

Descriptions of two new species of the genus *Psilopteryx* Stein from Turkey (Trichoptera, Limnephilidae, Chaetopterygini)

Descripción de dos nuevas especies del género *Psilopteryx* Stein de Turquía (Trichoptera, Limnephilidae, Chaetopterygini)

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Abstract

Two new species of Trichoptera from Turkey are described and illustrated: *Psilopteryx ilgazensis* sp. n. and *Psilopteryx yenicensis* sp. n., belonging to the tribe Chaetopterygini (Trichoptera: Limnephilidae). Both are closely related to each other and *P. turcicus* Çakın, 1983. *Psilopteryx turcicus aladagensis* Sipahiler, 2005 is given the rank of species.

Keywords. Trichoptera, Chaetopterygini, systematics, *Psilopteryx*, new species, Turkey

Resumen

Se describen e ilustran dos nuevas especies de Turquía, *Psilopteryx ilgazensis* sp. n. y *Psilopteryx yenicensis* sp. n., pertenecientes a la tribu Chaetopterygini (Trichoptera: Limnephilidae). Ambas están estrechamente relacionadas entre sí y con *P. turcicus* Çakın, 1983. Se propone que *Psilopteryx turcicus aladagensis* Sipahiler, 2005 sea elevada al rango de especie.

Palabras clave: Trichoptera, Chaetopterygini, sistemática, *Psilopteryx*, nueva especie, Turquía

INTRODUCTION

Two new species of the genus *Psilopteryx* Stein, 1874, *Psilopteryx ilgazensis* sp. n. and *Psilopteryx yenicensis* sp. n., are found in the Ilgaz Mountains in Kastamonu and Çankırı provinces, respectively, approximately 150 km further northeast of the place where *P. turcicus* lives. *Psilopteryx ilgazensis* sp. n. lives in a spring found on the northern side of the mountain above the forest zone at about 2100-2200 m and are not found in the lower part of the

spring. However, *P. yenicensis* sp. n. inhabits a spring found in the forest zone on the southern side of the mountain. Both are also closely related to *P. turcicus*, living at 800 m altitude. All these species are isolated, occupying small areas on the mountains, and not found in the surrounding districts. The morphological differences among these species are not restricted to the male and female genitalia; the length of the wings and spur formula are also clearly different.

MATERIALS AND METHODS

Specimens were collected during the daytime using a hand entomological net. The material was preserved in 75% ethyl alcohol and deposited in the author's collection at Hacettepe University (Beytepe, Ankara, Turkey). The figures were drawn using a Zeiss Stemi SV 6 microscope.

DESCRIPTIONS

Psilopteryx ilgazensis sp. n. (Fig. 1)

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Material: Holotype male and paratypes (3 male, 2 females): Turkey, Kastamonu, Ilgaz Mountains, Hacet, 2100–2186 m, 41°06'N, 33°51'E, 13.11.2014, leg. and coll. Sipahiler.

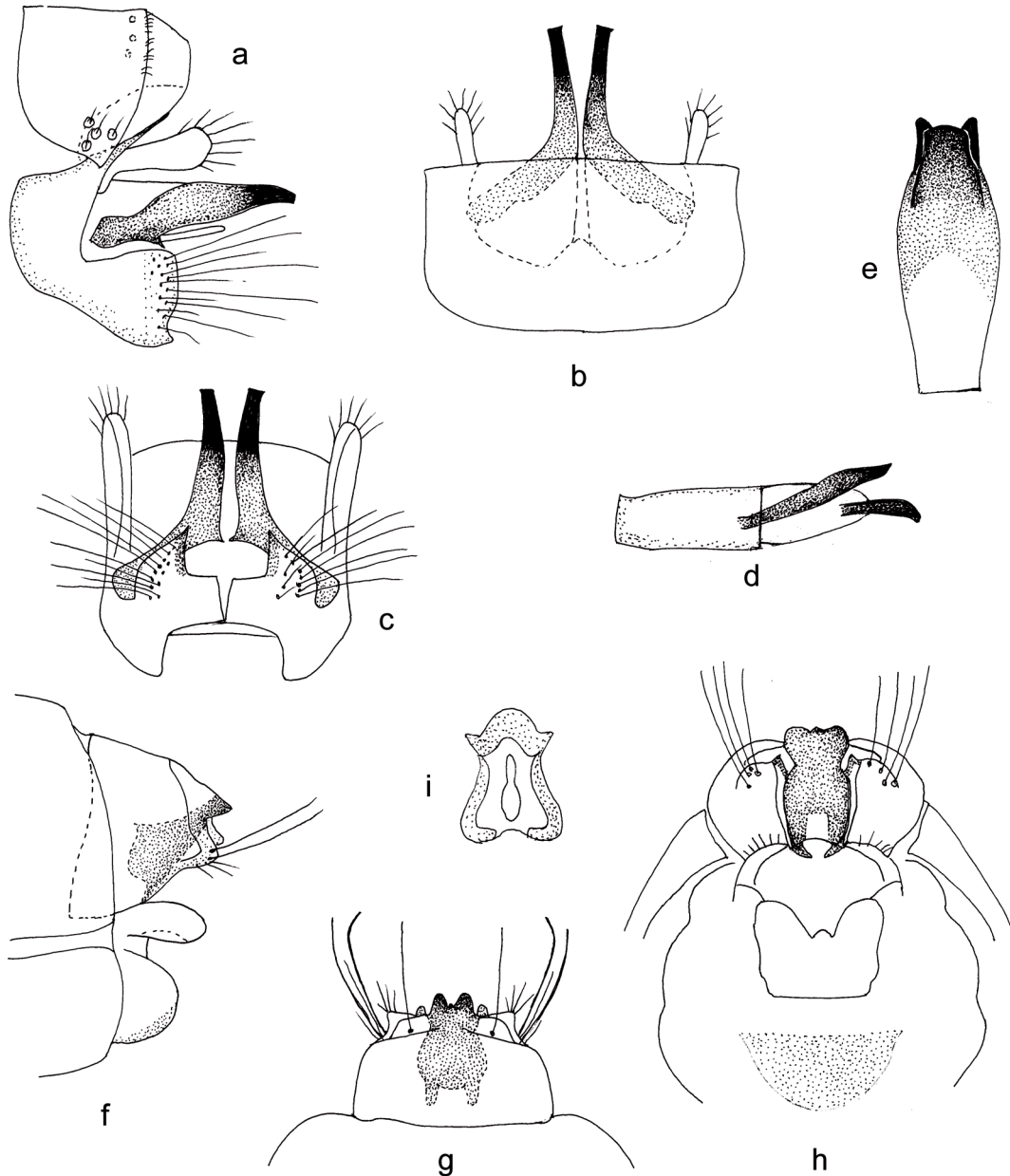


Figure 1. *Psilopteryx ilgazensis* sp. n., a-e: male genitalia. a, lateral; b, dorsal; c, ventral; d, phallic apparatus, lateral; e, phallic apparatus, ventral. f-i: female genitalia. f, lateral; g, dorsal; h, caudal; i, bursa copulatrix, ventral.

Figura 1. *Psilopteryx ilgazensis* sp. n., a-e: genitalia masculina. a, lateral; b, dorsal; c, ventral; d, aparato fállico, lateral; e, aparato fállico, ventral. f-i: genitalia femenina. f, lateral; g, dorsal; h, caudal; i, bursa copulatrix, ventral.

Antennae, brown, scapus dark brown, head dorsally dark brown, maxillary palps brown; wings brown, covered with erect hairs on both membrane and veins; tergites and sternites of the abdomen are dark brown. Spur formula of males is 0.2.2, of females 1.2.2. A brachypterous species; the length of the anterior wing of males is 7-8 mm, and 8-9 mm in females.

Male genitalia (Fig. 1: a-e): In lateral view the anterior margin of segment IX is roundly dilated on the ventral half, a projection protruding on the dorsal half; the dorsal part with a large dorsal plate, which is found under tergite VIII; the preanal appendage is short, as long as the inferior appendage, broad at the base, somewhat dilated towards the apex, the ventral edge slightly dilated subdistally. The intermediate appendage is long, broad at the base narrowing towards the tip; in lateral view, the dorsal edge rounded the ventral edge almost straight, without ventral dilatation. The inferior appendage is short, in lateral view the dorsal edge roundly dilated, the posterior edge is almost straight; in ventral view the dorsal edge is pointed in the middle. In lateral view the dorsolateral sclerites of the phallic apparatus are broad in the middle narrowing towards the pointed apex; the ventral sclerite in ventral view is large, its posterior edge is nearly smooth.

Female genitalia (Fig. 2: f-i): Segment IX is broad; in dorsal view the anterior margin is almost straight, only slightly dilated on the median part; in dorsal view the tubular pieces of segment X nearly triangular, each possesses a few long and thickened setae and shorter hairs. There are two lobes between the tubular pieces and a small median lobe, which are the apical projections of the sclerotized median part; in dorsal view they are longer than the tubular pieces. The median lobe of the vulvar scale is short and rounded.

Remarks. *Psilopteryx ilgazensis* sp. n. is closely related to *P. turcicus* Çakın, 1983 and the following features are seen: *P. ilgazensis* sp. n. is a brachypterous species with the spur formula 0.2.2 and 1.2.2 in males and females respectively, whereas *P. turcicus* has normal wings with 9-10 mm length and the spur formula of the male is 0.3.3 and 1.3.3 in females (ÇAKIN, 1983); the main differences in the male genitalia are seen especially in the shape of the preanal appendages,

which are short and basally broad and almost equal in width in the new species, while in *P. turcicus* they are long, basally thinner and in lateral view the ventral margin strongly dilated on the subdistal part; segment IX of *P. turcicus* in lateral view is roundly dilated on the anterior margin, in *P. ilgazensis* sp. n. there is a triangular projection on the dorsal half; the posterior edge of the inferior appendage of *P. turcicus* is rounded, in the new species it is almost straight and the dorsal edge strongly dilated. Differences in the female genitalia are also evident.

***Psilopteryx yenicensis* sp. n.** (Fig. 2)

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Material: Holotype male and paratypes (3 male, 2 females): Turkey, Çankırı, Ilgaz Mountains, Ilgaz, Yenice, Kadınçayırı, 1570 m, 41°01'N, 33°47'E, 14.11.2015, leg. and coll. Sipahiler.

Antennae dark brown, scapus dark brown blackish, maxillary palps brown; wings brown erect hairs both on membrane and on the veins; legs are brown, coxa of second and third legs and the side sclerites of thorax are dark brown blackish, the rest of thorax sclerites are brown; tergites of abdomen dark brown, the sternites are brown. The spur formula of male is 0.2.2, and 1.2.2 in females; the length of the forewing of males 8-10 mm, of females is 8.5- 10 mm.

Male genitalia (Fig. 2: a-e). Tergite VIII medially roundly dilated towards dorsal and possesses long hairs on this dilatation; the membranous part with numerous black, short spines. Segment IX in lateral view dilated anteriorly, the anterior margin is nearly straight, the dorsal part of segment IX with large dorsal plate. The preanal appendage short, nearly trapezoidal, narrow at the base, dilated towards the straight apical margin. The intermediate appendage is strongly sclerotized, long and broad narrowing at the tip; in lateral view the ventral margin somewhat roundly dilated, the ventral projection, which is found near the base has stout apex. In lateral view the dorsal edge of the inferior appendage is almost straight; the apical edge is rounded forming a small, pointed projection on the dorsal corner, from ventral edge protrudes a short lobe with a

rounded tip. The phallic apparatus is strongly sclerotized, the dorsal sclerites are long and broad, narrowed towards the tip, the ventral sclerite is slightly longer than the dorsal sclerite, in ventral view the apex is rounded.

Female genitalia (Fig. 2: f-i). Segment IX is broad; in dorsal view the anterior margin dilated anteriorly; in dorsal view the tubular pieces of segment X nearly triangular, with rounded side margins, each possesses a few long and

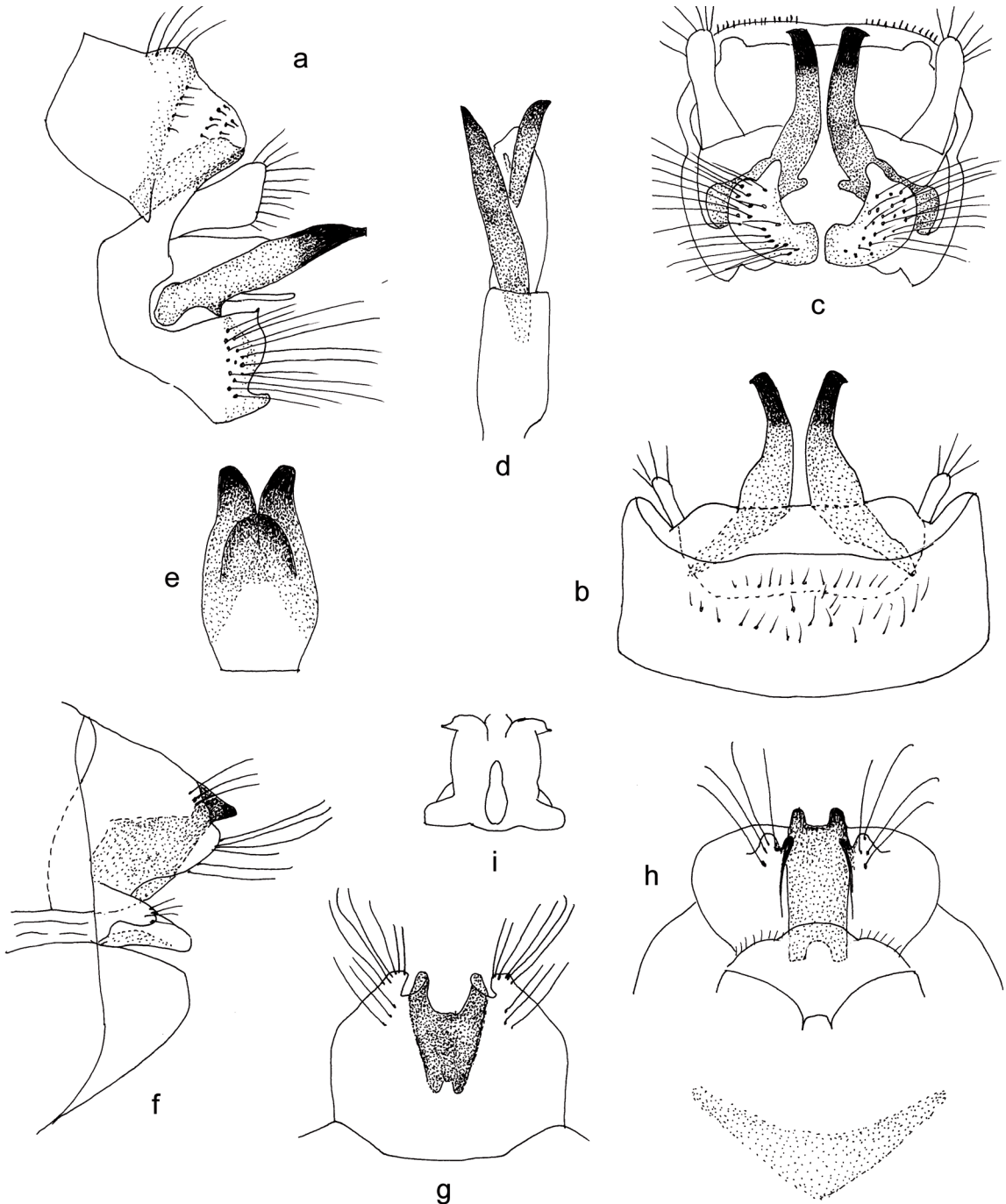


Figure 2. *Psilopteryx yenicensis* sp. n., a-e: male genitalia. a, lateral; b, dorsal; c, ventral; d, phallic apparatus, lateral; e, phallic apparatus, ventral. f-i: female genitalia. f, lateral; g, dorsal; h, caudal; i, bursa copulatrix, ventral.
Figura 2. *Psilopteryx yenicensis* sp. n., a-e: genitalia masculina. a, lateral; b, dorsal; c, ventral; d, aparato fálico, lateral; e, aparato fálico, ventral. f-i: genitalia femenina. f, lateral; g, dorsal; h, caudal; i, bursa copulatrix, ventral.

thickened setae and shorter hairs. There are two lobes between the tubular pieces, which are rounded at the tips, these are the apical projections of the sclerotized inner median part, surrounding the anal opening; in dorsal view the sclerotized inner median part becomes narrower towards anterior, the median lobe of the vulvar scale is short and round.

Remarks. *Psilopteryx yenicensis* sp. n. is closely related to *P. ilgazensis* sp. n., but the following differences are seen in the male genitalia: in lateral view, in *P. ilgazensis* sp. n. the anterior dilatation of segment IX rounded, the preanal appendages oval and longer than in *P. yenicensis* sp. n., the intermediate appendages narrower, the inferior appendages dilated on the dorsal edge and ventral prolongation is not seen, whereas in *P. yenicensis* sp. n. anterior dilatation of segment IX is almost straight, the preanal appendages are short and trapezoidal, the intermediate appendages are broader at the base and in the middle and the dorsal edge of the inferior appendage nearly straight, with a pointed projection apically and a short ventral prolongation; the dorsal and ventral sclerites of *P. yenicensis* sp. n. are broader and longer than those of *P. ilgazensis* sp. n. Differences in the female genitalia are also evident; the main difference is seen in the shape of the inner sclerotized part, which surrounds the anal opening;

in *P. ilgazensis* sp. n. it is roundly dilated on the anterior portion, while it is almost triangular in *P. yenicensis* sp. n.

Taxonomic remarks

Psilopteryx turcicus Çakın, 1983 was the first species of the genus *Psilopteryx* reported in Turkey (ÇAKIN, 1983) and it was discovered in Yedigöller National Park in Bolu Province. Later, *P. turcicus aladagensis* Sipahiler, 2005 (SİPAHİLER, 2005) was discovered in the Aladağlar Mountains, around 60 km south-western of the place where *P. turcicus* occurs, and was considered a subspecies of this species. Here, after the discovery of the two new species described in this paper, *P. aladagensis* Sipahiler, 2005 it is established as a species and given species rank.

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