

A NEW SPECIES, *PHYLLOTRETA BILGEAE* SP. NOV., FROM TURKEY (CHRYSOMELIDAE: GALERUCINAE: ALTICINI)

Hüseyin Özdikmen* and Didem Coral Şahin**

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

** 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 bilgeae* sp. nov. from Ankara province in Northern part of Central Anatolian Region of Turkey, close to *Phyllotreta cleomica* Furth, *Phyllotreta sisymbrii* Weise and *Phyllotreta armoraciae* (Koch).

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. The new species *Phyllotreta bilgeae* is a member of the group having upper side with yellow or reddish pattern. The characters of the new species suggest that it is clearly different from the other known group members.

***Phyllotreta bilgeae* sp. nov.**

(Figs. 1-4)

Type material. Holotype ♂: Turkey: Ankara prov.: Haymana, Soğulca village, N 39° 22' 26'' E 32° 21' 03'', 22.V.2014, 948 m, leg. D. Şahin. Paratype ♂: Same locality, data and collectors. The specimens are deposited in the collection of Nazife Tuatay Plant Protection Museum (NTM) (Turkey: Ankara).

Description of holotype.

Body length 1.9 mm. Body width 0.9 mm.

Head entirely black; frons and vertex with metallic reflection; frons and vertex sparsely, finely punctate. Antennomeres 1-6 light-brown, 7 basally light-brown apically black, the remaining antennomeres completely black. Proportions: ♂: 22-15-16-18-22-19-21-20-20-16-24.

Pronotum entirely black with greenish metallic reflection; puncturation distinct, moderately dense and confused; shape subrectangular, lateral and posterior margins rather evenly rounded.

Each elytron with a very broad yellow stripe, and with a narrow, black lateral and apical margins beginning from near humerus, black colour on apical margin approximately as the breadth as lateral margin; elytral base and humerus completely yellow without dark margin; elytra with a narrow, parallel sided, black sutural stripe, only apically becoming extremely narrowed, black colour of sutural stripe on each elytron approximately as the breadth as apical margin; elytral puncturation fine, moderately dense, confused; texture smooth; epipleura entirely black.

Ventral side of the body entirely black; apical sternite with a small depression at apex.

Fore and middle femora basally black, light-brown apically; hind femora entirely black; all tibiae and possibly all tarsi light-brown.

Aedeagus in figures 3B,J and 4I.

Female. Unknown.

Differential diagnosis. The new species is a member of the group having upper side with yellow or reddish pattern definitely. The new species is close to *Phyllotreta cleomica* Furth, 1979 described from Israel, *Phyllotreta sisymbrii* Weise, 1888 described from Caucasus, and *Phyllotreta armoraciae* (Koch, 1803) of which type locality is not known, lectotype from Hungary designated by Smith (1985). Only *Phyllotreta sisymbrii* Weise, 1888 has been known from Turkey until now.

The new species differs from *Phyllotreta sisymbrii* by body length (normally under 2.0 mm in the new species; normally over 2.0 mm in *Phyllotreta sisymbrii*), coloration of antennae (antennomeres 1-6 light-brown, 7 basally light-brown apically black, the remaining antennomeres completely black in the new species; antennomeres 1-4 light-brown or yellow, the remaining antennomeres completely black in *Phyllotreta sisymbrii*), proportion of antennomeres 3 and 4 (antennomere 3 smaller than 4 in the new species; antennomere 3 longer than 4 in *Phyllotreta sisymbrii*), black sutural stripe (narrower than *Phyllotreta sisymbrii*, only apically narrowed in the new species; broader than the new species, apically and behind scutellum narrowed in *Phyllotreta sisymbrii*), and shape of apex of aedeagus (sub-rounded with a median tooth in the new species; obtuse in *Phyllotreta sisymbrii*) chiefly.

The new species differs from *Phyllotreta cleomica* by coloration of antennae (antennomeres 1-6 light-brown, 7 basally light-brown apically black, the remaining antennomeres completely black in the new species; antennomeres 1-4 light-brown, sometimes yellow, 5 basally light-brown apically darkened, the remaining antennomeres completely black in *Phyllotreta cleomica*), proportion of antennomeres 1 and 5 (antennomere 1 as long as 5 in the new species; antennomere 1 longer than 5 in *Phyllotreta cleomica*), elytral pattern (elytra with narrow black lateral and apical margins beginning from near humerus, black colour at apical margin approximately as the breadth as of lateral margin, base and humerus completely yellow without dark margin, and a narrow, parallel sided, black sutural stripe, only apically becoming extremely narrow in the new species; elytra with narrow, black lateral margins, black colour at apical margin usually approximately twice the breadth of lateral margins but occasionally entirely yellow at apex, at base dark margin extremely narrow; sutural black stripe narrow but broader than lateral black margin, broadest in middle 2/3 then tapered apically becoming extremely narrow in *Phyllotreta cleomica*), coloration of legs (fore and middle femora basally black, apex light-brown, hind femora

entirely black in the new species; fore and middle femora basally dark-brown, apex lighter-brown, hind femora darker brown to black in *Phyllotreta cleomica*), humeral callus (entirely or almost entirely pale in the new species; covered by black colour in *Phyllotreta cleomica*), and shape of apex of aedeagus (sub-rounded with a median tooth in the new species; acute in *Phyllotreta cleomica*) chiefly.

The new species also differs from *Phyllotreta armoraciae* by body length (normally under 2.0 mm in the new species; normally over 2.5 mm in *Phyllotreta armoraciae*), coloration of antennae (antennomeres 1-6 light-brown, 7 basally light-brown apically black, the remaining antennomeres completely black in the new species; antennomeres 1-3 light-brown or yellow, the remaining antennomeres completely black in *Phyllotreta armoraciae*), proportion of antennomeres 1 and 11 (antennomere 1 smaller than 11 in the new species; antennomere 1 longer than 11 in *Phyllotreta armoraciae*), proportion of antennomeres 4 and 5 (antennomere 4 smaller than 5 in the new species; antennomere 4 longer than 5 in *Phyllotreta armoraciae*), black sutural stripe (narrower than *Phyllotreta armoraciae*, only apically narrowed in the new species; broader than the new species, apically and behind scutellum narrowed in *Phyllotreta armoraciae*), and shape of apex of aedeagus (sub-rounded with a median tooth in the new species; crescent in *Phyllotreta armoraciae*) chiefly.

In addition, some species of Palearctic *Phyllotreta* [e.g. *P. erysimi* Weise, 1900; *P. lativittata* (Kutschera, 1860); *P. pallidipennis* Reitter, 1891; *P. undulata* (Kutschera, 1860) and *P. variipennis* (Boieldieu, 1859)] are remarkably similar to the new species. However the new species differs from them by elytral patterns, coloration of antennae and proportions of antennal segments chiefly (Fig. 2).

Anyway the new species, *Phyllotreta bilgeae* sp. nov., is easily distinguished by structure of aedeagus from all other *Phyllotreta* species (Figs. 3-4).

Distribution. Known only from the type locality.

Etymology. The name is dedicated to Bilge Bahar Şahin (Turkey) who is daughter of the second author.

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

1. Humeral callus at least partly covered by black colour; apex of aedeagus acute; in male antennomeres 1-4 light-brown, sometimes yellow, 5 basally light-brown apically darkened, the remaining antennomeres completely black.....*P. cleomica*
-. Humeral callus entirely or almost entirely pale; apex of aedeagus and coloration of antennae not as above.....2
2. Body length over 2.5 mm; in male antennomeres 1-3 light-brown or yellow, the remaining antennomeres completely black; apex of aedeagus crescent.....*P. armoraciae*
-. Body length under 2.5 mm; in male at least first four antennal segment pale; coloration of antennae and apex of aedeagus not as above.....3
3. Apical margin of elytra narrowly darkened.....4
-. Apical margin of elytra broadly darkened.....5
4. Body length normally over 2.0 mm; black sutural stripe of elytra broader, apically and behind scutellum narrowed; in male antennomeres 1-4 light-brown or yellow, the remaining antennomeres completely black; apex of aedeagus obtuse.....*P. sisymbrii*

-. Body length normally under 2.0 mm; in male antennomeres 1-6 light-brown, 7 basally light-brown apically black, the remaining antennomeres completely black; black sutural stripe narrower, only apically narrowed; apex of aedeagus sub-rounded with a median tooth.....*P. bilgeae* sp. nov.

5. Mid part of sutural stripe parallel; dark parts of elytra mostly brownish; in male antennomeres 1-6 light-brown, 7 basally light-brown apically black, the remaining antennomeres completely black; in male antennomere 5 not distinctly thickened, about as long as 4.....*P. pallidipennis*

-. Mid part of sutural stripe not parallel, but lanceolate; dark parts of elytra black, contrasting on ground; in male antennomeres 1-4 light-brown or yellow, the remaining antennomeres completely black, antennomere 5 distinctly thickened, about 3 times longer than 4.....*P. variipennis*

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

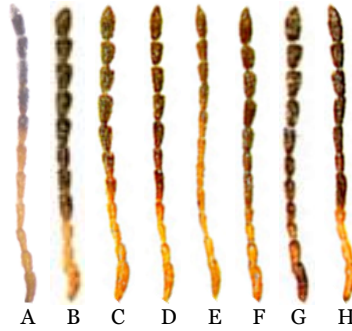


Figure 2. Antennae of males. A. *P. bilgeae* sp. nov., B. *P. armoraciae* [from Borowiec (2013)], C. *P. erysimi* [from Borowiec (2013)], D. *P. lativittata* [from Borowiec (2013)], E. *P. pallidipennis* [from Borowiec (2013)], F. *P. sisymbrii* [from Borowiec (2013)], G. *P. undulata* [from Borowiec (2013)], H. *P. variipennis* [from Borowiec (2013)].

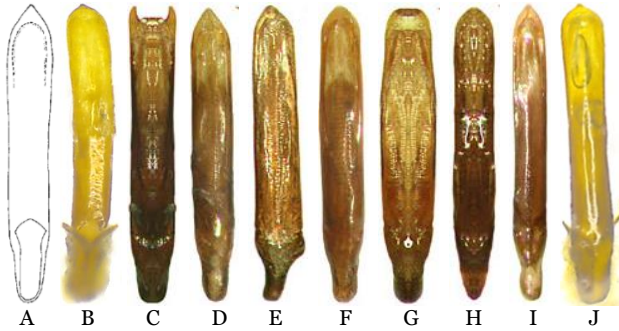


Figure 3. Ventral view of aedeagus. A. *P. cleomica* [from Furth (1979)], B. *P. bilgeae* sp. nov.; Dorsal view of aedeagus. C. *P. armoraciae* [from Borowiec (2013)], D. *P. erysimi* [from Borowiec (2013)], E. *P. lativittata* [from Borowiec (2013)], F. *P. pallidipennis* [from Borowiec (2013)], G. *P. sisymbrii* [from Borowiec (2013)], H. *P. undulata* [from Borowiec (2013)], I. *P. variipennis* [from Borowiec (2013)], J. *P. bilgeae* sp. nov.



Figure 4. Lateral view of aedeagus. A. *P. cleomica* [from Furth (1979)], B. *P. armoraciae* [from Borowiec (2013)], C. *P. erysimi* [from Borowiec (2013)], D. *P. lativittata* [from Borowiec (2013)], E. *P. pallidipennis* [from Borowiec (2013)], F. *P. sisymbrii* [from Borowiec (2013)], G. *P. undulata* [from Borowiec (2013)], H. *P. variipennis* [from Borowiec (2013)], I. *P. bilgeae* sp. nov.