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NOTES ON THE BIOLOGY OF *ORTHOPODOMYIA* IN ILLINOIS

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ABSTRACT. The principal habitats of immature *Orthopodomyia alba* and *Orthopodomyia signifera* are tree holes, though they are occasionally encountered in artificial containers. We collected 929 *Or. alba* and 17 *Or. signifera* from 2 plastic trash cans, 2 scrap tires, and a tree hole. All collections were made in an urban residential area in central Illinois.

The preimaginal stages of the sibling species *Orthopodomyia alba* Baker and *Orthopodomyia signifera* (Coq.) are most often encountered in deep rotholes, tree holes that extend to the heartwood of a tree and contain liquid from the tree's vascular system (Copeland and Craig 1990). However, immature *Or. alba* and *Or. signifera* have been reported occasionally from artificial containers such as tires (Beier et al. 1983), metal cans (Loor and DeFoliart 1969), and wooden containers (Carpenter and LaCasse 1955). We report here the collection of immature *Or. alba* and *Or. signifera* in unusual habitats at 2 different residences while conducting a larval survey in residential areas of Champaign and Urbana, IL, on September 1 and 2, 1994. At one residence, *Or. signifera* larvae were found in a 30-gallon plastic trash can that was more than half full of potting soil and herbaceous plant material. Sampling was done by sieving all the liquid in the trash can through a coarse (3 meshes/cm) screen followed by a fine (40 meshes/cm) mesh. Everything retained on both screens was washed into a pan and poured into plastic bottles for transport to the laboratory. All larvae were separated from the debris in the sample and reared on TetraMin® and Purina® rabbit chow at 24°C and 16 h:8 h (L:D). Larvae were identified to species when they reached the 4th instar. The trash can yielded 36 *Or. signifera*, 41 *Culex restuans* Theobald, and 236 *Culex pipiens* Linn. larvae.

At a 2nd residence, we collected 831 *Or. signifera* and 16 *Or. alba* larvae from a similar 30-gallon trash can, using the method described above. There were no other species present. Most of the debris in the trash can consisted of branches and needles of a conifer resembling a yew (*Taxus* spp.). The water in the trash can had a dark reddish color resembling the color of deep rothole water, suggesting that tannins and other compounds had leached from the plant material into the water. This might explain why *Or. signifera* and *Or. alba* oviposited in this trash can, whereas other species did not.

Three other containers encountered during the residential survey were positive for *Orthopodomyia.* One residence had 2 tires containing *Or. signifera* larvae. One tire had 56 *Or. signifera,* 30 *Anopheles barberi* Coq., 13 *Cx. restuans,* one *Cx. pipiens,* and 2 *Culex salinarius* Coq. larvae. The other tire contained 6 *Or. signifera,* 8 *An. barberi,* 110 *Cx. restuans,* and one *Cx. pipiens* larvae. Another residence had a small, shallow tree hole in which we found one *Or. alba* larva.

Nine hundred and forty-six (26%) of the 3,623 larvae found in the residential survey were *Orthopodomyia.* At present, it is not known whether *Or. signifera* and *Or. alba* have been always so abundant in urban areas or whether they have moved into urban areas recently. The high relative abundance of *Orthopodomyia* and its collection from several sites rules out the possibility that these were rare events. The possibility that *Or. signifera* could be involved in the natural cycles of eastern equine encephalitis (Chamberlain et al. 1954) and western equine encephalitis (Vargas 1960), combined with the fact that these 2 viruses are present in Illinois (Haramis et al. 1993), could have implications for human disease and provides an avenue for further study.

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