

*Rhithrogena wolosatkæ* n. sp., a new species of the *hybrida*-group from Southern Poland (*Ephemeroptera*, *Heptageniidae*)*Rhithrogena wolosatkæ*, nowy gatunek z grupy *hybrida* z Polski południowej (*Ephemeroptera*, *Heptageniidae*)

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ABSTRACT. *Rhithrogena wolosatkæ* n. sp. (mature nymph and egg) belonging to the *hybrida*-group was found in the Bieszczady Mountains, Southern Poland. Mature nymph is described and illustrated.

This paper reports the finding of an undescribed species of the *Rhithrogena hybrida*-group, collected in the Bieszczady Mountains, Southern Poland.

*Rhithrogena wolosatkæ* n. sp. (figs. 1-11)

Mature nymph (in formalin): body length 8.0-9.5 mm; length of cerci 7.0-7.5 mm. Head and antennae light brown. Compound eyes dark. Thorax brown with a purplish-pink tone, especially the mesonotum; pronotum and metanotum paler. Middle combs of the distal part of maxillar lacinia with 6-8 teeth. Legs yellowish-brown with a purplish-pink tone. Femora without a distinct dark spot, but the pale central part is slightly shaded; the pigment is diffuse and slightly more concentrated in its anterior part (fig. 1). Spines on the entire surface of the femora, numerous (spines from the central part of the dorsal surface of the hind femora as in fig. 2). Claws of legs with two small teeth. Abdomen brown of grey tone; the dorsal side darker than the ventral one. Terga 1 and 2 are slightly paler than the following ones. Tergum 10 slightly darker than the preceding ones. In young larvae, two small roundish spots are to be found on the terga of the abdomen. Hind central margin of

fifth abdominal tergum as in fig. 3; denticles are fairly sharp, slender, of varying size, broader at the base and at some distance from each other. Microdenticles near the margin numerous (present at almost every larger tooth). Gills (figs. 4–7) with a stronger central reinforcement of the lamellae. Nymphal male genitalia: seen from the dorsal view, the nymphal penis has a visible rufous reinforcement (fig. 8). The penial titillators of nymphs as in fig. 9. Caudal filaments: terminal filament pale yellow, cerci light brown, darker at the base. Surface of caudal filamentous segments smooth, pointed microtricha apparent only near the posterior margins of segments.

Egg (dissected from mature female nymph): length 180–200  $\mu\text{m}$ ; width 120–135  $\mu\text{m}$ ; oval. Polar cap present on both egg poles, consisting of fairly sparse adhesive elements. The adhesive elements are slightly smaller on one of the poles. On the egg surface there are numerous adhesive elements, smaller than those on either pole. Exochorionic surface almost glabrous, occasionally the small granules (microgranules) are visible. Two or three micropyles in equatorial position; margin of micropyle thin, almost glabrous (fig. 10).

Imago and subimago unknown.

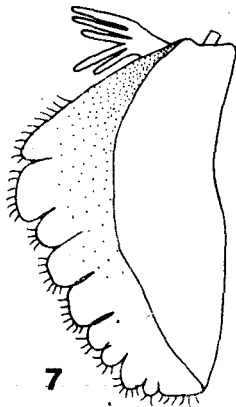
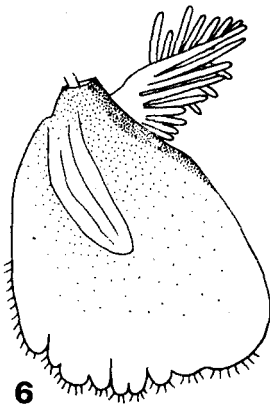
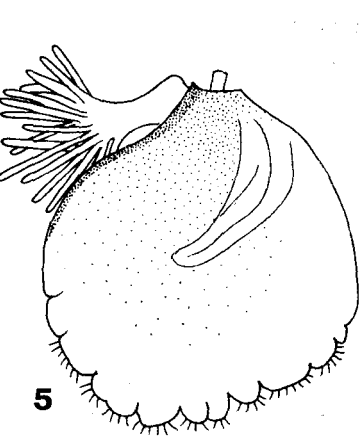
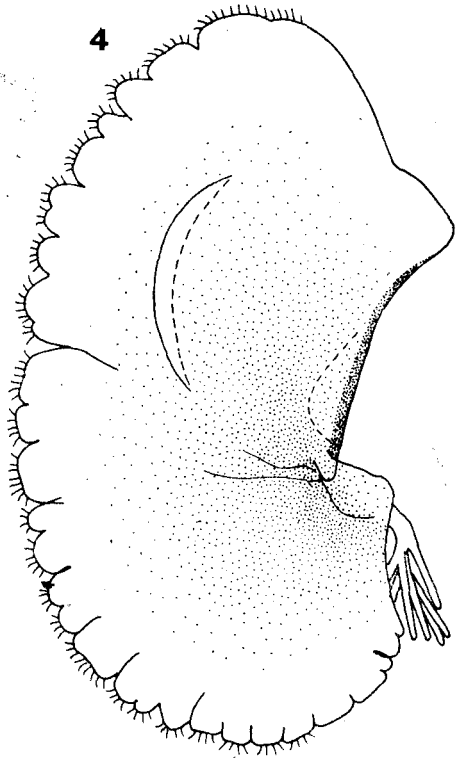
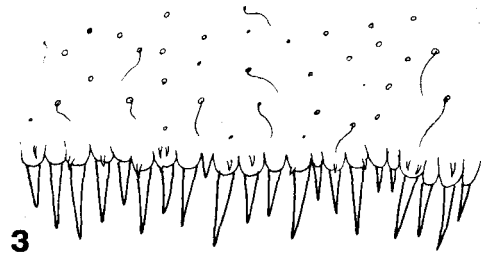
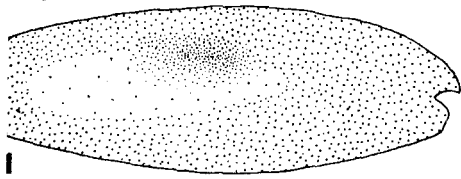
#### MATERIAL EXAMINED

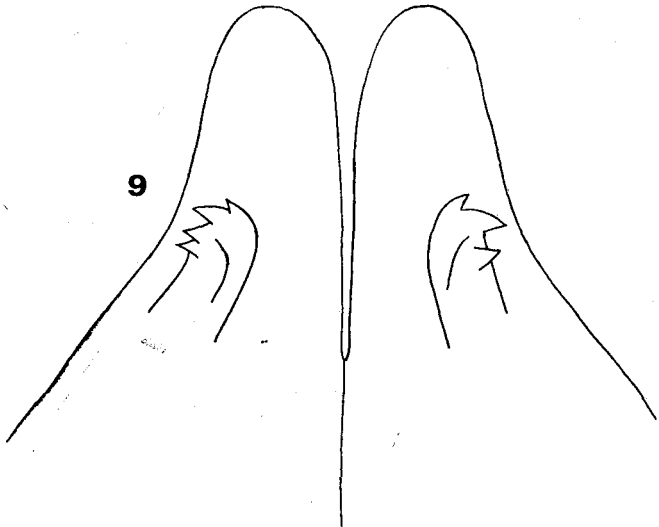
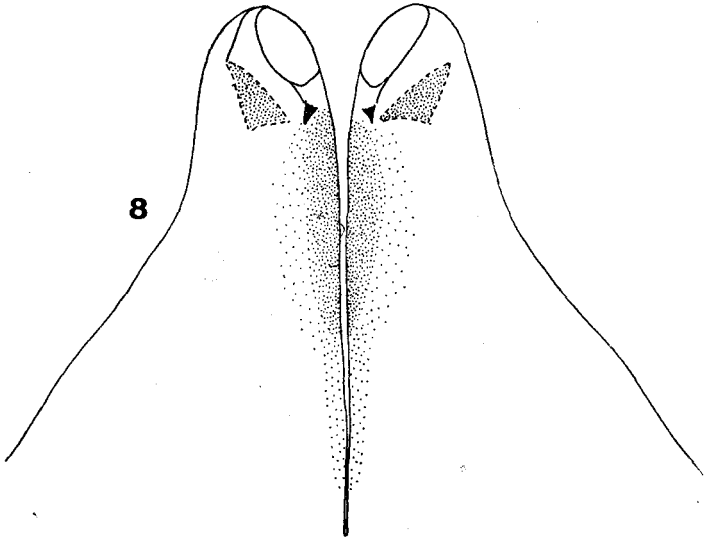
Mature female nymph (holotype), mature male nymph (allotype) and nymphs (paratypes): Southern Poland, Bieszczady Mountains, Wołosatka stream, 800 m above sea level, 19. 05. 1985, leg. M. KLONOWSKA. Other paratypes (young nymphs): Bieszczady Mountains, Terebowiec stream, 800 m above sea level, 10. 10. 1985, leg. K. KUKUŁA. Holotype and most of the paratypes (in part on slides) in the author's collection.

#### ETYMOLOGY

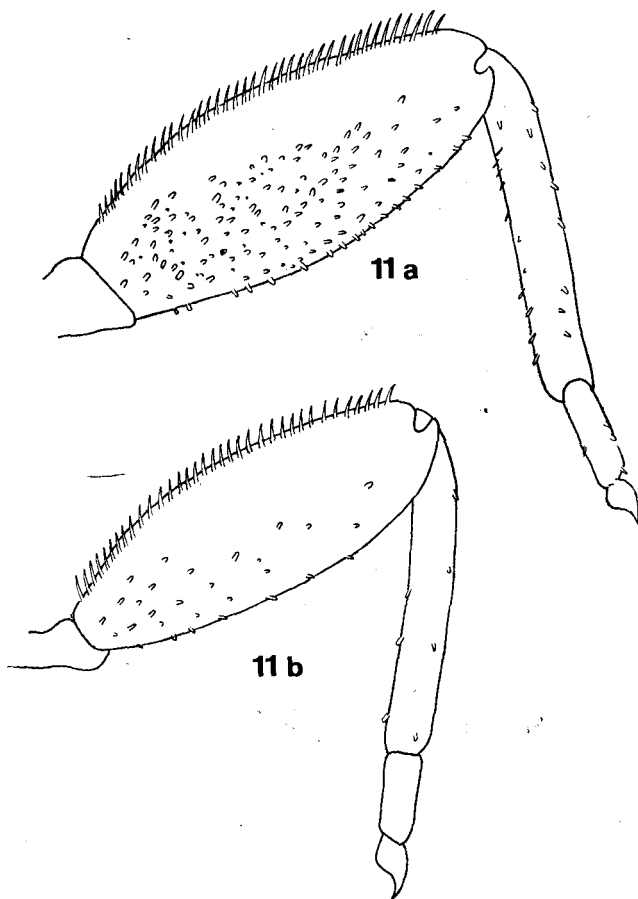
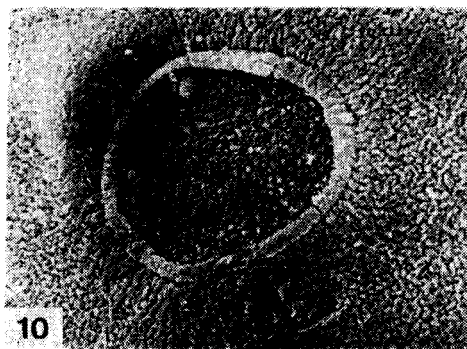
The species is named after the Wołosatka stream, from where it was collected.

1–11. *Rhithrogena wolosatkae* n. sp., nymph — nimfa: 1 — marking on dorsal surface of hind femora — upłamięnie na grzbietowej stronie tylnego uda; 2 — spines from central part of hind femora — kolce z środkowej części tylnego uda; 3 — fragment of hind-central margin of fifth abdominal tergite — środkowa część tylnego brzgu piątego tergitu odwłoka; 4 — first gill — pierwsza skrzelotchawka; 5 — second gill — druga skrzelotchawka; 6 — sixth gill — szósta skrzelotchawka; 7 — seventh gill — siódma skrzelotchawka





8 — nymphal penis in dorsal view — nimfalny zawiązek prącia, widok grzbietowy;  
 9 — nymphal titillators — nimfalne łechtaczki



10 — micropyle — mikropyle; 11 — hind leg — tylna noga, a — *R. wolosatkae* n. sp.  
b — *R. hybrida* ETN. from Réallon stream, France

## AFFINITIES

*R. wolosatkae* n. sp. seems to be closely related to *R. hybrida* ETN. (SOWA 1984, SOWA et al. 1985) and *R. circumtetrica* SOWA et SOLDAN (SOWA et SOLDAN, in press). Especially the eggs of *R. wolosatkae* show similarity to those of *R. hybrida*, both in their size and shape, and also in the appearance of the polar caps, the structure of the chorion, and the positioning of adhesive elements. It seems that there are certain differences in the appearance of the micropyle between the two species; in *R. wolosatkae* it has a slightly broader margin. Besides, the eggs of *R. wolosatkae* have slightly less developed polar caps (fewer adhesive elements). The fifth tergum of *R. wolosatkae* is clearly different from that in *R. hybrida*: the teeth of the tergum are of different sizes, slender, and microdenticles occur on almost every wider tooth. The legs of *R. wolosatkae* are more stout and the spines occur on the entire surface of the femur and are numerous (fig. 11). Femora with a dark spot lacking and the pale central area is slightly shaded (the pigment is slightly more concentrated in its anterior part). On the dorsal side of the nymphal penis, some sclerotization can be seen (much as in *R. circumtetrica*).

## ACKNOWLEDGMENT

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## REFERENCES

- SOWA, R., 1984, Contribution à la connaissance des espèces européennes de *Rhithrogena* EATON (*Ephemeroptera*, *Heptageniidae*) avec le rapport particulier aux espèces des Alpes et des Carpates, Proc. IVth Intern. Confer. *Ephemeroptera*. V. LAND, et al. (eds.), CSAV: 37-52.
- SOWA, R., E. GAINO, Ch. DEGRANGE, 1985, Description de *Rhithrogena hybrida* EATON, 1885 (*Ephemeroptera*, *Heptageniidae*) à partir d'exemplaires de l'une des stations types (Chalets de Joux Plane, Haute Savoie, France), Pol. Pismo Ent., 55: 135-137.
- SOWA, R., T. SOLDAN, 1986, Three new species of *Rhithrogena hybrida*-group from Poland and Czechoslovakia with a supplementary description of *R. hercynia* LANDA, 1969 (*Ephemeroptera*, *Heptageniidae*), Pol. Pismo Ent., 56: 557-572.