

Commonwealth of Massachusetts
State Reclamation and Mosquito Control Board



***NORTHEAST MASSACHUSETTS MOSQUITO CONTROL
AND WETLANDS MANAGEMENT DISTRICT***

Wyeomyia smithii

Kimberly Foss- Entomologist

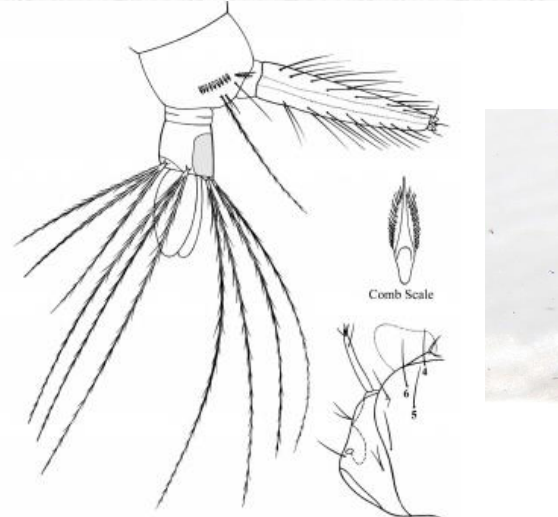
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www.northeastmassmosquito.org

Morphological Characteristics

- Larvae

- Antennal setae 1-A single
- Single row of comb scales
- Siphon w/ numerous long single setae
- Saddle incomplete w/o median ventral brush
- Only 2 anal gills (contribute to cutaneous respiration or length of time submerged?)



- Adult

- Size similar to *Ur. sapphirina*
- Proboscis dark scaled, unbanded
- Occiput dark w/ metallic blue-green scales
- Scutum dark brownish-gray metallic scales, mesopostnotum with setae
- Abdominal terga dark w/ metallic sheen, sides of sterna pale-scaled
- Legs dark-scaled, unbanded



Distribution/ Habitat

- Gulf Coast to Northern Canada (post glacial range expansion)
- Acidic sphagnum bogs and fens
- Commensalistic w/ carnivorous host plant
- Northern or Purple Pitcher Plant (*Sarracenia purpurea*)
- Shared habitat 2 diptera sp. (midge, flesh fly)
- Presence assists in nutrient absorption



Bionomics

- Autogenous
- Multivoltine
 - 2x per year -late spring & early fall
 - Some larvae in a generation will develop at different times
 - Some larvae will not pupate for 10 months
- Weak flyers (~15 meters), very prone to desiccation
- Females rest, feed and **fly** (other species do not) with hind legs bent forward over head



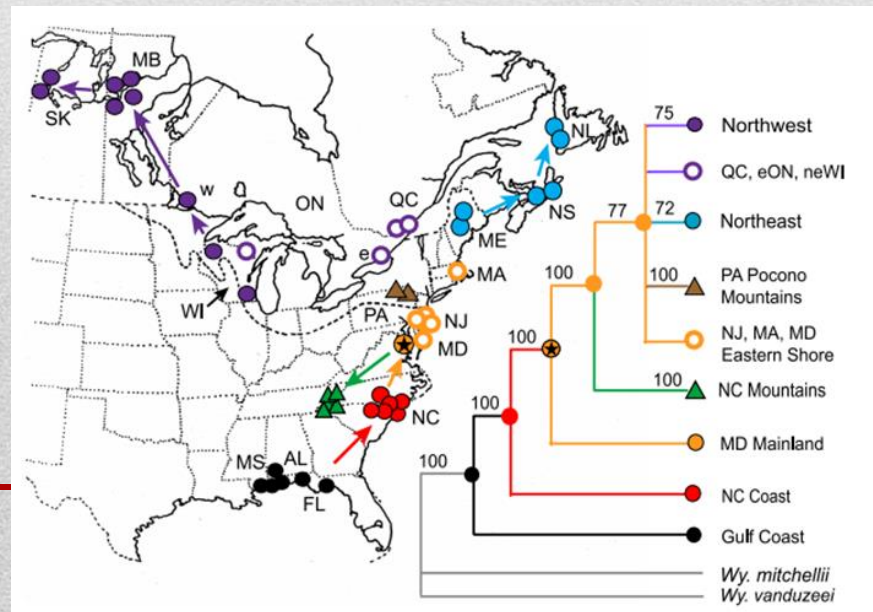
Photo: NJ Mosquito Control Association

- Summer-
 - Eggs laid singly or grouped on the water or above water level in older leaves
 - Fall to late November-
 - Eggs laid on the sides of young leaves (visual color) before water has collected
 - Larvae overwinter frozen solid in ice
 - Fall larvae survive several months of freezing
 - Summer larvae subjected to freezing will die
 - Lab collected winter larvae will thaw and become active but will not develop until late May or June (as they would if thawed naturally)
 - Larvae feed on detritus: invertebrates that the plant has captured
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- Larval respiration is mostly cutaneous
- Larvae pupate in spring (May)
 - No developmental difference from 1st to 3rd instar
 - Females remain in 4th instar 2 days longer than males
- Adults emerge 7-10 days later
 - Males emerge 5 hours after dawn
 - Females emerge 2 days after males, trend to late day
 - Equal percentages of males and females
 - Females mate immediately after emergence
 - Females lay eggs 4-6 days after mating
 - Can lay up to 7 clutches of eggs during season
 - Ave 2 with ~38 eggs for season



- Obligate non-biters, disinterested biters and avid biters
 - Northern evolutionary selection
 - Northern populations do not take a blood meal and usually only lay only one batch of eggs
 - Southern population may take a blood meal (ie: rats in lab)
 - Rare & at cost: protein degradation/thermal shock/untimely death- for these additional egg batches
- Arbovirus potential??
 - Ilhéus virus, VEE, MAGV w/ southern populations



References

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