

# New species and new faunistic data of West Palearctic *Bisnius* STEPHENS, 1829 (Coleoptera: Staphylinidae: Staphylininae)

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## Abstract

Two new species of West Palearctic *Bisnius* STEPHENS, 1829 (Coleoptera: Staphylinidae: Staphylininae, Philonthina) are described and illustrated: *B. karkarensis* (Armenia) and *B. iranicus* (Iran). Additional faunistic data are provided for *Bisnius microphthalmus* SCHILLHAMMER, 2011, *B. schillhammeri* HROMADKA, 2001 and *B. zhuk* (GUSAROV, 1995). *Bisnius microphthalmus* SCHILLHAMMER, 2011 is recorded from Kazakhstan for the first time.

**Key words:** Coleoptera, Staphylinidae, Staphylininae, Philonthina, *Bisnius*, new species, new data, West Palearctic.

## Introduction

The genus *Bisnius* STEPHENS, 1829 is a moderately speciose (current knowledge) genus in the subtribe Philonthina with an almost strictly Holarctic distribution.

There is quite a number of potential *Bisnius* species still residing in the genus *Philonthus* which have not yet been studied for correct generic assignment. In addition, the monophyly of the genus is doubtful and the systematic position of the *fimetarius* group, outside of *Bisnius* s.str. in CHANI-POSSE et al. (2018), should be assessed in detail.

In this paper, two new species of *Bisnius* are described: *B. karkarensis* (Armenia) and *B. iranicus* (Iran), and new or additional faunistic data are provided for *Bisnius microphthalmus* SCHILLHAMMER, 2011, *B. schillhammeri* HROMADKA, 2001 and *B. zhuk* (GUSAROV, 1995).

## Abbreviations and acknowledgements

The material treated in this paper is deposited in the following institutional and private collections:

CAH	coll. Volker Assing, Hannover, Germany
CGO	coll. Vladimir Gusarov, Oslo, Norway
CSB	coll. Michael Schülke, Berlin, Germany
HUB	Museum für Naturkunde – Leibniz Institute for Evolution and Biodiversity Science, Berlin, Germany (J. Frisch)
NMP	Národní muzeum (National Museum), Praha, Czechia (J. Hájek)
NMW	Naturhistorisches Museum Wien, Austria

The curators mentioned above are thanked for providing specimens and help in various ways.

In addition, I am grateful to Adam J. Brunke (Ottawa, Canada) for valuable comments to improve the manuscript.

***Bisnius zhuk* (GUSAROV, 1995)**

*Philonthus zhuk* GUSAROV 1995: 93.

TYPE MATERIAL EXAMINED: **Holotype** ♂: “Krim, nad Massandroj, Gusarov, 31.V.1990 [handwritten, in Russian] \ na excrementakh korovy” (CGO).

REDESCRIPTION: 6.2–7.3 mm long (3.1–3.5 mm, abdomen excluded). Black, moderately shining; elytra brown to dark reddish brown, distinctly darkened in basal depression, deflexed anterior portion between shoulders and neck sometimes reddish; abdominal tergites with posterior margins obscurely reddish, tergite X pale brown; legs reddish, medial faces of tibiae, especially metatibiae, infusate.

Head rounded quadrangular, about as long as wide, eyes moderately large, tempora 1.35–1.60 times as long as eyes; medial interocular punctures widely separated, as large as lateral interocular punctures, situated in front of level of lateral interocular punctures, vertex impunctate; antennae with segments 4–5 inconspicuously oblong, segments 6–10 about as long as wide; pronotum subparallel-sided, 1.10–1.15 times as long as wide, dorsal rows each with four more or less equidistant punctures; head and pronotum with very short-meshed microsculpture; elytra rather densely and coarsely punctate, distance between individual punctures variable, generally about a puncture diameter, but also in places slightly less or slightly more; scutellum very finely, sparsely punctate, surface with very fine transverse microsculpture; abdominal tergites III–VI with two basal lines, elevated area between basal lines impunctate on tergites III–V, that on tergite VI with a sparse row of fine setiferous punctures; remaining surface of tergites finely, moderately densely punctate, punctures almost forming indistinct transverse rows.

Aedeagus (Figs. 1–2) short, broad, with rounded apex; in lateral view broad, but apical portion rather flat; paramere (Figs. 1c, 2c) broad, slightly broader than median lobe (the holotype is slightly teneral with a partly collapsed median lobe, therefore the paramere appears much broader than the median lobe), apical margin deeply emarginate with additional small notch medially, with dense row of peg setae but without peg setae at medial notch. Generally, the aedeagus is similar to that of *Bisnius fimetarius* GRAVENHORST, 1802, but in the paramere of *B. fimetarius* the apical margin is only weakly emarginate, distinctly sinuate and with a much deeper medial notch.

DIAGNOSIS: Externally, the species is very similar to *B. fimetarius* except for the smaller eyes (tempora less than 1.2 times as long as eyes in *B. fimetarius*). From the former as well as from *B. schillhammeri* HROMADKA, 2001 and *B. karkarensis* it is distinguished mainly by the brownish elytra.

**ADDITIONAL MATERIAL:**

T U R K M E N I S T A N: 2 ♂♂: “USSR – Turkmenia, goldener Bach, westl. Aschhabad, 7.V.89, Wrase” (CSB, NMW); 1 ♀: “Turkm., Aschhabad, 7.V.[19]89, Wrase” (CSB).

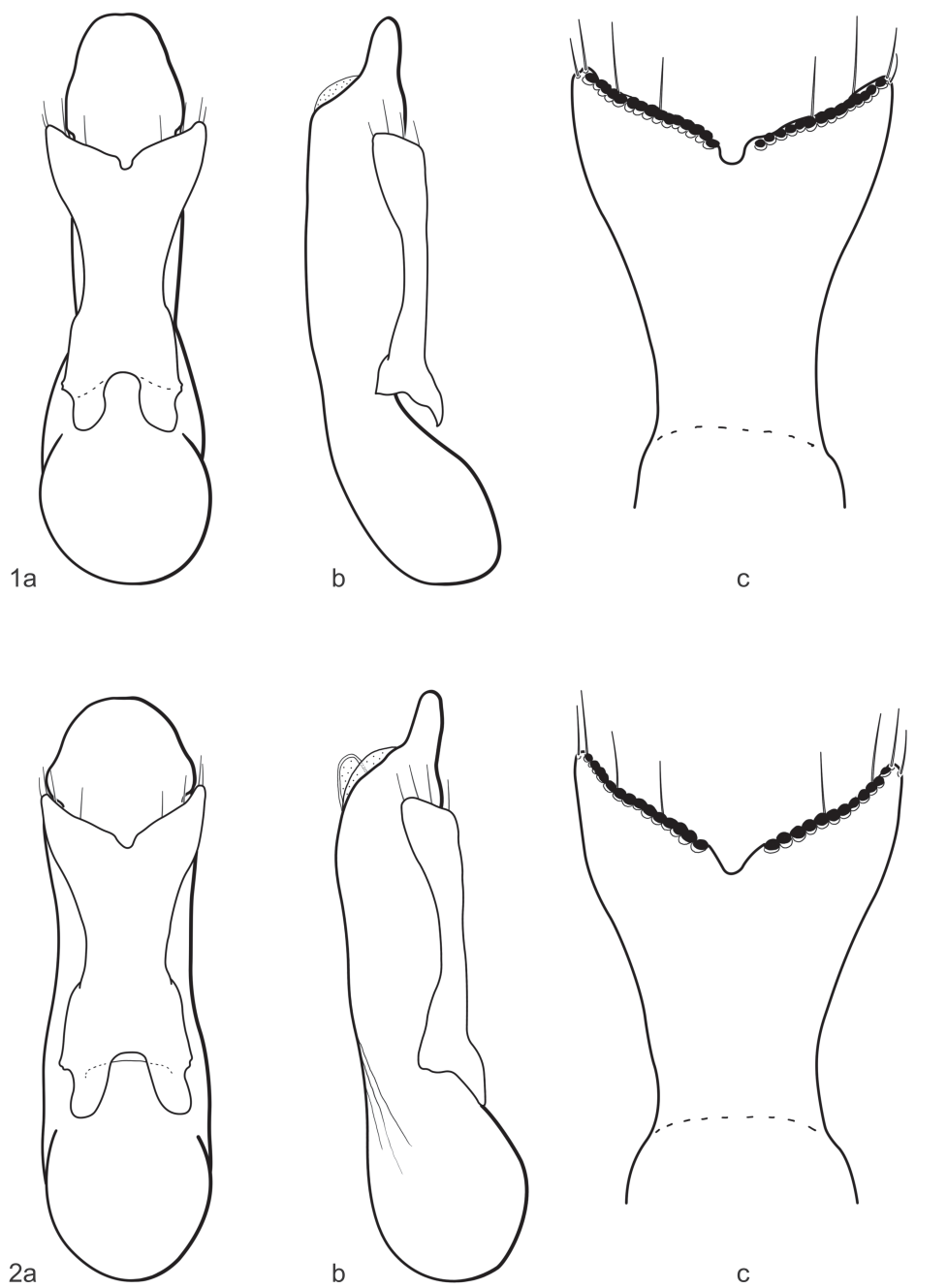
DISTRIBUTION: The species has been recorded from southern Russia, Azerbaijan and Turkmenistan.

BIONOMICS: The specimens of the type series have been collected from excrements of various animals, but also from decaying mushrooms.

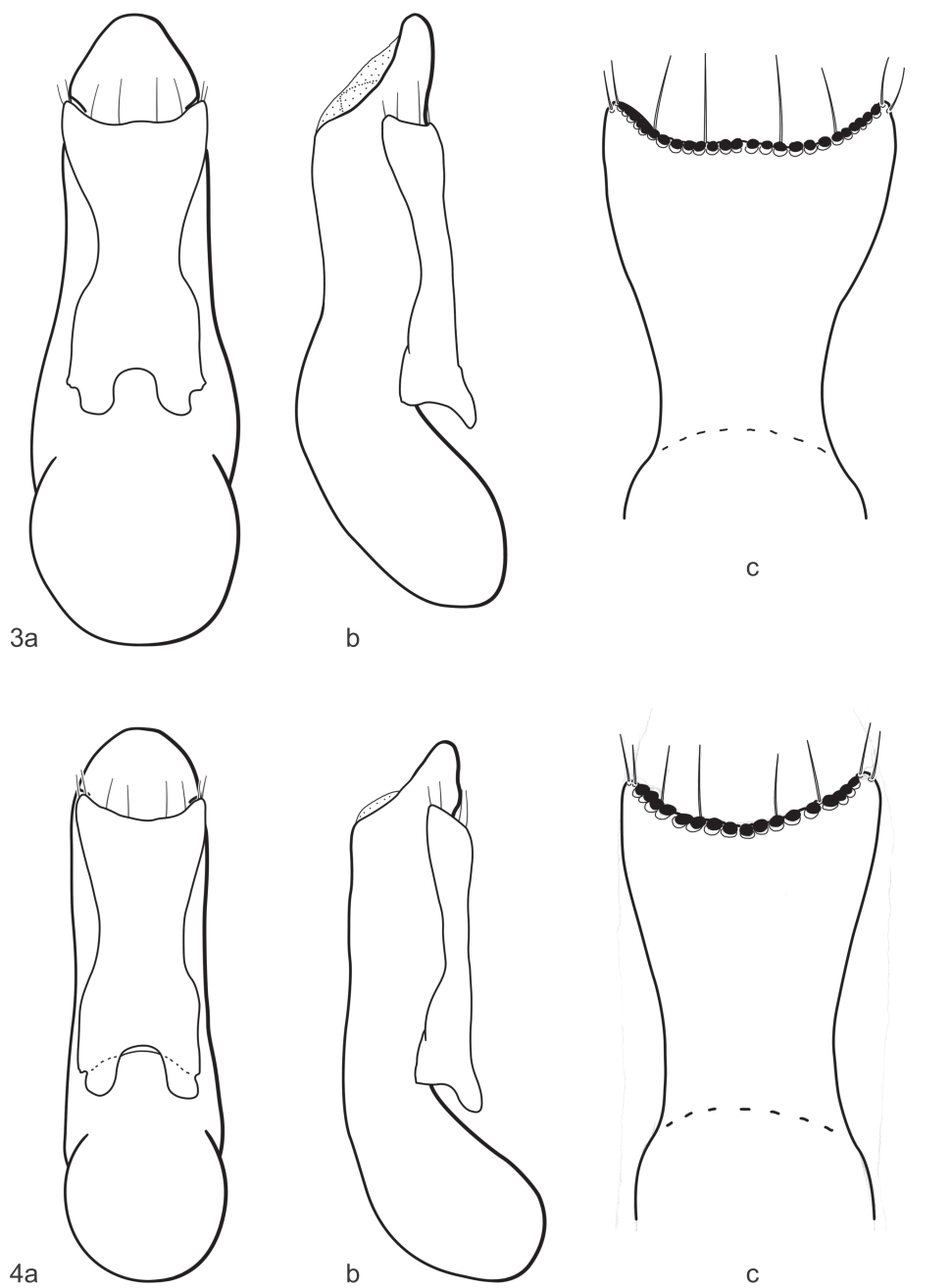
***Bisnius schillhammeri* HROMADKA, 2001**

*Bisnius schillhammeri* HROMADKA 2001: 139.

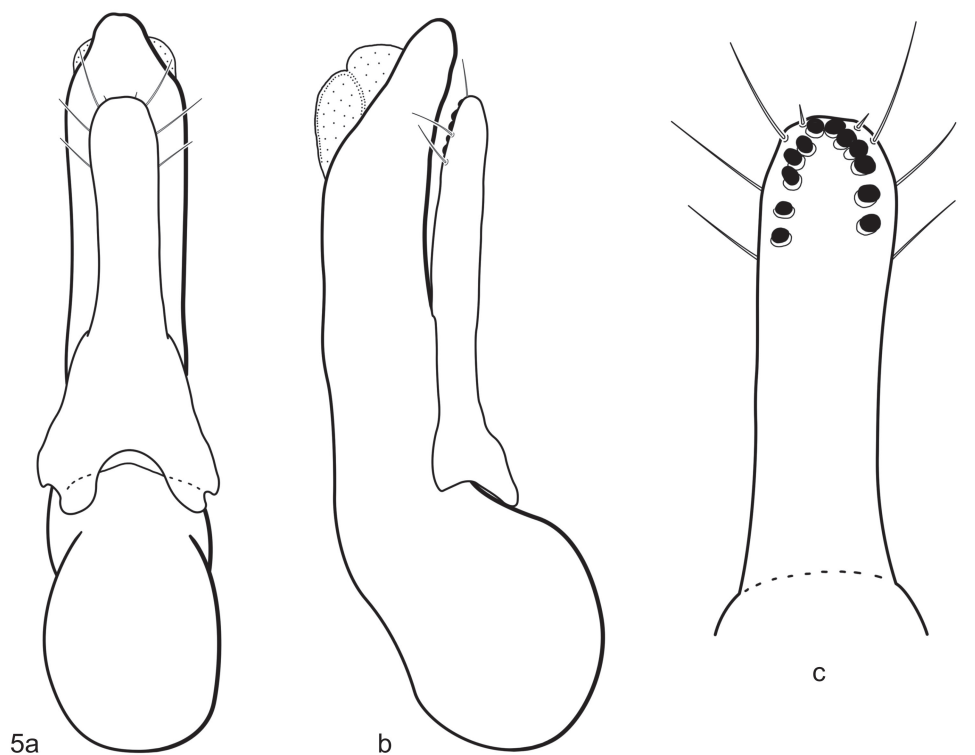
TYPE MATERIAL: **Holotype** ♂ (not studied for this paper): “S Iran, 29 km Yasui, 2300 m, 16.-17.6.1973, Loc. No. 245, Exp. Mus. Nat. Praha” (NMP), cited from the original description.



Figs. 1–2: Aedeagus of *Bisnius zhuk*: 1) holotype, 2) specimen from Turkmenistan; ventral view (a), lateral view (b), paramere (c). – Scale bars: 0.50 mm (a, b), 0.25 mm (c).



Figs. 3–4: Aedeagus of 3) *Bisnius schillhammeri*; 4) *B. karkarensis*; ventral view (a), lateral view (b), paramere (c). – Scale bars: 0.50 mm (a, b), 0.25 mm (c).



Figs. 5–7: 5) Aedeagus of *Bisnius iranicus*; ventral view (a), lateral view (b), paramere (c); 6–7) head of *B. iranicus* (6) and *B. microphthalmus* (7). – Scale bars: 0.50 mm (a, b), 0.25 mm (c).

The redescription is based on a single, newly collected male specimen because some parts of the original description are doubtful (especially the oblong head and the body size). The holotype has to be re-studied at a given time.

**REDESCRIPTION:** 6.8 mm long (3.3 mm, abdomen excluded). Black, shining; elytra dark brown to black brown, posterior margins of abdominal tergites broadly but obscurely reddish, palpi dark brown, last segment of maxillary palpi paler, legs dark brown, medial faces of meso- and metatibiae infuscate, tibiae narrowly reddish proximally, tarsi reddish with first segment somewhat darker.

Head rounded quadrangular, about as long as wide, eyes rather small, tempora subparallel, 1.6 times as long as eyes; medial interocular punctures widely separated, slightly shifted anteriorly, as large as lateral interocular punctures, distance between medial interocular punctures about four times distance between medial and lateral interocular puncture, vertex medially impunctate, with two pairs of larger punctures laterally behind level of posterior margin of eye and a pair of smaller punctures posteriorly; antennae with segment 4 inconspicuously oblong, segments 5–7 about as long as wide, 8–10 slightly transverse; pronotum subparallel-sided, 1.15 times as long as wide, dorsal rows each with four punctures, anterior three almost equidistant, distance between 3 and 4 slightly wider; head and pronotum with short-meshed, but rather obsolete microsculpture, especially on medial portion of pronotum barely visible; elytra rather densely and coarsely punctate, distance between punctures about a puncture diameter or slightly more; scutellum moderately coarsely and moderately densely punctate; abdominal tergites III–VI with two basal lines, elevated area between basal lines impunctate; remaining surface of tergites finely, moderately densely punctate.

Aedeagus (Fig. 3) with median lobe short and broad in ventral view, but apical portion slightly less broad than in *B. zhuk*; paramere (Fig. 3c) with much flatter apical emargination than in *B. zhuk*, medially, without notch and even slightly produced anteriorly; apical margin with dense uninterrupted row of peg setae.

**DIAGNOSIS:** The species differs from *Bisnius zhuk* in the darker elytra, from *B. fimetarius*, *B. zhuk* and *B. karkarensis* in the very weak microsculpture on head and pronotum, and from *B. karkarensis* in the more robust body and longer antennae.

#### ADDITIONAL MATERIAL:

I R A N: Isfahan Province: 1 ♂: S of Fereydun Shahr, Gukan, 2260 m, 32°42'36"N 50°05'16"E, 2.VII.2004, leg. J. Frisch (HUB).

**DISTRIBUTION:** The species is at present known only from Iran (provinces of Isfahan and Kohgiluyeh va Büyer Aḥmad).

**BIONOMICS:** Nothing is known about the habitat requirements of the species.

#### *Bisnius karkarensis* sp.n.

**Holotype** ♂: "ARMENIA [46] – 30 km NW Sisian, Mt. Karkar, 39°46'51"N 45°56'30"E, 2990 m, manure sifted, 11.VII.2017, V. Assing" (CAH). **Paratypes** (10 exs.): 5 ♀♀: same label data as holotype (4 CAH, 1 NMW); 1 ♂, 2 ♀♀: "ARMENIA [AR17-46] 30 km NW Sisian, Mt. Karkar, 39°46'51"N 45°56'30"E, 2990 m, straw manure sifted, 11.VII.2017, leg. M. Schülke" (2 CSB, 1 NMW); 1 ♂: "ARMENIA [AR17-27] SW Gavar, 40°14'31"N 45°01'41"E, 2570 m, stream valley, moist litter and roots near stream sifted, 4.VII.2017, leg. M. Schülke" (CSB); 1 ♂: "ARMENIA [AR17-42] 40 km NW Sisian, Vorotan Pass, 39°40'33"N 45°45'07"E, 2140 m, stream valley with Salix, litter and roots, sifted, 10.VII.2017, M. Schülke" (CSB).

**DESCRIPTION:** 5.2–6.5 mm long (2.8–3.0 mm, abdomen excluded). Black, moderately shining; tips of mandibles, outer faces of tibiae, tarsi and tergite X reddish brown to pale brown, reddish

stripe on tibiae often reduced to short and narrow portion proximally, basal one or two tarso-meres often darkened to almost black.

Head rounded quadrangular, as long as wide or inconspicuously wider than long, eyes moderately large, tempora 1.36–1.50 times as long as eyes; medial interocular punctures widely separated, smaller than lateral interocular punctures, situated in front of level of lateral interocular punctures, vertex impunctate; antennae with segment 4 inconspicuously oblong, segments 5 and 6 about as long as wide, 8–10 weakly transverse; pronotum subparallel-sided, 1.10–1.15 times as long as wide, dorsal rows each with four more or less equidistant punctures; head and pronotum with very short-meshed microsculpture; elytra rather densely and coarsely punctate, punctures separated by a puncture diameter or less, slightly less dense basally; abdominal tergites III–VI with two basal lines, elevated area between basal lines impunctate on tergites III–V, that on tergite VI with a sparse row of fine setiferous punctures; remaining surface of tergites finely, moderately densely punctate, punctures almost forming indistinct transverse rows.

Aedeagus (Fig. 4) smaller than in the previous two species, median lobe more slender with shorter and less flat (lateral view) apical portion; paramere (Fig. 4c) less broad, with shallow apical emargination, apical margin with dense uninterrupted row of peg setae.

DIAGNOSIS: *Bisnius karkarensis* differs from both previous species in the smaller body size, generally more slender build, shorter antennae and the completely black abdomen.

DISTRIBUTION: The species is at present known only from the type locality.

BIONOMICS: The specimens have been sifted from different kinds of plant material, mostly from leaf litter along streams. All specimens are from elevations above 2000 m.

DERIVATIO NOMINIS: The species is named after the type locality.

### ***Bisnius microphthalmus* SCHILLHAMMER, 2011**

*Bisnius microphthalmus* SCHILLHAMMER 2011: 136.

#### **ADDITIONAL MATERIAL:**

K A Z A K H S T A N: Turkistan Region: 1 ♀: “Kazakhstan: Aksu-Djabagly, Djabagly riv., Kshi-Kaindy, 19.06.2001, V. Kastcheev” (NMW).

First record for Kazakhstan!

### ***Bisnius iranicus* sp.n.**

**Holotype** ♂: “IRAN (Kohkilyeh va Büyer Ahmadi [Kohgīlūyeh va Büyer Ahmad]) Zagros Mts., Dena Mts., Sisakht, Kugol vall., 2750 m, 30°49'49"N 51°32'50"E, (subalpine pasture with tall herbaceous vegetation/under stones), 25.IV.2018, Wrase & Laser [18]” (CSB). **Paratype** ♀, same data as holotype (NMW).

**DESCRIPTION:** 8.0–9.5 mm long (4.5–4.9 mm, abdomen excluded). Black, matt, elytra reddish, abdominal tergites with posterior margins obscurely reddish, palpi pale reddish brown, legs dark reddish, medial faces of metatibiae infuscate.

Head rounded subquadrangular, 1.11–1.16 times as wide as long, widest at about level of half-length of tempora, eyes very small, tempora 2.7 (female paratype) to 3.2 (male holotype) times as long as eyes; with four interocular punctures, medial interocular punctures separated by about twice the distance between medial and lateral interocular puncture, all interocular punctures arranged in approximately one line at about level of half-length of eye; for chaetotaxy of head see Fig. 6; neck very broad, broader than half-width of head; antennae slightly sexually dimorphic – male: segment 4 slightly oblong, segments 5–6 about as long as wide, 7–10 transverse; female: segment 4 as long as wide, 5 slightly transverse, segments 6–10 more distinctly



transverse; pronotum about as long as wide, sides very weakly rounded; dorsal rows each with four punctures, anterior three punctures equidistant, distance between punctures 3 and 4 slightly larger; both head and pronotum with dense and distinct microsculpture of transverse waves, which are curved antieriad at base of head; elytra along shoulders much longer than pronotum along midline, finely punctate, punctures separated by about a puncture diameter or slightly more, due to small size of punctures punctation appearing rather dense; scutellum moderately densely, finely punctate, with exceedingly fine, short-meshed microsculpture; abdominal tergites III–VI with two basal lines, elevated area between basal lines densely, moderately strongly punctate and with dense isodiametrical microsculpture, in addition, with shallow depression immediately posterior of second basal line, with isodiametrical microsculpture in depression and very fine wavy microsculpture on remaining surface, tergites VII–VIII with a similar pattern of microsculpture but without depression at base.

Aedeagus (Fig. 5) with moderately broad median lobe, lateral outline of apical portion slightly sinuately narrowed toward subtruncate apex; paramere (Fig. 5c) moderately long, subparallel-sided, with rounded apex; with a subapical cluster of 12 peg setae arranged in two almost regular rows. Median lobe of *B. microphthalmus* with more slender apical portion of median lobe and broader paramere with subapical cluster of irregularly arranged peg setae (see SCHILLHAMMER 2011: Fig. 3).

DIAGNOSIS: The species is very similar to *Bisnius microphthalmus*, but immediately differs in the reddish elytra. In addition, the medial interocular punctures are more widely separated (Fig. 6) (more or less equidistant in *B. microphthalmus* – see Fig. 7).

DISTRIBUTION: The species is at present known only from the type locality.

BIONOMICS: The type specimens were collected from under stones at an elevation of 2750 m.

DERIVATIO NOMINIS: The species is named after the country of its origin.

### Zusammenfassung

Zwei neue westpaläarktische Arten der Gattung *Bisnius* STEPHENS, 1829 werden beschrieben und illustriert: *Bisnius karkarensis* (Armenien) und *B. iranicus* (Iran). Zusätzliche Funddaten für *Bisnius microphthalmus* SCHILLHAMMER, 2011, *B. schillhammeri* HROMADKA, 2001 und *B. zhuk* (GUSAROV, 1995) werden präsentiert.

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Autor(en)/Author(s): Schillhammer Harald

Artikel/Article: [New species and new faunistic data of West Palearctic \*Bisnius\* STEPHENS, 1829 \(Coleoptera: Staphylinidae: Staphylininae\) 107-114](#)