A KEY TO THE GENERA OF KNOWN NYMPHS OF THE OLIGONEURIIDAE

(EPHEMEROPTERA)

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Demoulin (1952: 2-3) has given a useful key to the adults of the family Oligoneuriidae. The present key will serve to determine the nymphs of this family, except those of the genera *Oligoneuria* Pictet and *Oligoneuriodes* Demoulin of South America, which remain unknown. This key is not intended as a guide to the relationships among the genera. Our present knowledge of the family does not permit a clear evaluation of these relationships, although some of the possible ones are outlined below.

Edmunds and Traver (1954) believed the genus *Pseudoligoneuria* to be the most primitive member of the family, and placed it in a separate subfamily. The dorsal position of the gills on segment one is shared with the related Isonychiinae (Siphlonuridae) in which the living members of the genus *Isonychia* of this subfamily possess traits similar to those which would be expected in the ancestors of the Oligoneuriidae. *Pseudoligoneuria* has a peculiar combination of isonychiine, oligoneuriine, and intermediate characters. Demoulin (1958) placed *Pseudoligoneuria* in the family Paedephemeridae, superfamily Oligoneurioidea; *Isonychia* was placed in the Isonychiinae of the same superfamily, but the remaining Siphlonuridae are placed in a different superfamily.

Within the Oligoneuriinae the nymphs of *Oligoneurisca* and *Homoeoneuria* are very similar in their adaptations of legs and gills to a sand habitat. The adult of *Oligoneurisca,* when known, may prove the two genera to be closely related. However, the incipient adult wing venation seen in the wing pads of *Oligoneurisca* nymphs suggests a closer relationship to *Oligoneuriella.* The adult wing venation of the genus *Elassoneuria* suggests it may be related to *Homoeoneuria,* but the nymph is not specialized for a sandy habitat.

The genera *Oligoneuriella* and *Oligoneuriopsis* appear to be very closely related, but because they may be distinguished readily in both nymphal and adult stages, it seems advisable to keep them as full genera. Eventually the two might be ranked as subgenera of a single genus.

The genus *Lachlania* is a clearly delimited genus of widespread occurrence in the Americas. Of the several generic and subgeneric names listed as synonyms by Edmunds and Traver (1954: 237) one or more might be retained as subgenera, but current evidence does not favor such a view. The genus *Lachlania* is probably most closely re-

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lated to the South American genus *Spaniophlebia* Eaton which it resembles to some degree in both adult and nymphal stages.

Of the two Neotropical genera whose nymphs remain unknown, *Oligoneuria* Pictet appears to be closest to *Spaniophlebia*, and *Oligoneuriodes* resembles *Oligoneuriella* and *Oligoneuriopsis* in wing venation. The true relationship of *Oligoneuriodes* might be more closely with *Spaniophlebia* or even *Elassoneuria*. Although the name *Oligoneuria* has been applied to nymphal specimens on several occasions, these nymphs have actually been representatives of either *Oligoneuriella, Homoeoneuria* or *Spaniophlebia*.

KEY TO GENERA

1. Gills on first abdominal segment dorsal (Oriental) ..... Pseudoligoneuriinae, **Pseudoligoneuria** Ulmer
   Gills on first abdominal segment ventral ..... Oligoneuriinae, 2
2. Foretarsi greatly reduced, claws wanting 3
   Foretarsi well developed, claws present 4
3. Fibrilliform portion of gills two to seven present; gill lamellae less than twice as long as broad (Russia and Poland) ..... **Oligoneurisca** Lestage
   Fibrilliform portion of gills two to seven wanting; gill lamellae at least three times as long as broad (North and Central America) ..... **Homoeoneuria** Eaton
4. Median terminal filament well developed, at least half as long as cerci 5
   Median terminal filament wanting, with cerci only (Pan-American) ..... **Lachlania** Hagen
5. Frontoclypeal region of head enormously expanded so as to form a dome shaped structure anterior to the antennae (South America) ..... **Spaniophlebia** Eaton
   Frontoclypeal region of head not expanded, head round or subtriangular (Eurasia or Africa) 6
6. Gill lamellae acuminate apically, each gill lamella longer than the segment from which it arises; head with a carina extending from between the antennal bases to the front of the head ..... **Elassoneuria** Eaton
   Gill lamellae rounded apically, each gill lamella shorter than the segment from which it arises; head lacking a carina 7
7. Ventral gill on segment one consists of fibrilliform tuft without a lamella (Africa) ..... **Oligoneuriopsis** Crass
   Ventral gill on segment one consists of a fibrilliform tuft with lamella (Eurasia, Africa) ..... **Oligoneuriella** Ulmer

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