

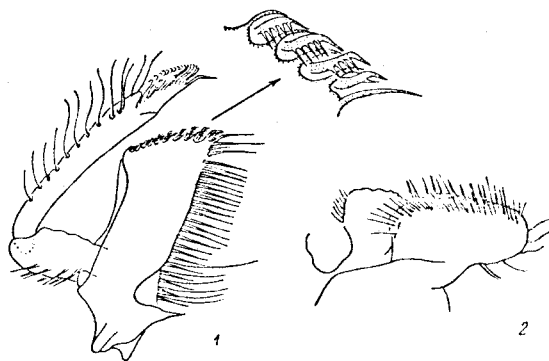
THE SYSTEMATIC POSITION OF THE GENUS PARACINYGMULA (EPHEMEROPTERA, HEPTAGENIIDAE)

O. A. TSHERNOVA (CHERNOVA)

Owing to lack of the requisite material, we were unable, in reviews of the systematic relations of genera of the family Heptageniidae (Chernova, 1974, 1976), to establish the position in the system of a number of genera described in recent years.

The author has recently had the opportunity of acquainting herself with new material of the species Paracinygmula zhiltzovae, from the Maritime Territory, for which a special genus was established (Baykova, 1975). It has been found that the description of this generic taxon given by Baykova (1975) is incomplete and does not enable us to establish its true relations with other members of the family. The actual description of the species and genus incorporates many inaccuracies and incorrect conclusions. The present note evaluates the systematic position of this species, the generic placement of which was incorrectly determined.

The new species and genus described on the basis of the nymph are characterized by a few morphological characters, frequently not of diagnostic importance, and by a verbose description of the coloration. A description and illustration of the maxillae and the labium, which characterize generic taxa in this family, are not given. It is noted that the genus described is similar to Cinygmula McD., from which "... it is distinguished by the structure of the labrum, the shape of the gill leaflets and the coloration of the body. The genus Paracinygmula, is also similar to the genus Ecdyonurus in the structure of the labrum and the hypopharynx" (Baykova, 1975 : 55). Consequently, there is nothing specific in the text to show the affinity of the taxon described to the genus Cinygmula McD.; certain differences are all that are indicated. It should be noted that the characteristics of the gill leaflets that are described do not have distinctive structural features, and that the coloration of the body of the nymphs is not in general of diagnostic importance in diagnoses of genera of the Ephemeroptera. Furthermore, in describing the new species P. zhiltzovae, its author repeats the description of the coloration and the shape of the gills already given in the description of the genus, and is guilty of lamentable acts of negligence in the description of the genus and the species. There is no information at all on the time of collection, nor is the collector indicated. Furthermore, the author gives an identification key to the genera Cinygmula, Cinygmula and Paracinygmula, but the genus Ecdyonurus is not even mentioned, although its similarity in the structure of the labrum and the hypopharynx to the newly described genus had already been noted in the text. The impression is created that these three genera were placed in the key only because of the etymological similarity of the names. In fact, the author apparently did not know the characteristic differences of the genera Cinygmula and Cinygmula, but based her identification key on random, incomplete and actually incorrect data. A similar conclusion may also be



Figs. 1-2. Ecdyonurus (= Paracinygmula) zhiltzovae.

1) Maxilla; 2) glossa and paraglossa of labium.

reached on the basis of an acquaintance with the author's previous work (Baykova, 1974), which also contains numerous inaccuracies; in particular 5 species classified in it as belonging to the genus Cinygmula all belong to the genus Cinygmula. Apart from the incorrect identifications of the genera to which the species belong, this article also contains other mistakes, which need to be specially considered, but this is not within the scope of the present communication. Only the fact of the publication of a new generic taxon classified as belonging to the family Heptageniidae prompted the publication of the present note, since the present author is particularly concerned with elucidation of the system of the genera in the family.

ECDYONURUS (= Paracinygmula)

Ecdyonurus zhiltzovae (= Paracinygmula zhiltzovae).

Comment. A study of new material, a nymph from the southern Maritime Territory (Barabashevka River) belonging to this typical species, justifies the conclusion that it belongs to the genus Ecdyonurus. In support of this conclusion illustrations of the maxilla and part of the labium are given in Figs. 1 and 2 (preparation No. 605) to supplement the illustrations made by the author of this species. The maxilla has 10 teeth on the outer margin, which is less than in most Ecdyonurus species; these pectinate teeth are located in depressions and are similar to those of Ecdyonurus werestschagini. The maxillary palp has a dense tuft of hairs at the end of the second segment, which is also similar to that of the species mentioned. The glossae and paraglossae of the labium are typical for members of the genus Ecdyonurus. As already noted by the author of the species, the labrum and

hypopharynx are similar in structure to those of Ecdyonurus. We also examined a paratype of Paracinygmula zhiltzovae in the Zoological Institute, USSR Academy of Sciences. This old material collected in 1927 is faded and in poor condition. The nymph lacks all the legs and has only one gill leaflet, the first left leaflet. However, all the mouth parts have been preserved, and their structure reveals that the paratype is identical to the nymph collected in 1976. The pronotum has been depicted incorrectly by Baykova (1975); its anterior margin is not broad. In reality the lateral margins are slightly rounded, with the paranotalia not extending onto the mesonotum, as in species of the "lateralis" group. The gill leaflets are leaflike, but lack basal filaments. The coloration of the nymph collected in 1976 is very bright. The pigmented part is dark brown, especially the last 4 abdominal segments, which are completely dark, and the basal half of the rudiments of the wings. The head and thorax have yellowish spots. The apical half of the fore and hind wings is yellowish. The legs, the first abdominal segments and the first 3 pairs of gill leaflets are whitish. The middle segments of the abdomen have dark spots and the gill leaflets on these segments have a dark spot. The 6th and 7th leaflets are almost entirely dark. The anal filaments are light, the 4 basal rings brown.

The body length of a nymph that was not fully mature was 7.5 mm, the length of the anal filaments 4.5 mm.

Material. Southern Maritime Territory, Barabashevka River, 15 July 1976, 1 nymph (preparation No. 605), collected by N. D. Sinichenkova and V. V. Zherikhin. Paratype Paracinygmula zhiltzovae: Tigrovaya station, Sitsa River below the school, 11 July 1927.

Conclusion. The species E. zhiltzovae is similar to a group of species of the genus Ecdyonurus such as E. werestschagini, E. yoshidae, E. fasciolatus and E. gallileae, in which the absence of elongations of the paranotalia of the pronotum has been recorded; in the structure of the male genitalia the last two species belong to the "lateralis" group.

LITERATURE CITED

- BAYKOVA, O. YA. On the mayflies (Ephemeroptera) of the Amur Basin. Entom. obozr., 53(4): 815-829.
- BAYKOVA, O. YA. 1975. A new mayfly genus (Ephemeroptera, Heptageniidae) from the Maritime Territory. Izv. SO AN SSSR. Seriya biolog., 1: 54-57.
- CHERNOVA (TSHERNOVA), O. A. 1974. The generic composition of the mayflies of the family Heptageniidae (Ephemeroptera) in the Holarctic and Oriental regions. Entom. obozr., 55(4): 801-814.
- CHERNOVA (TSHERNOVA), O. A. 1976. A nymphal key to the genera of the Heptageniidae (Ephemeroptera) of the Holarctic and the Oriental region. Entom. obozr., 55(2): 332-345.
- DEMOULIN, G. 1973. Contribution a l'etude des Ephemeropteres d'Israel. Introduction et 1. Heptageniidae. Bull. Inst. R. Sci. Nat. Belg., Bruxelles, 49(8): 1-19.

Moscow University

from Entomological Review, 57:3:369-370.

Russian pages 540-542.

1978