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**Notes on genus *Bembidion* Latreille, 1802, subgenus *Ocyturanus*
Müller-Motzfeld, 1986,
subcylindricum group and description of two new species**

(Insecta: Coleoptera: Carabidae: Bembidiina)

Abstract

Some taxonomic and geographical topics of genus *Bembidion* Latreille, 1802 subgenus *Ocyturanus* Müller-Motzfeld, 1986 are discussed.

The following new species are described: *Bembidion (Ocyturanus) luristanicum* n. sp. (Iran) and *Bembidion (O.) bamyanense* n. sp. (Afghanistan).

Bembidion kyros Netolitzky, 1931, formerly ranked as subspecies of *subcylindricum* Reitter, 1892, is here raised to **bona species**.

Lectotype and paralectotypes of *Bembidion subcylindricum kuliabense* Netolitzky, 1931 and *Bembidion subcylindricum kyros* Netolitzky, 1931 are designated.

New distribution records are given for *Bembidion (Ocyturanus) kyros* Netolitzky, 1931 (new to Turkey) and *Bembidion (O.) subcylindricum kuliabense* Netolitzky, 1931 (new to Afghanistan).

The key for the species groups of subgenus *Ocyturanus* formerly published (NERI & TOLEDANO, 2017) is corrected, and a key for the species of the *subcylindricum* group is also provided in Italian and in English.

Key words: *Bembidion*, *Ocyturanus*, taxonomy, holotype and lectotype designation, new species, Afghanistan, Iran, Kyrgyzstan, Tajikistan, Turkey, identification keys.

Riassunto

[*Note sul genere Bembidion Latreille, 1802, sottogenere Ocyturanus Müller-Motzfeld, 1986, gruppo subcylindricum e descrizione di due nuove specie (Insecta: Coleoptera: Carabidae: Bembidiina)*]
Sono discussi alcuni aspetti tassonomici e geografici del genere *Bembidion* Latreille, 1802 sottogenere *Ocyturanus* Müller-Motzfeld, 1986.

Le seguenti nuove specie sono qui descritte: *Bembidion (Ocyturanus) luristanicum* n. sp. (Iran); *Bembidion (O.) bamyanense* n. sp. (Afghanistan).

Bembidion kyros Netolitzky, 1931, precedentemente ritenuto sottospecie di *subcylindricum* Reitter, 1892, viene qui elevato a **buona specie**.

Vengono designati il lectotipo e i paralectotipi di *Bembidion subcylindricum kuliabense* Netolitzky, 1931 e *Bembidion subcylindricum kyros* Netolitzky, 1931.

Vengono forniti nuovi dati di distribuzione per *Bembidion (Ocyturanus) kyros* Netolitzky, 1931

(nuove citazioni per Turchia) e *Bembidion (O.) subcylindricum kuliabense* Netolitzky, 1931 (nuove citazioni per Afghanistan)._

Viene corretta la chiave di identificazione dei “gruppi specie” del sottogenere *Ocyturanus* pubblicata in precedenza (NERI & TOLEDANO, 2017) e fornita una chiave per le specie del gruppo *subcylindricum* in italiano e in inglese.

Introduction

The subgenus *Ocyturanus* Müller-Motzfeld, 1986 has been divided by the author himself in species groups exclusively to make their identification easier; this division does not necessarily have a significance of phylogenetic affinity. The *subcylindricum* Reitter, 1892 group is recognizable from the other species groups by having the elytra more or less parallel sided and with subquadrate shoulders, giving to the species a general cylindrical appearance.

We decided to study in depth the *subcylindricum* group because we received for study species, that in our opinion, were not yet described, because we discovered that some taxa are known only from the original descriptions, moreover some are short and incomplete, and because are almost missing any illustrations of the genitalia. We prepared also a new key for the identification of the whole group.

Materials and methods

We examined the external morphology, male and female genitalia and literature for almost all the species belonging to the subgenus *Ocyturanus*, *subcylindricum* group. We examined 530 exx. The type series or paratypes of all species were studied.

Some of the measurements are expressed in the text by abbreviations and were combined in ratios as follows:

Ew/Hw: elytral width / head width ratio.

Pw/Pl: pronotal width / pronotal length ratio.

The measurements of the total length were taken from the apex of labrum to the elytral apex. Dissections were made using standard techniques. Genitalia and small parts were preserved in Euparal on acetate mounts or on glass slides fixed to card mounts pinned underneath the specimens. The photographs are composite images with progressive focusing obtained with a Nikon DSFi1 digital camera controlled by a Nikon DS-L2 stand-alone remote controller mounted on a Leica Z6 microscope equipped with a 1.0x Leica lens and a customized motorized stand made by LT, then processed on a Macintosh Mac Book Pro quad-core computer with Helicon Focus ® 6.7.1 program and then optimized with Photoshop® Elements 14 on the same computer. Photographs of the aedeagi were made with the same setup and processing method described above, while using a 5x Infinity Corrected Nikon Fluor lens on the Z6 microscope.

The drawings of the spermathecae were made by Ivo Gudenzi. Photos of the habitus of the type specimens of Reitter, Netolitzky and of *Bembidion (Ocyturanus) luristanicum* sp.n. were made including the original mounting cards, they were not removed from the images.

The following acronyms are used:

AVT	coll. Augusto Vigna Taglianti, Roma
CR	coll. Christoph Reuter, Hamburg
CTVR	coll. Luca Toledano, Verona
DE	coll. Dominique Echaroux, Etréchy
DW	coll. David Wrase, Gusow – Platkow (part of Zoologische Staatssammlung, München)
JM	coll. Jan Muilwijk, Bilthoven
HNHM	Hungarian Natural History Museum, Budapest
MHB	Museum für Naturkunde, Berlin
NHMW	Naturhistorisches Museum, Wien
NMPC	National Museum of Natural History, Prague
PN	coll. Paolo Neri, Forli
SMTD	Senckenberg Museum für Tierkunde, Dresden
VZ	coll. Vladimír Zieris, Pardubice

Updated key for species groups

The following descriptions of new species required us to correct some parts of the key for species groups of subgenus *Ocyturanus*, published in NERI & TOLEDANO (2017). The correction includes couplet 2 and is here provided in English and Italian:

- 2 Ew/Hw < 1.70; elytra with more or less parallel sides and subquadrate shoulders, with cylindrical shape; in *kyros* Netolitzky, 1931 antennae with antennomeres short and stout and antennomere 3 longer than 4th ...
**subcylindricum** Reitter, 1892 group
subcylindricum subcylindricum Reitter, 1892; *subcylindricum kuliabense* Netolitzky, 1931; *kyros* Netolitzky, 1931; *luristanicum* **n. sp.**; *bamyanense* **n. sp.**
- Ew/Hw > 1.75; elytra with sides and shoulders more or less rounded, elytra sometimes ovoid3

Chiave aggiornata per i gruppi di specie del sottogenere *Ocyturanes* con riferimento a NERI & TOLEDANO (2017).

- 2 larghezza elitre / larghezza capo < 1.70; elitre a margini laterali più o meno paralleli e omeri subrettangolari, dall'aspetto cilindrico; in *kyros* Net. antenne con articoli corti e spessi e 3° articolo più lungo del 4°
.....gruppo ***subcylindricum*** Reitter, 1892
subcylindricum subcylindricum Reitter, 1892; *subcylindricum kuliabense* Netolitzky, 1931; *kyros* Netolitzky, 1931; *luristanicum* n. sp.; *bamyanense* n. sp.
- larghezza elitre / larghezza capo > 1.75; elitre a margini laterali e omeri più o meno tondeggianti, elitre a volte ovoidali3

Species of *subcylindricum* group

Bembidion (Ocyturanes) subcylindricum subcylindricum Reitter, 1892
(figs 2, 10, 14)

Bembidion (Peryphus) subcylindricum Reitter, 1892: 59

Historical notes. REITTER (1892) describes *Bembidion (Peryphus) subcylindricum* on specimens collected in swamps at Tashkent; it is obvious the description is based on several specimens, but there is no mention of their number; it is exhaustive, even though there are some imprecisions; there is no mention of the elytral microsculpture.

NETOLITZKY (1931), in the paper where he describes *kuliabense* and *kyros* as subspecies of *subcylindricum*, reports that the only specimen belonging to the type series in his availability has the hind pronotal angle not acute, as mentioned in the description, but obtuse; he also reports that the elytral microsculpture is full in the ♀♀, while in the ♂♂ is visible only at apex (observation probably done on non typical material).

NETOLITZKY (1943) includes the species into the subgenus *Peryphus*, *nitidulum* group (NETOLITZKY, 1943 page 47/143) and suggests a variability in the elytral colour, from light brown with preapical yellow spot to almost four-spotted (Netolitzky, 1943 page 51/147); for the first time the species is mentioned also as belonging to the “Gruppe des *subcylindricum*” (NETOLITZKY, 1943 page 46/142). MÜLLER-MOTZFELD (1986) includes *subcylindricum* among the species of the newly described subgenus *Ocyturanes*; in the paper he outlines the aedeagus (MÜLLER-MOTZFELD, 1986, page 35) without mentioning to which specimen it belongs.

Belousov (in KRYZHANOVSKIJ et al., 1995, note 181) ascertains that the type series is distinguishable from the subspecies *kuliabense* Netolitzky, 1931 by the

elytral microsculpture. MARGGI et al. (2017) report for Kyrgyzstan, Tajikistan and Uzbekistan the nominotypical form, listed into the subgenus *Ocyturanus*.

Material examined. From HNHM: one ♂ with four labels: “Turkestan / Taschkent [printed] // coll. Reitter [printed] // *B. subcylindricum* m. / 1897 Taschkent [handwritten] // [label bordered in red] Holotypus [printed] 1892 / *Bembidion / subcylindricum* / Reitter [handwritten]”; the specimen lacks the left median leg; the aedeagus is preserved in Euparal on acetate label on the same pin as the specimen.

One ♂ with three labels: “Turkestan / Taschkent [printed] // coll. Reitter [printed] // [label bordered in red] Paratypus [printed] 1892 / *Bembidion / subcylindricum* / Reitter [handwritten]”; the specimen lacks the right antenna, four antennomeres of the left antenna and the left fore leg; the aedeagus is preserved in Euparal on acetate label on the same pin as the specimen. Two ♂♂, labelled: “Taschkent / Leder. Reitter [printed]”; one lacks the right fore leg.

From NHMW: one ♀ with four labels, “Taschkent / Reitter dedit [handwritten] // coll. / Netolitzky [printed] // Type von Reitter / *subcylindricum* [handwritten] / Col. Netolitzky [printed] // TYPUS [red, printed].

From SMTD, three specimens: one ♂, with three labels: “*B. subcylindricum* m. / 1897 Taschkent [handwritten] // *subcylindricum* [handwritten] / det. Netolitzky [printed] // Coll. Prof. Noeske / Ankauf 1947”. A ♀ with three labels: “Taschkent [handwritten] // *subcylindricum* / com. Reitter [handwritten] // Sammlg. Dr. Dormeyer / Ankauf 1952”; the spermatheca is preserved in Euparal on acetate label on the same pin as the specimen. One ex. with four labels: “Taschkent / Leder. Reitter [printed] // *subcylindricum* / com. Stauding. [handwritten] // *B. subcylindricum* / R. [handwritten] // Sammlg. Dr. Dormeyer / Ankauf 1952”. All these three specimens bear also the following label: “Senckenberg Natur- / hist. Sammlungen / Dresden, Museum / für Tierkunde (MTD) [printed].

We think that all the specimens mentioned here have been used for the description and then sent to collectors or specialists; we confirm as holotypus and paratypus the specimens of HNHM already labelled in this way; to all the other specimens we added the following red label: *Bembidion (Peryphus) subcylindricum* Reitter, 1892 – PARATYPUS - P. Neri & L. Toledano vidit 2018; to all the specimens we also added the following label: *Bembidion (Ocyturanus) subcylindricum* Rtt. – Neri & Toledano det. 2018.

Remarks. In the description of the species, while clear and rather exhaustive, there is no mention regarding the elytral microsculpture and some characters are mentioned in a wrong or inaccurate way. Also NETOLITZKY (1931, 1943) is unclear regarding the microsculpture of the species; in fact the elytra are completely microsculptured in both sexes, even though sometimes the microsculpture is difficult to see on the disc; from the examination of six specimens belonging to the type series, we noticed that the hind pronotal angles are slightly obtuse; the

seventh stria is punctured as deep as the others or with slightly thinner punctures; the length is from 5.40 to 6.00 mm.

Regarding the genitalia, we report that in the aedeagus (1.11 – 1.16 mm) the apical quarter is evidently bent ventrally, the endophallus slightly protrudes from the basal opening, the paracopulatrix lamina is extended towards the ostial flag or the apex (fig. 10); the spermatheca (0.14 mm) has the proximal cavity similar to the distal one and trasversal in respect to the other one (fig. 2).

Finally, the species is reported for Kyrgyzstan, Tajikistan and Uzbekistan (MARGGI et al., 2017); we examined a large number of specimens of this group, but the nominotypical form of *subcylindricum* seems confirmed only from Tashkent (Uzbekistan); we think that Kyrgyzstan and Tajikistan need to be confirmed.

Bembidion (Ocyturanes) subcylindricum kuliabense Netolitzky, 1931
(figs 3, 11, 15)

Bembidion subcylindricum kuliabense Netolitzky, 1931: 80

Historical notes. NETOLITZKY (1931) describes *B. subcylindricum* subsp. *kuliabense* from Kuliab, Tajikistan. The very short description reports the characters differentiating from the typical form: both sexes with elytral microsculpture only at the extreme apex, penultimate palpomere darkened, base of femora darkened; together with Kuliab, collecting site for the type material, are also reported other localities for some other specimens in the coll. Hauser: Mts Karateghin (Baldschuan, Sary-pul, Ak-su-Tal), Mts. Ghissar, Tschitschantan, Karatag; length: 5 – 6 mm. MÜLLER-MOTZFELD (1986) includes *subcylindricum kuliabense* among the species of the newly described subgenus *Ocyturanes*. MARGGI et al. (2017) report *subcylindricum kuliabense* for Tajikistan, Kyrgyzstan and Uzbekistan.

Material examined. From NHMW: seven ♂♂ and three ♀♀ belonging to the type series; in the description, the number of the paratypes is not mentioned; all specimens have three labels: “Kuliab, / O. Buchara, / Coll. Hauser [printed] // coll. / Netolitzky [printed] // *subcylindricum* / dt Netolitzky [handwritten by Netolitzky]”. We designate as lectotype the ♂ specimen in better condition; to this specimen we added the following red label: *Bembidion subcylindricum kuliabense* Netolitzky, 1931 – LECTOTYPUS – P. Neri & L. Toledano des. 2018.

To the remaining specimens we added the following red label: *Bembidion subcylindricum kuliabense* Netolitzky, 1931 – PARALECTOTYPUS – P. Neri & L. Toledano des. 2018.

From NHMW: 13 ♂♂, 24 ♀♀, “Kuliab, / O. Buchara, / Coll. Hauser [printed] // *subcylindricum* [handwritten] / det. Netolitzky [printed] // Coll. Mus. Vindob.”; the label is the same as that of the type series; probably the material was seen by Netolitzky before the description of the subspecies, in fact all the specimens belong to the subspecies *kuliabense*, but they were determined as “*subcylindricum*”. Six ♂♂, 11 ♀♀ with two labels: “Kuliab, / O. Buchara, / Coll. Hauser [printed] // Coll.

/ Mus. Vindob. [printed]”; the label with the collecting data is the same as the type series. Seven ♂♂, four ♀♀, all with the same label as the type series, but with other labels mentioning old original collections. Seven ♂♂, three ♀♀, “Hissar, Boch. / Coll. Hauser [printed] // Coll. / Mus. Vindob. [printed] // *B. subcylindricum* ssp. / *subcylindricum* Netolitzky [handwritten] // det. M. Fassati, 1996 [printed]”. From other localities mentioned in the description: Mts Karateghin (Baldschuan: 4 exx.; Sary-pul: 5 exx.; Ak-su-Tal: 4 exx.); Mts. Ghissar: 8 exx.; Tschitschantan, 9 exx.; Karatag: 1 ex.

From HHNM: one specimen, “Turkestan / Bokara”. One ♀, “Prov. Kuliab / Ak-sou-Thal / F. Hauser 1898 [printed] // *fuscocomaculat.* / Mtsch. [handwritten] // Coll. Apfelbeck // *subcylindricum* / s. *subcylindricum* Net. [handwritten] / det. Ing. Jedlička”. One ♀, “Mts. Karateghin / Sary-pul / 1482 m F. Hauser 1898 [printed] // Coll. Apfelbeck // *subcylindricum* / s. *subcylindricum* Net. [handwritten] / det. Ing. Jedlička”. One ♂, “Ost-Bukara / Tschitschantan / Coll. Hauser 1898 // Coll. Apfelbeck // *subcylindricum* / s. *subcylindricum* Net. [handwritten] / det. Ing. Jedlička”.

From SMTD: one ♂, “Kuliab / O. Buchara / Coll. Hauser // Samml. O. Lamgen- / han. Kauf 1931. 18 [printed]”. One ♀, “Buchara / Kuliab [handwritten] // Samml. O. Lamgen- / han. Kauf 1931. 18 [printed]”. One ♂, one ♀, “Turkestan / Mts. Ghissar / F. Hauser 1898 [printed]”. One ♀, “*subcylindricum*/ Rtt. [handwritten] // Coll. Prof. Dr. Noeske / Aukauf 1947 [printed]”. One ♂, two ♀♀, “Karatag / 1901 // *subcylindricum* R. / com. Stauding. [handwritten] // Sammlg Dr. Dormeyer / Ankauf 1952 [printed]”. One ♂, “Prov. Kuliab / Ak-sou-Thal [printed] // *subcylindricum* / [unreadable] // Coll. Prof. Dr. Noeske / Aukauf 1947 [printed]”. Seventy exx., “Buchara” // W H Muche. Rade- / berg. Ankauf // Staatl. Museum für / Tierkunde. Dresden [printed]”. All the specimens submitted by SMTD bear the following label: “Senckenberg Natur- / hist. Sammlungen / Dresden, Museum / für Tierkunde (MTD) [printed]”.

From NMPC: one ♀, belonging to the type series, with three labels: “Kuliab, / O. Buchara, / Coll. Hauser [printed] // coll. / Netolitzky [printed] // *subcylindricum* / dt Netolitzky [handwritten by Netolitzky]”; we added to the specimen the following red label: *Bembidion subcylindricum subcylindricum* Netolitzky, 1931 – PARALECTOTYPUS – P. Neri & L. Toledano des. 2018. One ♂, three ♀♀, “Buchara [printed]”. Two ♂♂, two ♀♀, “Kuliab, / O. Buchara, / Coll. Hauser [printed]. One ♂, “OST-Buchara / Tschitschantan / Coll. Hauser 1898 // Coll. Apfelbeck [printed] // s. *subcylindricum* Net. [handwritten] / det. Ing. Jedlička.

From MHB: one ♂, “Kuljab / O. Buchara / Coll. Hauser [printed] // *subcylindricum* [handwritten] / dt. Netolitzky [printed] // *typis collatum* [handwritten]”. One ♂, “Kuljab / O. Buchara / Coll. Hauser [printed] // *subcylindricum* [handwritten] // det. / Wagner [printed]”. Three ♂♂, four ♀♀, “Kuljab / O. Buchara / Coll. Hauser [printed] // Netolitzky dt. [printed] / *subcylindricum* Rtt. [handwritten].

Three ♂♂, two ♀♀, “Kuljab / O. Buchara / Coll. Hauser [printed] // *Bembidion / subcylindricum* Reitt. / Museum f. Naturkunde / Berlin [printed]”. One ♀, “Kuljab / O. Buchara // Coll. Hauser // Dott. Jhssen [printed] // *subcylindricum* Rtt [handwritten]. Two exx., “Buchara” // *Bembidion / subcylindricum* Reitt. / Museum f. Naturkunde / Berlin [printed]”. One ♂, “Buchara // *subcylindr.* [handwritten] // *Bembidion / subcylindricum* Reitt. / Museum f. Naturkunde / Berlin [printed]”. One ♂, “Prov. Kuliab / Ak-sou-Thal / F. Hauser 1898 [printed] // *Bembidium subcylindricum* [handwritten]”.

From CTVR: one ♂, “OST-Buchara / Tschitschantan / Coll. Hauser 1898.

From DW: three ♂♂, three ♀♀, “USSR Asia centr / Tadjikistan / Pamir-Alai Hissar Mts // Adshuk-Cleft near Warsob / 1200 m 1.-3.VII. 1990 / leg. Schülke & Wrase // Coll. Wrase / Berlin [printed]. One ♂, “Tadjikistan Pamir-Alai / Hissar Mts Adshuk-Cleft / near Warsob N. Dushanbe / 1500 m (brook bank) / 1.-3. VI.1990 Schülke & Wrase // Coll. Wrase / Berlin [printed]”.

From DE: one ♂, “Afghanistan / Salang 3000 m / 14.8.1977 / Leg. G. Ledoux”.

To all these specimens we added the following label: *Bembidion (Ocyturanus) subcylindricum kuliabense* Net. – Neri & Toledano det. 2018.

Remarks. As it can be seen, many specimens preserved in some Museums are labelled “Kuljab / O. Buchara // Coll. Hauser” and identified as *subcylindricum* by Netolitzky himself; they have been supposedly identified before the description of the subspecies; only those labelled as “Kuljab / O. Buchara // Coll. Hauser” and determined as *subcylindricum* by Netolitzky himself can be considered as belonging to the type series.

The subspecies *subcylindricum* is distinguishable from the nominotypical form for the lack of elytral microsculpture, except for that at the extreme apex, as already observed by NETOLITZKY (1931) and by Belousov (in KRYZHANOVSKIJ et al., 1995); we report a variability in the colour of the appendages, in particular of the femora, from completely reddish to slightly darkened at base. The genitalia are similar to those of the nominotypical form, but often the aedeagal apex is more slender (figs 3, 11).

B. subcylindricum is reported for the first time from N. Afghanistan: Sary-pul (NHMW, HNHM); Salang 3000 m (DE).

Bembidion (Ocyturanus) kyros Netolitzky, 1931 **bona species**
(figs 5, 12, 13, 17)

Bembidion subcylindricum kyros Netolitzky, 1931: 80

Historical notes. NETOLITZKY (1931) describes *B. subcylindricum* ssp. *kyros* on two specimens from Kermanschah and one specimen from Teheran (Iran). The original description, though very short, does emphasize the distinguishing characters of the species: elytral microsculpture wanting or only in trace at apex, palps and antennae completely darkened with few antennomeres reddish at base,

antennomeres more thick than in *subcylindricum*, third antennomere longer than fourth.

MÜLLER-MOTZFELD (1986) includes *subcylindricum kyros* among the species of the newly described subgenus *Ocyturanus*. MARGGI et al. (2017) mention *subcylindricum kyros* only from Iran.

Material examined. From NHMW: the whole type series, three specimens pinned on two pins; the first pin is a brochette with two specimens and both have been dissected; after the dissection and the preparation of the genitalia, the two specimens have been transferred by us on two independent pins: the first one, ♂, lacking almost all tarsi, with the original labels, the second one, ♀, with the photocopies of the same labels; each pin, therefore, bears the following five labels: “Persia / Kermanschah / Coll. Hauser 5.09 [printed] // coll. / Netolitzky [printed] // *subcylindricum* Rtt. / sub. *kyros* Net. type / det. Netolitzky [handwritten] // Coll. / Netolitzky [printed] // TYPUS [red, printed]”; the last label, evidently added later, was already present in two copies on the same pin, and we transferred the second one on the second specimen. The second pin bears a ♀ dissected, with three labels: “Tèhèran 1864 / M. Aurelia // coll. / Netolitzky [printed] / *subcylindricum* / var *kyros* Net. / det. Netolitzky [handwritten, bordered, in part red]”. Not having been specified which specimen was the type of the species (the brochette with the label “Type” bears two specimens), we designate as Lectotype the ♂ specimen to which we left the original labels, and to which we added the following label: *Bembidion subcylindricum kyros* Netolitzky, 1931 - LECTOTYPUS - P. Neri & L. Toledano des. 2018; to the other two type specimens we added the following label: *Bembidion subcylindricum kyros* Netolitzky, 1931 – PARALECTOTYPUS - P. Neri & L. Toledano des. 2018.

Three ♂♂ with the same label as the lectotypus, but that we cannot designate as lectotypes because these specimens are not mentioned in the original description; the three specimens have also the following two labels: “Collect. / Hauser [printed] // *subcylindricum* [handwritten] / det. Netolitzky [printed]”.

One ♂, “Caucaso / Doria 62 [handwritten] // coll. / Netolitzky [printed] // cfr. *iphigenia* / cfr. *subcylindricum* / dt. Netolitzky [handwritten]”; the specimen was mentioned by NETOLITZKY (1931) as probable new taxon, but not described yet waiting for additional material; the specimen was dissected, studied and identified by ourselves as *Bembidion kyros*.

From MHB: two ♀♀, “Persia / Kermanschah [printed]”. One ♂, “Persia / Kermanschah [printed] // B. *subcylin-* / *dricum* Rtr. / Netol.”. The label is similar, but not identical, to that of the paralectotypes. We have also studied 130 exx from Iran coming from several collections (NHMW, DW, PN, MHB, NMPC, JM, VZ, CTVR). The Iranian Provinces where we ascertained the presence of the species, are: Azerbaijan, Arbadil, Quazvin, Teheran, Kermanshah, Lorestan, Esfahan, Chahar Mahal–Bakhtiari, Kohkiluyeh-Buyer Ahmad, Fars, Kerman. The altitude

of the collecting localities, where mentioned, is from 1700 to 3000 m.

From AVT: one ♀, “Turchia – Kayseri / Erciyas dagi / 26-V.83 m 2200 / G. Magnani leg.”. One ♂, “Turchia – Kayseri / Erciyas dagi / 29-V.84 m 2400 / G. Sama leg.”. One ♂, three ♀♀, “Turchia – vil. Konya / Sertavul geçidi, m 1610 / 25.IV.73 leg. Di Rao”.

From PN: one ♀, “Turchia – Kayseri / Erciyas dagi / 26-V.83 m 2200 / G. Magnani leg.”. Two ♂♂ “Turchia – Kayseri / Erciyas dagi / 29-V.84 m 2400 / G. Sama leg.”.

Conclusions. Together with the diagnostic characters mentioned by NETOLITZKY in the original description (1931) and later (1943), we wish to state that *kyros* shows a size on average smaller (3.80 – 5.10 mm) in respect to the preceding taxa and a great variability in the elytral colour (reddish-brown with sutural interval brown and yellowish oblique preapical spots, or cross pattern brown, dark brown or blackish and yellowish oblique humeral spots more or less distinct and oblique yellowish preapical spots, apex from brown to blackish brown); aedeagus small (0.84 – 1.02 mm) with apical quarter stout, slightly bent ventrally, sometimes with apex more slender (figs 12, 13); spermatheca with distal cavity showing annular narrowing and proximal cavity oblique in respect to the distal one (fig. 5).

For the first time *kyros* is recorded for south western Turkey. Also the specimen from “Caucasus” (NETOLITZKY, 1931) re-identified as *kyros* is interesting for the locality, even though it is impossible to have more precise data.

To be allowed to examine the type material of *subcylindricum* and its subspecies enabled us clearly notice the differences between *kyros* and the other taxa, suggesting that *kyros* is an independent species.

Therefore we officially state here the following, new status: *Bembidion* (*Ocyturanus*) *kyros* Netolitzky, 1931 **bona species** not a subspecies of *subcylindricum* Reitter, 1892. We added to all the studied specimens the following label: *Bembidion* (*Ocyturanus*) *kyros* Net. – Neri & Toledano det. 2018.

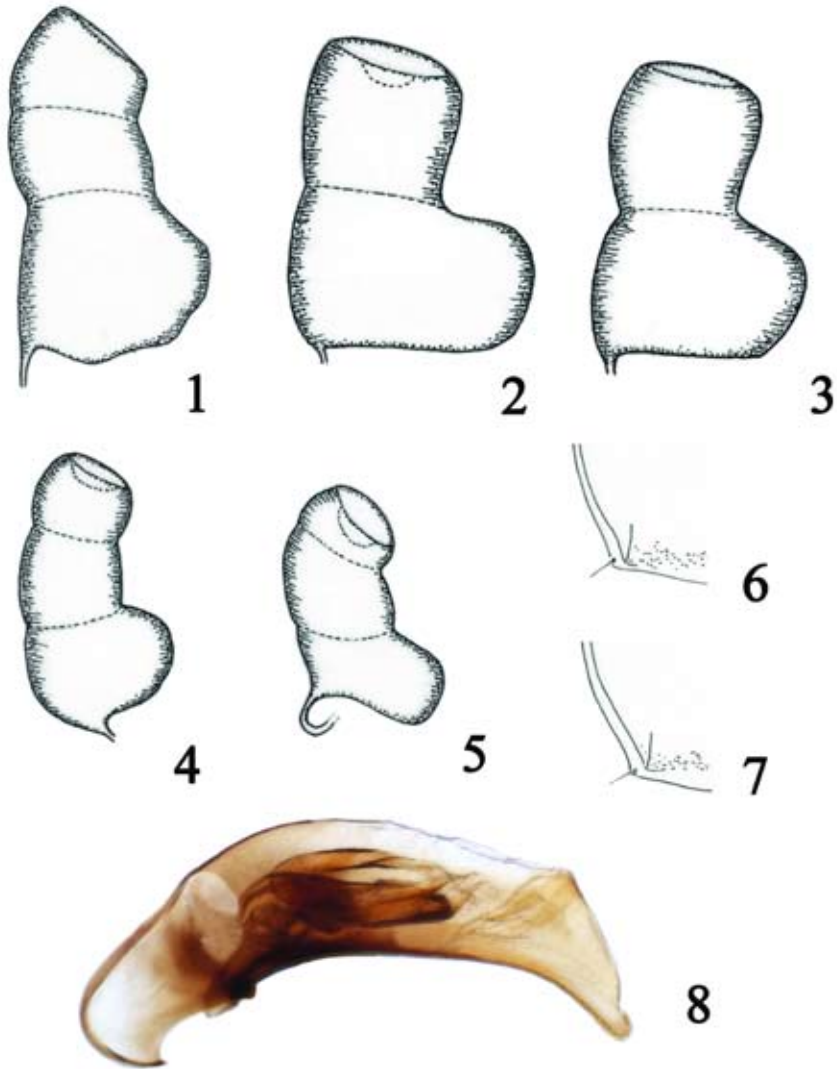
Note. Due to its variability in the colour and size, *Bembidion kyros* can be considered a polymorphic species, but we cannot exclude that a further study involving DNA sequencing could provide evidence that actually the examined specimens belong to more than one specific taxon. In PN we observed a ♀ specimen (Iran, Kohkiloeh & B., Abshar Yasud) of exceptional size (5.35 mm).

***Bembidion* (*Ocyturanus*) *luristanicum* n. sp.** (figs 1, 6, 7, 9, 16)

Diagnosis. A *Bembidion* subg. *Ocyturanus* of *subcylindricum* group distinguishable by the greater size, the pronotal shape, the greater aedeagal size and the peculiar shape of the spermatheca.

Type locality. Iran, Luristan.

Type series. Holotypus, ♂, “v. Bodemeyer / Persien / Luristan [printed] // *Bemb. lu-*



Figs 1-5. Spermathecae: 1- *Bembidion (Ocyturanes) luristanicum* n.sp., paratypus (0.16 mm) (MHB); 2- *B. (O.) subcylindricum subcylindricum* Reitter, 1892, paratypus (0.14 mm) (SMTD); 3- *B. (O.) subcylindricum kuliabense* Netolitzky, 1931, Kuliab, Ak-sou-Thai (0.14 mm) (NHMW); 4- *B. (O.) bamyanense* sp.n., paratypus (0.13 mm) (PN); 5- *B. (O.) kyros* Netolitzky, 1931, paralectotypus (0.11 mm) (NHMW).

Figs 6-7. Detail of left hind pronotal angle of: 6- *B.(O.) luristanicum* n.sp., paratypus; 7- *B.(O.) luristanicum* n.sp., holotypus.

Fig. 8. Median lobe of aedeagus of *B. (O.) bamyanense* n.sp., holotypus (1.00 mm) (PN).

/ *ristanicum* / Rtrr Type [handwritten] // O. Leonhard // coll. / Netolitzky [printed] // cfr. *kyros* Net. / dt. Netolitzky [handwritten]" (NHMW). The specimen, in good condition, lacks the hind left tarsus, while the tibia of the same leg is attached on the card. The aedeagus, prepared in Euparal on acetate label, is preserved on the same pin as the specimen. We added to the specimen the following red, printed label: "*Bembidion (Ocyturanus) luristanicum* Neri & Toledano, 2018 – HOLOTYPUS".

Paratypes: one ♂, "v. Bodemeyer / Persien / Luristan // *Bembidion / parsorum* Net. / Coll. H. Korge, / Berlin [printed]" (MHB); the specimen is in bad condition, lacking left labial palp, right antenna, fore left tibia and tarsus, fore right tarsus; the pronotum lacks the lateral borders. The aedeagus, prepared in Euparal on acetate label preserved on the same pin as the specimen, shows a transversal fracture. One ♀, (fig. 6), "v. Bodemeyer / Persien / Luristan // 112633 // *Bembidium / luristanicum* / nov. spec. / Reitter Type [green, handwritten] // *Bemb. / parsorum* Net. / ssp. nov. vgl. / Kol. Rdsch. 29-1943 / p. 8-104 / n. 1934, s.73 [green, handwritten] // *Bembidion / parsorum* Net. / Coll. H. Korge, / Berlin [printed]" (MHB); the specimen is in very bad condition, the only appendages still present are only few portions of the median and hind right leg. The spermatheca, prepared in Euparal on acetate label, is preserved on the same pin as the specimen. One ♂, "v. Bodemeyer / Persien / Luristan [printed] // *Bembidium / luristanic.* / n. sp. Rtrr. [handwritten] // Spec. typ. [red, printed] // TYPE [red, printed] // Coll. Prof. Dr. Noeske / Ankauf 1947 [yellow, printed] // Museum für Tierkun- / de Dresden (MTD) / MTD-Col-Car- / Type – 00750 [printed]" (SMTD); the left antenna and some right hind tarsomeres are missing.

We added to three specimens the following red, printed label: "*Bembidion (Ocyturanus) luristanicum* Neri & Toledano, 2018 – PARATYPUS".

Description of the holotypus (fig. 16). Total length 5.70 mm. Colour: head and pronotum blackish with reddish reflections; elytra reddish-testaceous, with two yellowish preapical spots, oblique and extending from stria 3 to 5; apex brown. All appendages reddish-testaceous. Head: maximum width, including eyes, 1.24 mm; distance between eyes 0.84 mm; frons smooth and glossy, frontal furrows wide, evident, slightly rugose, ending posteriorly at the first supraorbital seta. Eyes poorly convex, temples oblique, short. Antennae long 2.60 mm.

Pronotum: length along the midline 1.11 mm; width of anterior margin 1.16 mm; maximum width 1.51 mm; width of base 1.16 mm; Pw/Pl = 1.36; moderately convex, transverse; the sides completely bordered narrowing near base with a slight sinuation near base with which they form an obtuse angle (figs 6, 7); lateral gutter narrow and of uniform width; all surface smooth and glossy; laterobasal carina present; median longitudinal line very sharp, anteriorly a narrow arcuate transverse impression, almost invisible; transverse basal impression rugose-punctate between the basal foveae.

Elytra: length 3.40 mm, maximum width (of both elytra together) 2.00 mm; evident shoulders and parallel sides, microsculpture present in the apical fifth. Striae visible almost up to the apex with superficial punctures becoming evanescent in the apical part; stria 7 more or less as deep as the others. Macropterous species.

Male genitalia (fig. 9). Aedeagus of remarkable size (1.32 mm), ventral margin with apical fourth bent ventrally and rounded apex; endophallus not protruding from basal opening, paracopulatrix lamina extending towards dorsal margin, left and right paramere of the same length, with 4 apical setae each.

Intraspecific variability. One paratype shows head and pronotum blackish and elytra almost four-spotted with cross pattern brownish; the pronotum may have basal angles evidently obtuse and the base, between the lateral foveae, evidently rugose. Stria 7 may be narrower and with weaker puncturation. The length from 5.70 to 6.30 mm. Aedeagi long 1.32 and 1.42 mm.

Female genitalia (fig. 1). Spermatheca with distal cavity showing anular narrowing and proximal cavity rounded and wider than the distal one; length 0.16 mm.

Derivatio nominis. The species keeps the name written by Reitter on the label of three specimens of the type series; the specific epithet is an adjective and derives from the Iranian Province where the species was found.

Comparative notes. *B. luristanicum* is distinguishable from *bamyanense* n.sp. by the preapical elytral spots; from all the species of the group by the pronotum not or only faintly cordiform and by the bigger size of the aedeagus.

Distribution. The species is at present known only from Luristan Province in Iran.

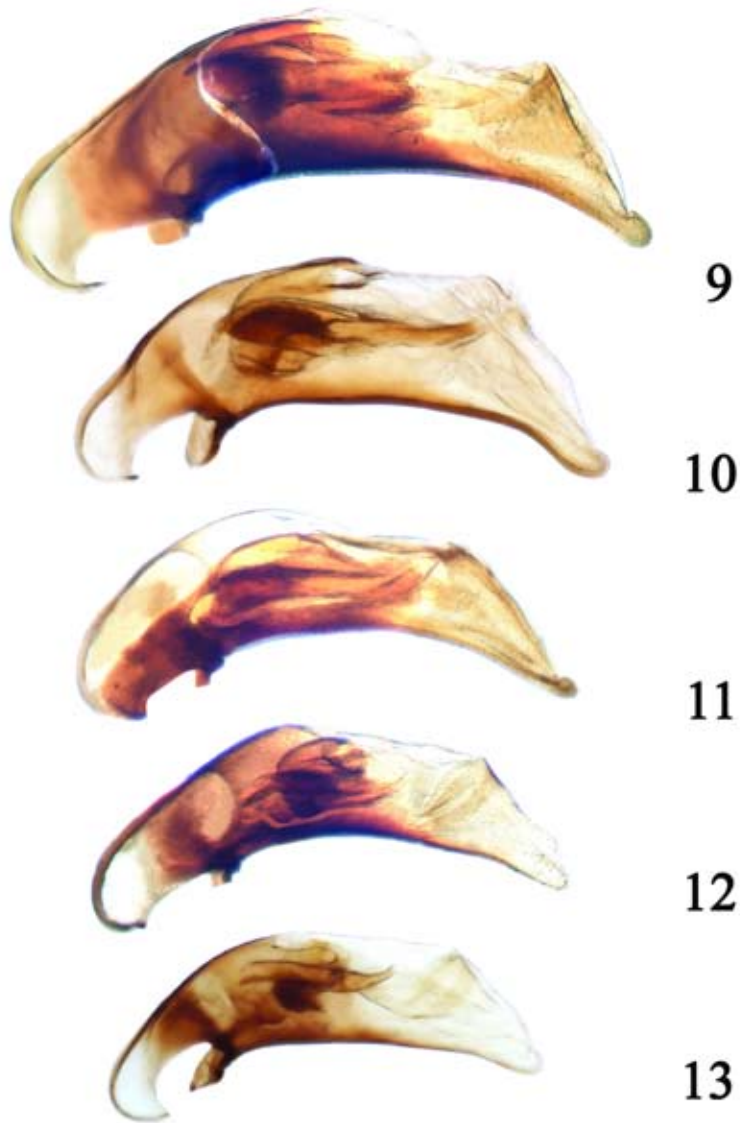
***Bembidion (Ocyturanus) bamyanense* n. sp.** (figs 4, 8, 18)

Diagnosis. A *Bembidion* subg. *Ocyturanus* of *subcylindricum* group distinguishable for the reddish-brown elytra without preapical spots.

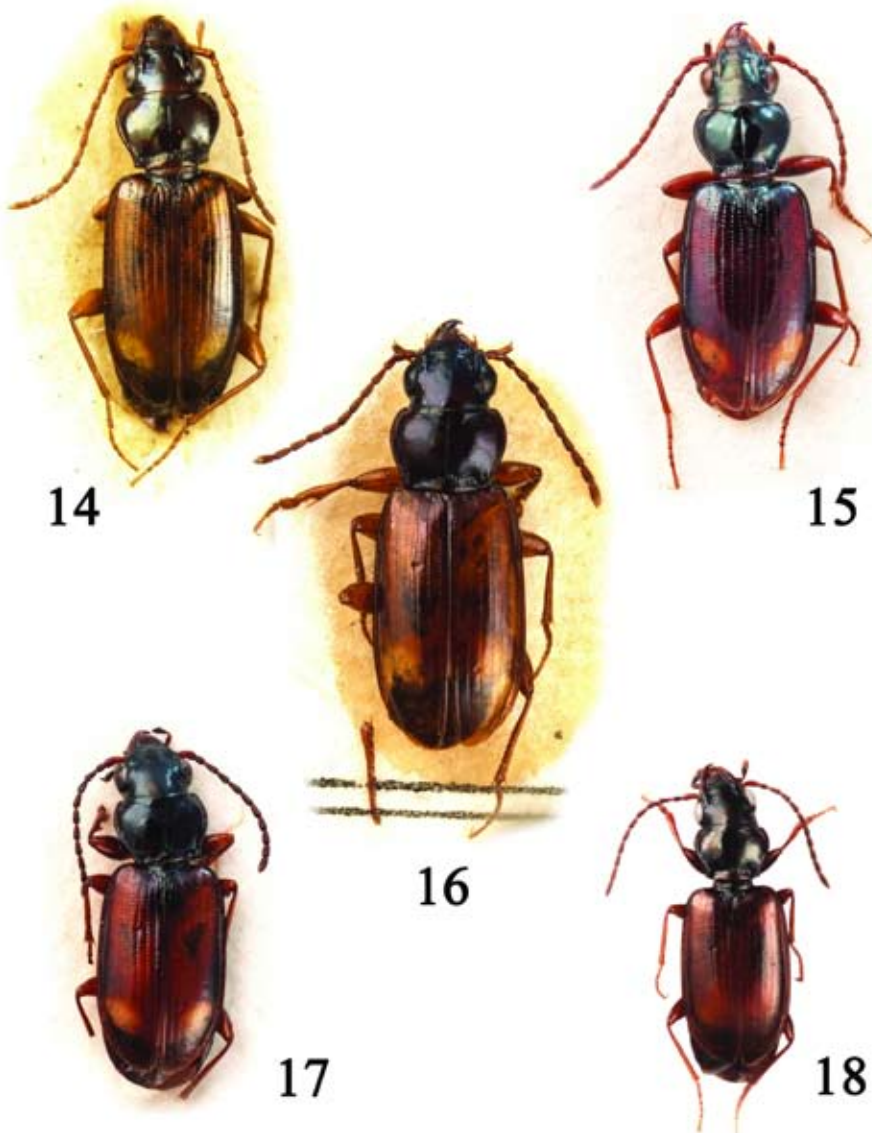
Type locality. Afghanistan, Boeum, Route de Bandiamir à Panjav 2600 m.

Type series. Holotypus, ♂, “Afghanistan, Boeum, Route de / Bandiamir à Panjav 2600 m / 25.8.1975 Leg. Ledoux” (PN); the aedeagus is prepared in Euparal on acetate label pinned on the same pin as the specimen; we added to the specimen the following red, printed label: “*Bembidion (Ocyturanus) bamyanense* Neri & Toledano, 2018 – HOLOTYPE”.

Paratypes. Two ♂♂, five ♀♀, “Afghanistan, Boeum, Route de Bandiamir à Panjav 2600 m., 25.8.1975, Leg. Ledoux” (PN, CTVR, DE); one ♀, “Afghanistan, A mont de Bamyan, 24.8.1975, Leg. Ledoux” (DE); one ♂, one ♀, “Afghanistan, Darah-e-Chekari, Route de Bamyan, 22.8.1975, Leg. Ledoux” (PN, CTVR); one ♀, Afghan., Prov. Bamyan, Boeum, 2600 m, Pista Band i Amir, à Panjav,



Figs 9-13. Median lobe of aedeagus of: 9- *Bembidion (Ocyturanus) luristanicum* n.sp., holotypus (1.32 mm) (NHMW); 10- *B. (O.) subcylindricum subcylindricum* Reitter, 1892, holotypus (0.11 mm) (HNHM); 11- *B. (O.) subcylindricum kuliabense* Netolitzky, 1931, paralectotypus, (1.00 mm) (NHMW); 12- *B. (O.) kyros* Netolitzky, 1931, Esfahan, Semirom (0.99 mm) (MHB); 13- *B. (O.) kyros* Netolitzky, 1931, lectotypus, 0.91 mm (NHMW).



Figs 14-18. Habitus of: 14- *Bembidion (Ocyturanus) subcylindricum subcylindricum* Reitter, 1892, holotypus (5.60 mm) (HNHM); 15- *B. (O.) subcylindricum kuliabense* Netolitzky, 1931, lectotypus, (5.15 mm) (NHMW); 16- *B. (O.) luristanicum* n.sp., holotypus (5.70 mm) (NHMW); 17- *B. (O.) kyros* Netolitzky, 1931, lectotypus (4.50 mm) (NHMW); 18- *B. (O.) bamyanense* n.sp., holotypus (4.35 mm) (PN).

25.8.1975, G. Ledoux (CTVR).

We added to all specimens the following red, printed label: “*Bembidion (Ocyturanus) bamyanense* Neri & Toledano, 2018 – PARATYPUS“.

Description of the holotypus (fig. 18). Total length 4.35 mm. Colour: head and pronotum black; elytra completely reddish-brown. Antennomeres slender, darkened only at apex from the second segment, palps darkened except for the last palpomere, yellow, femora reddish-testaceous with the lower side slightly darkened.

Head: maximum width, including eyes, 0.96 mm; distance between eyes 0.64 mm; frons smooth and glossy, evident frontal furrows, slightly rugose, ending posteriorly at the first supraorbital seta. Eyes poorly protruding, temples oblique, short. Antennae long 2.22 mm.

Pronotum: length along midline 0.82 mm; width of the anterior margin 0.88 mm, maximum width 1.11 mm, width of the base 0.81 mm; Pw/Pl = 1.35; moderately convex, transverse; sides completely bordered, narrowing with evident sinuature towards base with which they form a slightly obtuse hind angle; lateral gutter narrow and uniform; entire surface glossy; laterobasal carina evident; median line very thin, transverse anterior impression arcuate; transverse basal impression rugose-punctate between the basal foveae.

Elytra: length 2.67 mm, maximum width (of both elytra together) 1.58 mm; evident shoulders and parallel sides, microsculpture present in the apical quarter. Striae visible at apex even though more superficial, puncturation evanescent in the apical portion; stria 7 evident. Macropterous species.

Male genitalia (fig. 8). Aedeagus of medium size (1.00 mm), ventral margin rectilinear, with apical third evidently bent ventrally; endophallus slightly protruding from basal opening, apex of paracopulatrix lamina clearly extending towards the dorsal margin; left and right paramere of the same length, with 4 apical setae each.

Intraspecific variability. The elytra can be only slightly lighter at apex. The antennae may be more or less darkened. The length of the ♂♂ is from 4.10 to 4.75 mm and that of the ♀♀ from 4.20 to 5.00 mm. Aedeagus: length from 0.98 to 1.04 mm.

Female genitalia (fig. 4). Spermatheca with distal cavity showing annular narrowing and proximal cavity rounded and wider than the distal one; length 0.13 mm.

Derivatio nominis. The specific epithet is an adjective which derives from the name of Bamyān, the Province of Afghanistan where the type material was collected.

Comparative notes. *B. bamyanense* is distinguishable from the other species of

the group by the uniform, reddish-brown elytral colour; from *luristanicum* by the smaller size of body and aedeagus, from *subcylindricum* by the spermatheca with the distal cavity with annular narrowing, from *kyros* by the antennae less darkened, the slender antennomeres, the aedeagus with apical quarter more evidently bent ventrally and the spermatheca with the proximal cavity rounded.

Distribution. The species is known only from Bamyan Province in Afghanistan.

**Key for the species of subgenus *Ocyturanus* Müller-Motzfeld, 1986
subcylindricum Reitter, 1892 species group**

For the determination of the species is required the examen of the genitalia.

In the keys, the symbol (!) means that the distributional datum has been confirmed during this study

- 1 Elytra completely brown-reddish, without preapical spots, at most faintly lighter near apex; microsculpture present in the apical third; pronotum cordiform, transverse, glossy with obtuse hind angles; antennomeres slender, only faintly darkened at apex beginning from antennomere 2, palps darkened, femora reddish-yellow with ventral side slightly darkened; 4.20 to 5.00 mm (fig. 18); aedeagus 0.98 to 1.04 mm (fig. 8) with apical fourth evidently bent ventrally; spermatheca with distal cavity showing annular narrowing (fig. 4); AF (!)..... *bamyanense* n. sp.
- Elytra with yellowish preapical spots 2
- 2 Pronotum not or only faintly cordiform, sides narrowing towards base with a faint sinuosity, hind angles evidently obtuse (figs 6, 7); species on average larger: 5.70 to 6.30 mm; aedeagus evidently larger: 1.32 to 1.42 mm (fig. 9); antennae reddish ferruginous, legs and palpi testaceous-reddish; elytra brown-reddish or with brown cross pattern more or less evident, preapical spots oblique and yellowish, apex brown, traces of microsculpture in the apical fifth; spermatheca (fig. 1); IN (!)..... *luristanicum* n. sp.
- Prototum cordiform, sides evidently sinuate towards base with which they form an angle right or more or less obtuse; species on average smaller: 3.80 to 6.00 mm; aedeagus smaller: 0.84 to 1.16 mm 3
- 3 Species smaller: 3.80 to 5.10 mm (fig. 17); antennomeres wider, antennomere 1 reddish, 2 blackish, remaining antennomeres brown-blackish with reddish base, sometimes also first antennomere blackish or antennae completely blackish; elytra with variable colour: reddish-brown with sutural interval brown and

oblique, yellowish preapical spots, or with cross pattern brown, dark brown or blackish and reddish humeral spots more or less distinct and oblique, yellowish preapical spots, apex from brown to blackish brown; elytra, in both sexes, without microsculpture; aedeagus smaller: 0.84 to 1.02 mm, endophallus not protruding from basal opening and apical fifth less bent ventrally (figs 12, 13); spermatheca: distal cavity with annular narrowing and proximal cavity oblique in respect to the distal one (fig. 5); IN (!) (MARGGI et al., 2017), TR (!).....
 *kyros* Netolitzky, 1931

- Species larger: 4.80 to 6.00 mm; antennomeres more slender, light or darkened from third; elytra microsculptured or with microsculpture at least at the apex; aedeagus larger: 0.99 to 1.16 mm, endophallus slightly protruding from basal opening, apical fourth more pointed and evidently bent ventrally (figs 10, 11); spermatheca: distal cavity without annular narrowing and proximal cavity transverse in respect to the distal one (figs 2, 3) 4
- 4 Elytra completely microsculptured, even though superficially on disc; antennae yellowish or reddish-yellow; penultimate palpomere faintly darkened at apex; femora yellowish; elytra from reddish-brown to brown with reddish shoulders, small yellowish oblique preapical spot between stria 2 and 7, apex brown; aedeagus with apex more stout, 1.02 to 1.16 mm (fig. 10); UZ (!), KI, TD (MARGGI et al., 2017)..... *subcylindricum subcylindricum* Reitter, 1892
- Elytra with microsculpture only at the apex and colour similar to the nominotypical form; antennae normally darkened or slightly darkened from antennomere 3, sometimes from antennomere 2 or 4; penultimate palpomere more or less darkened; femora reddish-yellow or slightly darkened on the lower side; 4.80 to 6.00 mm (fig. 15); aedeagus similar to the nominotypical form o with apex more elongate, 0.99 to 1.11 mm (fig. 11); TD (!), KI, UZ (!) (MARGGI et al., 2017); AF (!) .. *subcylindricum kuliabense* Netolitzky, 1931

**Chiavi per le specie del sottogenere *Ocyturanus* Müller-Motzfeld, 1986,
 gruppo del *subcylindricum* Reitter, 1892**

Per la determinazione delle specie è indispensabile la visione dell'apparato genitale. Nelle chiavi il simbolo (!) significa che la presenza in una determinata nazione è stata confermata durante questo studio.

- 1 elitre completamente castano bruno rossastre, senza macchie preapicali, al massimo un leggero schiarimento preapicale; reticolazione elitrale presente nel terzo apicale; pronoto cuoriforme, trasverso, liscio ad angoli posteriori

- ottusi; articoli antennali snelli, solo leggermente oscurati al loro apice dal secondo, palpi oscurati, femori giallo rossicci con il lato inferiore leggermente oscurato; 4.20 – 5.00 mm (fig. 18); edeago 0.98 – 1.04 mm (fig. 8) con quarto apicale nettamente piegato ventralmente; cavità distale della spermateca con strozzatura anulare (fig. 4); AF!..... *bamyanense* n. sp.
- elitre con macchie preapicali giallastre 2
 - 2 pronoto non o appena cuoriforme, lati che si restringono verso la base con una leggerissima sinuatura, angoli posteriori molto ottusi (figg. 6, 7); specie mediamente più grande: 5.70 – 6.30 mm; edeago notevolmente più grande: 1.32 – 1.42 mm (fig. 9); antenne rosso ferruginee, zampe e palpi testaceo rossastri; elitre bruno rossastre o con disegno a croce bruno più o meno evidente, macchie subapicali oblique e giallastre, apice bruno, cenni di reticolazione nel quinto apicale; spermateca (fig. 1); IN!
.....*luristanicum* n. sp.
 - pronoto cuoriforme, lati evidentemente sinuati verso la base con cui formano un angolo retto, o più o meno ottuso; specie mediamente più piccole: 3.80 – 6.00 mm; edeago più piccolo: 0.88 – 1.16 mm 3
 - 3 specie più piccola: 3.80 – 5.10 mm (fig. 17); antenne con articoli più tozzi, 1° articolo rossastro, 2° articolo nerastro e ulteriori articoli bruno nerastri con base rossastra, a volte anche il primo articolo nerastro o antenne completamente nerastre; elitre a colorazione alquanto variabile: castano rossastre con interstria suturale bruna e macchie subapicali oblique e giallastre, oppure con disegno a croce bruno, bruno scuro o nerastro e macchie omerali rossastre più o meno distinte e macchie subapicali oblique e giallastre, apice da bruno a bruno nerastro; elitre, nei due sessi, senza reticolazione; edeago più piccolo: 0.84 - 1.02 mm, sacco interno che non fuoriesce nel bulbo basale e quinto apicale meno piegato ventralmente (fig. 12, 13); spermateca: cavità distale con strozzatura anulare e cavità prossimale posta obliquamente a quella distale (fig. 5); IN! (MARGGI et al., 2017), TR! *kyros* Netolitzky, 1931
 - specie più grande: 4.80 – 6.00 mm; antenne con articoli più snelli, chiari od oscurati dal 3°; elitre reticolate o con reticolo almeno all'estremo apice; edeago più grande: 0.99 – 1.16 mm, sacco interno che fuoriesce leggermente nel bulbo basale, quarto apicale più affusolato e nettamente piegato ventralmente (fig. 10, 11); spermateca: cavità distale senza strozzatura anulare e cavità prossimale posta trasversalmente a quella distale (fig. 2, 3)4

- 4 elitre completamente reticolate anche se con reticolo di difficile visione sul disco; antenne giallastre o giallo rossastre; secondo articolo dei palpi appena oscurato all'apice; femori giallastri; elitre da marrone-bruno rossastre a bruno con omeri rossastri, piccola macchia subapicale obliqua e giallastra posta tra la seconda e la settima stria, apice bruno; 5.40 – 6.00 mm (fig. 15); edeago con apice più tozzo, 1.02 – 1.16 mm (fig. 10); UZ!, KI, TD (MARGGI et al., 2017)..... *subcylindricum subcylindricum* Reitter, 1892
- elitre con reticolo solo all'estremo apice e colorazione simile alla forma tipica; antenne solitamente oscurate o leggermente oscurate dal 3° articolo, a volte dal 2° o dal 4°; secondo articolo dei palpi più o meno oscurato; femori giallo rossastri o appena oscurati al lato inferiore; 4.80 – 6.00 mm (fig. 15); edeago simile alla forma tipica o con apice più slanciato, 0.99 – 1.11 mm (fig. 11); TD!, KI, UZ! (MARGGI et al., 2017); AF!.....
.....*subcylindricum kuliabense* Netolitzky, 1931

In NMPC we found 13 ♀♀ 1 ♂, completely immature, with the following label: “N. Iran, C. Elburz / Kandavan, Val 2545 m / 10-11.8.1970 // Loc. no. 86 / Exp. Mus. Nat. / Praha”. Based on the label placed by Vysoký on the first specimen of the row (*Bembidion/ subcylindricum* Rtt / ssp. n. [handwritten] / V. Vysoký det. 75 [printed] / (penis!) [handwritten]) they could belong to an undescribed taxon; we suppose the same based on the size of the specimens (3.30 to 4.00 mm) and on the size of the sole aedeagus (0.80 mm). We must anyway emphasize that the extreme immaturity of the specimens and of the genital apparatus does not allow to describe a new species. We hope that, in the future, the availability of additional material could help to do it.

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