

A new species of *Leistus* Frölich, 1799 with a taxonomical analysis of the subgenus *Leistus* s. str. from Major Caucasus (Coleoptera: Carabidae: Nebriini)

Jan FARKAČ¹⁾, Alexander V. PUTCHKOV²⁾ & Otakar ROP³⁾

¹⁾Faculty of Forestry, Wildlife and Wood Sciences, Czech University of Life Sciences Prague,
Kamýcká 1176, CZ-165 21 Prague 6, Czech Republic

e-mail: farkac@fld.czu.cz

²⁾Institute of Zoology KAN, B. Khmelnitzkogo str. 19, Kiev - 30, UA-252030, Ukraine

e-mail: entomol@alex.alpline.kiev.ua

³⁾Department of Food Engineering, Faculty of Technology, Tomas Bata University
in Zlín, Náměstí T.G. Masaryka 275, CZ-762 72 Zlín, Czech Republic

e-mail: rop@ft.utb.cz

Taxonomy, new species, descriptions, Coleoptera, Carabidae, Nebriini, *Leistus*, Georgia, Major Caucasus

Abstract. A new species of *Leistus* Frölich, 1799 (Coleoptera: Carabidae: Nebriini), belonging to the subgenus *Leistus* s. str. is described and illustrated: *L. lebardicus* sp. nov. from Lebarde in Megrelia, west Georgia. The new species is compared to most species of subgenus *Leistus* s. str. currently known from Major Caucasus.

INTRODUCTION

In this paper, which is based on the study of numerous material and on a complete literature survey (Dvořák 1994, Farkač & Janata 2003, Farkač 2005, Farkač & Wrase 2010, Perrault 1985, 1988, 1991, Putschkov 2001, Reitter 1883, 1887, Rost 1891, Shilenkov 1999), one species, from Major Caucasus (Lebarde, Megrelia), of the subgenus *Leistus* s. str. is described as new.

MATERIAL AND METHODS

We have used several indexes in the descriptions of the species; their list including their abbreviations used in the text is presented as follows:

EIL = length of elytra (from apex of scutellum to apex of elytra);

EIW = maximal width of elytra;

FW = width of head (with eyes);

FL = length of head (from apex of labrum to anterior margin of pronotum);

PNL = length of pronotum (on medial line);

PNpW = width of pronotum between hind angles;

PNW = maximal width of pronotum.

DESCRIPTION

Leistus (s. str.) lebardicus sp. nov.

(Fig. 1)

Type material. Holotype (♀) labelled: “Georgia, 1600 m, Lebarde [West Georgia, Megrelia, Martveli distr., 50 km NE Dobrdzeni, former health resort “Lebarde”, western area of upper part of Tekhuri river, Egrisskyi range], VII. 1992, leg. V. Lind”. Holotype deposited in the collection of Jan Farkač, Prague (Czech Republic).

Description. Habitus of holotype as in Fig. 1. Body length 8.6 mm (only holotype known). Color brown, tarsi, tibiae, antennae and maxillary appendages paler. Mandibles brownish. Eyes relatively small, not prominent.

Pronotum (Fig. 1) cordiform, maximal width at the middle, lateral margin of pronotum distinct denticle, as wide as 2/3 length. Lobes of pronotum almost indistinct, base slightly concave, posterior angles acute, lateral groove (sinuation) deeper. All indexes used are summarized in Table 1.

Elytra. Lateral part of elytra (from shoulder to apex) rather parallel, maximal width near middle. Elytra relatively prominent on disc. Punctures in furrows of elytra small, not deep, areas near scutellum (base of elytra) distinctly flattened. All used indexes are summarized in Table 1.

Male. Unknown.

Diagnosis. *Leistus lebardicus* sp. nov. is in its habitus similar to *Leistus (s. str.) angustus* Reitter, 1883, *L. megrelicus* Shilenkov, 1999 and *L. elegans* Rost, 1891 too, but the new species distinctly differs from these species by some morphometrical features, especially correlations of measurements of elytra and pronotum (Table 1). Moreover *L. lebardicus* sp. nov. can be differentiated from similar species (*L. angustus*, *L. megrelicus*, *L. elegans*) by smaller eyes, distinct denticle on lateral margin of pronotum, punctures in elytral furrows and slope of upper part of elytra. All these and other differences between similar Caucasian species of the subgenus *Leistus* are presented in Table 2, indexes in Table 1. Taxonomical analysis of *Leistus lebardicus* sp. nov. from Lebarde (West Georgia) is presented below.

Table 1. Correlations of some indexes of Major Caucasian *Leistus* s. str. species.

measurements	<i>L. lebardicus</i> sp. nov.	<i>L. angustus</i> Reitter, 1883	<i>L. megrelicus</i> Shilenkov, 1999	<i>L. denticollis</i> Reitter, 1887	<i>L. odvarkai</i> Dvořák, 1994	<i>L. elegans</i> Rost, 1891
PNW/FW	1.24	1.27-1.39	1.24-1.29	1.19-1.28	1.19	1.16-1.28
PNW/PNL	1.24	1.26-1.34	1.37-1.56	1.34-1.38	1.34	1.29-1.44
PNW/PNpW	1.95	1.95-2.05	2.05-2.09	1.80-2.16	1.87	1.76-1.91
EIL/EIW	1.62	1.74-1.85	1.67-1.71	1.75-1.86	1.70	1.53-1.69
EIL/PNL	2.20	2.94-3.19	3.00-3.36	3.03-3.48	3.03	2.94-3.26
EIW/PNW	1.34	1.26-1.35	1.25-1.32	1.20-1.33	1.33	1.33-1.50
FL+PNL/EIL	1.27	1.38-1.40	1.34-1.43	1.46-1.60	1.45	1.42-1.44
FW/FL	0.87	0.83-0.94	0.83-0.97	0.88-1.11	1.09	1.03-1.06

Table 2. Differences between *L. lebardicus* sp. nov. and other similar Major Caucasian species of the genus *Leistus* s. str.

characters	<i>L. lebardicus</i> sp. nov.	<i>L. angustus</i> Reitter, 1883	<i>L. megrelicus</i> Shilenkov, 1999	<i>L. elegans</i> Rost, 1891
eyes	relatively small, not prominent	slightly larger, more prominent	larger, distinct more prominent	larger, distinct more prominent
lateral margin of pronotum	distinctly unbent, relatively wide, 2/3 of length	less unbent, relatively wide only in anterior half (before middle)	less unbent, relatively wide only in anterior half	less unbent, relatively wide only in anterior half
width of pronotum	max. width at middle	max. width before middle	max. width before middle	max. width before middle
lobes of PN	almost indistinct	indistinct	more less distinct	indistinct
base of PN	slightly concaved	slightly concaved or even	slightly concaved	almost even
posterior (hind) angles of pronotum	acute, lateral groove (sinuation) deeper	slightly obtuse, lateral groove shallower	almost right, slightly acute	acute, lateral groove (sinuation) deeper
shoulders of pronotum	less rounded (relatively narrower, more sloping)	more rounded (relatively wider, less sloping)	less rounded (but relatively narrower and more sloping than in <i>L. lebardicus</i> sp. nov.)	distinctly rounded (wider and more steeping than in <i>L. angustus</i>)
lateral part of elytra (from shoulder to apex)	relatively more parallel	relatively more parallel	relatively more rounded below middle	relatively more rounded below middle
max. width of elytra	near middle	near middle	below middle	below middle
disk of elytra	relatively more prominent on disk	relatively less prominent on disk	relatively more prominent on disk	relatively less prominent on disk
punctures in furrows of elytra	small, not deep	relatively larger and deeper	larger than in <i>L. angustus</i>	the same as in <i>L. angustus</i>
slope of upper part of elytra (lateral view)	not less than 40°	less than 40°	less than 40°	less than 40°
areas near scutellum (base of elytra)	distinctly flattened	not flattened	sometimes slightly flattened	not flattened
distribution, habitat	Lebarde (H-1800, central part of Egrisskiy range, S slopes), ? forest	S slopes of Swanetskiy range, Lechkhumskiy range (H-2400-3000, alpine), E part of Egrisskiy range (Tzikuri Mt. env., H-1700, Khvira Mt. env. Intzyra riv.), ? forest	upper part of Tekhuri riv. (central part of Egrisskiy range, S slopes, eastern Lebarde, H-2400, alpine)	Major Caucasus, N. Ossetia (H-2000-2300, alpine)

Etymology. The specific name is derived from the name of the district Lebarde, the name of the type locality.

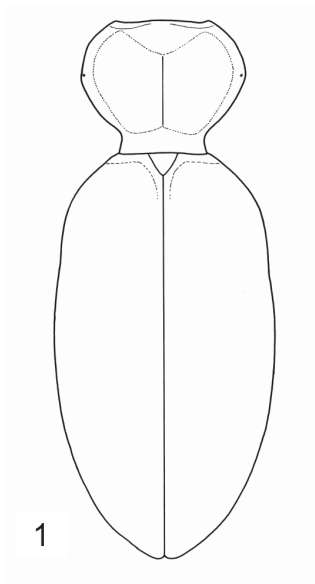


Fig. 1. Pronotum and elytrae of holotypus of *Leistus (L.) lebardicus* sp. nov.

ACKNOWLEDGEMENTS. We thank all our colleagues, who in any way contributed to the realization of this paper, particularly to Stefano Dacatra (Milano, Italy), who presented the specimens for study, Miloslav Rakovič (Charles University, Prague) for his help with English, Matúš Kocian (Praha, Czech Republic) for his assistance with the preparation of the illustration of the holotype.

REFERENCES

- DVOŘÁK M. 1994: Einige neue *Leistus*-Arten (Coleoptera, Carabidae, Nebriini). *Annotationes Zoologicae et Botanicae* 215: 1-11.
- FARKAČ J. & JANATA M. 2003: Nebriini pp. 79-96. In: LÖBL I. & SMETANA A. (Eds.) *The Catalogue of Palaearctic Coleoptera. Vol. 1*. Stenstrup: Apollo Books, 819 pp.
- FARKAČ J. 2005: Systematic Outline and Geographic Distribution of Species of the Genus *Leistus* Frölich, 1799 (Coleoptera: Carabidae: Nebriini). *Studies and Reports of District Museum Prague-East, Taxonomical Series* 1: 43-67.
- FARKAČ J. & WRASE D. W. 2010: Two new species of genus *Leistus* Frölich, 1799 from Turkey (Coleoptera: Carabidae: Nebriini). *Revue Suisse de Zoologie* 117: 143-152.
- PERRAULT G.-G. 1985: *Leistus elegans* Rost 1981: notes taxonomiques et designations de lectotypes (Col., Carabidae). *Nouvelle Revue d'Entomologie* 2: 158.
- PERRAULT G.-G. 1988: Le genre *Leistus* Froehlig (Coleoptera - Carabidae - Nebriini). X. Sous-genre *Leistus* s. str. (2). Les espèces asiatiques. *Bulletin Mensuel de la Société Linnéenne de Lyon* 57: 44-56.
- PERRAULT G.-G. 1991: Le genre *Leistus* Froehlig (Coleoptera Carabidae Nebriini). XV. Sous-genre *Leistus* s. str. (3). Les espèces euromaghrébines. *Bulletin Mensuel de la Société Linnéenne de Lyon* 60: 186-200.
- PUTCHKOV A. V. 2001: A new subspecies of the genus *Leistus* (Coleoptera, Carabidae) from western Caucasus. *Vestnik Zoologii* 35: 77-78.
- REITTER E. 1883: Neue Coleopteren aus Russland und Bemerkungen der bekannte Arten. *Revue Mensuelle d'Entomologie (St. Petersburg)* 1: 40-44.
- REITTER E. 1887: Neue Coleopteren aus Europa, den angrenzenden Ländern und Sibirien mit Bemerkungen über bekannte Arten. *Deutsche Entomologische Zeitschrift* 31: 497-528.
- ROST C. 1891: *Leistus elegans* n. sp. *Deutsche Entomologische Zeitschrift* 35: 126.
- SHILENKOV V. 1999: Ground-beetles of the genus *Leistus* Frölich of the Caucasus (Coleoptera Carabidae Nebriini). In: ZAMOTAJLOV A. & SČIAKY R. (Eds.): *Advances in Carabidology. Papers Dedicated to the Memory of Prof. Dr. Oleg L. Kryzhanovskij*. Krasnodar, Muiso Publishers, 473 pp.

Received: 22.2.2010

Accepted: 10.3.2010