

Notes on the genus *Bembidion* Latreille, 1802, subgenus *Ocyturanus* Müller-Motzfeld, 1986, with particular reference to the “*signatipenne* group” and description of a new species from Iran (Coleoptera, Carabidae, Bembidiini)

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Abstract

Some taxonomic, geographical, synonymic and nomenclatural aspects of the genus *Bembidion* Latreille, 1802 subgenus *Ocyturanus* Müller-Motzfeld, 1986, “*signatipenne* Jacquelin du Val, 1852 group” (MÜLLER-MOTZFELD 1986, NERI & TOLEDANO 2017), are discussed here. The species *Bembidion (Ocyturanus) ivanloebli* n. sp. from Iran is described here. The following synonymy is proposed (with junior synonym listed first): *Bembidion waziristanum murreense* Müller-Motzfeld, 1985 n. syn. of *Bembidion waziristanum* Andrewes, 1932. *Bembidion (Ocyturanus) viduum* Netolitzky, 1910 is reported for Syria for the first time. A key to the species of subgenus *Ocyturanus*, *signatipenne* group is given.

Key words: Bembidiina, taxonomy, synonymy, Syria, identification key

Introduction

The subgenus *Ocyturanus* was divided by MÜLLER-MOTZFELD (1986) into species groups, simply to facilitate their identification; this division does not necessarily reflect phylogeny. We here follow the same perspective, as in NERI & TOLEDANO (2017).

The *signatipenne* group sensu MÜLLER-MOTZFELD (1986) is distinguishable from the others by having elytra dark, blackish, piceous-brown or dark brown, unicoloured but with preapical spots, isolated or merging in a lunula. We decided to study these species in depth because we discovered an undescribed species. We also provide a new key for the identification of the whole species group.

Materials and Methods

We examined the external morphology, male genitalia and literature for almost all the species belonging to the subgenus *Ocyturanus* with elytra dark, blackish, piceous-brown or dark brown, unicoloured but with preapical spots, isolated or merging in a lunula. We examined more than 450 exx.

We examined the type series or paratypes of the following species: *viduum* Netolitzky, 1910; *kurdistanicum* Netolitzky, 1920; *heinzi* Korge, 1971; *antennarium* Morvan, 1972; *mirzayani* Morvan, 1973; *lobanovi*

Mikailov, 1984 (only female specimens); *waziristanum murreense* Müller-Motzfeld, 1985. We did not see type material or any specimen of *iphigenia* Netolitzky, 1931, so we only studied the literature for this species. The systematic treatment follows MARGGI et al. (2017). The body length was measured from the front margin of the clypeus to the apex of the elytra. Dissections were made using standard techniques. Genitalia and small parts were preserved in Euparal on acetate mounts or on glass slides fixed to card mounts pinned underneath the specimens. The photographs are composite images with progressive focusing obtained with a Nikon DSFi1 digital camera controlled by a Nikon DS-L2 stand-alone remote controller mounted on a Leica Z6 microscope equipped with a 1.0x Leica lens and a customized motorized stand made by LT, then processed on a Macintosh Mac Book Pro quad-core computer with Helicon Focus® 6.7.1 program and then optimized with Photoshop® Elements 14 and Nikon View X2® on the same computer. Aedeagus and spermatheca photographs were made with the same setup and processing method described above, while using a 5x Infinity Corrected Nikon Fluor lens on the Z6 microscope.

The following acronyms are used:

CTVR = coll. Luca Toledano, Verona, Italy.
DW = coll. David Wrase, Berlin, Germany.

- HNHM = Hungarian Natural History Museum, Budapest, Hungary.
 JM = coll. Jan Muilwijk, Bilthoven, Holland.
 MNB = Museum für Naturkunde, Berlin, Germany.
 NHMB = Naturhistorisches Museum, Basel, Switzerland.
 NHMW = Naturhistorisches Museum, Wien, Austria.
 NMPC = National Museum (Natural History), Prague, Czech Republic.
 PM = coll. Pierre Morvan, Karentoir, France.
 PN = coll. Paolo Neri, Forlì, Italy.
 SMTD = Senckenberg Museum für Tierkunde, Dresden, Germany.

Taxonomy

Bembidion (Ocyturanus) waziristanum Andrewes, 1932

Figs 2, 11

= *Bembidion (Ocyturanus) waziristanum murreense* Müller-Motzfeld, 1985 n. syn.

Historical notes. MÜLLER-MOTZFELD (1985) describes *Bembidion (Peryphus) waziristanum murreense* n. ssp. from Pakistan (Murree – Abbottabad, 2200–2500 m) on one male and two female specimens; in the paper are also given the drawings of the aedeagi of both nominotypical form and subspecies. The subspecies is mentioned in MÜLLER-MOTZFELD (1986) as belonging to the newly described “infrasubgenus” *Ocyturanus*, obviously together with the nominotypical form, and is included in the group with preapical lunula on elytra. Later on the taxon is mentioned only in catalogues, e.g. LORENZ (2005), MARGGI et al. (2003) and MARGGI et al. (2017).

Examined material. Holotype of *Bembidion waziristanum murreense*, male, “♂ 776 [handwritten with number of Müller-Motzfeld’s original dissection] // Murree – Abbottabad / 13.VI. 2200 – 2500 m [printed] // Pakistan, 1977 / Wittmer, Brancucci [printed] // *Bembidion* [printed] / *waziristanum* and [handwritten] / det. G. Müller 1983 [printed] / ssp. *murreense* nov. [handwritten] // Holotypus [red, handwritten] // *Bembidion (Ocyturanus) / waziristanum* Andrewes, 1932 / Neri & Toledano det. 2018 [white, printed]” (NHMB). The specimen is extremely immature and therefore the aedeagus, preserved on a transparent label on the same pin as the specimen, is almost not visible.

Paratypes of *Bembidion waziristanum murreense*: One female, “Murree – Abbottabad / 13.VI. 2200 – 2500 m [printed] // Pakistan, 1977 / Wittmer, Brancucci [printed] // *Bembidion* [printed] / *waziristanum* and [handwritten] / det. G. Müller 1983 [printed] /

ssp. *murreense* nov. [handwritten] // Paratypus [red, handwritten] // *Bembidion (Ocyturanus) / waziristanum* Andrewes, 1932 / Neri & Toledano det. 2018 [white, printed]” (NHMB); the specimen is slightly immature. One male, ♂ 2683 [handwritten with number of Müller-Motzfeld’s original dissection] // Pakistan Kagan Valley / Murree m. 2000 / 28.VII.1986 / L. Dacatra // *Bembidion* [printed] / *murreense* M.-M. [handwritten] / det. Müller-M. 1989 (PN). Many specimens from Pakistan (W. Himalai Mnts, 20 km SW Chilez) and Afghanistan (Paktia Khot-Gaï (Shahidan); Nangarhar prov. Dara-i Nur 1500 m), all belonging to the nominotypical form (CTVR, DW).

Discussion and conclusions. The subspecies should differ from the type form by the uniform subapical lunula (MÜLLER-MOTZFELD 1985), only slightly split by the dark suture, darkened elytral apex and posterior part of elytra more widened and slightly lighter. Furthermore, in the description the aedeagi of the two taxa appear to be slightly different. The comparison with the nominotypical form and the study of both the *murreense* type specimens suggested to us that the difference in the spot colour is due to intra-specific variability and to the immaturity of the type specimens. The darkened elytral apex is a character recognizable in almost all the specimens, and also the widened posterior part of elytra is due to the extreme immaturity of the holotype of *murreense*. The drawings of the aedeagi are slightly different, probably due to the extreme difficulties in the examination of the markedly immature median lobe of the holotype; we were able to enhance the structures of the aedeagus with a particular technique (condensed, transmitted light with semi-dark field, Fig. 12) in order to make the outline of the median lobe and the endophallus visible, and to compare them with those of the very similar nominotypical form. Furthermore, the examination of a mature specimen of *murreense* in collection PN from a locality very close to the locus typicus, showed it to be identical in both exoskeletal and genital characters to the nominotypical form; this finally allows us to state the synonymy of *B. (O.) waziristanum murreense* with *B. (O.) waziristanum* Andrewes, 1932.

Bembidion (Ocyturanus) ivanloebli n. sp.

Figs 1, 10, 14

Diagnosis. A *Bembidion* subgenus *Ocyturanus*, *signatipenne* species group sensu MÜLLER-MOTZFELD (1986), similar to *antennarium* Morvan, 1972 in the shape of the preapical elytral spots, size and shape of the aedeagus, and distinguishable from this last by the full elytral microsculpture and the very short, barely visible temples.

Type locality. Iran, Fars, Sepidan.

Type material. Holotype, male, “Iran, Fars, Sepidan, 21-9-2005, Muilwijk leg.” (CTVR). Aedeagus preserved in Euparal on a slide pinned on the same pin as the specimen; we added to the specimen the following label: “*Bembidion (Ocyturanus) ivanloebli* Neri & Toledano, 2018 – HOLOTYPE” [red, printed].

Paratypes. 1 male, 2 females, same data as holotype (PN, JM); 1 female, “Iran, Kohkiloch, Yasuj env., 30-4-2006, Muilwijk leg.” (JM); 2 males, 2 females, “S. Iran, Sisakht, Dena, 2500-3000 m, 13-14.6.1974” (JM, NMPC). We added to all the specimens the following label: “*Bembidion (Ocyturanus) ivanloebli* Neri & Toledano, 2018 – PARATYPE” [red, printed].

Description (Fig. 1). Total body length 5.60-6.00 mm for the male specimens and 5.80-6.60 mm for the female specimens (Holotype 6.00 mm). Head and pronotum black; elytra black with two preapical lunate reddish spots, not split by the sutural interval except in a few specimens; apex dark. Femora blackish with reddish knees, tibiae and tarsi darkened with reddish reflections; penultimate palpomere blackish. First antennomere brown, second almost completely darkened, third and fourth darkened with reddish base, remaining antennomeres almost completely darkened.

Head: maximum width, including eyes, 1.22 mm (HT); distance between eyes 0.77 mm (HT); front and clypeus slightly microsculptured, sometimes only in part; evident frontal furrows, posteriorly ending slightly beyond anterior supraorbital seta. Eyes convex, very short temples, barely oblique towards neck. Antennae length 3.53 mm (HT).

Pronotum: Length on midline 1.09 mm (HT); width at anterior margin 1.03 mm (HT), maximum width 1.40 mm (HT), width at base 1.06 mm (HT); pronotum width/pronotum length ratio 1.28 (HT); pronotum moderately convex, transverse; sides entirely bordered, narrowing and evidently sinuate towards base with which they form a posterior angle, almost a right angle; marginal gutter wide and of homogeneous width; almost all the surface glossy but with traces of microsculpture only at sides; postangular carina evident; median line and anterior transverse impression narrow; base with transverse impression punctured, sometimes more or less punctate-rugose between the lateral foveae. These last are relatively small, deep, square and rugose.

Elytra: Length 3.80 mm (HT), maximum width slightly beyond the middle, 2.30 mm (HT); shoulders marked but slightly rounded and sides slightly curved; completely microsculptured with transverse, long polygonal sculpticells. Striae with punctuation vanishing towards apex; seventh stria evident, sometimes less evidently punctured than sixth stria, first and eighth stria reaching apex, the remaining striae barely visible in the apical portion. In the female paratypes the elytra may have a more ovoid shape.

Macropterous species.

Male genitalia (Fig. 10) Aedeagus of medium-small size (0.86-1.02 mm, Holotype 1.02 mm), ventral margin with apical fourth only slightly bent ventrally; endophallus completely included in the median lobe, apex of paracopulatrix lamina in the direction of the dorsal margin; parameres of same length, with four apical setae each.

Spermatheca see Fig. 14.

Comparative notes. *B. ivanloebli* n. sp., among the larger species of the *signatipenne* group sensu MÜLLER-MOTZFELD (1986), is distinguishable from *B. waziristanum* Andrewes, 1922 by the almost completely darkened femora and by the aedeagus with the apical fourth only slightly bent ventrally; from *B. antennarium* Morvan, 1972 and *B. mirzayani* Morvan, 1973 by the full elytral microsculpture and the very short temples; from *B. antennarium* by the more protruding eyes and from *B. mirzayani* by the more rounded shoulders.

Derivatio nominis. The species is dedicated to the great entomologist Ivan Löbl to celebrate his 80th birthday.

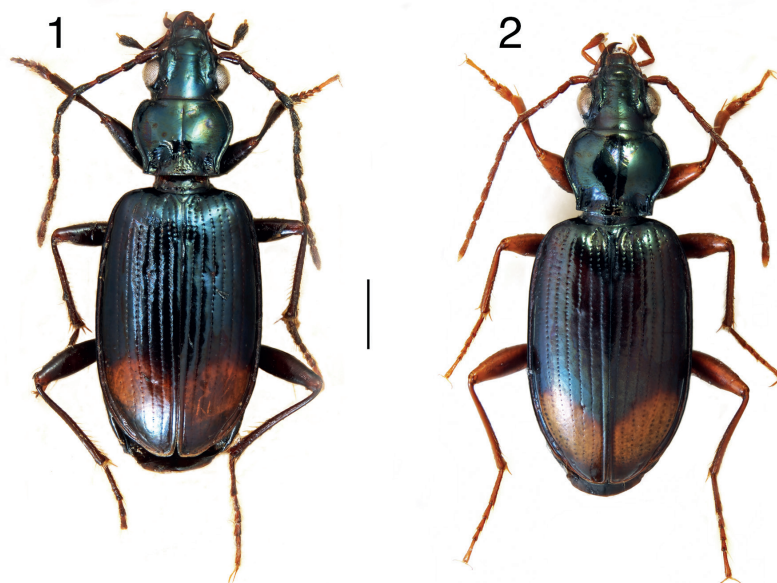
Distribution. The species is known from only three localities in central western Iran: Sepidan (Fars province), Sisakht and Yasuj (province of Kohgiluyeh and Buyer Ahmad).

Key to the *Ocyturanus* species with elytra dark brown, blackish or black, and preapical spots of various size, isolated or merging in a semi-lunar spot (= “*signatipenne* Jacquelin du Val, 1852 group” sensu MÜLLER-MOTZFELD 1986, NERI & TOLEDANO 2017)

- 1 Completely microsculptured elytra.....2
 - Elytra microsculptured at most in the apical half.7
 - 2 Legs completely light; antennae slightly darkened from the apex of third antennomere; penultimate palpomere darkened; eyes protruding and temples very short, almost absent; yellowish preapical spot big, rounded, extending from stria two to stria eight; elytral microsculpture with very narrow, transverse polygonal sculpticells; often the microsculpture has the appearance of chequering rather than that of normal microsculpture; long 4.3-5.2 mm (Fig. 4); aedeagus (Fig. 15). Distribution: Albania, Bulgaria, Greece, Macedonia, Turkey (MARGGI et al. 2017).....*B. signatipenne* Jacquelin du Val, 1852
- Remarks: In NETOLITZKY (1943, p. 45/141) two specimens are mentioned from Turkey (Karien, Denisli, Selbakos Geb., leg. Weirather) as “*B. signatipenne* ssp. nov.?”. The specimens, two females, respectively 5.0 and 5.2 mm long, pre-

- served at NHMW, actually belong to the typical form.
- Femora at least in part darkened or legs reddish-brown.....3
 - 3 Femora completely piceous brown or darkened, except for the knee.....4
 - Femora only in part more or less darkened, or legs reddish -brown.....6
 - 4 Bigger species 5.6-6.6 mm (Fig. 1); eyes more protruding; elytra with preapical reddish spots lunate, not or barely split by the sutural interval; apex dark; aedeagus (Fig. 10). Distribution: Iran ***B. ivanloebli* n. sp.**
 - Smaller species (4.2-5.3 mm); eyes less protruding; elytra with preapical spots evidently divided and far from the suture or merging in a more or less transverse band5
 - 5 Elytra with preapical spots extending from stria two to seven, evidently divided and far from suture and from lateral margin; 4.2-5.3 mm (Fig. 5); aedeagus (Fig. 16). Distribution: Turkey, Iran (MARGGI et al. 2017); SY (new record)..... ***B. viduum* Netolitzky, 1910**
Remarks: In CTVR there is a male specimen labelled: Syria, Crac de Chevaliers, 34°45'N, 36°18'E, 610 m, Šobotnik lgt, 28.VI.1998. All the specimens (about 40) from Iran examined by us, identified as *B. viduum*, are actually *B. kurdistanicum* Net.; the presence of *B. viduum* in Iran is to be confirmed.
 - Elytra with preapical spots forming almost a transverse band, barely interrupted by the suture; 4.2-5.3 mm (Fig. 6); aedeagus (Fig. 17). Distribution: Turkey, Iran (MARGGI et al. 2017)..... ***B. kurdistanicum* Netolitzky, 1920**
 - 6 Larger species, 5.6-6.3 mm (Fig. 2); a few punctures visible behind the frontal sulci, even though the species does not belong to the subgenus *Ocydromus* Clairville, 1806; elytra dark brown or blackish-brown, reddish-yellow preapical lunate spot often interrupted only by suture; legs reddish or with femora more or less darkened in the basal half; eyes evidently convex and temples very short, barely oblique towards neck, antennae and palps ferruginous, pronotum with wide lateral gutter; seventh elytral stria with punctuation deep as in the other striae; aedeagus with apical third evidently bent ventrally, paracopulatrix lamina bent towards the dorsal margin, 1.20-1.22 mm (Fig. 11). Distribution: Pakistan, Afghanistan (MARGGI et al. 2017)..... ***B. waziristanum* Andrewes, 1932**
 - Smaller species, 4.7-5.8 mm (Fig. 3); elytra dark, piceous brown, sometimes almost black; semilunar preapical spot divided by the brown sutural interval; antennae light brown with apical antennomeres slightly darkened; eyes poorly convex, temples flat, slightly oblique towards neck; seventh elytral stria with punctuation very fine, less deeply impressed than in the other striae; aedeagus with apical third slightly bent ventrally, paracopulatrix lamina bent towards ventral margin, 1.09 mm. Distribution: Tajikistan (MARGGI et al. 2017)..... ***B. lobanovi* Mikhailov, 1984**
Remarks: The exoskeletal characters of *B. lobanovi* derive from the original description (MIKHAILOV 1984), from a paratype received from NHMB and from some pictures of two paratype specimens received from Peter Michalik (Greifswald University). The aedeagal characters come from the “very simplified” drawing in the original description (Fig. 13). Slightly immature specimens, of lighter elytral colour, may be mistaken for members of the *marginipenne* group (see keys to the species groups of *Ocyturanus* in NERI & TOLEDANO 2017); in this case, *B. lobanovi* would key out between couplets 9 and point 10 of the keys to the *marginipenne* group.
 - 7 Legs, antennae and palps entirely light reddish; temples only slightly oblique, flat (similar to a small *B. (Peryphanes) stephensi* Crotch, 1869); elytra of the male completely lacking microsculpture; preapical oval spot, oblique, widened almost as a band and barely divided from suture; 5.0 mm.; Distribution: Ukraine; Crimea (MARGGI et al. 2017)..... ***B. iphigenia* Netolitzky, 1931**
Remarks: NETOLITZKY (1931) described *B. iphigenia* from a single male specimen collected in the Crimea. MÜLLER-MOTZFELD (1986) reports that he is unable to give a sure attribution of *B. iphigenia* to a subgenus without examining the specimen. KRYZHANOVSKIJ et al. (1995) listed *B. iphigenia* as an *Ocyturanus* for the first time, but without any explanation. Later, *B. iphigenia* was always listed among the *Ocyturanus*. All the mentioned characters derive from the original description. The type specimen was reported missing more than twenty years ago during a mailing sent by the NHMW to an entomologist (Harald Schillhammer, pers. comm.).
 - Legs unicoloured reddish-brown or femora blackish almost up to the apex; temples evident and oblique towards neck.....8
 - 8 Smaller species, 4.3-5.0 mm (Fig. 7); legs unicoloured reddish-brown; elytra with roundish preapical spot almost reaching second stria; antennae dark brown, often with base of antennomeres reddish; elytra microsculptured only at the

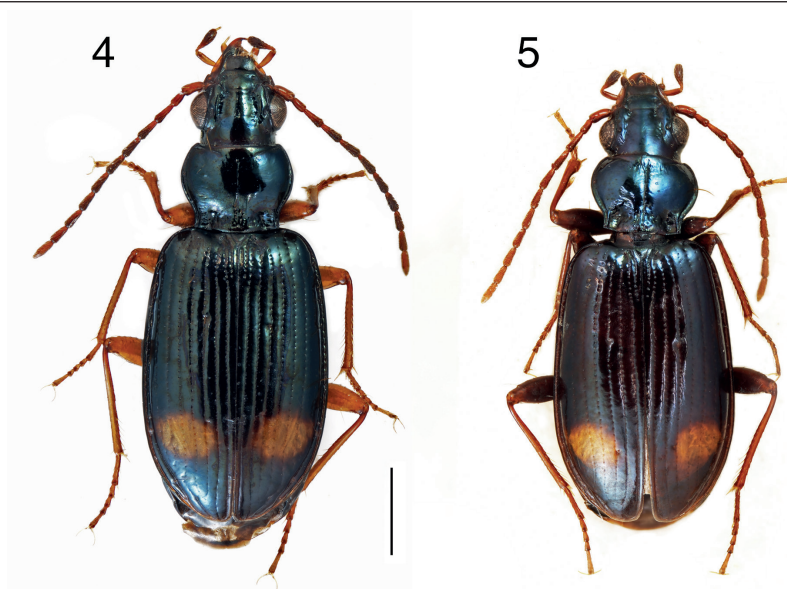
- extreme apex; aedeagus (Fig. 18). Distribution: Turkey (MARGGI et al. 2017).....
 *B. heinzi* Korge, 1971
- Larger species, 5.0-6.0 mm; femora blackish almost up to the apex; elytra with semilunar, yellowish preapical spot with undefined edges, barely divided by suture.....9
- 9 Elytra oval, microsculptured from apical fourth or fifth, bluish to dark brown, semilunar spot extending a little along interval five or six; pronotum less sinuate at sides before the hind angles; femora darkened with reddish apex, tibiae and tarsi reddish; head with microsculpture very superficial, eyes poorly protruding, temples short, slightly oblique towards neck; 5.2-5.4 mm (Fig. 8); aedeagus (Fig. 19, from MORVAN 1973). Distribution: Iran (Zagros: Kurang) (MARGGI et al. 2017)..... *B. antennarium* Morvan, 1972
- Remark: The species was described based on a single male specimen.
- Elytra with parallel sides, not microsculptured (female specimens), evident shoulders, bluish-dark brown with reddish reflections; pronotum more sinuate at sides before hind angles; legs blackish with lighter knees and tarsi; head not microsculptured, eyes protruding, temples longer and more oblique towards neck; 5.0-6.0 mm (Fig. 9); aedeagus (Fig. 20, from MORVAN 1973). Distribution: Iran (Zagros: Sisakht) (MARGGI et al. 2017)..... *B. mirzayani* Morvan, 1973



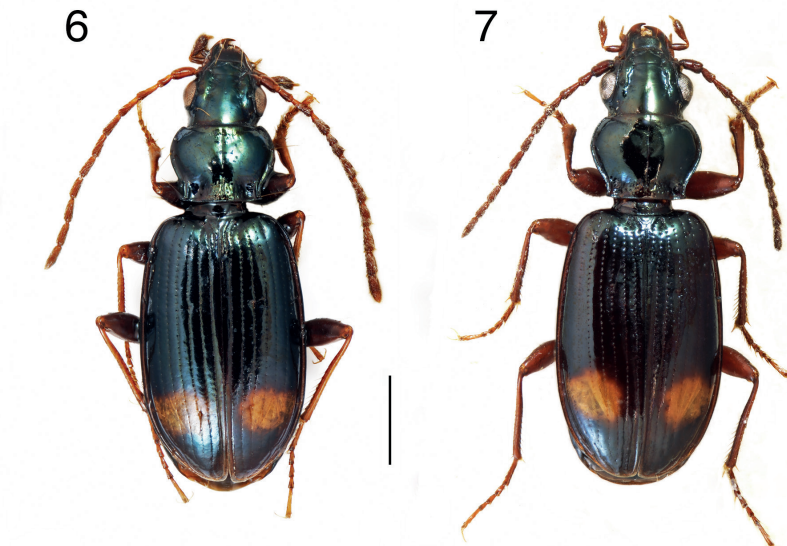
Figs 1-2. *Bembidion* spp., habitus. 1 – *B. ivanloebli* n. sp. Holotype. 2 – *B. waziristanum* Andrewes, 1932, specimen from Pakistan, W. Himalai mts., 20 km SW Chalez (CTVR). Scale: 1 mm.



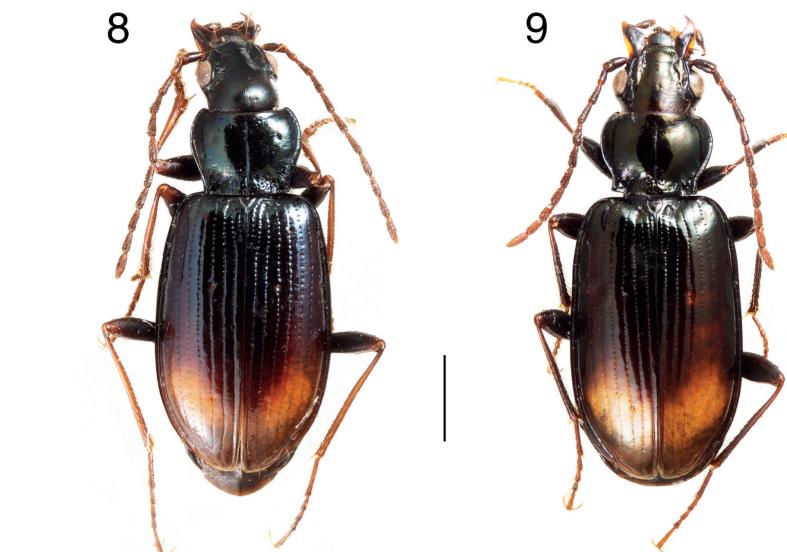
Fig. 3. *Bembidion lobanovi* Mikhailov, 1984, habitus, specimen from N Tajikistan, Fanskie Mts. Khurdak (CTVR). Scale: 1 mm.



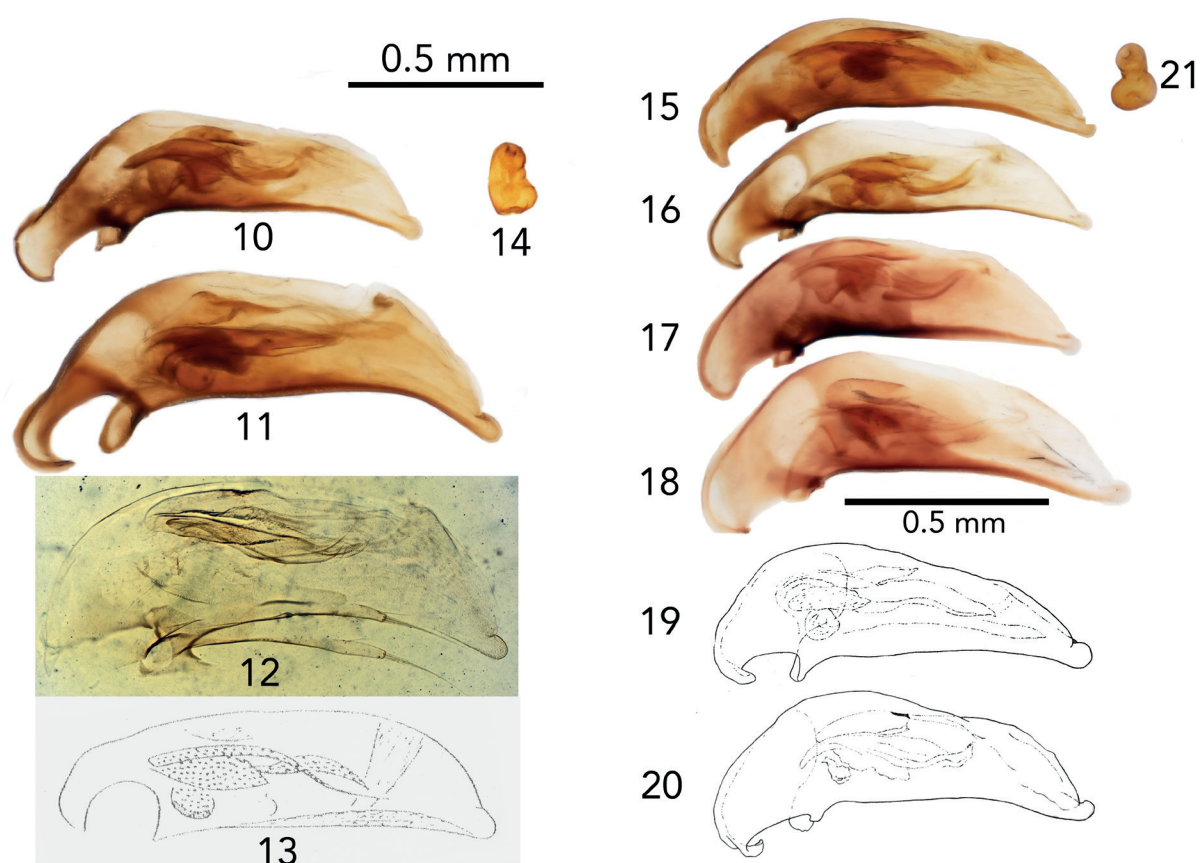
Figs 4-5. *Bembidion* spp., habitus. **4** – *B. signatipenne* Jacquelin du Val, 1852, specimen from NW Turkey, Edremit – Kaz Dağ, Ay i Deresi (PN). **5** – *B. viduum* Netolitzky, 1910, Holotype, Kilikisch. Taurus (NHMW). Scale: 1 mm.



Figs 6-7. *Bembidion* spp., habitus. **6** – *B. kurdanicum* Netolitzky, 1920, specimen from Iran, Mazandaran Prov., Karaj-Chalus road (MNB). **7** – *B. heinzi* Korge, 1971, Paratype, Anatolia bor., Köse Flußufer (MNB). Scale: 1 mm.



Figs 8-9. *Bembidion* spp., habitus. **8** – *B. antennarium* Morvan, 1972, Holotype, Iran, Zagros, Kurang (PM). **9** – *B. mirzayani* Morvan 1973, Allotype. Iran, Zagros Mts., Sisakht (PM). Scale: 1 mm.



Figs 10-14. *Bembidion* spp., median lobe of aedeagus (10-13) and spermatheca (14). **10** – *B. ivanloebli* n. sp., Paratype from Iran, Sepidan (PN). **11** – *B. waziristanum* Andrewes, 1932, specimen from Pakistan, W. Himalai mts., 20 km SW Chilez (CTVR). **12** – *B. waziristanum murreense* Müller-Motzfeld, 1985, Holotype, Murree - Abbottabad (NHMB). **13** – *B. lobanovi* (from MIKHAILOV 1984). **14** – *B. ivanloebli* n. sp., Paratype from Iran, Sepidan (JM).

Figs 15-21. *Bembidion* spp., median lobe of aedeagus (15-20) and spermatheca (21). **15** – *B. signatipenne* Jacquelin du Val, 1852, specimen from Crete, Rethimno, Plakias, river Megalopotamos (PN). **16** – *B. viduum* Netolitzky, 1910, Kilikisch. Taurus (NMPC). **17** – *B. kurdistanicum* Netolitzky, 1920, Holotype, Persia Septentr., Kerim (NHMW). **18** – *B. heinzi* Korge, 1971, Holotype, Anatolia bor., Köse Flußufer (MNB). **19** – *Bembidion antennarium* Morvan, 1972 (from MORVAN 1972). **20** – *B. mirzayani* Morvan, 1973 (from MORVAN 1973). **21** – *B. signatipenne* Jacquelin du Val, 1852, specimen from NW Turkey, Edremit – Kaz Dağ, Ay i Deresi (PN).

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Literature

- KRYZHANOVSKIY, O.L., BELOUSOV, I.A., KABAK, I.I., KATAEV, B.M., MAKAROV, K.V. & SHILENKOV, V.G. (1995): A Checklist of the Ground-Beetles of Russia and Adjacent Lands (Insecta, Coleoptera, Carabidae). – Pensoft Series Faunistica n° 3. Pensoft Publishers, Sofia-Moscow, 271 pp.
- LORENZ, W. (2005): Systematic list of extant ground beetles of the world (Coleoptera “Geadephaga”:

- Trachypachidae and Carabidae incl. Paussinae, Cicindelinae, Rhysodinae). 2nd edition. – Published by the author, Tutzing, 530 pp.
- MARGGI, W., HUBER, C., MÜLLER-MOTZFELD, G. & HARTMANN, M. (2003): Carabidae: Bembidiini: Bembidiina. – In: Löbl I. & Smetana A. (Eds.): Catalogue of Palaearctic Coleoptera. Volume 1. Archostemata – Myxophaga – Adephaga. – Apollo Books, Stenstrup:241-273.
- MARGGI, W., TOLEDANO, L. & NERI, P. (2017): Carabidae: Bembidiini: Bembidiina. – In: Löbl I. & Löbl D. (Eds.): Catalogue of Palaearctic Coleoptera. Volume 1 (2nd edition): Archostemata – Myxophaga – Adephaga. – Brill, Leiden: 294–342.
- MIKHAILOV, V.A. (1984): A review of the *Bembidion* (*Peryphus*) *marginipenne* group from central Asia (Coleoptera, Carabidae). – Entomological Review **63**: 113-119.
- MORVAN, P. (1972): Descriptions de nouveaux coléoptères carabiques d'Iran. – Bulletin de la Société Entomologique de France **77**: 26-28.
- MORVAN, P. (1973): Nouveaux coléoptères carabiques d'Iran. – Bulletin du Muséum National d'Histoire Naturelle (3^e série, n° 110, Zoologie) **84**: 169-186.
- MÜLLER-MOTZFELD, G. (1985): Bemerkungen zu einigen himalayischen Bembidien (Col. Carabidae). – Deutsche Entomologische Zeitschrift (N.F.) **32**: 171-181.
- MÜLLER-MOTZFELD, G. (1986): Zur Taxonomie und Phylogenie im *Bembidion*-Subgenus *Ocydromus* Clairville (Col., Carabidae). – Entomologische Nachrichten und Berichte **30**: 31-40.
- NERI, P. & TOLEDANO, L. (2017): Notes on genus *Bembidion* Latreille, 1802, subgenus (*Ocyturanus*) Müller-Motzfeld, 1986, with particular reference to the *marginipenne* group and description of seven new species (Insecta: Coleoptera: Carabidae: Bembidiina). – Quaderno di Studi e Notizie di Storia Naturale della Romagna **46**: 59-120.
- NETOLITZKY, F. (1931): Ueber neue und alte Bembidien. – Coleopterologisches Zentralblatt **5**: 78-81.
- NETOLITZKY, F. (1942-1943): Bestimmungstabellen europäischer Käfer (9. Stück). II. Fam. Carabidae, Subfam. Bembidiinae. 66. Gattung: *Bembidion* Latr. Bestimmungstabelle der *Bembidion*-Arten des paläarktischen Gebietes. – Koleopterologische Rundschau **29**: 1/97-70/166.

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