

# Key to Common Mosquitoes Found in Light Trap Collections in New Jersey

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This key was prepared as a training tool for mosquito identification specialists whose primary job is to sort through light trap collections. The key may not be applicable for specimens that were collected as larvae and reared through to the adult stage. Caution should be used for specimens collected during landing rate and bite count collections. A number of species and species complexes that are common in light trap collections have been grouped. *Wyeomyia smithii*, and *Toxorhynchites rutilus septentrionalis* have not been included because they are not readily attracted to light. For simplification in the identification process, the following rare mosquito species on New Jersey's checklist have been omitted: *An. atropos*, *An. barberi*, *An. earlei*, *Oc. aurifer*, *Oc. communis*, *Oc. dorsalis*, *Oc. dupreii*, *Oc. flavescens*, *Oc. hendersoni*, *Oc. implicatus*, *Oc. infirmatus*, *Oc. intrudens*, *Oc. mitchellae*, *Oc. provocans*, *Oc. spencerii*, *Oc. thibaulti*, *Ps. cyanescens*, *Ps. discolor*, *Ps. mathesoni*, *Cx. erraticus*, *Cx. tarsalis*, and *Cs. minnesotae*. *Aedes albopictus* and *Oc. japonicus* rarely enter light traps but have been included because of their unique status as introduced exotics and their growing importance as pests

The illustrations were scanned from plates in S.J. Carpenter and W.J. LaCasse 1955. "Mosquitoes of North America (North of Mexico)", University of California Press, Berkeley and Los Angeles. Figures pertaining to *Aedes albopictus* and *Ochlerotatus japonicus* were scanned from Tanaka, K, K. Mizusawa and E.S. Saugstad. 1979, "A revision of the adult and larval mosquitoes of Japan (including the Ryukyu Archipelago and the Ogasawara Islands) and Korea", Contributions of the American Entomological Institute, Vol. 16. The enlarged illustrations of wing scales were scanned from John B. Smith's New Jersey State Agricultural Experiment Station report on Mosquitoes, published in 1904.

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1. Palpi as long as proboscis (Genus *Anopheles*) (Fig. 1 A) .....2
- Palpi much shorter than proboscis (Fig. 1B) .....5

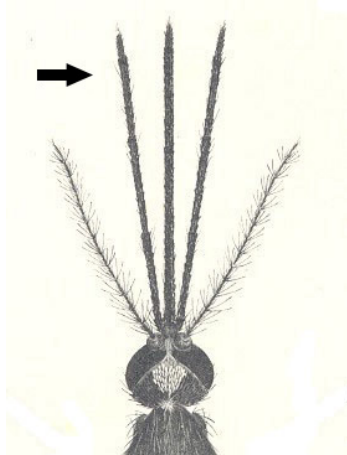


Fig. 1A

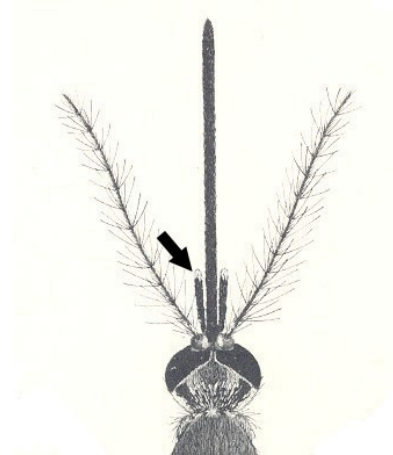


Fig. 1B

2. Wings with one or more small patches of white or coppery colored scales (Fig. 2A) .....3
- Wings entirely dark scaled (Fig. 2B) .....4

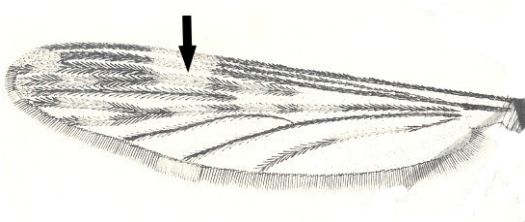


Fig. 2A

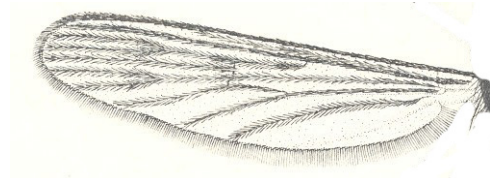


Fig. 2B

3. Two patches of light scales on margin of wing (Fig. 3A) .....*Anopheles punctipennis*  
(Note: the palpi are unbanded in this species)  
.....
- One small patch of light scales on margin of wing (Fig. 3B) .....*Anopheles bradleyi/crucians*  
(the palpi have white bands in this species)

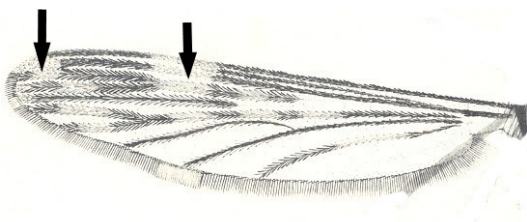


Fig. 3A

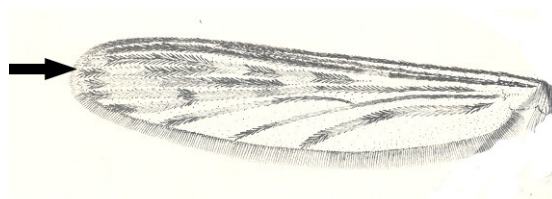


Fig. 3B

4. Palpi with narrow white bands (Fig. 4A) ..... *Anopheles walkeri*  
 Palpi unbanded (Fig. 4B) ..... *Anopheles quadrimaculatus*

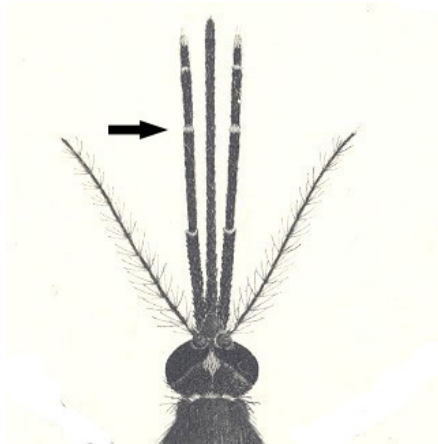


Fig. 4A

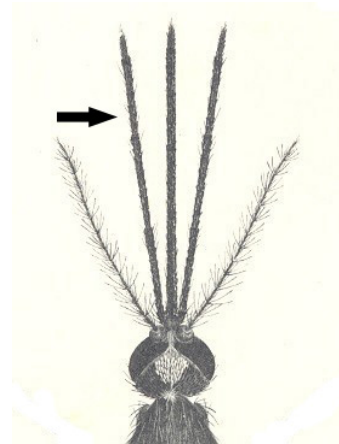


Fig. 4B

5. Abdomen pointed (Fig. 5A)  
 (Genus *Aedes*, *Ochlerotatus* and *Psorophora*) .....6  
 Abdomen blunt (Fig. 5B)  
 (Genus *Culex*, *Culiseta*, *Uranotaenia*, *Orthopodomyia* and *Coquillettidia*) .....24

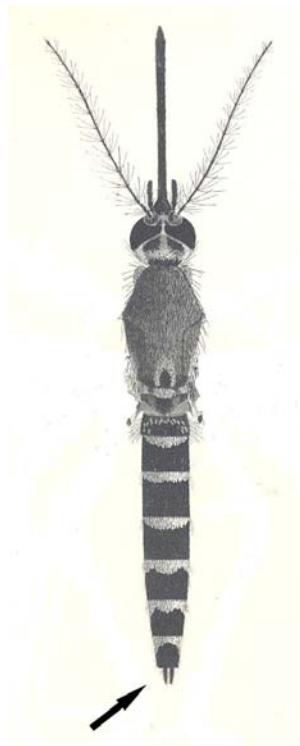


Fig. 5A

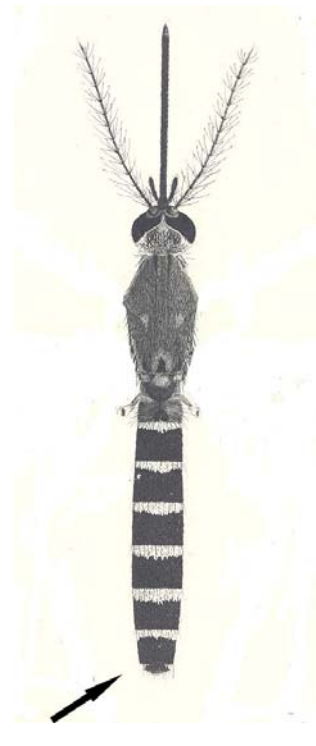


Fig. 5B

6. Large species, head and body 3/8" or larger (Fig. 6A) .....7  
 Small to average size species, head and body less than 3/8" (Fig. 6B).....8



Fig. 6A

Typical size for representative species



Fig. 6B

Maximum size for representative species

7. Abdomen metallic blue in color with narrow pale bands (Fig. 7A) .....*Psorophora howardii*  
 Abdomen yellowish in color lacking distinct bands (Fig. 7B) .....*Psorophora ciliata*

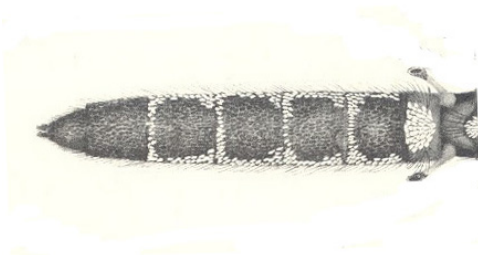


Fig. 7A

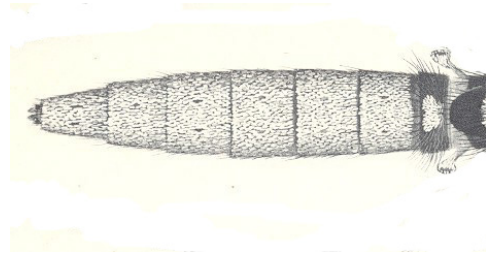


Fig. 7B

8. Hind legs unbanded, tinged with purple and last 2 tarsal segments entirely white (Fig. 8A) .....*Psorophora ferox*  
 Hind legs either banded or dark, but legs not as above .....9

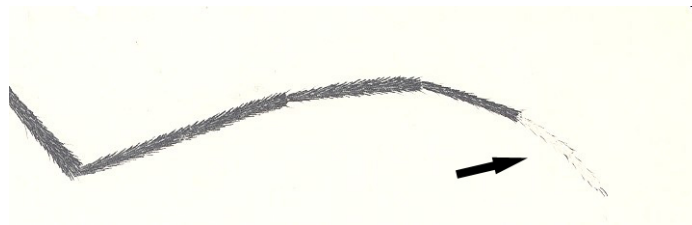


Fig. 8A

9. Tarsi ringed with white bands (Fig. 9A) .....10  
 Tarsi not ringed with white bands (Fig. 9B) .....20

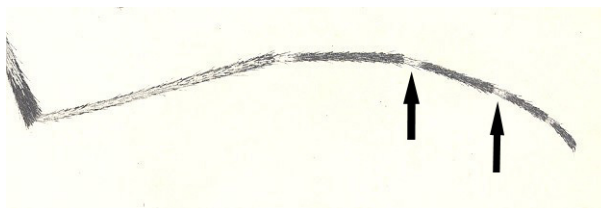


Fig. 9A



Fig. 9B

10. Tarsal bands overlapping individual segments (Fig. 10A) .....11  
 (Note: this configuration creates bands at both ends of each tarsal segment)  
 Tarsal bands only on base of individual segments (Fig. 10B) .....12

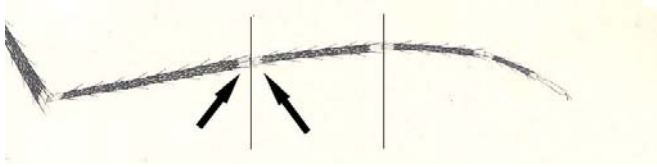


Fig. 10A

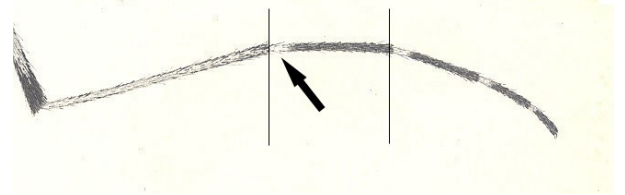


Fig. 10B

11. Wing scales entirely dark (Fig. 11A) .....*Ochlerotatus canadensis*  
 Wing scales dark except for a very small patch of white scales on the front of the wing at the base of the costa (Fig. 11B) .....*Ochlerotatus atropalpus*

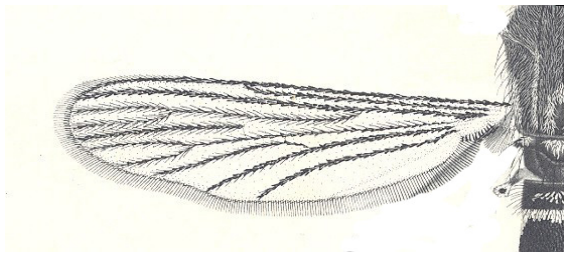


Fig. 11A

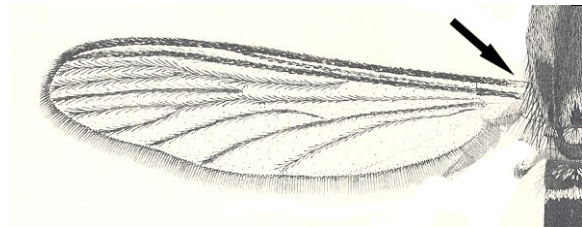


Fig. 11B

12. Tarsal bands narrow (Fig. 12A) .....13  
 Tarsal bands broad (Fig. 12B) .....14

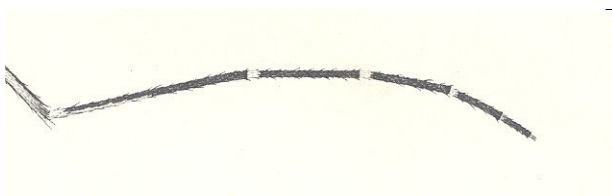


Fig. 12A

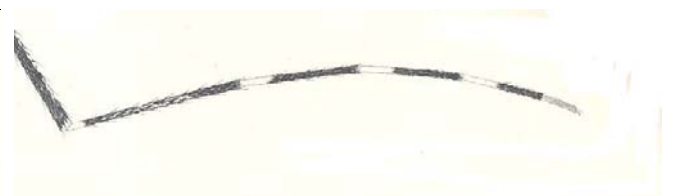


Fig. 12B

13. Abdominal bands with a V-shaped notch, 7<sup>th</sup> segment largely dark scaled (Fig. 13A) ..... *Aedes vexans*  
 Abdominal bands concave rather than notched, 7<sup>th</sup> segment pale scaled (Fig. 13B) .....*Ochlerotatus cantator*

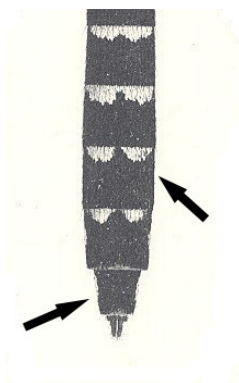


Fig. 13A

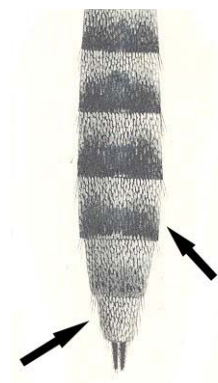


Fig. 13B

14. Proboscis with a pale band near the middle (Fig. 14A) .....15  
 Proboscis unbanded (Fig. 14B) .....17

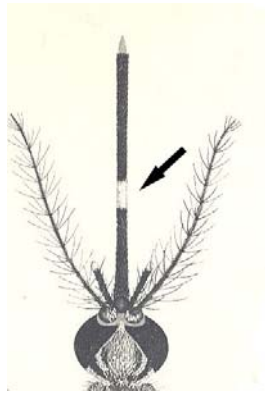


Fig. 14A

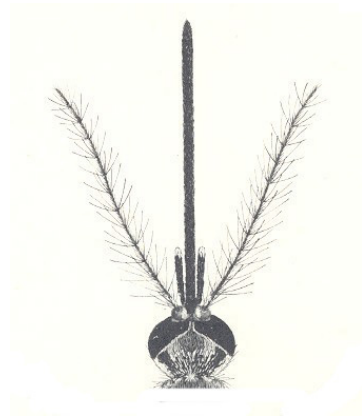


Fig. 14B

15. Bands on the apex of each abdominal segment (end of segment furthest from the head)  
 (Fig. 15A) .....*Psorophora columbiae*  
 Bands on the base of each abdominal segment (end of segment closest to the head)  
 (Fig. 15B) .....16

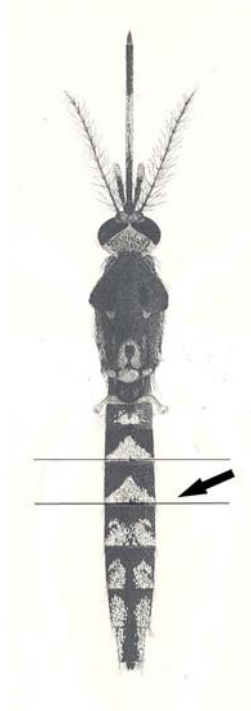


Fig. 15A

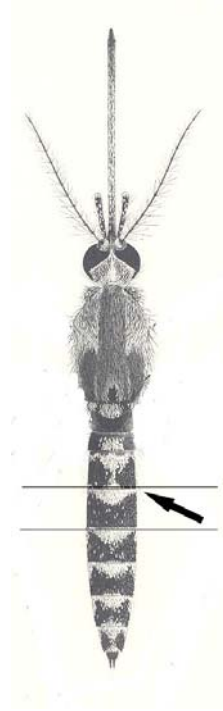


Fig. 15B

16. Abdomen with a longitudinal stripe of pale scales in addition to distinct bands  
 (Fig. 16A) .....*Ochlerotatus sollicitans*  
 Abdomen with distinct bands but lacks a longitudinal stripe of pale scales  
 (Fig. 16B) .....*Ochlerotatus taeniorhynchus*

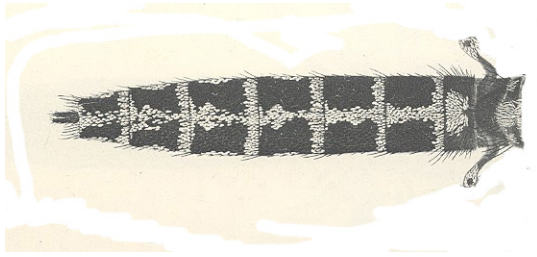


Fig. 16A

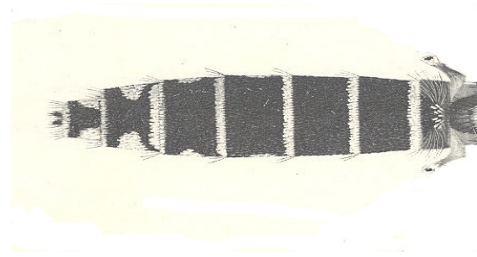


Fig. 16B

17. Thorax with a single white stripe that extends onto the head  
 (Fig. 17A) .....*Aedes albopictus*  
 Thorax with golden stripes or lacking stripes altogether (Fig. 17B) .....18

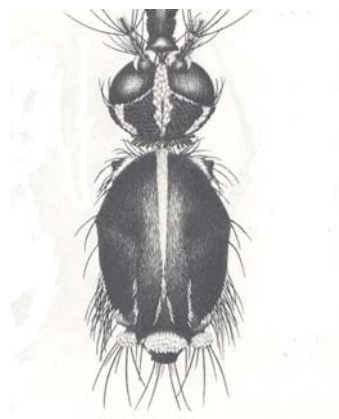


Fig. 17A

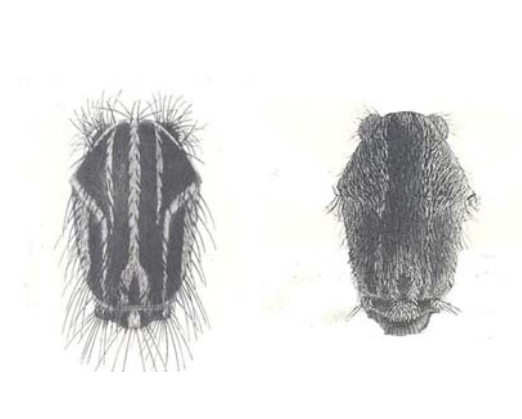


Fig. 17B

18. Multiple golden stripes on the thorax (Fig. 18A) ..... *Ochlerotatus japonicus*  
 (note: this species also has incomplete abdominal bands that produce bright white patches on the sides of each abdominal segment)  
 Thorax not ornamented with a striping pattern (Fig. 18B) .....19

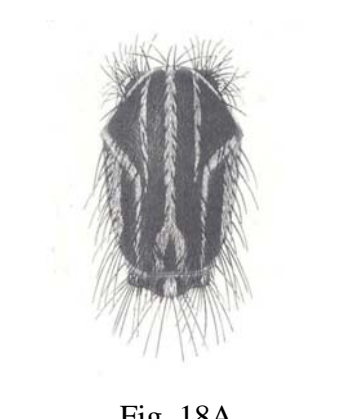


Fig. 18A



Fig. 18B

19. Individual wing scales broad (Fig. 19A) ..... *Ochlerotatus grossbeckii*  
 (Note: The broad wing scales have a triangular shape in this species)  
 Individual wing scales narrow (Fig. 19B)  
 ..... *Ochlerotatus stimulans* Group (*Oc. stimulans*, *Oc. excrucians*, *Oc. fitchii*)

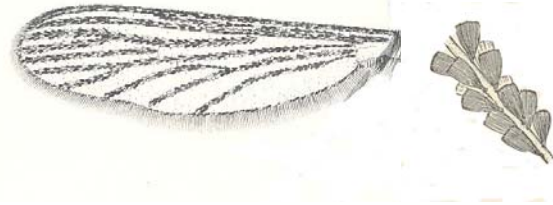


Fig. 19A

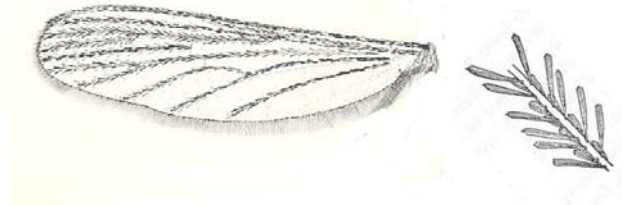


Fig. 19B

20. Thorax with either one or two broad stripes of pale scales down middle (Fig. 20A) .....21  
 Thorax either entirely dark or pale with a dark stripe down the middle (Fig. 20B) .....22

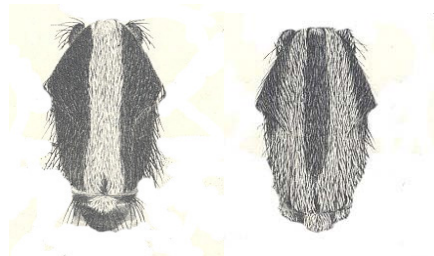


Fig. 20A

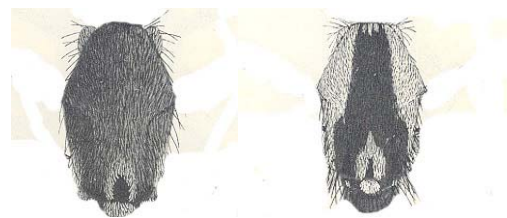


Fig. 20B

21. Thorax with a single broad stripe of pale scales down middle  
 (Fig. 21A) ..... *Ochlerotatus atlanticus*  
 Thorax with two broad stripes of pale scales down middle  
 (Fig. 21B) ..... *Ochlerotatus trivittatus*

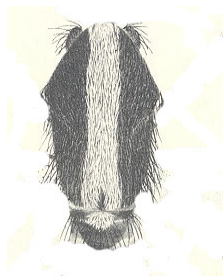


Fig. 21A

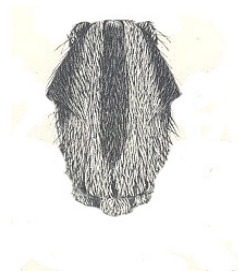


Fig. 21B

22. Abdominal bands incomplete (Fig. 22A) ..... *Ochlerotatus triseriatus*  
 (Note: this species has a distinct black & white color pattern)  
 Abdominal bands complete (Fig. 22B) .....23  
 (these species are brown rather than black)

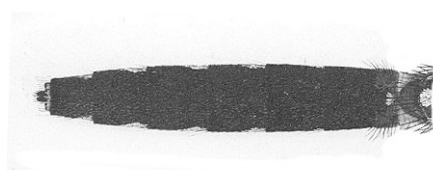


Fig. 22A

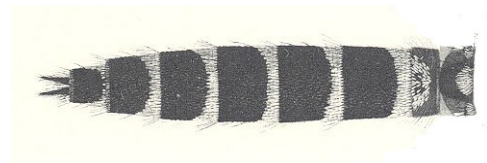


Fig. 22B



23. Relatively small species, 2 dark spots on top of head behind eyes  
 (Fig. 23A).....*Aedes cinereus*  
 Medium to large species, lacks dark spots on head behind eyes  
 (Fig. 23B)..... *Oclerotatus abserratus/ Ochlerotatus sticticus*

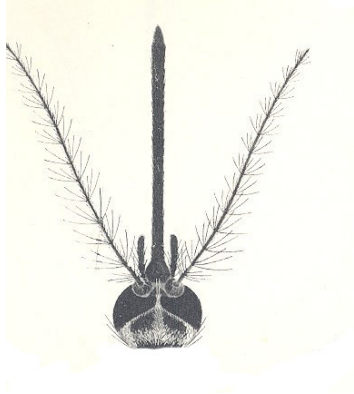


Fig. 23A

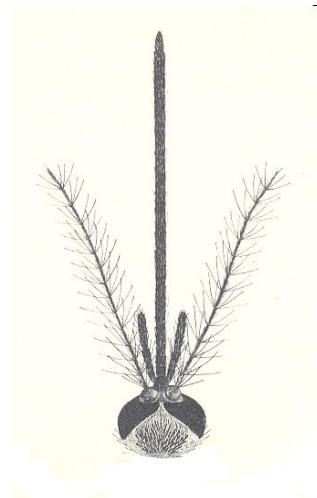


Fig. 23B

24. Very small species with iridescent blue scales on head and thorax  
 (Fig. 24A) .....*Uranotaenia sapphirina*  
 Lacks conspicuous iridescent blue scales .....25

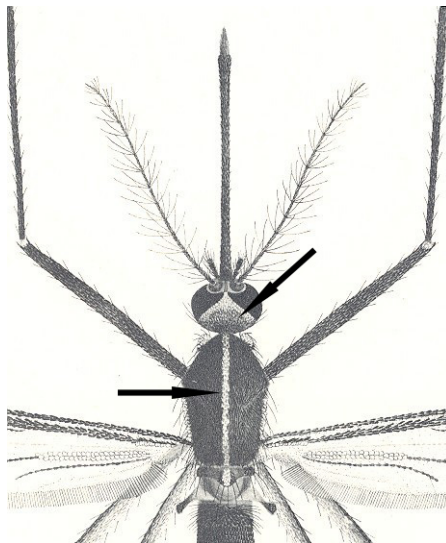


Fig. 24A

25. Tarsi ringed with white bands (Fig. 25A).....26  
 Tarsi unbanded (Fig. 25B) .....28

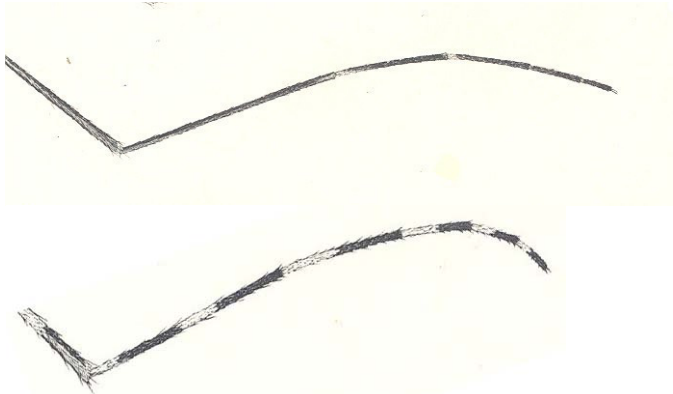


Fig. 25A

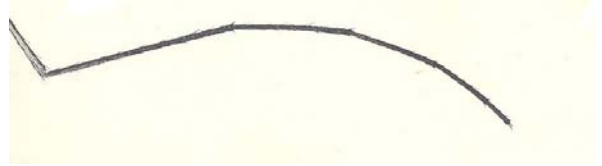


Fig. 25B

26. Thorax ornamented with fine lines of white scales  
 (Fig. 26A).....*Orthopodomyia signifera* / *Orthopodomyia alba*  
 Thorax without fine lines of white scales .....27

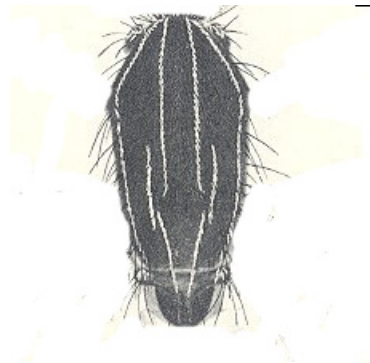


Fig. 26A

27. Tarsal bands broad, white band on proboscis (Fig. 27A)..... *Coquillettidia perturbans*  
 Tarsal bands narrow, no band on proboscis (Fig 27B)..... *Culiseta morsitans*



Fig. 27A



Fig. 27B

28. Relatively large species, wing scales mixed dark and light on the forward wing veins  
 (Fig. 28A) ..... *Culiseta inornata*  
 Average size, wing scales entirely dark (Fig. 28B) .....29

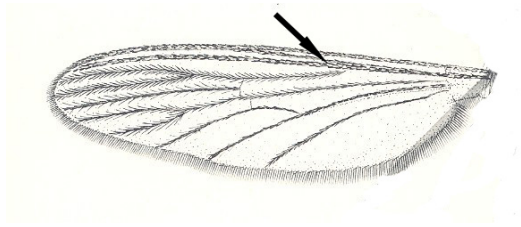


Fig. 28A

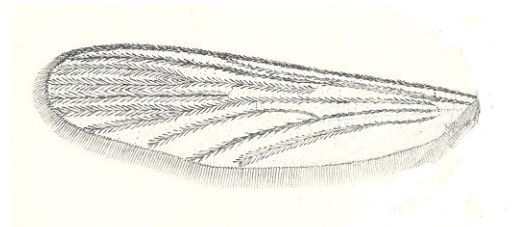


Fig. 28B

29. Abdomen dark with a purple coloration, lacks complete pale bands  
 (Fig. 29A) ..... *Culiseta melanura*  
 Abdomen marked with pale bands that extend completely across the dorsal surface  
 (Fig. 29B).....30

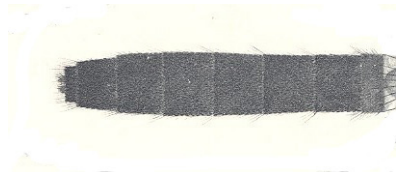


Fig. 29A

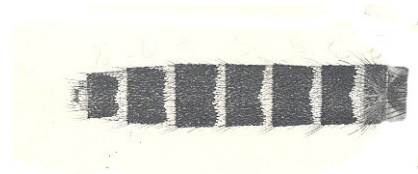


Fig. 29B

30. Bands on the apex of each abdominal segment (end of segment furthest from the head)  
 (Fig.30A)..... *Culex territans*  
 Bands on the base of each abdominal segment (end of segment closest to the head)  
 (Fig. 30B).....*Culex* Complex: *Culex pipiens*/ *Culex restuans*/ *Culex salinarius*

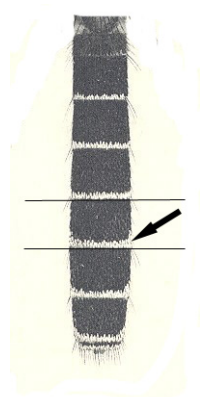


Fig. 30A

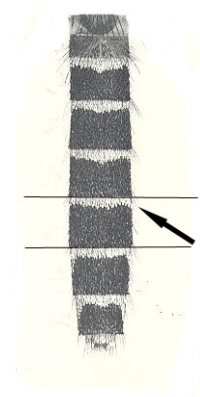


Fig. 30B

(Note : Characters are available to separate species that make up the *Culex* complex but damage to specimens collected in light traps make species identifications unreliable with this group)