*Cixius cultus*	a cixiid planthopper	Suwannee	TRUCK INTERDICTION
Brassica rapa	pe-tsai, Chinese cabbage, Napa cabbage	*Liriomyza langei*	California pea leafminer	Suwannee	TRUCK INTERDICTION
Brassica rapa	pe-tsai, Chinese cabbage, Napa cabbage	*Liriomyza langei*	California pea leafminer	Escambia	TRUCK INTERDICTION
Brassica rapa	pe-tsai, Chinese cabbage, Napa cabbage	*Lygus* sp.	a lygus bug	Escambia	TRUCK INTERDICTION
Brassica rapa	pak-choi, bok-choi, pak-choy, bok-choy, Chinese mustard, celery mustard	*Lygus* sp.	a lygus bug	Suwannee	TRUCK INTERDICTION
Carya sp.	hickory	*Tegonotus ecovagrans*	an eriophyid mite	Lafayette	STATE RECORD
Cichorium endivia	endive, escarole, frisee	*Nasonovia ribisnigri*	currant-lettuce aphid	Suwannee	TRUCK INTERDICTION
Crassula ovata	jade plant	*Vryburgia trionymoides*	a mealybug	Alachua	REGULATORY INCIDENT
Cynara cardunculus	artichoke, globe artichoke	*Lygus* sp.	a lygus bug	Suwannee	TRUCK INTERDICTION
Cynara cardunculus	artichoke	*Lygus* sp.	a lygus bug	Suwannee	TRUCK INTERDICTION
Cyperus haspan	haspan flatsedge, dwarf papyrus sedge	*Cymoninus notabilis*	a seed bug	Polk	HOST RECORD
Delphinium sp.		*Frankliniella minuta*	a thrips	Orange	DOG DETECTION
Diospyros digyna	black sapote; chocolate pudding tree	*Popillia japonica*	Japanese beetle	Broward	REGULATORY INCIDENT
Eriobotrya japonica	loquat, Japanese plum	*Bulimulus sporadicus*	a snail	Orange	COUNTY RECORD
Foeniculum vulgare	fennel	*Lygus hesperus*	a western lygus bug	Escambia	TRUCK INTERDICTION
Impatiens hawkeri	New Guinea impatiens	*Parasaissetia nigra*	nigra scale	Duval	HOST RECORD
Juniperus virginiana	eastern red cedar	*Acanthocephala declivis*	a biglegged bug	Hendry	COUNTY RECORD
Juniperus virginiana	eastern red cedar	*Parthenicus juniperi*	a plant bug	Polk	COUNTY RECORD
Lactuca sativa	lettuce, romaine lettuce, leaf lettuce	*Ceratagallia californica*	a leafhopper	Escambia	TRUCK INTERDICTION
Lactuca sativa	lettuce, romaine lettuce, leaf lettuce	*Ceratagallia longula*	a leafhopper	Suwannee	TRUCK INTERDICTION
Lactuca sativa	lettuce, romaine lettuce, leaf lettuce	*Liriomyza langei*	California pea leafminer	Suwannee	TRUCK INTERDICTION
Lactuca sativa	lettuce, romaine lettuce, leaf lettuce	*Liriomyza langei*	California pea leafminer	Escambia	TRUCK INTERDICTION

Plant Name	Plant Common Name	Arthropod	Arthropod Common Name	County	Records
Lactuca sativa	lettuce, romaine lettuce, leaf lettuce	*Liriomyza langei*	California pea leafminer	Volusia	REGULATORY INCIDENT
Lactuca sativa	lettuce, romaine lettuce, leaf lettuce	*Liriomyza langei*	California pea leafminer	Volusia	REGULATORY INCIDENT
Lactuca sativa	lettuce, romaine lettuce, leaf lettuce	*Liriomyza langei*	California pea leafminer	Escambia	TRUCK INTERDICTION
Lactuca sativa	lettuce, romaine lettuce, leaf lettuce	*Liriomyza langei*	California pea leafminer	Escambia	TRUCK INTERDICTION
Lactuca sativa	lettuce, romaine lettuce, leaf lettuce	*Liriomyza langei*	California pea leafminer	Suwannee	TRUCK INTERDICTION
Lactuca sativa	lettuce, romaine lettuce, leaf lettuce	*Lygus elisus*	pale legume bug	Suwannee	TRUCK INTERDICTION
Lactuca sativa	lettuce, romaine lettuce, leaf lettuce	*Lygus hesperus*	a western lygus bug	Escambia	TRUCK INTERDICTION
Lactuca sativa	lettuce, romaine lettuce, leaf lettuce	*Lygus hesperus*	a western lygus bug	Suwannee	TRUCK INTERDICTION
Lactuca sativa	lettuce, romaine lettuce, leaf lettuce	*Lygus* sp.	a lygus bug	Manatee	REGULATORY INCIDENT
Lactuca sativa	lettuce, romaine lettuce, leaf lettuce	*Nasonovia ribisnigri*	currant-lettuce aphid	Escambia	TRUCK INTERDICTION
Lactuca sativa	lettuce, romaine lettuce, leaf lettuce	*Nasonovia ribisnigri*	currant-lettuce aphid	Suwannee	TRUCK INTERDICTION
Lactuca sativa	lettuce, romaine lettuce, leaf lettuce	*Nasonovia ribisnigri*	currant-lettuce aphid	Escambia	TRUCK INTERDICTION
Lactuca sativa	lettuce, romaine lettuce, leaf lettuce	*Texananus latipex*	latipex leafhopper	Escambia	TRUCK INTERDICTION
Lagerstroemia indica	crape myrtle	*Duponchelia fovealis*	European pepper moth		DOG DETECTION
Lavandula dentata	French lavender	*Halticus brachtatus*	garden fleahopper	Collier	HOST RECORD
Ligustrum japonicum	waxleaf privet	*Bactrocera dorsalis*	Oriental fruit fly	Miami-Dade	REGULATORY INCIDENT
Ligustrum japonicum	waxleaf privet; Japanese privet; ligustrum	*Palpita persimilis*	Olive shootworm	Lee	COUNTY RECORD
Olea europaea	olive	*Oxycenus maxwelli*	Olive bud mite	Manatee	STATE RECORD
Olea europaea	olive	*Oxycenus maxwelli*	Olive bud mite	Polk	COUNTY RECORD
Phoenix canariensis	Canary Island date palm, pineapple palm	*Derelomus subcostatus*	fan palm polinating weevil	Lee	STATE RECORD
Pinus sp.	pine	*Cnestus mutilatus*	camphor shot borer	Suwannee	COUNTY RECORD
Polygonum punctatum	dotted smartweed	*Euschistus ictericus*	a stink bug	Pinellas	COUNTY RECORD
Pouteria sapota	mamey	*Bactrocera dorsalis*	Oriental fruit fly	Miami-Dade	REGULATORY INCIDENT
Psidium cattleianum	cattley guava; strawberry guava	*Lyssomanes viridis*	magnolia green jumper	Palm Beach	COUNTY RECORD
Quercus sp.	oak	*Chrysobothris scitula*	a buprestid beetle	Nassau	COUNTY RECORD
Quercus sp.	oak	*Cnestus mutilatus*	camphor shot borer	Volusia	COUNTY RECORD
Quercus sp.	oak	*Coccotrypes aciculatus*	a scolytid beetle	Lee	COUNTY RECORD
Quercus virginiana	live oak	*Clastoptera* sp.	a spittlebug	Brevard	COUNTY RECORD
Randia formosa	jasmin de rosa; blackberry jam fruit	*Aphis spiraecola*	spirea aphid	Miami-Dade	HOST RECORD
Rubus sp.	raspberry	*Lygus hesperus*	a western lygus bug	Escambia	TRUCK INTERDICTION
Solanum erianthum	potatotree	*Derelomus subcostatus*	palm weevil	Miami-Dade	STATE RECORD
Solanum lycopersicum	garden tomato, tomate, jitomate	*Leptoglossus zonatus*	a leaffooted bug	De Soto	COUNTY RECORD
Sorghum bicolor	sorghum, sweet sorghum, Sudan grass	*Melanaphis sacchari*	sugarcane aphid	Flagler	COUNTY RECORD
Syzygium cumini	jambolan plum; Java plum; black plum; jamun; duhat	*Eilica bicolor*	a ground spider	Collier	COUNTY RECORD

Plant Name	Plant Common Name	Arthropod	Arthropod Common Name	County	Records
Terminalia catappa	tropical-almond	*Bactrocera dorsalis*	Oriental fruit fly	Miami-Dade	REGULATORY INCIDENT
Thrinax radiata	Florida thatch palm, Jamaica thatch palm, silk-top thatch palm	*Amrineus coconuciferae*	eriophyid mite	Monroe	HOST RECORD
Thrinax radiata	Florida thatch palm, Jamaica thatch palm, silk-top thatch palm	*Notostrix* sp.	eriophyid mite	Monroe	HOST RECORD
Thrinax radiata	Florida thatch palm, Jamaica thatch palm, silk-top thatch palm	*Scolocenus* sp.	eriophyid mite	Monroe	HOST RECORD
Vitis sp.		*Metaphidippus chera*	a jumping spider	Suwannee	NOTABLE FIND
Zoysia sp.		*Aceria zoysiae*	eriophyid mite	Marion	COUNTY RECORD
		Aleurodicus rugioperculatus	a whitefly	St. Johns	COUNTY RECORD
		Bothriocera datuna	a cixiid planthopper	Broward	COUNTY RECORD
		Bulimulus sporadicus	a snail	Polk	COUNTY RECORD
		Cesonia irvingi	Irving's ground spider	Monroe	NOTABLE FIND
		Dasyhelea borgmeieri	a biting midge	Miami-Dade	COUNTY RECORD
		Epiplatea erosa	a richardiid fly	St. Lucie	COUNTY RECORD
		Helicoverpa armigera	Old World boll worm	Manatee	US CONTINENTAL RECORD
		Latrodectus geometricus	brown widow	Gilchrist	COUNTY RECORD
		Leptoglossus zonatus	a leaffooted bug	Palm Beach	COUNTY RECORD
		Megacopta cribraria	bean plataspid	Polk	COUNTY RECORD
		Metamasius mosieri	a bromeliad weevil	St. Lucie	COUNTY RECORD
		Orchestina nadleri	Nadler jumping goblin spider	Miami-Dade	COUNTY RECORD
		Saperda tridentata	elm borer	Marion	COUNTY RECORD
		Tarophagus colocasiae	a taro planthopper	Polk	US CONTINENTAL RECORD
		Utetheisa ornatrix	bella moth	Nassau	COUNTY RECORD
		Wulfila alba	a ghost spider	Brevard	COUNTY RECORD
		Zodion fulvifrons	a conopid fly	Pinellas	COUNTY RECORD

Nematology Section

Compiled by Jason D. Stanley, M.S., Leroy A. Whilby, D.P.M., Robert M. Leahy, M.S., Renato N. Inserra, Ph.D, and Janete A. Brito, Ph.D.

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

***Aphelenchoides besseyi* Christie, 1942, the rice white-tip nematode,** was detected in foliar tissues of the leopard plant, *Farfugium japonicum* (L.) Kitam**.** (St. Johns County; N15-00745; Robert M. Leahy, USDA; 7 July 2015).

Many genera in the family Asteraceae contain species that are good hosts of foliar nematodes of the genus *Aphelenchoides*. Among these species, the rice white-tip nematode, *A. besseyi*, which is a major pest of rice in many rice-producing states in the United States, is frequently detected on ornamentals belonging to this family. Recently an infestation of the white-tip nematode was observed on a stand of leopard plant growing in a landscape area of the Agricultural Extension Service community garden in St. Augustine, Florida. The symptoms observed on the infested plants included leaf discoloration and necrosis of leaf areas between the veins and along the margins. Nematode specimens were extracted from the leaves by dissecting portions of the discolored and necrotic leaf lesions in water and identified using a compound microscope. Nematode population levels averaged 13 nematodes per gram of infested leaf tissue.

The persistent rainy conditions of Florida summer have facilitated nematode infestation by providing enough moisture on leaf surface for nematode movement and penetration in the mesophyll. Chemical management of the nematode using approved systemic compounds can suppress nematode infestation levels, but does not eradicate the parasite. Dry weather conditions and avoiding overhead watering and splashing reduce nematode dissemination and damage.

Aphelenchoides besseyi **(the rice white-tip nematode) female collected from infested leaves of *Farfugium japonicum* (leopard plant)**
Photography courtesy of J. D. Stanley, DPI

Sample Submissions

	July August	Year to date
Morphological Identifications	2,050	**7,825**
Molecular Identifications	40	**447**
Total Samples Submitted	2,090	**8,272**

Certification and Regulatory Samples

	July August	Year to date
Multistate Certification for National and International Export	1,511	**5,699**
California Certification	286	**1,359**
Pre-movement (Citrus Nursery Certification)	98	**184**
Site or Pit Approval (Citrus Nursery and Other Certifications)	14	**121**

Other Samples

	July August	Year to date
Identifications (invertebrate)	0	**11**
Plant Problems	39	**71**
Intrastate Survey, Random	102	**380**
Molecular Identifications*	40	**447**

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

***Aphelenchoides besseyi* (the rice white-tip nematode infesting variegated leaves of *Farfugium japonicum* (leopard plant).** Note the large necrotic spots along the margin and in the center of the leaf blade induced by the nematode feeding and tunneling in the mesophyll.
Photography courtesy of J. Lotz, DPI

Collectors submitting five or more samples that were processed for nematological analysis during July - August 2015.

Bentley, Michael A.	84		LeBoutillier, Karen W.	188
Blaney, Richard L.	6		Ochoa, Ana L.	66
Burgos, Frank A.	234		Spriggs, Charles L.	148
Clanton, Keith B.	92		Strange, Lisa S.	29
Douglas, Kelly K.	14		Terrell, Mark R.	5
Golden, Walter W.	9		Violett, Larry L.	118

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Plant Pathology Section

Compiled by David A. Davison, M.S., Jodi L. Hansen, M.S. and Regina D. Cahoe, B.A.

The Plant Pathology section provides plant disease diagnostic services for department. The agency-wide goal of protecting the flora of Florida very often begins with accurate diagnoses of plant problems. Management recommendations are offered where appropriate and available. Our plant pathologists are dedicated to keeping informed about endemic plant diseases along with those diseases and disorders active outside Florida in order to be prepared for potential introductions of new pathogens to our area.

The late summer leaf pathogen *Grovesinia moricola* appears early this year

This year in the clinic we saw the surprisingly early (July) appearance of the leaf spot pathogen *Grovesinia moricola*. Typically, this fungus shows up to mark the late summer stage of the growing season, as we described in the fall of 2014. *Lagerstroemia indica* (crape-myrtle) is the most commonly infected species we see. This year the fungus was found infecting a new host, *Carya glabra* (pignut hickory), in Alachua county. The new host is in the same genus as *Carya illinoinensis* (pecan) and all varieties of pecan are susceptible to this leaf spot disease.

Symptoms begin with small, gray to light brown spots on leaves. The spots rapidly expand producing alternating concentric bands of lighter and darker tissue, giving these spots their zonate appearance. Leaf drop and foliar blighting occur rapidly. Depending on environmental conditions leaf drop may begin within a week of symptom appearance. The distinctive off-white pyramidal or cone-shaped fungal conidia can be observed with a hand lens or a dissecting microscope on both sides of infected foliage. As with many fungal plant diseases, *Grovesinia* leaf spot may be easier to control or prevent prior to symptom development. If growers or homeowners have observed infection by this zonate leaf spot in the past, they should treat plants when long periods (4-6 days) of continuously wet, late spring or summer weather occurs. (Alachua County; P2015-85486; Robert M. Leahy, USDA/CAPS; 17 July 2015.)

References:

Bertrand, P. 2010. *Cristulariella pyramidalis*. University of Georgia. http://wiki.bugwood.org/Cristulariella_pyramidalis

Johnston P., K. Seifert, J. Stone, A. Rossman and L. Marvanova. 2014. Recommendations on generic names competing for use in *Leotiomycetes* (*Ascomycota*). IMA Fungus. 5: 91-120.

Leahy, R. 1995. *Cristulariella* leaf spot on Florida ornamentals. Florida Department of Agriculture and Consumer Services. Plant Pathology Circular No. 370, 2 p.

Sample Submissions

	July August	Year to date
Citrus black spot	1	**42**
Citrus canker	249	**504**
Citrus greening HLB	136	**651**
Honey bees	2	**3**
Interdictions	2	**13**
Laurel wilt	16	**46**
General Pathology	396	**2,217**
Soil	1	**21**
Sudden Oak Death	2	**10**
Sweet Orange Scab-Like Disease	1	**1**
Texas Phoenix Palm Decline	1	**4**
Water	0	**0**
Miscellaneous	3	**13**
Total	810	**3,525**

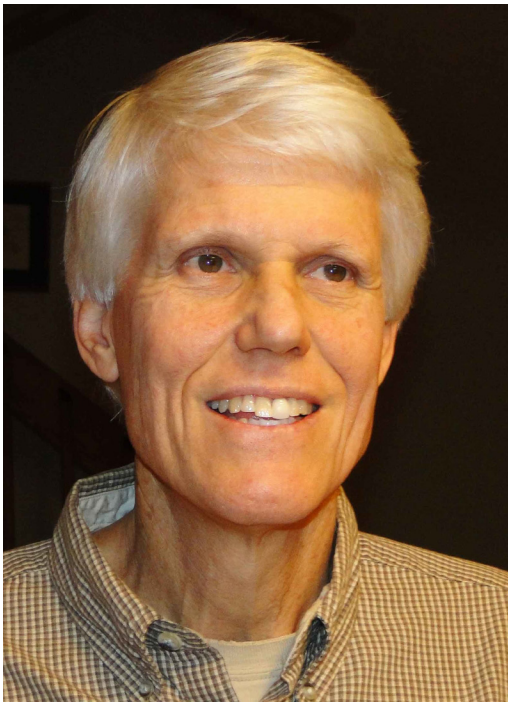
***Grovesinia moricola* typical zonate leaf spots on *Carya glabra* (pignut hickory).**
Photographs courtesy of Robert M. Leahy, USDA

Plant Species	Plant Common Name	Causal Agent	Disease Name	Location Type	Specimen #	County	Collector	Date	New Records	Comments
Allium ampeloprasum	broadleaf wild leek	*Puccinia allii*	rust	Ag Interdiction Station	85479	Escambia	Mary Ann Flores	7/13/2015		*Puccinia allii* is an important rust pathogen on leeks and can also infect onions, chives and garlic. It is most common mid-summer to late August. Affected plant leaves may shrivel or infections can cause reduced vigor.
Carya glabra	pignut hickory	*Grovesinia moricola*	zonate leaf spot	Residential landscape	85486	Alachua	Robert M. Leahy, USDA	7/17/2015	host	*Grovesinia moricolacauses* leaf spots and premature defoliation. Maple, hickory, black walnut and many common weeds can be infected. Symptoms are unique in that the dark lesions on leaves are rounded and have concentric white rings, giving the spot a target-shaped appearance which is often called bull's-eye leaf spot.
Pisum sativum	snow pea	*Ascochyta pisi*	leaf spot of pea	Nursery	85527	Alachua	Edmund P. Miller	7/17/2015		All parts of the pea plant are susceptible to *Ascochyta* species and infection can occur at any time during the growing season. Yield loss occurs when photosynthetic tissue of the plant is reduced by lesions. *Ascochyta* fungi overwinter in seed, soil or infested crop residue, and this is the primary source of reinfection.

Plant Species	Plant Common Name	Causal Agent	Disease Name	Location Type	Specimen #	County	Collector	Date	New Records	Comments
Sassafras albidum	sassafras	*Raffaelea lauricola*	laurel wilt	Roadside	85535	Alachua	Theresa R. Estok	7/21/2015		This is only the fourth *sassafrass* sample that has been identified as positive for laurel wilt since it was confirmed in Florida in 2005.
Quercus sp.	oak	Chimera	genetic mutation	Nursery	85619	Lafavette	Kelly K. Douglas; Cheryl A. Jones	7/29/2015		Chimera is a result of a genetic mutation. In leaves, it can produce a variegated or completely white look. In fruit trees such as citrus, it can be observed in the fruit, giving the rind a striped appearance.
Hibiscus rosa-sinensis	hibiscus	*Kuehneola malvicola*	rust	Nursery	85686	Duval	Kaleigh Hire	8/5/2015		*Kuehneola malvicola* is autoecious, meaning it can complete its entire life cycle on a single host species, while other rusts require two host species to complete their life cycle. Since several rusts can occur on members of the Malvaceae family, we must use microscopic examination of the spores to determine the species of rust.
Phoenix roebelenii	pygmy date palm	Nidulariaceae	bird's nest fungus	Home owner	85727	Miami-Dade	Ciro Milian	7/31/2015		Nidulariaceae, from nidulus meaning 'small nest' are a family of saprotrophic fungi that feed on decomposing organic matter and are often seen growing on decaying wood and in soils enriched with wood mulch.

Plant Species	Plant Common Name	Causal Agent	Disease Name	Location Type	Specimen #	County	Collector	Date	New Records	Comments
Ilex sp.	holly	*Sphaeropsis tumefaciens*	witches' broom	Residential landscape	85773	Orange	George A. Warden	8/12/2015		"In Florida, hollies are often infected by Sphaeropsis tumefaciens. This fungus is widespread in certain parts of the tropics (especially the Caribbean region) and infects a variety of woody plants including citrus, oleander, bottlebrush, Brazilian pepper and Natal plum. "
Ipomoea pes-caprae	railroad vine, bayhops	*Coleosporium ipomoeae*	leaf rust	Nursery	85786	Miami-Dade	Marieta Figueroa	8/14/2015		Coleosporium ipomoeae is a macrocyclic, heteroecious rust pathogen that occurs in the United States, Mexico, the West Indies, Central America and South America. Coleosporium ipomoeae is known to use Pinus as its primary host, from which aeciospores are transmitted to alternative hosts in the Convolvulaceae (morning-glory family), including Argyreia, Calystegia, Convolvulus, Jacquemontia and Ipomoea.

Thirty-five years … but who's counting?



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. Dr. Timothy S. Schubert, the long time administrator of the Plant Pathology Section, has worked at DPI since 1980 in support of that mission and will retire in September 2015.

Born in Kansas, Dr. Schubert graduated from the University of Missouri with a B.S. in Forestry, and an M.S. and Ph.D. in Plant Pathology. While finishing his degree working on the ultrastructure of vesicular-arbuscular endomycorrhizae, Tim worked as an extension assistant in the University of Missouri Plant Disease Clinic where he diagnosed and offered management advice for diseases of ornamental plants, trees, and field crops. While at the University of Missouri, Tim met fellow Ph.D. graduate student, Mary Lou Henry, and they were married in 1978.

Tim began his career with DPI as a plant pathologist specializing in the diagnosis of abiotic and fungal plant disease. He became Chief Plant Pathologist in 1987, and then became the Administrator of the section in 1992. During his tenure, Tim was head of plant disease diagnostic services and director of the DPI Plant Disease Quarantine Facility. His research includes investigations into etiology and management of new and insurgent plant diseases. Two of his major projects were sorting through the phytotoxicity episodes in Florida associated with the fungicide Benlate DF and the diagnosis and evaluation of control agents for the Citrus Canker Eradication Program. Moreover, Dr. Schubert is also an excellent teacher and is often invited to train plant inspectors and university students in the techniques and challenges of plant pathology.

During retirement, Dr. Schubert plans build as cheaply as possible a garden shed / greenhouse that has been in a prolonged planning stage for 20+ years, do more serious gardening, resurrect his fly-tying skills, and do some hiking and camping with his wife and family. Mary Lou and Tim will reside in Gainesville until they can tolerate the six month summer swelter no longer, then maybe move north where the four seasons beckon.

Tim wishes to express his profound gratitude to all his co-workers at DPI, UF, and USDA along with folks in the agricultural industries that have been so helpful and encouraging over the years.

Tim leaves us with this message:

"I have been blessed with a constant parade of the most conscientious, competent and cooperative friends and colleagues through my years here. The work has been educational, challenging and fulfilling, in large part because of the shared sense of purpose and willingness to give it our best effort day in and day out. Keep up the good work, thanks, and sincere best wishes to all!"