Entomologist Challenge – *Aedes cinereus*

John Shepard

Department of Environmental Sciences
Center for Vector Biology & Zoonotic Diseases
The Connecticut Agricultural Experiment Station
New Haven, CT
Quick Facts

• “True” *Aedes*
  • Described by German dipterist, Johann Wilhelm Meigen, in 1818
  • Type species for the subgenus *Aedes*
  • *Has not been subject to name changes*

• Synonym Species in the Northeastern US
  • *Aedes fuscus*, described from male and female specimens collected in Cambridge, MA by Osten Sacken, 1877
  • *Culex pallidothirta*, described from female specimens collected in Orange Mts., NJ by Grossbeck, 1905

Quick Facts

- Holarctic distribution
  - northern latitudes of North America, Europe and northern Asia (Mongolia, Russia)

- Does not have a “flashy” appearance as an adult
  - Medium-sized
  - Brownish-tan
  - Wings and legs with all dark scales

- Nuisance
  - Aggressive biter during morning and early evening
  - Biting activity in wooded areas, near lavral habitat
  - “Ankle biter”

- Medical and Veterinary Importance
  - Vector of a variety of pathogens
Life History

- Desiccation-resistant eggs laid in a variety of temporary and permanent water habitats
- Larvae develop in a wide variety of freshwater habitats
- Major generation in spring with sporadic egg hatch late
- Overwinters in egg stage

Similar life cycle with *Ochlerotatus canadensis* and *Oc. sticticus*

Larval Habitat

- Larvae found in Temporary and Semi-Permanent pools
  - Shallow leaf-lined pools
    - Heavy to light shade
  - Deeper pools - associated with emergent vegetation
    - Sedge tussocks and boggy areas of ponds and swamps

- Associated species in larval habitats include:
  - *Oc. canadensis*
  - *Oc. abserratus*
  - *Oc. excrucians*
  - *Oc. fitchii*
  - *Oc. stimulans*
  - *Cs. morsitans*
  - *Cx. territans*
  - *An. walkeri*
  - *An. punctipennis*
Larval Habitat

- *Ae. cinereus* can be found in habitats associated with residential and commercial activity.
Larval Habitat
Larval Identification

- Siphon with tuft inserted beyond distally detatched pectin teeth
  - Saddle incomplete
- Antennae shorter than head
- Head hairs 5, 6, & 7 in straight line
Adult Female Identification

- Leg tarsi and wings dark scaled
- Abdomen with narrow transverse basal bands of light scales
- Dark-scaled forecoxae
- Similar species in keys (CT, NY)
  - *Oc. intrudens*
  - *Oc. communis*
  - *Oc. sticticus*
Adult Seasonal Abundance – Dry Season

2 Generations
Adult Seasonal Abundance – Wet Season

Aedes cinereus per Light Trap

3 Generations
Host Associations

- Obtains blood meals from a wide range of mammalian hosts (CT, MA, NY)
  - White-tailed deer
  - Human
  - Horse
  - Chipmunk
  - Racoon
  - Cat
  - Rat
  - Squirrel

- Limited data on blood meals acquired from avian hosts (CT)
  - American Robin
  - Eastern Flycatcher
  - Scarlet Tanager
Medical and Veterinary Importance

• Arboviruses Isolated in CT (1997-2018)
  • Eastern Equine Encephalitis (18)
  • West Nile (13)
  • Highlands J (7)
  • Jamestown Canyon (12)
  • LaCrosse Encephalitis (2)
  • Cache Valley (13)
  • Potosi (30)
  • Trivittatus (1)

• Ockelbo virus (Sindbis variant) in northern Europe

• *Dirofilaria immitis*
References


