

A NEW SPECIES OF *PHYLLOTRETA* CHEVROLAT FROM TURKEY (CHRYSOMELIDAE: GALERUCINAE: ALTICINI)

Hüseyin Özdikmen*, Didem Coral Şahin** and Neslihan Bal*

* Gazi University, Science Faculty, Department of Biology, 06500 Ankara, TURKEY. E-mails: ozdikmen@gazi.edu.tr; neslihansilkin@gmail.com

** Directorate of Plant Protection Central Research Institute, Ankara, Turkey. E-mail: didemsahin@ziraimucadele.gov.tr

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ABSTRACT: The following new species is described: *Phyllotreta aygulae* sp. nov. from Bartın province in North-Western part of Anatolia, close to *Phyllotreta atra* (Fabricius), *Phyllotreta weiseana* Jakobson, *Phyllotreta lubischevi* Lopatin and *Phyllotreta annae* Konstantinov.

KEY WORDS: Chrysomelidae, Galerucinae, Alticini, *Phyllotreta aygulae*, new species, Turkey

Phyllotreta Chevrolat, 1836 is one of the largest worldwide alticine genus which contains approximately 150 species in the Palearctic region and more than 250 species worldwide (Konstantinov & Vandenberg, 1996, 2015). The members of this genus are specialist feeders on the Brassicaceae and related groups (Jolivet & Hawkeswood, 1995). Thus most species of this genus are known as crop pests. Adults usually feed on the foliage of host plant.

Heikertinger (1941) and Warchalowski (2003, 2010) divided *Phyllotreta* species into two main groups on the base of upper side with yellow or reddish pattern, sometimes elytra entirely or almost entirely yellow and upper side uniformly black or black with metallic reflex. These authors also divided *Phyllotreta* species with uniformly black upper side into two groups based on whether they have the central part of the frons punctured. The new species *Phyllotreta aygulae* is a member of the group having the central part of frons punctured. The characters of the new species suggest that it is clearly different from the other known group members.

Phyllotreta aygulae sp. nov.

(Figs. 1-2)

Type material. Holotype ♂: Turkey: Bartın prov.: Güzelcehisar, 12.V.2015, 250 m, leg. D. Şahin, Paratypes: 11 ♂♂ and 6 ♀♀: Same locality, data and collectors; 1 ♂: Turkey: Ankara prov.: Akyurt, Yeşiltepe, 14.VIII.2015, 1063 m, on *Brassica oleracea acephala*; 1 ♂: Turkey: Çankırı prov.: Ilgaz, Candere-Bükcük villages, 26.IV.2015, 874 m, leg. N. Silkin; 3 ♀♀: Turkey: Ankara prov.: Nallıhan, Davutoğlu, 05.V.2015, 474 m, on *Eruca vesicaria* (L.)Cav. and *Lepidium sativum* L., leg. D. Şahin; 1 ♀: Turkey: Ankara prov.: Haymana, 07.V.2015, 1025 m, leg. D. Şahin; 1 ♀: Turkey: Çankırı prov.: Bayramören, exit of Yurtpınar village, 24.IV.2015, 829 m, leg. N. Silkin; 1 ♀: Turkey: Çankırı prov.: Ilgaz, Candere-Bükcük villages, 26.IV.2015, 874 m, leg. N. Silkin. The holotype is deposited in Nazife Tuatay Plant Protection Museum (NTM) (Turkey: Ankara). The paratypes

are deposited in the collections of Nazife Tuatay Plant Protection Museum (NTM) and Gazi University (Turkey: Ankara).

Description of holotype.

Body length 2.25 mm. Body width 1.125 mm.

Black without metallic lustre.

Head entirely black; frons with sparse, deep punctures near eyes; central parts of frons and vertex distinctly punctured; frontal keel convex, acute; antennae thin, antennomere 2 and 3 blackish-brown or brown, remaining antennomeres entirely black, antennomere 3 as long as 2 and slightly shorter than 4. Proportions: σ : 26-18-18-20-22-18-16-20-18-16-24.

Pronotum entirely black, short, more than 1.5 times as wide as long, with rounded lateral sides, the greatest width in middle of lateral margin; disc clearly shagreened, distinctly punctured; distances between punctures shorter than their diameter.

Lateral sides of elytra small rounded; humeral calli well developed; elytral apices with acute sutural angles; apices of hind margin with row short setae; elytral puncturation slightly bigger than pronotal puncturation.

Ventral side of the body entirely black with densely light pubescence.

Legs black with the exception of blackish-brown or brown tarsi.

Aedeagus in figures 2A,B,C.

Spermatheca in figure 2D.

Female. The same as male.

Differential diagnosis. The new species is a member of the group having upper side with uniformly black and the central part of the frons punctured definitely. The new species is close to the species *Phyllotreta atra* (Fabricius, 1775) described from Sweden, *Phyllotreta wiseana* Jakobson, 1901 described from S Russia and Caucasus, *Phyllotreta lubischevi* Lopatin, 1992 described from Kirgizia and *Phyllotreta annae* Konstantinov, 1992 described from Kazakhstan. Only *Phyllotreta atra* (Fabricius, 1775) and *Phyllotreta wiseana* Jakobson, 1901 have been known from Turkey until now.

The new species differs from *Phyllotreta atra* by shape of apex of aedeagus in dorsal view (acutely with a median tooth in the new species; sub-rounded with a median tooth in *Phyllotreta atra*), shape of apex of aedeagus in lateral view (directed slightly backwards in the new species; straightened, not directed backwards in *Phyllotreta atra*), and shape of distal pump of spermatheca (obtuse ending in the new species; acute ending in *Phyllotreta atra*) chiefly.

The new species differs from *Phyllotreta wiseana* by coloration of antennae (antennomere 2 and 3 blackish-brown or brown, remaining antennomeres entirely black in the new species; entirely black in *Phyllotreta wiseana*), coloration of legs (black with the exception of blackish-brown or brown tarsi in the new species; tibiae and tarsi at least partly red in *Phyllotreta wiseana*), shape of antennomere 3 in male (antennomere 3 without tooth-like process in the new species; antennomere 3 with a tooth-like process in *Phyllotreta wiseana*), shape of aedeagus in dorsal view (acutely with a median tooth in the new species; widely rounded in *Phyllotreta wiseana*), and shape of apex of aedeagus in lateral view (directed slightly backwards in the new species; directed clearly backwards in *Phyllotreta wiseana*) chiefly.

The new species differs from *Phyllotreta lubischevi* by coloration of antennae (antennomere 2 and 3 blackish-brown or brown, remaining antennomeres

entirely black in the new species; entirely black in *Phyllotreta lubischevi*, coloration of legs (black with the exception of blackish-brown or brown tarsi in the new species; entirely black in *Phyllotreta lubischevi*), puncturation of vertex (punctured in the new species; smooth in *Phyllotreta lubischevi*), shape of elytral apices (elytral apices with acute sutural angles in the new species; elytral apices rounded in *Phyllotreta lubischevi*), shape of aedeagus in ventral view (median lobe of aedeagus long and slender, almost parallel sided in the new species; median lobe of aedeagus clearly widened in basal half, narrower in apical half in *Phyllotreta lubischevi*), and shape of apex of aedeagus in lateral view (directed slightly backwards in the new species; straightened, not directed backwards in *Phyllotreta lubischevi*) chiefly.

The new species differs from *Phyllotreta annae* by coloration of body (black without metallic reflex in the new species; black with weak metallic reflex in *Phyllotreta annae*), shape of aedeagus in ventral view (median lobe of aedeagus long and slender, almost parallel sided in the new species; median lobe of aedeagus clearly widened in basal half, narrower in apical half in *Phyllotreta annae*), shape of apex of aedeagus in lateral view (directed slightly backwards in the new species; straightened, not directed backwards in *Phyllotreta annae*), and shape of distal pump of spermatheca (straightened, not curved in the new species; clearly curved in *Phyllotreta annae*) chiefly.

Anyway the new species is clearly different from the other known group members by shape of aedeagus.

Variability. Body length of all paratypes is over 2.0 mm. It changes 2.25 to 2.35 mm in both sexes.

Distribution. Known only from Western Black Sea Region of Northern Anatolia (Bartın province) and North parts of Central Anatolian Region (Ankara and Çankırı provinces) of Turkey.

Etymology. The name is dedicated to Asiye Aygül Aşar (Turkey) who is student of the first author.

A short key for the closely related species to new species on the base of Warchalowski (2010) and forms of genitalae

1. Median lobe of aedeagus clearly widened in basal half, narrower in apical half in ventral view.....2
 -. Median lobe of aedeagus long and slender, almost parallel sided in ventral view.....3
2. Body black with weak metallic reflex; apex of aedeagus acute; elytral apices with acute sutural angles; apices of hind margin of elytra with row of short setae.....*P. annae*
 -. Body pure black without metallic reflex; apex of aedeagus sub-rounded with a median tooth; elytral apices wide rounded; apices of hind margin of elytra without row of short setae.....*P. lubischevi*
3. In male antennomere 3 with a tooth-like process; apex of aedeagus widely rounded.....
*P. weiseana*
 -. In male antennomere 3 without tooth-like process; apex of aedeagus more or less pointed, not widely rounded.....4
4. Apex of aedeagus acutely with a median tooth; in lateral view apex directed slightly backwards; distal pump of spermatheca obtuse ending.....*P. aygulae* sp. nov.
 -. Apex of aedeagus sub-rounded with a median tooth; in lateral view apex straightened, not directed backwards; distal pump of spermatheca acute ending.....*P. atra*

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Figure 1. *Phyllotreta aygulae* sp. nov. (holotype ♂); dorsal view (left), ventral view (right).



Figure 2. *Phyllotreta aygulae* sp. nov., A. Dorsal view of aedeagus, B. Ventral view of aedeagus, C. Lateral view of aedeagus, D. Spermatheca.