Commonwealth of Massachusetts
State Reclamation and Mosquito Control Board

NORTHEAST MASSACHUSETTS MOSQUITO CONTROL
AND WETLANDS MANAGEMENT DISTRICT

Wyeomyia smithii

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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

Photos: Maryland Biodiversity
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 pupurea*)
- 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
• Larval respiration is mostly cutaneous
• Larvae pupate in spring (May)
  • No developmental difference from 1\textsuperscript{st} to 3\textsuperscript{rd} instar
  • Females remain in 4\textsuperscript{th} 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

Photo: BugGuide
• 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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