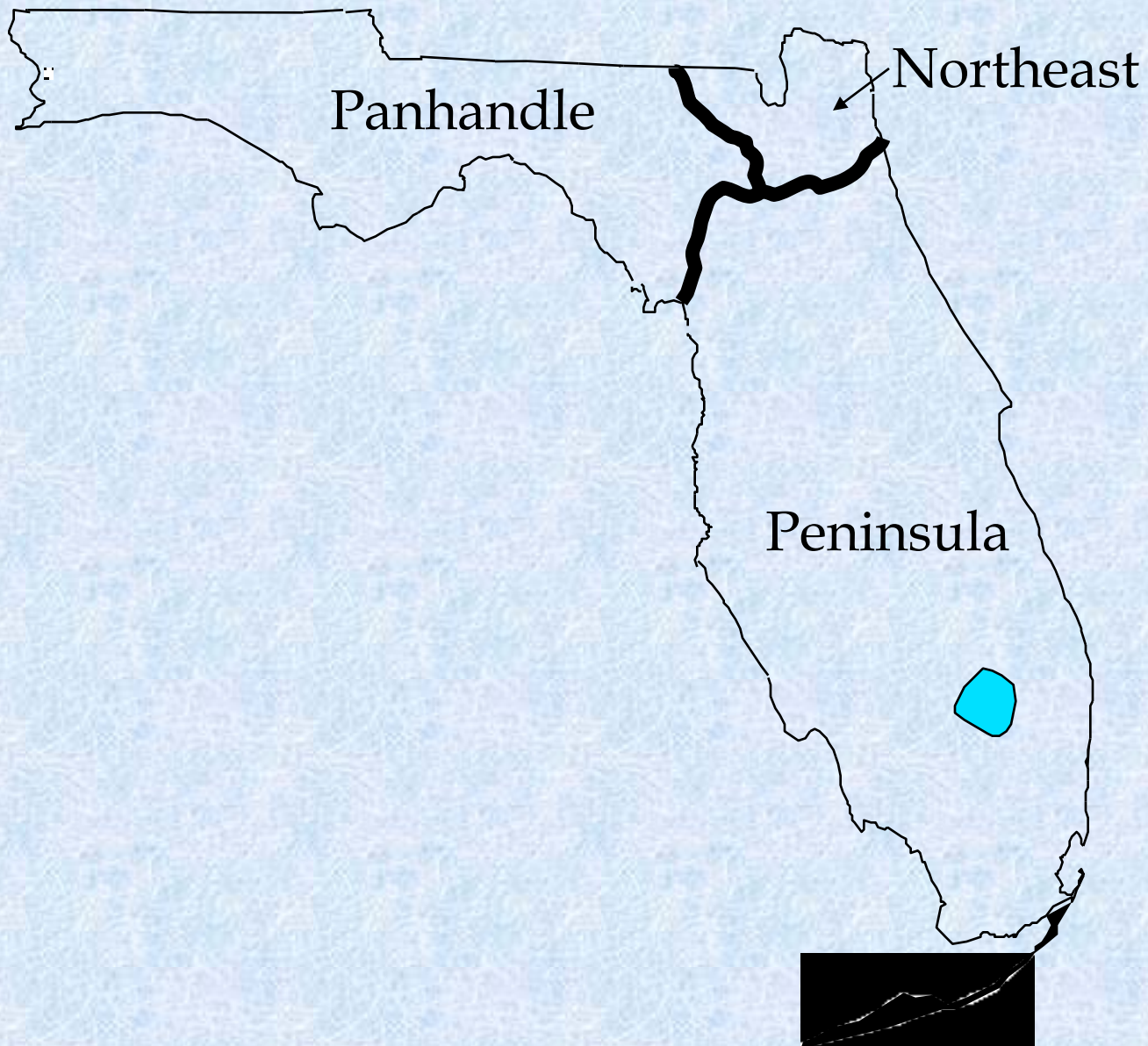


An Update Of Florida's Chironomidae Taxonomy

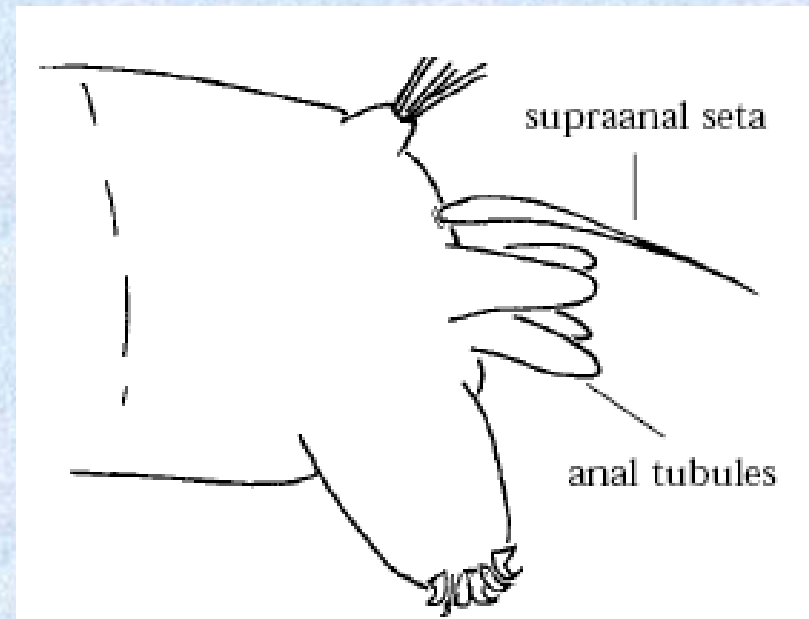
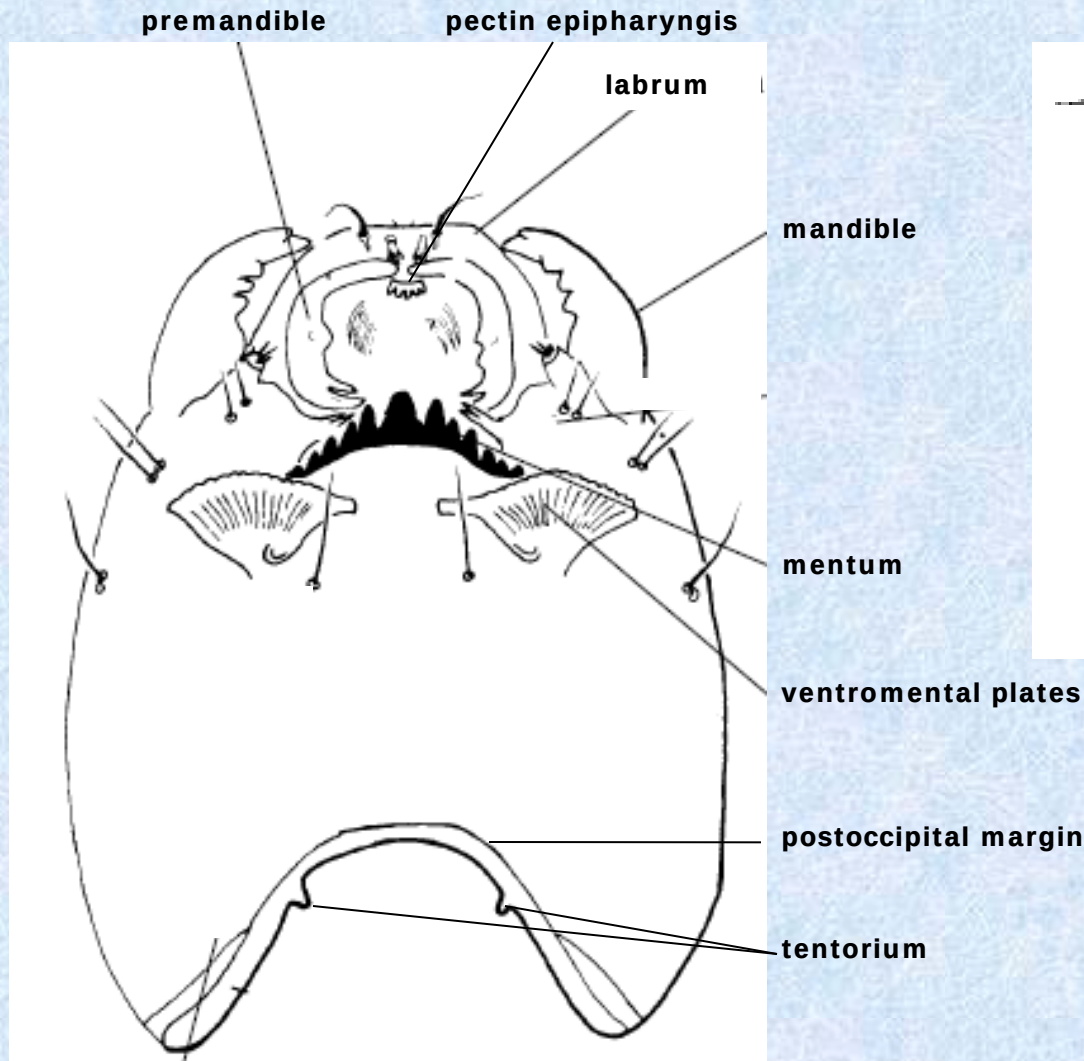


Presented by Todd Risk
FL DEP Bureau of Labs – Biology Section
November 2011

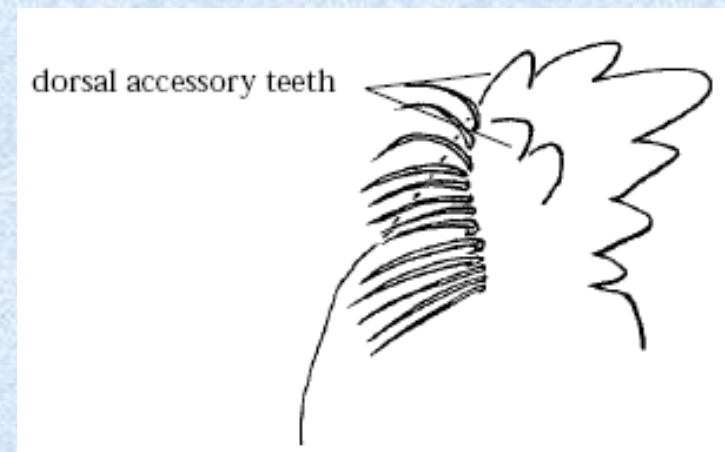
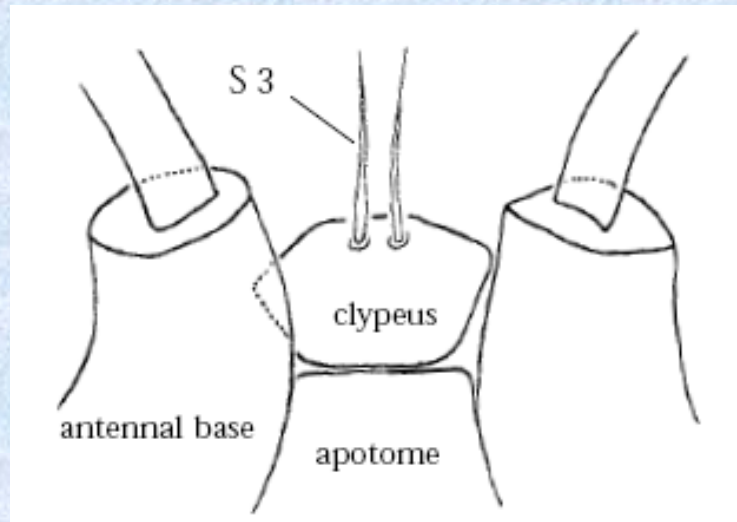
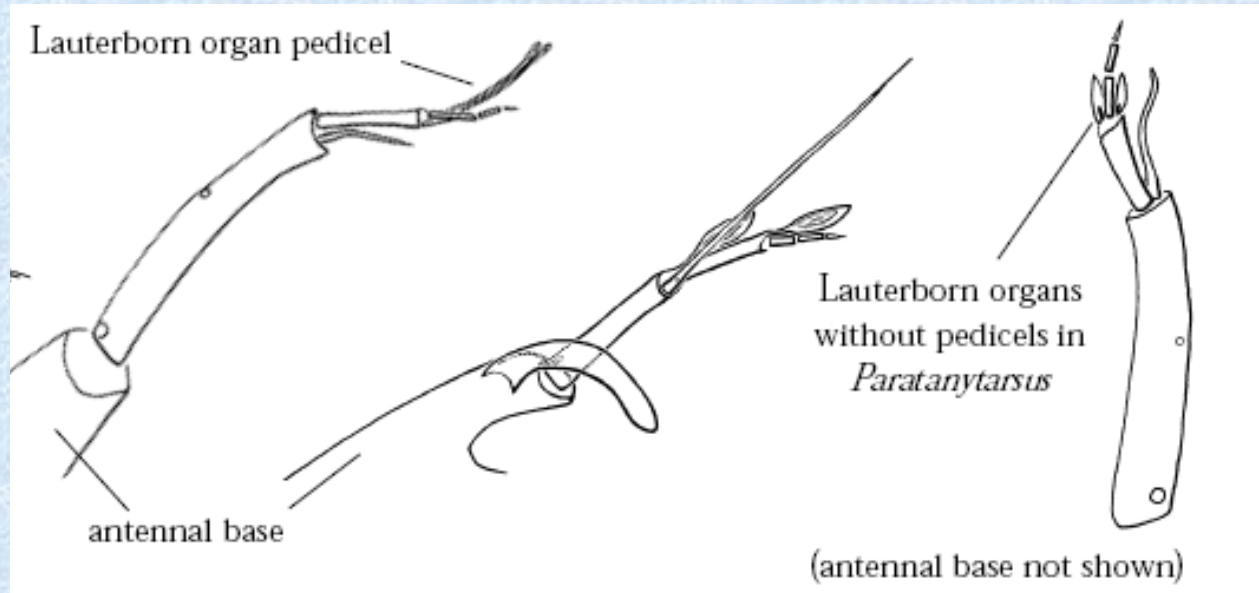
Bio-regions of Florida



Morphology and Terminology



Morphology and Terminology



Overview

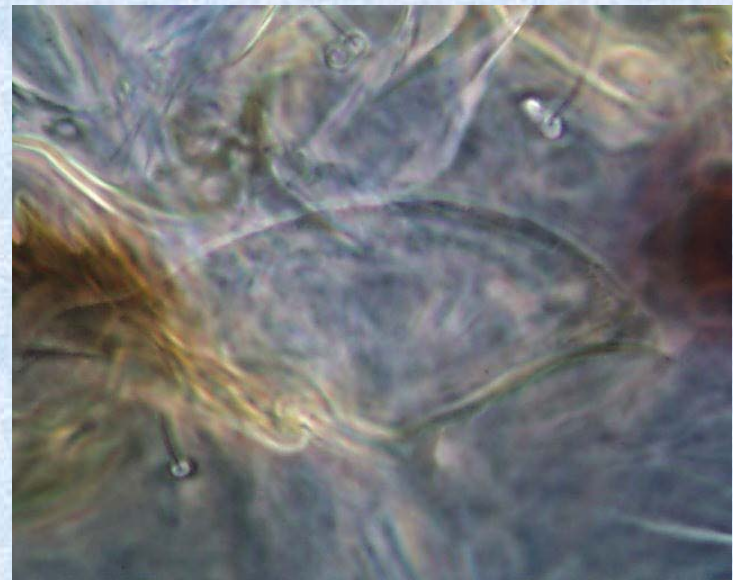
- These are Chironomidae larvae which have been found in Florida. Some are not in Epler's 1995 or 2001 Chironomidae keys, and some are species that have since been split into multiple species. All are based on more than one specimen.

The Species:

- *Parachironomus* sp. A Risk
- *Polypedilum nubifer* (Skuse)
- *Stempellina* sp. D Risk
- *Tanytarsus* sp. Y Epler
- *Tanytarsus* sp. 1 Risk
- *Tanytarsus* sp. 2 Risk
- *Tanytarsus* sp. 3 Risk
- *Tanytarsus* sp. 4 Risk
- *Tanytarsus* sp. sp. 1 Heyn / *Tanytarsus* sp. C Epler (Type 3)
- *Tanytarsus* sp. L Epler (Type 1)
- *Tanytarsus* sp. L Epler (Type 2)
- *Ablabesmyia aspera* (Type 1)
- *Ablabesmyia aspera* (Type 2)
- *Conchapelopia* sp. (Type 1)
- *Conchapelopia* sp. (Type 2)

Parachironomus sp. A Risk

- Found in the peninsula
- Mentum with a single median tooth
- 5th lateral tooth subequal to 6th
- Outer margin of mentum smooth
- Ventromental plate without recurved striae
- Anterior margin of ventromental plates smooth



Parachironomus sp. A Risk

- Antennal segments 3 & 4 subequal
- Pecten epipharyngis is trifid
- Mandible with 2 well developed teeth
- Keys to couplet 7 in Epler's 2001 Chironomidae key where it hits a dead end



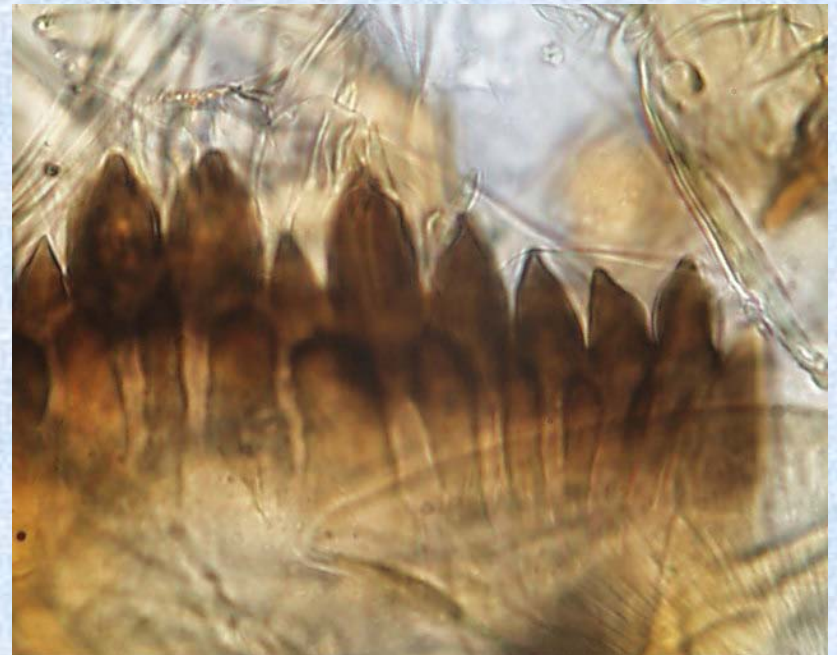
Polypedilum nubifer (Skuse)

- Found in the peninsula
- The only *Polypedilum* we see with alternating lauterborn organs
- Other characteristics are similar to what you see in other, more common, *Polypedilum*.



Polypedilum nubifer (Skuse)

- Mentum and ventromental plates similar to *P. illinoense* group.



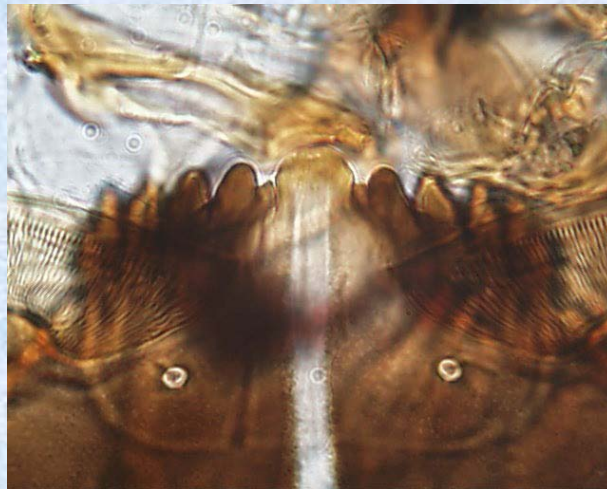
Stempellina sp. D Risk

- Found in the panhandle
- Frontoclypeal setae on long pedicels
- Procerci large & heavily sclerotized with a spiked plate on each side
- Found in a curved, sand case



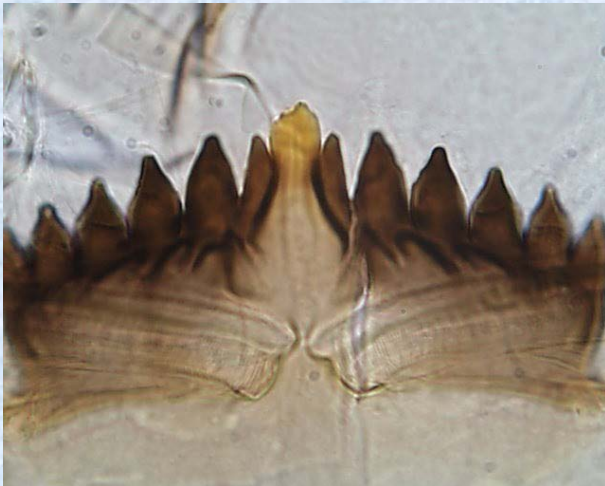
Stempellina sp. D Risk

- Base of antenna with palmate process
- Light median tooth
- Mandible with 2 inner teeth



Tanytarsus sp. Y Epler

- Keys out to couplet *T.* species A or S in Epler's 2001 Chironomidae key
- Mentum with a light median tooth
- Clypeal setae (S3) branched; The drawing is from the updates to Epler's 2001 Chironomidae key: <http://home.comcast.net/~johnepler3/CorAdd-NS.html>



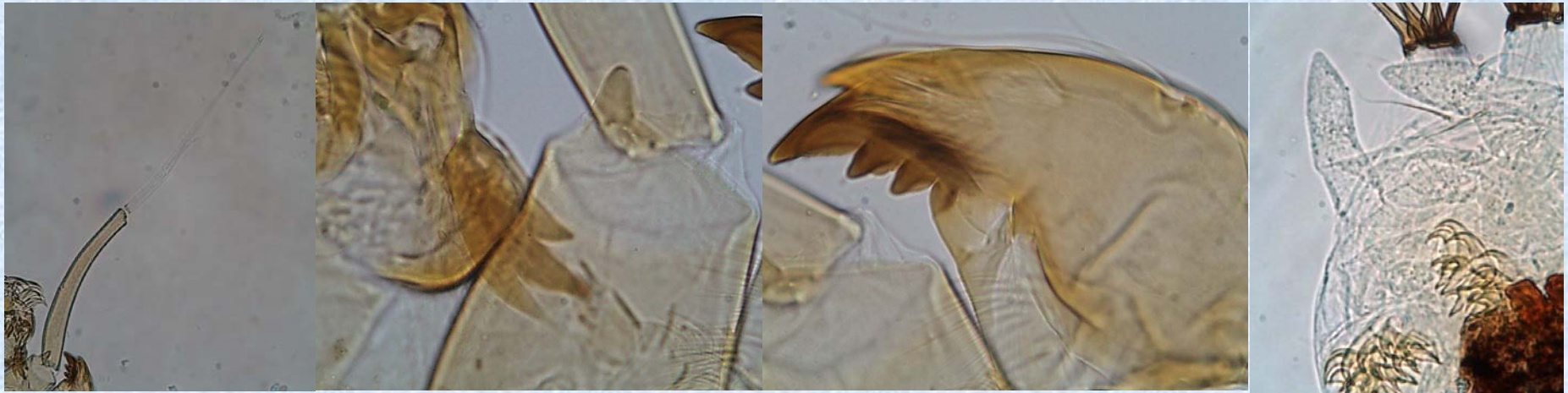
Tanytarsus sp. Y Epler

- Antennal segment 2 not sclerotized
- Mandible with 3 inner teeth
- Supraanal setae subequal to or shorter than anal tubules



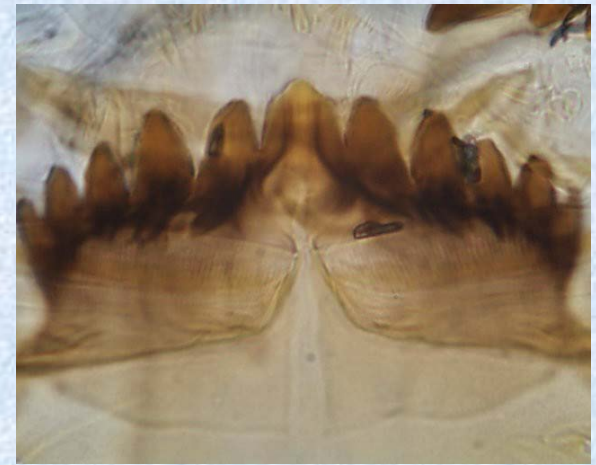
Tanytarsus sp. 1 Risk

- Keys out to couplet *T.* species A or S in Epler's 2001 Chironomidae key
- Antennal segment 2 not sclerotized
- Antennal base with a small spur
- Mandible with 2 inner teeth
- Supraanal setae subequal to anal tubules



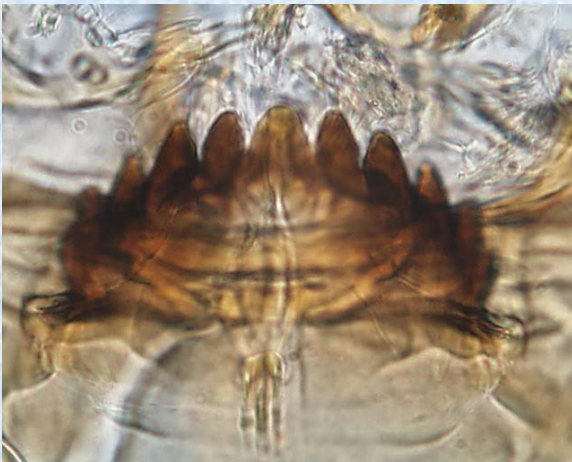
Tanytarsus sp. 1 Risk

- Clypeal setae (S3) deeply divided with secondary hairs



Tanytarsus sp. 2 Risk

- Keys out to *T.* species J in Epler's 2001 Chironomidae key
- Seen commonly in the peninsula, but may be more widespread
- Mentum with brown to light brown center tooth
- Mandible with 2 inner teeth
- Supraanal setae subequal to anal tubules



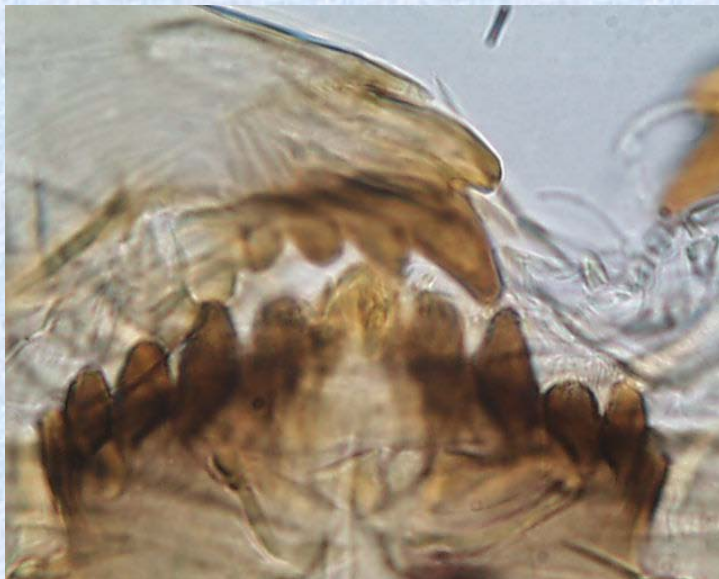
Tanytarsus sp. 2 Risk

- Fairly short lauterborn organs (similar to those on *T.* species G, R, and V)
- 1st and 2nd antennal segments fairly short (about half of the length of the head combined)



Tanytarsus sp. 3 Risk

- This also keys out to *T.* species J in Epler's 2001 Chironomidae key
- Collected in the peninsula
- Mentum with light center tooth
- Mandible with 2 inner teeth



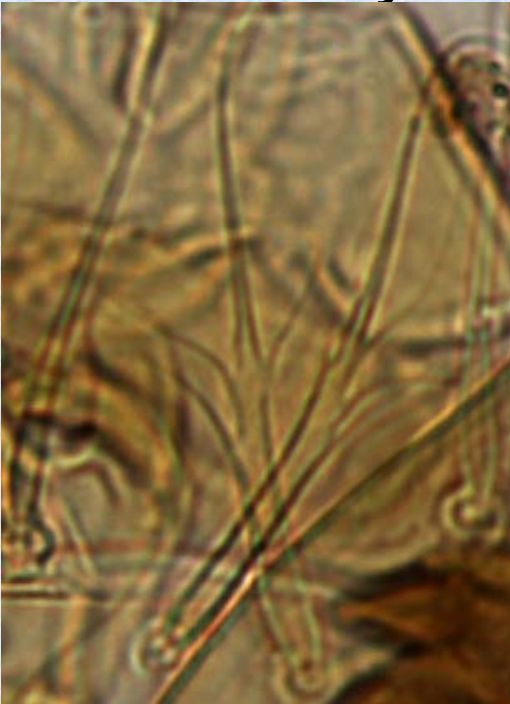
Tanytarsus sp. 3 Risk

- Longer lauterborn organs than *T. species 2* Risk
- 1st and 2nd antennal segments fairly long (about the length of the head combined)



Tanytarsus sp. 4 Risk

- Found in the panhandle
- S3 setae branched near the top (similar to sp. P)
- Long, blunt spur at antennal base
- Mandible with 3 inner teeth and 2 dorsal accessory teeth

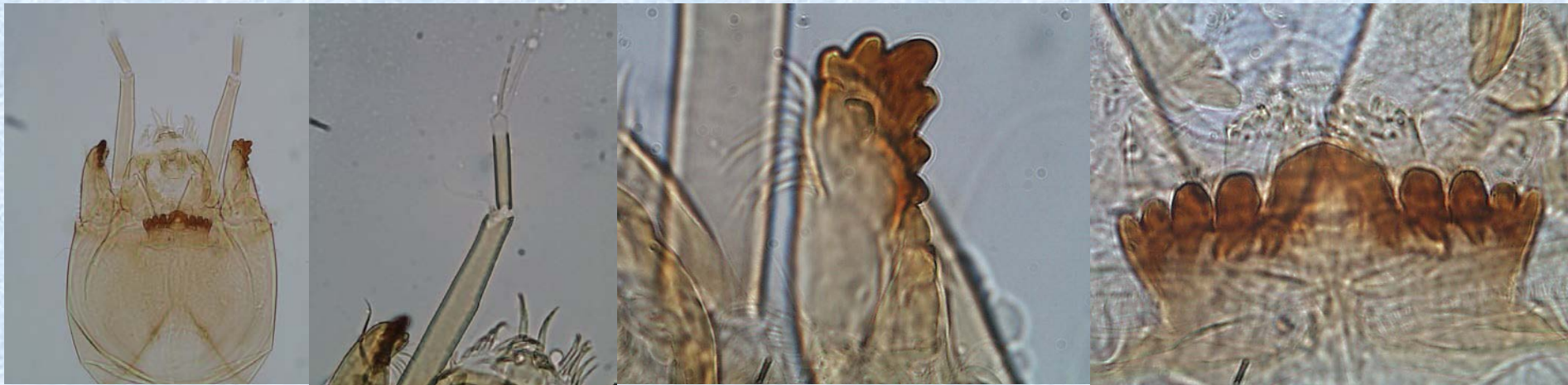


Tanytarsus sp. C Epler (Complex)

- *Tanytarsus* sp. C Epler has long spine patches on the pupa and a dark postoccipital margin. It is *Tanytarsus buckleyi* Sublette.
- *Tanytarsus* sp. 1 Heyn and *Tanytarsus* sp. C Epler (Type 3) may be the same species. Both have small spine patches on the pupa and light postoccipital margins.
- We have larval ➡ pupal ➡ adult (male) rearings of *Tanytarsus* sp. C (Type 3) and it is probably *Tanytarsus allicis* Sublette.

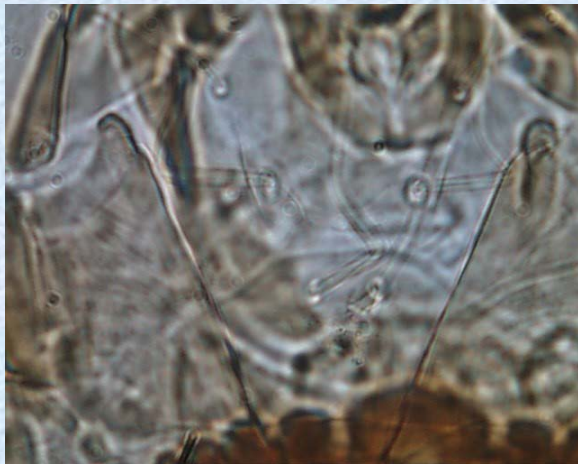
Tanytarsus sp. 1 Heyn

- Two specimens from Lee County, FL
- Keys out to *T* species C in Epler's 2001 Chironomidae key
- Mandibles with many dorsal accessory teeth
- Antennal segment 2 well sclerotized
- Worn mentum? Or is it naturally broad?



Tanytarsus sp. 1 Heyn

- S3 setae simple.
- Has small spine patches on the pupal abdominal tergites (middle)
- *Tanytarsus buckleyi* has large spine patches on the pupal tergites (right)



Tanytarsus sp. C Type 3

- Keys out to *T* species C in Epler's 2001 Chironomidae key
- Mandibles with many dorsal accessory teeth
- Antennal segment 2 well sclerotized
- Has small spine patches



— *Tanytarsus buckleyi*

Type 3 —



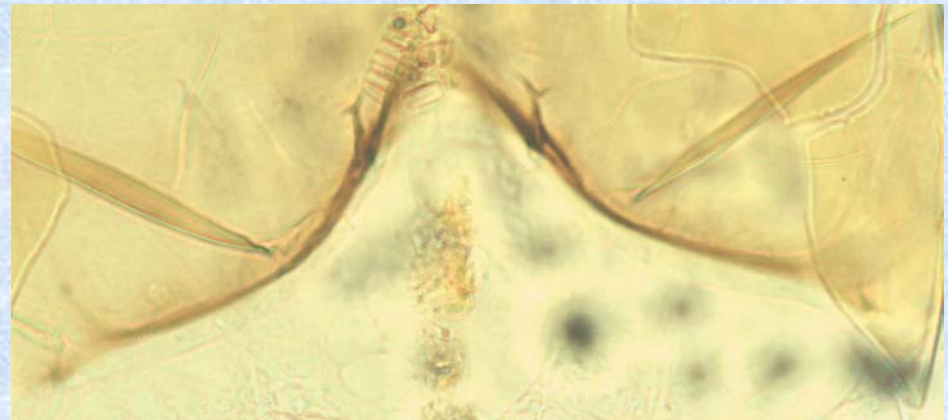
Tanytarsus sp. C Type 3

- Has clear postoccipital margin

Type 3

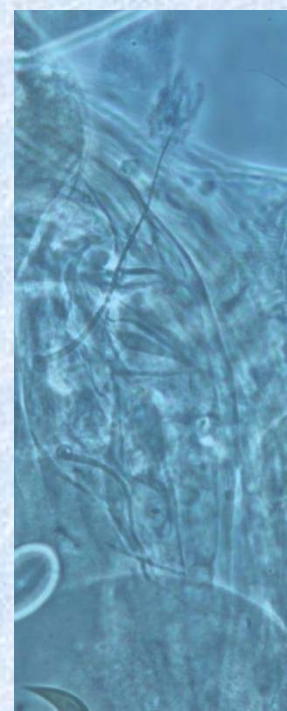


Tanytarsus buckleyi



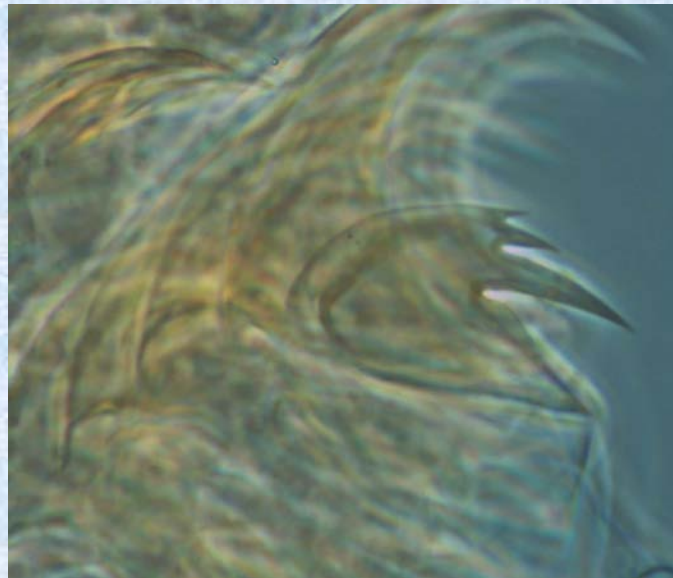
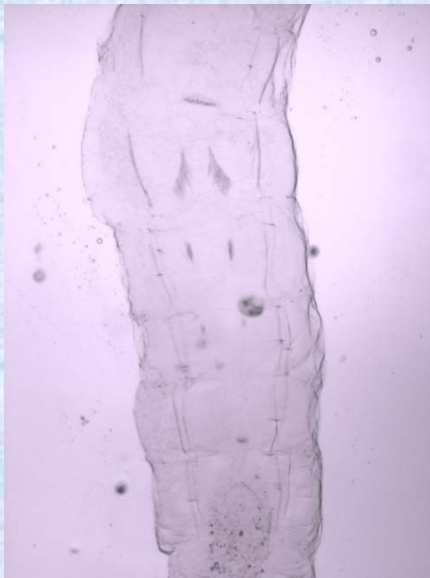
Tanytarsus sp. L Epler (Type 1)

- Collected throughout the state (mostly in streams)
- Pupal spine patches on T3 & T4 long
- Anal claws all simple
- Supraanal setae “normal;” Thin and tapering to a point
- This is probably *Tanytarsus confusus* Malloch

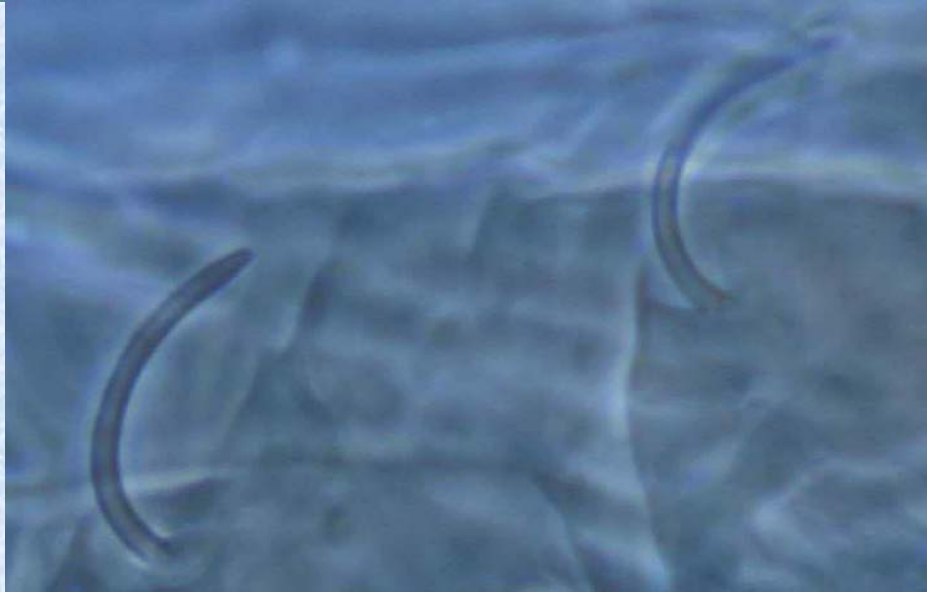
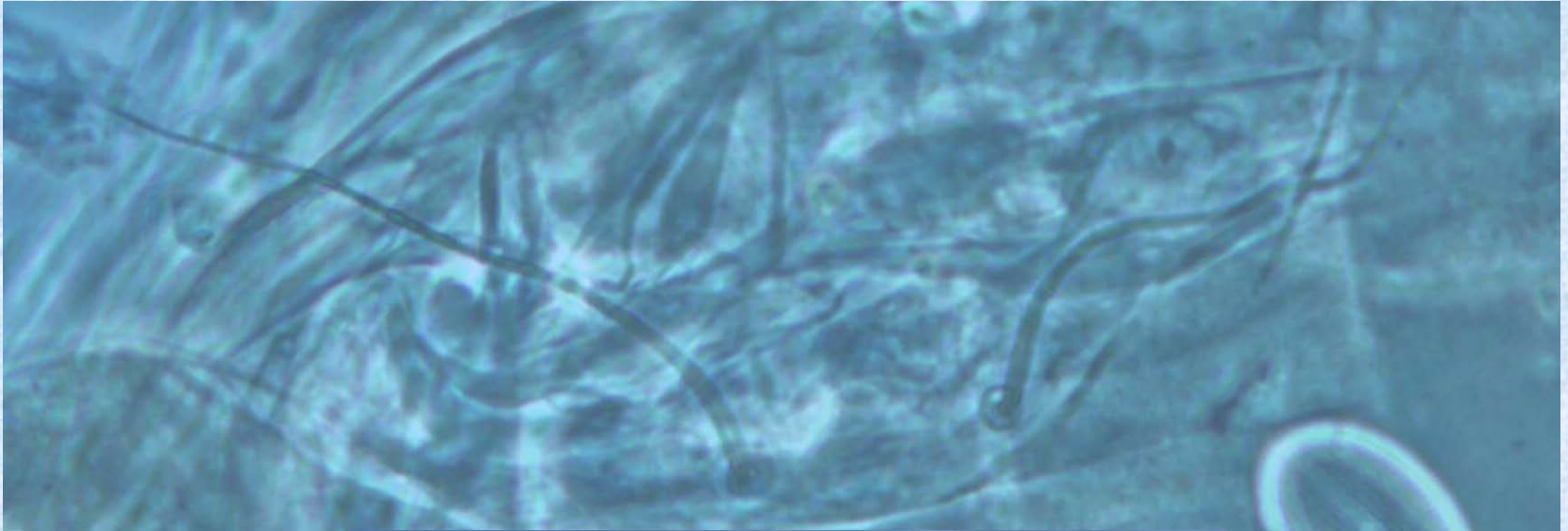


Tanytarsus sp. L Epler (Type 2)

- Collected throughout the state (often in rivers)
- Pupal spine patches are only long on T3
- Small anal claw(s) with multiple teeth
- Supraanal setae “unusual” Short, thick, curved, and blunt

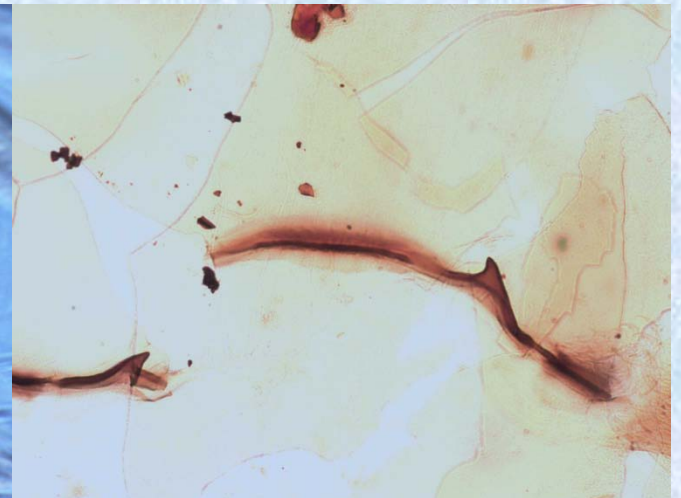
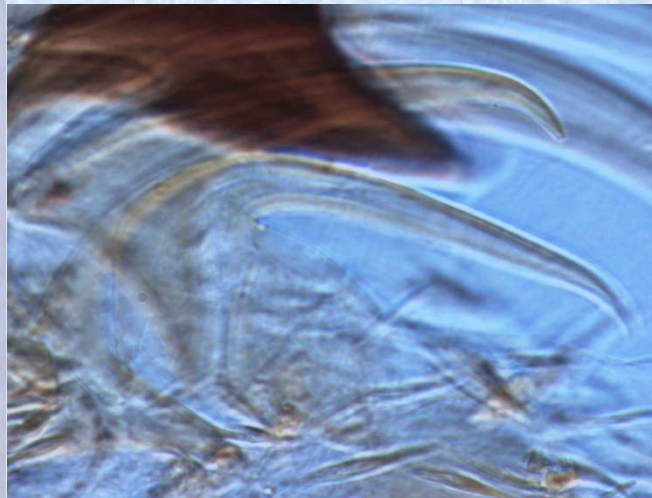


Tanytarsus sp. L Epler (Type 1)-Top
Tanytarsus sp. L Epler (Type 2)-Bottom



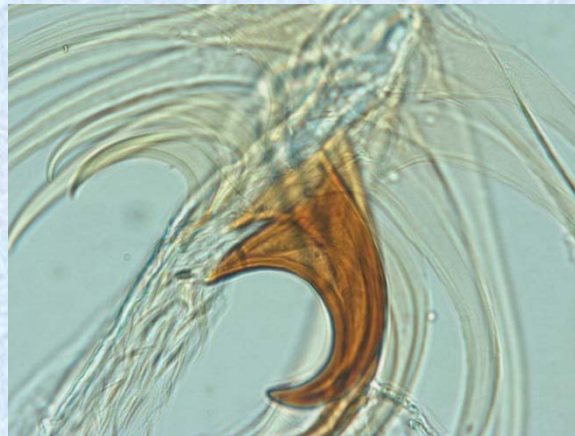
Ablabesmyia aspera (Type 1)

- Maxillary palp w/ 6 segments
- Expanded base on the small anal claws
- No large, dark area at center of head capsule
- Medium sized, rounded tentorium at base of head capsule



Ablabesmyia aspera (Type 2)

- Mentioned in the *A. aspera* species notes in Epler 2001. New species? Hybrid?
- Maxillary palp w/ 6 segments (often looks like 6 on one side & 5 on the other side of each palp)
- No expanded base on the small anal claws
- No large, dark area at center of head capsule
- Large, sharp tentorium at base of head capsule



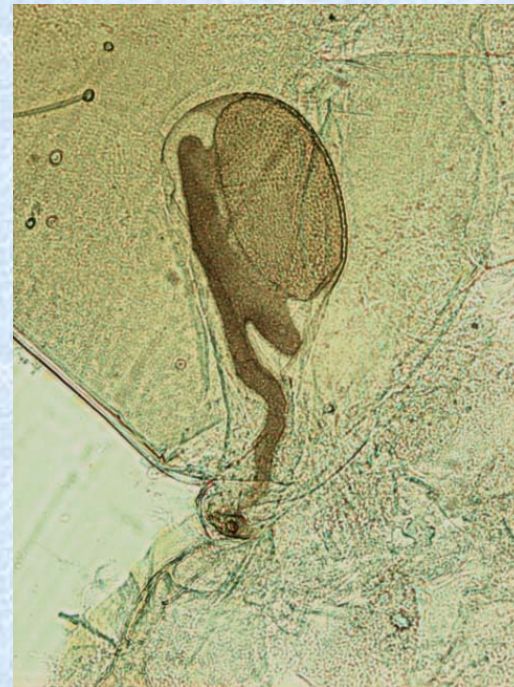
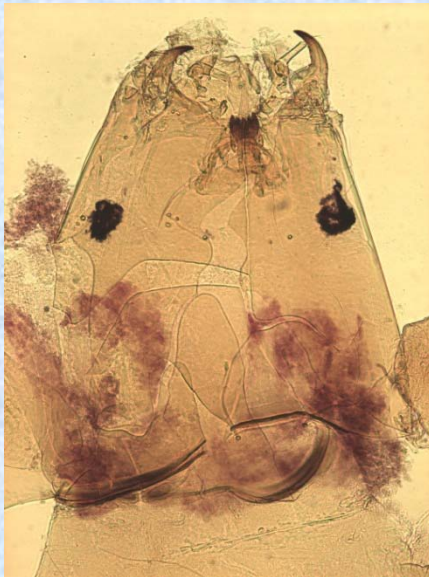
Conchapelopia sp. (Type 1)

- We're just getting started looking at these
- Thoracic horn for Type 1 drawn in Epler 2001
- The plastron is about half of the total length of the thoracic horn



Conchapelopia sp. (Type 2)

- We're just getting started looking at these
- Thoracic horn for Type 2 similar to the one drawn for *Helopelopia* in Epler 2001
- The plastron is about 1/3 of the total length of the thoracic horn



Other News & Notes

Often stolen straight from John Epler's website!

<http://home.comcast.net/~johnnepler3/index.html>

- After examining the type specimen for *Tanytarsus* sp. Q, Mike Heyn (FL DEP) and I have come to the conclusion that *Tanytarsus* sp. E and *Tanytarsus* sp. Q are the same species. We have removed sp. Q from our key.
- *Tanytarsus* sp. W was found to have been a *Micropsectra* sp. D (now described as *Paratanytarsus longistilus*). So *Tanytarsus* sp. W no longer exists.
- *Parachironomus supparilis* was split into three species. The species found in FL is *Parachironomus longistilus*
- *Stelechomyia perpulchra* is now known as *Kribiodorum perpulchrum*

Other News & Notes

- *Polypedilum beckae* is now *Asheum Beckae*
- *Orthoclaadiinae* genus H is now *Phytotelmatocladius delarosai*
- *Stempellinella* sp. A is now *Stempellinella fimbriata*.

Acknowledgements

- I gratefully give thanks to the following for their help and support: Broughton Caldwell, Dana Denson, John Epler, Julie Espy, Mike Heyn, Rick Jacobsen, Bob Rutter, Cheryl Swanson, Cliff Webber and everyone else who has guided me along the way
- All of the taxonomic line drawings are courtesy of John Epler from his 2001 Chironomidae key