

Some new species of Trichoptera from Turkey (Philopotamidae, Beraeidae)

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Abstract. The following new species of Trichoptera from Turkey are described and illustrated: *Wormaldia haldizan* sp. n., *W. niksar* sp. n., *W. ordu* sp. n. (Philopotamidae), and *Ernodes gombe* sp. n. (Beraeidae).

Key words. New species, *Wormaldia*, *Ernodes*, Turkey.

In the present paper three new species of the genus *Wormaldia* McLachlan from northeastern Anatolia and a new *Ernodes* Wallengren species from the Taurus Mountains in southern Turkey are described.

Wormaldia haldizan sp. n.

Material. Holotype male and paratype female: Turkey, Rize, İkizdere, Anzer, Haldizan Yaylası direction, Demirkapı, 2400 m, 40°33'N, 40°25'E, 25.8.1992, leg. and coll. Sipahiler.

Antennae, maxillary palps yellowish, wings pale brown, legs yellow. The length of the anterior wing of male and female 6 mm.

Male genitalia (Figures 1-4). In dorsal view, the apical edge of tergite VIII deeply excised in the middle, forming long and large lobes on both sides of the excision, which are as long as the rest of the width of the tergite VIII. Segment IX is roundly dilated on the anterior margin, the preanal appendages are very long, nearly quadrangular in lateral view; segment X in lateral view with a pointed projection on the subdistal portion. The harpago of the inferior appendage is shorter than the coxopodite, the apex is rounded. The phallic apparatus with numerous small spinules at the base, which are found transversal, there are very small spinules on the distal part, three long and rather thin spines are found on the subdistal part.

Remarks. *Wormaldia haldizan* sp. n. differs from the other species of the genus by the shape of tergite VIII, which has very long and broad lobes on the apical edge, the length of the lobes is the half of the width of tergite VIII. It somewhat resembles *W. subnigra* McLACHLAN, 1865 (MALICKY 2004) by having a pointed projection on the subdistal part of segment X, but many parts of the genitalia separate these species.

Wormaldia niksar sp. n.

Material. Holotype male: Turkey, Tokat, Niksar, Çamiçi Yaylası, 1200 m, 40°44'N, 36°58'E, 2.7.2007; paratypes: Trabzon, Maçka, Sumela, Akarsu Yaylası, 2390 m, 40°36'N, 39°38'E, 2 males, 1 female, all leg. and coll. Sipahiler.

Antennae, maxillary palps, and legs pale brown yellowish, the wings are pale brown, the length of the anterior wing of the male is 7.0-7.5 mm, of the female 8 mm.

Male genitalia (Figures 5-8). Tergite VIII with moderately deep and rounded excision in the middle of the apical edge, the side lobes of both sides of the excision apically rounded. Segment IX is rather narrow in lateral view, the preanal appendage is long, somewhat oval, and the apical edge is rounded, the apical edge of segment X is rounded. The harpago of the inferior appendage gradually narrows towards the tip, the ventral margin is somewhat excised. The phallic

apparatus with numerous small spines on the subdistal portion, which are seen as rounded units. There are a few long and thin spines beneath this spinulose area, and distally a few small spinules.

Remarks. *Wormaldia niksar* sp. n., formerly identified as *W. mahiri* SİPAHİLER, 2012 (SİPAHİLER 2012), is considered in the present paper as a new species. It closely resembles *W. mahiri*, but differs from this species as follows: in *W. mahiri* there are three long and rather thicker spines near the small spines in the phallic apparatus, whereas in the new species there are four very thin spines, which make a bunch of spines near the small spines. *W. niksar* sp. n. also resembles *W. ditta* SİPAHİLER, 2020, but the following differences are seen in the male genitalia: in *W. ditta* the preanal appendage is quadrangular and the apical edge straight, whereas in *W. niksar* sp. n. it is nearly oval and the apical edge is rounded; the spines of the new species are also different, the most important difference being the lack of a large spine, which is found in *W. ditta* on the distal portion (SİPAHİLER 2020).

Wormaldia ordu sp. n.

Material. Holotype male: Turkey, Ordu, Yukarıtepe Village, 300 m, 40°56'N, 37°58'E, 21-27.8.1982, leg. and coll. Sipahiler.

Antennae, maxillary palps, and legs pale yellowish, wings pale brown; the length of the anterior wing of male 5.5 mm.

Male genitalia (Figures 9-12). The apical edge of tergite VIII is roundly excised medially, the side lobes are rounded. In lateral view, segment IX is roundly dilated on the anterior edge; the preanal appendage is long, the dorsal margin dilated in the middle, becoming narrower towards the apex; segment X with rather long subdistal pointed projection, the apical edge straight. The dorsal and ventral edges of the harpago of the inferior appendage are slightly dilated towards dorsal. The phallic apparatus has two series of spines, each comprising four small spines on the basal part, subdistally with a long and thicker spine.

Remarks. *Wormaldia ordu* sp. n. somewhat resembles *W. subnigra*, but the following differences are seen in the male genitalia: in *W. subnigra* the preanal appendage becomes thinner towards the apical edge (MALICKY 2004), whereas in the new species it is dilated on the subdistal part; in *W. subnigra* there are two long spines parallel to each other, whereas in *W. ordu* sp. n. there is only one long spine in the phallic apparatus; in addition, differences in the shape of tergite VIII and harpago are also evident.

Ernodes gombe sp. n.

Material. Holotype male: Turkey, Antalya, Taurus Mountains, Gömbe, near Yeşilgöl, 1800 m, 36°33'N, 29°37'E, 23.6.1988, 1 male, leg. and coll. Sipahiler.

Antennae, maxillary palps, and legs pale brown, wings brown, the length of the anterior wing of male 4.2 mm.

Male genitalia (Figures 13-18). In lateral view, segment IX is large on the sides, triangular, dorsally quadrangular, the sides are sclerotized, ventrally narrow in the middle; preanal appendages are larger and rather long, in dorsal view nearly quadrangular, segment X in dorsal view long, narrow towards posterior edge, subdistal portion deeply excised, forming two large and long lobes directed on the sides. The sclerotized side prolongations are curved in the middle, broad on the second half, dorsally reaching beneath the under sides of the lobes. In ventral view, the inferior appendages with two lobes, the dorsal lobes are thick, long, and curved upwards, the ventral lobes are short and very thin. Laterally the phallic

apparatus with a rounded keel dorsally near the base; in ventral view, the right edge is laterally rounded, the outer edges of both distal parts near the dorsal excision are sclerotized, inside is a sclerotized spine in the middle.

Remarks. *Ernodes gombe* sp. n. closely resembles *E. articularis* PICTET, 1834 (MALICKY 2004), but the following differences are seen in the male genitalia: in *E. articularis* segment IX rather broad in ventral view, segment X with short and narrow apical lobes, the median lobes of the inferior appendages are directed inward, the ventral lobes are not very thin, whereas in *E. gombe* sp. n. segment IX in ventral view narrow in the middle, segment X with long and broad apical lobes curving on the sides, the median lobes of the inferior appendages are long and curved dorsally, the ventral lobes are very thin; the shape of the phallic apparatus of the new species and its sclerotized spines differs than those of the related species, which has narrower phallic apparatus without a keel at the base.

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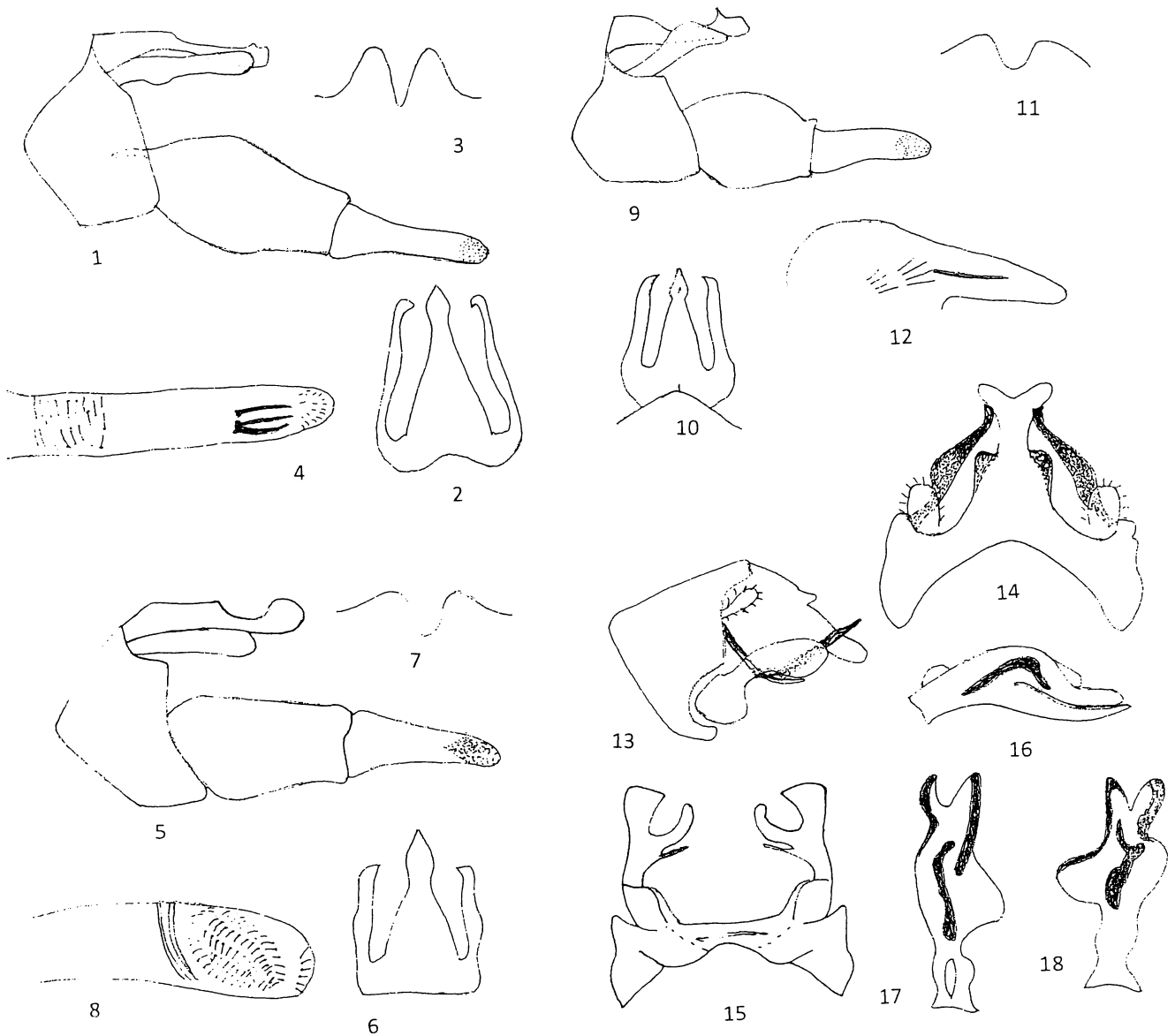


Fig. 1-4 *Wormaldia haldizan* sp.n. ♂ genitalia: 1 lateral, 2 dorsal, 3 tergite 8 dorsal, 4 phallic apparatus dorsal.

Fig. 5-8 *Wormaldia niksar* sp.n. ♂ genitalia: 5 lateral, 6 dorsal, 7 tergite 8 dorsal, 8 phallic apparatus dorsal.

Fig. 9-12 *Wormaldia ordu* sp.n. ♂ genitalia: 9 lateral, 10 dorsal, 11 tergite 8 dorsal, 12 phallic apparatus lateral.

Fig. 13-18 *Ernodes gombe* sp.n. ♂ genitalia: 13 lateral, 14 dorsal, 15 ventral, 16 phallus lateral, 17 ventral, 18 dorsal.

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