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Authors: Hribar, Lawrence J., Brown, Brian V., and Disney, R. Henry L.

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OCCURRENCE OF *MEGASELIA IMITATRIX* BORGMEIER AND *MEGASELIA HANSONIX* DISNEY IN FLORIDA (DIPTERA: PHORIDAE)

LAWRENCE J. HRIBAR¹, BRIAN V. BROWN² AND R. HENRY L. DISNEY³

¹Florida Keys Mosquito Control District, 503 107th Street, Marathon, FL 33050

²Natural History Museum of Los Angeles County, 900 Exposition Boulevard, Los Angeles, CA 90007

³Cambridge University Museum of Zoology, Cambridge CB2 2EJ, UK

During a study of container-inhabiting mosquitoes in the Florida Keys, Hribar et al. (2004) reported finding larvae of a phorid fly, *Megaselia scalaris* (Loew), in some aquatic habitats. Identification was made on the basis of reared adults. Since that time, aquatic phorid larvae occasionally have been collected during routine mosquito surveillance. Examination of those larvae revealed that their general habitus did not conform to that of descriptions of the larva of *M. scalaris*. Particularly notable were the caudal spiracles being located on an extensible tube, similar to beach fly larvae (Diptera: Canacidae), and large bulbous anal gills, typical of aquatic Phoridae (Disney 1991). Some specimens were cleared and slide-mounted and the cephalopharyngeal skeleton compared to illustrations of that of *M. scalaris* (Liu & Greenberg 1989). Cephalopharyngeal morphology was not consistent with *M. scalaris*; instead, larval morphology was consistent with *Megaselia imitatrix* Borgmeier and *M. hansonix* Disney (Hanson & Disney 2008; Disney et al. 2009).

Attempts to rear additional larvae to the adult stage were unsuccessful. However, adult phorids were seen occasionally in traps set for adult mosquito surveillance. The Florida Keys Mosquito Control District deploys several different mosquito traps for adults. Phorids were collected in dry-ice-baited ABC light traps (Clarke Mosquito Control, Roselle, Illinois, USA) and BG Sentinel traps (Biogents, Regensburg, Germany) baited with octenol and lactic acid. Adult Phoridae were cleared and mounted on microscope slides according to the protocol of Wirth & Marston (1968). Adult males were compared with the figures and description provided by Disney et al. (2009). Four species were identified: *Megaselia hansonix* Disney, *M. imitatrix* Borgmeier, *M. scalaris* (Loew), and an apparently undescribed species of *Megaselia*. Voucher specimens of adult flies have been deposited in the Los Angeles County Museum of Natural History, California, and the Cambridge University Museum of Zoology, UK.

Megaselia hansonix Disney

Florida, Monroe County: Tavernier, 14 Sep 2010, D. DeMay, 1 M; 4 Oct 2010, D. DeMay, 4M; 9 Nov 2010, D. DeMay, 3M; 20 Nov 2010, D. De-

May, 3M; Vaca Key, 8 Sep 2010, L. Hribar, 2M; 29 Sep 2010, L. Hribar, 2 M; 8 Oct 2010, L. Hribar, 1 M; 17 Oct 2010, L. Hribar, 1 M; Windley Key, 29 Sep 2010, D. DeMay, 1 M; Plantation Key, 6 Oct 2010, D. DeMay, 1 M; Upper Matecumbe Key, 2 Nov 2010, D. DeMay, 1M.

Megaselia imitatrix Borgmeier

Florida, Monroe County: Tavernier, 9 Nov 2010, D. DeMay, 1M.

Megaselia scalaris (Loew)

Florida, Monroe County: Plantation Key, 6 Oct 2010, D. DeMay, 1M; Key Largo, 28 Oct 2010, A. Tambasco, 1M; Key West, 18 Nov 2010, C. Pruszyński, 1M.

Megaselia species 1

Florida, Monroe County: Key Largo, 1 Dec 2010, D. DeMay, 1M; same data except 6 Dec 2010, 1M; Vaca Key, 12 Jan 2011, D. DeMay, 1M.

Megaselia imitatrix and *M. hansonix* are obligate aquatic species (Disney et al. 2009). There are at least 3 almost identical scuttle flies in the genus *Megaselia* Rondani that exploit aquatic habitats: *M. imitatrix* Borgmeier, known from Florida, Illinois, Indiana, Missouri, Dominica, and Puerto Rico; *M. hansonix* Disney, known from Florida and Texas; and an undescribed species from Brazil (Borgmeier 1969; Disney et al. 2009). The natural larval habitat of these species appears to be natural containers such as rotholes in trees (Copeland 1989) and husks of *Theobroma cacao* L. (Benton & Claugher 2000). However, aquatic phorid larvae have been taken from artificial containers in the Florida Keys (Hribar et al. 2004).

The specimens originally sent to the Los Angeles County Museum of Natural History were not retained; therefore it is not possible to say with certainty that the species reported by Hribar et al. (2004) was really *M. hansonix* (Disney 2008a). However, judging from the identity of the adult flies collected in traps and given the apparently more widespread distribution of *M. hansonix* in the Florida Keys, it is likely that the species was

M. hansonix, not *M. imitatrix*. The morphology of the aquatic phorid larvae that have been cleared and mounted on slides reveals that the species was not *M. scalaris*; moreover, the latter species' larvae are primarily terrestrial, although they do occasionally invade the aquatic habitats of containers (Disney 2008b).

SUMMARY

The aquatic scuttle flies, *Megaselia hansonix* Disney and *M. imitatrix* Borgmeier, (Diptera: Phoridae) are reported for the first time from Florida, USA.

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