On some, mostly East European and Asian species of the genus *Ophonus* (Coleoptera: Carabidae)

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Based on extensive and representative material, *Ophonus hystrix* Reitt. is treated as a polytypic species with four subspecies: *O. h. hystrix* (Mongolia and S Siberia), *O. h. dissors* Tschitsch., stat. n. (Tien Shan), *O. h. kamenskii* Kataev & Kabak, ssp. n. (plains of Kazakhstan) and *O. h. altaiensis* ssp. n. (SE Altai). A key to the subspecies of *O. hystrix* is provided and wing dimorphism in this species is discussed. New taxa, *O. austrocaspicus* Kataev & Belousov, sp. n. (SE Daghestan, E Azerbaijan, N Iran) and *O. melletii hyrcanus* ssp. n. (SE Azerbaijan, N Iran, SW Turkmenistan), are described and the poorly-known *O. transversus* Motsch. from Eurasian steppe zone is redescribed. The following new synonymies are proposed: *O. puncticollis* (Paykull, 1798) = *O. ovipennis* Motschulsky, 1844, syn. n.; *O. cribricollis* (Dejean, 1829) = *O. obscuripes* Motschulsky, 1850, syn. n.; *O. rufibarbis* (Fabricius, 1792) = *Harpalus (Ophonus) brevicollis* var. *orienticola* Tschitschérine, 1902, syn. n.; *O. puncticeps* Stephens, 1828 = *Harpalus (Ophonus) brevicollis* var. *crebrior* Tschitschérine, 1902, syn. n.; *O. stricticollis* Tschitschérine, 1893 = *O. chinensis* Tschitschérine, 1895, syn. n.; *O. chlorizans* Solsky, 1874 = *O. pangoides* Reitter, 1913, syn. n.; *O. quadricollis* (Dejean, 1831) = *Harpalus aesculoides* Jedlička, 1959, syn. n. New distributional and systematic data about *O. sciakyi* Wrase, *O. rebellus* Schaub., *O. minimus* Motsch. and *O. chlorizans* Sols. are also presented. Lectotypes are designated for *O. transversus* Motsch., *O. ovipennis* Motsch., *O. obscuripes* Motsch., *O. stricticollis* Tschitsch., *O. chinensis* Tschitsch., *O. pangoides* Reitt., *Harpalus (Ophonus) brevicollis* var. *orienticola* Tschitsch. and *H. (O.) b.* var. *crebrior* Tschitsch.

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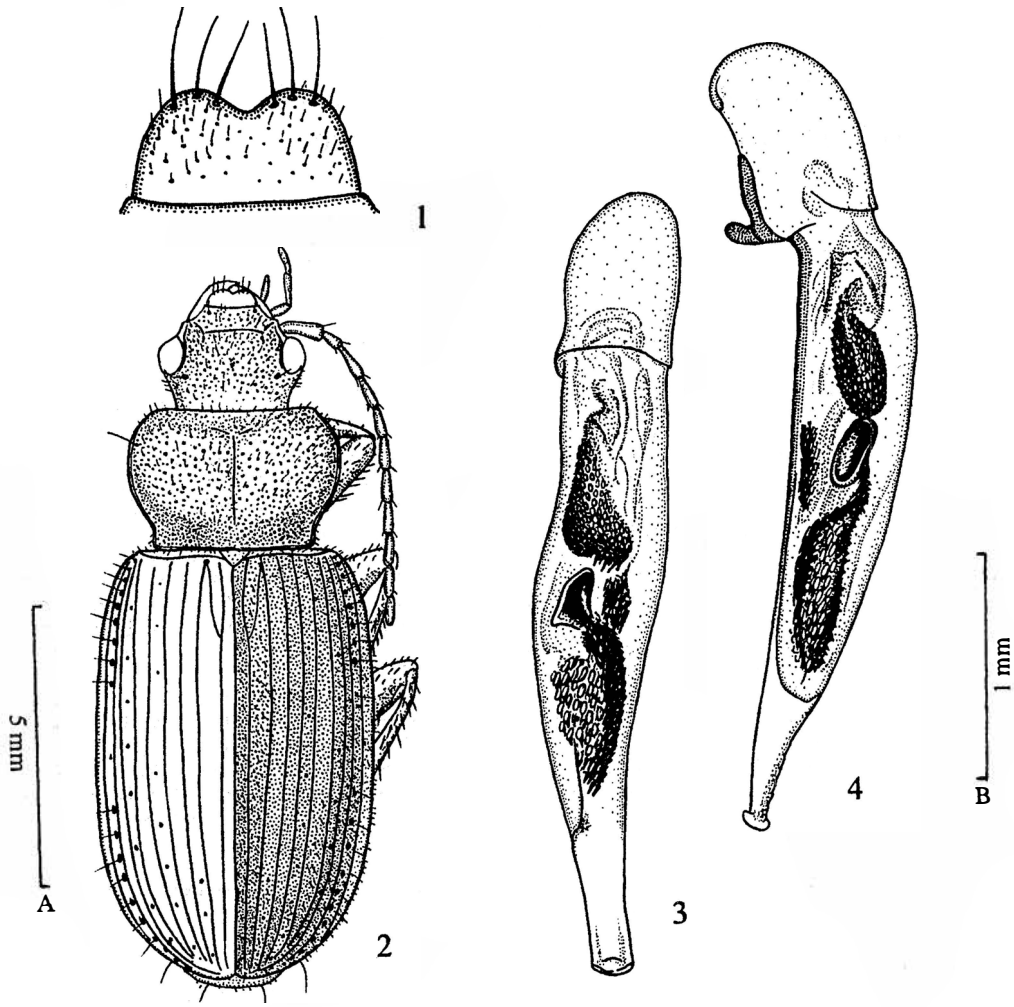
Ophonus Dejean, 1821 is a Palaearctic genus with about 70 species distributed mostly in the Mediterranean Region. Only a few species were described from the East Palaearctic. On the basis of the West Palaearctic material, Sciaky (1986) revised most of the species of the genus, and more recently Wrase (1990, 1991, 1995) has described several new species from Turkey and Iran. The present paper deals mainly with the East European and Asian representatives of the genus *Ophonus* which were not treated or treated inadequately in the publications mentioned above.

The material examined is haused in the following museums and private collections: **IBB** – Institute of Biology and Pedology, Kirgizian Academy of Sciences, Bishkek; **ISEAN** – Institute of Systematics and Ecology of Animals, Siberian Branch, Russian Academy of Sciences, Novosibirsk; **IZK** – Institute of Zoology, Ukrainian Academy of Sciences, Kiev; **HNHMB** – Hungarian Natural History Museum, Budapest; **MNHUB** – Museum für Naturkunde der Humboldt-Universität, Berlin; **MPU** – Moscow Pedagogical University, Moscow; **MZLU** – Museum of Zoology, Lund University, Lund; **NMB** – Naturhistorisches Museum Basel, Basel; **NMP** – National Museum Prague, Prague; **OÖLL** – Oberösterreichisches Landesmuseum, Linz; **SMNHS** – Swedish Museum of Natural History, Stockholm; **SMNST** – Staatliches Museum für Naturkunde, Stuttgart; **ZIA** – Zoological Institute, Kazakh Academy of Sciences, Almaty; **ZISP** – Zoological Institute, Russian Academy of Sciences, St.Petersburg; **ZMM** – Zoological Museum, Moscow; **ZMUC** – Zoological Museum, University of Copenhagen; **cBEL** – Coll. I. Belousov, St.Petersburg; **cFED** – Coll. D. Fedorenko, Moscow; **cHNZ** – Coll. W. Heinz, Schwanfeld, Germany; **cIKAB** – Coll. I. Kabak, Almaty; **cISOL** – Coll. I. Solodovnikov, Vitebsk, Belarus; **cKAB** – Coll. O. Kabakov, St.Petersburg; **cKLM** – Coll. A. Klimenko, Tver', Russia; **cKOM** – Coll. E. Komarov, Volgograd, Russia; **cOVCH** – Coll. S. Ovchinnikov, Bishkek; **cSHIL** – Coll. V. Shilenkov, Irkutsk; **cSOK** – Coll. I. Sokolov, St.Petersburg; **cWR** – Coll. D.W. Wrase, Berlin.

Measurements were taken as follows: body length (L) from anterior margin of clypeus to elytral apex; width of head (WH) as maximum linear distance across head, including com-



Figs 1-4. *Ophonus transversus.* 1, labrum; 2, habitus (Belebey); 3, penis, dorsal aspect (Esil); 4, penis, view from left side. Scales: A = 5 mm (Fig. 2); B = 1 mm (Figs 1, 3, 4).

pound eyes; length of pronotum (LP) along its median line; length of elytra (LE) from basal edge in scutellar region to apex of sutural angle; width of pronotum (WP = WPmax) and elytra (WE) at their broadest place; minimum width of pronotum (WPmin) at its narrowest place near basal angles; length of metepisterna along their inner margin and width of metepisterna along their anteriormargin.

Ophonus (Metophonus) transversus Motschulsky, 1844
(Figs 1-4)

Ophonus transversus Motschulsky, 1844: 227, t. 10, f. 3 (type locality: "Steppes des Kirguises").

Type material. Lectotype (here designated), ♀ with labels "74", "Camp. Kirgis" and "*Ophonus transversalis* [sic!] mihi, Dichergwin Oytas", and paralectotype, ♂ with labels "74" and "Camp. Kirgis" (both in ZMM; see Notes below).

Other material examined. **Russia**: *Bashkortostan*: 1 ♂, Belebey Distr., 25-27.VII.1959, Shenshelevich leg. (ZISP); 1 ♂, Ayzelil Distr., Bastandyk, 27.VII-15.VIII. 1958, Shenshelevich leg. (MPU). **Ukraine**: 1 ♀, the Crimea, Tarkhankut, 3.VII.1987, A. Puchkov leg. (IZK). **Kazakhstan**: *Uralsk Prov.*: 1 ♀, env. Uralsk, 21.VI.1907, B. Uvarov leg. (ZISP); *Turgay Prov.*: 1 ♂, Esil Distr., zernosovkhoz Dalniy, 5.VI.1958, Slivkina leg. (ZISP); 1 ♀, Kokshetau Mts, southern slope, 15.VI. 1957, L. Arnoldi leg. (ZISP); *Kokchetav Prov.*: 1 ♂, Borovskiy forest, 5.VII.1932, B. Popov leg. (ZISP); *Kustanay Prov.*: 1 ♀, Karabalyk Distr., virgin land, 24.VI.1960, L. Titova leg. (cISOL).

Description. Body length 9.7-12.1 mm, width 4.1-5.1 mm.

Body ferrugineous to dark brown without any metallic lustre; palpi, antennae and legs brownish yellow; each of 3rd-11th antennal segments usually with narrow longitudinal dark stripe. Body covered with brownish yellow pubescence.

Head of medium size, 0.68-0.72 times as wide as pronotum, with rather convex, hemispherical eyes. Tempora short and flat, sloping descending to neck. Labrum rather deeply emarginate anteriorly (Fig. 1). Mentum edentate. Antennae slender, extending approximately to one-fifth or one-sixth of elytra, with middle segments about twice as long as wide.

Pronotum cordate, rather transverse, 1.42-1.57 times as wide as long, widest before the middle. Sides strongly rounded anteriorly and strongly sinuate posteriorly, each with 1-2 lateral setigerous pores before the middle. Anterior margin only scarcely emarginate, sometimes almost straight; posterior margin straight, entirely and distinctly bordered, a little wider than anterior margin and notably narrower than elytral base between humeral angles. Apical angles not protruding, widely rounded; basal angles rectangular, sharp at apex. Pronotal surface moderately convex anteriorly, flattened along posterior margin. Lateral depressions narrow, beginning from apical angles and almost not widened basad, fused basally with broad and deep latero-basal depressions. Basal foveae situated within latero-basal depressions, very shallow and poorly visible.

Elytra convex, comparatively long, 1.51-1.58 times as long as wide, 2.84-3.00 times as long and 1.24-1.36 times as wide as pronotum, parallel-sided or slightly widened posteriad. Humeri subangulate, each with a small acute denticle at apex. Subapical sinuation weak; sutural angle in both sexes rounded at tip. Elytral basal edge only scarcely sinuate, almost straight, meeting the lateral margin in an obtuse angle with a distinct vertex. Striae thin, superficial, distinctly punctate. Scutellar stria long, with a basal pore. Intervals flat, 5th and 7th sometimes with larger setigerous pores poorly noticeable against the background of basic punctation and arranged within each interval in a longitudinal row.

Metepisterna rather strongly narrowed posteriad, notably longer than wide. In fore tibiae, outer distal margin with three spines, ventroapical tubercle with one spine. Hind femur with 8-12 setigerous pores along posterior margin. Anal abdominal sternite in both sexes rounded at apex, in male thin, in female slightly swollen apically.

Punctation on head and pronotum more coarse than on elytra. Distance between pores approximately equal to their diameter on vertex and on central parts of pronotum, and a little less than their diameter on elytra. Pores on elytral intervals arranged either in four (usually in male) or five (usually in female) irregular rows. Microsculpture absent on vertex and on pronotal disc, very fine on elytra; meshes isodiametric.

Penis (Figs 3, 4) comparatively weakly arcuate. Terminal lamella more or less parallel-sided (dorsal aspect), much longer than wide, with an oval capitulum at apex. Internal sac with a large funnel-shaped tooth and with several large spiny patches.

Distribution. The species is distributed across the Eurasian steppe zone from the Crimea to Central Kazakhstan.

Notes. This rare species was described from "Steppes des Kirguises", the former name of the steppe zone from lower Volga to Irtysh. Motschulsky (1844) proposed the name "*transversus*" for his species but he apparently erroneously labelled the type specimens as "*transversalis*". The couple examined by me from his collection (now in ZMM) with such determination label and geographical label "Camp. Kirgis" agree well with the original description of *O. transversus* and appear to be the syntypes. Since I was unable to find any specimens labelled "*Ophonus transversus*" in the Motschulsky's collection, I designate the female with the label "*Ophonus transversalis*" as the lectotype of *O. transversus*.

Although the species described by Motschulsky was rather distinctive and easily recognizable, until now it was unknown to other specialists. Tschitschérine (1902) and Csiki (1932) listed *O. transversus* amongst the synonyms of *O. brevicollis* (Serville, 1821) [= *O. rufibarbis* (Fabricius, 1792) according to Tschitschérine and Csiki] probably on the basis of the broad pronotum characteristic of both *O. brevicollis* and *O. transversus*, but these species are dissimilar in many important characters (body size, features of the external morphology and male genitalia) and must be treated as separate.

O. transversus is one of the largest species of *Ophonus* with a cordate pronotum. In habitus, it is most similar to *O. cordatus* Duftschmid, 1812 and *O. puncticollis* (Paykull, 1798) but easily distinguished from them by the greater body size, labrum much more deeply emarginate anteriorly, hind femur with greater number of setigerous pores along posterior margin, and pronotum wider and much more strongly flattened at base. Besides, all these species differ

in the penis structure: in *O. cordatus* and *O. puncticollis*, the penis is without any large teeth in the internal sac, only with small spiny patches at the middle as contrasted to *O. transversus*, the penis of which possesses a large tooth in the internal sac.

Ophonus (Metophonus) puncticollis (Paykull, 1798)

Carabus puncticollis Paykull, 1798: 120 (type locality: Sweden).
Ophonus ovipennis Motschulsky, 1844: 226 (type locality: "Steppes des Kirguises", "fl. Turgai", Kazakhstan), **syn. n.**

Type material. Lectotype (here designated) of *O. ovipennis*, ♀ with small square piece of blue paper and labels "Camp. Kirgis", "*Ophonus ovipennis* mihi, fl. Turgai" (ZMM) and paralectotype, ♀ with label "Fl. Irtysch" (ZMM).

Notes. O. ovipennis has been described from "Steppes des Kirguises" and "Irtysh" as very similar to "*O. punctulatus* Duft." [error; = ? *O. punctatulus* (Duft.), = *O. nitidulus* Steph.] but smaller and entirely brown. Later, it was cited by Csiki (1932) and other authors as an aberration (or variety) of *O. punctatulus*. Re-examination of the original specimens of Motschulsky has shown that *O. ovipennis* was described from comparatively large specimens of *O. puncticollis* (body length in lectotype 9.7 mm, in paralectotype 8.8 mm), a species widely distributed across Europe, Caucasus, Asia Minor, northern and central Kazakhstan as well as the south of West Siberia to Lake Baikal. According to my observations, larger size and paler colour are common characteristics of populations of *O. puncticollis* inhabiting central Kazakhstan. However, in the male genitalia they do not differ from populations from Europe, and hence I prefer to consider *O. ovipennis* as a synonym of *O. puncticollis*.

Ophonus (Metophonus) austrocaspicus Kataev & Belousov, sp. n.
(Figs 5-8)

Holotype, ♂, **Azerbaijan**, Alekseevka, 12 km SW Lenkoran, 5.VII.1932, Znojko leg. (ZISP).

Paratypes. **Azerbaijan**: 19 ♂, 21 ♀, same data as holotype, but 26-28.VI, 30.VI, 3-4.VII and 10.VII. 1932 (ZISP); 1 ♂, Lulakeran, Zuvant, 3.VIII.1932, Znojko leg. (ZISP); 1 ♂, Lenkoran Distr., 20.II.1958, N. Samedov leg. (ZISP); 1 ♂, Talysh, Alekseevka, Lenkoran Distr., 7.VII.1975, V. Belov & N. Nikitsky leg. (MPU); 2 ♀, Lerik, 29.IV.1986, S. Saluk leg. (ZISP); 1 ♂, Lenkoran Distr., Khavzava, under stones, 18.II.1957 (ZISP); 1 ♂, 1 ♀, Yardamly, 30.VI. 1977 (IZK); 1 ♀, Kusarchay, at light, 14.VII.1982, I. Belousov leg. (cBEL); 2 ♂, Divichi Distr., 20 km W Besh-Barmak, 20.IV.1984, I. Belousov leg. (cBEL); 1 ♂, Alty-Avacha Distr., near Khyzy, 21.IV.1984, I. Belousov leg. (cBEL). **Russia**, *Daghestan:* 1 ♂, env. Agach Aul, W of Makhachkala, 15.IV.1995, E. Iljina leg. (ZISP); 1 ♂, Samur forest, VI.1982 (cBEL). **Iran**: 1 ♂, 3 ♀, Widif Park, vicinity of Dasht, 650 m, loc. no. 77, Exp. Nat. Mus. Praha, 27-30.VII.1970 (NMP); 1 ♂, Tahergourahe (feucht), 0 m u. m., VI.1950, F. Schäuffele leg. (SMNST); 4 ♂, 5 ♀, Mazanderan, Chorteh ("ob. Waldzone"), ca 1700 m, 11-12.VI.1998, W. Heinz leg. (cHNZ; cWR); 1 ♂, "Pers. Kopet-Dagh, Siaret, 1160 m, V.1899, Coll. Hauser" (cWR).

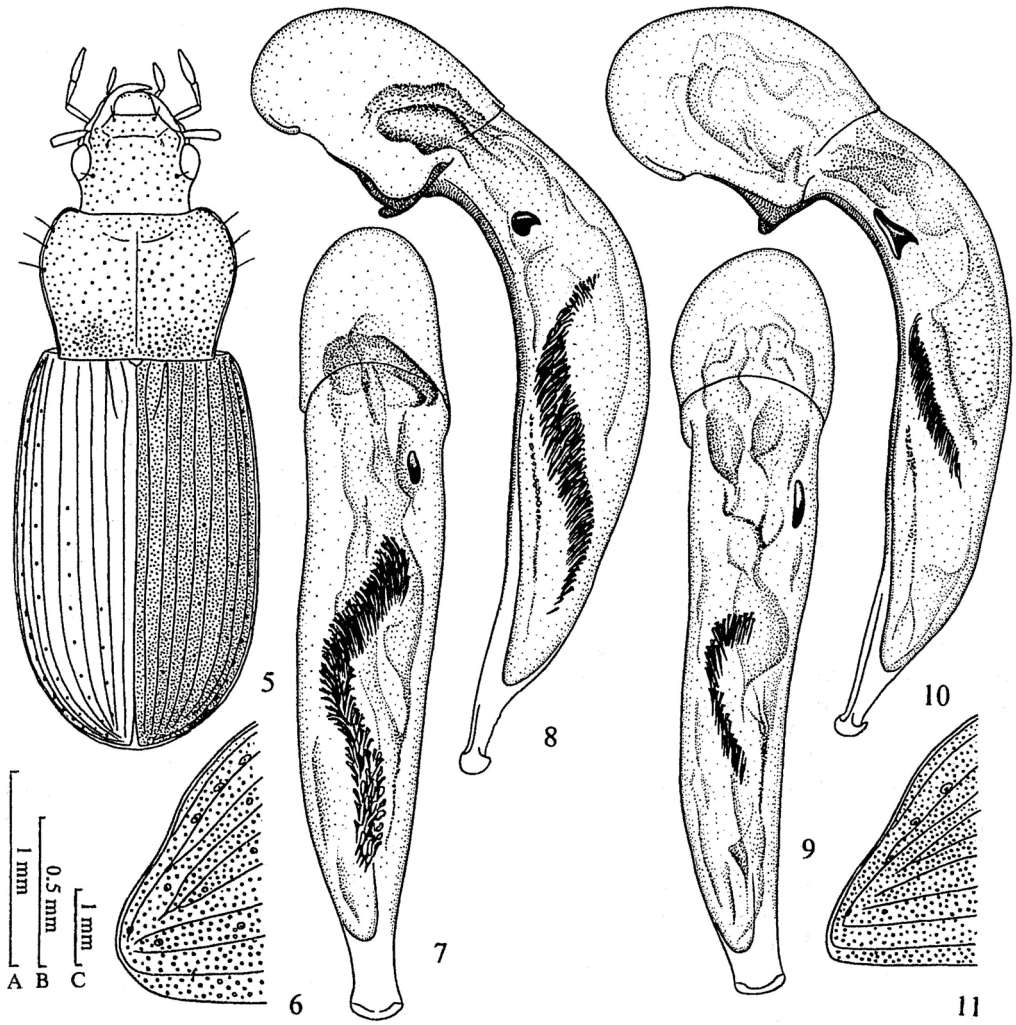
Description. Body length 7.4-9.4 mm, width 2.9-3.6 mm.

Upperside shiny, usually dark brown, rarely brown or almost black; underside paler, red brownish to brown; palpi, antennae and legs brownish yellow, each of 3rd-11th antennal segments with narrow longitudinal dark stripe. Body covered with brownish yellow pubescence.

Head of medium size, 0.67-0.73 times as wide as pronotum, with moderately convex eyes. Tempora flat, slopingly descending to neck. Labrum weakly emarginate anteriorly. Mentum edentate. Antennae slender, extending approximately to one-sixth of elytra, with middle segments 1.8-2.0 times as long as wide.

Pronotum weakly convex, comparatively narrow, 1.25-1.39 times as wide as long, widest in anterior third, rather strongly narrowed basad. Sides gently rounded anteriorly, clearly sinuate posteriorly, each with several (usually 2-3) lateral setigerous pores in anterior half. Anterior margin slightly arcuately emarginate, posterior margin more or less straight, not bordered, as wide as anterior margin and notably narrower than elytral base between humeral angles. Apical angles scarcely protruding, rather narrowly rounded at apex; basal angles rectangular, sharp at apex. Lateral depressions not developed, basal foveae very small and shallow, poorly visible.

Elytra moderately convex, comparatively narrow and long, 1.55-1.65 times as long as wide, 2.58-2.83 times as long and 1.20-1.32 times as wide as pronotum, scarcely widened posteriad and widest behind the middle. Humeri subangulate, each usually with small denticle at apex. Subapical sinuation weak; sutural angle in both sexes comparatively widely rounded at apex (Fig. 6). Elytral basal edge weakly sinuate, meeting lateral margin in a very obtuse angle without distinct vertex. Striae thin, superficial, impunctate. Scutellar stria long, with a basal pore. Intervals flat throughout, 3rd, 5th and 7th with a row of well noticeable against the background of basic



Figs 5-11. 5-8, *Ophonus austrocaspicus* sp. n. (Talysh); **9-11**, *O. rupicola* (Taman). 5, habitus, 6, 11, apex of left elytron; 7, 9, penis, dorsal aspect; 8, 10, penis, view from left side. Scales: A = 1 mm (Figs 6, 7); B = 0.5 mm (Figs 7-10); C = 1 mm (Fig. 5).

punctation the larger setigerous pores arranged along the middle of interval (in 3rd interval, the pores restricted to its apical portion).

Metepisterna rather long, strongly narrowed posteriad. In fore tibiae, outer distal margin with three spines, ventroapical tubercle with one spine. Hind femur usually with three large setigerous pores along posterior margin. Pro- and mesotarsi in male rather strongly dilated. Apex of anal sternite in male thin and slightly truncate, in female clearly swollen and narrowly rounded.

Punctation on head and pronotum more coarse than on elytra. Distance between pores greater than their diameter on frons, vertex and central part of pronotum, and approximately equal to their diameter on head near frontal foveae, on base of pronotum and on elytra. Pores on elytral intervals arranged usually in three, rarely in two irregular rows. Dorsal microsculpture visible on labrum, on head behind the eyes, on pronotum basally and on elytra throughout; consisting of isodiametric meshes.

Penis (Figs 7, 8) moderately arcuate. Terminal lamella rather long and narrow, flattened dorso-ventrally and sinuate at sides (dorsal aspect) before the small apical capitulum. Internal sac with a latero-proximal tooth and a lon-

gitudinal spiny patch approximately half as long as the median lobe.

Distribution. SE Daghestan, E Azerbaijan and N Iran.

Notes. This new species is closely related to *O. rupicola* (Sturm, 1818), which is widely distributed in Europe, Asia Minor and Caucasus. Both species are very similar in body size, proportions, pronotum not bordered along posterior margin, anal sternite of female clearly swollen at apex, and in penis with peculiar longitudinal spiny patch in internal sac. *O. austrocaspicus* sp. n. is distinguished, however, by several important characters: its elytral sutural angle (Fig. 6) is more widely rounded at apex than in *O. rupicola* (Fig. 11), dorsal pubescence, especially on pronotum, is longer, and discal pores on 3rd, 5th and 7th elytral intervals are less noticeable against the background of the more coarse elytral punctation. In addition, in *O. austrocaspicus* sp. n. the terminal lamella of penis (Figs 7, 8) is relatively longer and more strongly sinuate at sides than in *O. rupicola* (Figs 9, 10) and the internal sac is with much longer longitudinal spiny patch (in *O. rupicola*, longitudinal spiny patch is only about 0.2 times as long as median lobe). *O. rupicola* and *O. austrocaspicus* are mainly allopatric. According to our data, *O. rupicola* is widely distributed across the Caucasus but it does not reach the Talysh and Elburz where the holotype and most of paratypes of the new species were collected. In Daghestan and N Azerbaijan, *O. rupicola* and *O. austrocaspicus* sp. n. occur sympatrically without intergradation, which is the best demonstration of their specific separateness.

Ophonus (Metophonus) rufibarbis (Fabricius, 1792)

Carabus rufibarbis Fabricius, 1792: 155 (type locality: Germany).

Harpalus (Ophonus) brevicollis var. *orienticola* Tschitschérine, 1902: 589, 592 (type locality: Jerusalem, Israel), **syn. n.**

Type material. Lectotype (here designated) of *O. brevicollis* var. *orienticola*, ♂ with labels "Jerus.[alem]", "Syria", "*Oph. brevicollis* Serv., c. Chicherin [in Russian]", "*Oph. brevicollis* S. v. *orienticola* m. Typ, Tschitscherin det." (ZISP) and 4 paralectotypes (all in ZISP): 2 ♂ from "Jerusalem" (one of them with head and pronotum missing) and 2 ♂ from "Syria".

Notes. The geographical range of *O. rufibarbis* (= *O. brevicollis* sensu Tschitschérine) occupies the West Palaearctic from northwestern Africa and Iberian Peninsula to Altai, Sayans and Tien Shan. Based on the specimens from "Syria", Tschitschérine (1902) has described var. *orienticola* distinguishing it by the broader body and pronotum with sides weakly sinuate posteriorly. In my opinion, these characters are not sufficient to treat this form as a separate taxon.

Ophonus (Metophonus) puncticeps Stephens, 1828

Ophonus puncticeps Stephens, 1828: 173 (type locality: England).

Harpalus (Ophonus) brevicollis var. *crebrior* Tschitschérine, 1902: 589, 592 (type locality: Amasia, Turkey), **syn. n.**

Harpalus (Ophonus) angusticollis Müller, 1921: 137 (type locality: Istria).

Harpalus (Ophonus) angusticollis orientis Schauberger, 1926: 169 (type locality: Mersina, Turkey).

Type material. Lectotype (here designated) of *H. brevicollis* var. *crebrior*, ♂ with labels "Amasia" and "*brevicollis* Serv. v. *crebrior* m., Typ, Tschitscherin det." (ZISP); and 12 paralectotypes (all in ZISP): 1 ♂, 5 ♀, same data as lectotype; 2 ♂ from "Syria", 1 ♂ from "Nazareth", 1 ♀ labelled "Trans-Caspi G., Turkmenien, E. König", 1 ♂ from "Tauria, Salgir" and 1 ♀ without geographical label.

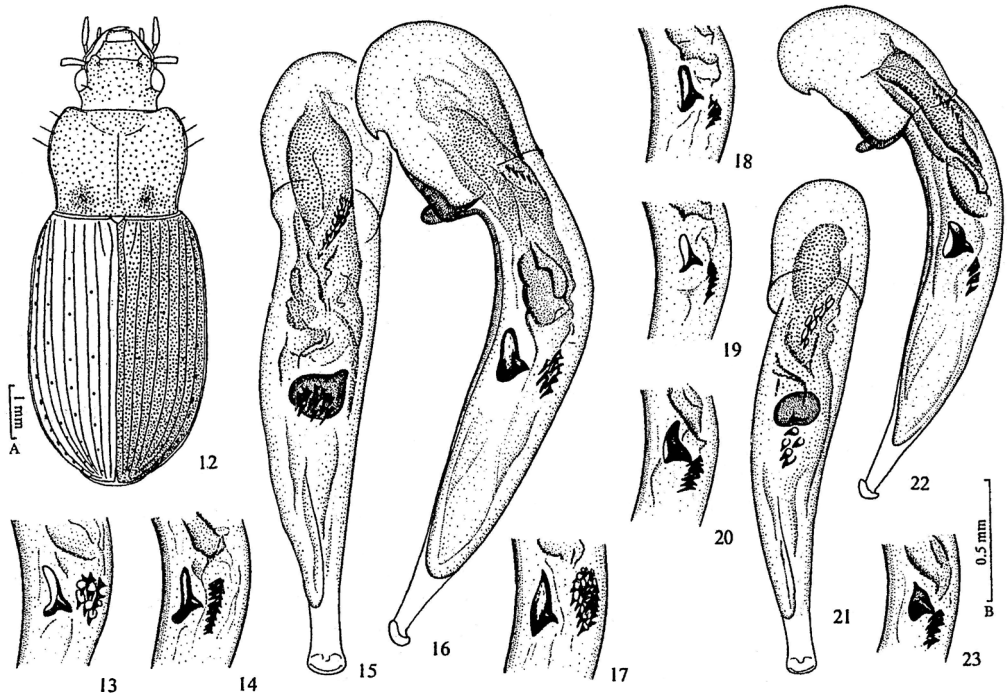
Notes. H. brevicollis var. *crebrior* has been described from many specimens collected in Asia Minor, Syria, Crimea and Transcaspia. As revealed by a re-examination of the type series, this name should actually be referred to *O. puncticeps*, not to *O. rufibarbis* (= *O. brevicollis* sensu Tschitschérine). However, it should be recorded that of the two syntypes from "Tauria, Salgir", one actually belongs to *O. melletii*.

O. puncticeps is distributed across Europe, Caucasus, Asia Minor and Middle East to SW Turkmenistan. Schauberger (1926) treated the poorly delimited geographical form of *O. angusticollis* (= *O. puncticeps*) from Asia Minor and Middle East characterized by more coarse and sparse dorsal punctation as subspecies *orientis*. Later Sciaky (1986) synonymized it with *O. puncticeps*. If the status of that form be restored, the subspecies should be referred as *O. puncticeps crebrior*.

Ophonus (Metophonus) melletii (Heer, 1837)

Harpalus melletii Heer, 1837: 42.

Note. The species is widely distributed over Europe, Caucasus, Near East and N Iran. In my opinion, it forms two subspecies with the characteristics given below.



Figs 12-23. 12-17, *Ophonus melletii hyrcanus* ssp. n. (12, 14, Gorgan; 13, 15, 16, Alekseevka; 17, Tersakan); **18-23**, *O. m. melletii* (18, Germany; 19, Belgrad; 20, Zheleznovodsk; 21, 22, Stavropol; 23, Armenia). 12, habitus; 13, 14, 17-20, 23, armature of internal sac of penis, view from left side; 15, 21, penis, dorsal aspect; 16, 22, penis, view from left side. Scales: A = 1.0 mm (Fig.12); B = 0.5 mm (Figs 13-23).

Ophonus melletii melletii (Heer, 1837)
(Figs 18-23)

Harpalus melletii Heer, 1837: 42 (type locality: Vallorbes, Switzerland).
Ophonus caucasicus Kolenati, 1845: 59 (type locality: "monte Kasbek Caucasi Ossetici").
Ophonus rectangulus Thomson, 1870: 323 (type locality: Scandinavia).
Ophonus rupicoloides Sharp, 1912: 208 (type locality: Chatam, Great Britain).
Ophonus championi Sharp, 1912: 209 (type locality: Guildfort, Great Britain).

Type material. Syntype (?) of *O. caucasicus*, ♂ with small golden quadrangle and labels "Georgia" and "*Caucasicus* Kolen. Alp. Cauc." (ZISP).

Other material examined. More than 70 specimens from Central and South Europe, Moldavia, Ukraine, south of European part of Russia (north at least to Belgorod Prov., also the south of Perm Prov.: Predural'e Nature Reserve, G. Voronov leg.), Caucasus (Russia, Krasnodar Terr.: Krasnodar, Ubinskaya, Lazarevskoe, Sochi, Krasnyy Kut; Stavropol Terr.: Zheleznovodsk, Pyatigorsk, Kursavka, Stavropol, Russkoe; Georgia: 25 km NW Tbilisi, Tbilisi, Manglisi, Shakriani; Armenia: Daragisht), Asia Minor (Turkey: Artvin; Osmaniye; Cappadocia, env. of Göremezelve-Avanos) and Lebanon (Hammand - Jabalel knisse, 1100 m, W. Heinz leg.).

Diagnosis. Smaller: body length 6.3-7.6 mm in males and 6.7-8.3 mm in females. Microsculpture on pronotum fine, suppressed, usually developed almost throughout, sometimes obsolete in a small central part of disc. Apex of tooth in internal sac of penis situated at proximal margin of medial spiny patch (Figs 18-23). Terminal lamella of penis comparatively shorter, with apical capitulum weakly oblique, almost transverse (Fig. 22).

Distribution. Europe east to the Urals, Caucasus, Asia Minor, Lebanon.

Note. The pronotal microsculpture in specimens examined from Turkey and Lebanon is almost invisible.

Ophonus melletii hyrcanus ssp. n.
(Figs 12-17)

Holotype, ♂, **Azerbaijan**, Alekseevka, 12 km SW Lenkoran, at light, 26-28.VI.1932, D. Znojko leg. (ZISP).

Paratypes. **Azerbaijan**: 6 ♂, 6 ♀, same data as holotype and also 3-5.VII.1932 (ZISP); 1 ♂, Alekseevka, Talysh, oak-wood, in leaf-litter, 2.V.1952 (ZISP); 3 ♂, Lenkoran Distr., Alekseevka, at ultra-violet light, 20.VII.1978, Mikheechev & Nikitsky leg. (ZISP;

ZMM); 1 ♀, Lenkoran, Talysh, V.1936, K. Arnoldi leg. (ZISP); 1 ♂, Astara, Lenkor.[an] u[ezd], 11.V.1911, Mlokosevich leg. (ZISP); 3 ♀, Masally, VII.1982, V. Semenov leg. (MPU). **Iran**: 4 ♂, 3 ♀, Gorgan, at light, 16.VII.1942, Pavlovsky leg. (ZISP); 1 ♀, Astrabad [= Gorgan], 29.V.1904, Filippovich leg. (ZISP). **Turkmenistan**: 2 ♂, Tersakan, 28.VI.1912, Bilkevich leg. (ZISP).

Diagnosis. Greater: body length 7.3-8.5 mm in males and 7.8-9.1 mm in females. Microsculpture on pronotum visible only along base and lateral margins, obsolete on remaining part. Apex of tooth in internal sac of penis situated either at distal margin or at the middle of medial spiny patch, never at its proximal margin (Figs 13-17). Terminal lamella of penis slightly shorter, with apical capitulum more distinctly oblique (Fig. 16).

Distribution. SE Azerbaijan (Talysh Lowland), N Iran (Caspian Lowland) and SW Turkmenistan.

Notes. The distinctive features of *O. melletii hyrcanus* ssp. n., including those of the male genitalia, are stable throughout its geographical range.

Ophonus (Metophonus) sciakyi Wrase, 1990
(Figs 26, 27)

Ophonus (Metophonus) sciakyi Wrase, 1990: 77 [type locality: "Astrabad" (= Gorgan), Iran].

Material examined. **Russia**: *Chechnia*: 1 ex., southern slope of Terskiy Mt. Range near Grozny, 14.IV.1984, E. Komarov leg. (cKOM); *Daghestan:* 3 ex., Derbent Distr., env. Berikey, 29.VI.1982, B. Kataev leg. (ZISP); 2 ex., Samur Nature Reserve, Primorskoe, 22.VII.1992, S. Kurdiukova leg. (ZISP); 2 ex., "Derbent, Becker" (ZISP); 2 ex., Derbent, Olsufjev leg. (ZISP); 35 ex., same locality, ex coll. Lutshnik (ZISP); **Azerbaijan**: 1 ex., Astanly, near Dzhalalabad, 25.VII.1980, Micheechev leg. (ZISP); 1 ex., Dadali, near Khachmas, 31.VII.1975, V. Janushev leg. (MPU); 3 ex., Geokchay Distr., 25.VII.1981 (MPU); 1 ex., "Kreis Nucha (E. Koenig)" (ZISP); 1 ex., Shusha (ZISP); 1 ex., Lenkoran, 17.IV.1972, Shkhasheminaev leg. (ZISP); 1 ex., Talysh Mts, Zuvant, Mistan sector, 8.VI.1982, A. Kazantzev leg. (MPU); 1 ex., Lenkoran, Dzhoni, 29.V.1976, Petrenko leg. (ZISP); 12 ex., same locality, 2.VII.1974, V. Dolin leg. (ZISP); 1 ex., Zuvant, Luliakeran, 3.VIII.1932, D. Znojko leg. (ZISP); **Georgia**: 2 ex., env. of Tiflis (= Tbilisi), 27.VII.1903, K. Satunin leg. (ZISP); 1 ex., 25 km NW Tbilisi, 13.VII.1977, V. Dolin leg. (ZISP); 1 ex., Manglisi, 1878 (ZISP); 1 ex., Vashlovan Nature Reserve, 25.V.1977, O. Kryzhanovskij leg. (ZISP); 1 ex., same locality, steppe, 10.V.1983, V. Janushev leg. (ZISP); **Armenia**: 3 ex., Kafan Distr., Shinakhokh, 29.IV.1983, V. Janushev leg. (ZISP); 2 ex., Megri Pass, 27.IV.1983, V. Janushev leg. (ZISP); **Iran**: 1 ex., Gilian, env. Gustemabad, Kararud Gorge, 20.V.1904, N. Zarudny leg. (ZISP); 2 ex., Gilian, IV.1903, N. Zarudny leg. (ZISP); **Turkmenistan**: 2 ex., Chatly, 3.VII.1912, Bilkevich leg. (ZISP); 1 ex., Tersakan, 28.VI.1912, Bilkevich leg. (ZISP); 2 ex., "Transcaspia, J. Sahlberg" (SMNHS).

Distribution. E Caucasus and Transcaucasia, N Iran, SW Turkmenistan.

Notes. In the original description of *O. sciakyi*, Wrase (1990) correctly compared his species with *O. melletii* (Heer), *O. parallelus* (Dej.) and *O. gabrieleae* Wrase. In my opinion, *O. sciakyi* is most related to *O. parallelus*; it is readily distinguished from the latter only by having the penis with apical capitulum more strongly oblique and with the somewhat differently organized armature of internal sac. In *O. parallelus*, internal sac has constantly two longitudinal parallel spiny patches at the middle and sometimes also a small proximal spiny patch on the right side of median lobe (Figs 24, 25); in *O. sciakyi*, there are left medial and right proximal spiny patches, the both well developed, and sometimes also a very small spiny patch at the middle on the right side of median lobe (Figs 26, 27). As judged from the examined material, *O. parallelus* and *O. sciakyi* are vicariant species. *O. parallelus* occupies southern and central portions of Europe from Iberian Peninsula to the Crimea, Asia Minor and West Caucasus; *O. sciakyi* occurs to the east of the geographical range of *O. parallelus*, in E Caucasus and Transcaucasia, N Iran and SW Turkmenistan.

Ophonus (Metophonus) hystrix Reitter, 1894
(Figs 28-111)

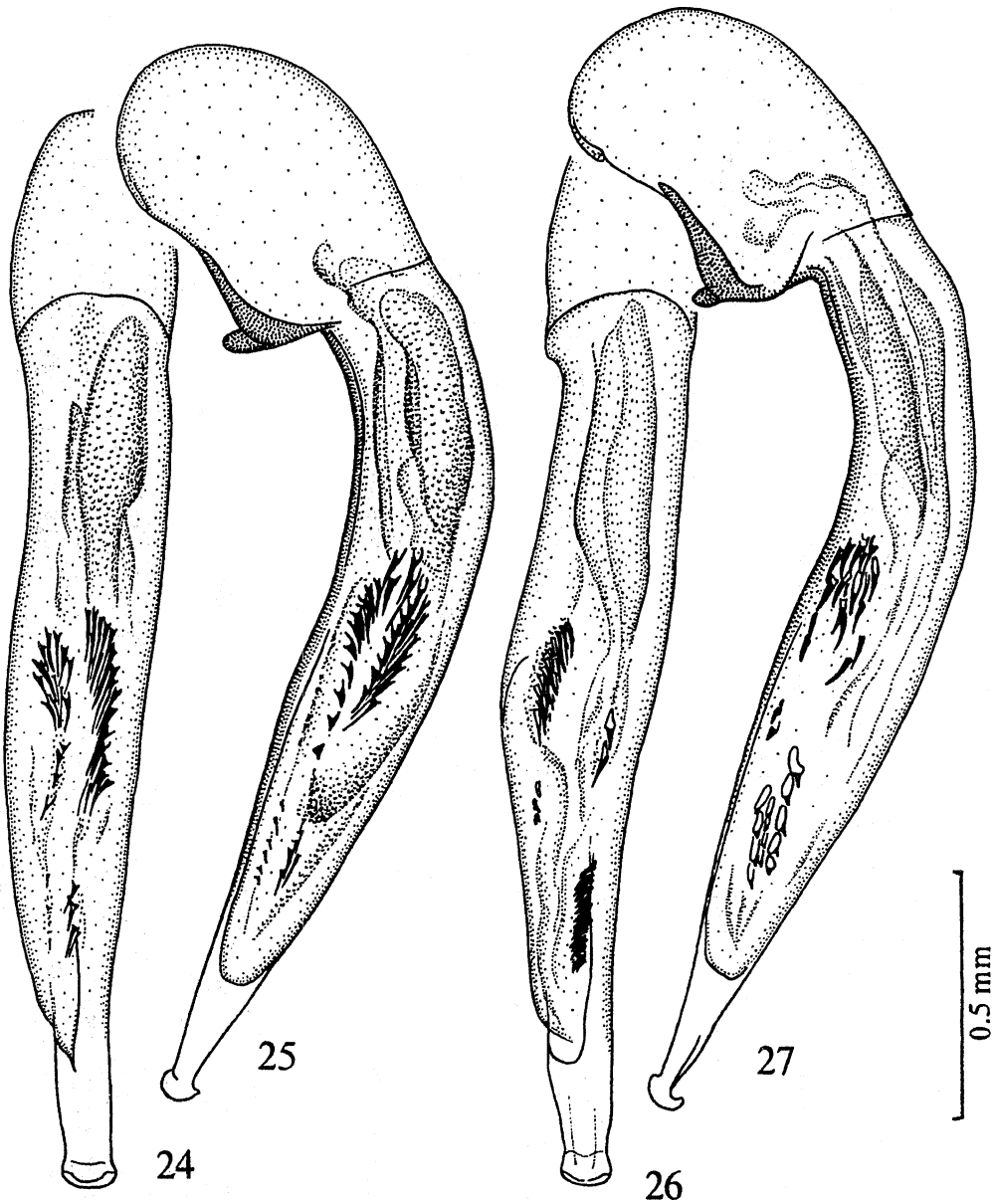
Ophonus hystrix Reitter, 1894: 124.

Description. Body length 4.7-8.0 mm, width 1.9-3.1 mm.

Coloration variable: body from reddish brown to metallic blue or green; palpi, antennae and legs from unicolourous brownish yellow to dark brown.

Head 0.68-0.73 times as wide as pronotum, with more or less convex eyes. Tempora flat or slightly convex, usually slopingly descending to neck. Labrum only scarcely concave anteriorly. Mentum without distinct median tooth but often with anterior margin barely projected forward medially.

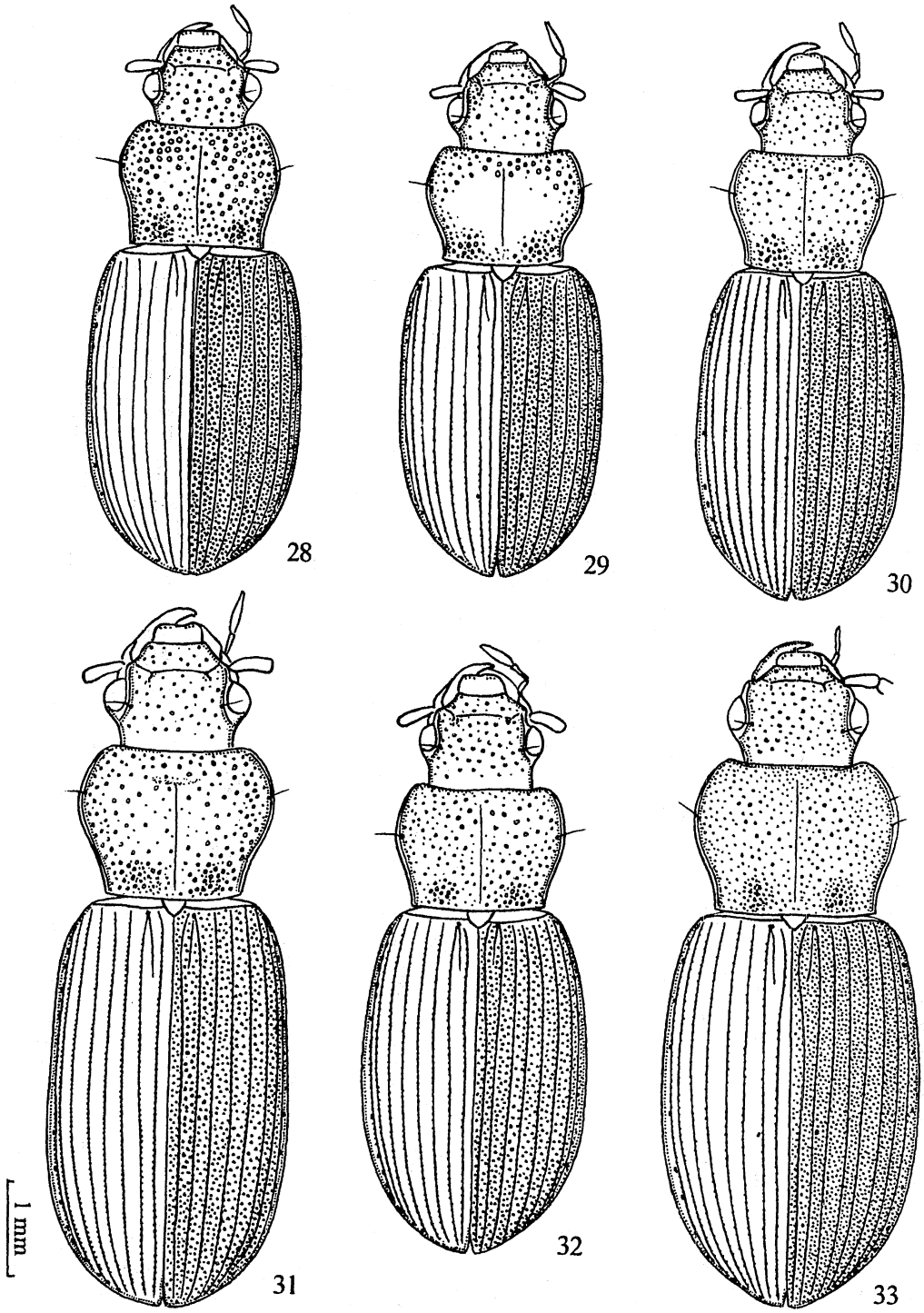
Pronotum cordate, 1.22-1.44 times as wide as long, widest before the middle (WPmax/WPmin = 1.22-1.43), where one (rarely two) lateral setigerous pores present, with sides more or less strongly sinuate before sharp, rectangular or slightly obtuse basal angles. Apical angles not protruding, widely rounded. Anterior margin only scarcely emar-



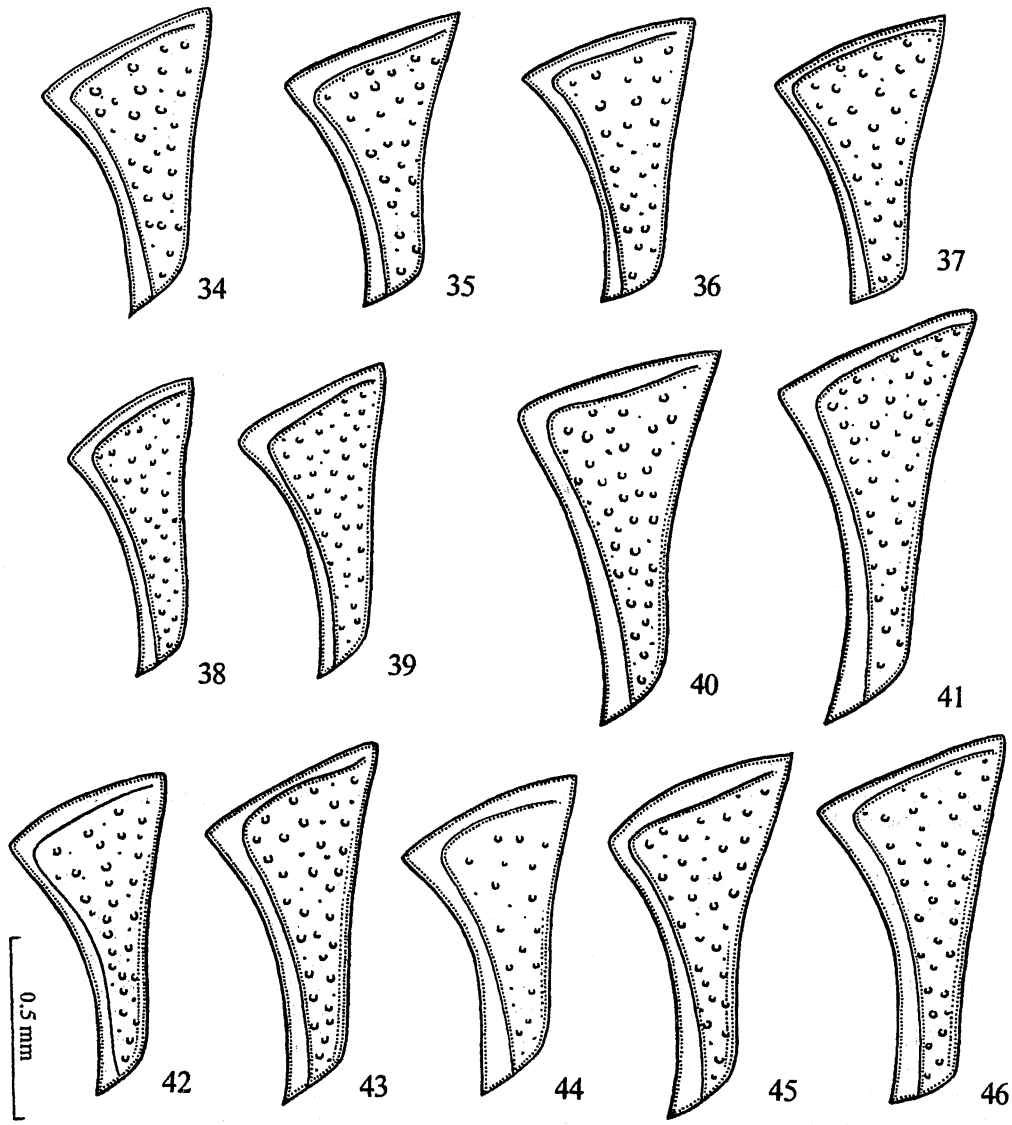
Figs **24-27**, *Ophonus*, penis. **24, 25**, *O. parallelus* (Crimea); **26, 27**, *O. sciakyi* (Daghestan). 24, 26, dorsal aspect; 25, 27, view from left side.

ginate, posterior one almost straight or slightly oblique laterally, not bordered, approximately equal to anterior margin and slightly narrower than elytral base between humeral angles. Pronotal surface moderately convex, either flattened at basal angles or not. Lateral depressions very narrow. Basal foveae small and usually shallow.

Elytra 1.40-1.67 times as long as wide, 2.39-2.90 times as long and 1.17-1.42 times as wide as pronotum, usually more or less strongly rounded at sides and widest behind middle. Humeri subangulate, rounded at apex, without a distinct denticle. Elytral basal edge straight or scarcely sinuate, meeting the lateral margin in a very obtuse angle with indistinct vertex.



Figs 28-33. *Ophonus hystrix,* habitus. **28, 29,** *O. h. hystrix* (28, env. Choybalsan; 29, Mandal-Gobi); **30**, *O. h. altaiensi* ssp. n. (Chuyskaya Steppe); **31**, *O. h. kamenskii* ssp. n. (Ortau); **32, 33**, *O. h. dissors* (32, Bayduly; 33, Uzun-Agach, holo type).

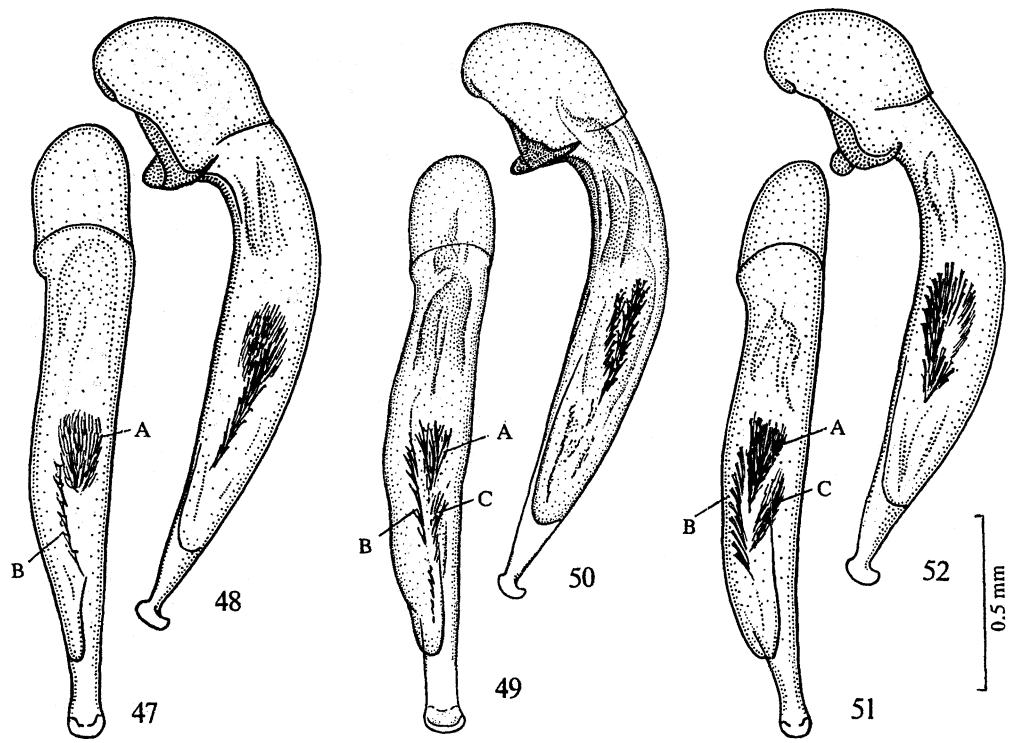


Figs 34-46. *Ophonus hystrix*, left metepisternon. **34-37**, *O. h. hystrix* (34, Kobdo – Ulangom; 35, env. Ulangom; 36, Ikh-Bogdo; 37, Lun-Ula); **38, 39**, *O. h. altaiensis* ssp. n. (38, Kadzhi River; 39, Kuray); **40, 41**, *O. h. kamenskii* ssp. n. (40, Saur, Uydene, 41, Ulytau); **42-46**, *O. h. dissors* (42, Malyy Naryn; 43, Akshiyrak; 44, 45, Aksu-Dzhabagly; 46, Almaty).

Pronotal sinuation weak; sutural angle slightly blunted at apex. Striae smooth or punctate. Scutellar stria well developed, with a basal pore. Intervals flat, 3rd behind middle sometimes with one discal pore near 2nd stria.

Metepisterna (Figs 34-46) clearly narrowed posteriad, notably longer than wide. In fore tibiae, outer distal margin with 2-3 spines, ventroapical tubercle with one spine. Hind femur with 3-7 setigerous pores along posterior margin. Anal abdominal sternite in both sexes thin, rounded at apex, with two pairs of setae along posterior margin.

Punctation on head and pronotum irregular and more coarse and sparse than on elytra. Pores on elytral intervals similar in size to pores in elytral striae, arranged within each interval in 2-4 irregular rows. Dorsal pubescence



Figs 47-52. *Ophonus hystrix hystrix*, penis (47, 48, Mandal-Gobi; 49, 50, Kharatalogoy; 51, 52, env. Altai Somon). 47, 49, 51, dorsal aspect; 48, 50, 52, view from left side).

short to rather long. Dorsal microsculpture, if present, fine; meshes isodiametric.

Female genitalia (Figs 93-110) with apical stylomere stout.

Penis (Figs 47-64) comparatively weakly arcuate. Terminal lamella more or less parallel-sided (dorsal aspect), much longer than wide, with apical capitulum clearly oblique and directed dorsad. Internal sac usually with three spiny patches at the middle of median lobe (in figures, designated as *A*, *B*, *C*); patches often fused with one another or 1-2 of them lacking.

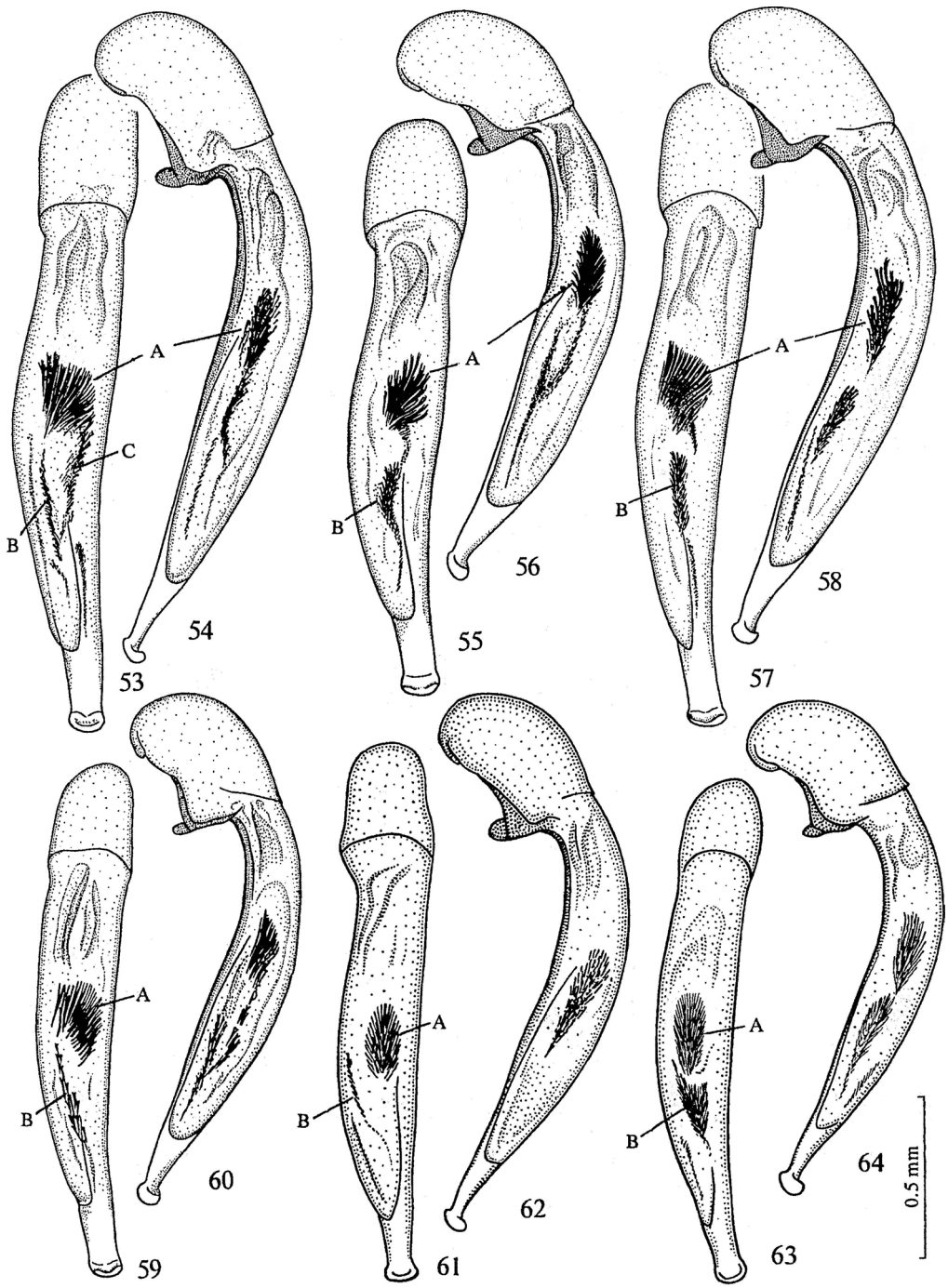
Distribution. Plains of Kazakhstan, Tien Shan, Altai, the southmost of Siberia from Tuva to Transbaikalia, Mongolia.

Notes. In external morphology and male genitalia, *O. hystrix* is somewhat similar to *O. sciakyi* and *O. parallelus*, and it is likely that all these species are derivative of one evolutionary stock, which is recognizable on apomorphic state of penis with oblique apical capitulum directed dorsad and with internal sac having distinctive group of spiny patches at the middle. In spite of high variability of characters, *O. hystrix* is easily distinguished from *O. sciakyi* and *O. parallelus* by the pronotum with basal margin unbordered and with basal angles sharp at apex and by elytra without series of discal pores on 3rd, 5th and 7th intervals.

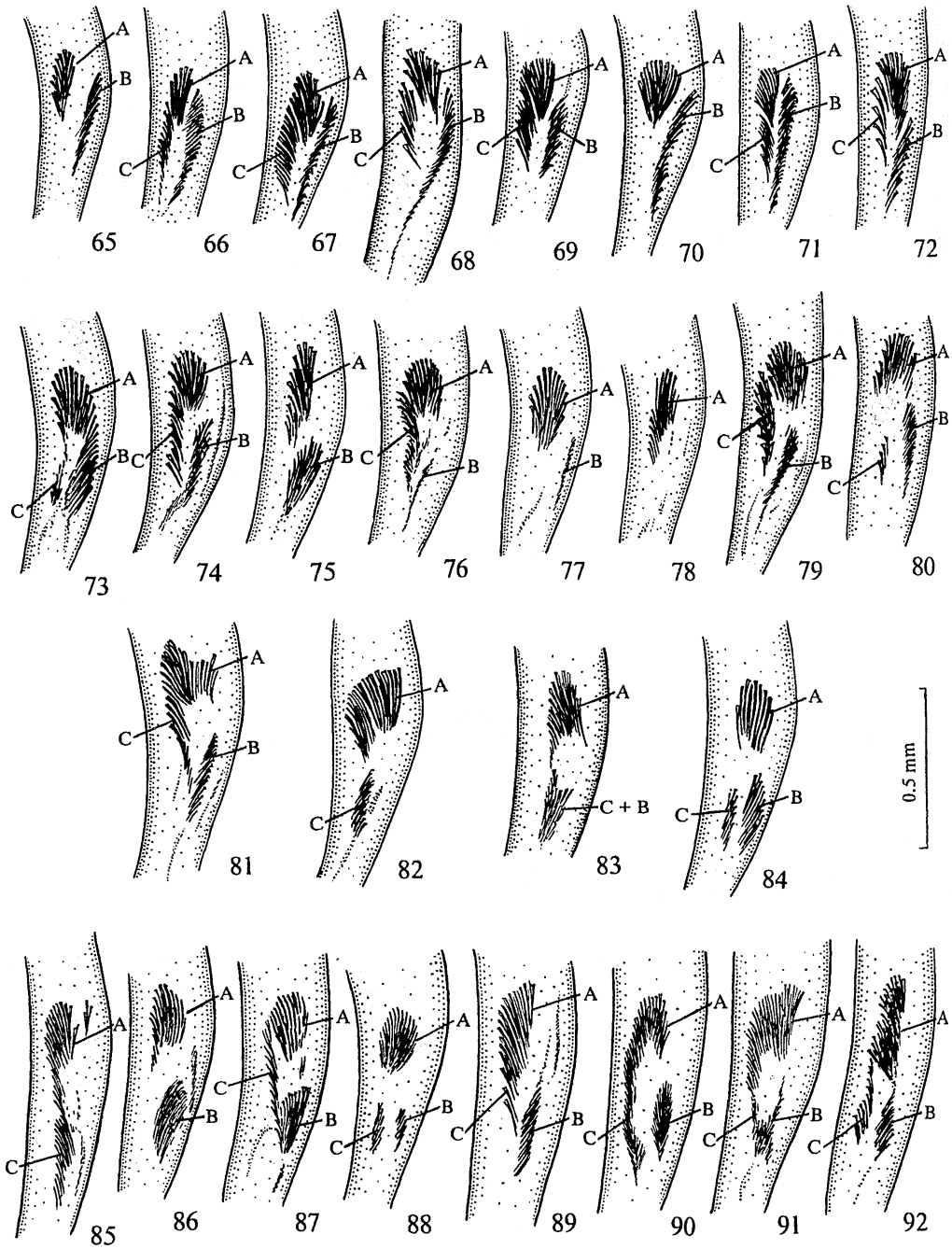
O. hystrix is variable in geographical respect. I treat it in wide sense as a polytypic species with four subspecies. Their main numerical characteristics are given in Table 1.

Key to subspecies of *O. hystrix*

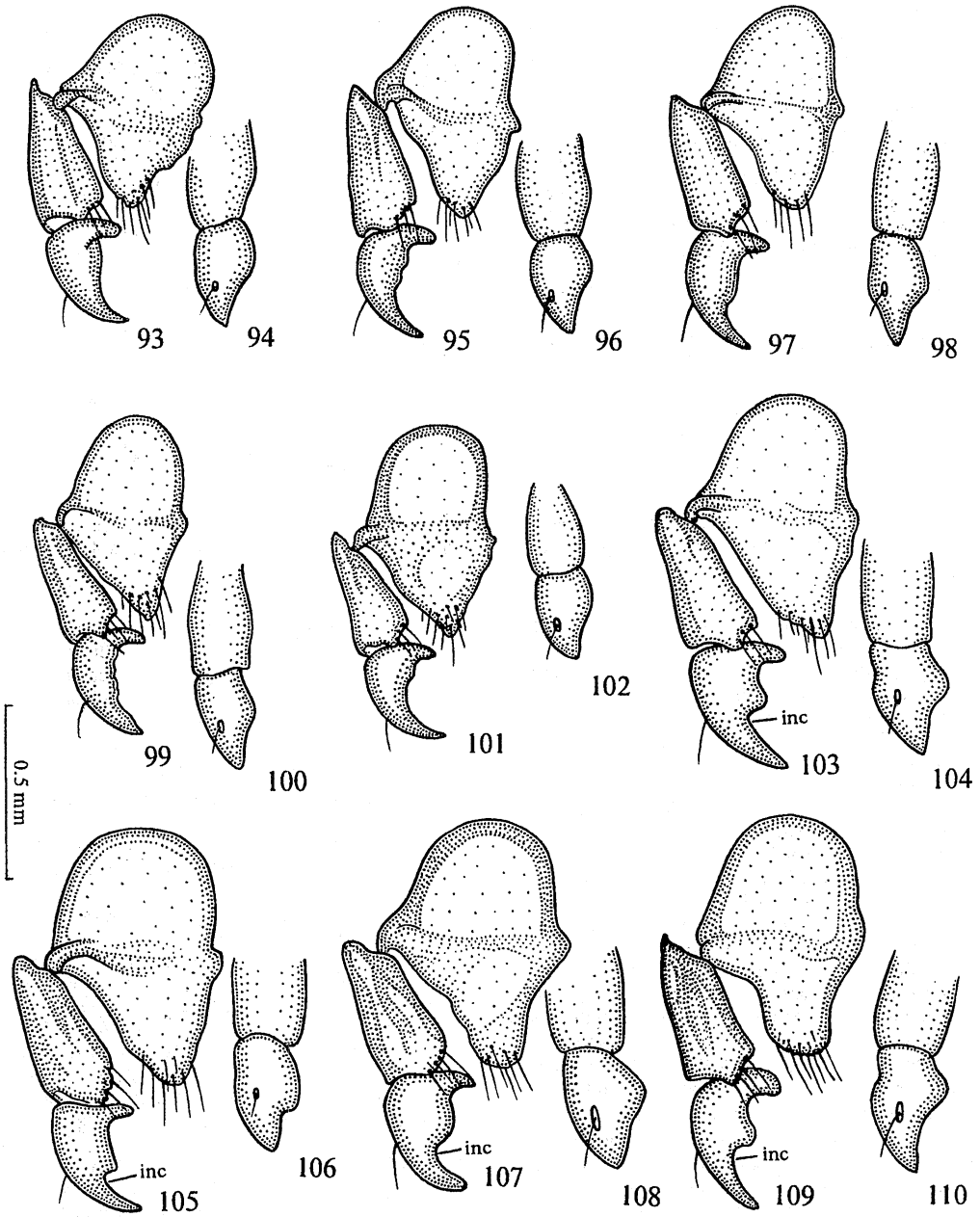
1. Metepisterna shorter, their inner margin less than 1.3 times as long as anterior margin (Figs 34-37). Antennae from 2nd or 3rd segment on and femora more or less strongly infuscated; dorsum without metallic lustre. Dorsal pubescence rather long, on pronotum near apical angles at least as long as width of 1st antennomere. Hind femur with 4-7 setigerous pores along posterior margin. Spines in spiny patch *A* of internal sac of penis with apices situated more distally than bases of proximal spines in spiny patch *B* (Figs 65-72). Apical stylomere in female genitalia without deep incision on external margin (Figs 94-96). Body length 4.7-6.4 mm. Mongolia, southmost Siberia ..... **O. hystrix hystrix** Rtt.



Figs 53-64. *Ophonus hystrix*, penis. **53-56**, *O. h. dissors* (53, 54, Aksu-Dzhabagly; 55, 56, env. Ottuk); **57, 58**, *O. h. kamenskii* ssp. n. (Ortau); **59-64**, *O. h. altaiensis* ssp. n. (59, 60, Kurday; 61, 62, Sebystey; 63, 64, env. Kosh-Agach). 53, 55, 57, 59, 61, 63, dorsal aspect; 54, 56, 58, 60, 62, 64, view from left side.



Figs 65-92. *Ophonus hystrix*, armature of internal sac of penis, ventral aspect. **65-72**, *O. h. hystrix* (65, env. Dut; 66, Kobdo – Ulangom; 67, env. Altai Somon; 68, Muren; 69, Kharatologoy; 70, env. Uyang; 71, env. Bayan-Delger; 72, env. Dariganga); **73-80**, *O. h. altaiensis* (73, Chuyskaya Steppe; 74, 75, 76, env. Kosh-Agach; 77-80, Sebystey); **81-84**, *O. h. kamenskii* ssp. n. (81, Mugodzhary; 82, Ortau; 83, Koksengir; 84, Saur); **85-92**, *O. h. dissors* (85, 86, Bayduly; 87, env. Ottuk; 88, Semizbel; 89, "Namangan"; 90, 91, Aksu-Dzhabagly; 92, Almaty).



Figs 93-110. *Ophonus hystrix*, female genitalia, ventral and lateral aspects. **93-96**, *O. h. hystix* (93, 94, env. Ulangom; 95, 96, env. Bayan); **97-102**, *O. h. altaiensis* ssp. n. (97, 98, env. Kosh-Agach; 99-102, Sebystey); **103-104**, *O. h. kamenskii* ssp. n. (Ulytau); **105-110**, *O. h. dissors* (105-106, env. Ottuk; 107, 108, Kargalinka; 109, 110, Almaty). *inc* – incision.

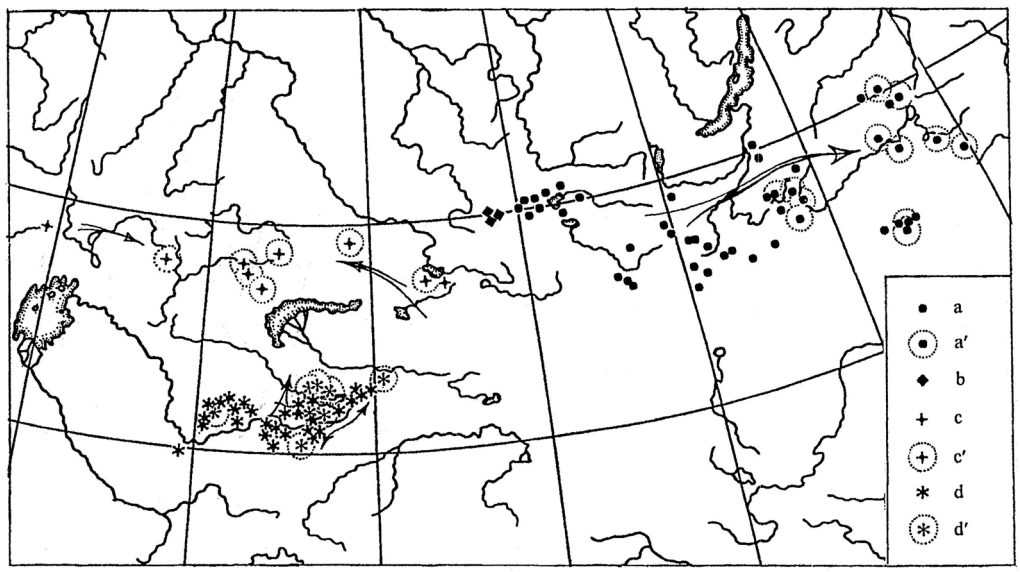


Fig. 111. *Ophonus hystrix*, distribution. **a, a'**, *O. h. hystrix*; **b,** *O. h. altaiensis* ssp. n.; **c, c'**, *O. h. kamenskii* ssp. n.; **d, d'**, *O. h. dissors*. a, b, c, d, brachypterous populations; a', c', d', macropterous populations. Arrows indicate possible routes of migration.

– Metepisterna longer, their inner margin more than 1.3 times as long as anterior margin. Antennae and legs usually unicolourous, reddish brown; dorsal surface either with metallic lustre or not. Dorsal pubescence shorter, on pronotum near apical angles at most as long as width of 1st antennomere. Hind femur usually with 3, sometimes 4 setigerous pores along posterior margin. Spines in spiny patch *A* of internal sac of penis with apices situated more proximally than bases of proximal spines in spiny patch *B* (Figs 73-92). Apical stylomere in female genitalia either with or without deep incision on external margin (Figs 103-110) 2

2. Dorsum dark brown to black, with more or less intense metallic lustre, often entirely metallic blue or metallic green. Dorsal pubescence shorter, on pronotum near apical angles as a rule distinctly shorter than width of 1st antennomere. Body length 5.1-8.0 mm. Tien Shan ... **O. hystrix dissors** Tschit.

– Dorsum reddish brown to dark brown, at most with weak bluish green or bluish violet metallic lustre. Dorsal pubescence longer, approximately as long as or a little shorter than width of 1st antennomere .. 3

3. Larger: body length 6.0-7.8 mm. Antennae slenderer, with middle segments more than twice as long as wide. Dorsal pubescence usually longer, on pronotum near apical angles approximately as long as width of 1st antennomere. Apical stylomere in female genitalia with deep incision on external margin (Figs 103-104). Plains of Kazakhstan .....
..... **O. hystrix kamenskii** ssp. n.

– Smaller: body length 4.7-6.0 mm. Antennae stouter, with middle segments less than twice as long as wide. Dorsal pubescence shorter, on pronotum near apical angles usually a little shorter than width of 1st antennomere. Female genitalia with apical stylomere lacking deep incision on external margin (Figs 97-102), or incision not deep. SE Altai .....
..... **O. hystrix altaiensis** ssp. n.

Ophonus hystrix hystrix Reitter, 1894
(Figs 28, 29, 34-37, 47-52, 65-72, 93-96, 111a)

Ophonus hystrix Reitter, 1894: 124 (type locality: "Quellengebiet des Irkut [Russia] und nordl. Mongolei").

Type material. Syntype (?) of *O. hystrix*, ♂ with label "*hystrix* m. Mongol. bor." (ZISP).

Other material examined (all in ZISP, unless otherwise indicated). **Russia**. *Tuva:* 3 ex., Mugur-Aksy (MPU); 2 ex., 3-5 km SE of Mugur-Aksy, Kargy River valley (ISEAN); 4 ex., Oviur Distr., 20 km E of Torgalyg, Kadyy River; 1 ex., 20 km NW of Solchur, 1500 m (ISEAN); 1 ex, 3 km NE of Sagly (ISEAN); 2 ex, Agar-Dag, 35 km WNW Erzin (ISEAN); 1 ex., northern slope of Mongun-Tayga Mt. Range, upper Mugur River (ISEAN); *Chita Prov.:* 1 ex., Achinsk Distr., 15 km of Kunkur; 1 ex., 25 km SW of Kharanor, Bishakhan Lake (ISEAN); 2 ex., 22 km SW of Kharanor, Bol'shoy Chindant Lake (ISEAN); 3 ex., Daurskiy Nature Reserve, Zun-Torey Lake (ISEAN); 1 ex., Onon River near Verkhniy Tsasuchey (ISEAN); *Buryatia:* 1 ex., env. Troitskosavsk [= Kyakhta]; **Mongolia**. *Hovd:* 3 ex., 15 km WNW of Dut; *Ubsunur:* 3 ex., Togtokhyn-Shil, 50 km ESE Ulangom; 3 ex., 50 km E Ulangom; 1 ex., northeastern shore of Ureg-Nur Lake; 2 ex., mountains between Kobdo and Ulangom, Koku-Borut; 3 ex., 15 km N of mouth of Khuv-Usny-Gol; *Khubsugul*: 5 ex.,

Table 1. Main numerical characteristics of subspecies of *Ophonus hystrix*

Subspecies	Sex, number	WP/LP	LE/WE	LE/LP	WE/WP	WH/WP	WPmax/ WPmin	L
hystrix	♂	1.28-1.38	1.40-1.52	2.50-2.73	1.30-1.42	0.70-0.79	1.23-1.35	4.7-5.8
hystrix	n=18	(1.33)	(1.46)	(2.64)	(1.37)	(0.74)	(1.30)	(5.4)
	♀	1.32-1.44	1.40-1.53	2.63-2.90	1.32-1.41	0.71-0.78	1.23-1.33	5.2-6.4
	n=11	(1.37)	(1.49)	(2.77)	(1.36)	(0.74)	(1.29)	(5.6)
hystrix	♂	1.23-1.34	1.50-1.60	2.54-2.80	1.29-1.40	0.72-0.77	1.23-1.36	4.7-5.7
altaiensis ssp. n.	n=17	(1.28)	(1.54)	(2.65)	(1.34)	(0.74)	(1.30)	(5.4)
	♀	1.22-1.35	1.49-1.61	2.56-2.87	1.34-1.39	0.71-0.77	1.26-1.37	4.9-6.0
	n=10	(1.27)	(1.54)	(2.69)	(1.36)	(0.74)	(1.31)	(5.6)
hystrix	♂	1.26-1.35	1.48-1.67	2.49-2.69	1.17-1.35	0.70-0.76	1.30-1.43	6.0-7.7
kamenskii ssp. n.	n=13	(1.29)	(1.59)	(2.60)	(1.26)	(0.73)	(1.36)	(6.9)
	♀	1.25-1.41	1.54-1.64	2.64-2.79	1.27-1.39	0.70-0.76	1.29-1.41	6.3-7.8
	n=15	(1.31)	(1.61)	(2.72)	(1.31)	(0.73)	(1.34)	(7.1)
hystrix	♂	1.29-1.40	1.46-1.58	2.39-2.64	1.22-1.30	0.69-0.74	1.25-1.34	5.1-6.3
dissors,	n=10	(1.33)	(1.50)	(2.54)	(1.27)	(0.71)	(1.29)	(5.7)
C and Inner	♀	1.32-1.38	1.50-1.59	2.64-2.76	1.26-1.33	0.69-0.73	1.22-1.32	6.0-6.6
Tien Shan	n=7	(1.35)	(1.54	(2.71)	(1.30)	(0.70)	(1.28)	(6.3)
hystrix	M	1.29-1.42	1.47-1.62	2.54-2.70	1.21-1.31	0.69-0.73	1.24-1.41	6.1-7.7
dissors,	n=14	(1.34)	(1.55)	(2.62)	(1.26)	(0.71)	(1.30)	(6.7)
W and N	♀	1.24-1.36	1.53-1.67	2.65-2.79	1.24-1.34	0.68-0.74	1.24-1.34	6.3-8.0
Tien Shan	n=9	(1.32)	(1.58)	(2.73)	(1.30)	(0.71)	(1.28)	(7.3)

10 km SE Muren; 6 ex., Ider River, Dzhargalant; *Bayan-Khongor:* 11 ex., northern slope of Ikh-Bogdo-Ula, 2500-3000 m; 4 ex., Tuin-Gol, Khalkha; 4 ex., Lamyn-Gegen, SE Hangai; *Gobi-Altai:* 2 ex., 25 km SE Altai (Yusun-Bulak); 1 ex., Khasagt-Khairkhan Mt. Range, 15 km S Dzhargalant; 6 ex., 10 km SW Naran, 2500 m; *Middle Gobi:* 1 ex., Delger-Khangai-Ula; 4 ex., 25 km WSW Mandal-Gobi; 1 ex., 20 km SW Mandal-Gobi; 1 ex., Kharatologoy; *East Gobi:* 1 ex., 45 km NE Bayan-Munkh; *Ara-Khangai:* 5 ex., 25 km WSW Ikh-Tamir; 2 ex., 20 km E Tevshrulekh; 1 ex., 35 km E Chulut; 4 ex., 20 km W Tariat; 1 ex., 45 km E Tsetserleg (cISOL); *Uber Khangai:* 2 ex., 35 km ENE Arbay-Khere; 1 ex., Uldziyn-Ula, 60 km ENE Arbay-Khere; 1 ex., 12 km W Uyang; *Dzabkhan:* 1 ex., Ulan-Erig, NW of Ulyasutay; 1 ex., "N.-W. Mongolia, 3.VII-3.VIII.1894, E. Klementz leg."; *Hentei:* 6 ex., Bukhdere-Karausu, Kerulen; *Selenginsk:* 2 ex., between Iro and Kharagol, Hentei; *Central:* 2 ex., Nalaykha, 40 verst E Urga [= Ulan Bator]; 3 ex., env. of Nalaykha; 1 ex., 40 km E Urga [= Ulan Bator]; 1 ex., env. Urga [= Ulan Bator]; 2 ex., Mungen-Mort; 1 ex., northern slope of Bogdo-Ula near Ulan Bator; 1 ex., 25 km SSE Bayan; 2 ex., Urga [= Ulan Bator]; 1 ex., Shoroytu-Gol; 2 ex., Chulutuin; 2 ex., Gantsa-khuduk, Tsagan-Cholot; *East:* 2 ex., Numregin-Gol, 32 km SE Salkhit; 1 ex., Kerulen, 40 km Choybalsan; 1 ex., 40 km ESE Choybalsan; 2 ex., Buyr-Nur Lake, 25 km NE Bayan Nur Lake; 2 ex., 50 km ESE Choybalsan; *Sukhe-Bator:* 3 ex., Shiliyn-Bogdo-Ula; 1 ex., 22 km WNW Bayan-Delger; 4 ex., Lun-Ula Mt., 30 km WNW Dariganga; 4 ex., Dariganga, Altyn-Obo Mt.; 1 ex., Dzotol-Khan-Ula Mt.; 1 ex., Dzhavkhlant; also without precise localisation: 4 ex., "Nordl. Mongolei, Changai, Leder"; 1 ex., "Mongolia (B. Jakowlew)".

Description. Comparatively small: body length 4.7-6.4 mm, width 2.1-2.6 mm. Body reddish brown to dark brown tinged with red, without metallic lustre; palpi, antennae from 2nd or 3rd segment on and legs more or less strongly infuscated. Head comparatively large, with convex, hemispherical eyes. Antennae long and stout, extending approximately to one third of elytra, with middle segments less than twice as long as wide. Pronotum comparatively broad, with sides rather strongly sinuate behind middle and more or less parallel before usually rectangular, sometimes slightly obtuse basal angles. Pronotal surface moderately convex, distinctly flattened at basal angles. Elytra convex, comparatively broad, with rather broad striae. Discal pore on 3rd interval invisible. Metepisterna (Figs 34-37) shorter than in other subspecies, approximately 1.20-1.30 times as long as wide. Hind femur with 4-7 setigerous pores along posterior margin. Punctation on head and pronotum much coarser and sparser than on elytra; in some specimens, central part of pronotal disc smooth, impunctate (Fig. 29).

Pores on each elytral interval arranged usually in two or three, sometimes (generally on even intervals) in four irregular rows. Dorsal pubescence rather long, on pronotum near apical angles at least as long as width of 1st antennomere. Dorsal microsculpture indistinct, often visible only in females. Female genitalia (Figs 93, 96) with apical stylomere without deep incision on external margin. Spines in spiny patch *A* of internal sac of penis with apices situated more distally than bases of proximal spines in spiny patch *B* (Figs 47-52, 65-72; better to examine from ventral side).

Distribution. Southernmost part of Siberia from Tuva to Transbaikalia, Mongolia.

Ophonus hystrix dissors Tschitschérine, 1895, stat. n.

(Figs 32, 33, 42-46, 53-56, 85-92, 105-110, 111d)

Ophonus (in sp.) *dissors* Tschitschérine, 1895a: 235 (type locality: Uzun-Agach, Kazakhstan).

Type material. Holotype, ♂ with labels "Semiretschie, village Usun-Agatsch (P. Schmidt), 24.VI. 1892" and "*Dissors* m., Typ. Tschitscherin det." (ZISP).

Other material examined. **Kazakhstan**: *Chimkent Prov.:* Aksu-Dzhabagly Nature Reserve: 12 ex., northern slope of Talas Mt. Range near Kazan-Chukur, 2950 m (MPU; ZISP); 6 ex., Dzhabagly Gorge, Izbola (ZISP); 10 ex., Ulken-Kaindy, 2700-2800 m (cIKAB; MPU); 1 ex., road to Kshi-Kaindy (cIKAB); 4 ex., 6 km E of Novonikolaevka (ZISP); *Almaty Prov.:* 1 ex., Zailiysk Alatau, Right Talgar River (ZIA); 1 ex., Almaty, Talgar (ZIA); Almaty, Glubokaya Shchel', 1200 m (ZIA); 2 ex., Almaty, at light (ZIA); 1 ex., "Vernyy [= Almaty]" (ZISP); 3 ex., "Wjernij [= Almaty], Alatau" (ZISP); 2 ex., env. Almaty (ZISP); 1 ex., Zailiysk Alatau, Kargalinka Gorge, 2000 m (ZISP); 1 ex., Turgen gorge, 1900 m (ZIA); 1 ex., Kshi-Chymbulak River, S of Fabrichnyy (cIKAB); 1 ex., sovkhoz Kaskelenskiy (ZISP); 4 ex., Turaygyr Mt. Range, 32 km NE Zhalanash (cIKAB); 1 ex., Kegen, Sary-Tau (ZISP); 1 ex., Ketmen Mt. Range, Bol'shoy Ketmen (cIKAB); **Uzbekistan**: 1 ex., "Namangan Uezd" (ZISP); 1 ex., Kuraminsk Mt. Range, Kamchik Pass, 2200 m (IBB); 1 ex., Turkestan Mt. Range, Kusavlisai, 2300-2600 m (cWR); **Kirgizia**: 1 ex., Ichkili-Too, 20 km SE Pokrovka, 1300-1600 m (cIKAB); 3 ex., Talas Mt. Range, 30 km S Talas, 2200-2700 m (ZISP); 1 ex., Khodzha-Ata River near Sary-Chelek Lake (ZISP); 5 ex., Sary Chelek Nature Reserve, Irikol Lake (IBB); 19 ex., Sary Chelek (cOVCH); 1 ex., Sary Chelek Nature Reserve, Blue Lake (ZISP); 1 ex., Chichkan (cOVCH); 1 ex., Susamyrtoo, Kobuksu River, 3 km from mouth (cOVCH); 1 ex., Ferganskiy Mt. Range, near Kaldama Pass (ZISP); 5 ex., Arslanbob, 2000-2700 m (ZISP); 3 ex., Baubash-ata Mt. Range, Yarodar, Zindan (IBB); 1 ex., Ak-Terek near Dzhalal-Abad (ZISP); 1 ex., SE part of Fergansk Mt. Range, right bank of Oytal River, 5 km Kulun River mouth, 2900-3000 m (cIKAB); 1 ex., Kungey Alatoo, N slope, env. Kaindy, 1600-1900 m (cIKAB); 1 ex., 50 km E Rybachiy, 1970 m (ISEAN); 1 ex., E part of Terskey Mt. Range, Tosor River Valley, 2600 m (ZISP); 1 ex., Chon-Kemin River, 1800 m (MPU); 1 ex., Issyk-Kul Lake, Semizbel, 2600 m (ZISP); 1 ex., east shore of Issyk-Kul, Barskaun, *Picea* forest, 2200 m (ZISP); 1 ex., upper Tiup River, Santash (cOVCH); 2 ex., E spur of Terskey Mt. Range, 20 km N Sary-Dzhaz (cIKAB); 10 ex., Terskey Mt. Range, Barskoon Gorge, 2500 m (ZISP; IBB); 16 ex., NW slope of Terskey Mt. Range, Ukok River, 10 km S Kochkorka, 2000-2900 m (ZISP; cIKAB); 6 ex., env. Kochkorka, 1900 m (IZK); 2 ex., Kochkorka, flood-land of Chu River (ZISP); 2 ex., N slope of Ukok Mt, ESE of Kochkorka, 2300-2600 m (cIKAB); 1 ex., E Terskey Mt. Range, right bank of Orta-Konnak River, 3000 m (cIKAB); 3 ex., Akshiyrak Mt. Range, 2000-2700 m (ZISP); 10 ex., 40 km SE Ottuk, 30 km from Issyk-Kul Lake, Ulakhol River, 2300 m (ZISP); 1 ex., N slope of Ukek Mts, SSE Kochkorka, 2300-2600 m (cIKAB); 5 ex., Dzhetym-bel, 12 km of mouth Archaly River, 3100-3400 m (ZISP); 10 ex., Bayduly Mt. Range, Keksu, 2800-3000 m (cBEL; ZISP; cIKAB); 1 ex., Akshiyrak Mt. Range, Aldane River, S Chetki, 3100 m (cIKAB); 1 ex., 30 km S Dolon Pass, 1800 m (cKLM); 1 ex., S slope of Terskey Mt. Range, west portion of left bank of Karakudzhur River, 16 km E Sarybulak, 2400 m (cIKAB); 2 ex., Naryntoo Mt. Range, 15 km W Naryn City, 1600 m (cKLM); 2 ex., Atbashi Mt. Range, 45 km SE Naryn, 2700-3000 m (ZISP); 3 ex., 10 km N of mouth Malyy Naryn River, 3000-3500 m (ZISP); 2 ex., Atbashi Mt. Range, 45 km SE Naryn, 2700-3000 m (cIKAB); 1 ex., Atbashi Mt. Range, 2700 m (IBB).

Description. Body length 5.1-8.0 mm, width 1.9-3.1 mm. Body dark brown to nearly black, with labrum and mandibles paler; dorsum with more or less intense metallic lustre (usually blue, rarely green, often entirely metallic blue or metallic green). Palpi, antennae and legs more or less unicolourous, reddish brown. Head, on average, smaller than in nominotypical subspecies and with less convex eyes. Antennae slenderer, extending to one-quarter or one-fifth of elytra. Pronotum with sides moderately or only slightly sinuate behind middle and usually converging, more rarely parallel before obtuse or rectangular basal angles. Pronotal surface less convex than in nominotypical subspecies, usually not depressed at basal angles. Elytra longer, often with one discal pore on each 3rd interval. Metepisterna (Figs 42-46) notably longer, approximately 1.35-1.50 times as long as wide. Number of pores along posterior margin of hind femur fewer than in nominotypical subspecies, usually three, sometimes four. Head and pronotum more densely and finely punctate. Dorsal pubescence short; on pronotum near apical angles, length of hairs usually less than width of 1st antennomere. Dorsal microsculpture usually developed only on elytra, throughout or

along margins. Female genitalia (Figs 105-110) usually with apical stylomere having deep incision on external margin. Spines in spiny patch *A* of internal sac of penis with apices situated more proximally than bases of proximal spines in spiny patch *B* (Figs 53-56, 85-92; better to examine from ventral side).

Geographical variation. There are some morphological differences between the populations distributed in Northern and Western Tien Shan and those distributed in Central and Inner Tien Shan. The latter demonstrate a shift in some characters to the subspecies *altaiensis* ssp. n. In the specimens examined from Central and Inner Tien Shan, the body size is smaller (length 5.1-6.6 mm, width 1.9-2.6 mm) than in specimens from Western and Northern Tien Shan, elytra are comparatively shorter, antennae stouter (with middle segments often less than twice as long as wide) and the dorsal punctation sparser and coarser (punctures on each elytral interval arranged usually in two rows). For comparison, in specimens from Northern and Western Tien Shan, the length is 6.1-8.0 mm, width 2.5-3.1 mm, antennae with middle segments at least twice as long as wide, and punctures on each elytral interval arranged in two or three irregular rows.

Distribution (Fig. 111d). Tien Shan.

Notes. O. h. hystrix and *O. h. dissors* differ from each other in many characters and were hitherto considered separate species, but since they are connected by geographical forms with intermediate characteristics, I prefer to consider them as subspecies.

Ophonus hystrix kamenskii Kataev & Kabak, ssp. n.

(Figs 31, 40, 41, 57, 58, 81-84, 103, 104, 111c)

Ophonus kamenskyi K. Arnoldi in L. Arnoldi, 1969: 39 (nomen nudum).

Holotype, ♂, **Kazakhstan**, *Dzhezkazgan Prov.*, Koksengir, 30 km W of Kyzylzhar, 22.V.1962, L. Arnoldi leg. (ZISP).

Paratypes. **Kazakhstan**: *Dzhezkazgan Prov.:* 1 ♂, same data as holotype (ZISP); 2 ♀, Ulytau, 2.VI.1962, G. Medvedev leg. (ZISP); 5 ♂, 1 ♀, Zhana-Arka, 1.VI.1960 and 6.VII.1961 (ZISP); 1 ♀, 40 km S Zhana-Arka, 12.VI.1960, I. Kerzhner leg. (ZISP); 1 ♀, 30 km S Mointy, 23.VI.1961, G. Medvedev leg. (ZISP); 1 ♂, Koksengir, 24.VII.1958, Mal'kovskij leg. (ZISP); *Aktyubinsk Prov.:* 1 ♂, 3 ♀, Mugodzhary, 10 km N Ber-Chogur, 2.VII.1952, F. Lukjanovitch leg. (ZISP); 1 ♂, Balkhash, Mun-Kara-Bas, 16.VI.1929 (ZIA); *Karaganda Prov.:* 1 ♂, Ortau Mts, 7 km E Yuzhnyy, G. Sergeev leg. (ZISP); *Turgay Prov.:* 1 ♀, Kokshetau, 1.VII.1957 (ZISP); *East-Kazakhstan Prov.:* 1 ♀, 10 km NW Priozernyy, S shore of Zaisan Lake, 10.VI.1997, R. Dudko & V. Zinchenko leg. (ISEAN); 18 ♂, 17 ♀, northern foothills of Saur Mt. Range, 18-20 km S Zaysan City, Uydene River, 16-17.VI.1989, I. Kabak leg. (cIKAB; ZISP); 1 ♂, 15 km SSW Zaysan City, 17.VI.1989, I Kabak leg. (cIKAB); *Semipalatinsk Prov.:* 1 ♂, 30 km NW Kaynar, 21.VI.1978, G. Nikolaev leg. (cIKAB); also unlocalized material: 1 ♀, Karakolskiy zernosovkhoz, 7.VII.1966, Batyrshin leg. (ZIA).

Other material examined. **Uzbekistan**: 2 ♀, SE slope of Pskem Mt. Range, Zambatsai River (right tributary of Koksu River), 2000-2600 m, 30.V.1997, I. Kabak leg. (ZISP).

Description. Very similar to *O. h. dissors*. Length 6.0-7.8, width 2.3-3.1 mm. Body reddish brown to dark brown, at most with very weak bluish violet lustre on dorsum. Palpi, antennae and legs brownish yellow. Body narrow, with elytra comparatively longer than in *O. h. dissors* and with pronotum usually more strongly narrowed basad. Antennae slender, with middle segments more than twice as long as wide. Metepisterna (Figs 40, 41) longer than in other subspecies, approximately 1.50-1.60 times as long as wide. Dorsal punctation sparser and coarser than in *O. h. dissors* (especially as compared to the specimens from Northern and Western Tien Shan) and pubescence, on average, a little longer (on pronotum near apical angles approximately as long as width of 1st antennomere). Male and female genitalia as in *O. h. dissors* (Figs 57, 58, 81-84, 103, 104).

Distribution. Plains of Kazakhstan from Mugodzhary to Saur (Fig 111c).

Notes. As a new separate species *O. kamenskyi*, this taxon was contemplated for description but not published by the late K.V. Arnoldi (1901-1982).

The taxonomic position of two females collected from Zambatsai River (Uzbekistan) requires further investigation on the basis of more extensive material and that is why they were not included in the type series.

Etymology. The subspecies is named after Russian entomologist A.F. Kamenskij.

Ophonus hystrix altaiensis ssp. n.

(Figs 30, 38, 39, 59-64, 73-80, 97-102, 111b)

Holotype, ♂, **Russia**, *Altai*, S slope of Yuzhno-Chuyskiy Mt. Range, middle course of Sebystey River, steppe, 2200 m, 14.VI.1997, A. Matalin leg. (ZISP).

Paratypes. **Russia**: *Altai:* 25 ♂, 15 ♀, same data as holotype (MPU; ZISP); 2 ♀, spurs of Kuray Mt. Range, env. of Kosh-Agach, 28.V.1989, A. Pisanenko leg. (cIKAB); 1 ♂, 1 ♀, same locality, 21-25.V.1989, A. Pisanenko leg. (cSHIL); 12 ♂, 13 ♀, ca 40 km W of Kosh-Agach, 19th km of road Ortolyk-Bel'tir, 1900-2000 m, stony semidesert, 25-30.VI.1999, D. Logunov leg. (ISEAN). 1 ♀, upper Kadzhi River, 3.VI.1902, exp.

V. Sapozhnikov leg. (ZISP); 1 ♂, 1 ♀, Kuray Mt. Range, env. Kuray Village, 1800 m, 27.VI.1993 (MPU); 13 ♂, 8 ♀, N slope of Yuzhno-Chuyskiy Mt. Range, 18.VII.1997, D. Fedorenko leg. (cFED; ZISP); 7 ♂, 1 ♀, 23-28 km SSW Kosh-Agach, valley of Kokozek River, 2000 m, 6.VII.1996, A. & R. Dudko leg. (ISEAN; ZISP); 4 ♂, 4 ♀, 20 km SW Kosh-Agach near Kokozek River, 1900 m, 16.VII.1997, D. Fedorenko leg. (cFED; ZISP); 4 ♂, 1 ♀, 27 km S Kosh-Agach, between Chagan-Burgazy River and Tarkhata River, 2100-2400 m, steppe, 29.VII.1996, A. & R. Dudko leg. (ISEAN); 1 ♂, 6-8 km NE Kokor', valley of Kyzylshin, 1900 m, 17.VII.1996, A. & R. Dudko leg. (ISEAN); 1 ♂, 1 ♀, SW corner of Chuyskaya Steppe, ca 2000 m, 16.VII.1997, D. Fedorenko leg. (cFED); 67 ♂, 12 ♀, Chuyskaya Steppe, valley of Sebystey River, 32 km SW Kosh-Agach, 6.VII.1995, F. Hieke leg. (MNHUB; cWR).

Description. Comparatively small: length 4.7-6.0 mm, width 1.9-2.5 mm. Body reddish brown to dark brown, at most with weak bluish green metallic lustre on dorsum. Labrum, mandibles, palpi, antennae and legs reddish brown, in some specimens antennae, femora, tibiae at apex and tarsi slightly infuscated. Antennae rather long and stout, with middle segments less than twice as long as wide. Pronotum comparatively narrow. Metepisterna (Figs 38, 39) approximately 1.5 times as long as wide. Dorsal punctation rather sparse and coarse, similar to that in *O. h. kamenskii* ssp. n., but pubescence, on average, a little shorter, length of hairs on pronotum near apical angles usually less than width of 1st antennomere. Female genitalia with apical stylomere lacking deep incision on external margin, or incision not deep (Figs 97-102). Male genitalia similar to those in *O. h. dissors* and *O. h. kamenskii* ssp. n. (Figs 59-64, 73-80).

Distribution. SE Altai (Fig. 111b).

Notes. It is well known that the South East Altai is occupied by the Mongolian fauna. The taxonomic position of *O. h. altaiensis* ssp. n. is in contradiction with this fact. Although *O. h. altaiensis* ssp. n. is somewhat similar in general habitus and shape of apical stylomere of females to the nominotypical subspecies, I think it is more related to *O. h. dissors* and *O. h. kamenskii* ssp. n. because both latter subspecies and *O. h. altaiensis* ssp. n. share such important characters as the shape of metepisterna and the features of armature of internal sac of penis. Of the mentioned two subspecies, *O. h. altaiensis* ssp. n. is particularly close to *O. h. kamenskii* ssp. n., which is similar to *O. h. altaiensis* ssp. n. in the colour at most only with weak metallic lustre and in rather coarse and sparse dorsal punctation. Nevertheless, combinative nature of distinctive features of *O. h. altaiensis* ssp. n. stands out. Geographically, this taxon is located between the nominotypycal subspecies and *O. h. kamenskii* ssp. n. and it is most likely that *O. h. altaiensis* ssp. n. is a result of the intergradation of these two subspecies.

On the wing dimorphism in *Ophonus hystrix*

O. hystrix demonstrates wing dimorphism associated mainly with the geographical distribution (Fig. 111). In all cases, the brachypterous form has the wing rudiments equal approximately to half of elytron. It was found that the nominotypical subspecies is dimorphic, with macropterous form restricted exclusively to eastern Mongolia and Transbaikalia. *O. h. dissors* is predominantly brachypterous. The macropterous form is mainly restricted to Zailiysk Alatau, Ketmen and some regions of Inner Tien Shan (specimens examined from Ukok River; 10 km N of mouth of Malyy Naryn River; Atbashi Mt. Range). Only one macropterous individual of *O. h. dissors* is known from West Tien Shan (Aksu Dzhabagly Nature Reserve: road to Kshi-Kaindy). Contrastingly, most examined specimens of *O. h. kamenskii* ssp. n. are macropterous. Brachypterous individuals are only known from the west and the east of the geographical range of the subspecies (Mugodzhary Mountains and Zaisan region). It is worth noting that populations from Zaisan region are dimorphic, consisting of both macropterous and brachypterous forms, as opposed to population from Mugodzhary, all examined specimens of which are brachypterous. *O. h. altaiensis* ssp. n. is known only in the brachypterous form.

Lindroth (1949) stated that, in general, the regions with predominantly or exclusively brachypterous populations were colonized earliest. Based on this idea, it is believed that the area of the nominotypical subspecies was expanding to the east. Evidently in the comparatively late time the subspecies *dissors* has penetrated to Zailiysk Alatau, Ketmen and some regions of Inner Tien Shan. It is interesting to note in this connection that the latter subspecies, while widely distributed over Tien Shan, was hitherto not recorded from Kirgizian Alatoo which, like Zailiysk Alatau and Ketmen, belongs to the same northernmost mountain chain of Tien Shan. Using Lindroth's method, I also assume that Mugodzhary Mountains and Zaisan region were some of the centres of postglacial dispersal of *O. h. kamenskii* ssp. n. over the plains of Kazakhstan.

Ophonus (Metophonus) stricticollis Tschitschérine, 1893
(Figs 112-117)

Ophonus stricticollis Tschitschérine, 1893: 371 (type locality: Gornyy Zerentuy, Russia).
Ophonus chinensis Tschitschérine, 1895b: 500 (type locality: Vutschi, Gansu, China), **syn. n.**
Ophonus nikolskyi Jedlička, 1932: 326 [type locality: "Nikolsk Ussurijsk" (= Ussuriysk), Russia].

Type material. Lectotype of *O. stricticollis* (here designated), ♂ with labels "Siberia or., g. Zerentui, J. Wagner!" and "*stricticollis* m. Tschitscherin det." (ZISP); paralectotypes: 2 ♀ (!?) with labels as in lectotype (ZISP).

Lectotype of *O. chinensis* (here designated), ♂ with labels "Gan-ssu [village Vutschi], g. Potanine!, 10.VI.1885" and "*chinensis* m. Typ!, Tschitscherin det." (ZISP); paralectotypes: 1 ♀ with labels as in lectotype (ZISP) and 1 ♂ with collecting label "Gan-ssu, [village Katapu], g. Potanine!, 17.VI.1885" (ZISP).

Other material examined. **Russia**: *Irkutsk Prov.*: 4 ex., 25 km NW Bayanday, between Nukhu-Nur and Muromtsovka, 22.VII.1997, I. Sokolov leg. (cSOK; ZISP); 1 ex., Zherdovka, 28.VIII.1912, S. Rodionoff leg. (ZISP); 1 ex., Ashekhabad, 7.VIII.1912, S. Rodionoff leg. (ZISP); *Buryatia* (?): Tarbagatay 12.VI.1913 (ZISP); *Chita Prov.*: 20 ex., 20 km NW Priargunsk, 28.VII.1989, O. Kabakov leg. (cKAB; ZISP); 5 ex., Borzia Distr., S slope of Nerchinsk Range, 20 km N of Kovyli, 2-6.VI.2000, B. Kataev leg. (ZISP, cWR); 1 ex., Dagoy, 25 km NW of Mogoytuy, 23.VI.2000, B. Kataev leg. (ZISP); 1 ex., Gornyy Zerentuy, Yu. Wagner leg. (ZISP); *Amur Prov.*: 6 ex., Klimoutsy, 40 km W Svobodnyy, 5-9.VII.1958, Zinovjev leg. (ZISP); 1ex., Zeya River near Mukhinka, 8.VII.1999, D. Zaratuychenko leg. (ISEAN); 3 ex., Simonovo, 75 km W Svobodnyy, 27.V.1959, I. Kerzhner leg. (ZISP); *Primorsk Terr.*: 2 ex., Nikolsk (= Ussuriysk), 29.VII.1926, N. Kuznetzov leg. (ZISP); 1 ex., Golubinyy Utes near Khasan, 5.VIII.1991, Kurbatov leg. (MPU). **Mongolia**: *East Aymak*: 1 ex., Derkhin-Tsagan-Obo Mt., 60 km ENE Bayan-Burd, 12.VI.1976, E. Gurjeva leg. (ZISP); 1 ex., same locality, 21.VII.1971, G. Medvedev leg. (ZISP); 3 ex., Numregin-Gol River, 32 km SE Salkhit Mt., 16.VI.1976, E. Gurjeva & I. Kerzhner leg. (ZISP); 1 ex., Khalkhin-Gol River, 33 km SE Khalkh-Gol Somon, 10.VI.1976, E. Gurjeva leg. (ZISP); 1 ex., Bayan-Dun, 10.VII.1976, E. Gurjeva leg. (ZISP). **China**: *Liaoning:* 1 ex., Dalian, 17.VI.1923, E. Suenson leg. (ZMUC); 1 ex., "Mandzh., Chin-De-Fu [= Changtu], 19.V.1896" (ZISP); *Shanxi:* 4 ex., Wu Tai Shan, 19.VII.1929, 1929, E. Suenson leg. (ZMUC; ZISP); also unlocalized material: 1 ex., "Salijan", 10-20.VII.1896, Komarov leg. (ZISP); 1 ex., "China, Sjölander" (SMNHS); 1 ex., "Dayanon, 8.VI.1926" (ex coll. V. Lutshnik) (ZISP).

Distribution. Southern part of East Siberia from Baikal Lake to the Amur River, also Primorsk Territory, E Mongolia, and NE China.

Note. O. stricticollis occupies the easternmost part of the geographical range of the genus *Ophonus*, where it lives mainly allopatrically to other species of the genus. Only in the west of its geographical range (Baikal-Transbaikal Region and eastern Mongolia), *O. stricticollis* occurs sympatrically with *O. hystrix hystrix*. It seems to be the most advanced representative of the above-mentioned evolutionary stock "*parallelus – sciakyi – dissors – hystrix*", all species of which are similar in many characters including the structure of the male genitalia.

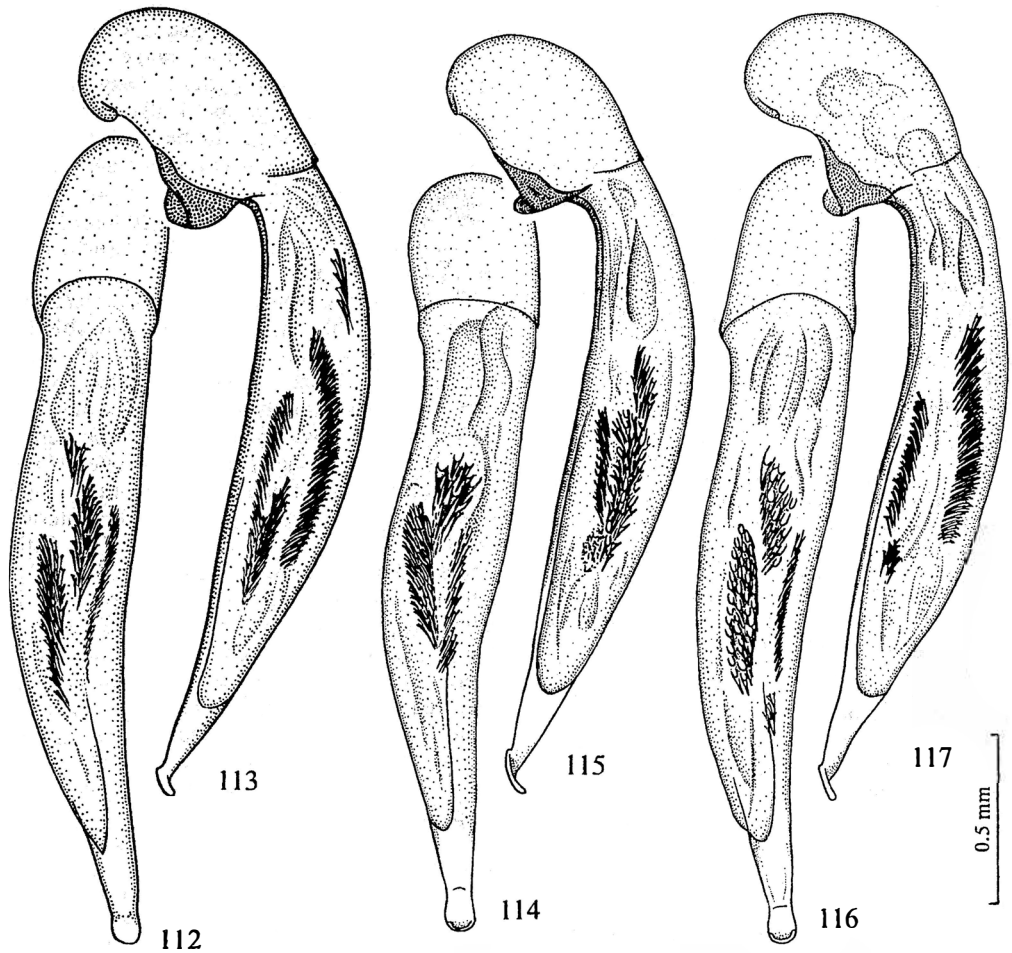
The distinctive features of *O. stricticollis* are rather remarkable. It is easily recognizable by having convex body covered with comparatively long pubescence, rather narrow pronotum with sides strongly sinuate before hind angles and with posterior margin not bordered, and elytra with striae coarsely punctate. Its penis has distinctly oblique apical capitulum and three (rarely four) spiny patches in the internal sac (Figs 112-117). *O. stricticollis* is a little larger (body length 5.7-7.5 mm, width 2.3-3.2 mm) than *O. hystrix hystrix* and its pronotum is much more strongly constricted basad. In addition, in *O. stricticollis* elytral striae are much more coarsely punctate than elytral intervals as opposed to *O. hystrix*, in which the striae are either smooth or finely punctate, with pores equal in size to pores on elytral intervals.

O. stricticollis does not form distinct geographical races. *O. nikolskyi* described from Primorsk Territory of Russia was correctly synonymized with *O. stricticollis* described originally from Transbaikalia already by Schauberger (1933). *O. chinensis* described from Central China also possesses all the characteristics of *O. stricticollis*, including the penis structure (Figs 114, 115). All the characters noted by Tschitschérine (1895b) as distinctive features of *O. chinensis* (colour of labrum, shape of eyes, features of punctation and pubescence) vary individually and hence I treat the latter species also as a synonym of *O. stricticollis*. Previously, Lafer (1996) already assumed that *O. chinensis* is identical with *O. stricticollis*.

Ophonus (Hesperophonus) similis (Dejean, 1829)

Harpalus (Ophonus) similis Dejean, 1829: 204 (type locality: "Dalmatie").
Harpalus coeruleipennis Ménétriés, 1832: 129 (type locality: Caucasus).

Type material. Holotype of *H. coeruleipennis*, ♂ with labels "Caucas." and "*coeruleipennis* Menet., Caucas" (ZISP).



Figs 112-117. *O. stricticollis*, penis (112, 113, Irkutsk Prov.; 114, 115, lectotype of *O. chinensis*; 116, 117, lectotype of *O. stricticollis*). 112, 114, 116, dorsal aspect; 113, 115, 117, view from left side.

Note. Harpalus coeruleipennis has been described on the basis of a single specimen from "Caucasus". More recently (Jacobson, 1907; Csiki, 1932), it was cited as a probable synonym of *O. episcopalis* Reiche & Marseul, 1863 or *O. violaceus* Reiche & Saulcy, 1855, both being junior synonyms of *O. similis* Dejean. Examination of the holotype of *H. coeruleipennis* has confirmed this synonymy.

Ophonus (Hesperohonus) rebellus (Schauberger, 1926)

Harpalus (*Ophonus*) *rebellus* Schauberger, 1926: 173 (type locality: Elburz, Iran).

Material examined. **Iran**: 30 ex., Amarat, 2-12.V.1894, D. Glasunov leg. (ZISP); 8 ex., Astrabad [= Gorgan], 29.V-1.VI.1904 and 19.VI.1905, Filippovich leg. (ZISP); 5 ex., mouth of Karasu River, 8-10.II.1916, B. Iljin leg. (ZISP); **Turkmenistan**: 4 ex., Chatly, 3.VII.1912, Bilkevich leg. (ZISP); 1 ex., Kopetdag, Chandyr Valley, Ak, 18.X.1935, K. Arnoldi leg. (ZISP); 1 ex., W Kopetdag, Khasardag, 4-8.VI.1982, V. Fet leg. (ZISP); 1 ex., Aydere, 27.III.1987, Kh. Atamuradov leg. (ZISP); 3 ex., C Kopetdag, Tagarevo, 21.IV and 9.VI.1989, Kh. Atamuradov leg. (ZISP); 1 ex., 5 km S Kyzyl-Arvat, Kalchidag, 22.IV.1993, V. Vakhrushev leg. (cISOL); 1 ex., Kyzyl-Atrek, 10.VI.1989, S. Cherkasov leg. (ZISP).

Distribution. This species described from Elburz is distributed in N Iran and SW Turkmenistan.

Note. O. rebellus is rather similar in appearance to *O. azureus* F. It may be recognized on the basis of the non-metallic coloration (at most with weak bluish or violet metallic lustre on elytra) and of the male genitalia with oblique apical capitulum and with usually five, rarely four, spiny patches in the internal sac. The aedeagus of *O. rebellus* is illustrated by Sciaky (1986: fig. 25).

Ophonus (Hesperophonus) minimus Motschulsky, 1845
(Figs 118-121, 128a)

Ophonus minimus Motschulsky, 1845: 45 [type locality: "Ekaterinoslav" (= Dnepropetrovsk), Ukraine].
Ophonus amoenulus Reitter, 1900: 67 (type locality: "Araxesthal", Armenia).

Type material. Syntype? of *O. minimus*, ♀ with labels "*Ophonus minimus* Motsch. Rus. mer." [Motschulsky's handwriting] and "*Oph. azureus* var. *minimus* Motsch., c. Chicherin [in Russian]" (ZISP).

Syntypes of *O. amoenulus*, 1 ♂, 1 ♀, with labels: "Caucasus, Araxesthal, Leder, Reitter", "*amoenulus* m., Typen", "*amoenulus* Reitt., Tschitscherin det." (ZISP).

Other material examined. **Ukraine**: 1 ex., env. Odessa, Luzanovka, 30.V.1926 (ZISP); 2 ex., Odessa, Krivaya, 24.VI.1920, D. Znojko leg. (ZISP); 1 ex., Askania-Nova, S. Medvedev leg. (ZISP); 1 ex., env. of Kherson, 11.VII.1893 (ZISP); 1 ex., Kharkov, garden, 26.VI.1913 (ZISP); 2 ex., Lugansk Distr, Provalye, 16.V.1928, V. Talitzkij leg. (ZISP); 1 ex., env. of Voznesensk, IV-V.1922, D. Znojko leg. (ZISP); **Russia**: *Stavropol Terr.:* 6 ex., Stavropol, ex coll. Lutshnik (ZISP); 6 ex., Petrovskoe, ex coll. Lutshnik (ZISP); 5 ex., Manych, 40 km E Divnoe, 22.V.1950, K??? leg. (ZISP); 1 ex., Sharakalsun (ZISP); 1 ex., Zhuravka, 1.IV.1924, G. Grinev leg. (ZISP); *Rostov Prov.:* 1 ex., Gigant, 5.V.1962, V. Minoranskij leg. (ZISP); *Saratov Prov.:* 6 ex., Volsk Distr., env. of Tersa, 19.VI.1979, B. Kataev leg. (ZISP); *Volgograd Prov.*: 1 ex., "Sarepta" (ZISP). *Daghestan:* 1 ex., Bogoss Mt. Range, S of Tlokh, 1500 m, 13.V.1988, E. Iljina leg. (ZISP); 1 ex., "Saltinsk (pres Gounib), Koenig, 1894" (ZISP); *Kalmykia:* 1 ex., Yashalta Distr., Manych-Gudilo, A. Fomichev leg. (ZISP); *Astrakhan Prov.:* 2 ex. labelled "*Ophonus minutus* m. Bogdo [= Bol'shoe Bogdo Mt.]" (Motschulsky's handwriting; ZISP); **Kazakhstan**: *Aktyubinsk Prov:* 1 ex., Ber-Chogur, P. Zhikharev leg. (ZISP); *Turgai Prov.:* 3 ex., Kokshetau, 17.VI.1957, 15.V.1958 and 11.VI.1960, L. Arnoldi and M. Falkovich leg. (ZISP); 1 ex., Basaga-uzek Valley, 13.VII.1957, E. Gurjeva leg. (ZISP); *Semipalatinsk Prov.*: 1 ex., Tarbagatay, 40 km NW Urdzhar, env. Blagodatnoe, 2800 m, 12.VI.1989, I. Kabak leg. (cIKAB); *East Kazakhstan Prov.*: 1 ex., "Bes-Terek, 6.VI.1908" (ZISP). **China**, *Xinjiang Uygur Autonomous Region:* 1 ex., between Burgun and Kran, 10-19.VI.1903, Grum-Grzhimajlo leg. (ZISP); also unlocalized material: 1 ex., "B.-Har., 8.V.1908" (ZISP).

Distribution. The south of E Europe, Caucasus, N Kazakhstan and NW China (Fig. 128a).

Notes. This species, similar in appearance with small specimens of *O. azureus* F., possesses quite different type of the male genitalia with large curved tooth in the internal sac (Figs 118-121). Based on this character, *O. minimus* is very close to *O. chlorizans* Solsk. (see below).

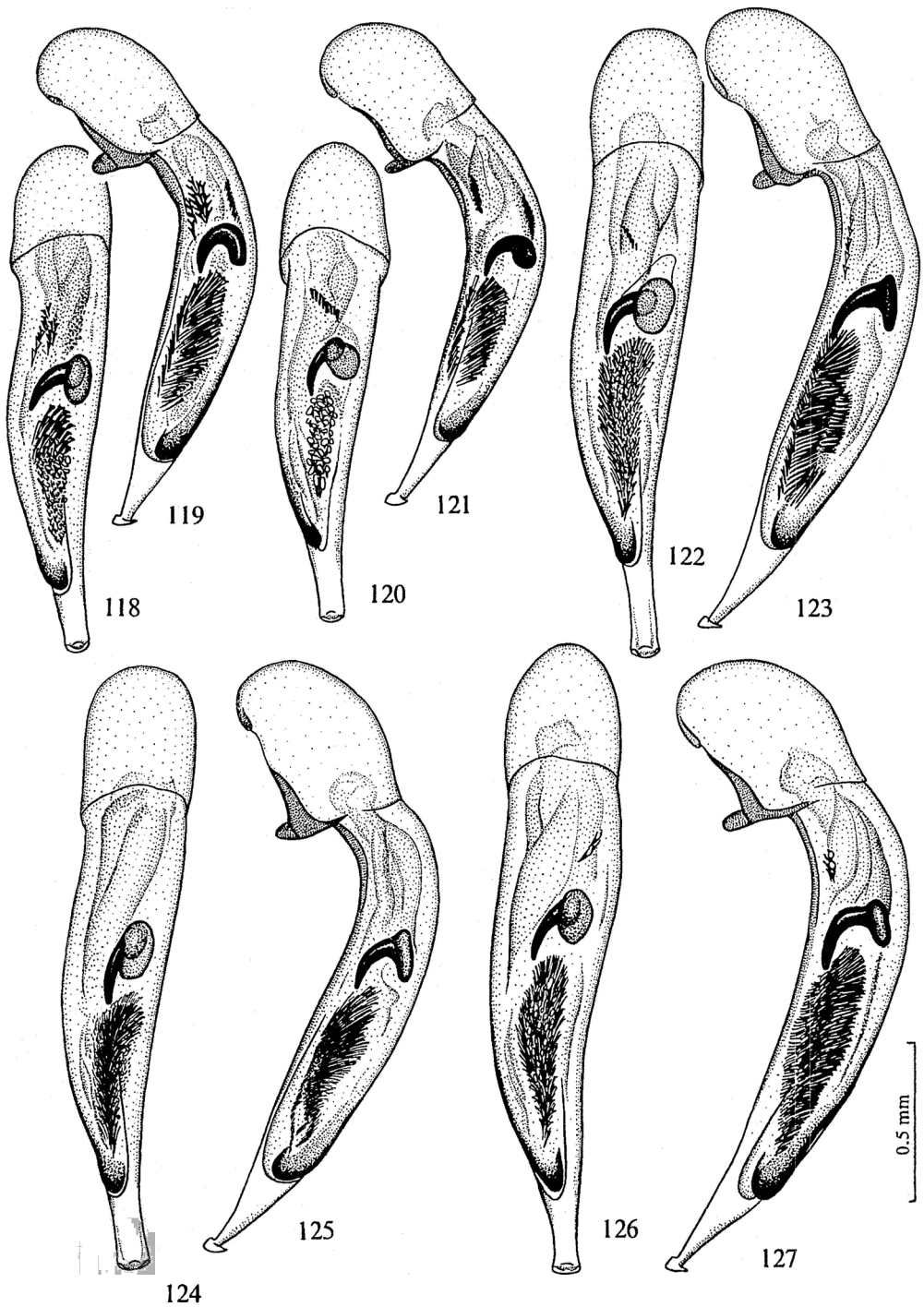
Ophonus (Hesperophonus) chlorizans Solsky, 1874
(Figs 122-127, 128b)

Ophonus chlorizans Solsky, 1874: 78 (type locality: "Khodzha-chiburgan", N slope of Alai Mt. Range).
Ophonus pangoides Reitter, 1913: 649 (type locality: Poo, West Himalaya), **syn. n.**
Ophonus chlorizans hissariensis Lutshnik, 1922: 56 (type locality: Hissar Mt. Range, Tajikistan).

Type material. Lectotype (here designated) of *O. pangoides*, ♂ with labels "Poo, West. Hym., coll. Splichal", "*pangoides* m.", "coll. Reitter", "Holotypus, 1913, *Ophonus pangoides* Reitter" (HNHMB), and 4 paralectotypes (1 ♂, 3 ♀), same data as lectotype (HNHMB).

Syntypes ? (3 ♂) of *O. chlorizans hissariensis*, each labelled as "Gissarskiy khr. Turkestan" [in Russian] and "coll. Lutshnik" without any Lutshnik's determination labels (ZISP).

Other material examined (all in ZISP, unless otherwise indicated). More than 600 specimens from the following localities: **Kazakhstan**: *Dzhezkhazgan Prov.:* Koksengir, 40 km S Zhana-Arka; Karazhar gorge near Sarysu and Karakingir; Ulytau Mt.; Sarysu, 50 km NO of mouth of Karakingir; 40 km E Sayak; 12 km E Balkhash City; 30 km SE Zhana-Arka; Aktau, 60 km S Zhana-Arka; 30 and 40 km W Betpak-Dala meteorological station; Chekmen-Kalgan, 60 km S Betpak-Dala meteorological station; 20 km N Dzhezkazgan; 25 km SW Kense; 15 km S Kiik; Betpak-Dala, 10 km NW Biurteskem; Moyinty; Kendyrlyk, S of Karakoin Lake, Betpak-Dala; *Almaty Prov.:* 40-50 km W Sarkand; Sarkand; env. Taldy-Kurgan; env. Kapal; Zailiysk Alatau, Kastek, 2600 m; ?Dogut-Tau; Almaty; env. of Almaty, 900 m; Assy near Turgen gorge; Arkharly, Toguzkuduk; Kok-Tyube; Ketmen; Iliysk (SMNH); "Ili"; Ili River between Karkara and Dzharkent [= Panfilov]; upper Tekes River; *Dzhambul Prov.:* Chu River Valley, 1 km N of Ulan-Bel; Kurdai Pass, 1100 m; "Nikolaykol, Aulie-Ata uezd"; Botomaynak, Tishikbastau; Kaika; env. of Dzhambul; *Chimkent Prov.*: env. Kurbat; Aksu-Dzhabagly Nature Reserve, env. of Novonikolaevka; **Uzbekistan**: Kara-Kalpak, Ust'urt, Kosbulak; Syr-Darya, Chimchanka River; Ugam Mt. Range, upper Maydantal River; Maydantal-Ashu; Zhum-Tuksen; Say Kara-kyz; Oygaing; Pskem; 20 km N Khumsan; Pskem Mt. Range, 20 km E Bogustan, 2500 m; Nanay, N of Namangan, 1200 m; Zambatsay, 2000-2600 m; env. Nanay, 3000 m; Padsha-ata, N of Nanay; mts near Tashkent, Tovgar; Chatkal Mt. Range, 33 km NO Angren; Kadraus near Angren; Angren River; Chatkal Nature Reserve, 2000-2500 m; Kuramin



Figs 118-127, *Ophonus*, penis. **118-121**, *O. minimus* (118, 119, Tersa; 120, 121, Kalmykia); **122-127**, *O. chlorizans* (122-125, Sarysu; 126, 127, paralectotype of *O. pangoides*). 118, 120, 122, 124, 126, dorsal aspect; 119, 121, 123, 125, 127, view from left side.

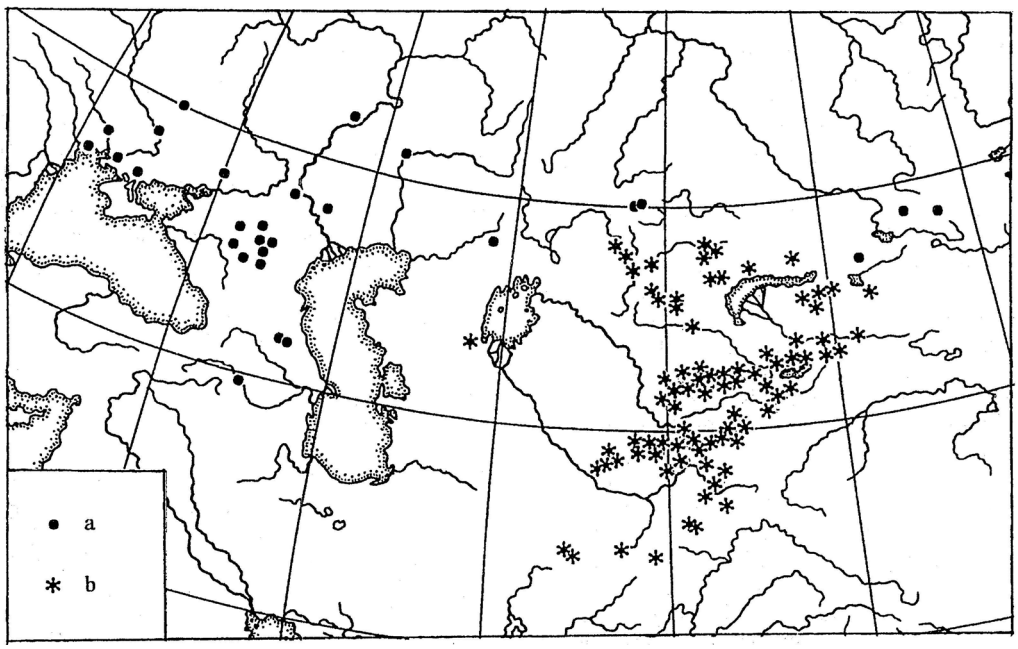


Fig. 128. *Ophonus minimus* (a) and *O. chlorizans* (b), distribution.

Mt. Range, N slope near ?Kalpin, 2200 m; Kamchik Pass, 2700 m; N slope of Turkestan Mt. Range; 5 km N Shakhristan Pass; Zeravshan Mt. Range, Aman-Kutan near Takhta-Karacha Pass; Hissar Mt. Range, Khan-Takhta; Guzar Beksu, Akkaty River; **Turkmenistan**: Kugitang-Tau: Svintsovyy Rudnik; At-Dara; Ayri-Baba; **Kirgizia**: many localities from almost everywhere at 700-3400 m; **Tadjikistan**: many localities at 1300-4000 m; **Afghanistan**: *Konar Prov:* Astiway, 2000 m (O. Kabakov leg.); N of Waygal, 2500-2700 m (O. Kabakov leg.); W of Barikot, 2000-2500 m (O. Kabakov leg.); *Bamyan Prov.:* S of Kalu, 3100 m (O. Kabakov leg.); *Badakhshan:* Eshkasem, 2500 m (O. Kabakov leg.); *Ghor Prov.:* Tulak (O. Kabakov leg.); Kotal-Nayak, Taivara, 2660 m (K. Lindberg leg.; MZLU); *Ghazni Prov.*: Oukak, Vallee de Boum (K. Lindberg leg.; MZLU); Ghazni, 2215 m (K. Lindberg leg.; MZLU). "Dival Kol" (MZLU); **India**: *Kashmir:* Poo, 4000 m; **China**: *Xinjiang Uygur Autonomous Region:* N spur of Borohoro Shan, SE of Jinghe, 1800 m (Belousov & Kabak leg.); Kuldzha [= Yining] (A. Regel leg.).

Distribution (Fig. 128b). Mountains of Kazakhstan and Middle Asia (Kazakhstan Upland, Ustyurt, Dzhungar Alatau, Tien Shan, Hissar-Darvaz, Kugitang), Hindukush and West Himalaya.

Notes. O. chlorizans is a common species distributed across all the mountains of Middle Asia, except for Kopetdagh, to West Himalaya. Amongst the Middle Asian *Ophonus* species, it is easily recognizable by the combination of rather small body (length 5.4-8.5 mm), widely rounded basal angles of pronotum and dark legs. In contrast to *O. convexicollis* Mén., the base of its mandibles is not protruding angularly. In colour and general habitus, *O. chlorizans* is rather similar to *O. cribricollis*, but in the latter the basal angles of pronotum are well marked, only narrowly rounded at apex, and the intervals of elytra are more convex at apex than in *O. chlorizans*.

O. chlorizans is highly variable in the size and in the colour of dorsum, which varies from metallic blue, green or violet to black. The colour is most likely to be dependent on ecological factors. For example, according to our data, dark individuals without metallic lustre are predominant in dry habitats. Based on the green specimens from Hissar, Lutshnik (1922) has described the subspecies *hissariensis*, but this name should be treated only as a synonym of *O. chlorizans*, because green specimens also occur in other regions, not only in Hissar. A re-examination of the type series of *O. pangoides* has shown that this name is also a synonym of *O. chlorizans*. It was based on comparatively large and robust specimens from West Himalaya (body length 6.5-6.8 mm in males and 7.1-7.4 mm in females) having black dorsum with weak blue tinge. Although *O. chlorizans* actu-

ally tends to become somewhat larger and robuster in the southmost of its geographical range, where *O. pangoides* was described from, this tendency is too weak and gradual to consider the latter as a separate taxon. Besides, the male genitalia of *O. chlorizans* are nearly invariable in geographical aspect and specimens from West Himalaya are dissimilar in this character to specimens from Middle Asia (Figs 122-125 and 126, 127).

As noted above, I believe that *O. chlorizans* is closely related to *O. minimus* on the basis of the strong similarity in their male genitalia even though the both species markedly differ in appearance. The male genitalia differ only in the following: the internal sac of *O. minimus* generally possesses 2-3 additional small spiny patches in basal portion (Figs 118-121) as opposed to internal sac of *O. chlorizans* (Figs 122-127), which usually lacks these patches (in some cases only one small spiny patch is present, as in Figs 122, 123, 126, 127). In contrast to that, *O. minimus* is easily distinguished from *O. chlorizans* by having body smaller (length 5.0-6.0 mm), dorsal punctation, especially on pronotum, notably more coarse and sparse, microsculpture on elytra absent or obliterate (in *O. chlorizans* it is well developed) and legs yellow ferrugineous. It should be noted that the geographical ranges of *O. minimus* and *O. chlorizans* are non-overlapping and complementary. The boundary between them runs across central Kazakhstan and then between Tarbagatay and Dzhungar Alatau (Fig. 128).

Ophonus (Hesperophonus) cribricollis (Dejean, 1829)

Harpalus cribricollis Dejean, 1829: 208 (type locality: Caucasus).
Ophonus obscuripes Motschulsky, 1850: 32 (type locality: "Tauria" = Crimea, Ukraine), **syn. n.**
Harpalus (Ophonus) cribricollis clandestinus Schauberger, 1927: 19 (type locality: "Wjernje" = Almaty, Kazakhstan).

Type material. Lectotype (here designated) of *O. obscuripes*, ♀, badly damaged by dermestids (base of elytra, meso- and metathorax, two first visible abdominal sternites and three legs only preserved), with labels "Tauria", "*Ophonus obscuripes* m., Tauria" (ZMM), and paralectotype, female, also badly damarged by dermestids (elytra, meso- and metathorax, and abdomen only preserved), with label "T[auria]" (ZMM).

Holotype of *Harpalus cribricollis clandestinus*, ♀ with labels "Semirjetsch., Wjernji", "Type", "*cribricollis* Dej. s. *clandestinus* Schaub., det. Dr. E. Schaub.", "Coll. Dr. E. Schauberger", "*Ophonus Metophonus cribricollis* Dej. *clandestinus* Schaub.", "Type" (OÖLL); and paratype, ♀, same data as holotype but labelled as cotype (OÖLL).

Notes. The taxonomic status of *O. obscuripes* was hitherto unclear (Kryzhanovskij et al., 1995). Meantime I was able to examine two type specimens of this species. Although both are badly damaged, the characters visible on them (body size; comparatively short elytra with rounded sides, with striae impunctate and intervals finely and densely punctate; colour of elytra dark brown and of legs brown) together with characters noted by Motschulsky in the original description clearly indicate that *O. obscuripes* is conspecific with *O. cribricollis*. The latter species is distributed in Southern and Central Europe, Caucasus and Asia Minor; it also occurs in the Crimea.

I stated before (Kataev in Kryzhanovskij et al, 1995) that *O. cribricollis clandestinus* described from Northern Tien Shan seems to be a synonym of *O. chlorizans* Solsk. because, according to our data, *O. cribricollis* is absent from Middle Asia. However, after the study of relevant type material I agree now with the opinion of Sciaky (1986) that *O. cribricollis clandestinus* is a synonym of *O. cribricollis*. Nevertheless, the occurrence of that species in the east of Middle Asia requires confirmation.

Ophonus (Ophonus) quadricollis (Dejean, 1831)

Harpalus (Ophonus) quadricollis Dejean, 1831: 838 (type locality: Sicilia).
Harpalus aesculoides Jedlička, 1959: 522 (type locality: Bone, Algeria), **syn. n.**

Type material. Holotype, ♂ with labels "Algerien, Bone", "Typus", "*Harpalus aesculoides* sp. n., det. Ing. Jedlička", "Museum Frey, Tutzing" (NMB).

Note. Harpalus aesculoides has been described within the *aeneus* (= *affinis*) group of *Harpalus* s. str. A re-examination of the holotype has shown that it is identical with *Ophonus* (s. str.) *quadricollis* distributed across the West Mediterranean from NE Africa to Italy.

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