

Overview of the Revisions to the Chapter on Ephemeroptera

(or what your advisor, boss, etc. never told you
about mayflies)

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The Chapter on Ephemeroptera: A Historical Perspective



1st Ed. – 1978 – G.F. Edmunds, Jr. –
Family Level Key (17 fam./ 59 gen.).

2nd Ed. – 1984 – G.F. Edmunds, Jr. –
Fam./Gen. Key (17 fam./ 69 gen.).

3rd Ed. – 1996 – G.F. Edmunds, Jr. &
R.D. Waltz – Fam./Gen. Key (21
fam./ 81 gen.).

4th Ed. – 2006? – R.D. Waltz & S.K.
Burian – Fam./Gen. Key
(23 fam./ 98 gen.).

6 families and 39 genera have been
added since 1978

Taxonomic Changes For The New Chapter

Baetidae - (5 genera will be added and 1 redefined with a different name)

Euthyplociidae - (1 genus will be added)

Heptageniidae - (2 genera will be added)

Leptophlebiidae - (1 genus will be added)

Paligeniinae goes to **Paligeniidae**

Tricorythidae goes to **Leptohyphidae** - (6 genera will be added)

Changes to the Baetidae



Americabaetis Kluge – Range SW USA, Mexico

Baetopus Keffermuller – Range North Carolina

Moribaetis Waltz & McCafferty – Range Mexico

Plauditus Lugo-Ortiz & McCafferty – Range All of USA; NE & NW Canada; parts of Mexico



Pseudocloeon Klapalek (new definition previously listed as *Labiobaetis*) – Range all of USA; much of Canada

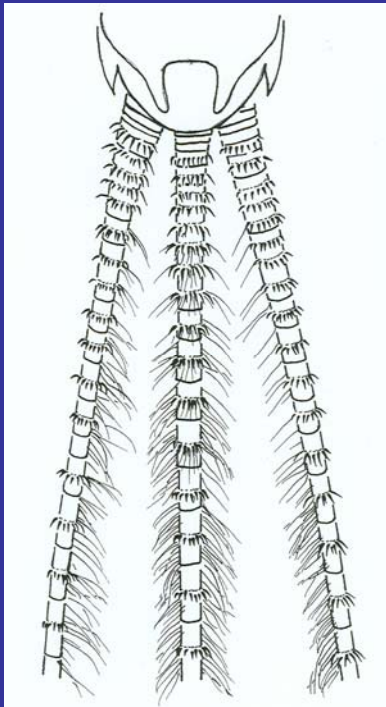
Varipes – Lugo-Ortiz & McCafferty – Range Mexico

Changes to the Heptageniidae

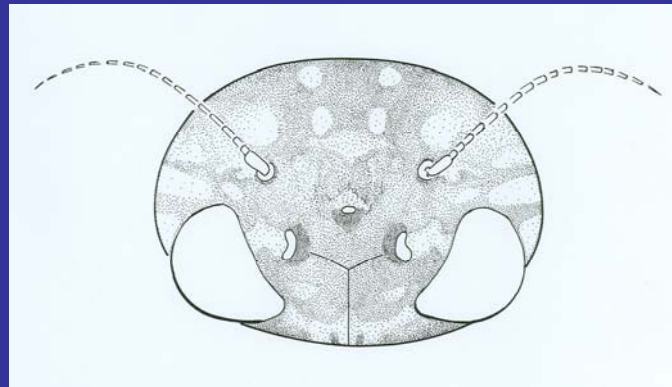


Changes to ***Stenonema*** – Subgenera previously defined are now recognized as genera [*Maccaffertium* and *Stenonema*]

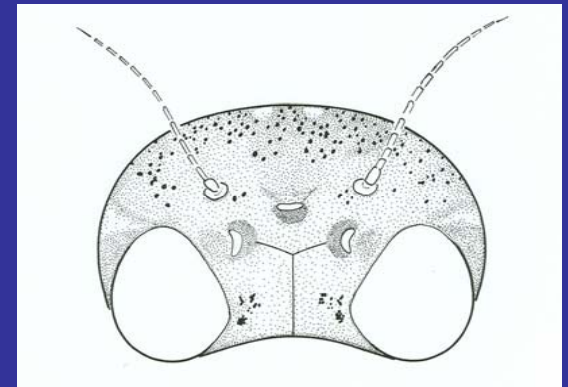
Recognition of the genus *Ecdyonurus* in North America – This is based on reassignment of 3 species previously placed in *Nixe*.



Nixe sp.



Nixe sp.

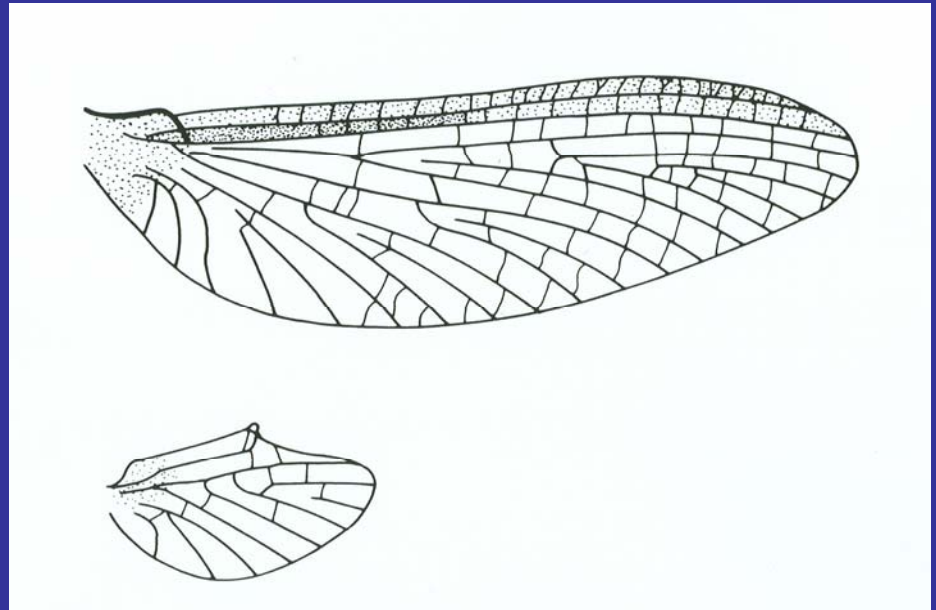


Leucrocuta sp.

Changes to the Leptophlebiidae



The genus *Hydrosmilodon* Flowers and Dominguez is added for the species previously recognized as *Traverella primanus* (Eaton) – Range Mexico



Changes to the Leptohiphidae



Ableptemetes Wiersema & McCafferty –
Range Mexico

Allenhyphes Hofman & Sartori – Range
SW USA, Mexico

Asioplax Wiersema & McCafferty –
Range SE, SW, and NW USA; NW
Canada; Mexico

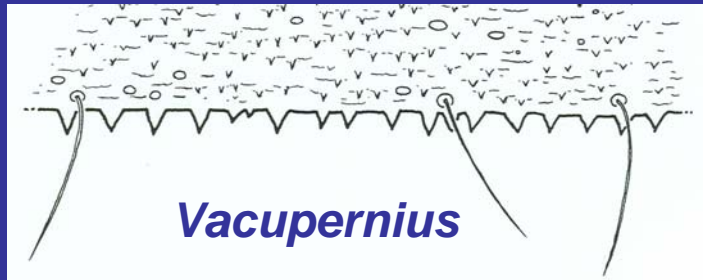


Homoleptohyphes Allen & Murvosh –
Range SW USA; Mexico

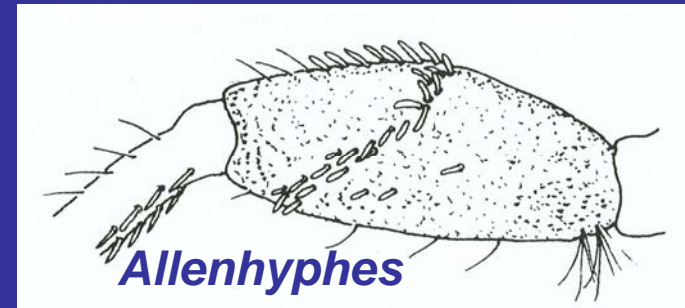
Tricoryhyphes Allen & Murvosh – Range
SW USA; Mexico

Vacupernius Wiersema & McCafferty –
Range SW USA; Mexico

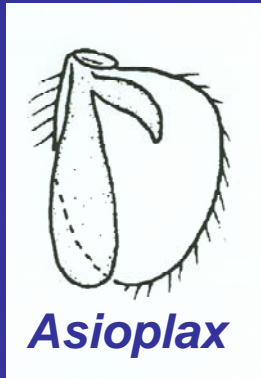
Overview of Characters of Genera of Leptoehyphidae (Figures modified from Wiersema & McCafferty 2000)



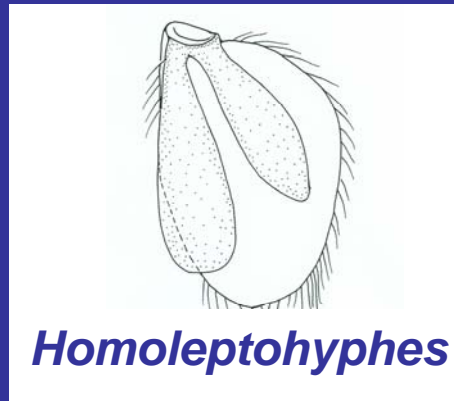
Vacupernius



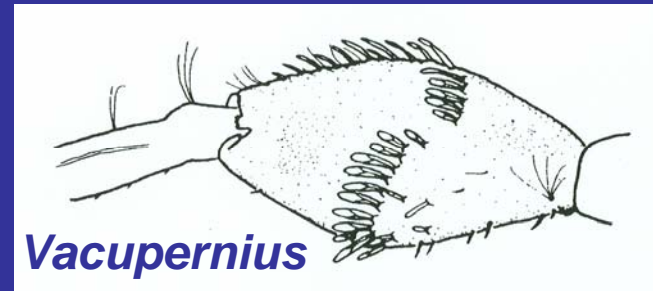
Allenhyphes



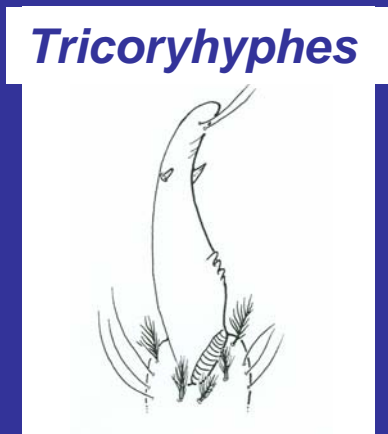
Asioplax



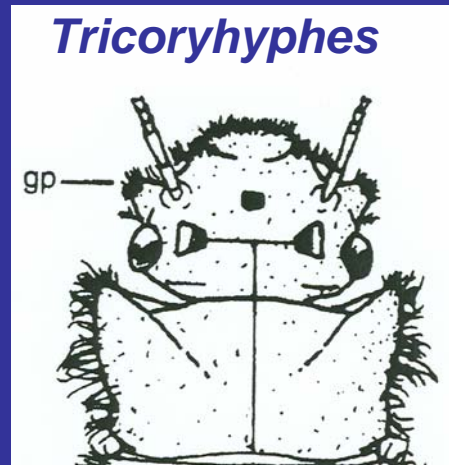
Homoleptoehyphes



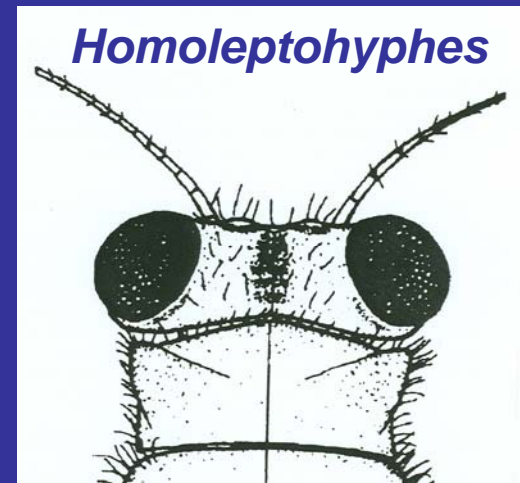
Vacupernius



Tricoryhyphes



Tricoryhyphes



Homoleptoehyphes

What Will The New Keys Look Like?

New Figures – 28 completely new or redrawn figures to improve and supplement both larval and adult key.

Changes to the Larval Key – Changes are referenced to couplet numbers of current key – they will change!

Baetidae: 30-35 will likely be modified to handle changes to genera of *Baetis* complex.



37-38 changes here to improve existing couplet structure and maybe include *Americabaetis*.

? – *Moribaetis* (similar to genera of *Baetis* complex, but does not have the villopore) and *Varipes* yet to be placed.

Heptageniidae: 47 will change to reflect change in not recognizing subgenera *Ironopsis* and *Iron*;
53 will change for *Mccaffertium*;
56 will have new characters for separating *Leucrocuta* from *Nixe* and *Ecdyonurus*.



Leptophlebiidae: 61 will be improved for *Neochoroterpes*;
64 will be improved for *Habrophlebiodes*; and
66 will be expanded for *Hydrosmilodon*.

Ephemerellidae: 73 – 74 will be changed to reflect generic Status of *Dannella* and *Timpanoga*;
75 will be changed to reflect changes in *Eurylophella* and *Dentatella*.

Leptohyphidae: 76 will be greatly expanded for new genera

Changes to the Adult Key

Modifications to the adult key are extensive!

Since the previous edition, taxonomic studies have associated and described adults for *Caurinella* and *Dentatella*. These combined with updating the key to include all of the new additions has resulted in a more complex key.



Loose Ends

Regional Faunal Surveys Section Updated

Table of Ecological and Distributional Data Updated

Higher Classification of the Ephemeroptera

Future Directions in Ephemeroptera Systematics

- Integrated Taxonomic Approach
- More Fine Grained Population Studies



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