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TO THE KNOWLEDGE OF THE GENUS *CHORTHIPPUS* FIEBER, 1853 (ORTHOPTERA: ACRIDIDAE: GOMPHOCERINAE) FROM TURKEY WITH DESCRIPTION OF A NEW SPECIES

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Chorthippus aktaci sp. n. is described from Turkey. A new species is compared with the closely related *Ch. ilkazi* Uvarov, 1934. The illustrations and distribution of both species in Turkey are provided.

KEY WORDS: Orthoptera, Gomphocerinae, *Chorthippus*, new species, Turkey.

М. Унал. К познанию рода *Chorthippus* Fieber, 1853 (Orthoptera: Acrididae: Gomphocerinae) из Турции с описанием нового вида // Дальневосточный энтомолог. 2010. N 215. С. 1-8.

Из Турции описан *Chorthippus aktaci* sp. n. Дано сравнение нового вида с близкородственным *Ch. ilkazi* Uvarov, 1934. Для обоих видов приведены иллюстрации и уточнено их распространение в Турции.

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INTRODUCTION

Some specimens of *Chorthippus* Fieber, 1853 were collected between the years 1997 and 2001 from Bolu Province of Turkey and were identified as *Chorthippus* (*Glyptobothrus*) *ilkazi* Uvarov, 1934 (Ünal, 2008) which is an endemic species known only from Ilgaz Mountains and neighbourings (Uvarov, 1934; Karabag, 1958;

Mol et al., 2003). After collecting the true *C. ilkazi* from its type locality in 2009 it has been appeared that the specimens collected from Bolu province belong to another species of *Chorthippus* that is new to science. In this paper the description of the new species and comparisons with its allies are given. Determinative illustrations are provided. The type specimens including holotype are deposited in the Abant İzzet Baysal Üniversitesi Entomoloji Müzesi (AİBÜEM), Bolu.

TAXONOMY AND DISTRIBUTION

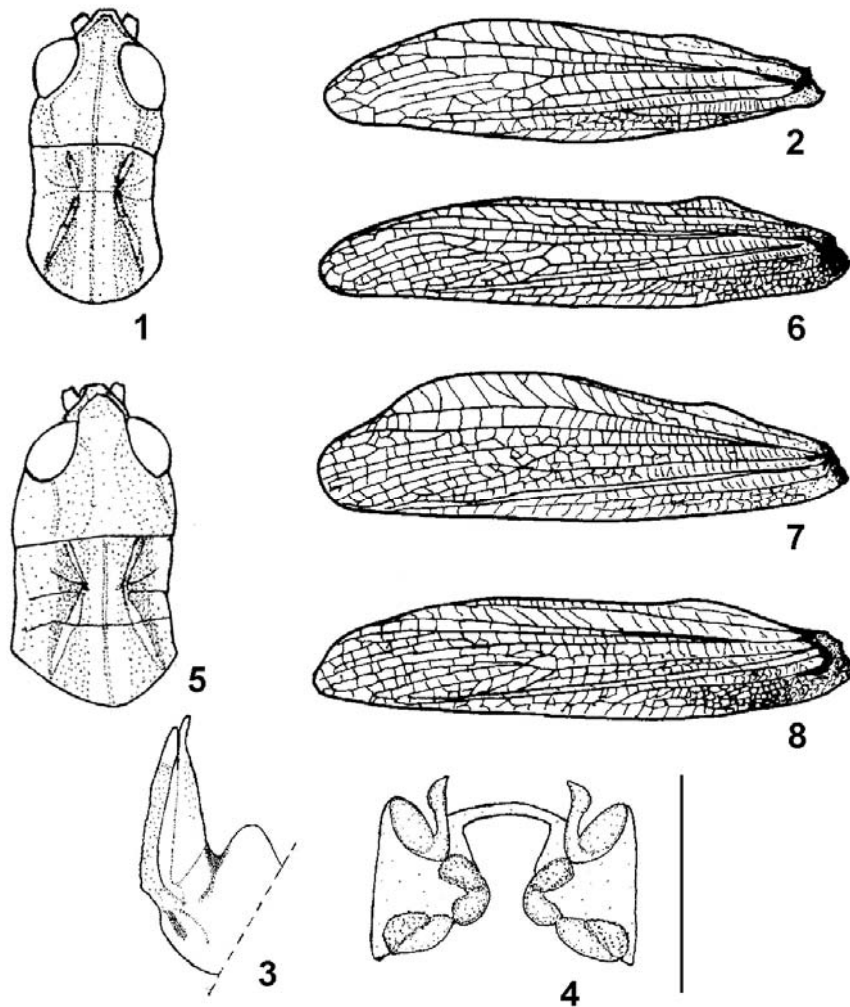
Chorthippus (Glyptobothrus) aktaci Ünal, sp. n.

Figs 1-6, 9, 10, 13, 14, 17-21

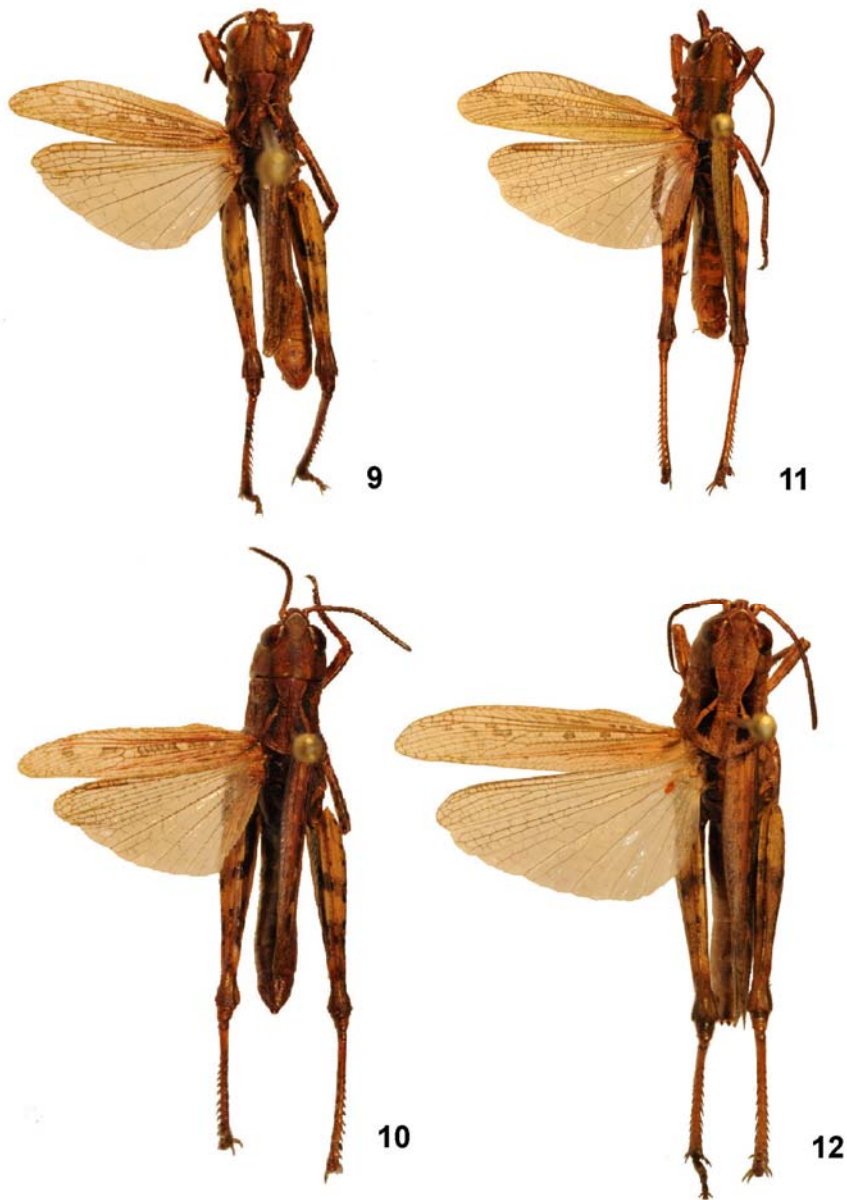
MATERIAL. Holotype – ♂, Turkey: Bolu Prov., Çele Tepesi, 10.VIII 2000, coll. M. Ünal (AİBÜEM); Paratypes – 11♂, 11♀, Bolu Prov., Çele Tepesi, 10.VIII 2000; 7♂, 7♀, Çele Tepesi, 1850 m, 11.IX 2001; 2♀, Çele Tepesi, 1700-1980 m, 30.IX 2001; 1♂, Yedigöller yolu 20 km, 10.VIII 2000; 1♀, Kozlu Yaylası, 1800 m, 10.IX 2000; 1♀, Kozlu yaylası, 5.X 2000; 2♂, 2♀, Kozlu Köyü, 3.IX 2000; 1♂, 1♀, Kadıköy Yaylası, 1550 m, 11.IX 2001; 1♀, Kıbrısçık, Karaköy, 10.IX 1997, all coll. M. Ünal (AİBÜEM).

DESCRIPTION. MALE (holotype). Body (Figs. 9, 13), meso- and metasternae, ventral surface of fore and middle legs and dorsal surface of distal half of abdomen with long and dense hairs. Head (Figs. 1, 9, 13): Antennae 1.3 times longer than head and pronotum together. Head slightly wider than pronotum. Fastigium oblique. Faveolae almost rectangular, but its both tips almost rounded, 2.5 times longer than wide; inner surface concave. Eyes large, 1.8 times longer than subocular groove; 1.8 times wider than vertex between the eyes and 2.5 times longer than vertex. Pronotum (Figs. 1, 9, 13) 1.2 times longer than head; median and lateral carinae distinct; median carina cut by transverse sulcus in the middle; lateral carinae distinct, strongly bent in prozona under an obtuse angle; lateral lobes of pronotum slightly 1.25 times lower than length of pronotum; prozona slightly concave, metazona a little convex and hind margin slightly downcurved in lateral view. Mesosternal space 1.3 times wider than long but 1.4 times narrower than mesosternal lobes. Metasternal space slightly narrower than long. Tegmina (Figs. 2, 17) 4.1 times longer than wide, with distinct precostal field which reaching just beyond the midlength of tegmen; costal field narrow (not widened distinctly), only 1.25 times wider than median field and 1.6 times wider than subcostal field; median field quite narrow, 1.3 times narrower than subcostal field; cubital field narrow, 1.6 times narrower than median field; apical 3/10 part of tegmen distinctly narrowed; apex narrowly rounded; shorter than abdomen, reaching to base of cercus and to genicular lobe of hind femur; in paratypes (Fig. 18), mostly as in holotype but in several specimens tegmina reaching at most to hind knee and slightly beyond end of abdomen. Wings as long as tegmina in resting position. Hind femur 4 times longer than wide. Stridulatory file 3 mm long, with 92 pegs; in 1 mm with 34 stridulatory pegs in middle part. Arolium as long as half of claws; narrow in hind leg, narrower

than that of fore and middle legs. Abdomen: Tympanal opening oblique, narrow and long, 3 times longer than wide. Subgenital plate (Fig. 20) short, posterior margin rounded, slightly pointed at apex. Cercus 2.5 times longer than wide, slightly compressed laterally, conical in lateral view, reaching to tip of supra anal plate. Penis valves and epiphallus as in Fig. 3 and Fig. 4 respectively.



Figs 1-8. *Chorthippus* spp. 1-6 – *Ch. aktaci* sp. n.: 1) male head and pronotum, dorsal view, 2) male left tegmen, 3) penis valves, lateral view, 4) epiphallus, dorsal view, 5) female head and pronotum, dorsal view, 6) female left tegmen; 7-8 – *Ch. ilkazi*: 7) male left tegmen; 8) female left tegmen. Scale for Figs. 3-4 is 1 mm.



Figs 9-12. *Chorthippus* spp. 9, 10 – *Ch. aktaci* sp. n.: 9) male habitus, dorsal view, 10) female habitus, dorsal view; 11, 12 – *Ch. ilkazi*: 11) male habitus, dorsal view, 12) female habitus, dorsal view.

FEMALE. Body with sparse hairs. Head (Figs. 5, 10, 14): Antennae shorter than head and pronotum together. Faveolae twice as long as wide. Frontal ridge punctate. Eye 1.3 times longer than its width; 1.3 times longer than subocular groove; 1.3 times wider than vertex between the eyes and 1.7 times longer than vertex. Width of vertex 2.2 mm between the eyes. Pronotum (Figs. 5, 10, 14) longer than head; median keel cut by transverse sulcus in the middle of pronotal length; lateral keels clearly bent in prozona under obtuse angle; prozona slightly convex, metazona slightly concave in lateral view, in some paratypes the both slightly convex; lateral lobes slightly lower than length of pronotum. Mesosternal space 1.7 times wider than long and 1.25 times narrower than lateral lobes of mesosternum. Metasternal space 1.3 times wider than long. Tegmina (Figs. 6, 19) 5 times longer than wide, apex distinctly narrowed, narrowly rounded; shorter than abdomen, reaching to basal part of supra anal plate, in other females slightly shorter and rarely slightly longer but never reaching to end of abdomen; precostal field distinct, reaching to 3/4 of tegmen; median field as wide as or in some others slightly wider than costal field; cubital field very narrow, 1.4 times narrower than median field. Hind femur 3.6 times longer than wide. Arolium slightly larger than that of male. Abdomen: Tympanal opening very narrow and long, 5 times longer than wide. Subgenital plate 1.4 times longer than wide, triangular at apex. Ovipositor (Fig. 21) with short and sharp valves.

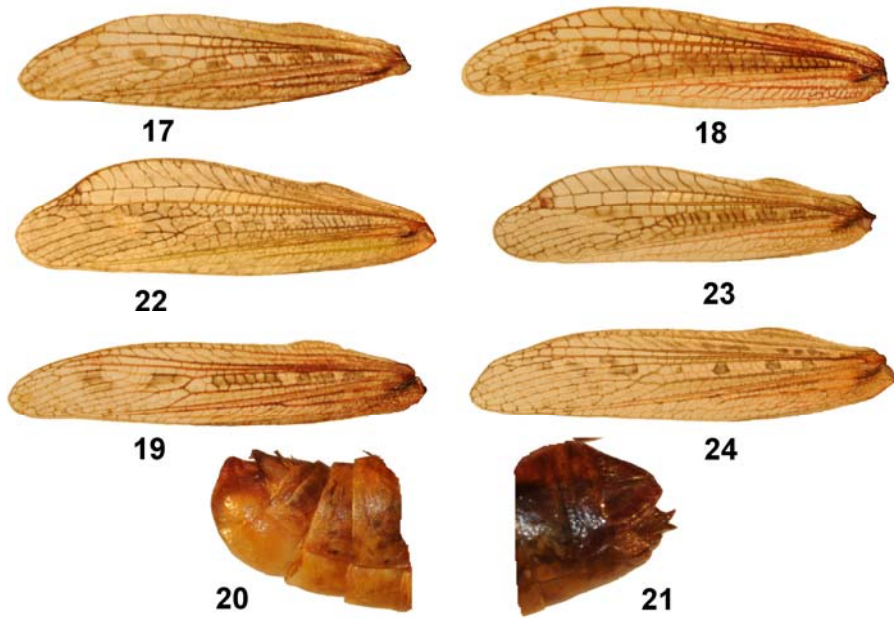
COLOUR. As in most species of the genus *Chorthippus* body various shades of brown with black spots, stripes and bands with some reddish and green colour. Proximal half of abdomen with blackened tergites, distal half yellow or reddish. Hind knee slightly darkened. Hind tibia red to yellowish orange.

LENGTH (in mm). Body: male 13.6-16.4, female 18.7-23.9; head: male 2.2-3.1, female 2.9-3.6; pronotum: male 2.8-3.4, female 3.4-4.5; tegmina: male 9-10.7, female 10.3-12.9; hind femur: male 8.2-9.9, female: 10.2-12.5.

COMPARISON. This new species is most related to *Chorthippus ilkazi*. But it has some distinct differences from it by the shorter antennae of both sexes (in *C. ilkazi* antennae 1.6 times longer than head and pronotum together in male and as long as in female); the larger eyes (in *C. ilkazi* eye 1.25 times longer than subocular groove, 1.6 times wider than vertex, twice as longer as vertex in male; 1.2 times longer than subocular groove, 1.2 times wider than vertex, 1.6 times longer than vertex in female), the narrower costal and subcostal field in male (in *C. ilkazi* costal field clearly expanded, 1.6 times wider than subcostal field and 1.9 times wider than median field; subcostal field wider or as wide as median field in male of *C. ilkazi*); the narrowed but longer apical part of tegmen in male (in *C. ilkazi* apical 1.5/10 part of tegmen strongly and sharply narrowed but more widely rounded than that of the new species); the narrower cubital field in female (in *C. ilkazi* Cu field wider than that of the new species, only 1.1-1.2 times narrower than median field); the shorter stridulatory file with sparser pegs (in *C. ilkazi* stridulatory file 3.5 mm long, with 115 pegs, in 1 mm with 38 stridulatory pegs in middle part); the shorter female tegmina (in *C. ilkazi* tegmina mostly surpassing end of abdomen and rarely shorter as in the new species) and the sparser body hairs (denser in *C. ilkazi*). It is different



Figs 13-16. *Chorthippus* spp. 13, 14 – *Ch. aktaci* sp. n.: 13) male habitus, lateral view, 14) female habitus, lateral view; 15, 16 – *Ch. ilkazi*: 15) male habitus, lateral view, 16) female habitus, lateral view.



Figs 17-24. *Chorthippus* spp. 17-21 – *Ch. aktaci* sp. n.: 17) male left tegmen, holotype, 18) male left tegmen, paratype, 19) female left tegmen, 20) male end of abdomen, 21) female end of abdomen; 22-24 – *Ch. ilkazi*: 22) male left tegmen, 23) another male left tegmen, 24) female left tegmen.

from *C. bozdaghi* Uvarov, 1934 by the shape of veinlets of tegmina in both sexes such as narrower costal and subcostal field in male, the narrower cubital field in female; the shape of pronotum with angularly and strongly incurved lateral keels (in *C. bozdaghi* lateral keels roundly and less curved) and the distribution. It is not so similar to *C. helverseni* Mol et al. Most of the characters very different from it such as the head and pronotum, the shape and venation of tegmina, male genitalia and the distribution.

ETYMOLOGY. The new species is named in honor of Hymenopterist Professor Dr. Nihat Aktaç for his much contribution to Turkish fauna.

DISTRIBUTION. Turkey: NW Anatolia, Bolu Province.

***Chorthippus (Glyptobothrus) ilkazi* Uvarov, 1934**

Figs 7, 8, 11, 12, 15, 16, 22-24

MATERIAL. Turkey: 10♂, 3♀, Çankırı Province, Ilgaz Dağı, Kırkpınar yaylası, 1850 m, 29.VIII 2009; 1♀, Kırkpınar yayla yolu, 1530-1700 m, 29.VIII 2009; 5♂, 4♀, Ilgaz Dağı, Alıç köyü, Karakaya yan. göz. ist., 1590 m, 29.VIII 2009; 5♂, 1♀, Kastamonu Province, Tosya, Ilgaz Dağı, Yukarıberçin Köyü, 1800 m, 28.VIII 2009, all coll. M. Ünal (AIBÜEM).

DISTRIBUTION. Turkey: NW Anatolia, Çankırı, Kastamonu and Ankara Provinces.

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