New and poorly known Carabidae from North, Central and East Asia (Coleoptera)

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Several new taxa are described: Notiophilus hyperboreus sp. n. from NW Siberia, N. ghilarovi sp. n. and N. stackelbergi sp. n. from Tien Shan Mts. (new data on some poorly known species of this genus are also given), Broscus kozlovi sp. n. (China: Inner Mongolia), and Andrewesius amicus sp.n. (China: Sichuan). Anchagonum gen. n. (tribe Platynini) is established for Anchomenus turkestanicus Ballion, 1870 from Middle Asia. New data on some Palaearctic Brachinus are given.

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The paper contains the descriptions of new taxa and data on taxonomy and distribution of some little known species of Asiatic Carabidae. The type material is kept in the collection of the Zoological Institute, St.Petersburg (ZIN), if no other indications are given.

I. Genus Notiophilus Duméril, 1806

The Holarctic genus Notiophilus forms a peculiar tribe Notiophilini (supertribe Nebriitae). It includes about 50 species, two-thirds of them being distributed in the northern hemisphere southwards to NW Africa, SW Asia, Himalaya, and Guatemala. The fauna of Asiatic continent is insufficiently known.

The author has found three undescribed species of Notiophilus in the rich collection of ZIN and examined several poorly known ones.

A key to Asiatic species of Notiophilus with subapical pore in elytra and black tibiae

- 1(6). 3rd-7th elytral intervals without microsculpture (except their apical portion).
- 2(5). Discal pore of 4th elytral interval large and distinct. Length more than 4.0 mm.
- 33(4). Frons with 5-6 (rarely 7) regular, almost parallel frontal keels. Elytra nearly parallel-sided in middle part, slightly dilated behind middle. Pronotal median groove usually without punctures at sides. Apex of penis as in Fig. 13. 4.5-6 mm
- 4(3). Frons with 7-8 irregular, often confused keels.

- Elytra slightly rounded in middle part (Fig. 9). Pronotal median groove usually with irregular N. hyperboreus sp. n.
- 5(2). Discal pore of 4th elytral interval small and indistinct. Apex of penis as in Fig. 10. 3.8-4.2 mm N. ghilarovi sp. n.
- 6(1). 3rd-7th elytral intervals with distinct (sometimes delicate) microsculpture.
- 7(8). 4th elytral interval without discal pore, 3rd interval smooth, 4-7th intervals delicately microsculptured, 4.0-4.2 mm... N. stackelbergi sp. n. 8(7). 4th elytral interval with distinct pore.
- 9(10). 6th and 7th elytral intervals with distinct microsculpture only, without rows of minute punctures. Apex of penis as in Fig. 11. Some specimens with 2 subapical pores. 4.1-4.5 mm. - C Tien Shan N. tshitsherini Zaitzev
- 10(9). 6th and 7th elytral intervals each with one row of minute and thin punctures and with delicate microsculpture (which may be present also at the base of 3rd interval). Apex of penis as in Fig. 12. 4.5-5.7 mm. – NE Siberia, N America...... N. borealis Harris

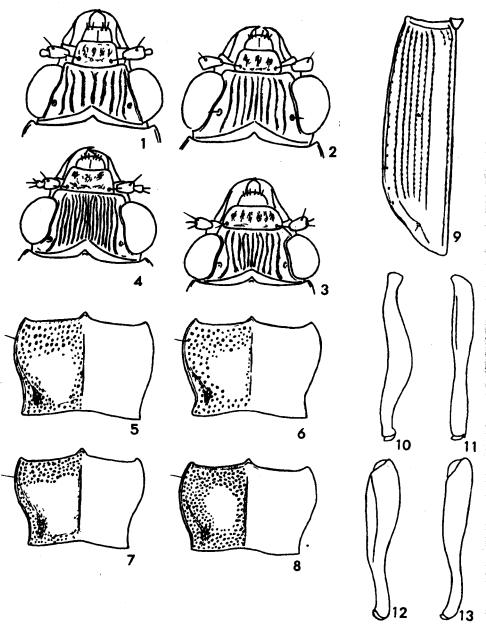
Notiophilus hyperboreus sp. n.

(Figs 1, 5, 9)

Holotype. Q, Russia, Gydan peninsula, Yuribei River, 26.VII.1927 (Naumov).

Paratypes. 7 Q, as holotype, but 25-30.VII.1927.

Description. Dark bronze above, black with greenish lustre beneath (including tibiae), only 1st-4th antennomeres reddish brown. Head (Fig. 1) with eyes not wider than pronotum; labrum not excised; frons with 7-8 rather irregular keels. Pronotum (Fig. 5) with sides



Figs 1-13. Notiophilus spp. 1, 5, 9, N. hyperboreus sp. n.; 2, 6, 10, N. ghilarovi sp.n.; 3, 7, N. stackelbergi sp. n.; 4, 8, 11, N. tschitscherini Zaitzev; 12, N. borealis Harris; 13, N. aquaticus (L.). 1-4, head; 5-8, pronotum; 9, elytron; 10-13, apex of penis.

feebly sinuate near base; hind angles acute, slightly protruding laterally; all pronotal margins roughly and densely punctate, the punctures here and there flowing into wrinkles; basal foveae deep, rounded; disc convex,

smooth, with few punctures along median groove. Elytra (Fig. 9) 1.74-1.78 times as long as wide, widest behind the middle, shoulders rounded, sides slightly convex; striae shallow with small punctures, impunctate near apex

only; scutellar striae somewhat redoubled; intervals without microsculpture, delicately microreticulated only in apical part; 2nd interval as wide as 3rd and 4th together; 4th interval at middle slightly wider than 5th or 6th; one rather small discal pore; one subapical pore. Length 4.0-4.5 mm.

Etymology. The species name refers to the high latitude of its locality.

Comparison. Similar to N. aquaticus (L.), but differs in the smaller size, more numerous irregular frontal keels and shorter elytra. From also similar N. borealis Harris it differs in the absence of microsculpture on the external elytral intervals, the sculpture of frons and some other characters.

Distribution. The species is known only from the type locality in the forest-tundra zone of NW Siberia east of the Ob' River estuary at 71° N.

Notiophilus ghilarovi sp. n. (Figs 2, 6, 10)

Holotype. &, Kazakhstan, Dzhungarian Alatau Mts., locality Karasyryk, upper reaches of Sarkand River, alpine zone, 3000 m, 7.VIII.1984 (I. Kabak).

Paratypes. 5 exx., as holotype; 47 exx. from several localities in the Dzhungarian Alatau, 2400-3600 m, 1984-1994 (I. Kabak leg.: ZIN; Institute of Zoology, the National Academy of Kazakhstan, Alma-Ata; collection of I. Kabak, Alma-Ata).

Description. Dark bronze above, black with greenish lustre beneath; tibiae black with metallic lustre, 1st-4th antennomeres brownish beneath. Head with eyes slightly wider than pronotum; frons with 8 keels (Fig. 3) sometimes irregular in front; labrum not excised. Pronotum (Fig. 7) with sides moderately sinuate before the almost rectangular hind angles; all pronotal margins roughly and rather densely punctured; disc almost smooth or finely and irregularly wrinkled, usually with minute punctures along median line. Elytra rather elongate, 1.69-1.75 times longer than wide; striae shallow with small, moderately deep punctures, apically strongly smoothed out. 2nd interval slightly narrower than 3rd and 4th together, the latter two of almost equal width, distinctly wider than 5th and 6th intervals; microsculpture of 3rd-7th intervals obsolescent, more distinct only in apical portion; discal pore on 4th interval very small; 1 subapical pore. Wings reduced. Prosternum in front with large and rather dense punctures. Aedeagus as in Fig. 11. Length 3.6-4.0 mm.

Etymology. Named in the memory of Academician M.S. Ghilarov (1912-1985), eminent Russian entomologist and soil zoologist.

Comparison. One of the smallest species of Notiophilus. Very similar to N. tshitsherini Zaitzev in the coloration, presence of single apical pore of elytra, reduction of wings and other characters, but differing in the smaller size, more elongate elytra with very feeble microsculpture of external intervals, in the sculpture of pronotum, etc.

Notiophilus stackelbergi sp. n. (Figs 3, 7)

Holotype. & Kyrghyzstan, Susamyr [actually Dzhumgol] Range, Kumbel Pass, 12.VIII.1913 (Tshernavin).

Paratypes. Kyrghyzstan: 1 o, as holotype; 6 d, 5 o, Susamyr Range, river Kobuksu (Eastern), 4000 m, 28.VII.1993 (S. Ovtshinnikov).

Description. Dark bronze or (one paratype) bluish black above, black with metallic lustre beneath (including tibiae), 1st-4th antennomeres reddish yellow. Head with eyes as wide as pronotum; labrum not excised; clypeus with smooth convexity at base and rather regular shallow wrinkles; frons with 6-8 parallel or slightly divergent keels, some of them may redouble (Fig. 3). Pronotum (Fig. 7) with sides distinctly sinuate before acute hind angles; densely and finely wrinkled and with rather large punctures along all margins; disc almost smooth with fine transverse wrinkles. Elytra ovate, 1.56-1.61 times longer than wide, with single subapical pore; striae shallow, finely punctate; 2nd interval as wide as 3rd and 4th together; 4-7th intervals with distinct delicate microsculpture; 2nd and 3rd intervals smooth with only apical portion microsculptured; 4th interval without discal pore. Prosternum in front roughly and densely punctured. Hind wings reduced; metepisterna slightly longer than wide. Length 4.0-4.2 mm.

Etymology. Named in the memory of Prof. A.A. Stackelberg, eminent Russian entomologist and one of my teachers.

Comparison. Very similar to N. tshitsherini Zaitzev, but differs in the absence of discal pore in the 4th elytral interval, more finely punctate striae, much more delicately microsculptured intervals.

Distribution. Inner part of the Tien Shan mountain system: Susamyr and Dzhumgol Ranges.

Notiophilus tshitsherini Zaitzev, 1916 (Figs 4, 8, 11)

Notiophilus tshitsherini Zaitzev, 1916: 657 (type locality: "Turkestan", probably Atbashi Range in Central Tien Shan; lectotype in ZIN).

Notiophilus tschitscherini Csiki, 1927: 402 (unjustified emendation).

Material. Lectotype, here designated: "Haberhauer. Turkestan 89", "Notiophilus n. sp. non sublaevis" (T. Tschitscherin's handwriting), "N. tshitsherini m. spec. typic. Zaitzev det.", "Lectotypus N. tshitsherini Zaitzev, design. Kryzhanovskij" (on red paper) (ZIN). Central Tien Shan, Atbashi Range: 40 km SE Naryn, 15.VII. 1966 (E.L. Gurjeva), 8 ex.; Atbashi Range, N slope, 3000 m, 22.VI.1959 (V.A. Zaslavskij), 1 ex.; Naryntoo Range, upper reaches of Irisu River, 18.VII. 1987, 1 Q (S. Ovtshinnikov). All series in ZIN.

Description. Dark bronze above, tibiae black, rarely (in one specimen) dark brown, 1st-4th antennomeres rufous beneath. Head with eyes slightly wider than pronotum; labrum not excised; frons with 8-10 keels, usually very irregular, fused or bifurcated (Fig. 4). Pronotum (Fig. 8) with sides slightly to moderately sinuate before hind angles; all pronotal margins and area along median line roughly and deeply rugosely punctate; small areas along middle line impunctate, nearly smooth (in lectotype) or finely and irregularly wrinkled (in other specimens). Elytra 1.63-1.70 times as long as wide, with rounded shoulders; striae with small but dense and deep punctures; 2nd interval as wide as or slightly narrower than 3rd and 4th together; 3rd interval wider than 4th; 3rd-7th and apical portion of 2nd interval with rather strong microsculpture; discal pore in 4th interval large, the second pore may rarely be present on one side; preapical pore usually 1, but lectotype with 2 pores on one side, and one specimen from Atbashi Range with 2 pores on each side. Wings reduced. Prosternum with large but sparse punctures. Aedeagus as in Fig. 11. Length 4.1-4.5 mm.

Comparison. Similar to N. ghilarovi sp. n. and N. stackelbergi sp. n., but differs in the characters mentioned in the key. It was described from a single damaged specimen (or probably two specimens) without exact locality label. In the original description 2 subapical pores were indicated, but most of the examined specimens have only 1 pore on each side. The available specimens vary also in the number of frontal keels, sculpture of pronotum and number of discal pores but are very similar in the coloration, size, general aspect, microsculpture of elytra and punctation of prosternum.

Notiophilus borealis Harris, 1869 (Fig. 12)

Notiophilus borealis Harris, 1869, Occas. Pap. Boston Soc. nat. Hist., 1: 213; Lindroth, 1961, Opusc. entom., Suppl. 20: 96; Lafer, 1989: 98.

Similar to N. aquaticus (L.), but differs in the structure of penis (Figs 12, 13) and the microsculpture of outer elytral intervals. It is widely distributed in the northern part of N America and known also from the northern taiga and tundra zones of Russia (NE Siberia: Chukotsk Peninsula and north of Kamchatka Province). The western limit of its distribution is unknown.

II. A new species of the genus Broscus Panzer, 1813

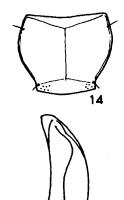
Broscus kozlovi sp. n.

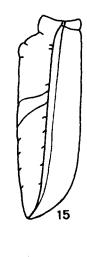
(Figs 14, 15, 17)

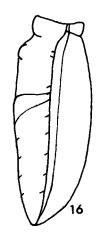
Holotype. d, China, Alashan Mts., Tszosto Gorge, 8-11.V.1908 (expedition of Kozlov); "Broscus Kozlovi m. Typ. Semenov-Tian-Shansky det., V. 1922", "Holotypus. B. kozlovi sp. n. Kryzhanovskij det., 1985".

Paratypes. 3 Q, as holotype; 6 Q, Alashan, Dyn-yuanin (expedition of Kozlov), 28.IV, 5.VI, 28.V-17.VI and 7-9.VI.1908 and 20-25.V.1909. All specimens were apparently collected in the foothills of the Alashan Mts. east of the Bayan-Khoto (formerly Dynyuanin) town, Inner Mongolia, China. The species was studied by A.P. Semenov-Tian-Shansky, but not described by him.

Description. Rather small and slender for the genus. Black, less shining above than related species; pronotum and elytra with isodiametric microsculpture. Head enlarged, with eyes slightly narrower than pronotum; its upper surface indistinctly microsculptured, with sparse minute punctures in frontal furrows and on vertex. Submentum with 3, rarely 2 pairs of setiferous pores. Pronotum (Fig. 14) narrow, 1.13-1.17 times as wide as long; its maximum width near the middle; lateral borders narrow but distinct in their entire length; disc with very thin irregular transverse wrinkles, base laterally with few punctures. Elytra flattened (Fig. 15), 1.62-1.65 times as long as wide; scutellar pore large; inner (1st-5th) striae very thin, minutely punctured, distance between punctures equal to 2-4 diameters of the latter; outer striae distinct or absent; series umbilicata consisting of 8 (rarely 7 or 9) pores, without median interruption. Pro- and metepisterna almost smooth; mesepisterna entirely punctured. Fore tarsi in male with 3 dilated segments having hairy soles, the one on 3rd tarsomere smaller than the others. Apical lobe of penis short







Figs 14-17. Broscus spp. 14, 15, 17, B. kozlovi sp. n.; 16, B. przewalskii Sem. 14, pronotum, 15, 16, elytra; 17, apex of penis.

and blunt (Fig. 17). Length 16.5-18.5 mm.

Distribution. China: Inner Mongolia, western slope of Alashan Range (probably has wider distribution).

Notes. Two specimens collected in May are not fully coloured, chestnut-brown. Hibernates probably as larva.

Comparison. Belongs to the B. declivis group, most species of which live in Central Asia and are recognized by the enlarged head, uniformly black coloration, reduced wings and presence of 7-10 pores in the series umbilicata. Differs from the related B. potanini Semenov, 1899 in the very distinct complete lateral borders of pronotum; from B. przewalskii Semenov, 1889 in the presence of scutellar pore and larger size; from the both species in the depressed elytra and very short apical lobe of penis. The two mentioned species live in the mountains of Qinghai Province, China.

III. On a new genus of Platynini

Platynini is one of the largest tribes of Carabidae. It comprises more than 2000 described and many undescribed species and about 100 genera in all zoogeographical realms. Platynini are especially abundant in the tropical and subtropical countries, whereas the fauna of temperate regions is less diverse. The taxonomy of the Platynini is rather vague and intricate (see Kryzhanovskij, 1994). Some genera of Platynini are treated traditionally in a very broad sense, for example Agonum (s. lato) and Colpodes (s. lato), which are typical "genera of convenience". Few modern authors sub-

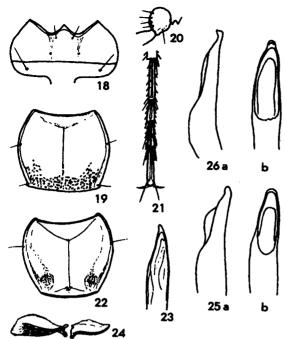
divided them into more natural groups (Jeannel, 1942; Darlington, 1952; Basilewsky, 1985). But Habu (1978) included in Agonum a lot of very different supraspecific taxa such as Agonum (s. str.), Sericola Kirby, Metacolpodes Jeannel, Loxocrepis Eschscholtz, etc. Liebherr (1991) included in Anchomenus (s. novo) several fairly diverse groups: Anchomenus Bonelli, Anchodemus Motschulsky, Chlaeniomimus Semenov, and Nipponanchus Habu. I prefer to consider these taxa distinct genera. Rational classification of the world fauna of Platynini is a very interesting but extremely difficult problem for the future investigators.

Examination of some Palaearctic genera of Platynini has shown a very distinct position of Agonum turkestanicum Ballion among the species assemblage generally included in the former genus Agonum (s. lato). A new genus is therefore established for this species.

Anchagonum gen. n.

Type species Anchomenus turkestanicus Ballion, 1870.

Description. General aspect as in Agonum; body pitchy-black or pitchy-brown without metallic lustre; underside and appendages brown. Tooth of mentum simple, narrowly truncate at apex; mentum with a pair of distinct pits; submentum with one pair of setae (Fig. 18). Pronotum with two marginal setae on each side; sides not sinuate; their margins explanate-reflexed; basal part densely punctate, especially in basal foveae; hind angles obtusely angulate, with small denticle (Fig. 19). Elytra without



Figs 18-26. 18-21, Anchagonum (gen. n.) turkestanicum (Ballion): 18, mentum and submentum; 19, pronotum; 20, right middle coxa (ventral view); 21, left hind tarsus. 22-24, Andrewesius anicus sp. n.: 22, pronotum, 23, apex of penis (dorsal view), 24, paramere. 25, Brachinus macrocerus Chaudoir, penis (a, left side view; b, dorsal view). 26, B. stenoderus Bates, penis.

scutellar pore; 3rd dorsal interval with 3 pores. Middle coxae with 4-6 outer (ridge) setae and 1 inner seta (Fig. 20); hind coxae trisetose; hind femora with 4-5 setae along hind margin. In hind tarsi, 1st-3rd tarsomeres dorsally with two furrows and sharp keel between them (Fig. 21); 4th tarsomere with apical setae; 5th tarsomere setose beneath. In female, apical segment of gonapophyse with 4 spines at outer margin.

Etymology. The name of the new genus is a combination of generic names Anchus and Agonum.

Comparison. The combination of characters is similar to that in the genus Paranchus Lindroth, 1974, most species of which inhabit the West Mediterranean area. The new genus differs from Paranchus in the numerous setae of middle coxae, darker legs and the pronotum similar to that of Agonum, with explanate-reflexed sides.

The single known species, A. turkestanicum (Ballion, 1870), is distributed in the Central Asiatic republics including S Kazakhstan; one specimen was found in the E Caucasus (Derbent). Reitter described this species for the second time as Agonum punctibase Reitter, 1894. Some authors referred to it as A. longipenne (Mannerheim, 1844), but Schmidt (1994) has recently shown that this name is a junior synonym of A. lugens (Duftschmidt,

1812). A turkestanicum inhabits the "tugays" – inundated forests in river valleys; it is rather rare in collections and collected mainly at light.

IV. On a new species of Andrewesius Jedlička, 1932

The author has recently published (Kryzhanovskij, 1994) a redescription of a peculiar East Asiatic genus Andrewesius and described two new species of this genus from SW China. Another undescribed species of this genus was collected in 1893 in the mountains of N Sichuan (China) by M.M. Berezowski, a member of the Russian expedition headed by ethnographer and botanist G.N. Potanin. Its description is given below.

Andrewesius amicus sp. n. (Figs 22-24)

Holotype. c, China, Sichuan, distr. Lunan, Tats'aopin, 14000 feet, 1893 (Berezowski). This locality is situated at the southern slope of Tsinling Mts.

Paratypes. 5 Q, as holotype.

Description. Upper surface black, shining; elytra with feeble bronze or greenish lustre; suture and epipleura of elytra, meso- and metathorax, abdomen and femora piceous to brown; buccal appendages, antennae, tibiae and tarsi reddish brown. Head smooth with short frontal

furrows, its microsculpture faint, consisting of irregular isodiametric meshes. Antennae extending beyond base of elytra by 9-11th segments. Pronotum (Fig. 22) on the average 1.22 times as wide as long, 1.26 times wider at apex than at base; its maximum width near the middle; sides rather widely explanate, converging to the widely rounded hind angles; anterior margin gently sinuate; anterior and posterior margins with entire, very fine borders; disc with very fine transverse microsculpture, its sides and basal part with sligthly transverse, anterior part with isodiametric meshes; basal foveae rounded, deep, with some punctures at bottom. Elytra broadly ovate, in male 1.48, in females 1.43-1.45 times longer than wide; shoulders rounded; scutellar pore absent; striae fine, minutely punctate; intervals flat; 3rd interval with 3-4 discal pores; microsculpture consisting of transverse meshes; umbilicate series of 18-22 pores. Scutellum with isodiametric meshes. Last abdominal sternite with one pair of pores in male and two pairs in female. Hind femora with 2 setae at hind margin. Aedeagus as in Figs 23, 24; penis very narrow; parameres comparatively narrow for the genus, especially the right one. Length of holotype 11.2 mm, of

paratypes 11.4-12.4 mm.

Etymology. The specific epithet refers to the traditional friendship and collaboration of Russian and Chinese entomologists.

Comparison. Closely related to A. pratti (Bates, 1891) from W Sichuan, but differs in the punctate striae of elytra, the number of discal pores and pores of umbilicate series, and in the structure of aedeagus, especially in the narrower parameres. I have examined a pair of specimens of the type series of A. szetschuanus Jedlička, 1932 from the Prague National Museum, kindly sent by Dr. J. Jelinek; this name is a junior synonym of A. pratti; both forms were collected at Tatsienlu (now Kangting) in W Sichuan. The examined specimens have impunctate elytral striae, 1-2 discal pores, 15-17 pores in umbilicate series and wider parameres; the male with labels "Szetschuan, Tatsienlu, China mer." and "Typus A. szetschuanus, Jedlička det." was dissected and designated as lectotype.

The new species is rather similar also to A. stricticollis (Fairmaire, 1886) from NW Yunnan, especially in the structure of pronotum, in the form of apex of penis, the punctate elytral striae, etc. The type locality of the new species is located in a mountain system (Tsinling Mts.)

other than that of A. pratti and A. stricticollis (Sino-Tibetan Mts).

V. Notes on some species of Brachinus Weber, 1801

Brachinus alexandri F. Battoni, 1984

This species was confused for a long time with B. plagiatus Reiche, 1868 and B. berytensis Reiche, 1855. It was described from Greece (Battoni, 1984) and reported later from Turkey and Bulgaria. B. alexandri is represented in the ZIN collection by long series from the Crimea (where it is common, whereas B. plagiatus recorded formerly for this region is absent from our Crimean material), from N Caucasus (Krasnodar and Stavropol territories) and Transcaucasia (E Georgia, Azerbaijan).

Brachinus klapperichi Jedlička, 1955

B. adelus Khnzorian, 1973, syn. n.

B. klapperichi was described from E Afghanistan (Nuristan, Bashgul River valley). B. adelus was described from Armenia and collected later in Central Asia (Turkmenistan, Tajikistan, Uzbekistan, S Kazakhstan) to lower reaches of Syr-Darya in the north (about 43° 30' N).

Comparison of a specimen from Armenia identified as B. adelus by S.M. Khnzorian and a long series from E Transcaucasia and Central Asiatic republics with a paratype of B. klapperichi and a series collected in Nuristan by O.N. Kabakov shows the identity of these forms.

Brachinus macrocerus Chaudoir, 1876 (Fig. 25)

B. longicornis Motschulsky, 1860 (junior homonym of B. longicornis Fairmaire, 1859).

B. macrocerus Chaudoir, 1876 (new name for B. longicornis Motschulsky).

B. stenoderus ab. sutschanensis Jedlička, 1963, syn. n.

This species was confused with the similar B. stenoderus Bates, 1873 by the previous authors including Habu (1967) and Jedlička who described it as an "aberration" of B. stenoderus. But the two forms differ very sharply in the structure of penis (Figs 25 -26) and also in the coloration: metepisterna and sides of abdomen in B. macrocerus are darkened, whereas in B. stenoderus the underside is entirely orange-yellow.

Lafer (1992) noted the taxonomic distinctness of this species but named it *B. longicornis* Motschulsky, 1860. The latter name is a junior homonym (see above).

Brachinus evanescens Bates, 1892

It was described from Burmese material collected by L. Fea. The ZIN collection includes extensive material from the vast area covering SW China (Yunnan, Jintung, III.1957, Montshadsky, 7 exx.), W Afghanistan (Anardara, II.1972, Kabakov), and SE Iran (env. of Bempur, 27° N and 60° 30′ E, 12.VII.1898, N. Zarudny, more than 20 exx.). All these specimens are similar morphologically. The species lives probably also in N India and Pakistan. Some other Carabidae have similar distributions, for example Abacetus (Astigis) guttula Chaudoir.

Acknowledgements

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