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Notes on genus *Bembidion* Latreille, 1802, subgenus *Ocyturanes* Müller-Motzfeld, 1986, with particular reference to the *marginipenne* group and description of seven new species

(Insecta: Coleoptera: Carabidae: Bembidiina)

Abstract

Some taxonomical, geographical, synonymical and nomenclatorial topics about genus *Bembidion* Latreille, 1802 subgenus *Ocyturanes* Müller-Motzfeld, 1986 are discussed here.
The following species are here described as new: *Bembidion* (*Ocyturanes*) *muilwijki* sp.n. (Iran); *Bembidion* (*O.*) *samai* sp.n. (Afghanistan); *Bembidion* (*O.*) *urarteum* sp.n. (Turkey, Armenia and Iran); *Bembidion* (*O.*) *schnitteri* sp.n. (Iran); *Bembidion* (*O.*) *ioheli* sp.n. (Pakistan); *Bembidion* (*O.*) *rohanum* sp.n. (Afghanistan); *Bembidion* (*O.*) *ronfelixi* sp.n. (Uzbekistan, Kyrgyzstan and Kazakhstan).
Bembidion davatchii (Morvan, 1971), formerly ranked as subspecies of *culminicola* Piochard de la Brûlerie, 1876 is ranked here as good species.
Bembidion xanthochiton Andrewes, 1922 and *Bembidion notatum* Andrewes, 1922 are transferred from subg. *Ocyturanes* to subg. *Asioperyphus* Vysoky, 1986. *Bembidion kuhitangi* Mikhailov & Belousov, 1991 and *Bembidion ledouxianum* Kirschenhofer, 1989 are transferred from *Bembidion incertae sedis* to subg. *Peryphus* Dejean, 1821.
The synonymy proposed by Belousov in Kryzhanovskij *et al.* (1995), of *Bembidion wrasei* Müller-Motzfeld, 1986 with *hissaricum* Netolitzky, 1943 is herewith confirmed. The synonymy of *khanakense* Mikhailov, 1984 with *hissaricum* Netolitzky, 1943 proposed by Belousov in Kryzhanovskij *et al*. (1995) is here recalled.
The following synonymies are proposed here (with junior synonym listed first): *Peryphus bifasciatus* Schuler, 1959 nec Stephens, 1828 **syn. n.** of *Bembidion dyscheres* Netolitzky, 1943 and *Bembidion karokhense* Marggi, 2003 **syn. n.** of *Bembidion dyscheres* Netolitzky, 1943.
In order to complete the synonymy proposed in Toledano & Marggi (2017), of *Bembidion farsense* Marggi & Huber, 1999 (replacement name for *Bembidion depressum* (Morvan, 1972)) with *Bembidion antennarium* (Morvan, 1972), the following synonymy is proposed here (with junior synonym listed first): *Bembidion depressum* (Morvan, 1972) = *Bembidion antennarium* (Morvan, 1972).
The lectotype of *Peryphus bifasciatus* Schuler, 1959 is herewith designated.
The distribution of the following species is extended: *Bembidion* (*Ocyturanes*) *parsorum* Netolitzky, 1934 new records for Kazakhstan and Turkmenistan. *Bembidion* (*O.*) *eucheres eucheres* Netolitzky, 1943 new records for Afghanistan. *Bembidion* (*O.*) *praeustum* Dejean, 1831 is present in Romania; this record, formerly already known, was omitted in Neri (2017); *Bembidion* (*O.*) *kiritschenkoi* Mikhailov, 1984 is reported from Tajikistan (Iskanderkul) according to the original description, the

distribution is extended with new records for Kazakhstan.
Keys for the identification of the "species groups" of subgenus *Ocyturanes* and for the species of gr. *marginipenne* are provided in English and in Italian.

Key words: *Bembidion*, *Ocyturanes*, taxonomy, synonymy, lectotype designation, new species, Afghanistan, Armenia, Azerbaijan, Iran, Iraq, Kazakhstan, Kyrgyzstan, Pakistan, Romania, Tajikistan, Turkey, Turkmenistan, Uzbekistan, identification keys.

Riassunto

[*Note sul genere* Bembidion *Latreille, 1802, sottogenere* Ocyturanes *Müller-Motzfeld, 1986, con particolare riferimento al gruppo* marginipenne *e descrizione di sette nuove specie (Insecta: Coleoptera: Carabidae: Bembidiina)*]
Sono discussi alcuni aspetti tassonomici, geografici, sinonimici e nomenclatoriali del genere *Bembidion* Latreille, 1802 sottogenere *Ocyturanes* Müller-Motzfeld, 1986.
Le seguenti nuove specie sono qui descritte: *Bembidion* (*Ocyturanes*) *muilwijki* sp.n. (Iran); *Bembidion* (*O.*) *samai* sp.n. (Afghanistan); *Bembidion* (*O.*) *urarteum* sp.n. (Turchia, Armenia e Iran); *Bembidion* (*O.*) *schnitteri* sp.n. (Iran); *Bembidion* (*O.*) *ioheli* sp.n. (Pakistan); *Bembidion* (*O.*) *rohanum* sp.n. (Afghanistan); *Bembidion* (*O.*) *ronfelixi* sp.n. (Uzbekistan, Kyrgyzstan e Kazakistan).
Bembidion davatchii (Morvan, 1971), precedentemente ritenuto sottospecie di *culminicola* Piochard de la Brûlerie, 1876 viene qui elevato a buona specie.
Bembidion xanthochiton Andrewes, 1922 e *Bembidion notatum* Andrewes, 1922 sono trasferiti dal sottogenere *Ocyturanes* al sottogenere *Asioperyphus* Vysoky, 1986. *Bembidion kuhitangi* Mikhailov & Belousov, 1991 e *Bembidion ledouxianum* Kirschenhofer, 1989 sono trasferiti da *Bembidion incertae sedis* al sottogenere *Peryphus* Dejean, 1821.
La sinonimia di *Bembidion wrasei* Müller-Motzfeld, 1986 con *hissaricum* Netolitzky, 1943 proposta da Belousov in Kryzhanovskij *et al*. (1995) è confermata. La sinonimia di *khanakense* Mikhailov, 1984 con *hissaricum* Netolitzky, 1943 proposta da Belousov in Kryzhanovskij *et al*. (1995) viene qui ricordata.
Le seguenti sinonimie sono proposte qui (con sinonimo junior elencato per primo): *Peryphus bifasciatus* Schuler, 1959 nec Stephens, 1828 **syn. n.** di *Bembidion dyscheres* Netolitzky, 1943 e *Bembidion karokhense* Marggi, 2003 **syn. n.** di *Bembidion dyscheres* Netolitzky, 1943.
Per completare la sinonimia proposta in Toledano & Marggi (2017), di *Bembidion farsense* Marggi e Huber, 1999 (nome nuovo per *Bembidion depressum* (Morvan, 1972)) con *Bembidion antennarium* (Morvan, 1972), viene qui proposta la seguente sinonimia (con sinonimo junior elencato per primo): *Bembidion depressum* (Morvan, 1972) = *Bembidion antennarium* (Morvan, 1972).
Viene designato il lectotipo di *Peryphus bifasciatus* Schuler, 1959.
Vengono forniti nuovi dati di distribuzione per le seguenti specie: *Bembidion* (*Ocyturanes*) *parsorum* Netolitzky, 1934 (nuova citazione per Kazakistan e Turkmenistan); *Bembidion* (*O.*) *eucheres eucheres* Netolitzky, 1943 (nuova citazione per Afghanistan). *Bembidion* (*O.*) *praeustum* Dejean, 1831 è presente in Romania; questa citazione, precedentemente nota in letteratura, era stata recentemente omessa da Neri (2017); di *Bembidion* (*O.*) *kiritschenkoi* Mikhailov, 1984 si segnala la presenza in Tadjikistan (Iskanderkul) secondo la descrizione originale e la distribuzione è ulteriormente estesa da nuove segnalazioni per il Kazakistan.
Viene fornita una chiave di identificazione dei "gruppi specie" del sottogenere *Ocyturanes* e una chiave per le specie del gruppo *marginipenne* in italiano e in inglese.

Introduction

Müller-Motzfeld (1986) proposed the name *Ocyturanes*, as "infrasubgenus", i.e. a species group within the subgenus *Ocydromus* Clairville 1806 for all the species formerly considered as belonging to the subg. *Peryphus* Dejean, 1821 they share the presence of a peculiar endophallic character, a membrane bag ("membranöser Sack", Müller-Motzfeld, 1986) between the main sclerites and the median portion of the dorsal edge of the aedeagus (fig. 29). This character is present also in the subgenus *Lymnaeum* Stephens, 1828, which is on the other hand recognizable from the other subgenera by external characters. In the same paper, the author splits the species belonging to *Ocyturanes* in some species groups: "Gruppe *marginipenne*, *balcanicum*, *praeustum* u.a. (= and more)" (Müller-Motzfeld, 1986) based on external characters, and gives also to *Peryphanes* Jeannel, 1941 the same level of species group within *Ocydromus*.
Later, while Kryzhanowskij et al. (1995) followed his settlement, using many subgeneric names (e.g. *Peryphanes, Ocyturanes, Peryphus*…) as species groups within the subgenus *Ocydromus*, other authors (e.g. Lorenz, 1998, 2005; Marggi et al., 2003 and many others) used the name *Ocyturanes* as a subgenus. A definitive settlement of the *Bembidiina* still is far from being completed, and a complex study in progress, based on morphological taxonomy and molecular biology, hopefully will help to make more clear this complex subtribe (David Maddison, pers. comm.). Therefore, for the present study we decided to follow the current (Marggi et al., 2017) settlement, and deal with the name *Ocyturanes* intended as a subgenus of *Bembidion* Latreille, 1802. We needed to study in deep the *marginipenne* Solsky, 1874 group because we discovered species apparently new to science, and ascertained that some species are known only from the original descriptions and that the iconography of the genitalia available in the literature are partial or very simplified.
We decided to provide a key for the species of this group and to try to make clear some doubts regarding species belonging to other species groups of the same subgenus. Due to the impossibility to obtain in study type material of some species, some of these doubts still remain. Some species of the subgenus were included in other species groups: *argaeicola* Ganglbauer, 1905, *balcanicum* Apfelbeck, 1899, *circassicum* Reitter, 1890, *signatipenne* Du Val, 1851 and *subcylindricum* Reitter, 1892. These species groups are intended as instruments to make easier the identification of the species more than groups with phylogenetic importance.

Materials and methods

For almost all the species of subg. *Ocyturanes*, *marginipenne* group, we examined the external morphology, the male and female genitalia, and the relevant literature; we examined more than 1150 specimens. From *marginipenne* group we studied

holotypes or paratypes of the following species: *culminicola culminicola* Piochard de la Brûlerie, 1876; *culminicola davatchii* (Morvan, 1971); *parsorum* Netolitzky, 1934; *eucheres eucheres* Netolitzky, 1943; *eucheres michailovi* Müller-Motzfeld, 1986; *dyscheres* Netolitzky, 1943; *hoberlandtianum* Fassati, 1959, *bifasciatum* (Schuler, 1959). Of the following species we were not able to study type material or other specimens, but only the literature: *eucheres darvasicum* Mikhailov, 1984; *kabakovi* Mikhailov, 1984; *lobanovi* Mikhailov, 1984; *fulvipenne* (Schuler, 1959).

We studied type material of species of other species groups of *Ocyturanes* and of other subgenera: *mirzayani* (Morvan, 1973); *antennarium* (Morvan, 1972); *depressum* (Morvan, 1972); *baghlanicum* Kirschenhofer, 1989; *hissaricum* Netolitzky, 1943; *wrasei* Müller-Motzfeld, 1986; *ledouxianum* Kirschenhofer, 1989. Thanks to the kind help of Peter Michalik (ZIMG) we were also allowed to examine photos of habitus and aedeagi of the type material of *B. wrasei* preserved in the Müller-Motzfeld Collection (ZIMG).

The measurements are expressed in the text by these abbreviations and were combined in ratios as follows:

Ew/Hw elytral width / head width ratio
Pw/Pl pronotal width / pronotal length ratio

The body length was measured from the front margin of the clypeus to the apex of the elytra, the antennal length from the base of antennomere 1 to the apex of 11. The width of the head includes the eyes. The pronotal length is measured along the mid-line. The elytral width is measured in the widest point and includes both elytra.

Dissections were made using standard techniques. Genitalia and small parts were preserved in Euparal on acetate or glass labels pinned underneath the specimens.

The photographs are composite images with progressive focusing obtained with a Nikon DSFi1 digital camera controlled by 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 ® 6.4.2 program and then optimized with Photoshop® Elements 14 and Nikon View X2® on the same computer. Photographs of the aedeagi are made with the same setup and processing method described above, while using a 5x Infinity Corrected Nikon Fluor lens on the Z6 microscope.

The systematic treatment of the subtribe Bembidiina follows Maddison (2012).

The specimens mentioned in this paper are preserved in the collections of the following institutions and individuals:

AP	coll. Andreas Pütz, Eisenhuttenstadt, Germany
AUB	Natural History Museum of the American University, Beirut, Lebanon
CR	coll. Christoph Reuter, Hamburg, Germany
CTVR	coll. Luca Toledano, Verona, Italy
DE	coll. Dominique Echaroux, Etréchy, France
DW	coll. David Wrase, Berlin, Germany
IRSBN	Institut Royal des Sciences Naturelles de Belgique, Bruxelles, Belgium
JM	coll. Jan Muilwijk, Bilthoven, Holland
KR	coll. Karel Rébl, Nove Straseci, Czech Republic
MHB	Museum für Naturkunde, Berlin, Germany
MHNG	Muséum d'Histoire naturelle, Genève, Switzerland
MNHN	Muséum National d'Histoire Naturelle, Paris, France
MT	coll. Marcos Toribio, Madrid, Spain
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
PS	coll. Peer Schnitter, Halle, Germany
RF	coll. Ron Felix, Berkel-Enschot, Holland
SF	coll. Sergio Facchini, Piacenza, Italy
VZ	coll. Vladimír Zieris, Pardubice, Czech Republic
ZIMG	Zoologische Institut und Museum, Greifswald, Germany

Problems regarding species attributed by the literature to *Ocyturanes*

During this and other contemporaneous long term studies we discovered that many *Bembidion* species were formerly attributed to wrong subgenera. Since, in the meantime, both of us we were collaborating also with the new edition of the catalogue of the Palaearctic Coleoptera (Toledano & Marggi, 2017), we decided to publish in that publication most of our nomenclatorial discoveries in order to update the new Catalogue as much as possible by the inclusion of these informations. In this paper we provide information and iconography supporting some of these systematic changes.

Bembidion praeustum Dejean, 1831.

In Neri (2017) the species is not mentioned for Romania. Our friend Eugen Nitzu

pointed out the mistake; both Marggi et al. (2003) and Nitzu (2006) mention this species for Romania.

Bembidion xanthochiton Andrewes, 1922 and ***Bembidion notatum*** Andrewes, 1922.

As we already discovered during the preparation of Toledano & Marggi (2017) and Marggi et al. (2017), both species (figs. 41, 42) were wrongly considered members of subgenus *Ocyturanes* (Marggi et al., 2003; Lorenz, 2005). After examination of the male genitalia (figs. 20, 22) of specimens preserved in CTVR, including a few paratypes, they revealed that actually belong to the subgenus *Asioperyphus* Vysoky, 1986.

Bembidion lobanovi Mikhailov, 1984.

This species was ranked by Müller-Motzfeld (1986) as a member of subgenus *Ocyturanes*, *marginipenne* group. From the photo of a female paratype of this species (NHMB) and from a careful reading of the original description we conclude that the species probably belongs to the *signatipenne* group.

Bembidion khanakense Mikhailov, 1984.

The species was described upon 2 female specimens from Tajikistan (Hissar range – loc. class.) and included in those belonging to the subgenus *Peryphus* Dejean, 1821; Müller-Motzfeld (1986) includes the species into *Ocyturanes*, *marginipenne* group. Belousov in Kryzhanovskij et al. (1995, note no.185) points out that *khanakense* is synonym of *B.* (*Peryphanes*) *hissaricum* Netolitzky, 1943, after the study of the types of both species. According to Marggi et al. (2003), Lorenz (2005) and Marggi et al. (2017) *khanakense* is a good species belonging to the subgenus *Ocyturanes*. Probably the note of Belousov in Kryzhanovskij et al. (1995 no.185) was forgotten by the following authors, including us… In conclusion, *khanakense* is a *Peryphanes*, and it is a junior synonym of *Bembidion hissaricum*.

Bembidion wrasei Müller-Motzfeld, 1986.

While studying *Bembidion wrasei* Müller-Motzfeld, 1986, at present ranked as junior synonym of *Bembidion* (*Peryphanes*) *hissaricum* Netolitzky, 1943, we noticed that the drawing of the aedeagus present in the original description of Müller-Motzfeld (1986) does not match with the drawing of the aedeagus of *hissaricum* provided by Belousov & Sokolov (1996). Since the synonymy is

announced, without any explanation in a short note by Belousov in Kryzhanovskij et al. (1995, pag. 88 note 185), we decided to see some specimens of the type series of both species in order to check this synonymy.
Netolitzky (1943, pag. 45/141 note 42) describes *hissaricum* on two specimens from Hissar, "Bochara (coll. Hauser, Typen)" and on three specimens from Buchara (coll. Staudinger), and includes the species in the subgenus *Peryphus*, *nitidulum* group; he does not mention the sexes of the examined specimens.
Müller-Motzfeld (1986) lists (with doubt) *hissaricum* in the newly described subgenus *Ocyturanes*, *signatipenne* group, and in the same paper describes *wrasei* from Hissar, including the species in the same subgenus and species group; he states that the species looks very similar to *hissaricum* (on the other hand known only from female specimens) and that the aedeagus is peculiar and somehow intermediate between the *praeustum* group and the *nitidulum* group; he provides a drawing of the aedeagus of *wrasei* which seems to suggest that it belongs to *Ocyturanes*.
Belousov in Kryzhanovskij et al. (1995), in the short note no.185, after the examination of the types states that *wrasei* is junior synonym of *hissaricum.* The drawing ot the aedeagus of *hissaricum* in Belousov & Sokolov (1996) shows that the species belongs to *Peryphanes*; anyway it must be emphasized again that the type series of *hissaricum* includes only female specimens (Müller-Motzfeld, 1986); it is therefore evident that the drawing of the aedeagus is made after a specimen identified as *hissaricum* without the possibility of a comparison of the male genitalia; also the drawing of the peculiar spermatheca of *hissaricum* was provided in the same paper.
Later, Marggi et al., 2003 and Lorenz, 2005 report *wrasei* as synonym of *hissaricum*. At last, in Marggi (2011) and Marggi et al. (2017) *hissaricum* is considered species of subg. *Peryphanes*.

From NHMW we have received the following four specimens ♀♀ belonging to the type series of *hissaricum*: 1 ♀, "Hissar, Boch. / Coll. Hauser [printed] // coll. / Netolitzky [printed] // *hissaricum* m / dt. Netolitzky / Type! [handwritten] // TYPUS [red, printed] // Coll. / Netolitzky [printed]"; the spermatheca is dissected and mounted on a transparent label on the same pin as the specimen; the specimen lacks nine antennomeres of left antenna; 1 ♀, "Hissar, Boch. / Coll. Hauser [printed] // Sammlung / Stöcklein [printed] // coll. / Netolitzky [printed] // *hissaricum* m / dt. Netolitzky [handwritten] // CO / TYPUS [red, printed]"; the specimen lacks the right antenna; 1 ♀, "Buchara / Staudinger [handwritten] // *hissaricum* m / dt. Netolitzky [handwritten]"; the specimen lacks five antennomeres of right and left antenna; 1 ♀, "Coll. Staudinger / Buchara [handwritten] // coll. / Netolitzky [printed] // *hissaricum* m / dt. Netolitzky [handwritten, underlined in red]"; the specimen lacks nine antennomeres of left antenna and the tarsomeres of the left

hind leg; the spermatheca is dissected and mounted on a transparent label pinned on the same pin as the specimen, but the lower cavity is slightly crushed.
From David Wrase we have received: 1 ♀, "Duschanbe UdSSR / Tadschikistan / 4.9 – 14.9. 1983 / leg. U. Arnold [printed] // Para / TYPUS [red, handwritten] // *Bembidion* [printed] / *wrasei* nov. sp. [handwritten] / det. G. Müller 1985 [printed] // *Bembidion* / (*Ocyturanes*) / *hissaricum* Netol. / (*wrasei* Müll.M.) / Wrase det. 2003 [printed] // Coll. Wrase / Berlin [green, printed]"; the spermatheca is dissected and mounted on a transparent label pinned on the same pin as the specimen; 1 ♂, "Tadshik. Hissar Alai / Warsob-Schlucht b. / Duschanbe 2000 m / 19.VII.1984 leg. Wrase [printed] // Para / TYPUS [red, handwritten] // *Bembidion* [printed] / *wrasei* nov. sp. [handwritten] / det. G. Müller 1985 [printed] // *Bembidion* / (*Ocyturanes*) / *hissaricum* Netol. / (*wrasei* Müll.M.) / Wrase det. 2003 [printed] // Coll. Wrase / Berlin [green, printed]"; the aedeagus is dissected and mounted on a transparent label pinned on the same pin as the specimen.
From Peter Michalik (ZIMG) we have received the photos of the habitus and of the aedeagus of the holotype and of a paratype of *wrasei*.

As first we observed that the spermatheca of *hissaricum* (fig. 1) perfectly matches with the spermatheca of *wrasei* (fig. 2); on the other hand, regarding the aedeagus of *wrasei*, the photo of the holotype received from ZIMG and the drawing in Müller-Motzfeld (1986) (fig. 19) are different from the aedeagus of the paratype in coll. DW (fig. 18) and from the drawing of its synonym *hissaricum* in Belousov & Sokolov (1996) (fig. 17). This is the reason that suggested to verify the synonymy between *wrasei* and *hissaricum*.
Since ZIMG, together with the photo of the holotype of *wrasei* sent us also the photo of a paratype different from the photo of the holotype but similar to the paratype in coll. DW, we were able to understand what probably occurred: the drawing of the aedeagus of the holotype seems to lack the central brush which protrudes from the basal opening (in the Müller-Motzfeld's drawing the central brush seems not protruding) possibly because the specimen was captured slightly after the copula and the endophallus was not yet returned to the initial position, thus the central brush was not yet protruding from the basal opening.
Therefore we confirm that *Bembidion* (*Ocyturanes*) *wrasei* Müller-Motzfeld, 1986 is a junior synonym of *Bembidion* (*Peryphanes*) *hissaricum* Netolitzky, 1943.

Bembidion kuhitangi Mikhailov & Belousov, 1991.

This species was described from several specimens from Turkmenistan (Karlyuk, Kuhitangtau – loc. class.) and there is no clear attribution to a subgenus, because the species seems isolated from the similar known groups: *Peryphus* and *Ocyturanes*.

Kryzanovskij et al. (1995) include the species into the *rickmersi* group (considered somewhat close to the subgenus *Nepha* Motschulsky, 1864); Lorenz (1998, 2005), Marggi et al. (2003) and Michalik et al. (2010) (this last paper in the list of the Types of the Collection Müller-Motzfeld at ZIMG) report that the specimen lacks the aedeagus) list or simply mention the species as *Ocyturanes*. Marggi et al. (2003) report the species for Turkmenistan, Tajikistan and Uzbekistan. From the collection CTVR we have studied the following male paratype with these labels: "хр. Кугитаиг – Тау / близ Карлюкской пещерн / у водн / В. Михайлов 20.4.1976" [printed] // Paratypus [red, printed] / *B. kuhitangi* sp. n. / Mikh. et Bel. [red, handwritten]". The aedeagus was glued, dried, on a label and the endophallus was removed from the median lobe and glued on the same label; we tried to prepare it again on a transparent label in Euparal, but we discovered that it lacks the basal bulb of the median lobe.
In Toledano & Marggi, (2017) the species was transferred to the species *incertae sedis*. Recently, thanks to our friend Karel Rébl, we were able to study a small series of specimens from the type locality. After the study of this material, in our opinion the species belongs to the subgenus *Peryphus*, even though the endophallus seems do not allow its inclusion in the known species groups of the subgenus; we wish to remind that in the subgenus *Peryphus* are several species groups with different endophallic characters; according to the external characters, the closer species group seems to be the *obscurellum* Motschulsky, 1844, as already pointed out by Mikhailov & Belousov (1991).

Bembidion antennarium (Morvan, 1972) (fig. 44)

Thanks to the kind collaboration of Jan Muilwijk (Bilthoven) and Bernard Lassalle (Boissy lès Perche), from the collection PM we have received the following two specimens: 1 ♀ with three labels: "Iran Zagros / Kurang. 2800 m / 6. 1970. Morvan [handwritten] // *Peryphus* / *depressus.* / Morvan [handwritten] // HOLOTYPE [red, printed]"; 1 ♂ with four labels: "Iran Zagros / Kurang. VI. 1970 / 2800 m Morvan [handwritten] // penis n. // 127 [handwritten] // *Peryphus* / *antennarius* / Morvan [handwritten] // HOLOTYPE [red, printed]". There is another label where some parts of the copulatory apparatus are glued, but unfortunately not the aedeagus, that probably is preserved separately from the specimen, possibly still in the collection PM.
Peryphus depressus Morvan, 1972 was renamed as *Bembidion* (inc. sedis) *farsense* Marggi & Huber, 1999, because the name was preoccupied by *B. depressum* Ménétriés, 1832. *Peryphus antennarius* Morvan, 1972 at present is ranked as *Bembidion* (*Ocyturanes*) *antennarium* (Morvan, 1972) (Marggi et al. 2017). As we already stated in Toledano & Marggi (2017), *antennarium* and *farsense* are conspecific, and they were synonymized, with *Bembidion* (*Ocyturanes*) *antennarium* (Morvan, 1972) as senior synonym, but unfortunately we omitted

to propose officially also the synonymy of *depressum*. In order to complete the synonymy, we state as follows: *Bembidion depressum* (Morvan, 1972) **syn.n.** of *Bembidion antennarium* (Morvan, 1972) (with junior synonym listed first).
We must also emphasize that the drawings of the habitus of both taxa in Morvan, 1973 (pag. 178 no. 39-40) do not match with the holotypes we examined; even though simplified, they show the femora of *depressus* almost completely blackish, while those of *antennarius* in the drawing are light; actually, from the description and the examination of the holotypes the femora of both species are almost completely blackish; also the difference in size is not real, in fact the holotypus of *antennarius* is 5.08 mm while that of *depressus* is longer, 5.38 mm.
We added the following label to the holotype of *depressum*: "*Bembidion* (*Ocyturanes*) *antennarium* Morvan – Neri & Toledano det. 2017". The species belongs to the *signatipenne* group.

Bembidion ledouxianum Kirschenhofer, 1989 (fig. 43)

The species was described upon four specimens from Himachal Pradesh Mahri (Himalayan India) and attributed to *Ocyturanes* for the similarities in the body and in the aedeagus with *signatipenne* Duval, 1852; it is also provided a very simplified drawing of the aedeagus which actually does not show the diagnostic characters of the subgenus *Ocyturanes*. Therefore the species was transferred to the species *incertae sedis* in Toledano & Marggi (2017).
In order to try to ascertain the real systematic position of this taxon, more recently we requested in study the two following specimens belonging to the type series: from MHNG: 1 ♂ with six labels, "Inde / Himachal Pradesh / Mahri [handwritten] // 3500 m / 18.VIII.80 / G. Ledoux [handwritten] // Collectio / M. Fassati [printed] // alatus [printed] // Paratypus [red, printed] // *Bembidion* [printed] / (*Ocyturanes*) / *ledouxianum* mihi [handwritten] / det. E. Kirschenhofer 1988 [printed]". The aedeagus is dissected and mounted on a transparent label pinned on the same pin as the specimen,
From NHMW: 1 ♂ with five labels: "Inde / Himachal Pradesh / Mahri [handwritten] // 3500 m / 18.VIII.80 / G. Ledoux [handwritten] // Para [red, handwritten] / TYPUS [red, printed] // *Bembidion* [stampato] / (*Ocyturanes*) / *ledouxi* mihi [handwritten] / det. E. Kirschenhofer 1988 [printed] // *Bembidion* [stampato] / *ledouxianum* 88 [handwritten] / det. E. Kirschenhofer [printed]". The specimen lacks the last three antennomeres of left antenna; The aedeagus was dissected and mounted on a transparent label pinned on the same pin as the specimen.
The study of the aedeagus of *ledouxianum* (fig. 23) shows that the species lacks the "membranoser sack" (Müller-Motzfeld, 1986) and other endophallic characters typical for *Ocyturanes*; in our opinion the species belongs to the subgenus *Peryphus* which, as mentioned above, includes several species groups

including species with different aedeagal characters. We added to the specimens the following label: *Bembidion* (*Peryphus*) *ledouxianum* Kirschenhofer, 1989 – Neri & Toledano det. 2017.

Bembidion* (*Ocyturanes*) *karokhense Marggi, 2003 (=*bifasciatum* Schuler, 1959).

Schuler (1959) described from Afghanistan (Herat, Karokh – loc. class., type ♂ in coll. K. Lindberg), upon one male and one female specimen, *Peryphus bifasciatus*. Later, Lorenz (1998) mentions this species between the "*Ocydromus* incert.". Marggi (2003 p.19) in Marggi et al. (2003), ranking the species as belonging to the genus *Bembidion* Latr., changes the name to *karokhense* because *bifasciatum* is preoccupied by *bifasciatum* Stephens, 1828 and attributes the species to the subgenus *Ocyturanes*. Lorenz (2005) mentions the species in the subgenus *Ocyturanes*.
For a long time we looked for the type series in the collections Lindberg, Schuler and MNHN but in vain. Thanks to the kind collaboration of Giulio Cuccodoro (MHNG) who at the very last minute was able to find out it in the Collection of his Institution, we were allowed to study a specimen with collecting data matching with those of mentioned by Schuler in the original description. The specimen, male, has the following five labels: "Afghanistan. 4. 9. 57, Gr. de Karokh, (Hérat) . K. Lindberg [black, handwritten] / A 203 [black, handwritten] / 670 [blue, handwritten] / det. L. Schuler [black, printed], *Peryphus bifasciatum* n.sp. [black, handwritten] / B. (Ocyturanes) karakhense (sic!) Marggi, det. W. Marggi [black, printed]". We suppose that this could actually be the type specimen, therefore we labelled as: "*Peryphus bifasciatus* / Schuler, 1959 / Lectotypus / Neri & Toledano des. 2017" [red, printed]. The examen of this specimen revealed that it is conspecific with *dyscheres* Netolitzky, 1934 therefore we state the following synonymies (with first synonym listed first): *Bembidion bifasciatum* (Schuler, 1959) nec Stephens, 1828 **syn. n.** of *Bembidion dyscheres* Netolitzky, 1943 and *Bembidion karokhense* Marggi, 2003 **syn. n.** of *Bembidion dyscheres* Netolitzky, 1943.
We added to the specimen also the following label: *Bembidion* (*Ocyturanes*) *dyscheres* Netolitzky, 1943, Neri & Toledano det. 2017.

Key to "species groups" of subgenus ***Ocyturanes*** Müller-Motzfeld, 1986

Below here the species are divided into species groups mainly in order to make easier their identification; this division does not necessarily have significance of phylogenetic affinity.

1 Elytral stria 3 with three setae, stria 4 and 5 with one seta each; elytral striae deep and punctured, clearly visible to apex, intervals convex; elytra with subparallel sides, marked shoulders, microsculpture finely transverse, apical elytral third with two more or less sharp spots or with more or less vanishing reddish-yellow colour; pronotum glossy, with faint microsculpture only at sides; pronotal base with very light and scattered punctuations; light appendages, antennae slightly obscured from antennomere 4, penultimate palpomere slightly obscured; length 4.90 to 6.00 mm (fig. 45); aedeagus 1.19 mm (fig. 21); Russia (Cherkessia), Georgia (Abkhasia) ....***circassicum*** Reitter, 1890 group

circassicum Reitter, 1890

- Elytral stria 3 with two normal setae only; elytral striae less deep and more superficial or hardly visible at apex.....2

2 Elytra narrower, Ew/Hw < 1.70; elytra usually with sides more or less parallel and square shoulders; antennomeres short and thick (fig. 46)..... ..... ***subcylindricum*** Reitter, 1892 group

subcylindricum subcylindricum Reitter, 1892; *subcylindricum kyros* Netolitzky, 1931; *subcylindricum kuliabense* Netolitzky, 1931.

- Elytra wider, Ew/Hw > 1.75; elytra with sides less parallel, sometimes ovoid, and more or less rounded shoulders; antennomeres longer and often more sle nder.....3

3 Intervals 1 to 4 flat, outer intervals moderately convex, elytra clearly oval (fig. 47), species black or piceous-brown in general more flat, with less evident shoulders, only one taxon with preapical spots; species alpine and nival..... ***argaeicola*** Ganglbauer, 1905 group

argaeicola Ganglbauer, 1905; *tauricum tauricum* Müller, 1918; *tauricum frivaldszkyi* Csiki, 1928; *tauricum weiratheri* Netolitzky, 1930.

- Elytra more convex, mainly at sides, less ovoid, with sides less rounded, sometimes almost parallel, more evident shoulders.....4

4 Elytra unicolorous blackish, dark blue, blue-blackish or piceous black, sometimes slightly lighter at apex, with or without preapical spots.....5

- Elytra four-spotted or brown, reddish-brown, testaceous, light brown, light with indistinct dark pattern, with or without preapical spots.....6

5 Elytra unicolorous blackish or piceous black, sometimes slightly lighter at apex, without preapical spots..... ***balcanicum*** Apfelbeck, 1899 group

balcanicum Apfelbeck,1899; *pindicum* Apfelbeck, 1901; *reiseri* Apfelbeck, 1902; *xestum* Andrewes, 1923; *dudichi* Csiki, 1928; *lysander* Andrewes, 1935; *menander* Andrewes, 1935; *stolfai* Müller, 1943; *gudenzii* (Neri, 1982)*; martachemai* (Toribio, 2002); *kareli* Toledano, 2008; *iacobi* Neri, 2017.

- Elytra unicolorous blackish, piceous black or dark brown, with preapical spots isolated or lunule shaped (as in *B. terminale* Heer, 1841)..... ..... ***signatipenne*** Duval, 1852 group

signatipenne Duval, 1852; *viduum* Netolitzky, 1910*; kurdistanicum* Netolitzky, 1920; *iphigenia* Netolitzky, 1931; *waziristanum* Andrewes, 1932; *heinzi* Korge, 1971; *antennarium* (Morvan, 1972); *mirzayani* (Morvan, 1973); *lobanovi* Mikhailov, 1984; *waziristanum murreense* Müller-Motzfeld, 1985.

6 Elytra entirely yellowish or brownish-red, without dark patterns or with a lunule-shaped preapical spot; species large, 5.00 to 7.00 mm..... ..... ***praeustum*** Dejean, 1831 group

praeustum Dejean, 1831; *dieckmanni* Fassati, 1957; ?*kabakovi* Mikhailov, 1984; *baghlanicum* Kirschenhofer, 1989.

- Elytra four spotted, or testaceous, or reddish-brown, light testaceous, brown, light brown, light with more or less sharp dark pattern, with or without preapical spots; species in general smaller, 3.50 to 5.50 mm..... ..... ***marginipenne*** Solsky, 1874 group

marginipenne Solsky, 1874*; culminicola* Piochard de la Brûlerie, 1876; *babaulti* Andrewes, 1924; *parsorum* Netolitzky, 1934; *dyscheres* Netolitzky, 1943; *eucheres eucheres* Netolitzky, 1943; *hoberlandtianum* Fassati, 1959; ?*fulvipenne* (Schuler, 1959); *davatchii* Morvan, 1971*; kiritshenkoi* Mikhailov, 1984; *?kabakovi* Mikhailov, 1984*; eucheres darvasicum* Mikhailov, 1984; *eucheres michailovi* Müller-Motzfeld, 1986; *muilwijki* **n.sp.**; *samai* **n.sp.**; *urarteum* **n.sp.**; *schnitteri* **n.sp.**; *ioheli* **n.sp;** *rohanum* **n.sp.;** *ronfelixi* **n.sp.**

Chiave dei "gruppi di specie" del sottogenere ***Ocyturanes*** Müller-Motzfeld, 1986

Le specie trattate sono suddivise in "gruppi di specie" soprattutto per semplificarne l'identificazione; questa divisione non ha necessariamente un significato di affinità filogenetica.

1 terza stria elitrale con tre setole, quarta e quinta stria con una setola ciascuna; strie elitrali profonde e punteggiate, ben visibili fino all'apice, interstrie convesse; elitre a lati subparalleli, omeri evidenti, fine reticolo trasverso, terzo apicale con due macchie più o meno definite o con colorazione giallo rossastra più o meno diffusa; pronoto lucido, con cenni di reticolo solamente ai lati; base del pronoto con una lievissima e rada punteggiatura; appendici chiare, antenne lievemente oscurate del quarto articolo, palpi con il penultimo

articolo lievemente oscurato; 4.90 – 6.00 mm (fig. 45); edeago 1.19 mm (fig. 21); Russia (Circassia), Georgia (Abcasia)..... ....*circassicum* Reitter, 1890 (gruppo ***circassicum***)

circassicum Reitter, 1890

- terza stria elitrale con solo le due setole consuete; strie elitrali meno profonde e all'apice molto superficiali o appena percettibili.....2

2 elitre più strette, larghezza elitre / larghezza capo < 1.70; elitre solitamente a margini laterali più o meno paralleli e omeri subrettangolari; antenne con articoli corti e spessi (fig. 46).....gruppo ***subcylindricum*** Reitter, 1892

subcylindricum subcylindricum Reitter, 1892; *subcylindricum kyros* Netolitzky, 1931; *subcylindricum kuliabense* Netolitzky, 1931.

- elitre più larghe, larghezza elitre / larghezza capo > 1.75; elitre a margini laterali e omeri più o meno tondeggianti, elitre a volte ovoidali; antenne con articoli più lunghi e spesso più sottili.....3

3 elitre appiattite sulle prime quattro interstrie e a lati moderatamente convessi, chiaramente ovoidali (fig. 47), nel complesso più piatte, omeri meno evidenti, nerastre o bruno pece, un solo taxa con macchie preapicali; specie alpine e nivali..... gruppo ***argaeicola*** Ganglbauer, 1905

argaeicola Ganglbauer, 1905; *tauricum tauricum* Müller, 1918; *tauricum frivaldszkyi* Csiki, 1928; *tauricum weiratheri* Netolitzky, 1930.

- elitre maggiormente convesse soprattutto ai lati, meno ovoidali e/o margini laterali più o meno arrotondati, a volte quasi paralleli, omeri più evidenti...4

4 elitre unicolori nerastre, blu-scuro, blu-nerastre, bruno pece, a volte leggermente schiarite all'apice, senza o con macchie preapicali.....5

- elitre quadrimaculate o brune, bruno cuoio o testacee, brune chiare, chiare con disegno sfumato, con o senza macchie preapicali.....6

5 elitre unicolori nerastre, bruno pece, a volte leggermente schiarite all'apice, senza macchie preapicali..... gruppo ***balcanicum*** Apfelbeck, 1899

balcanicum Apfelbeck,1899; *pindicum* Apfelbeck, 1901; *reiseri* Apfelbeck, 1902; *xestum* Andrewes, 1923; *dudichi* Csiki, 1928; *lysander* Andrewes, 1935; *menander* Andrewes, 1935; *stolfai* Müller, 1943; *gudenzii* (Neri, 1982)*; martachemai* (Toribio, 2002); *kareli* Toledano, 2008; *iacobi* Neri, 2017.

- elitre unicolori nerastre, bruno pece o bruno scure, con macchie preapicali sia separate che a forma di lunula (come in *terminale* Heer, 1841) .... gruppo ***signatipenne*** Duval, 1852

  signatipenne Duval, 1852; *viduum* Netolitzky, 1910*; kurdistanicum* Netolitzky, 1920; *iphigenia* Netolitzky, 1931; *waziristanum* Andrewes, 1932; *heinzi* Korge, 1971; *antennarium* (Morvan, 1972); *mirzayani* (Morvan, 1973); *lobanovi* Mikhailov, 1984; *waziristanum murreense* Müller-Motzfeld, 1985.

6 elitre completamente giallastre o rosso brunicce, senza disegni o con una macchia preapicale giallastra a forma di lunula; specie grandi, 5.00 – 7.00 mm ..... gruppo ***praeustum*** Dejean, 1831

  praeustum Dejean, 1831; *diekemanni* Fassati, 1957; ?*kabakovi* Mikhailov, 1984; *baghlanicum* Kirschenhofer, 1989.

- elitre quadrimaculate, oppure testacee o bruno cuoio, testaceo chiare, castane, castane chiare, chiare con disegno più o meno definito o sfumato, con o senza macchie preapicali; specie mediamente più piccole, 3.50 – 5.50 mm..... ..... gruppo ***marginipenne*** Solsky, 1874

  marginipenne Solsky, 1874*; culminicola* Piochard de la Brûlerie, 1876; *babaulti* Andrewes, 1924; *parsorum* Netolitzky, 1934; *dyscheres* Netolitzky, 1943; *eucheres eucheres* Netolitzky, 1943; *hoberlandtianum* Fassati, 1959; *?fulvipenne* (Schuler, 1959); *davatchii* Morvan, 1971; *kiritshenkoi* Mikhailov, 1984; *?kabakovi* Mikhailov, 1984; *eucheres darvasicum* Mikhailov, 1984; *eucheres mikhailovi* Müller-Motzfeld, 1986; *muilwijki* **n.sp.**; *samai* **n.sp.**; *urarteum* **n.sp.**; *schnitteri* **n.sp.**; *ioheli* **n.sp.**; *rohanum* **n.sp.**; *ronfelixi* **n.sp**.

Bembidion **Subgenus** ***Ocyturanes*****,** ***marginipenne*** **species group**

Bembidion (***Ocyturanes***) ***culminicola*** Piochard de la Brûlerie, 1876 (figs. 25, 48, 50)

Material examined. 1 ♂ with four labels: "Dj. Cheik [green, handwritten] // *culminicola* / la Brul [handwritten] // Muséum Paris / Coll. Sedillot 1935 / P. de la Brûlerie [printed] // TYPE [red, printed]" (MNHN). The specimen lacks the left middle leg; it was dissected and the aedeagus is mounted and preserved in Euparal on a transparent label on the same pin as the specimen. 4 ♂♂, all with the following label: "Mt Sannin [printed]"; on the bottom of the box it's present also the following label: "*Bembidium* / *culminicola* La Brûl. [handwritten]" (AUB); those specimens are topotypical and could be part of the type series, but we do not know it with certainty. 1 ♂, TR Centro sud, Niğde, Ulukişia-Darboğaz 2200, strada x Bolkar Daglari, 25.V.2008 Leg. Neri (PN).

Note. The nival species *culminicola* was described by Piochard de la Brûlerie (1876) from Lebanon and Anti-Lebanon Ranges (Lebanon and Syria); in the description, even though clear and complete, there is no mention of the elytral microsculpture. Müller (1918) reports that the elytral microsculpture is superficial and in wide sculpticells only in the apical portion, while the remaining part is smooth; he does not mention any difference between males and females and reports the species from Lebanon and Asia Minor. Also Netolitzky (1943) is not clear regarding the microsculpture of the species, but we can perceive by intuition that he considers the male with microsculpture wanting or reduced, while clearly says that the female has a fine elytral microsculpture at apex and shoulders.
From the examination of the male type specimen (fig. 48) and of the four male topotypical specimens we noticed that the elytra are smooth; we were unable to ascertain the microsculpture in the females.
The specimen in coll. PN shows microsculpture only at the extreme elytral apex.
In Müller-Motzfeld (1986) there is a drawing of the aedeagus of *culminicola*; we believe, according to the aedeagal shape, that the drawing actually could refer to a specimen of *davatchii*.
Petr Michalik (ZIMG) sent us the photos of two specimens of the Müller-Motzfeld Collection collected in Iran (Mazandaran) and Turkey (Artvin). Also in this case we believe that they do not belong to *culminicola*; the specimen from Iran could be a *davatchii* while the specimen from Artvin could belong to a new species described below (*urarteum* n. sp.).

Bembidion* (*Ocyturanes*) *davatchii (Morvan, 1971) **bona species** (figs. 8, 24, 49, 51)

Background. Morvan (1971) described *Peryphus davatchii* upon specimens collected in the Elburz Mountains, Kuh-i-kahar Range, at 2600 - 2800 m; the description and the drawings of the genitalia are precise and exhaustive. Müller-Motzfeld (1986) included (with doubt) *davatchii* in the newly described subgenus *Ocyturanes*, *marginipenne* group; in the paper he provides a drawing of the aedeagus of *culminicola* which on the other hand, as explained above, in our opinion actually refers to *davatchii*.
Belousov in Kryzhanovskij et al. (1995, note 180) ranks *davatchii* as a subspecies of *culminicola*; the taxon is included in the subgenus *Ocyturanes*. Marggi et al. (2017) report *culminicola davatchii* from Iran, Azerbaijan, Armenia and Afghanistan.

Material examined. From MNHN we have received the holotype of *culminicola* (see above). From the collection PM we have received the following two paratypes of *davatchii*: 1 ♂ with four labels: "16.7.1968 / n° 70) [handwritten]

// Iran – Elburz / Gash.i.Sar 2700 m / 6.1968 Morvan [handwritten] // *Peryphus* / *davatchii* / Morvan [handwritten] // PARATYPE [red, printed]". The specimen is dissected, but unfortunately on the transparent label only a part of the genital apparatus is present: the aedeagus is missing, probably preserved separately and still in the PM collection; 1 ♂ with three labels: "Iran – Elburz / Gash.i.Sar 2700 m / 6.1968 Morvan [handwritten] // *Peryphus* / *davatchii* / Morvan [handwritten] // PARATYPE [red, printed]". The specimen lacks tibia and tarsus of left anterior leg; the aedeagus is preserved in Euparal, on a transparent label pinned to the same pin as the specimen and it is broken in the basal bulb. In CTVR is preserved a paratype with the following labels: "Iran. VII-1968 / Gash-i-Sar :2800 / m. Elburz / D.M. Morvan // *Peryphus* / *davatchii* / Morvan // PARATYPE [red, printed].
We also examined 40 specimens from Iran preserved in several collections (DW, KR, JM, CTVR, PS, VZ).

Systematic notes. The chance to be allowed to examine type material of *culminicola* and *culminicola davatchii* shown the differences between the two taxa. The differences in the size and shape of the apical third of the aedeagus (figs. 24, 25), in the obliqueness of the temples (figs. 50, 51) and in the colours of elytra and femora (figs. 48, 49) persuaded us that they are distinct species.
Therefore: ***Bembidion*** (***Ocyturanes***) ***davatchii*** (Morvan, 1971) **bona species** nec subspecies of ***Bembidion culminicola*** Piochard de la Brûlerie, 1876. We added the following label to all the specimens examined: *Bembidion* (*Ocyturanes*) *davatchii* Morvan – Neri & Toledano det. 2017.

Bembidion (***Ocyturanes***) ***parsorum*** Netolitzky, 1934 (figs. 4, 27, 52, 54)

Background. Netolitzky (1934) describes *Bembidion parsorum* from Iran; Müller-Motzfeld (1986) includes *parsorum* into the newly described subgenus *Ocyturanes*, in the *marginipenne* group. Marggi et al. (2003) report *parsorum* for Iran, Turkey, Armenia, Kyrgyzstan, Tajikistan, Uzbekistan.
Marggi (2014) designates the lectotype of *parsorum*, redescribes the species and adds to the known distribution for the species also Azerbaijan and Iraq.

Material examined. From NHMW we have received the hololectotype and seven paralectotypes of *parsorum*. We have also studied more than 350 specimens from almost all the known geographical distribution belonging to several collections (DW, JM, KL, CTVR, MHB, PN, PS, SF), and we could ascertain the presence of the species also in some localities of Kazakhstan and Turkmenistan after the study of the following specimens: 1 ♂ 1 ♀, Kazakistan, Umg. Maldy-Kargan, Flussufer Karatal, 20.VI.1990, V. Dolin (CTVR); 3 ♂♂ 6 ♀♀, Turkmenia mer., Chr. Kugi Tang Tau, Svincovji Rudnik, 29.V.1992, Lgt. Snížek (PN, CTVR); Turkmenistan:

Bez. Mary Badchys NSG, Euroylanduz, 19-20.4.1993, leg. Dostal & Cate (CTVR); 1 ♂, SW Turkmenistan, Kopetdag: Garygala, May 1994, Miatleuski leg. (CTVR).

Bembidion* (*Ocyturanes*) *muilwijki n.sp. (figs. 3, 28, 55)

Diagnosis. A *Bembidion* subgenus *Ocyturanes* belonging to the *marginipenne* group similar to *parsorum* for the structure of the head and the colour of femora; it is distinguishable from this last for the less protruding eyes, the elytral colour and the aedeagus narrower, more slender and bent ventrally.

Type locality. NW Iran p. Āz̲arbāyḡān-e Ĝarbī, 10 Km S Hōy.

Type series. Holotype, ♂, "NW Iran p. Āz̲arbāyḡān-e Ĝarbī, 10 Km S Hōy, 8.VI.1999, lgt. E.&P. Hajdaj" (CTVR); aedeagus mounted in Euparal on a transparent label pinned to the same pin as the specimen; we added to the specimen the following label: "*Bembidion* (*Ocyturanes*) / *muilwijki* Neri & Toledano / 2017 – Holotypus" [red, printed].
Paratypes. 2 ♂♂ 2 ♀♀, same collecting data as the holotype, (CTVR, PN); 67 ♂♂ 96 ♀♀, "S Iran, Sisakht, Dena, 2500 - 3000 m, 13-14.6.1973" (NMPC, PN, CTVR); 1 ♂ 1 ♀, "S Iran, 13 km SSW Yasuj, 1800 m, 12-13.6.1973" (NMPC); 3 ♂♂ 1 ♀, "S. Iran, Kuhé Dena, 3000 – 4000 m, 14.6.1973" (NMPC); 2 ♀♀, "C Iran, Esfahàn, 19.3.1973" (NMPC); 2 ♂ 9 ♀♀, "S Iran, 29 km E Yasuj, 16-17.6.1973" (NMPC); 3 ♂♂ 4 ♀♀, "S Iran, Zagros, Sísakht, 2400 m, 13-15.6.1973" (NMPC); 1 ♂, "SW Iran, Fars P., 14.VII.2004, Dasht-e Arzhan (W Shiraaz), 2056 m" (NMPC); 2 ♂♂ 1 ♀, "IR Kuzestan, Izeh lake, 1-IV-2007, Muilwijk leg." (JM); 1 ♂, "IR Fars, Mogtarabad, 29-4-2008, Muilwijk leg." (JM); 1 ♀, "IR Kerman, 15 Km E Rabor, 22-4-2008, Muilwijk leg." (JM); 2 ♂ 1 ♀, "IR Charmahali, 10 Km SW Naghan, Muilwijk leg." (JM); 1 ♀, "IR Fars Neyriz, Bakhtegan, 15-5-2006, Muilwijk leg." (JM); 7 ♂♂ 7 ♀♀, "Iran, Kohkiloeh & Kohgol Valley, Sisakh, 27-9-2005, Muilwijk leg." (JM); 1 ♀, "Iran, Kohkiloeh, Sisakh, 30-4-2006, Muilwijk leg." (JM); 2 ♂♂ 1 ♀, "IR Kohkiloeh, Baba Hasan, 4-5-2008, Muilwijk leg." (JM); 1 ♂, "Iran, Kohkiloch, Tobady valley, 5 Km N Yasud, 26-9-2005, Muilwijk leg." (JM); 1 ♂, "IR Kohkiloch, Tobady valley,3-5-2006, Muilwijk leg." (JM); 2 ♂, "IR Fars, Tang e Tizab, 1-5-2008, Muilwijk leg." (JM); 1 ♂ 1 ♀, "Iran, Char Mahali-o-Bakhti, 10 Km ZW Naghan, bergpas, 1492 m, 02-04-2007, leg. R.F.F.L. Felix" (JM); 1 ♂ 1 ♀, "Iran, Char Mahali-o-Bakhti, 10 Km O Dehdez, 1508 m, 31-3-2007. Leg. R.F.F.L. Felix" (JM); 2 ♂♂ 1 ♀, "Iran, SW Buyer Ahmad-o-Kuhgiluye prov., Si Sakhtn env. 5-9 Km O 1-16.7.2003 1700-4000 m, Ivo Jeniš leg." (KR); 1 ♂, "N Iran p. Mazandarān, Nahār Hōrān, 10 Km S Gorgan, 16.VI.1999 lgt. Kabátek" (DW); 1 ♀, "S Iran, prov. Fārs, 3 Km SSW Dašt-e Aržan

[W Šīraāz], 30.IV.2002, lgt. Kabátek" (DW); 1 ♀, "SW Iran (Fārs), Sīvand NE Šīraāz, 1770 m, 15.VII.2004, M. Rejzek" (DW); 1 ♂, "Iran, Zagros, Mt. Sisakht, 3800 m, 6.1970 Morvan" (PM); 1 ♀, "C Iran p. Fārs, Yāsūḡ NW, Šīraāz (vill. Kākān) 13.VI.1999, lgt. E.&P. Hajdaj" (PN); 1 ♂, "Iran – Lorestan m 1400, 5-15 Km SW Dorud, G. Magnani 9/10.V.2002" (PN); 1 ♂ 1 ♀, "Iran: Fars, NW Shiraz, 35 Km E Yasug, 23.4.1996, rivulet, leg. Wewalka" (CTVR); 1 ♂, "Iran, VII.1970, Zagros, Yasuj: 1500 m Morvan" (CTVR); 1 ♀, "N Iran p. Mazandarān, Nahār Hōrān, 10 Km S Gorgan, 16.VI.1999, P Kabátek" (CTVR); 2 ♂♂, 4♀♀, "Yasui reg. pass NE from SI Sakht (3800), 4-VI-2008, Iran, A. Anichtchenko leg." (MT, CTVR); 1 ♂ 2 ♀♀, "C Iran P. Fārs, Yāsūḡ NW, Šīraāz (vill. Kākān) 13.VI.1999, lgt. E.&P. Hajdaj" (CTVR); 2 ♀♀, "Iran: prov. Buyerahmad, Zagros Mts. Vazag 2350 m, 19.VI.2010, leg. B. Benedek & T. Hácz" (CTVR, IRSBN); 2 ♀♀, "SW Iran-2000-4000, Buyer Ahmad o Kuhgiluye, prov. Si Sakht env., 14.VII.2003, Ivo Jeniš leg." (CTVR); 3 ♂♂ 1 ♀, "Iran, Kohkiloeh & Kohgol Valley, Sisak, 27-9-2005, Muilwijk leg." (CTVR); 1 ♂, "20 Km W Estahban (2500 m) 9-V-2007, Iran, A. Anichtchenko leg." (MT); 1 ♀, "Iran, 20 Km SW Yasuj (Kohgiluyeh-va-Boyer Ahmad), 5-6.V.2007, Anichtchenko A. leg." (CTVR, MT); 2 ♀♀, "Iran, 20 Km SW Yasuj (Kohgiluyeh-va-Boyer Ahmad), 4.V.2007, Anichtchenko A. leg." (MT); 1 ♂, 1 ♀, "Iran, 20 Km SW Yasuj (Kohgiluyeh-va-Boyer Ahmad), 6.V.2007, Anichtchenko A. leg." (MT); 5 ♂♂, 3 ♀♀, "20 Km SW Yasuj, 10 Km SE Sepidan, 6-V-2007, Iran, A. Anichtchenko leg." (CTVR); 1 ♀, "Iran, Hamedan Province, Moradbeyk valley (Kuh-e Alvand), 2380 m light trap, 22.06.2004, leg. J. Frisch" (MHB); 9 ♂♂ 13 ♀♀, "Iran, Lorestan Prov., Dorud: Saravand (Oshtoran Kuh), 2000 m light trap, 25-27.06.2004, lg. Frisch" (MHB); 2 ♂♂ 2 ♀♀, "Iran, Boyer Ahmadi va Kohkiluyeh Province, Si Sakht: Dena Protected Area (Kuh-e Dihar), 2700 m, 08.07.2004 leg. J. Frisch" (MHB); 2 ♂♂, "Iran, Fars Province, Sepidan-Komehr rd: 9 Km NW Sepidan, 2790 m, 08.05.2007, leg. J. Frisch" (MHB); 1 ♀, "Iran, Tehran Province, Damavand-Firuzkuh rd: 30 Km SW Firuzkuh, 2010 m, 21.5.2006, lg. Frisch & Serri" (MHB); 3 ♂♂ 2 ♀♀, "Iran, Fars Province, SE Sepidan: pass Sarbast-Dalkhon, 2290 m, 09.05.2007, lg. Frisch & Serri" (MHB); 8 ♂♂ 7 ♀♀, "Ir., Sisakht, 2990 m, 17.5.2016, leg. R.F.F.L. Felix" (RF, CTVR, PN); 3 ♀♀, "Ir., Isfahan, Ab Malakh, 1727 m, 16.5.2016, R.F.F.L. Felix leg." (RF); 5 ♂♂ 1 ♀, "Iran, Zagros Mts., Esfahan prov., Feraeidunshahr-Karaman road, Karaman pass., Ferdun Mts., 2900-3100 m, J.Riegr lgt., 17-18.7.2016" (VZ); 4 ♂♂, 3 ♀♀, "Iran, Zagros Mts., Shakhre-Quord, near Samsami ye Cheri pass., 2750-3100 m, 7-9.7.2016, J.Riegr lgt." (VZ, CTVR, PN). We added to the specimens the following label: "*Bembidion* (*Ocyturanes*) / *muilwijki* Neri & Toledano / 2017 – Paratypus" [red, printed].

Description of the holotype (fig. 55). Total length 4.00 mm. Colour: head and pronotum black; elytra testaceous with two preapical spots forming a lunule,

divided only by the darker first interval; the first interval, brown in the apical half, becomes darker, dark brown, in the basal half, and becomes wider, "V" shaped, in the scutellar area; basal margin, lateral margins and apex dark brown; intervals 7 and 8 brown. Antennae completely pale testaceous darkened in the apical portion. Maxillar and labial palps brown, darkened, with last palpomere pale. Legs pale testaceous with femora blackish-brown almost to the apex, which is pale testaceous.
Head: maximum width 0.80 mm; distance between eyes 0.48 mm; front and clypeus smooth and glossy, frontal furrows deep and evident, ending posteriorly slightly behind the first supraorbital seta; a couple of punctures behind the frontal furrows. Eyes protruding, temples very short. Antennae long 2.00 mm.
Pronotum: length 0.71 mm; width of the anterior margin 0.66 mm, maximum width 0.92 mm, basal width 0.71 mm; Pw/Pl = 1.29; moderately convex, transverse; sides entirely bordered, narrowing with evident sinuation towards base, with which they form almost right hind angles; lateral gutter of uniform width; almost all the surface smooth and glossy; posterolateral carina evident; median impression sharp, anterior transverse impression curved; basal transverse impression punctured between the lateral foveae.
Elytra: length 2.45 mm, maximum width 1.45 mm, marked shoulders and sides only slightly widened behind middle, microsculpture wanting or almost wanting. Elytral striae progressively evanescent in the apical part; stria 7 evident, striae 1 and 8 complete, reaching apex, all the remaining striae barely visible in the apical part. Species macropterous.
Male genitalia. Aedeagus (fig. 28): length 0.86 mm, ventral margin rectilinear with apical third slightly bent ventrally and rounded apex; endophallus very slighty protruding from basal opening, paracopulatrix lamina reaching the 2/3 of the aedeagus, right and left paramere of equal length, both with 4 apical setae.

Description of the paratypes. The paratypes in general match the holotype for colour and morphology; the antennae can be completely testaceous or pale testaceous and with the antennomere 1 and 2 darker. Elytra with transverse band more or less visible. The hind pronotal angles may be right-angled. Length of male paratypes 3.80 to 4.50 mm, length of female paratypes 3.90 to 4.70 mm. Aedeagus long 0.84 to 0.92 mm.
Spermatheca (fig. 3).

Derivatio nominis. The species is dedicated to our friend Jan Muilwijk (Bilthoven, Holland), specialized in the study of the Carabidae of Iran, who collected a part of the type material and kindly gave us his material in study. The name is genitive.

Comparative notes. *B. muilwijki* is distinguishable from *culminicola* by the very short, almost absent, temples, for the elytral colour and the apex of aedeagus less pointed; from *parsorum* for the less protruding eyes, the almost absent elytral microsculpture and the median lobe of aedeagus more narrow and slender. From all the other species of the *marginipenne* group for the femora blackish-brown almost up to the apex.

Distribution. The species is at present known to us only from Iran.

Bembidion* (*Ocyturanes*) *samai n.sp. (figs. 5, 30, 57)

Diagnosis. A *Bembidion* subgenus *Ocyturanes* belonging to the *marginipenne* group, similar to *marginipenne* for the body size and the aedeagal shape and size, distinguishable from this last by the elytral colour and the more oblique temples.

Type locality. Afghanistan, Vt. N Salang, Khenjan, bord torrent, 1450 m.

Type series. Holotype, ♂, "Afghanistan, Vt. N Salang, Khenjan, bord torrent, 1450 m., 11.8.1975, Leg. Ledoux" (PN); aedeagus mounted in Euparal on a transparent label pinned to the same pin as the specimen; we added to the specimen the following label: "*Bembidion* (*Ocyturanes*) / *samai* Neri & Toledano / 2017 – HOLOTYPUS" [red, printed].
Paratypes. 26 ♂♂ 22 ♀♀, "Afghanistan, Vt. N Salang, Khenjan, bord torrent, 1450 m., 11.8.1975, Leg. Ledoux" (DE, CTVR, PN); 7 ♂♂ 13 ♀♀, "Afghanistan, Col du Salang, 2500 m, 10.8.1976, Leg. Ledoux" (CTVR, PN); 6 ♂♂ 5 ♀♀, "Afghanistan, Vt. N Salang, Khenjan, bord torrent, 1800 m., 11.8.1975, Leg. Ledoux" (DE); 1 ♂ 1 ♀, "Afghanistan, Vt. N Salang, Khenjan, bord torrent, 2000 m., 11.8.1975, Leg. Ledoux" (DE); 1 ♂ 3 ♀♀, "Afghanistan, Salang, bord de la rivière, 2800 m, 16.9.1977, Leg. Ledoux" (DE); 1 ♂ 1 ♀, "Afghanistan, Vt. N Salang, Khenjan, bord torrent, 2000 m., 11.8.1975, Leg. Ledoux" (DE); 2 ♂♂ 1 ♀, "Afghanistan, Vt. N Salang, Khenjan, bord torrent, 1300 m., 11.8.1975, Leg. Ledoux" (DE); 2 ♂♂ 5 ♀♀, "N Afghanistan (Baghlan Prov., Khinjan Distr.), Hindu Kush, Salang mountain range, NE Salang Pass 2200-2400 m (small valley, single trees / bushes / tall forbs, thistles, grass), V 2010 Chr. Reuter" (DW); 9 ♂♂ 17 ♀♀, "N Afghanistan NE Salang pass, 2200 – 2400 m, 2.VII.2010, leg. Reuter" (CR, DW); 1 ♂, with three labels, "J. Klapperich, Senna, 1800m, 16.7.53, Kokschatal, Badakshan, NO-Afghanistan / *B. fulvipenne* SCHULER [blue, handwritten] / *B.* (*Ocyturanes*) *fulvipenne* Schuler Det. W. Marggi" (MHNG); 1 ♀, with two labels, "Afganistan (sic!), Lir Chiban / *B.* (*Ocyturanes*) *fulvipenne* Schuler Det. W. Marggi" (MHNG); 1 ♂, with two labels, "J. Klapperich, Anjuman 2900m, 9.8.52 Anjuman – geb., Badakshan, NO-Afghanistan / *B.* (*Ocyturanes*) *fulvipenne*

Schuler Det. W. Marggi" (MHNG). We added to the paratypes the following label: *Bembidion* (*Ocyturanes*) *samai* Neri & Toledano, 2017 – Paratypus [red, printed].

Note. Just a few days before closing this paper, thanks to the kind help of Giulio Cuccodoro (MHNG) we were allowed to study the three last specimens listed above. We are able to exclude that they could belong to the type series of *Bembidion fulvipenne* (Schuler, 1959) because the collecting data reported on the labels are different from those of the type series of *fulvipenne* and because the original description of this last does not match with these specimens in some characters, as the head completely covered by isodiametric microsculpture and the elytral colour, therefore we attributed the three specimens to the species *B. samai*.

Description of the holotype. Length 4.05 mm. Colour: head and pronotum black; elytra testaceous-reddish with two preapical yellowish spots with vanishing edges; scutellar area and first two intervals blackish-brown, lateral margins and apex brown. Appendages entirely pale testaceous.
Head: width 0.83 mm; distance between eyes 0.50 mm; front and clypeus smooth but with a faint microsculpture near the evident frontal furrows, these last ending posteriorly slightly behind the first supraorbital seta. Eyes protruding, temples evidently oblique. Antennae long 2.26 mm.
Pronotum: length 0.75 mm; width of the anterior margin 0.71 mm, maximum width 1.00 mm, basal width 0.77 mm; Pw/Pl = 1.33; moderately convex, transverse; sides completely bordered, narrowing and evidently sinuate towards the base with which they form hind angles almost right; lateral gutter wide, widening towards base; almost completely smooth but with faint scattered rugosities; posterolateral carina evident; median line sharp; transverse anterior impression curved; transverse basal impression evidently rugose-punctate between the basal foveae.
Elytra: length 2.49 mm, maximum width 1.55 mm; marked shoulders and sides only slightly widened behind middle, microsculpture with polygonal, transverse sculpticells. Punctuation of the striae progressively becoming more superficial towards apex; stria 7 evident, striae 1 and 8 complete, reaching apex, all remaining striae barely visible in the apical portion. Species macropterous.
Male genitalia. Aedeagus (fig. 30) small (0.73 mm), ventral margin with apical third bent ventrally; endophallus very slightly protruding from basal opening, apex of the paracopulatrix lamina clearly bent dorsally; right and left paramere of equal length, both showing 4 apical setae.

Description of the paratypes (fig. 57). The paratypes in general match with the holotype colour and morphology; the antennae may be slightly darkened from 4th antennomere. The hind pronotal angles may be right-angled and the base more or less rugose-punctate. The elytral intervals 1 to 4 may be blackish-brown. Length

of male paratypes: 3.75 to 4.20 mm; length of female paratypes: 3.60 to 4.40 mm. Aedeagus long 0.72 to 0.78 mm.
Spermatheca (fig. 5).

Derivatio nominis. The species is dedicated to Gianfranco Sama, good friend and excellent specialist of Coleoptera Cerambycidae. The name is genitive.

Comparative notes. *B. samai* among the species of small size of body and aedeagus, with light femora, oblique temples, preapical spots and elytral dark pattern not cruciform, is distinguishable from *marginipenne* by the elytral colour and the more oblique temples and from *rohanum* n. sp. by the elytral pattern.

Distribution. The species is known to us only from north eastern Afghanistan.

Bembidion* (*Ocyturanes*) *urarteum n.sp. (figs. 11, 33, 64)

Diagnosis. A *Bembidion* subgenus *Ocyturanes* belonging to the *marginipenne* group near *culminicola* for elytral colour and pattern; distinguishable from this last by the femora mainly or completely pale testaceous, and by the aedeagus with apical portion less pointed and with a gibbosity in the ventral margin.

Type locality. Nakhitshevan [Azerbaijan], Nius-Nius nr Ordubad.

Type series. Holotype, ♂, "Nakhitshevan, Nius-Nius nr Ordubad, 4.7.1984, I.A. Belousov leg." (CTVR); aedeagus mounted in Euparal on a transparent label pinned to the same pin as the specimen; we added to the specimen the following label: "*Bembidion* (*Ocyturanes*) / *urarteum* Neri & Toledano / 2017 – Holotypus" [red, printed].
Paratypes. 1 ♂, "Nakhitshevan, Nius-Nius nr Ordubad, 4.7.1984, I.A. Belousov leg." (SF); 1 ♂, "Turkey or., Muradiye, Selalesi (Van Gölü env.), 1993-06-27, Klíma lgt." (PN); 6 ♂♂, 1 ♀, "Armenia, Syunik prov., 1650 m, 10 Km N of Shvanidzor, 22.7.2003, V. Zieris lgt." (CTVR, VZ, PN, KR); 1 ♂, NW "Iran, Azerbaygan-e 15 Km S Mešgínšahr, 2900 m, 20.VI.2000, lgt. Hajdaj E.P." (PN); 1 ♂, 1 ♀, "Ardebil, N. Sabalan Mt., Gheynarjeh, 2099m, 24.VI.2008, leg. Ser." (JM, PN); 2 ♂♂, "Türkei, Artvin, Yubufeli, 1800-1900m, S. Kiliçkaya, leg. Staven / Skoupy, 30. VI. 1996" (PS). We added to the specimen the following label: "*Bembidion* (*Ocyturanes*) / *urarteum* Neri & Toledano / 2017 – Paratypus" [red, printed].

Description of the holotype (fig. 64). Total length 4.35 mm. Colour: head and pronotum black. Elytra with cruciform pattern, reddish testaceous in the basal half and two oblique yellowish lunules in the apical part; first interval, base and lateral borders blackish-brown; apex and transverse band with vanishing basal edges brown.

Antennae pale testaceous slightly darkened from 4th antennomere; maxillar and labial palps testaceous with last palpomere pale. Legs pale testaceous with femora slightly darkened in the basal half.
Head: maximum width 0.83 mm; distance between eyes 0.54 mm; front and clypeus smooth and glossy, deep and evident frontal sulci ending posteriorly slightly behind the first supraorbital seta. Eyes moderately convex, temples oblique long about 1/3 of the eye.
Antennae 2.40 mm long.
Pronotum: length 0.82 mm; width of anterior margin 0.73 mm, maximum width 1.03 mm, width of basal margin 0.80 mm; Pw/Pl = 1.26; moderately convex, transverse; sides entirely bordered, narrowing with evident sinuation near base, with which they form a right angle; lateral gutter of uniform width; almost the whole surface smooth and glossy; posterolateral seta very evident; median line sharp, anterior impression curved; basal transverse impression punctate-rugose between the basal foveae.
Elytra: length 2.85 mm, maximum width 1.65 mm; marked shoulders and maximum width behind the middle, completely but very finely microsculptured with polygonal, transverse sculpticells, hardly visible in the basal half. Elytral striation progressively evanescent towards apex. Species macropterous.
Male genitalia. Aedeagus (fig. 33) medium-sized (0.90 mm); ventral margin with a slight gibbosity; apex of paracopulatrix lamina in the direction of the dorsal margin. Right and left paramere of equal length, each with four apical setae.

Description of the paratypes. The paratypes in general match with the holotype in colour and morphology; the slight darkening of the antennae may begin from third antennomere; femora can be pale; elytral microsculpture sometimes not visible on the disc in the males, more evident in the single female examined; the punctuation of elytral stria 7 can be more or less deep; length of male paratypes 4.05 to 4.65 mm, length of the female paratype 4.50 mm. The ventral margin of aedeagus can lack the slight gibbosity and the median lobe is long 0.90 to 0.98 mm.
Spermatheca (fig. 11).

Derivatio nominis. The neutral adjective *urarteum* means "of Urartu" and derives from the Kingdom of Urartu that ruled most of Armenia and part of the present Turkey from 1200 B.C. to 800 B.C.

Comparative notes. *B. urarteum*, species with elytra showing cruciform pattern, is recognizable from *culminicola* by the light coloured legs; from *dyscheres* Netolitzky, 1943 by the microsculpture which is hardly visible or absent on the elytral disc and the larger aedeagus; from *eucheres michailovi* Müller-Motzfeld, 1986 for the deeply punctate-rugose pronotal base and the aedeagus with evident gibbosity in the ventral margin.

Distribution. The species is known to us from the following areas south of Caucasus: E-Turkey, Azerbaijan, Armenia, Iran (Azerbaijan prov.). Probably it has been formerly confused with *culminicola*, which distribution must be reviewed (almost all the specimens examined were formerly identified as *culminicola*).

Bembidion* (*Ocyturanes*) *schnitteri n.sp. (figs. 14, 39, 66)

Diagnosis. A *Bembidion* subgenus *Ocyturanes* belonging to the *marginipenne* group which is similar to *davatchii* and *urarteum* for the aedeagal shape; distinguishable from *davatchii* for the short and oblique temples, and from *urarteum* for the colour and the lack of elytral pattern.

Type locality. Iran, Prov. Kerman, Kerman N, Darb-e-asiab, waterfall near Kuhpayeh, *Schlucht*/*Schotterbank*, 2600 m üNN (N 30°31'18.4" E 57°09'44.6").

Type series. Holotype, ♂, "N 30°31'18.4" E 57°09'44.6", Iran, Prov. Kerman, Kermann N, Darb-e-asiab, waterfall near Kuhpayeh, *Schlucht*/*Schotterbank*, 07.06.2014, 2600 m üNN, leg. Schnitter" (PN); aedeagus mounted in Euparal on a transparent label pinned to the same pin as the specimen; we added to the specimen the following label: "*Bembidion* (*Ocyturanes*) / *schnitteri* Neri & Toledano / 2017 – Holotypus" [red, printed].
Paratypes. 47 ♂♂ 45 ♀♀, "Iran, Prov. Kerman, Kerman N, Darb-e-asiab, waterfall near Kuhpayeh, *Schlucht*/*Schotterbank*, 07.06.2014, 2600 m üNN, leg. Schnitter (PS, CTVR, PN); 1 ♂, "Iran, Prov. Kerman, Kuh-e Lalehzar, Lalezahr vill., *Kulturland*, 04.06.2014 2830 m üNN, leg. Schnitter" (PS); 1 ♂, "Iran, Prov. Kerman, Rayen, waterfall near Kuh-e Hazar, *Bachufer/Schotterbank*, 05.06.2014, 2920 m üNN, leg. Schnitter" (PS); 1 ♂, "Iran, Prov. Kerman, Rayen, Anbaroutak, *Bachufer/Schotterbank*, 05.06.2014, 2350 m üNN, leg. Schnitter" (PS); 3 ♂♂ 2 ♀♀, "Iran, prov. Kerman, Sarbizhan, 4.5.2010, 140 km S Kerman, 3100 m, lgt. Orszulik" (KR); 1 ♂, 2 ♀♀, "Iran, prov. Kerman, Sarbizhan, 5.5.2010, 140 km S Kerman, 2700 m, lgt. Orszulik" (KR); 1 ♀, "Iran c, Yazd env., Mt. Sir Kuh, 7.5.1999, L. Klima leg." (JM, KR); 1 ♂, "IR, Kerman, Kuh-e-Hezar, 7-4-2008, Muilwijk leg." (JM); 10 ♂♂ 10 ♀♀, "Iran (Kerman Prov.), waterfall at Darb-e Āsīāb vill., N Kerman 2600 m (canyon, in gravel/under stones), 7.VI.2014, D.W. Wrase" (DW); 7 ♂♂ 9 ♀♀, "Iran, (Kerman Prov., waterfall at Darb-e Āsīāb vill., nr. Kuhpayeh vill. N Kerman, 2600 m (canyon, in gravel under stones), 7.VI.2014 D.W. Wrase" (DW); 1 ♂, 1 ♀, "Iran (Kerman Prov.), waterfall at Darb-e Asīāb vill., N Kerman c.a. 2550 m (canyon, in gravel under stones), 2.VI.2014, D.W. Wrase" (CTVR, PN); 1 ♀, "Iran (Kermann prov.), Kuhpayeh vill. N Kerman, 2000 m (river bank, in gravel/under stones), 2.VI.2014, Wrase & Laser" (DW).

We added to the paratypes the following label: "*Bembidion* (*Ocyturanes*) / *schnitteri* Neri & Toledano / 2017 – Paratypus" [red, printed].

Description of the holotype (fig. 66). Total length 4.30 mm. Colour: head and pronotum black. Elytra completely testaceous, slightly lighter in the apical third, scutellar area and the entire elytral border darkened. All appendages completely pale testaceous.
Head: width 0.84 mm; distance between eyes 0.49 mm; front and clypeus almost smooth, deep and evident frontal furrows ending posteriorly between the first and the second supraorbital seta. Eyes protruding, temples short, oblique. Antennae 2.25 mm long.
Pronotum: length 0.80 mm; width of the anterior margin 0.71 mm, maximum width 0.98 mm, width of the base 0.73 mm; Pw/Pl = 1.23; moderately convex, slightly transverse; sides entirely bordered, narrowing with evident sinuation towards base, moderately oblique near the slightly obtuse hind angles; lateral gutter narrow and of uniform width; almost all the surface smooth and glossy; laterobasal carina very evident; median line sharp, anterior transverse impression curved with slight rugosities at sides; transverse basal impression punctate-rugose between the lateral foveae.
Elytra: length 2.63 mm, maximum width 1.61 mm; marked shoulders and sides slightly widening behind the middle, completely microsculptured with transverse, polygonal sculpticells. Elytral striae very superficially punctate in the apical part; stria 7 evident, striae 1 and 8 complete, reaching apex, all the remaining striae hardly visible in the apical part. Species macropterous.
Male genitalia. Aedeagus (fig. 39) medium sized (0.87 mm); ventral margin with a very slight gibbosity, apical fourth evidently bent ventrally; apex of the paracopulatrix lamine in the direction of the dorsal margin. Left and right paramere of equal length, each with four apical setae.

Description of the paratypes. The paratypes in general match with the holotype for the colour and morphology; the elytra can show uniform colour, testaceous or testaceous-reddish; femora can be in part darkened (as in 6 specimens of 112 examined); rarely palps slightly darkened at apex; punctuation of stria 7 more or less evident; length of male paratypes 4.20 to 4.75 mm; length of female paratypes 4.25 to 5.15 mm. Aedeagus 0.87 to 0.94 mm long; the ventral margin of the aedeagal median lobe can be also rectilinear with apex more or less evidently bent ventrally.
Spermatheca (fig. 14).

Derivatio nominis. The species is dedicated to our friend Peer Schnitter who collected and kindly gave us in study a long series of specimens of this interesting new species. The name is genitive.

Comparative notes. *B. schnitteri*, species with long oblique temples and uniform colour, elytra without evident preapical spots and lacking transverse dark band, is distinguishable from *marginipenne* by its larger size and for the larger and diversely shaped aedeagus; from *kiritschenkoi* by its smaller size and for the smaller and diversely shaped aedeagus.

Distribution. The species is known to us only from the Kerman and Yazd provinces in Iran.

Bembidion* (*Ocyturanes*) *ioheli n.sp. (figs. 15, 38, 69)

Diagnosis. A *Bembidion* subgenus *Ocyturanes* belonging to the *marginipenne* group recognizable from all the other species of the group for the slightly concave ventral margin of the aedeagal median lobe.

Type locality. Pakistan, NWFP, Waziristan reg., Tanai vill. env., 1500 – 2000 m.

Type material. Holotype, ♂, "Pakistan, NWFP, Waziristan reg., Tanai vill. env., 1500 – 2000 m., 28.VII – 12.VIII 2005" (PN); aedeagus mounted in Euparal on a transparent label pinned to the same pin as the specimen; we added to the specimen the following label: "*Bembidion* (*Ocyturanes*) / *ioheli* Neri & Toledano / 2017 – Holotypus" [red, printed].
Paratypes. 7 ♂♂ 6 ♀♀, "Pakistan, NWFP, Waziristan reg., Tanai vill. env., 1500 – 2000 m., 28.VII – 12.VIII 2005" (PN, CTVR); 2 ♀♀, "Pakistan, NWFP, Waziristan reg., Tanai vill. env., 1500 – 2500 m., 28.VII – 12.VIII 2005" (CTVR); 1 ♂ 1 ♀, "Pakistan, Zhob vall., Sulaimann range, 1700 m, VIII.2005" (PN). We added to the specimen the following label: "*Bembidion* (*Ocyturanes*) / *ioheli* Neri & Toledano / 2017 – Paratypus" [red, printed].

Description of the holotype (fig. 69). Total length 4.55 mm. Colour: head and pronotum black. Elytra testaceous reddish with two big preapical yellowish spots with poorly defined edges; scutellum and interval 1 brown; elytral apex brown. Appendages pale testaceous.
Head: width 0.89 mm; distance between eyes 0.53 mm; front and clypeus smooth and glossy, frontal furrow ending posteriorly slightly behind the first supraorbital seta. Eyes poorly convex, temples short and oblique. Antennae long 2.40 mm.
Pronotum: length 0.85 mm; width of anterior margin 0.77 mm, maximum width 1.09 mm, width of base 0.80 mm; Pw/Pl 1.28; moderately convex, transverse; sides entirely bordered, narrowing with evident sinuation towards base, with which they form a slightly obtuse hind angle; lateral gutter of uniform width; all the surface smooth and glossy; laterobasal carina evident; median line sharp, anterior transverse

impression curved; transverse basal impression punctate-rugose between the lateral foveae.
Elytra: length 2.90 mm, maximum width 1.80 mm; marked shoulders and sides slightly widened behind the middle, completely microsculptured with short transverse and well visible polygonal sculpticells.
Elytral striae with punctuation progressively evanescent in the apical part; stria 7 evident, striae 1 and 8 complete, reaching apex, all the remaining barely visible in the apical part. Species macropterous.
Male genitalia. Aedeagus (fig. 38) medium sized (0.91 mm); ventral margin slightly concave and bent ventrally. Right and left paramere of equal length, each with four apical setae.

Description of the paratypes. The paratypes in general match with the holotype in colour and morphology; the hind pronotal angles can be from right to slightly obtuse; length of the male paratypes 4.40 to 4.75 mm, length of the female paratypes 4.50 to 4.90 mm. Aedeagus 0.85 to 0.91 mm long.
Spermatheca (fig. 15).

Derivatio nominis. The name *ioheli* is genitive and derives from the Latin translation of the Italian name Gioele; the species is dedicated to the grandson of one of the authors (PN).

Comparative notes. *B. ioheli*, species with light femora, oblique temples, elytra with preapical spots and lacking the transverse band, is distinguishable from *eucheres eucheres* for the smaller size of the aedeagus and the shape of the paracopulatrix lamine; from *samai* for the elytra lacking the first two-three intervals blackish-brown. From all the species of the group for the aedeagus with the ventral margin slighty concave in all its length.

Distribution. The species is known to us only from Waziristan and North Baluchistan in Pakistan.

Bembidion* (*Ocyturanes*) *rohanum n.sp. (figs. 16, 40, 67)

Diagnosis. A *Bembidion* subgenus *Ocyturanes* belonging to the *marginipenne* group similar to *dyscheres* for the shape of aedeagus and distinguishable from this last by the elytra lacking evident cruciform dark pattern.

Type locality. Afghanistan, Boeum, Route de Bendiamir à Panjaw, 2600 m.

Type series. Holotype, ♂, "Afghanistan, Boeum, Route de Bendiamir à Panjaw, 2600 m., 25.8.1975, Leg. Ledoux" (CTVR); aedeagus mounted in Euparal on a

transparent label pinned to the same pin as the specimen; we added to the specimen the following label: "*Bembidion* (*Ocyturanes*) / *rohanum* Neri & Toledano / 2017 – Holotypus" [red, printed].
Paratypes. 4 ♂♂ 7 ♀♀, same collecting data as the holotype, (DE, CTVR, PN); 1 ♀, "Afghanistan, Vt. N Salang, Khenjan, bord torrent, 2000 m, 11.8.1975, Leg. Ledoux" (DE); 1 ♂, 1 ♀, "Afghanistan, Vallée de Dokani – Khaoul, 2600 m, 19.8.1975, Leg. Ledoux" (PN, CTVR). We added to the specimens the following label: "*Bembidion* (*Ocyturanes*) / *rohanum* Neri & Toledano / 2017 – Paratypus" [red, printed].

Description of the holotype (fig. 67). Total length 4.55 mm. Colour: Head and pronotum black. Elytra testaceous with two oblique yellowish apical lunule; brown transverse band visible only near the first interval. All appendages testaceous.
Head: maximum width 0.90 mm; distance between eyes 0.53 mm; front and clypeus smooth, frontal furrows deep and evident, posteriorly ending slightly behind the first supraorbital seta; near the frontal sulci is visible a faint microsculpture. Eyes protruding, temples short and oblique. Antennae long 2.53 mm.
Pronotum: length 0.81 mm; width of anterior margin 0.77 mm, maximum width 1.06 mm, width of base 0.80 mm; Pw/Pl = 1.31; moderately convex, transverse; sides entirely bordered, narrowing with evident sinuation towards base, with which they form a right angle; lateral gutter wide and of uniform width; a faint microsculpture at sides, the entire disc smooth; laterobasal carina very evident; median line sharp, transverse anterior impression curved; basal transverse impression punctate-rugose between the lateral foveae.
Elytra: length 2.80 mm, maximum width 1.75 mm; marked shoulders, completely microsculptured in short transverse, very evident sculpticells. Striae with superficial punctuation progressively vanishing in the apical part; stria 6 and 7 with even sharper punctures, striae 1 and 8 complete, reaching apex, all remaining striae hardly visible in the apical part. Species macropterous.
Male genitalia. Aedeagus (fig. 40) medium sized (0.82 mm); ventral margin with apical quarter evidently bent ventrally; apex of the paracopulatrix lamine in the direction of the ostial flag. Right and left paramere of equal length, one with four apical setae.

Description of the paratypes. The paratypes in general match with the holotype in colour and morphology; the pronotum can be entirely glossy; the transverse elytral band is more or less visible; the punctures of stria 6 may be more or less evident; length of male paratypes 4.25 to 4.55 mm, length of female paratypes 4.30 to 4.90 mm. Aedeagus 0.82 to 0.94 mm long.
Spermatheca (fig. 16).

Derivatio nominis. In the medieval era the Pashtun people called as "Roh" ruled

all the mountain range extending from the provinces in the northern surroundings of Kabul (Afghanistan) to Hassan Abdal (Pakistan); the adjective *rohanum* used as specific epithet means "from Roh" and is neutral.

Comparative notes. *B. rohanum*, species with light femora, oblique temples, elytra with preapical spots but lacking evident cruciform pattern, is distinguishable from *eucheres eucheres* for the size of the aedeagus and the shape of the paracopulatrix lamine; from *samai* for the elytra lacking the internal intervals blackish-brown; from *ioheli* for the presence of the transverse dark elytral band and the different aedeagical structure.

Distribution. The species is known to us only from northern Afghanistan.

Bembidion* (*Ocyturanes*) *ronfelixi n.sp. (figs. 12, 34, 68, 70)

Diagnosis. A *Bembidion* subgenus *Ocyturanes* belonging to the *marginipenne* group similar to *eucheres* for the elytral colour and the aedeagical shape; it is distinguishable by the femora partly darkened, by the aedeagus with the central brush completely included in the endophallus and the paracopulatrix lamina in the direction of the ostial flag.

Type locality. Uzbekistan, Alai Mts. 1800 m, 60 Km S Fergana, Kuk-Kul lake.

Type series. Holotype, ♂, "USSR, Uzbekistan, Alai Mts. 1800 m, 60 Km S Fergana, Kuk-Kul lake, 21.6.1981, Karel Majer leg." (CTVR); aedeagus mounted in Euparal on a transparent label pinned to the same pin as the specimen; we added to the specimen the following label: "*Bembidion* (*Ocyturanes*) / *ronfelixi* Neri & Toledano / 2017 – Holotypus" [red, printed].
Paratypes. 2 ♂♂, 1 ♀, same collecting data as the holotype, (CTVR, PN); 13 ♂♂, 19 ♀♀, "Usbekist., Pamir Alai, Chamsaabad, b. Fergana 1800 m, 14.VII.1984, leg. Wrase" (DW, PN, CTVR, SF); 1 ♂, "USSR, Uzbekistan, Chamzabaad (Alaj), 13, 14. 7. 1979, 1400m, Jiri Moravec lgt. (DW); 2 ♀♀, Usbekist., Pamir Alai, Jardar, b. Fergana 2500m, 15. VII. 1984 leg. Wrase" (DW); 1 ♂, "W. Tien Shan val. Oigaing riv., 20.06.98" (SF); 1 ♂, "N sl. of Turkestan, mt. Buldzhuma riv. left of Lailak riv. nr. Ozgonish, 11-12.06.96, h-2800, Putchkov leg." (CTVR); 3 ♂♂, "Kyrgystan, Apshir Sai., 13.09.89" (CTVR, SF); 2 ♂♂ 1 ♀, "S. Kirgizia, Osh. reg., 15 km SW Isphana, Ak Tash mts. h. 2500, 3.06.96 Putschkov leg." (CTVR, PN); 1 ♂, "S. Kirgizia, Osh. Reg., Lailaik distr., Sarken-Gush riv-s, h-2800, 9.06.96, Putschkov leg." (CTVR); 1 ♀, "Kirghizstan, W. Tien Shan 2100m, Koksai gorge, 2.VI.1999 Leg. J. Cooter" (SF); 1 ♂, 1 ♀, "Kirgisien, Fergana gebirge, Kuli – Kuban See, 1800m 14.7.84, Leg. Gascha" (DW). We added to the specimen the following label: "*Bembidion* (*Ocyturanes*) / *ronfelixi* Neri & Toledano / 2017 – Paratypus" [red, printed].

Description of the holotype (fig. 68). Total length 4.70 mm. Colour: head and pronotum black; elytra pale testaceous with brownish cruciform pattern, scutellar area, margins and apex brownish. Legs testaceous with femora darkened in the basal two thirds, penultimate palpomere slightly darkened at apex and antennae testaceous reddish.
Head: maximum width 0.93 mm; distance between eyes 0.60 mm; front and clypeus almost smooth, evidently impressed frontal furrows posteriorly ending between the first and the second supraorbital seta. Eyes moderately protruding, temples oblique. Antennae long 2.62 mm.
Pronotum: length 0.83 mm; width of anterior margin 0.82 mm, maximum width 1.14 mm, width of base 0.84 mm; Pw/Pl = 1.37; moderately convex, transverse; sides entirely bordered, narrowing with evident sinuation towards base, slightly oblique near the base with which they form a slightly obtuse angle; marginal gutter wide and of uniform width; almost all the surface more or less smooth and glossy; laterobasal carina very evident; median line sharp, anterior transverse impression curved with a few very small punctures at sides; transverse basal impression punctate-rugose between the lateral foveae.
Elytra: length 3.00 mm, maximum width 1.80 mm; marked shoulders and sides slightly widened behind middle, completely microsculptured with transverse, polygonal sculpticells. Striae with very faint punctures in the apical part; stria 7 with very superficial punctures, barely visible, striae 1 and 8 complete, reaching apex, all the remaining hardly visible in the apical part. Species macropterous.
Male genitalia. Aedeagus (fig. 34) medium sized (0.93 mm); ventral margin slightly convex and bent ventrally; central brush included in the endophallus; only the extreme end of the main sclerite slightly protrudes from the basal opening; apex of paracopulatrix lamine in the direction of the ostial flag. Right and left paramere of equal length, each with four apical setae.

Description of the paratypes. The paratypes in general match with the holotype for the colour and morphology; the pronotum may have a base clearly oblique towards the angles, Pw/Pl 1.34 to 1.40; the elytra have a very variable colour, may have a cruciform pattern but also show uniform colour testaceous or reddish-brown (fig. 70) with preapical spots and transverse dark band more or less evident (like *eucheres*); femora can be more or less darkened, or only in the lower part, or at maximum for two/thirds; the antennae uniformly testaceous; length of the male paratypes 4.50 to 4.95 mm, length of female paratypes 4.65 to 5.20 mm. Aedeagus long 0.90 to 0.98 mm; its ventral margin can be more or less rectilinear, with the apical quarter bent ventrally.
Spermatheca (fig. 12).

Derivatio nominis. We dedicate this species to our friend Ron Felix (Berkel-

Enschot, Holland), well known specialist in Carabidae of Arabic Peninsula, who very kindly collaborated with our work by submitting in study the material of his collection. The name is genitive.

Comparative notes. *B. ronfelixi*, medium-sized species with oblique temples, femora at least in part darkened and with elytra completely microsculptured showing variable colour (with cruciform pattern, or uniformly testaceous with evident preapical spots), is distinguishable from *eucheres eucheres* and *eucheres michailovi* for the femora at least in part darkened, the aedeagus with the paracopulatrix lamine in the direction of the ostial flag; from *dyscheres* for the femora at least in part darkened and the aedeagus slightly larger.

Distribution. The species is known to us from Uzbekistan**,** Kazakhstan (Turkestan) and Kyrgyzstan.

Key to the species of subgenus ***Ocyturanes*** Müller-Motzfeld, 1986, ***marginipenne*** group

For the determination of most species is needed the examination of the aedeagus.
In the following key the symbol (!) means that a given locality, already reported in the literature, was confirmed during this study; the symbol (!!) means that a locality new for a known species was discovered during this study. The localities known by literature, but not confirmed during this study, could be wrong, and refer to some of the species herewith described as new.

1 Legs with femora entirely evidently darkened or blackish and apex reddish.. 2

- Legs entirely light, testaceous or reddish-brown; rarely femora more or less darkened in the basal half, in the lower surface or for two thirds.....4

2 Temples more evident, longer and more oblique towards the neck (fig 50); elytra smooth or with slight microsculpture only in the apical fourth (♂) or in the apical third and at the humeral margin (♀); elytra reddish, with suture, transverse band, margins and apex darkened, brown; penultimate palpomere from reddish to blackish; elytral stria 7 evident as the others; antennae reddish or blackish except for antennomere 1, or 1 and 2, reddish; length 4.50 to 5.00 mm; aedeagus (fig. 25) with apical third evidently pointed and bent ventrally main sclerite and paracopulatrix lamine (Neri & Vigna-Taglianti, 2010) reaching the apical third, median lobe long 0.97 to 0.99 mm; Lebanon (!), Syria, Turkey (!) (Marggi et al., 2017)..... ..... ***culminicola*** Piochard de la Brûlerie, 1876 (fig. 48)

- Temples very short or almost absent, gently merging obliquely with the neck

(figs. 52, 55).....3

3 Eyes protruding; elytra with two big yellowish preapical spots, sutural dark band almost disappearing, transverse dark band more or less evident, lateral margins dark, scutellar area in general darker, completely microsculptured with transverse sculpticells; antennae pale testaceous, sometimes with first two antennomeres light and the remaining slightly darkened; penultimate palpomere more or less darkened; elytral stria 7 almost disappearing or represented by few fine punctures; length 4.30 to 5.20 mm; aedeagus (fig. 27) stout, apical third not or slightly pointed and apex very slightly bent ventrally, median lobe long 0.89 to 1.00 mm; spermatheca (fig. 4); Azerbaijan (!), Armenia (!), Iran (!), Iraq, Kyrgyzstan, Tajikistan, Turkmenistan (!), Turkey (!), Uzbekistan (!), (Marggi et al., 2017); Kazakhstan (!!).....
.....***parsorum*** Netolitzky, 1934 (*iranicum* Jedlicka, 1962) (fig. 54)

Kazakhstan, Umg. Maldy-Kargan, Flussufer Karatal (CTVR); Turkmenia mer., Chr. Kugi Tang Tau, Svincovji Rudnik (PN, CTVR).

- Eyes less protruding, elytra testaceous with two big, yellowish preapical spots; first interval, lateral margins, scutellar area and shoulders dark brown or black, interval 7 and 8 darker than the others; transverse dark band barely visible; elytral microsculpture from very superficial to absent; antennae light brown, often with first two antennomeres darker, the remaining antennomeres of the basal half more or less darkened, those of the apical half slightly lighter; penultimate palpomere, sometimes also the basal palpomeres, darkened; length 3.80 to 4.70 mm; aedeagus (fig. 28) narrower and slender, apical third more pointed and bent ventrally, median lobe long 0.82 to 0.89 mm; spermatheca (fig. 3); Iran.....
.....***muilwijki*** **n.sp** (*parsorum* ssp. nov. in Netolitzky, 1943?) (fig. 55)

4 Eyes protruding; temples very short or almost absent, merging with the neck very slightly obliquely (fig. 53).....5

- Eyes less protruding; temples longer, merging with the neck more or less obliquely.....6

5 Elytra testaceous, yellowish-testaceous (similar to *parsorum*) with margins and first interval brown or dark brown, transverse brown band more or less distinct and two yellowish spots in the apical fourth; elytra less convex, shoulders narrower in respect to the pronotum; elytral striae less deeply impressed; light appendages, palps with penultimate palpomere slightly

darkened at apex; length 4.70 to 5.20 mm; aedeagus (fig. 36) with rectilinear ventral margin, apical fourth bent ventrally and endophallus almost completely included in the median lobe, median lobe long 0.95 to 0.99 mm; Afghanistan (!), Kazakhstan, Uzbekistan, Tajikistan, Kyrgyzstan (Marggi et al., 2017).... .....***hoberlandtianum*** Fassati, 1959 (fig. 58)

We examined some hundreds of specimens of *parsorum* and noticed that the almost complete darkening of femora is a character always present. In CTVR we found some specimens collected in Kyrgyzstan (15 exx. mostly immature, S. Kirgizia, Osh. Reg. 25 Km SW Isphara, Ak Tash mts, H-2500, 3.06.96, Putschkov leg.) and from Tadjikistan (2 exx., Seravshan Geb. Kette, Masor-Scharif. 1800 m, 02.06.1984 Michailov; 1 ex., Sawron-Schlucht, 2000-2400 m, 2.07.1991, W. Dolin) showing external characters similar to *hoberlandtianum* but with male genitalia identical to *parsorum*. We could hypothesize that they belong to a new subspecies (or variety of colour) of *parsorum*, but we prefer to refrain from taking any decisions until more material becomes available for study.

- Elytra brown or light brown with yellowish apical spots extended on the whole apical quarter; elytra more convex, wider shoulders, in respect to the pronotum, elytral striae more deeply punctured; appendages pale with antennae sometimes slightly darkened; length 4.30 to 4.90 mm; aedeagus (fig. 37) with apical third evidently bent ventrally and markedly pointed, long 0.96 mm; spermatheca (fig. 10); India (Kashmir (!), Himachal Pradesh (!), Uttar Pradesh (!)), Pakistan (!), Afghanistan (!), China (Sichuan) (Marggi et al., 2017)..... ***babaulti*** Andrewes, 1924 (fig. 59)

Afghanistan, E, Nangarhar prov., Dara-i-nur, 1500m. leg. Reuter ((CR, CTVR); Afghanistan, Paktia, Khot-Gaï, (Shahidan), 2500m, G. Ledoux (DE, CTVR).

6 Species smaller (3.50 to 4.40 mm) with smaller aedeagus (0.72 to 0.79 mm), apex not evidently pointed; elytra testaceous or reddish-brown, pale testaceous sometimes lighter at apex with first interval dark brown; or elytra reddish-brown with two yellowish preapical spots, first two or three intervals up to the preapical spots and apex darkened.....7

- Species larger, (4.20 to 5.50 mm) with larger aedeagus, (more than 0.81 mm); or elytra with cruciform pattern or unicolorous yellow without darkening of the internal intervals.....8

7 Elytra testaceous or reddish-brown with transverse band absent or rarely very faint, apical quarter usually lighter, first interval dark brown; all appendages pale testaceous, sometimes antennae slightly darkened from 4th antennomere; elytral microsculpture with short, transverse sculpticells; length 3.65 to 4.25 mm; aedeagus (fig. 29) long 0.73 to 0.78 mm; spermatheca (fig. 6); Afghanistan, Uzbekistan (!), Kazakhstan (!),

Tajikistan (!), Kyrgyzstan (!) (Marggi et al., 2017)..... ..... ***marginipenne*** Solsky, 1874 (fig. 56)

- Elytra reddish-testaceous with two yellowish preapical spots with vanishing edges; first two or three intervals, up to the preapical spots, lateral margins and apex blackish-brown; all appendages pale testaceous or antennae slightly darkened from 4th antennomere; elytral microsculpture with short, transverse sculpticells; length 3.50 to 4.40 mm; aedeagus (fig. 30) long 0.72 to 0.78 mm; spermatheca (fig. 5); Afghanistan..... ..... ***samai*** **n.sp.** (fig. 57)

8 Aedeagus (fig. 26) larger (1.07 to 1.18 mm) with apex bent ventrally, sometimes markedly so; pronotum with lateral gutter wide, base very superficially punctate and pronotal base only slightly wider than anterior margin; elytra uniformly yellowish-brown, pale testaceous or reddish-brown including first interval; preapical portion of elytra slightly lighter or with two yellow preapical spots with indistinct edges and brown apex; temples long and oblique (fig. 60); appendages pale testaceous or yellowish-brown; elytral microsculpture in transverse sculpticells; length 4.70 to 5.50 mm; spermatheca (fig. 7); Kyrgyzstan (!), Uzbekistan (!), Afghanistan (Marggi et al. 2017); Tajikistan (Iskanderkul– from the original description); Kazakhstan (!!)..... ..... ***kiritschenkoi*** Mikhailov, 1984 (fig. 61)

Turkestan, Mt. R. Buldzhuma, (trib. of Lialliak) 2900 m, Kabak leg. (SF); Kazachstan, Džambul, Kara-tau, Kuyuk, lgt. V. Bìža (KR).

- Aedeagus smaller (0.82 to 1.06 mm) or pronotum with lateral gutter narrow, or elytra with evident cruciform pattern or, if completely testaceous, reddish-brown, then with first interval dark brown, with more or less distinct preapical spots.....9

9 Temples slightly oblique (similar to *Bembidion* (*Peryphanes*) *stephensi* Crotch, 1898), long slighty more than one third of the eye (fig. 51); pronotal base of pronotum deeply rugose-punctate; elytra with rounded shoulders and sides, microsculpture very faint, more evident in the apical third; elytra reddish-brown, lateral margins, sometimes first interval, and apex darker, sometimes a darker transverse band; oblique, yelowish preapical spots more or less evident; penultimate palpomere and legs testaceous, antennae testaceous or slightly darkened from antennomere 3 or 4; length 4.65 to 5.30 mm; aedeagus (fig. 24) with endophallus completely included in the median lobe, main sclerite and paracopulatrix lamine in the direction of the dorsal

margin; median lobe long 0.98 to 1.04 mm; spermatheca (fig. 8); Iran (!), Armenia, Azerbaijan, Afghanistan (Marggi et al., 2017)..... ..... ***davatchii*** (Morvan, 1971) (fig. 49)

- Temples oblique and shorter.....10

10 Aedeagus larger (0.93 to 1.06 mm), with rectilinear ventral margin and apical part slightly bent ventrally, endophallus slightly protruding from basal opening, paracopulatrix lamine clearly bent towards the ventral margin (figs. 31, 32).....11

- Aedeagus smaller (0.82 to 0.98 mm) with apical portion of ventral margin evidently bent ventrally, endophallus not protruding from basal opening, except for the basal end of the main sclerite, paracopulatrix lamine in the direction of the apex or the ostial flag, or clearly bent towards the dorsal margin (figs. 24, 34, 40).....12

11 Elytra reddish-brown or testaceous with dark brown first interval and dark brown transverse band, with edges vanishing towards base and sharper towards apex, elytral apex dark brown, big yellowish preapical spots; elytral microsculpture irregular or in sharp, transverse sculpticells; length 4.40 to 5.20 mm; aedeagus (fig. 31) long 0.93 to 1.06 mm; spermatheca (fig. 9); Tajikistan (!), Kyrgyzstan (!), Kazakhstan, Uzbekistan (!) (Marggi et al., 2017); Afghanistan (!!)..... ..... ***eucheres eucheres*** Netolitzky, 1943 (fig. 62)

Afghanistan, Col du Salang, 2500 m, Leg. G. Ledoux (CTVR); Afghanistan, Khawak, Pied de la Ville Rouge, 2500 m, Leg. Ledoux (CTVR).

Mikhailov (1984) described a subspecies distinguishable from the nominotypical form only for the coarser pucturation of the elytral striae (the type form shows some striae with moderately impressed punctures and others with superficial, hardly visible punctures); the elytral colour can be a distinctive character even though the author himself emphasizes that the colour of both taxa is extremely variable: in the subspecies he describes, the basal portion is completely black or dark brown and the apical spots very sharp; the aedeagus does not show evident differences; we were not able to study any specimens, therefore all the data and characters come from the original description; Tajikistan (Darvaz Range, Kohzratisho Range) ..... ***eucheres darvasicum*** Mikhailov, 1984

- Elytra with cruciform pattern more or less evident; elytral microsculpture in sharp, transverse sculpticells; length 4.00 to 5.10 mm; aedeagus (fig. 32) long 0.95 to 1.00 mm; Tajikistan (!) (Hissar Gebirge)..... ..... ***eucheres michailovi*** Müller-Motzfeld, 1986 (fig. 63)

12 Elytra with cruciform pattern very evident.....13

- Elytra testaceous, testaceous-reddish or testaceous-yellowish; colour uniform or with yellowish preapical spots or whole apex lighter; transverse band wanting or barely visible 15

13 Elytral microsculpture sharp, transverse and hardly visible on disc; elytra with basal and lateral margins blackish-brown; legs testaceous, sometimes slightly darkened in the basal half; antennae slightly darkened from antennomere 3 or 4; length 4.35 to 4.75 mm; aedeagus (fig. 33) long 0.90 to 0.98 mm, with ventral margin in most cases showing a slight gibbosity, apical quarter more narrow, bent ventrally; spermatheca (fig. 11); Turkey, Azerbaijan, Armenia, Iran (Azerbaijan prov.)..... ***urarteum*** **n.sp.** (fig. 64)

- Elytral microsculpture in short, transverse and evident sculpticells; antennae pale or testaceous; aedeagus with apical quarter stout and ventral margin more evidently bent ventrally.....14

14 All appendages light; length 4.20 to 5.00 mm; aedeagus (fig. 35) shorter (0.81 to 0.88 mm), apical quarter of ventral margin evidently bent ventrally; spermatheca (fig. 13); Afghanistan (!), Pakistan, Tajikistan, Iran (!), Uzbekistan (!), Kyrgyzstan (!), Turkmenistan (!) (Marggi et al., 2017)..... ..... ***dyscheres*** Netolitzky, 1943 (fig. 65)

Afghanistan, Darah-e-Chekari (Route de Bamyan à Adjar). 2000 m. Leg. Ledoux (DE); Afghanistan, A mont de Bamyan, Leg. Ledoux (DE).

- Femora darkened or only in the lower side or at maximum in the basal two thirds; length 4.50 to 5.20 mm; aedeagus (fig. 34) slightly longer (0.90 – 0.98 mm) with ventral margin slightly convex or more or less rectilinear with apical quarter less evidently bent ventrally; spermatheca (fig. 12); Uzbekistan, Kyrgyzstan, Kazakhstan..... ***ronfelixi*** **n.sp.** (fig. 68)

15 Elytra uniformly coloured, testaceous, pale testaceous or yellowish-testaceous, without transverse band, without preapical spots or only with lighter apex; elytral microsculpture sharp, transverse; all appendages light, often reddish, femora sometimes slightly darkened at base and palps darkened at apex; length 4.20 to 5.15 mm; aedeagus (fig. 39) 0.87 to 0.94 mm long, with apical quarter more or less evidently bent ventrally, often with ventral margin showing a slight gibbosity; spermatheca (fig. 14); Iran ..... ***schnitteri*** **n. sp** (fig. 66)

- Elytra with evident elytral spots 16

16 aedeagus (fig. 38) 0.85 to 0.91 mm long, in general slender, with ventral margin slightly concave and bent ventrally; elytra testaceous-reddish with two yellowish preapical spots with poorly defined edges, transverse band absent; length 4.40 to 4.90 mm; spermatheca (fig. 15); Pakistan .... ***ioheli*** **n.sp** (fig. 69)

- Aedeagus larger, with ventral margin concave or rectilinear or with a slight gibbosity, apical quarter more or less bent ventrally.....17

17 Elytra pale testaceous with transverse band poorly visible, sometimes almost wanting, or more visible only near the first interval; yellowish apical spots big and evident; elytral microsculpture short, transverse; all appendages light, often reddish; length 4.30 to 4.90 mm; aedeagus (fig. 40) 0.82 to 0.94 mm long, with apical quarter evidently bent ventrally; spermatheca (fig. 16); Afghanistan..... ***rohanum*** **n.sp.** (fig. 67)

- Elytra reddish-brown or testaceous with first interval dark brown and transverse band with sharp edge only in its apical limit, apex dark brown, big yellowish preapical spots; femora darkened or only in the lower side or at maximum for the basal two thirds; length 4.50 to 5.20 mm; aedeagus (fig. 34) long 0.90 to 0.98 mm with ventral margin slightly convex or more or less rectilinear with apical quarter bent ventrally; spermatheca (fig. 12); Uzbekistan, Kyrgyzstan, Kazakhstan..... ***ronfelixi*** **n.sp.** (fig. 70)

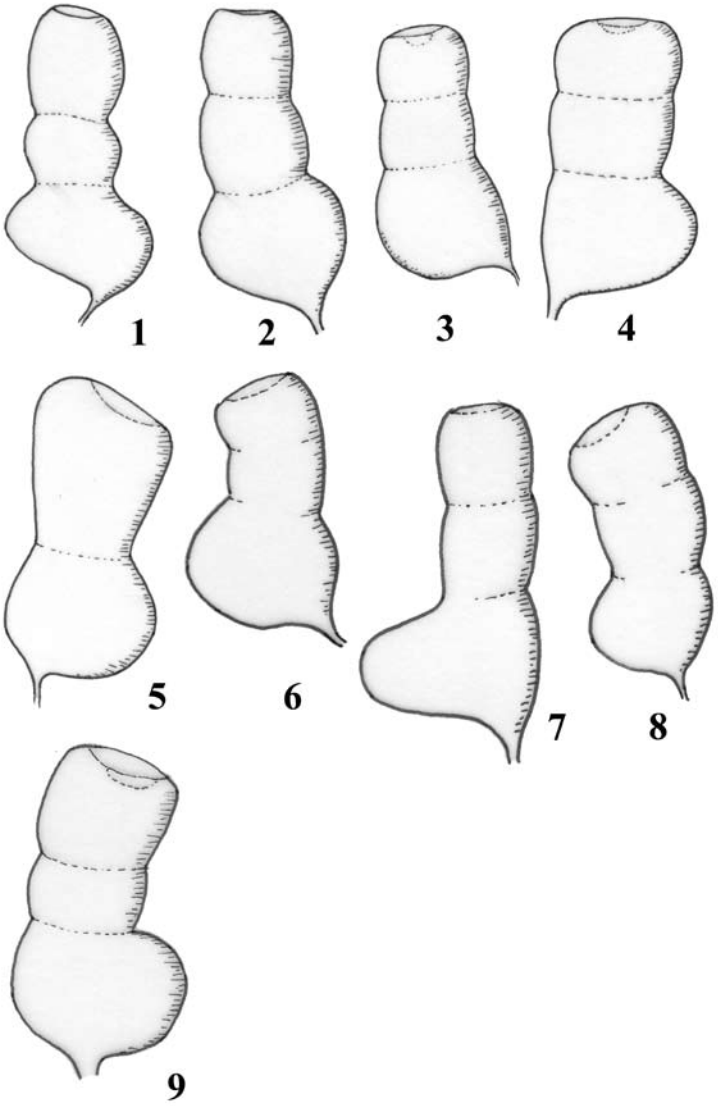
The following species cannot be included in the keys for the *marginipenne* group because we were unable to check their type material and the original descriptions do not give us adequate information:

Bembidion* (*Ocyturanes*) *fulvipenne (Schuler, 1959). The species was described upon a male specimen from a cave in Afghanistan (Herat, Karokh – type coll. K. Lindberg). Müller-Motzfeld (1986) lists the species as belonging to the newly described subgenus *Ocyturanes* gr. *marginipenne*, but with doubt (probably he did not see the specimen).
Also Marggi et al. (2003) and Lorenz (2005) include the species in *Ocyturanes*. The attribution to *Ocyturanes* is probably due to the similarity of habitus and aedeagus with *praeustum* Dejean, according to the original description.
The relevant character mentioned in the description: head completely microsculptured with isodiametric meshes; we are unaware of such character in the subgenus. Other interesting characters are the elytra entirely yellowish except

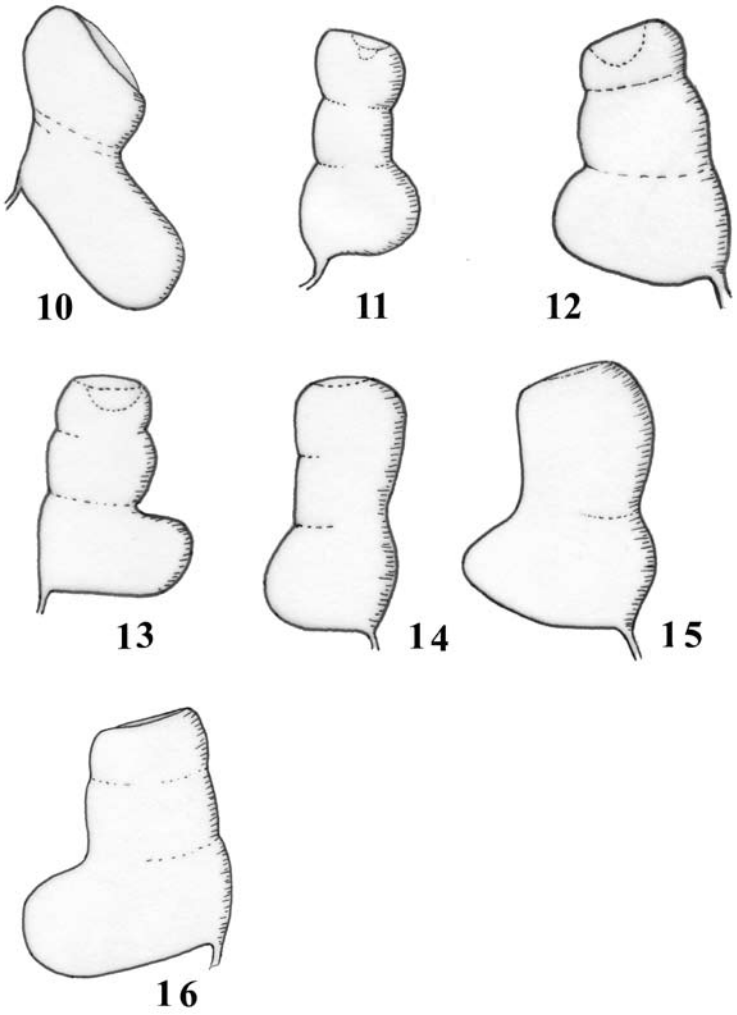
for a transverse band barely visible in the apical third, the appendages reddish, except for the base of femora darkened and the length of 4.50 mm. These data could suggest that actually the species belongs to the *marginipenne* group.
For a long time we looked for the type series in the collections Lindberg, Schuler and MNHN, but in vain. Thanks to the kind collaboration of Giulio Cuccodoro (MHNG) who at the very last minute was able to find out them in the Collection of his Institution, as mentioned above we were allowed to study three specimens possibly belonging to this species, labelled as "*B.* (*Ocyturanes*) *fulvipenne* Schuler Det. W. Marggi". Actually they miss any Schuler's label, furthermore the collecting data of the specimens do not match with those mentioned in the original description and the specimens do not match with the original description in important characters (head covered by isodiametric microsculpture, elytral colour), therefore we cannot state that they really belong to the type series of *B. fulvipenne* but we are also unable to state that they actually belong to this taxon. In other words, the species *Bembidion fulvipenne* still is unknown to us.

Bembidion* (*Ocyturanes*) *kabakovi Mikhailov, 1984. This species was described from two male specimens from Afghanistan (Baghlan, O.Khejan – loc. class.) and included into the genus *Bembidion* subgenus *Peryphus*, *marginipenne* group; the original description does not mention the aedeagus. Müller-Motzfeld (1986) does not list the species among the members of *Ocyturanes*. Lorenz (1998) mentions it between the *Ocydromus* incert.; Marggi (2003 pp. 20) in Marggi et al. (2003), includes it into the subgenus *Ocyturanes* after the study of the type material; Lorenz (2005) lists the species in the *Ocyturanes*. Later, no one includes more precisely the species into a species group. According to the characters mentioned in the description, we are unable to state it. We could only hypothesize that, if it was an *Ocyturanes*, it could belong to the *praeustum* group.
Relevant characters found in the description: elytra with microsculpture sharp and transverse, colour uniformly reddish-brown, including appendages, length 7 mm and width 2.5 mm; as far as we know there are no species of this large size in the *marginipenne* group.

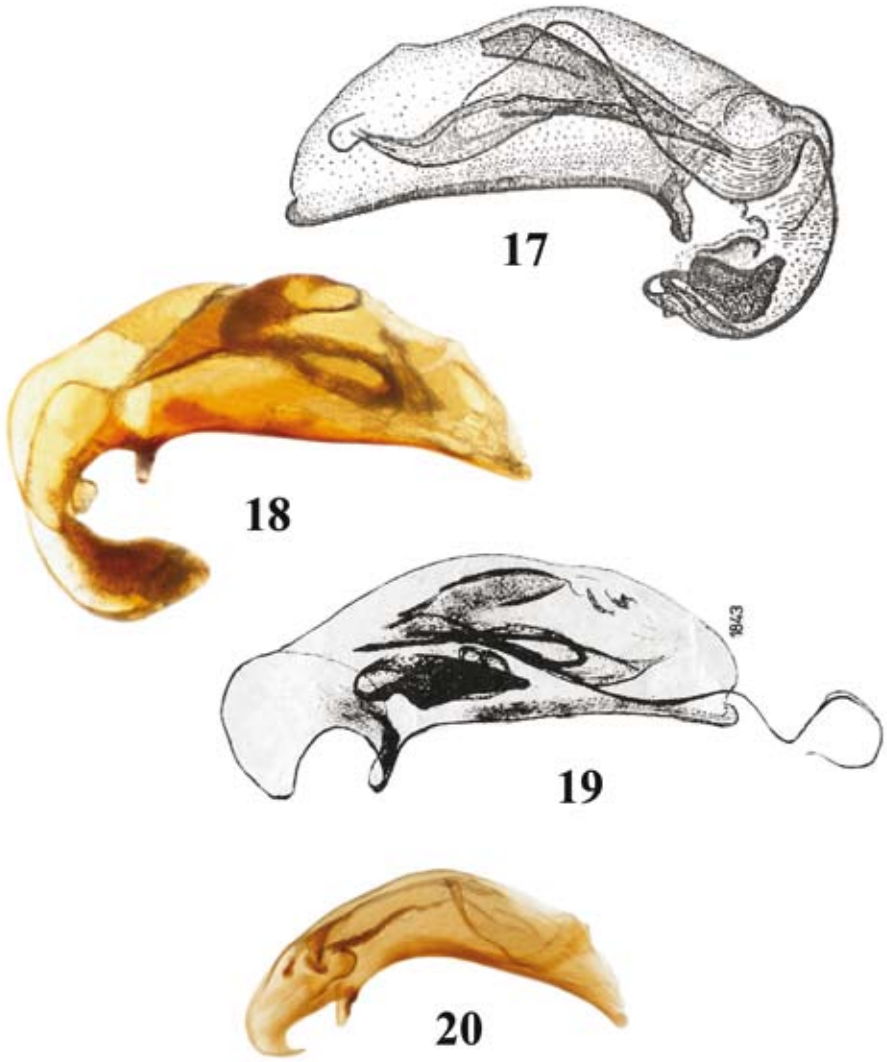
Both ***Bembidion* (*Ocyturanes*) *fulvipenne*** (Schuler, 1959) and ***Bembidion* (*Ocyturanes*) *kabakovi*** Mikhailov, 1984 cannot be present in the key (obviously in the place of some of the species herewith described) because according to the original descriptions *fulvipenne* has the head with isodiametric microsculpture and *kabakovi* is long 7 mm; there are no species of the *marginipenne* group known to us with these characters.



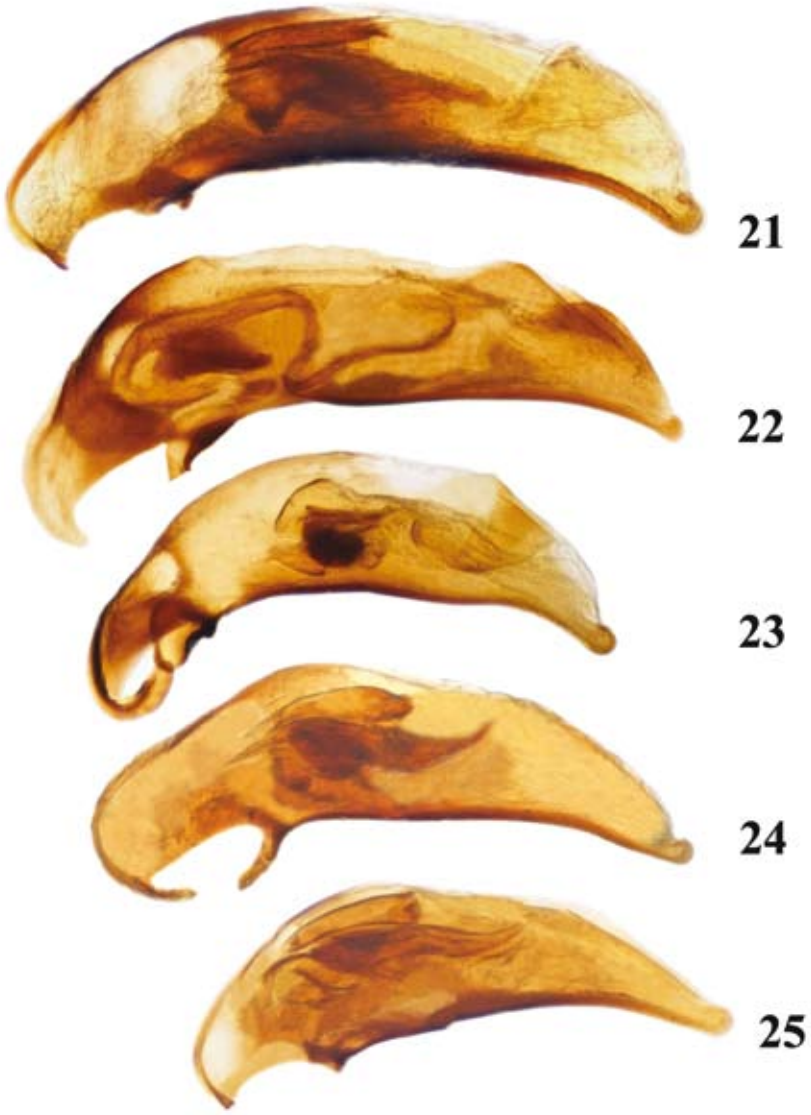
Figs. 1-9. Spermathecae of: 1: *Bembidion* (*Peryphanes*) *hissaricum* Net.., Holotype (0.13 mm); 2: *B.* (*P.*) *wrasei* Müll.-Mtzf., Tajikistan Dushanbe, paratype (0.14 mm); 3: *B.* (*Ocyturanes*) *muilwijki* Neri&Tol., Iran p. Fars, Yasug NW Siraaz (vill.Kakan), paratype (0.11 mm); 4: *B.* (*O.*) *parsorum* Net., Armenia, Khosrov reserve, Central area (0.12 mm); 5: *B.* (*O.*) *samai* Neri&Tol., Afghanistan, Vt N Salang 1450m Khenjan, bord torrent, paratype (0.13 mm); 6: *B.* (*O.*) *marginipenne* Solsky, Kirgizia, Osh.reg.Lailaik., distr. Sarken-Gush riv-s 2800 m (0.11 mm); 7: *B.* (*O.*) *kiritshenkoi* Mikh., Uzbekistan, Chatkal range 1700 m Kashka-Su river (0.14 mm); 8: *B.* (*O.*) *davatchii* Morvan, Iran, Prov. Tehran Elburz Mts. Tajrish N, Kandovan-Pass, 2850 m (0.12 mm); 9: *B.* (*O.*) *eucheres* Net., Tajikistan, Fan Mts. 2800 m (0.14 mm). Drawings by Ivo Gudenzi.



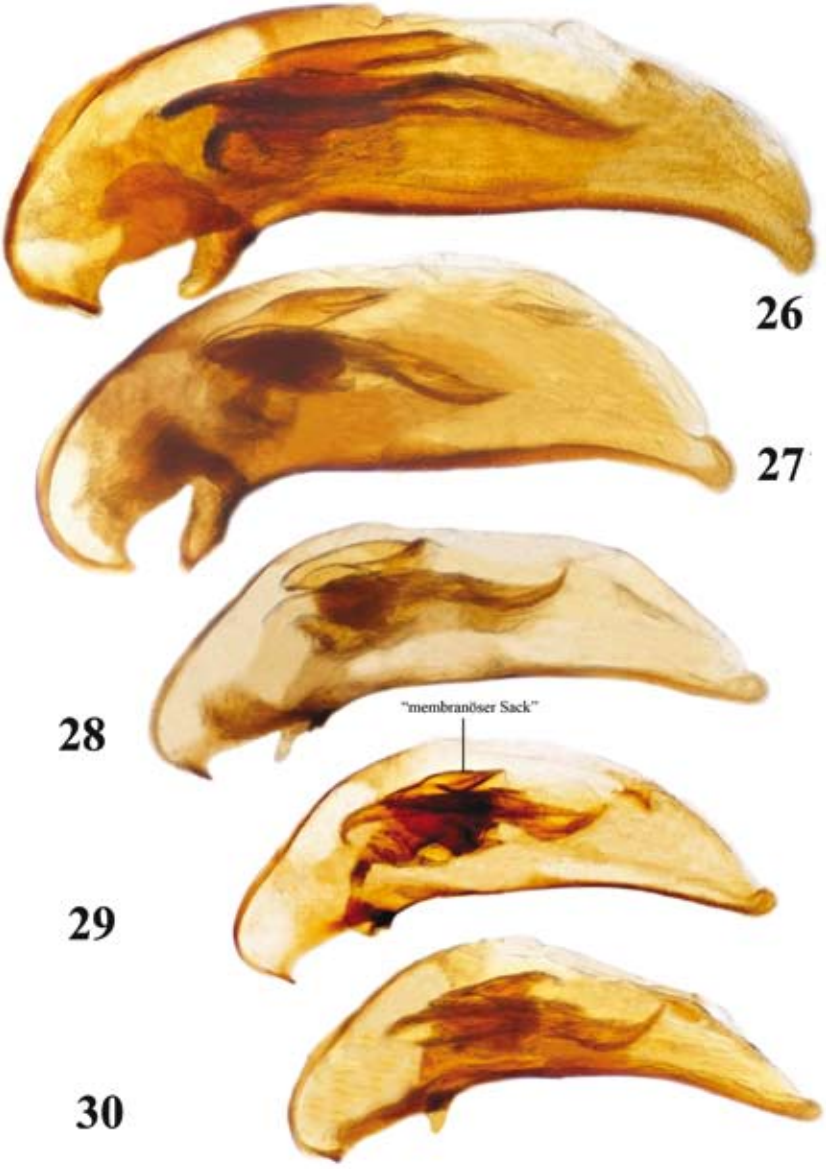
Figs. 10-16. Spermathecae of: 10: *Bembidion* (*Ocyturanes*) *babaulti* Andr., Pakistan (0.13 mm); 11: *B.* (*O.*) *urarteum* Neri&Tol., Armenia, Syunik prov. 10 Km N Shvanidzor 1650 m, paratype (0.10 mm); 12: *B.* (*O.*) *ronfelixi* Neri&Tol., Uzbekistan . Pamir Alai Chamsaabad 1800 m, paratype (0.12 mm); 13: *B.* (*O.*) *dyscheres* Net., Turkmenia mer.or. Svincoviy Rudnik, Kugitangtau ridge (0.10 mm); 14: *B.* (*O.*) *schnitteri* Neri&Tol., Iran (Kermann prov.) waterfall at Darb-e Asiab vill. N Kermann 2550 m (canyon), paratype (0.11 mm); 15: *B.* (*O.*) *ioheli* Neri&Tol., Pakistan NWFP Waziristan reg.- Tanai vill. env.1500-2000 m, paratype, (0.12 mm); 16: *B.* (*O.*) *rohanum* Neri&Tol., Afghanistan, Boeum route de Bandiamir à Panjav 2600 m, paratype (0.12 mm). Drawings by Ivo Gudenzi.



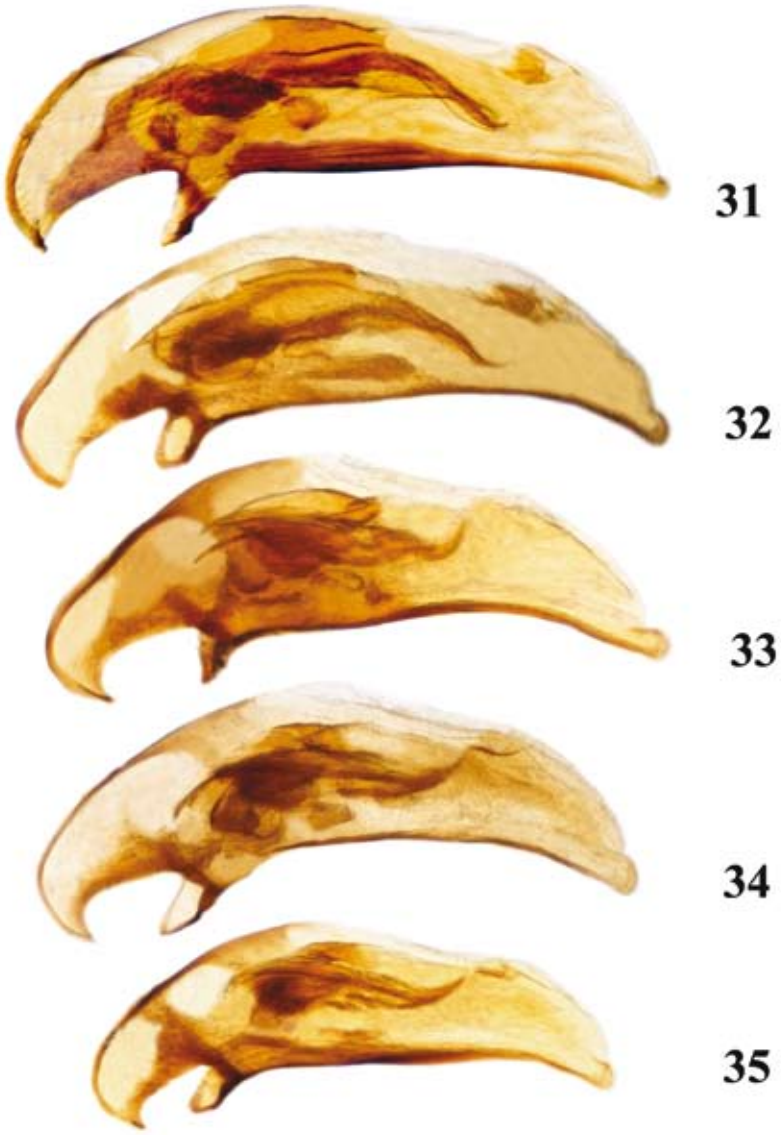
Figs. 17-20. Aedeagi of: 17: *Bembidion* (*Peryphanes*) *hissaricum* Net.., from Belousov & Sokolov (1996) (1.40 mm); 18: *B.* (*P.*) *wrasei* Müll.-Mtzf., Tajikistan., Hissar Alai, Warsob-Schlucht b. Duschanbe 2000 m, paratype (1.33 mm); 19: *B.* (*P.*) *wrasei* Müll.-Mtzf., holotypus, from Müller-Motzfeld (1986); 20: *Bembidion* (*Asioperypus*) *notatum* Andr., Kumaon, W Almora, India H.G.C., paratype (0.98 mm).



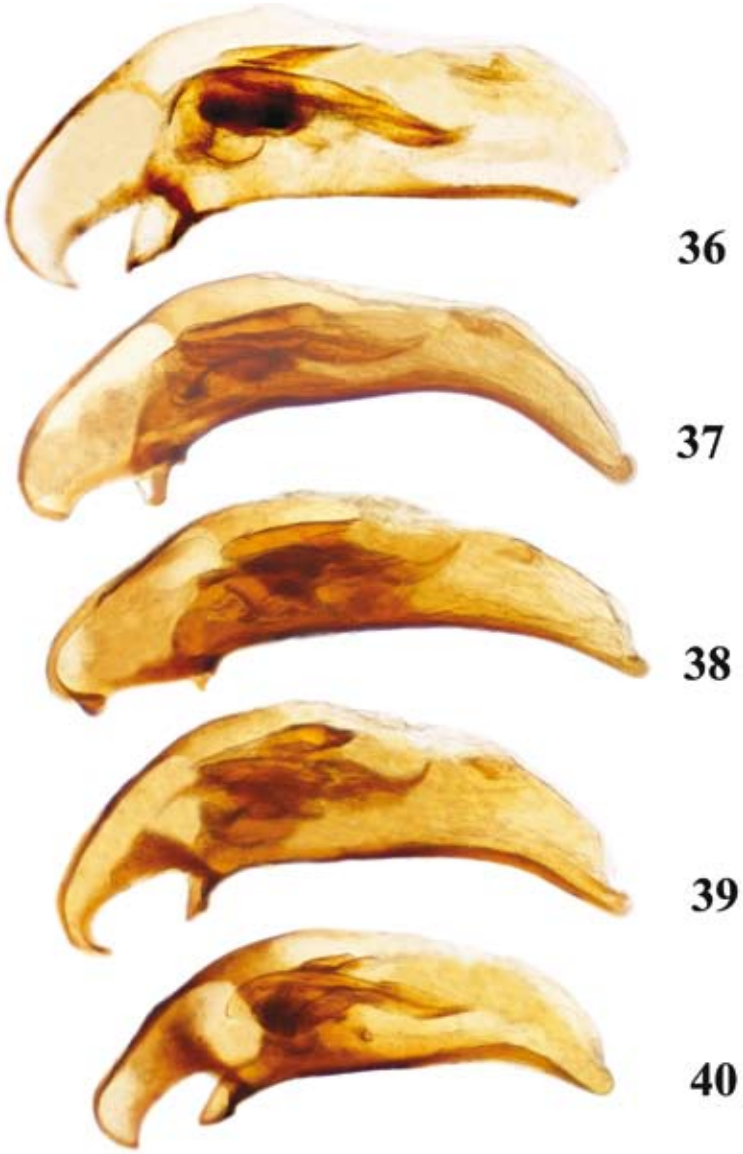
Figs. 21-25. Aedeagi of: 21: *Bembidion* (*Ocyturanes*) *circassicum* Rtt., Russia, Krasnodar, Centralny (Psakhe riv.) (1.20 mm); 22: *Bembidion* (*Asioperypus*) *xanthochiton* Andr., Gopaldhara (1.14 mm); 23: *Bembidion* (*Peryphus*) *ledouxianum* Kirsch., India, Himarchal Pradesh, Mahri, 3500 m, paratype (0.91 mm); 24: *Bembidion* (*Ocyturanes*) *davatchii* Morvan, N Iran, p. Mazandaran, 70 km SW Calus 2870 m (1.04 mm); 25: *B.* (*O.*) *culminicola* Pioch.la Brül., Type (0.96 mm).



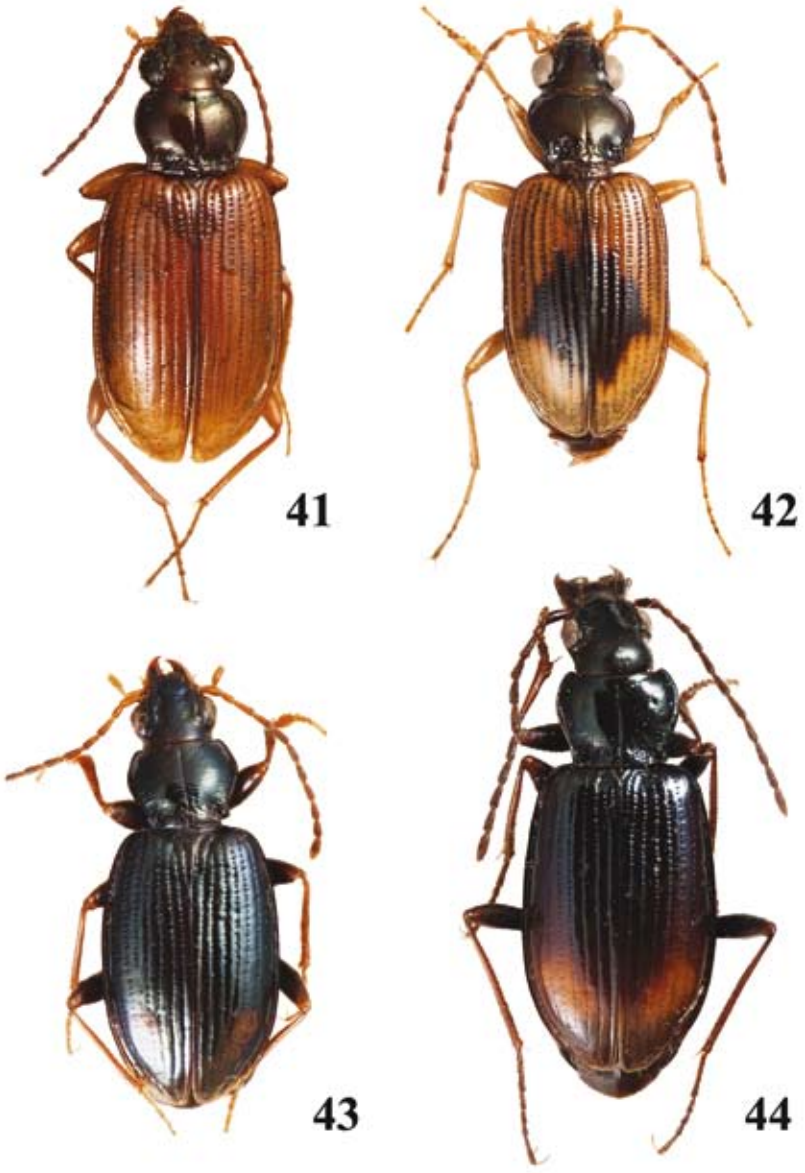
Figs. 26-30. Aedeagi of: 26: *Bembidion* (*Ocyturanes*) *kiritschenkoi* Mikh., Kazakhstan, W Tien-Shan, N sl.Talass Alatau, Aksu Dzhabagly, Kshi-Kaindy 2000 m (1.17 mm); 27: *B.* (*O.*) *parsorum* Net., Iran, Lorestan 5-15 km SW Dorud (0.98 mm); 28: *B.* (*O.*) *muilwijki* Neri&Tol., holotype (0.86 mm); 29: *B.* (*O.*) *marginipenne* Solsky, Tajikistan, W Serawschan Gbg. Kschtut, 1300 m (0.74 mm); 30: *B.* (*O.*) *samai* Neri&Tol., holotype (0.73 mm).



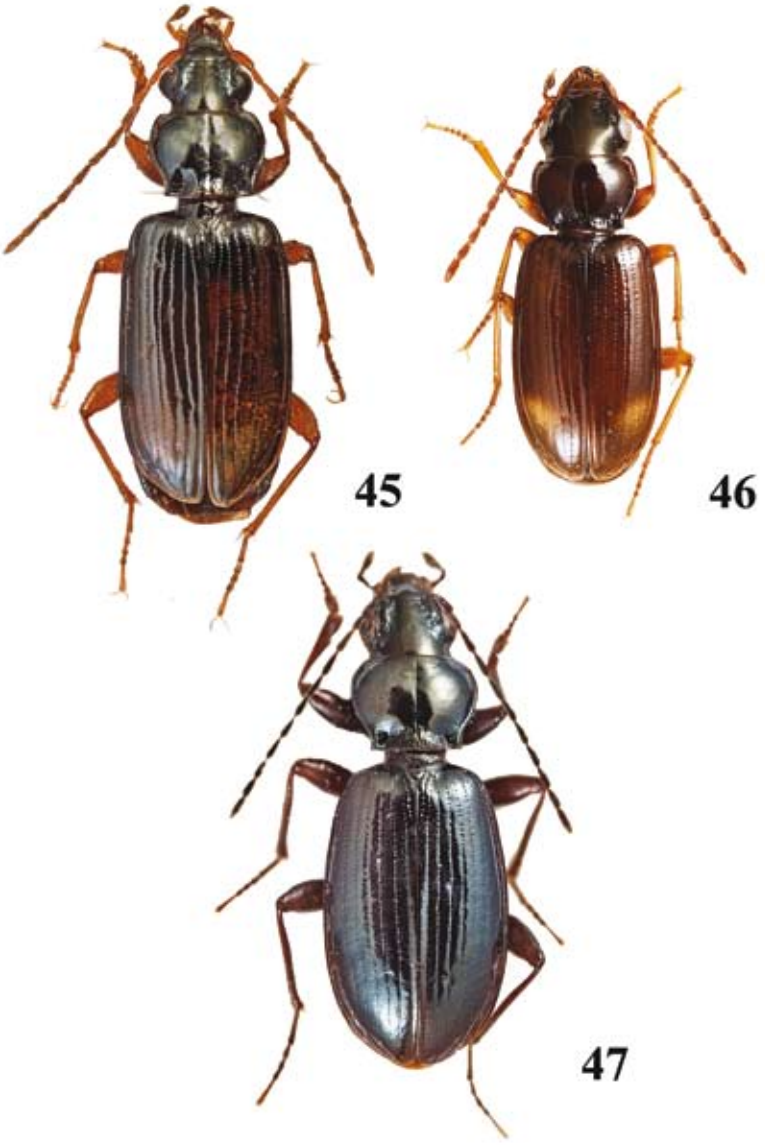
Figs. 31-35. Aedeagi of: 31: *Bembidion* (*Ocyturanes*) *eucheres* Net., Kuljab, O.Buchara, paratype (1.01 mm); 32: *B.* (*O.*) *eucheres michailovi* Müll.-Mtzf., SU Tajikistan, 15 Km N Dushanbe Warsob-See, 800 m (1.01 mm); 33: *B.* (*O.*) *urarteum* Neri&Tol., Armenia, 22.7.2003, Syunik prov. 1650m, 10 Km N of Shvanidzor, paratype (0.96 mm); 34: *B.* (*O.*) *ronfelixi* Neri&Tol., holotype (0.93 mm); 35: *B.* (*O.*) *dyscheres* Net., Kirghizia centr. Arsianbad (0.81 mm).



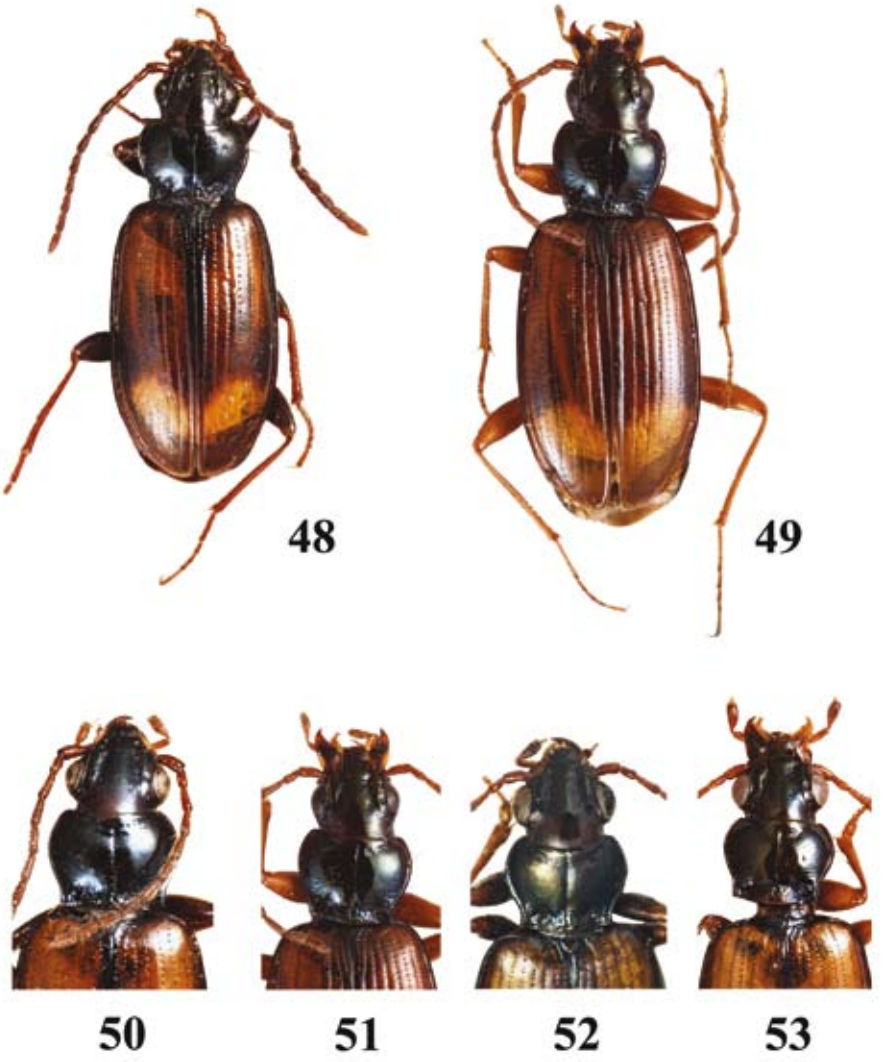
Figs. 36-40. Aedeagi of: 36: *B.* (*O.*) *hoberlandtianum* Fass., O. Afghanistan, Tangi-Gharuh 1600 m am Kabulfluss, holotype (0.97 mm); 37: *B.* (*O.*) *babaulti* Andr., Pakistan, Kagan Valley, dint. Murree 2000 m (0.93 mm); 38: *B.* (*O.*) *ioheli* Neri&Tol., holotype (0.91 mm); 39: *B.* (*O.*) *schnitteri* Neri&Tol., holotype (0.87 mm); 40: *B.* (*O.*) *rohanum* Neri&Tol., holotype (0.82 mm).



Figs. 41-44. Habitus of: 41: *Bembidion* (*Asioperyphus*) *xanthochiton* Andr., Gopaldhara (4.52 mm); 42: *B.* (*A.*) *notatum* Andr., NE India, W - Meghalaya, Umran 33 Km N, Shillong, 800 m, Mourzin (4.27 mm); 43: *Bembidion* (*Peryphus*) *ledouxianum* Kirsch., India, Himarchal Pradesh, Mahri, 3500m, paratypus, (4.25 mm); 44: *Bembidion* (*Ocyturanes*) *antennarium* Morvan, holotypus (5.08 mm).

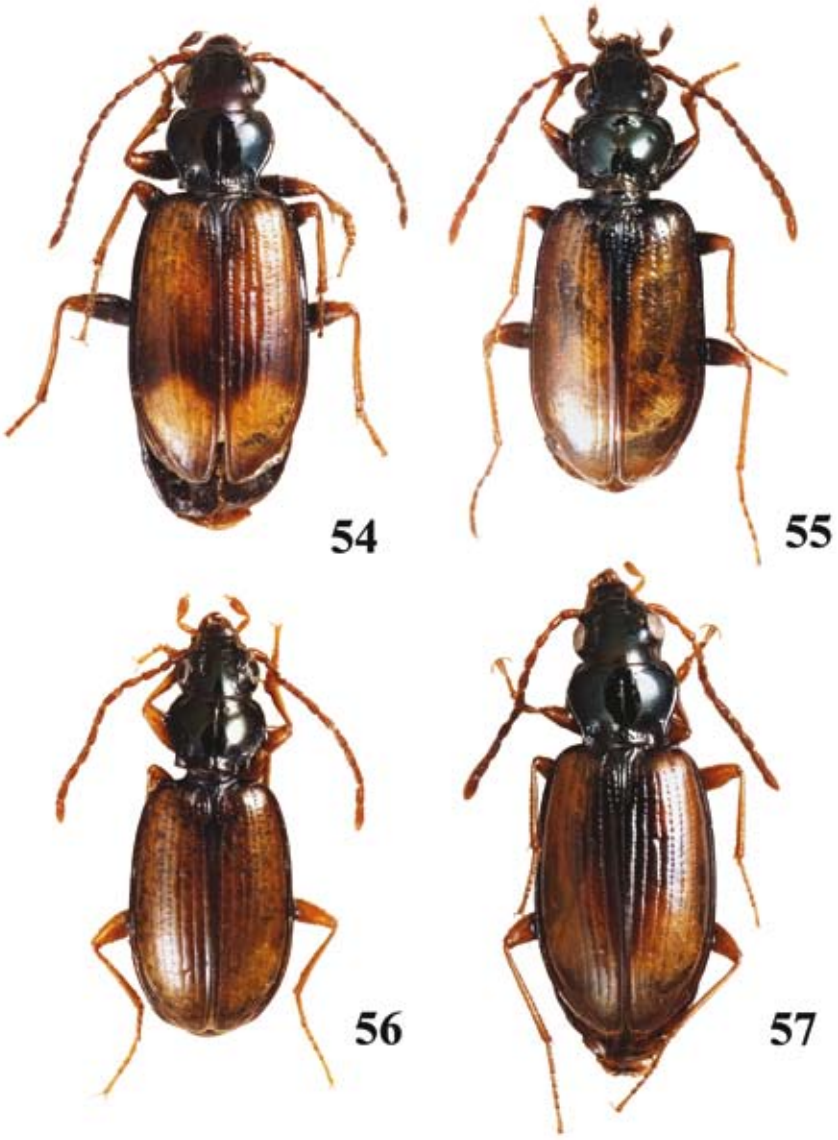


Figs. 45-47. Habitus of: 45: *Bembidion* (*Ocyturanes*) *circassicum* Rtt., Russia Krasnodar, Centralny (Psakhe riv.) (5.30 mm); 46: *B.* (O) *subcylindricum kyros* Net., N Iran, 2400 m, 8 km NE Ziaran (4.20 mm); 47: *B.* (O) *tauricum frivakdszkyi* Csiki, TR Nord occ. Bursa, Uludag 1900-2000 m (5.00 mm).

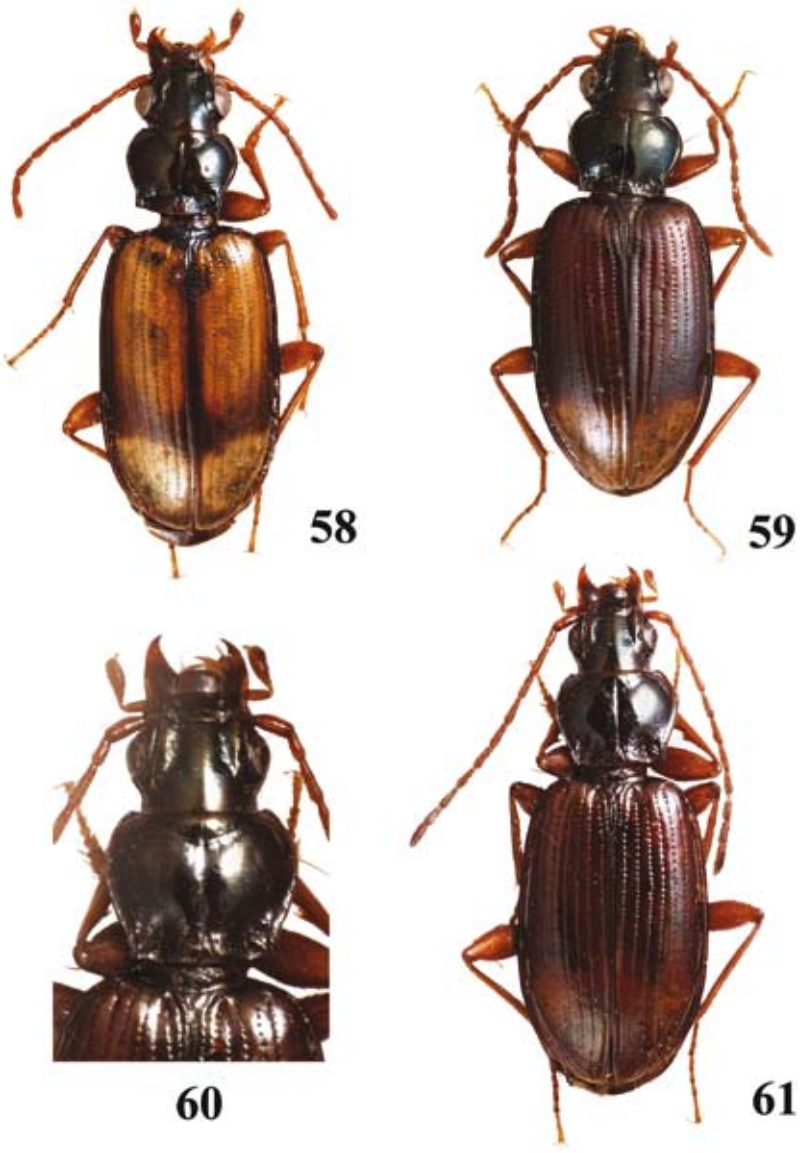


Figs. 48-49. Habitus of; 48: *Bembidion* (*Ocyturanes*) *culminicola* Pioch.la Brül., Type (4.50 mm); 49: *B.* (O) *davatchii* Morvan, Iran – Elburz Gash.i.Sar, 2700 m, paratypus (4.80 mm).

Figs. 50-53. Detail of the temples of: 50: *Bembidion* (*Ocyturanes*) *culminicola* Pioch.la Brül., topotypical specimen, Mt Sannin; 51: *B.* (O) *davatchii* Morvan, Iran – Elburz_Gash.i.Sar, 2700 m, paratype; 52: *B.* (O) *parsorum* Net., lectotype; 53: *B.* (O) *hoberlandtianum* Fass., O. Afghanistan, Tangi-Gharuh 1600 m am Kabulfluss, holotype.

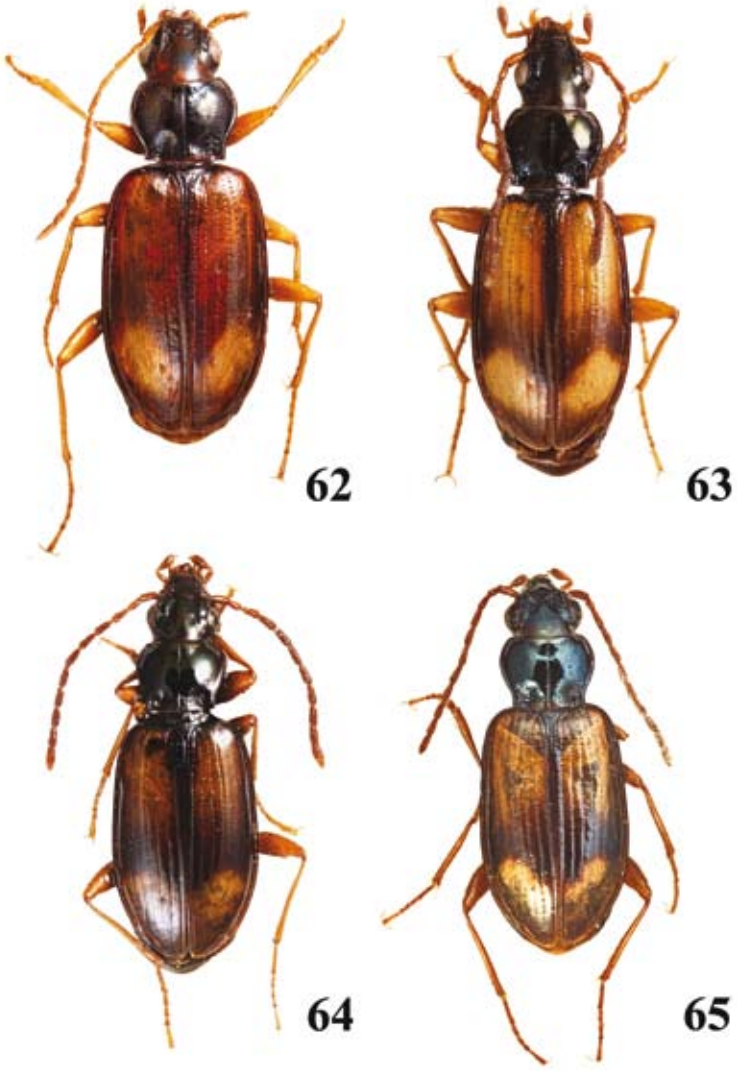


Figs. 54-57. Habitus of: 54: *Bembidion* (*Ocyturanes*) *parsorum* Net., Lectotype (4.30 mm); 55: *B.* (*O.*) *muilwijki* Neri&Tol., holotype (4.00 mm); 56: *B.* (O) *marginipenne* Solsky, Tajikistan, W Serawschan-Gbg.Kschtut, 1300 m (3.65 mm); 57: *B.* (O) *samai* Neri&Tol., Afghanistan, Vt N Salang 1450 m Khenjan, bord torrent, paratype (4.15 mm).

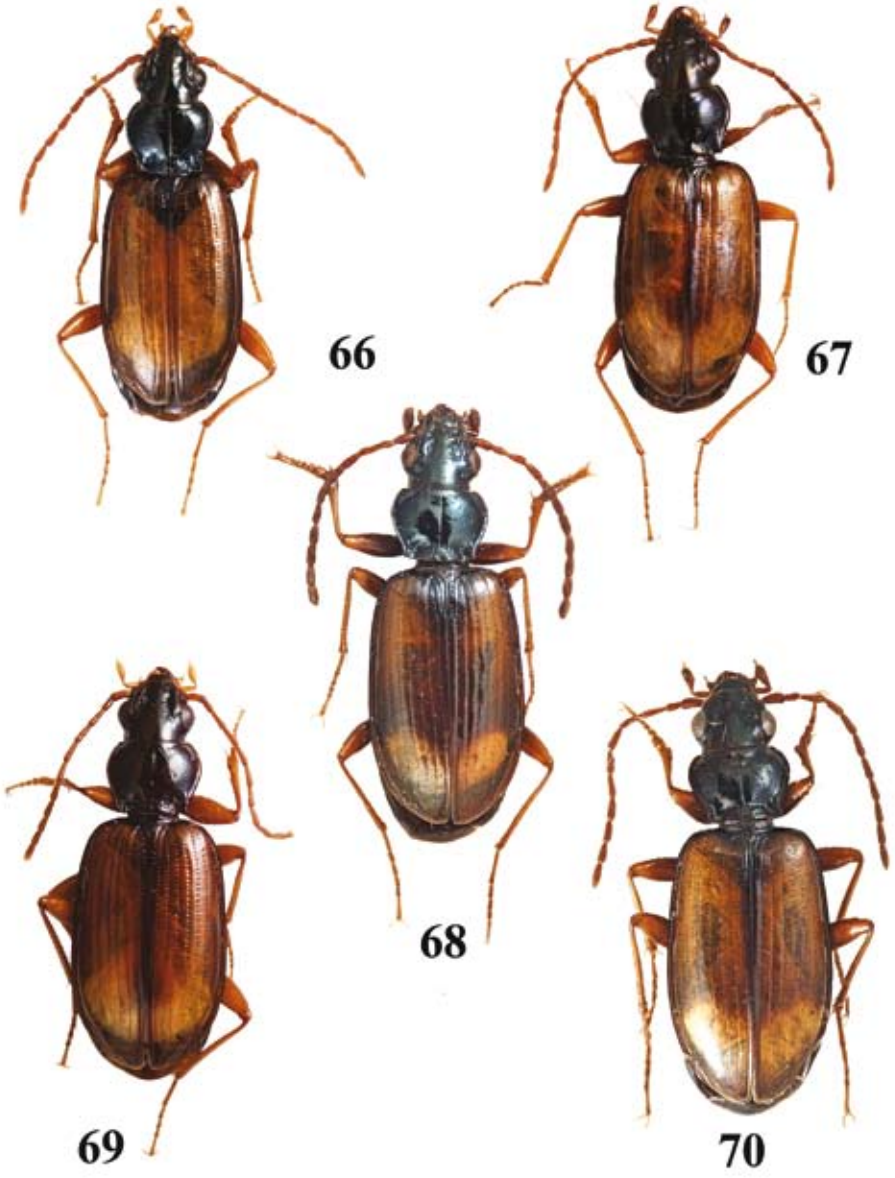


Figs. 58-59, 61. Habitus of: 58: *Bembidion* (*Ocyturanes*) *hoberlandtianum* Fass., O. Afghanistan Tangi-Gharuh 1600m am Kabulfluss, holotypus (5.00 mm); 59: *B.* (*O.*) *babaulti* Andr., West Pakistan, Rawalpindi Umg. 700 m (4.70 mm); 61 *B.* (*O.*) *kiritshenkoi* Mikh., Kazakhstan, W Tien-Shan N sl.Talass Alatau, Aksu-Dzhabagly Kshi-Kaindy, 2000 m (5.20 mm).

Fig. 60. Temples and pronotum of *B.* (*O.*) *kiritshenkoi* Mikh., Kazakhstan, W Tien-Shan N sl.Talass Alatau, Aksu-Dzhabagly Kshi-Kaindy, 2000 m.



Figs. 62-65. Habitus of: 62: *Bembidion* (*Ocyturanes*) *eucheres* Net., Kuljab O. Buchara, paratype (4.70 mm); 63: *B.* (*O.*) *eucheres michailovi* Müll.-Mtzf., Tajikistan, Hissar Alai, Warsob-Schlucht b. Dushanbe 2000 m, paratype (4,70 mm); 64: *B.* (*O.*) *urarteum* Neri&Tol., holotype (4.35 mm); 65: *B.* (*O.*) *dyscheres* Net., Kuljab O.Buchara, paratype (4.10 mm).



Figs. 66-70. Habitus of 66: *Bembidion* (*Ocyturanes*) *schnitteri* Neri&Tol., holotype (4.30 mm); 67: *B.* (*O.*) *rohanum* Neri&Tol., holotype (4.55 mm); 68: *B.* (*O.*) *ronfelixi* Neri&Tol., holotype (4,70 mm); 69: *B.* (*O.*) *ioheli* Neri&Tol., holotype (4.55 mm); 70: *B.* (*O.*) *ronfelixi* Neri&Tol., Usbekistan, Pamir Alai Chamsaabad b. Fergana 1800 m, paratype (4.90 mm).

Chiavi per le specie del gruppo ***marginipenne*** Solsky, 1874 del Subg. ***Ocyturanes*** Müller-Motzfeld, 1986

Per la determinazione delle specie è indispensabile la visione dell'edeago.
Nelle chiavi il simbolo (!) significa che la presenza in una determinata località, già nota in letteratura, è stata confermata durante questo studio; il simbolo (!!) significa che una nuova località di una specie nota è riportata per la prima volta nel presente lavoro. Le località note in letteratura, ma non confermate durante questo lavoro, potrebbero essere erronee, e riferirsi a qualcuna delle specie nuove descritte in questo lavoro.

1 zampe con femori nettamente oscurati o nerastri fino all'estremo apice che è rossiccio.....2

- zampe totalmente chiare, testacee o bruno rossicce; raramente i femori più o meno oscurati o rabbruniti nella metà basale, al lato inferiore o per due terzi 4

2 tempie più evidenti, più lunghe e oblique verso il collo (fig. 50); elitre lisce o con leggera microscultura solo nel quarto apicale (♂) o nel terzo apicale e ai margini omerali (♀); elitre rossicce, con sutura, fascia trasversa, margini e apice bruno oscurati; penultimo articolo dei palpi da rossiccio a nerastro; 7a stria evidente come le altre; antenne ferruginee o nerastre con l'esclusione di uno o due articoli basali rossastri; 4.50 – 5.00 mm; edeago (fig. 25) con terzo apicale molto affusolato, decisamente piegato ventralmente, sclerite principale e lamina paracopulatrice (Neri & Vigna-Taglianti, 2010) raggiungenti il terzo apicale, 0.97 – 0.99 mm; Libano (!), Siria, Turchia (!) (Marggi et al., 2017)..... ..... ***culminicola*** Piochard de la Brûlerie, 1876 (fig. 48)

- tempie brevissime o quasi nulle, che si fondono col collo in modo appena obliquo (figg. 52, 55).....3

3 occhi sporgenti; elitre giallo testacee con due grandi macchie preapicali giallastre, fascia suturale scura solitamente quasi svanita, fascia trasversa scura più o meno delineata, margini laterali scuri, area scutellare leggermente più scura, completamente reticolate a maglie trasverse; antenne testaceo chiare, a volte con i primi due articoli chiari e gli altri leggermente oscurati; penultimo articolo dei palpi più o meno oscurato; settima stria quasi svanita o accennata da punti molto fini (punti di spillo); 4.30 – 5.20 mm; edeago (fig. 27) tozzo, terzo apicale non o poco affusolato ed estremo apice appena piegato ventralmente, 0.89 - 1.00 mm; spermateca (fig. 4); Azerbaijan (!), Armenia (!), Iran (!), Iraq, Kyrgyzstan, Tadjikistan,

Turkmenistan (!), Turchia (!), Uzbekistan (!), (Marggi et al., 2017); Kazakistan (!!)..... ***parsorum*** Netolitzky, 1934 (*iranicum* Jedlicka, 1962) (fig. 54)

Kazakhstan, Umg. Maldy-Kargan, Flussufer Karatal (CTVR); Turkmenia mer., Chr. Kugi Tang Tau, Svincovji Rudnik (PN, CTVR).

- occhi meno sporgenti; elitre testacee con due grandi macchie preapicali giallastre; interstria suturale, margini laterali, area scutellare e omeri bruno scuri o neri, 7a e 8a interstria più scura delle altre; fascia trasversa appena accennata; microscultura elitrale da appena accennata a mancante; antenne castano chiare con spesso i primi due articoli più oscurati, i rimanenti articoli della metà basale in parte più o meno oscurati, quelli della metà apicale leggermente più chiari; penultimo articolo dei palpi oscurato, talvolta anche quelli basali; 3.80 – 4.70 mm; edeago (fig. 28) più stretto e slanciato, terzo apicale più affusolato e piegato ventralmente, 0.82 - 0.89 mm; spermateca (fig. 3); Iran..... ***muilwijki*** **n.sp** (*parsorum* ssp. nov. in Netolitzky, 1943?) (fig. 55)

4 occhi sporgenti; tempie brevissime o quasi nulle, che si fondono col collo in modo appena obliquo (fig. 53).....5

- occhi meno sporgenti; tempie più lunghe, che si fondono col collo in modo più o meno obliquo.....6

5 elitre testacee, testaceo giallastre (simile a *parsorum*) con bordi e interstria suturale marrone o bruno scuro, fascia trasversa marrone più o meno distinta e due macchie giallastre nel quarto apicale; elitre meno convesse, omeri meno larghi, in rapporto al pronoto; strie elitrali meno profondamente impresse; appendici chiare, palpi con penultimo articolo leggermente oscurato all'apice; 4.70 – 5.20 mm; edeago (fig. 36) con margine inferiore rettilineo, quarto apicale piegato ventralmente e endofallo quasi completamente contenuto nel lobo mediano, 0.95 - 0.99 mm; Afghanistan (!), Kazakistan, Uzbekistan, Tadjikistan, Kyrgyzstan (Marggi et al., 2017)..... ***hoberlandtianum*** Fassati, 1959 (fig. 58)

Abbiamo visto alcune centinaia di esemplari di *parsorum* e notato che l'oscuramento dei femori quasi totale è un carattere sempre presente. In CTVR abbiamo osservato alcuni esemplari provenienti dal Kyrgyzstan (15 exx. di cui la maggioranza immaturi, S. Kirgizia, Osh. Reg. 25 Km SW Isphara, Ak Tash mts, H-2500, 3.06.96, Putschkov leg.) e dal Tadjikistan (2 exx., Seravshan Geb. Kette, Masor-Scharif. 1800 m, 02.06.1984 Michailov; 1 ex., Sawron-Schlucht, 2000-2400 m, 2.07.1991, W. Dolin) che presentano caratteri esoscheletrici simili ad *hoberlandtianum*, ma con organi genitali identici a *parsorum*. Riteniamo quindi che possano

appartenere ad una nuova sottospecie (o varietà di colore) di *parsorum*, ma non prendiamo decisioni in attesa di maggior materiale.

- elitre brune o bruno chiare con macchie apicali giallastre occupanti tutto il quarto apicale; elitre più convesse, omeri più larghi, rispetto al pronoto, strie elitrali più profondamente punteggiate; appendici chiare con antenne a volte leggermente oscurate; 4.30 – 4.90 mm; edeago (fig. 37) con terzo apicale nettamente piegato ventralmente e molto affusolato, 0.96 mm; spermateca (fig. 10); India (Kashmir (!), Himachal Pradesh (!), Uttar Pradesh (!)), Pakistan (!), Afghanistan (!), Cina (Sichuan) (Marggi et al., 2017)..... .....***babaulti*** Andrewes, 1924 (fig. 59)

  Afghanistan, E, Nangarhar prov., Dara-i-nur, 1500m. leg. Reuter ((CR, CTVR); Afghanistan, Paktia, Khot-Gaï, (Shahidan), 2500m, G. Ledoux (DE, CTVR).

6 specie piccole, 3.50 – 4.40 mm; edeago 0.72 – 0.79 mm, apice non chiaramente affusolato; elitre testacee o bruno cuoio, testaceo chiare a volte schiarite all'apice con interstria suturale bruno scura; oppure elitre bruno rossastre con due macchie giallastre preapicali, prime due o tre interstrie fino alle macchie preapicali e apice bruno oscurati.....7

- specie più grandi, 4.20 – 5.50 mm, con edeago più grande, oltre 0.81 mm; oppure elitre a disegno cruciforme o elitre unicolori gialle senza oscuramento delle strie suturali.....8

7 elitre testacee o bruno cuoio con fascia trasversa inesistente o raramente appena indicata, quarto apicale solitamente più chiaro, interstria suturale bruno scura; tutte le appendici testaceo chiare, a volte le antenne leggermente offuscate dal quarto articolo; elitre con microscultura a maglie corte trasverse; 3.65 – 4.25 mm; edeago (fig. 29) 0.73 – 0.78 mm; spermateca (fig. 6); Afghanistan, Uzbekistan (!), Kazakistan (!), Tadjikistan (!), Kyrgyzstan (!) (Marggi et al., 2017)..... ..... ***marginipenne*** Solsky, 1874 (fig. 56)

- elitre testaceo rossastre con due macchie giallastre preapicali a contorni indefiniti; prime due o tre interstrie fino alle macchie preapicali, margini laterali ed apice bruno nerastri; tutte le appendici testaceo chiare o antenne lievemente oscurate dal quarto articolo; elitre con microscultura a maglie corte trasverse; 3.50 – 4.40 mm; edeago (fig. 30) 0.72 – 0.78 mm; spermateca (fig. 5); Afghanistan..... ***samai*** **n.sp.** (fig. 57)

8 edeago (fig. 26) di dimensioni maggiori 1.07 – 1.18 mm, estremo apice

piegato ventralmente anche notevolmente; pronoto con doccia laterale larga, base con punteggiatura molto superficiale e base del pronoto di solito lievemente più larga dell'apice; elitre uniformemente giallo brune, testaceo chiare o bruno rossicce compreso l'interstria suturale; parte preapicale leggermente schiarita o con due macchie preapicali gialle a contorni indefiniti, apice bruno; tempie lunghe e oblique (fig. 60); zampe, palpi e antenne testaceo chiare o giallo brune; reticolazione elitrale a maglie trasverse; 4.70 – 5.50 mm; spermateca (fig. 7); Kyrgyzstan (!), Uzbekistan (!), Afghanistan (Marggi et al., 2017); Tadjikistan (Iskanderkul– dalla descrizione originale); Kazakistan (!!)..... ***kiritschenkoi*** Mikhailov, 1984 (fig. 61)

Turkestan, Mt. R. Buldzhuma, (trib. of Lialliak) 2900 m, Kabak leg. (SF); Kazachstan, Džambul, Kara-tau, Kuyuk, lgt. V. Bìža (KR).

- edeago di dimensioni minori, 0.82 – 1.06 mm o pronoto con doccia laterale stretta o elitre con disegno a croce evidente o completamente testacee, bruno cuoio, con interstria suturale bruno scura o con macchie preapicali più o meno distinte.....9

9 tempie appena oblique (simili a *stephensi* Crotch), lunghe poco più di un terzo dell'occhio (fig. 51); base del pronoto profondamente rugoso punteggiata; elitre ad omeri e lati tondeggianti, microscultura appena percettibile e più visibile nel terzo apicale; elitre rosso brune, margini laterali, a volte la stria suturale e apice più oscurati, a volte una fascia trasversa più oscurata; macchie preapicali più o meno evidenti, oblique e giallastre; penultimo articolo dei palpi e zampe testacee, antenne testacee o leggermente oscurate dal terzo o quarto articolo; 4.65 – 5.30 mm; edeago (fig. 24) con strutture interne contenuto nell'endofallo, sclerite principale e lama paracopulatrice rivolti verso il margine superiore, 0.98 – 1.04 mm; spermateca (fig. 8); Iran (!), Armenia, Azerbaijan, Afghanistan (Marggi et al,. 2017)..... ***davatchii*** (Morvan, 1971) (fig. 49)

- tempie oblique e più corte.....10

10 edeago più grande: 0.93 – 1.06 mm, margine ventrale lineare con parte apicale appena piegata ventralmente, strutture interne che fuoriescono leggermente nel bulbo basale, lama paracopulatrice piegata chiaramente verso il margine ventrale (figg. 31, 32)..... 11

- edeago più piccolo: 0.82 – 0.98 mm, margine ventrale con parte apicale chiaramente piegata ventralmente, strutture interne contenute nell'endofallo,

nel bulbo basale potrebbe fuoriuscire soltanto l'inizio della sclerite principale, lama paracopulatrice distesa verso l'apice o verso il V dell'ostio, oppure chiaramente piegata verso il margine superiore (figg. 24, 34, 40).....12

11 elitre bruno cuoio o testacee con interstria suturale bruno scura e indistinta fascia trasversa bruno scura chiaramente delimitata solo nella parte inferiore, apice bruno scuro, grandi macchie preapicali giallastre; microscultura elitrale a strigosità irregolare o sottile reticolo trasverso; 4.40 – 5.20 mm; edeago (figg. 31) 0.93 – 1.06 mm; spermateca (fig. 9); Tadjikistan (!), Kyrgyzstan (!), Kazakistan, Uzbekistan (!) (Marggi et al., 2017); Afghanistan (!!)..... ..... ***eucheres eucheres*** Netolitzky, 1943 (fig. 62)

Afghanistan, Col du Salang, 2500 m, Leg. G. Ledoux (CTVR); Afghanistan, Khawak, Pied de la Ville Rouge, 2500 m, Leg. ledoux (CTVR).

Mikhailov (1984) descrive la sottospecie seguente che si distingue dalla forma tipica unicamente per la punteggiatura delle strie elitrali più grossolana (la forma tipica presenta alcune strie con punteggiatura moderatamente grossolana e altre con questa appena percettibile); la colorazione elitrale può essere un carattere differenziale anche se lo stesso autore segnala che la colorazione di entrambe le entità è estremamente variabile: nella sottospecie descritta la parte anteriore è completamente nera o marrone scuro e le macchie apicali molto nitide; l'edeago non presenta differenze rilevanti; non abbiamo visto alcun esemplare, tutti i dati e i caratteri sono tratti dalla descrizione; Tadjikistan (Darvaz Range, Kohzratisho Range)..... ..... ***eucheres darvasicum*** Mikhailov, 1984

- elitre con disegno cruciforme più o meno evidente; microscultura elitrale con sottile reticolo trasverso; 4.00 – 5.10 mm; edeago (fig. 32) 0.95 – 1.00 mm; Tadjikistan (!) (Hissar Gebirge)..... .....***eucheres michailovi*** Müller-Motzfeld, 1986 (fig. 63)

12 elitre a disegno chiaramente cruciforme.....13

- elitre testacee, testaceo rossicce o testaceo giallastre; di colore uniforme o con macchie preapicali giallastre o apice schiarito; fascia trasversa assente o appena accennata.....15

13 reticolazione elitrale sottile, trasversa e di difficile visibilità sul disco; elitre con orlo basale e bordi laterali bruno nerastri; zampe testacee, a volte appena oscurate nella metà basale; antenne appena oscurate dal terzo o quarto articolo; 4.35 – 4.75 mm; margine ventrale dell'edeago (fig. 33) solitamente con una leggera gibbosità, quarto apicale più affusolato, piegato ventralmente, 0.90 – 0.98 mm; spermateca (fig. 11); Turchia, Azerbaijan, Armenia, Iran (Azerbaijan prov.)..... ***urarteum*** **n.sp.** (fig. 64)

- reticolazione elitrale a maglie corte, trasverse ed evidenti; le antenne chiare o testacee; edeago con quarto apicale tozzo e margine ventrale piegato ventralmente in modo più evidente.....14

14 tutte le appendici chiare; 4.20 – 5.00 mm; edeago (fig. 35) più corto, quarto apicale del margine ventrale piegato ventralmente in modo evidente, 0.81 – 0.88 mm; spermateca (fig. 13); Afghanistan (!), Pakistan, Tadjikistan, Iran (!), Uzbekistan (!), Kyrgyzstan (!), Turkmenistan (!) (Marggi et al., 2017) .....***dyscheres*** Netolitzky, 1943 (fig. 65)

Afghanistan, Darah-e-Chekari (Route de Bamyan à Adjar). 2000 m. Leg. Ledoux (DE); Afghanistan, A mont de Bamyan, Leg. Ledoux (DE).

- femori rabbruniti o solo al lato inferiore o al massimo per due terzi; 4.50 – 5.20 mm; edeago (fig. 34) leggermente più lungo, margine ventrale leggermente convesso o più o meno rettilineo con quarto apicale piegato ventralmente meno decisamente, 0.90 – 0.98 mm; spermateca (fig. 12); Uzbekistan, Kyrgyzstan, Kazakistan..... ***ronfelixi*** **n.sp.** (fig. 68)

15 elitre a colorazione uniforme, testacee, testaceo chiare o testaceo giallastre, senza fascia trasversa, macchie preapicali mancanti o con solo uno schiarimento apicale; reticolazione elitrale sottile, trasversa; tutte le appendici chiare, spesso ferruginee, femori a volte leggermente oscurati alla base e palpi oscurati all'apice; 4.20 – 5.15 mm; edeago (fig. 39) con quarto apicale piegato ventralmente sia lievemente sia evidentemente, spesso il margine ventrale con una leggera gibbosità, 0.87 – 0.94 mm; spermateca (fig. 14); Iran . ..... ***schnitteri*** **n. sp.** (fig. 66)

- elitre con chiare ed evidenti macchie apicali.....16

16 edeago (fig. 38) nel complesso più snello, con margine ventrale leggermente concavo e piegato ventralmente, 0.85 – 0.91 mm; elitre testaceo rossicce con due macchie preapicali giallastre a contorni indefiniti, fascia trasversa mancante; 4.40 – 4.90 mm; spermateca (fig. 15); Pakistan... .....***ioheli*** **n. sp.** (fig. 69)

- edeago più voluminoso, con il margine ventrale concavo oppure rettilineo o con una leggera gibbosità, quarto apicale più o meno piegato ventralmente..... 17

17 elitre testaceo chiare con fascia trasversa poco evidente, a volte quasi mancante o solo più evidente vicino alla stria suturale; macchie apicali giallastre grandi

ed evidenti; reticolazione elitrale corta, trasversa; tutte le appendici chiare, spesso ferruginee; 4.30 – 4.90 mm; edeago (fig. 34) con quarto apicale evidentemente piegato ventralmente, 0.82 – 0.94 mm; spermateca (fig. 12); Afghanistan..... ***rohanum*** **n.sp.** (fig. 67)

- elitre bruno cuoio o testacee con interstria suturale bruno scura e indistinta fascia trasversa bruno scura chiaramente delimitata solo nella parte inferiore, apice bruno scuro, grandi macchie preapicali giallastre; femori rabbruniti o solo al lato inferiore o al massimo per due terzi; 4.50 – 5.20 mm; edeago (fig. 34) con margine ventrale leggermente convesso o più o meno rettilineo con quarto apicale piegato ventralmente, 0.90 – 0.98 mm; spermateca (fig. 12); Uzbekistan, Kyrgyzstan, Kazakistan..... .....***ronfelixi*** **n.sp.** (fig. 70)

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