

## Eastern Equine Encephalomyelitis Virus - Nathan Burkett-Cadena

- 1) Background
  - a) First recognized in MA in 1831 - 75 horse died
  - b) One of the most pathogenic of all mosquito-borne viruses
- 2) Ecology
  - a) Clustering seen in "plain" ecotypes
  - b) Transmission foci are freshwater swamp areas
- 3) Transmission cycle
  - a) Enzootic vectors - primarily *Culiseta melanura*
  - b) Bridge vectors - many species
  - c) Primary reservoir - birds
  - d) Temporal clustering
    - i) Edman & Taylor. 1968. Science
    - ii) Feeding shifts - birds to mammals
- 4) Study
  - a) Muscogee National Forest
  - b) Collected resting mosquitoes
    - i) Blood meal analysis
      - (1) Primary avian hosts
        - (a) Great blue heron
        - (b) Yellow-crowned night heron
      - (2) Correlation between when birds are in rookery and when mosquitoes are feeding on the birds
    - ii) Overwintering
      - (1) Probably not in avian host
        - (a) Short viremic period
        - (b) Too few vectors over the winter
        - (c) EEE rarely found in migrating birds
      - (2) Probably not in primary vector
      - (3) What about bridge vectors?
        - (a) Fumigated hollow trees
          - (i) Found *Anopheles punctipennis*, *Cx erraticus*, *Cx peccator*, *Ur sapphirina*
          - (ii) No positives found
        - (b) Collected from animal dens - no positives found
    - (4) How about other vertebrate hosts?
      - (a) Reptiles and amphibians
        - (i) Amphibians did not become viremic
        - (ii) Reptiles did but few species became viremic enough to serve as a reservoir - needs more work
      - (b) Other mammals???
  - c) Host reproductive biology drives timing of EEEv epidemics