14 Perlodidae

Ricker (1952) provided the first comprehensive study of the family Perlodidae, based largely on adult genitalia, mesosternal characters, gills and mouthparts of known nymphs. He recognized three subfamilies, Isogemnae, Isoperlinae, and Perlodinae. Stark & Szczytko (1984) discussed the disparate classifications of the family by Zwick (1973) and Ricker & Scudder (1975), and based on additional data from a comprehensive SEM study of the eggs of world genera, reaffirmed Zwick's recognition of only two subfamilies, Isoperlinae and Perlodinae, and recognized three tribes of the Perlodinae, Arcynopterygim, Diploperlini, and Perlodini, containing 36 genera. Szczytko and Stewart (1984), recognized seven genera in the Isoperlinae, Bulgaroperla, Calliperla, Cascadoperla, Clioperla, Isoperla, Kaszabia, and Mesoperlina, but Bulgaroperla was placed in Diploperlini by Stark & Szczytko (1984).

Ricker (1959b) provided the first definitive key to nymphs of the family. Rapidly changing classification and discovery of several new genera in the following two decades rendered it and other keys such as Jewett (1968) incomplete and outdated by the 1980s. Frison's (1942) study had included descriptions and illustrations of many isoperline and perlodine nymphs which are still widely used, and Hitchcock (1974) utilized many of these figures to illustrate his keys to northeastern species.

Our comparative study of Perlodinae nymphs (Stewart & Stark 1984) provided a review of previous nymph studies and the first key with comparative illustrations to encompass all recent Nearctic genera, including *Chernokrilus* which would not key to Ricker's (1959b) couplet 35 as he had proposed, and the newly discovered nymphs of *Oconoperla* Stark & Stewart. The key that follows further updates the Stewart & Stark (1984) work by including the recently recognized Perlodinae genera *Salmoperla* Baumann & Lauck and *Baumannella* Stark & Stewart.

The following key is the first to provide separation of nymphs of all modern genera of both Perlodinae and Isoperlinae. At the time of Ricker's (1959b) key, knowledge of Isoperlinae nymphs was incomplete as follows: Calliperla luctuosa (Banks) nymphs were unknown, Cascadoperla Szczytko & Stewart and Clioperla Needham & Claassen were included in Isoperla Banks, the nymphs of Rickera sorpta (Needham & Claassen) were poorly known (and the genus was transferred into the subfamily Perlodinae by Szczytko & Stewart [1984b] and Stark & Szczytko [1984]), and Cosumnoperla Szczytko & Bottorff had not been discovered. Szczytko & Stewart (1979, 1981, 1984) described the nymphs of Cascadoperla trictura (Hoppe), Clioperla clio (Newman), and Calliperla luctuosa, and Szczytko & Stewart (1984b) further described and illustrated the nymph of Rickera sorpta.

Recent studies of Hydroperla (Ray & Stark 1981), Helopicus (Stark & Ray 1983), Diploperla (Kondratieff et al. 1981), Malirekus (Stark & Szczytko, 1988), Isoperla (Szczytko & Stewart 1979), and Setvena (Stewart & Stanger 1985a) provide keys or