## 13 Perlidae

Perlidae was proposed (as Perlariae) by Latreille (1802), and until Newman (1853) proposed Nemouridae, it remained the only family-level taxon of stoneflies. Needham & Claassen (1925) continued to include present-day perlodids, chloroperlids, and peltoperhds in Perlidae, even though Klapálek (1912) and Okamato (1912) had recognized Perlodidae and Chloroperlinae, respectively, as valid taxa. Claassen (1931) removed the Peltoperlidae, and Frison (1935, 1942) organized the Perlidae along essentially modern lines by following Klapálek's (1912) and Okamato's (1912) recognition of Perlodidae and Chloroperlidae. This classification included species whose nymphs have highly branched gills and "carnivorous mouth parts" in the family, which resulted in a "more homogeneous grouping" (Frison 1935). Ricker (1950) recognized two subfamilies, Acroneuriinae and Perlinae, and he has been followed in this by subsequent authors (Illies 1966; Zwick 1973); Stark & Gaufin (1976a) also recognized these groups but subdivided each subfamily into two tribes.

The numerous generic level changes in the family have centered around the breakup of Perla s.l. and Acroneuria s.l. Perla, as currently defined, is a Palearctic group of large carnivorous species, superficially similar to Claassenia. Nearctic perlids formerly placed in Perla (Needham & Claassen 1925) are currently included in Agnetina (= Phasganophora = Neophasganophora) (Zwick 1984; Stark 1986), Paragnetina (Ricker 1949; Stark & Gaufin 1976a; Stark & Szczytko 1981), and Claassenia (Wu 1934; Stark & Gaufin 1976a). Illies (1966) gave generic rank to Attaneuria, Beloneuria, Doroneuria, Eccoptura, and Hesperoperla, which were formerly considered subgenera of Acroneuria (Needham & Claassen 1925; Frison 1942; Ricker 1950, 1954). Stark & Gaufin (1974b) removed Calineuria from synonymy with Doroneuria, Zwick (1971) suppressed Atoperla, and Nelson (1979) proposed Hansonoperla, to bring the number of currently recognized Nearctic genera to 15. Nelson (1979) analyzed phylogenetic relationships among the 10 Nearctic genera of Acroneuriini and found that Hansonoperla exhibits a "distant phenetic relationship to the other Nearctic genera"; however, nymphal morphology (Kirchner & Kondratieff: 1985) and behavioral data (unpublished data) suggest Hansonoperla is closely related to Perlinella.

Nymphs of most of the Nearctic genera were described by Claassen (1931) or Frison (1935, 1937, 1942) under older names; only the recently named *Hansonoperla*, and *Anacroneuria*, were omitted from their studies. Frison's (1935, 1937, 1942) studies emphasized recognition of: *Acroneuria* species by the distinctive color patterns of: reared nymphs. Hitchcock (1974), Surdick & Kim (1976), and Unzicker & McCaskill (1982) have utilized these descriptions in regional keys; unfortunately, they are based on small samples of: associated material from limited areas and their application over the entire eastern Nearctic region is probably unsound. Nymphal species keys are available for *Agnetina* (Stark

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