

# *Culex*



Plain, brown, boring...or are they?

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# Species covered



- ☞ *tarsalis*
- ☞ *coronator* (2016)
- ☞ *territans*
- ☞ *salinarius*
- ☞ *nigripalpus* (2017)
- ☞ *restuans*
- ☞ *pipiens* x *quinquefasciatus*
- ☞ *erraticus*



# Culex Bionomics



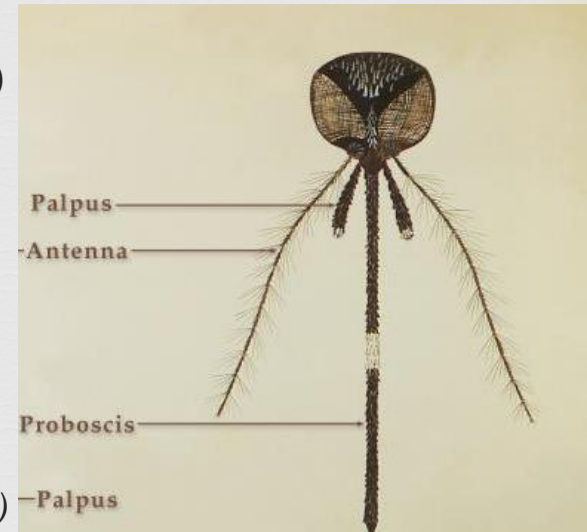
- ❧ Overwinter as adults
- ❧ Lay eggs in rafts of 100-200, multivoltine (multiple broods/yr)
- ❧ Breed mostly in FW or brackish (*Cx. sal*)
  - some prefer putrid, stagnant water with heavy organic material (*Cx. pip/res*)
  - some prefer ponds with algal mats or other surface vegetation (*Cx. err*)
  - some very opportunistic (*Cx. cor*, *Cx. nig*)
- ❧ Many are indiscriminate feeders
  - primarily avian and mammalian
- ❧ Typically nocturnal biters
- ❧ Found in CDC and gravid traps
- ❧ Vectors for a variety of diseases
  - WNV, SLE, EEE, WEE



# Common Adult Morphology

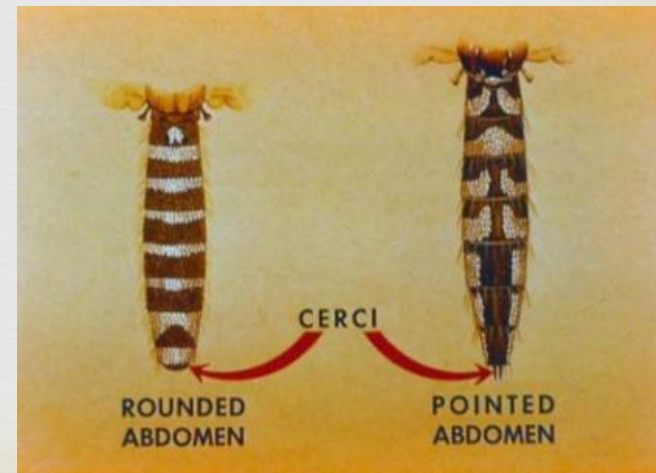
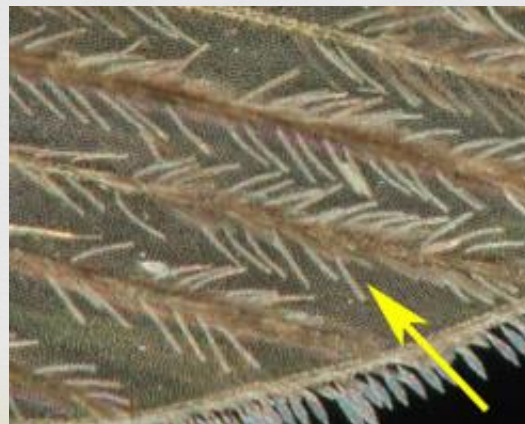


- Palpi much shorter than antennae (not *An.* or *Tx.*)
- Generally small, dark yellowish-brown
- Blunt, rounded abdomen (not *Ae.* or *Ps.*)  
w/ varied bands
- Wing scales narrow and usually all dark  
(not *Cq.*, *Ms.*, *Or.*)



broad

narrow



# Separating from other genera



- ☞ Distinguished from *Wyeomyia* (rare) whose abdomen is dorsally dark and ventrally pale - this character not listed in couplet 3, pg 29



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- ❧ Distinguished from *Uranotaenia*
  - ❧ Cx. lacks metallic scales

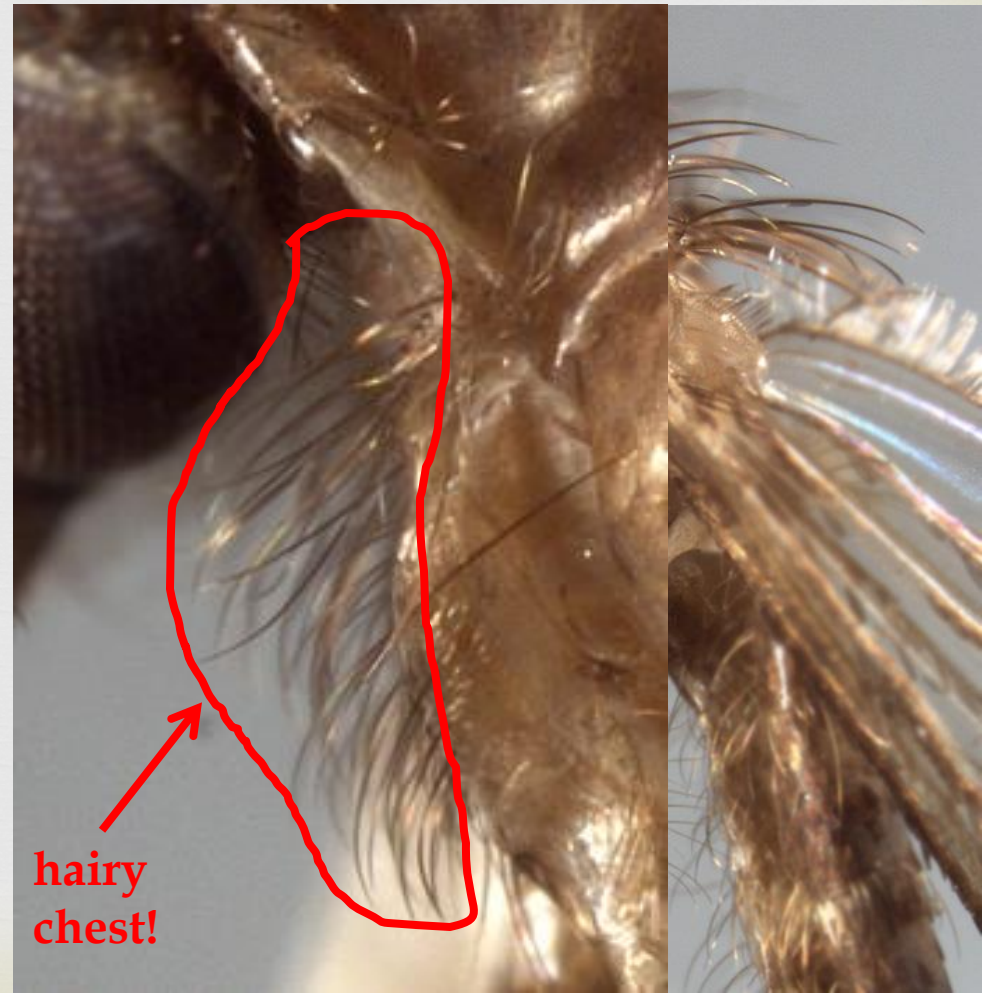
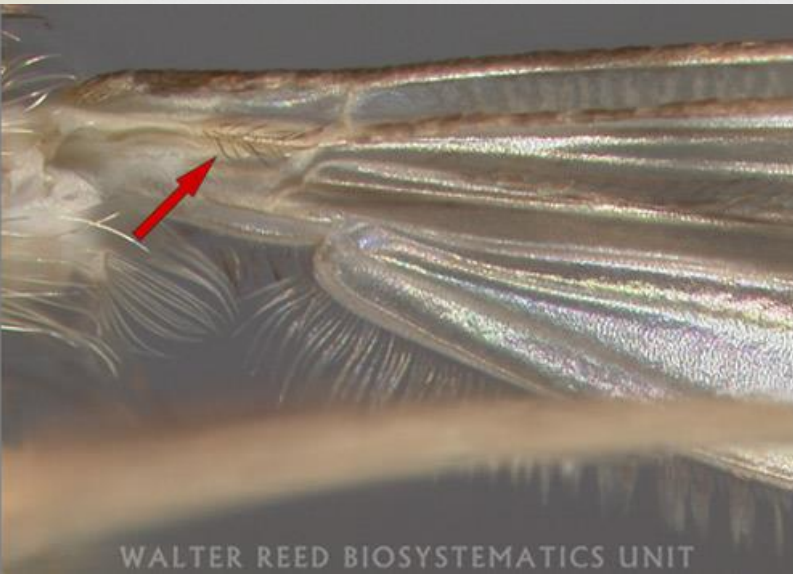


# Separating from other genera



## ☞ Distinguished from *Culiseta*

- ☞ no setae under wing (think armpit) or prespiracular area (check book)
- ☞ Cx. proboscis will be shorter
- ☞ Cx. will not have a lot of setae on the basisternum/front coxa





# *Cx. tarsalis*



- ∞ Hindtarsomeres 1-5 with apical/basal pale bands
- ∞ Proboscis with distinct pale band
- ∞ Palpi with pale scales
- ∞ Costal & subcostal veins with some pale scales

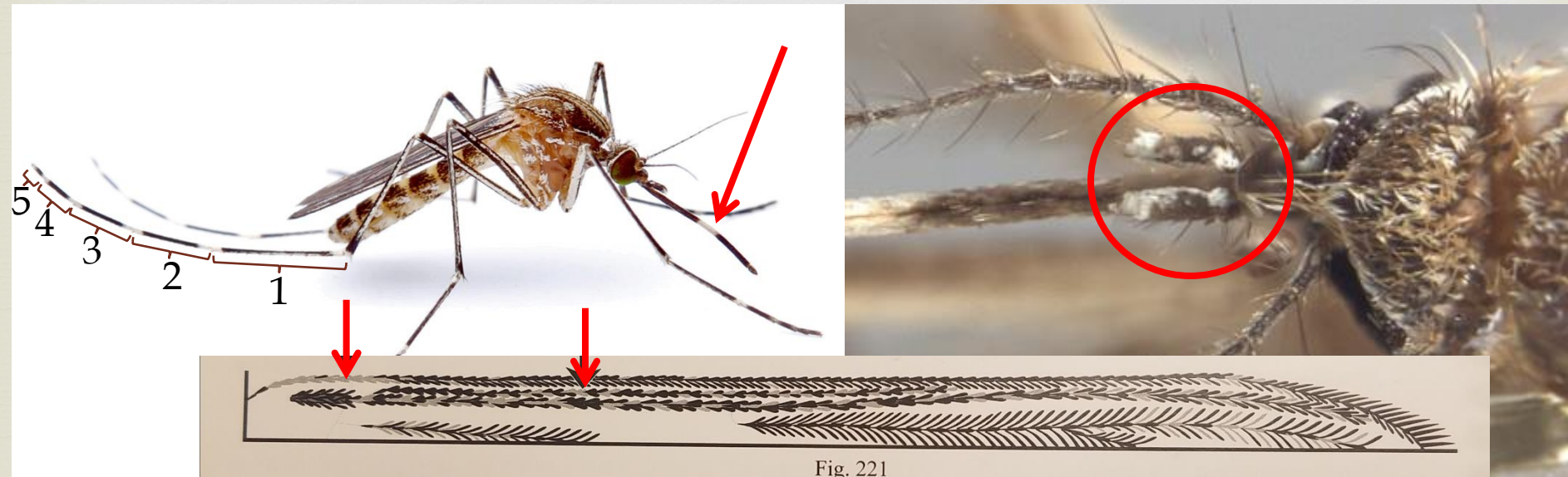


Fig. 221

# *Cx. coronator*



- ∞ Hindtarsomeres 1-5 banded similar to *Cx. tarsalis*
- ∞ Proboscis with median ventral pale patch – not a band
- ∞ Palpi without pale scales
- ∞ Costal and subcostal veins all dark



Fig. 223

# *Cx. territans*



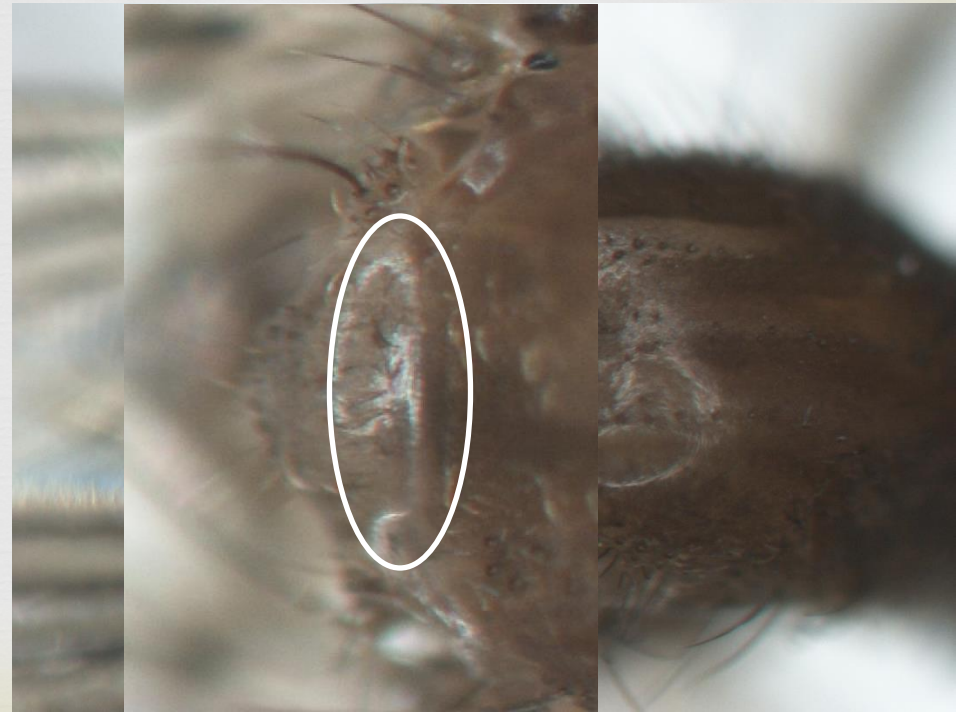
- ∞ Hindtarsomeres and proboscis not banded
- ∞ Abdominal terga with pale apical bands



# *Cx. salinarius*



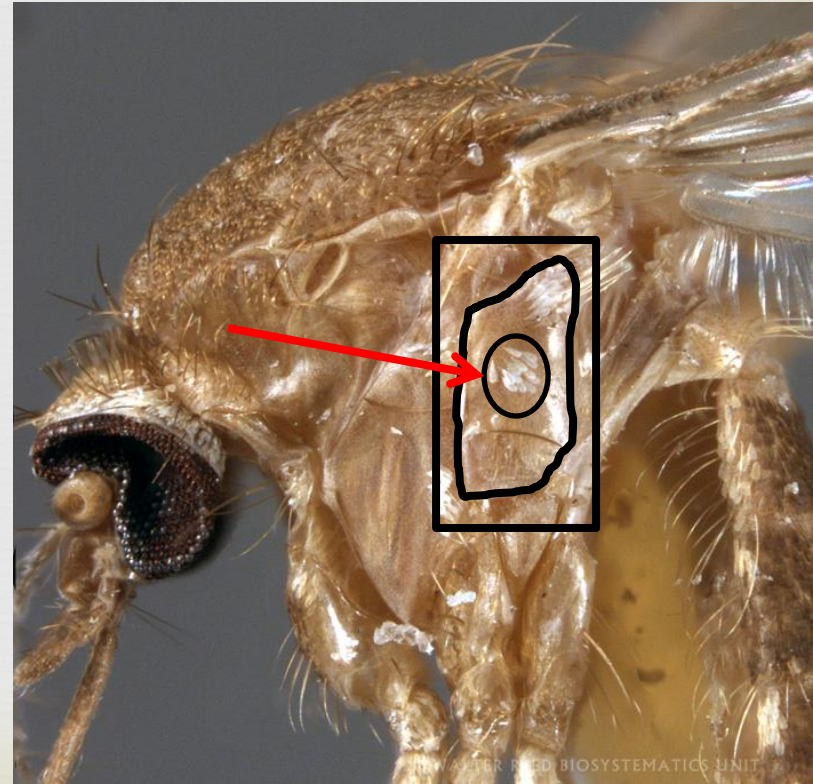
- ∞ Hindtarsomeres and proboscis not banded
- ∞ Abdominal terga with narrow or indistinct pale basal bands
- ∞ Mid-lobe of scutellum with basal patch of dark brown scales



# *Cx. salinarius*



- ☞ Last 2 abdominal segments nearly covered with gold scales
- ☞ Mesepimeron with middle patch of white scales



# *Cx. nigripalpus*



- ✧ VERY similar to *Cx. salinarius*
  - ✧ Hindtarsomeres and proboscis not banded
  - ✧ Abdominal terga with narrow/indistinct basal bands
  - ✧ Mid-lobe of scutellum with basal patch of dark brown scales



Can you  
spot the 1<sup>st</sup>  
difference?



# *Cx. nigripalpus*



∞ Difference #1

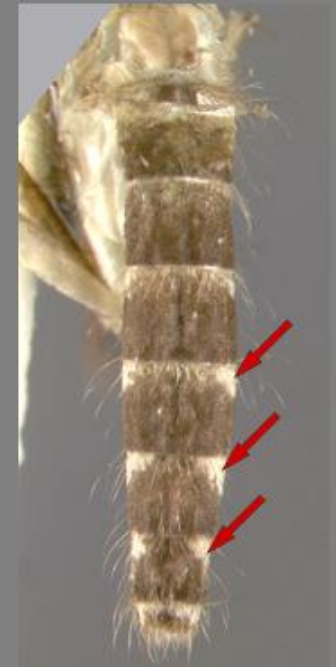
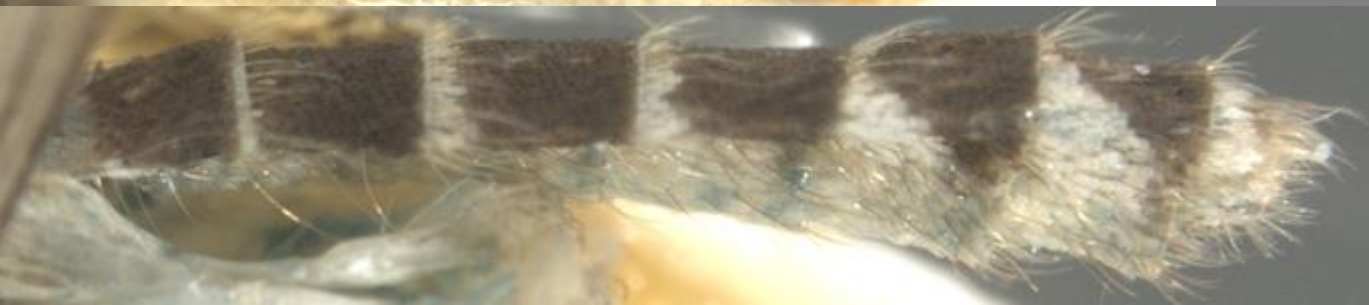
∞ Abdominal segment 7 mostly dark scaled

# *Cx. nigripalpus*



## ∞ Difference #2

- ∞ Abdominal segments 5-7 with large basolateral white patches increasing in size distally



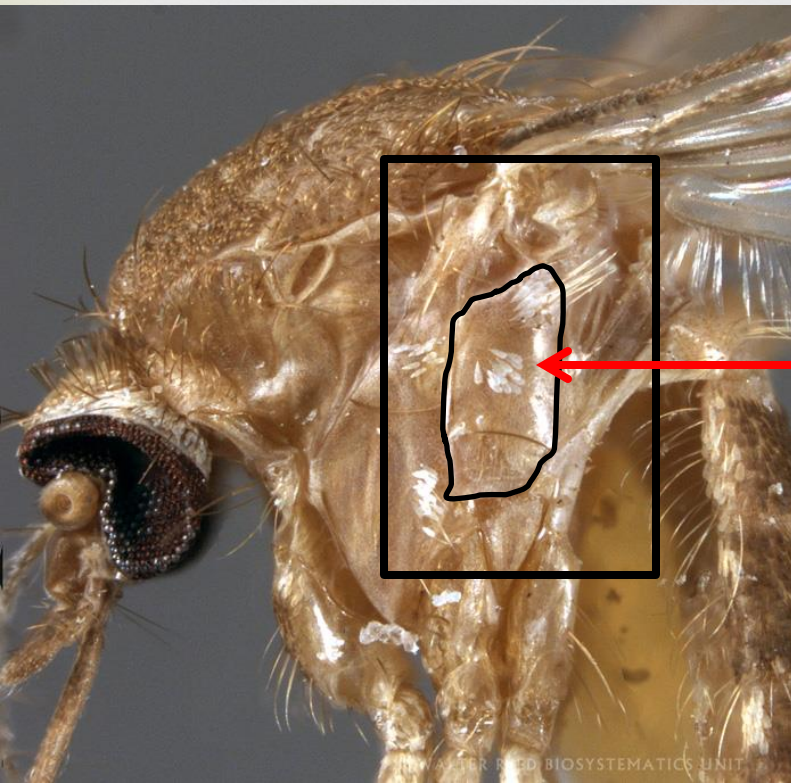


# *Cx. nigripalpus*



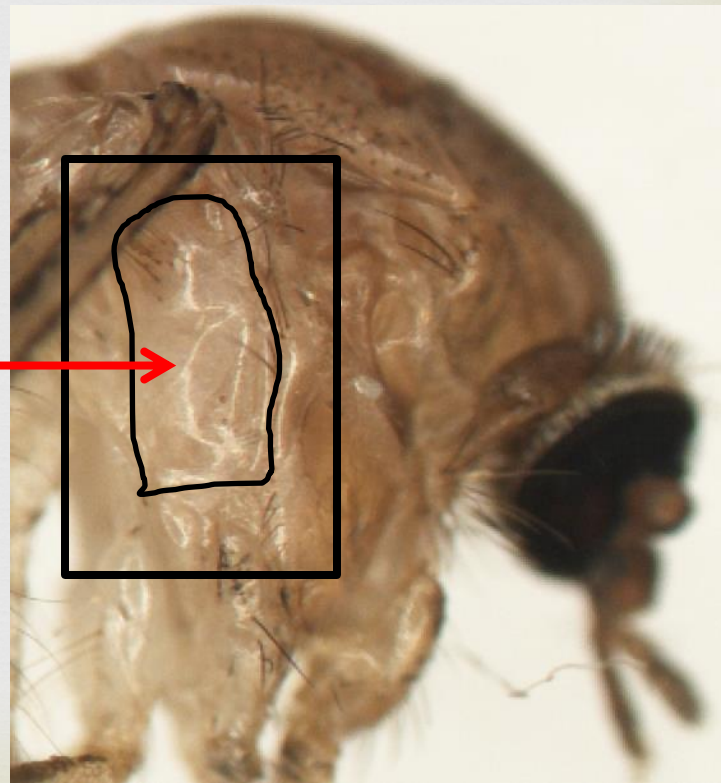
☞ Difference #3 (last one!)

☞ Mesepimeron without middle patch of white scales



(check both sides!)

*Cx. sal*  
with  
patch

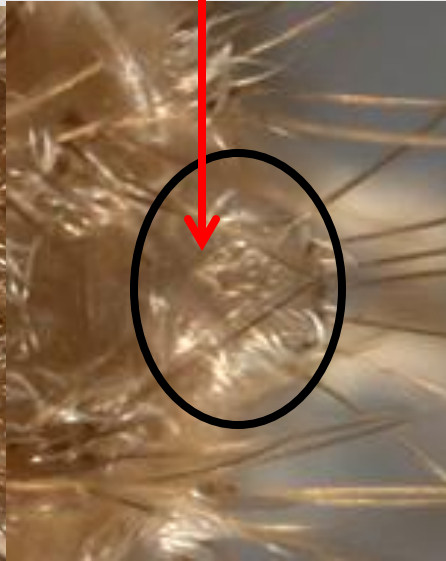


*Cx. nig*  
without  
patch

# *Cx. restuans*



- ✧ Hindtarsomeres and proboscis not banded
- ✧ Abdominal terga with distinct basal pale bands
- ✧ Scutellum mid-lobe w/ basal patch of white/cream color scales



# *Cx. restuans*



- ☞ Top of head with erect forked scales on vertex + occiput black
- ☞ Scutum w/ fine dark brown scales and usually 2 small round white spots



# *Cx. pipiens x quinquefasciatus*



- VERY similar to *Cx. restuans*
  - Hindtarsomeres and proboscis not banded
  - Scutellum mid-lobe w/ basal patch of white scales
  - Abdominal terga with distinct basal pale bands

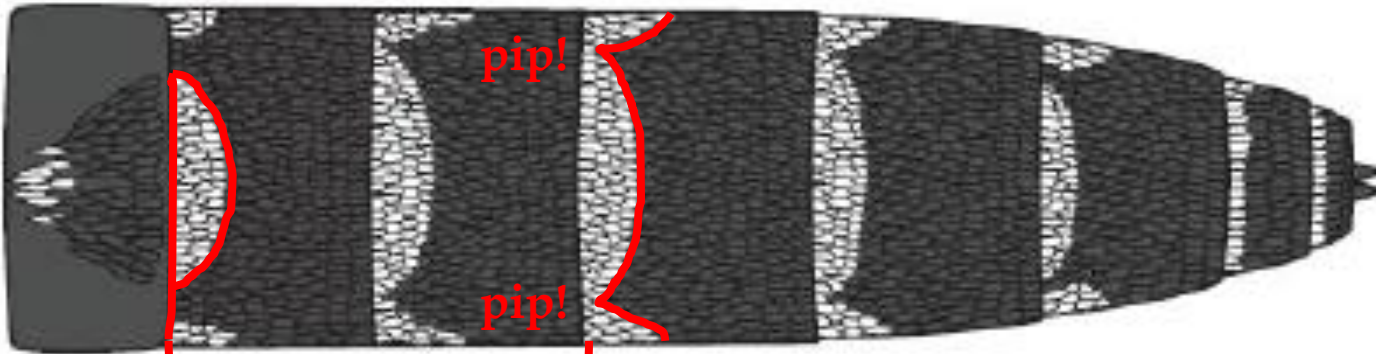
HOWEVER...



# *Cx. pipiens x quinquefasciatus*



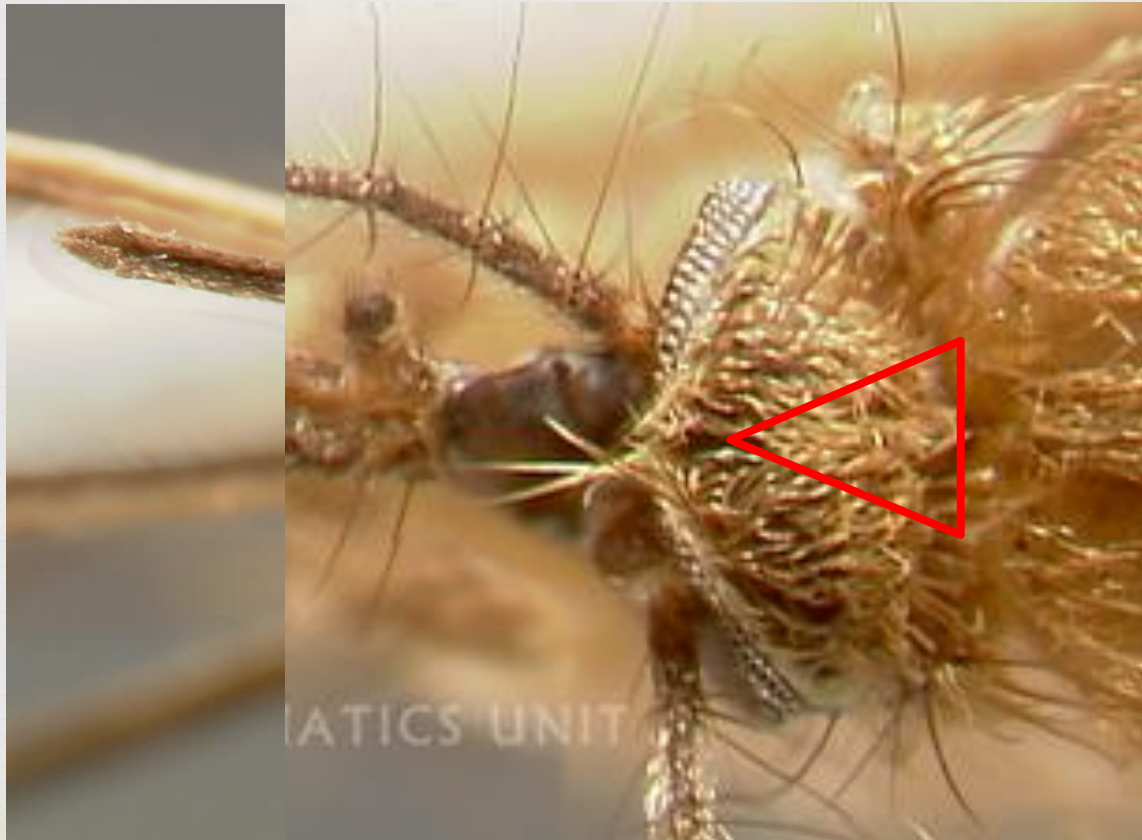
- ☞ Segments II, III usually with cream/light yellow central spot that is narrowly or not attached to white lateral spots
- ☞ Banding usually not straight centrally enlarged think sideways P or “pip, pip!”



# *Cx. pipiens x quinquefasciatus*



- Top of head w/ pale or tan erect forked scales on median vertex and occiput



# *Cx. erraticus*



- Very small, dark brown/black mosquito with bright white scales on abdomen and sides of thorax
- Vertex of head with a few rows of broad round scales immediately behind eyes



# *Cx. erraticus*



- ☞ Most easily recognized by color/abdominal banding
- Appears to wrap all the way around
- Sometimes very indistinct on dorsal side





# Summary of key characters



Character(s)	Species
<u>Banded legs</u> & proboscis with pale band or ventral patch	<i>Cx. tarsalis</i> or <i>Cx. coronator</i>
<u>Apical</u> abdominal banding	<i>Cx. territans</i>
Indistinct basal abdominal bands, <u>last 2 segments</u> <u>nearly all gold</u> , mesepimeron with middle pale patch	<i>Cx. salinarius</i>
Indistinct basal abdomen bands, <u>segment VII nearly all dark</u> , mesepimeron without middle patch	<i>Cx. nigripalpus</i>
Distinct basal bands, <u>usually 2 white dots on scutum</u> , middle head scales black	<i>Cx. restuans</i>
Distinct basal bands <u>P shaped</u> , head scales pale	<i>Cx. pipiens</i> x <i>quinquefasciatus</i>
<u>Small and dark with bright white banding</u> that usually wraps around ventrally	<i>Cx. erraticus</i>



Thank you!

Questions?