N O T E

Occurrence of *Leucothrips furcatus*, *Scirtothrips dorsalis*, and *Tenothrips frici* (Thysanoptera: Thripidae) Previously Unreported from Georgia[1]

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The small size and opportunistic lifestyle of most thrips (Order Thysanoptera) allows many species to be preadapted to an invasive lifestyle (Morse and Hoddle 2006. Annu. Rev. of Entomol. 51: 67 - 89). The movement of thrips along with agricultural plant material may serve as the primary route of invasion for most thrips. From 1983 - 1999, 130 species of thrips were intercepted in shipments of plants and cut flowers arriving in the U. S. from Europe, the Mediterranean, and Africa (Nickle 2006. Proc. Entomol. Soc. Washington 108: 443 - 466). However, they are also known to travel as stowaways on other cargo as well as part of the aerial plankton (Mound 1983. J. Biogeog 10: 119 - 133). Of the 202 species known to exist in Georgia, 30 are species not native to the U. S. (Diffie et al. 2008. Zootaxa 1787: 45 - 62). Three of the 30 invasive thrips species previously unreported from Georgia were collected in the state in 2007. Two of the species had been reported previously from Florida, the other species was known to occur north of the Carolinas on the eastern coast of the U.S. The following reports the collection of each species, a brief morphological description, and the potential pest status of each.

All thrips specimens were mounted in CMC-10 High Viscosity Mountant (Masters Co., Inc., Wood Dale, IL) and examined under an Olympus BX 41 compound microscope at 200X and 400X. Specimens were identified using Key to North American Thripidae (S. Nakahara and B. Footitt, unpub.) and submitted to the USDA Systematic Entomology Laboratory in Beltsville, MD, for confirmation. Voucher specimens for each of the species are included in the Thysanoptera collection at the University of Georgia Tifton Campus. All three species are members of the suborder Terebrantia and family Thripidae. Two of the species, *Scirtothrips dorsalis* Hood and *Tenothrips frici* Uzel, are members of the subfamily Thripinae. *Leucothrips furcatus* Hood is in the subfamily Dendrothripinae.

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Leucothrips furcatus Hood

A single female adult of this species was collected by S. Diffie from mimosa, *Albizia julibrissin* Durazz, on 8 Sep 2007 on the University of Georgia Tifton Campus as part of a routine collection. Thrips were dislodged from the trees by beating the branches with a wooden rod onto a plastic tray. Thrips were collected from the plastic tray by using a fine paint brush, placed in a vial containing 70% ETOH, and microscopically examined and identified. *Leucothrips furcatus* is small, pale in color, and possesses a lyre-shaped metafurca. Females, in general, are macropterous and have 7-segmented antennae. Antennal segments I-III are pale whereas segments IV-VI have grayish apices. Segment VII is grayish. Segments III and IV bear forked sense cones. The pronotum contains 2 posteroangular setae. Forewings have straight fringe cilia. Tergites and sternites contain some microtrichia.

Scirtothrips dorsalis Hood

Chilli thrips were collected by Barry Smith, GA Department of Agriculture (DOA), from a nursery in Colquitt Co., GA, and submitted to the UGA Thrips Laboratory for identification on 19 Sep 2007. Plants were searched visually, and thrips were collected by using a fine paint brush and transferred to a vial containing 70% ETOH. The nursery had reported a thrips problem on Indian hawthorne, *Rhaphiolepis indica* (L.) Lindl., which prompted the visit by the Georgia DOA. Subsequent surveys of nurseries in southern Georgia by Georgia DOA personnel also revealed the presence of *S. dorsalis* in 2 additional nurseries in Lowndes Co. These collections were made on 27 Sep 2007 from knockout roses, *Rosa* sp., at both nurseries. Thrips collected during the same time period from nurseries in Cook Co. and Muscogee Co. in southern Georgia and submitted for identification were not *Scirtothrips dorsalis*.

Scirtothrips dorsalis was first detected in Florida in the early 1990s, and collections in Georgia indicate that it has moved steadily northward. Collections in Duval Co., FL, in the spring of 2007 also revealed the presence of *S. dorsalis* near the Georgia border (Lance Osborne, UFI Apopka Campus, pers. comm.) iterating that its range is steadily spreading to other states. Females are macropterous with small, pale yellow bodies. The antennae are 8-segmented with segment I white, II-III grayish, and V-VIII brownish. Segments III and IV contain forked sense cones. The pronotum does not have elongated setae. The posterior fringe setae on the forewings are straight. Rows of fine microtrichia cover the lateral portions of tergites II-VIII. The antecostal ridges of the tergites and sternites are dark brown as are small areas along the ridges.

Tenothrips frici Uzel

Specimens were collected from unidentified Asteraceae plants in Habersham Co., GA, on 6 Aug 2007 as part of a regular sampling. The flowers were removed from the plant and washed in cups containing alcohol. Thrips collected from the wash were submitted to the University of Georgia Thrips Laboratory in Tifton by the local county extension agent. High numbers of *T. frici*, the dandelion thrips, are often found breeding in the flowers of asters (Moritz et al. 2004. Pest Thrips of the World CD). Females are macropterous with brown bodies. The antennae are 8-segmented, and segments III and IV contain forked sense cones. The pronotum contains 2 long posteroangular setae. Scattered microtrichia can be found on tergite VIII.

Pest Potential

The pest status of *L. furcatus* is unknown in Georgia, but this species has been reported as a pest of croton, *Codiaeum variegatum* (L.) A. Juss. var. *pictum* (Hook.) Müll. Arg. in Florida (Purvis 1996. FDACS Division of Plant Industries—Entomology Section. S. E. Halbert [ed.] Triology 35: 5). *Scirtothrips dorsalis* is mainly a foliage feeder and has been reported to attack more than 100 plant host species (Ludwig et al. 2007. National Pest Alert. USDA-CSREES). In Georgia, important ornamentals that may be affected include crape myrtle (*Lagerstroemia indica* L.), camellia (*Camellia* spp.), poinsettia (*Euphorbia pulcherrima* Willd.), and rose (*Rosa* spp.). *Scirtothrips dorsalis* may also affect row crops such as beans (*Phaseolus vulgaris* L.), cotton (*Gossypium hirsutum* L.), peanut (*Arachis hypogaea* L.), and tomato (*Solanum lycopersicon* L.). *Scirtothrips dorsalis* also has been reported to be a potential vector of several plant viruses, including *Peanut necrosis virus*, *Peanut chlorotic fan virus*, and *Tobacco streak virus* (Ludwig et al. 2007). *Scirtothrips dorsalis* also is reported to be an inefficient vector of *Tomato spotted wilt virus* (TSWV) (Amin et al. 1981. Plt. Dis. 65: 663 - 665). TSWV causes serious losses (extending up to $100 million per year) in peanut, tomato, pepper, and tobacco. The arrival of a new vector species, even with relatively low transmission efficiency, can further complicate TSWV management. *Tenothrips frici* is not described as a pest in the current literature; however, its propensity to breed in noticeably high numbers may cause concerns as a nuisance pest.

Further delineation of the ranges of each of these species in Georgia will be monitored in the future. Additional information will be made available as the importance of each of these species as a pest becomes more evident.

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