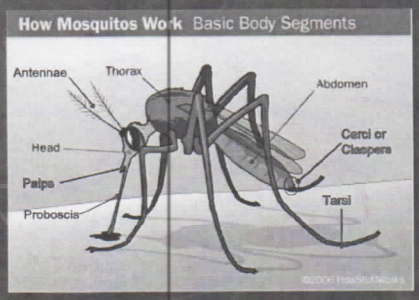
USE as evidence
Harassment, Retaliation
Discrimination Conspiracy

Adult Mosquito Identification

San Joaquin County MVCD
In-house Training

Parts of a Mosquito



Body Parts Used in ID

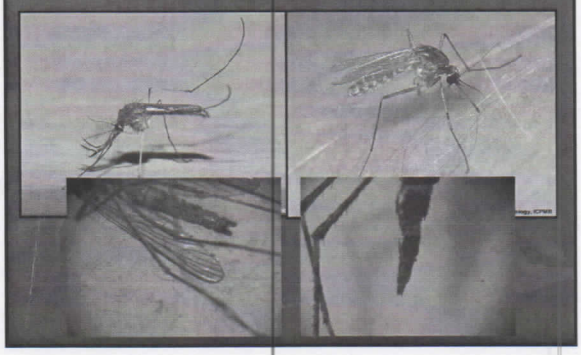
- Palps (length and scales)
- Wing scales
- Abdominal scales (both dorsal and ventral)
- Tarsal scales
- Cerci (abdomen pointed or blunt)

Male Vs. Female

Males
- Antenna with long filaments (hairs)
- Maxillary palps usually as long as the proboscis
- Tip of abdomen with a pair of hinged claspers

Females
- Antenna without long filaments (hairs)
- Maxillary palps are typically shorter than the proboscis
- Tip of abdomen with a pair of cerci

Male Vs. Female



Genus

- Anopheles
- Aedes
- Culiseta
- Culex

Genus

- Maxillary palps nearly as long as the proboscis
  - Anopheles
- Maxillary palps shorter than the proboscis
  - Tip of abdomen pointed
    - Aedes
  - Tip of abdomen blunt
    - Cross-veins in-line
      - Culiseta
    - Cross-veins Not in-line
      - Culex

Anopheles

- Maxillary palps nearly as long as the proboscis (females)
- Maxillary palps tear shaped in the males

Anopheles

- Palps with pale rings; wings with yellow scales on major posterior veins
  - Anopheles franciscanus
- Palps with mostly dark scales
  - Wing scales all dark, Wing with distinct patches of dark scales
    - Anopheles freeborni
  - Wing with patches of dark and pale scales on major veins
    - Anopheles punctipennis

Anopheles franciscanus

- Maxillary palps with pale rings and wing scales with yellow scales at the end of each posterior wing vein.
- Often confused with Anopheles punctipennis.

•Sunlit pools with algal mats
•Not a vector

Anopheles freeborni

- Wing scales all dark
- Wing with distinct patches of darker scales

•Found in sunlit algae-laden pools of water
•Vector of malaria

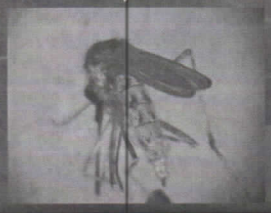
Anopheles punctipennis

- Wing patches of dark and yellow scales on all major anterior veins. Dark scales on the proboscis.

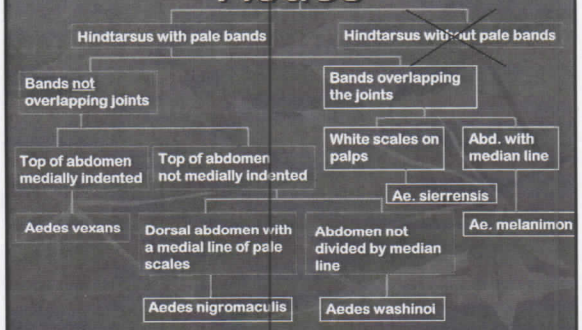
•Found in algae-laden shaded pools of water
•Vectors malaria

Aedes

- Maxillary palps are shorter than proboscis
- Pointed abdomen
- Floodwater mosquitoes



Aedes



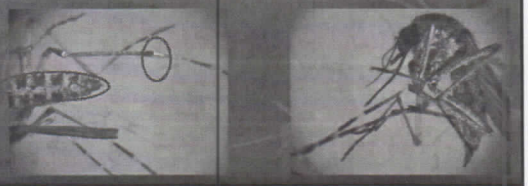
Aedes vexans

- Dorsal side of abdomen with V-notch indention
- Tarsal bands are very thin and do not overlap the joint

•Found in association with flooded rivers and streams
•Vector of Dog heartworm

Aedes nigromaculis

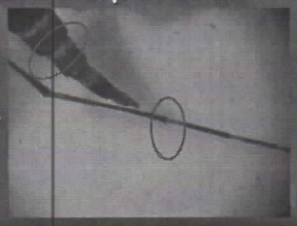
- Has a median stripe
- Tarsal bands do not overlap the joint
- Sometimes a pale band on the proboscis is visible
- Flood-water species; found in pastures



Aedes washinoi

- Hindtarsus has pale bands that do not overlap the joints
- Dorsal abdomen with pale bands

•Grassy floodwater species
•Not a known vector



Aedes melanimon

- Top of abdomen divided by a median stripe
- Hindtarsus has pale scales that overlap the joint

•Floodwater species
•Vector of WNV, WEE, and CE

Aedes sierrensis

- Hindtarsus with pale scales overlapping the joint
- White scales on the palps
- Pale basal bands on abdomen
- Small size; usually black and white

•Treehole species
•Dog Heartworm

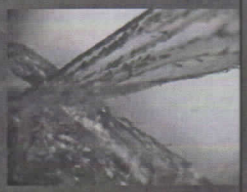
Aedes dorsalis

- Has median stripe down the abdomen
- Pale scaled (blonde)
- Not commonly found in our county
- Found primarily on the islands

•Found in coastal salt marshes
•Vector of WEE, SLE, and CE

Aedes squamiger

- Dark and pale scales are intermixed on the wing
- Found in coastal salt marshes
- Vector of CE

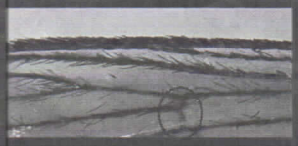


Male Aedes

- Palps have a thick mat of hairs
- All female characteristics are present in males

Culiseta

- Palps are short (females)
- Tip of abdomen is blunt; cerci are mostly concealed (C-shaped)
- Cross-veins on the wings are in line or nearly in line.
- Larger mosquito; "Winter mosquito"



Culiseta

Wings with no dark patches and hindtarsus without pale bands

Culiseta inornata

Wing with distinct dark patches and hindtarsus with pale bands

Cross-veins with no scales and hindtarsus with narrow pale bands

Culiseta incidens

Cross-veins with scales and hindtarsus with Wide pale bands

Culiseta particeps

Culiseta inornata

- Wing with radial and medial cross-veins in line
- Wings with no patches of scales
- Widespread species

•Vector of CE

Culiseta incidens

- Cross-veins are in line
- No scales on the radial and medial cross-veins
- Patches of scales on the wings

•Breed in artificial containers
•Not a vector

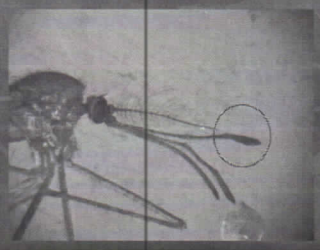
Culiseta particeps

- Wings with distinct dark patches
- Scales are present on the radial and median cross-veins

•Breed in shaded pools containing algae and debris
•Not a vector

Male Culiseta

- Palps are long and have a club-like shape
- Cross-veins may or may not be in-line



Culex

- Hindtarsus with pale bands overlapping the joint
  - Forefemur with a pale stripe; abd. with dark chevron patch
    - Cx. tarsalis
  - Forefemur without a pale stripe; abd. with a dark triangle patch
    - Cx. stigmatosoma
- Hindtarsus without pale bands
  - Dorsal abdomen with narrow bands
    - Cx. erythrothorax
  - Dorsal abdomen With contoured bands
    - Cx. pipiens

Culex tarsalis

- Pale band around proboscis
- Forefemur and foretibia with pale stripe
- Ventral abdomen with Chevron-shaped dark patches

•Vector of WNV, WEE, and SLE
•Assoc. with agricultural sources

Culex stigmatosoma

- Forefemur and foretibia without a pale stripe
- Ventral abdomen with dark triangle patch
- Easily mistaken for Cx. tarsalis

•found in both foul and slightly foul water
•Adults over winter in stumps and burrows
•Vector of WNV, SLE, WEE

Culex pipiens

- Hindtarsus without pale bands
- Top of abdomen with pale basal bands that are contoured
- Thorax is dark brown color

•Foul-water species
•Vector of SLE and WNV

Culex erythrothorax

- Top and sides of thorax reddish-orange
- Hindtarsus without pale bands
- Top of abdomen with narrow pale band
- Often mistaken for Cx. pipiens

•Associated with water containing tules and cattails
•Vector of SLE and WNV

Male Culex

- Have hairy antennae
- Have hairs on the palps, but not in thick tufts like the Aedes

Orthopodomyia signifera

- Thorax is dark brown to black with three paired narrow longitudinal lines of silver-white scales.
- Lay their eggs on the water surface, NOT on the bark

- This species breeds in tree holes and occasionally in man-made containers.

Larval Identification

An indication of the genera of mosquito larvae can be made from:

- The length of the siphon
- The position of the body in the water column

Larval Identification

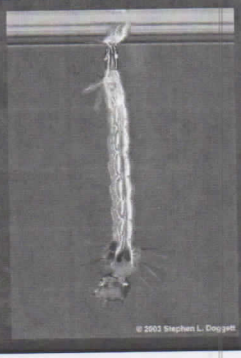
Anopheles

- Lay parallel to the water surface
- Have very small siphons called siphon plates

Larval Identification

Aedes

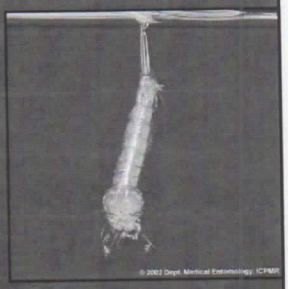
- Hang down from the water surface at an angle
- Have short, fat siphons that are more barrel shaped



Larval Identification

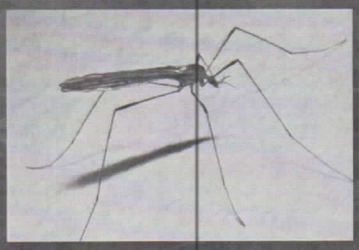
Culex

- Hang down from the water surface at an angle
- Have long, slender siphons



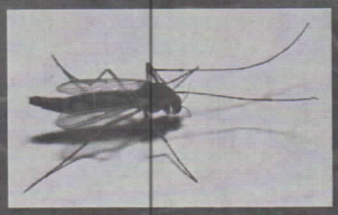
Not a Mosquito

- This is a cranefly



Not a Mosquito

- This is a midge



The End