

A Review of the Weevil Genus *Graptus* Schoenherr (Coleoptera, Curculionidae) in the Fauna of Russia and Adjacent Countries

G. E. Davidian and Yu. G. Arzanov

All-Russia Institute of Plant Protection, St. Petersburg, Russia
Rostov-on-Don State University, Russia

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Abstract—A key to 10 species of the genus *Graptus* Schoenh. (= *Alophus* Schoenh.) from Russia and adjacent countries is given, including *G. triguttatus* F., *G. austriacus* Otto, *G. kaufmanni* Strl., *G. circassicus* Solari, *G. carpathicus* Rtt., *G. weberi* Pen., *G. agrestis* Boh., *G. armeniacus* Hochh., *G. steppensis* Davidian, Arzanov et Korotyayev, sp. n., from southwestern Russia, and *G. giresunicus* Davidian et Arzanov, sp. n., from northeastern Turkey.

This study is based on examination of the material from the Zoological Institute, Russian Academy of Sciences, St. Petersburg (ZIN); Zoological Museum of the Moscow State University (MSU); Department of Entomology of the Biological Faculty, MSU, and A.P. Runich collection (Piatigorsk). The following private collections or material have been also examined in addition to the material collected by the authors: I.A. Belousov, B.M. Kataev, and A.G. Koval (St. Petersburg); V.G. Gratshev, V.Yu. Savitskii and M.Yu. Savitskii (Moscow); E.V. Il'ina (Makhachkala); P.P. Ivliev, A.V. Kalerin, D.G. Kasatkin, E.A. Khachikov, M.V. Nabozhenko, and I.V. Shokhin (Rostov-on-Don); E.V. Komarov (Volgograd); V.O. Kozminykh (Perm'); A.I. Miroshnikov and A.S. Zamotailov (Krasnodar); V.Yu. Nazarenko (Kiev), and S. Pesic (Kraguevac; Serbia and Montenegro).

Eleven species are included in the review; two among these are described as new to science; a key to 10 species is presented. *G. steppensis* sp. n. was identified as a new species by B.A. Korotyayev several years ago.

The holotypes and most of paratypes of the new species are in ZIN.

The distance between bases of the tarsal claws as given in the figures herein is rather an artifact depending on the curvature of the claws and the position in which the figures were taken. In the drawings of the lamella of the penis, its striate inner structure is shown.

According to Bajtenov (1974; as *Alophus*), the genus *Graptus* includes about 20 species distributed

mostly in Europe, Anatolia, and the Caucasus. The diversity of these weevils is high in the Balkans, where more than 10 species occur (Apfelbeck, 1927). Bajtenov's (1974) list includes *Alophus tadshikicus* Bajtenov from western Tajikistan, but we do not know the description of this species.

In spite of a relatively small number of species in *Graptus*, its study is obscured by the plentiful nominate species, mostly in Europe. The most comprehensive studies on the genus are those by Apfelbeck (1927), Solari (1945), and Smreczyński (1957).

THE GENUS *GRAPTUS* SCHOENHERR, 1823

Schoenherr, 1823 : 166; Lacordaire, 1863 : 397–398; Reitter, 1885 : 212; 1894 : 307–311; 1901 : 207–214; Apfelbeck, 1927 : 69–83; Ter-Minassian, 1946 : 29; Solari, 1945 : 5–41; Arnoldi *et al.*, 1965 : 557; Smreczyński, 1957 : 5–40; Angelov, 1978 : 207; Alonso-Zarazaga & Lyal, 1999 : 145.

Type species *Graptus triguttatus* F., 1775.

Description. Beetles wingless, with elongate-oval body 5–10.6 mm long and 2.2–4.9 mm wide.

Rostrum subquadrate in cross-section, with steep sides, noticeably wider than femora, widest near apex, 1.5–2.0 times as long as wide. Frons leveling with rostral dorsum, the latter distinctly narrowing apically, flattened, with variably deep median sulcus running from frons to antennal insertion. Epistome clearly limited posteriorly by medially curved epistomal carina. Mandibles often with deciduous appendages. Deep antennal scrobes with sharp, occasionally keeled margins usually visible dorsally in apical half only,

directed to ventral margins of eyes and forming angular prominences, usually visible even dorsally, at their merging with ocular sulcus bordering anterior margin of eye. In majority of the species examined, ventral margin of rostrum with obsolete prominence at base; the only exception being *G. nictitans* Boh. with large tooth in this place.

Eyes transverse-oval, weakly convex, scarcely protruding from head and situated closer to its ventral side. Antennae inserted at very apex of rostrum. Scape slender, reaching very close to anterior margin of eye. First and 2nd segments of funicle oblong, 3rd–6th segments usually rounded, 7th more or less strongly transverse; club oblong-ovate, with 1st segment as long as, or somewhat longer than 2nd.

Pronotum transverse, widest in apical third, or, less often, near middle; with apical constriction and distinct postocular lobes; apical margin of pronotum straight or emarginate medially, base rounded. Disc densely punctate, usually with median sulcus in apical half occasionally in the form of small oblong fovea. Basal margin beveled and usually with fine bordering. Scutellum small, mostly well-visible, sometimes somewhat protruding above elytral level.

Elytra elongate, with beveled or almost missing humeral prominences and deeply emarginate base. Elytral striae distinct, occasionally concealed by scaling to varying extent. Intervals along most of their length weakly convex or, less frequently, flat; only odd-numbered intervals usually convex at base. Admarginal interval abruptly narrowed distal to hind coxae. In females, abdominal tergite VII with apex straight or shallowly [deeply in some species—Ed.] and smoothly emarginate medially. Pygidium completely concealed by elytra.

Fore coxae contiguous and situated closer to anterior margin of prosternum; distance from transverse sulcus on precoxal part of prosternum to fore coxae twice that to anterior margin of prosternum. Processus prosternalis behind fore coxae usually swollen and concealing sternellum. Apfelbeck (1927) subdivided *Graptus* into three groups based on shape of processus prosternalis. The first group includes *G. nictitans*, *G. agrestis* Boh., *G. kaufmanni* Strl., and *G. csikii* Apf. with strongly convex, narrow processus prosternalis. The second group is composed of *G. styriacus* Apf. and *G. austriacus* Otto with beveled, moderately convex processus prosternalis. The third group includes *G. triguttatus* and other species with weakly convex processus prosternalis.

Hind coxae reaching very close to lateral margin of elytra. Femora clavate, mutic. Fore tibia with widened inner apical angle; in female straight, in male weakly incurved apically. Articulation surface on apex of fore tibia simple, without beveled area on outer side. Tarsi narrow; 1st segment of hind tarsus elongate, occasionally as long as 2nd and 3rd segments combined; 3rd segment bilobed; claws free, simple.

Mandibles without scales; epistome with transverse row of 8 epistomal setae; mandibles, mentum, and sides of rostrum behind mandibular articulation usually with 2 hairs each. Ocular sulcus with one row of fine, short, light, erect setae along eye margin. Scape of antennae with hairs and sparse hair-like scales. Elytra with contiguous cover of oval and round imbricate scales and with more or less regular rows of erect setae, length of which not exceeding width of elytral interval. Elytra with varying pattern consisting of two oblique pale bands, one before middle, and another closer to apex of elytra. Scales in pale bands of same shape as, or slightly narrower than on rest of elytral disc. According to Reitter (1901) and Apfelbeck (1927), the Balkan species *G. hilfi* Rtt. and *G. apfelbecki* Rtt. clearly differ from congeners in having disc of elytra covered with wide rounded scales, and sides of elytra, with hair-like scales. Head, pronotum, underside, and legs in most species with sparser vestiture; coxae and ventrites usually with plumose light scales split to finest filiform projections. Articulating surface of tibiae visible dorsally covered with dense minute pale hairs; sole surface of tarsi with hair brushes.

Aedeagus short, somewhat flattened; strongly, almost rectangularly bent dorsoventrally in middle part, without separated dorsal plate and lateral membranous areas. Tegmen with well-developed manubrium and without parameres; spiculum gastrale hooked in basal part. Basal part of endophallus with sclerotized structure characteristic of all species of *Graptus* (Figs. 36–47). Narrow basal part of spiculum ventrale no more than 1.5 times as long as its wide apical part.

Males differ from females in narrower body, medially depressed 1st, 2nd, and, to lesser extent, anal ventrites, weakly incurved apically fore tibia, and wide fore tarsus.

The majority of the species considered in the present paper can be subdivided into two groups based on the type of vestiture. The first group comprises *G. tri-*

guttatus, *G. austriacus* Otto, *G. kaufmanni* Strl., *G. circassicus* Solari, *G. carpathicus* Rtt., *G. weberi* Pen., and *G. elegans* Strl. The second group includes *G. agrestis*, *G. armeniacus* Hochh., *G. squamiventris* Rtt., *G. steppensis* Davidian, Arzanov et Korotyaev, sp. n., and *G. giresunicus* Davidian et Arzanov, sp. n. Species of the first group are characterized by the following type of the vestiture: the pronotum, venter, and legs have non-contiguous vestiture; scales on the venter and legs are elongate, occasionally acuminate apically; anal ventrite and 1st and 2nd segments of the hind tarsus are usually covered with hair-like scales only. Species of the second group possess usually contiguous vestiture on the pronotum; dense, occasionally contiguous scaling on the venter and legs; plumose scales on the ventrites, and small rounded or elongate scales on two basal segments of the hind tarsus. *G. nictitans* does not belong to any of the two groups differing from all their species in the dense hair-like pubescence on all ventrites.

Most of the *Graptus* species from European Russia and the Caucasus occur in the steppes, mountain steppes, and meadows.

For comparison with *Graptus*, the related genera *Rhytideres* Schoenherr, 1826; *Seidlitzia* Desbrochers, 1892; *Trichalophus* LeConte, 1896, and *Xeralophus* Korotyaev, 1991 (Korotyaev, 1991) have been examined. *Rhytideres* sharply differs in the highly longitudinally carinate pronotum and angular elytral humeri. Among the characters given in the original description of *Xeralophus*, the narrow tarsi without sole brushes; strongly dilated apically fore tibia with large outer lobe, and contiguous vestiture can be mentioned here. The genus *Trichalophus* differs from *Graptus* in the absence of the epistomal carina; presence of the median carina on the pronotal disc; flat, transverse scutellum; shallowly concave, nearly straight base of the elytra; reduced processus prosternalis; distinctly emarginate hind margin of 4th ventrite; dense hairs on lateral surface of the mandibles; hair-like vestiture on the body, and bare articulating surface of the tibial base. In addition, most species of *Trichalophus* have no ocular sulcus. Species of the genus *Seidlitzia* examined by us have no ocular sulcus and median sulcus on the pronotal disc and possess a weak processus prosternalis; they are similar to *Graptus* in the pubescent articulating surface of the tibial base, and have vestiture on the ventrites and tarsi similar to that in the species related to *G. agrestis*.

A Key to Species of the Genus Graptus Schoenherr from Russia and Adjacent Countries

- 1(4). 1st segment of antennal funicle usually noticeably longer than 2nd one. Scutellum present or absent. Processus prosternalis scarcely convex. Body length 5–6.4 mm.
- 2(3). Apical margin of pronotum straight or shallowly excised medially. Scutellum usually very small, occasionally not visible. Diameter of punctures in elytral striae not less than width of intervals *G. carpathicus* Reitter.
- 3(2). Apical margin of pronotum angularly excised medially. Scutellum usually clearly visible. Diameter of punctures in elytral striae usually noticeably less than width of intervals *G. weberi* Penecke.
- 4(1). 1st segment of antennal funicle as long as, or slightly longer than 2nd one, rarely shorter than latter. Scutellum always well visible. Processus prosternalis in the form of one pair of strong, occasionally acuminate projections clearly visible even in lateral view. Body length usually above 6.2 mm (in *G. steppensis* Davidian, Arzanov et Korotyaev, sp. n., 5.45–8.1 mm).
- 5(12). 1st and 2nd segments of hind tarsus usually covered with small broad scales. Rostral dorsum, femora, and elytral disc with more or less strongly raised, occasionally erect setae. Pronotum, elytra, and venter usually with dense, occasionally contiguous vestiture of rounded scales. Sides of elytra behind humeri usually more or less keeled. Apical margin of aedeagus straight or rounded, occasionally slightly emarginate.
- 6(7). Rostrum and legs slender and long. Posterior angles of pronotum smoothly rounded and usually indistinct. Elytra usually without humeri, widely rounded at sides, widest near middle, noticeably narrowing to base; 3rd interval distinctly convex at base. Intervals of elytra with long erect setae arranged in one almost regular row; length of setae equal to width of intervals. All ventrites usually densely covered with light plumose scales *G. steppensis* Davidian, Arzanov et Korotyaev, sp. n.
- 7(6). Rostrum usually wider, and legs robust. Posterior angles of pronotum more or less distinct. Elytra with beveled humeri, subparallel-sided or weakly rounded in basal half; 3rd interval flat or slightly

convex at base. Setae on intervals forming no regular row; length of setae usually noticeably less than width of intervals. Plumose scales on ventrites usually not arranged in large groups.

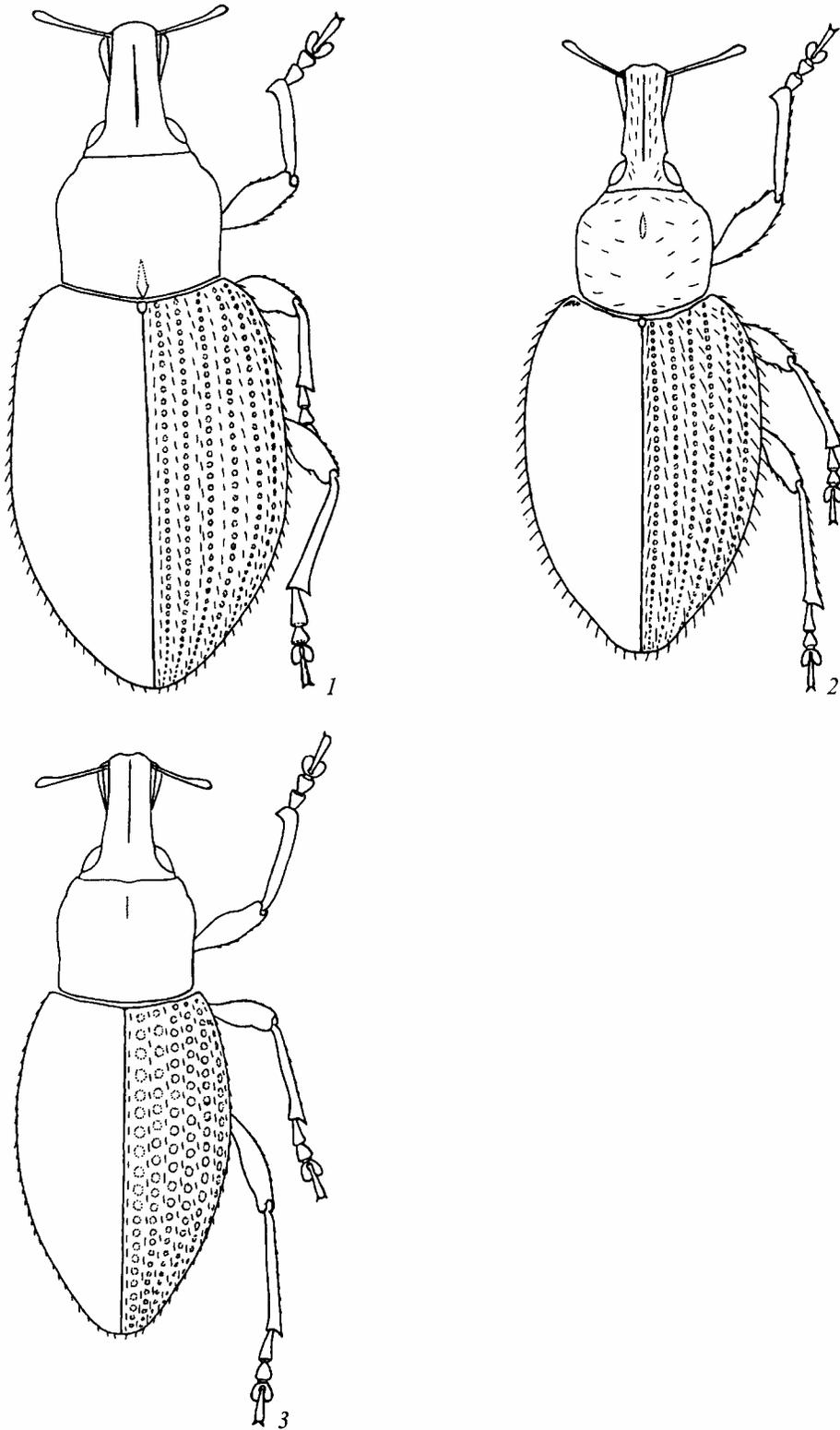
- 8(9). Median sulcus on rostrum wide and deep in basal half, usually superficial in apical half. Pronotal disc often without median sulcus. Base of pronotum usually with median tubercle, limited by small foveae at sides. Sides of ventrites usually with groups of light plumose scales. Basal part of endophallus with lire-shaped wings (Fig. 36) *G. armeniacus* Hochhuth.
- 9(8). Median sulcus on rostrum deep, sharply outlined throughout its entire length from frons to antennal insertion. Pronotal disc always with median sulcus at least in apical half. Plumose scales usually present only along sutures between ventrites. Base of pronotum without median tubercle.
- 10(11). Lamella elongate, rounded apically (Figs. 22, 23). Venter covered with ash-gray, opalescent scales. Processus prosternalis less than half as high as protruding part of fore coxae *G. agrestis* Boheman.
- 11(10). Lamella noticeably shorter, truncate apically (Fig. 24). Venter covered with large yellowish scales. Processus prosternalis more than half as high as protruding part of fore coxae *G. giresunicus* Davidian et Arzanov, sp. n.
- 12(5). 1st and 2nd segments of hind tarsus usually covered with hair-like scales pointed apically. Rostral dorsum, femora, and disc of elytra usually with weakly raised setae. Elytra with contiguous vestiture of round or, less frequently, oblong scales. Pronotum and venter with elongate, occasionally pointed apically scales and hair-like setae forming no contiguous cover; anal ventrite usually without broad scales. Sides of elytra behind humeri keeled or widely and evenly convex. Apical margin of aedeagus more or less deeply concave, occasionally almost straight.
- 13(14). Rostral dorsum widening to base, and ocular sulci not visible dorsally. Apex of pronotum straight or weakly emarginate, base with obsolete median tubercle or without any. Processus prosternalis weakly protruding for about 1/4 of exposed part of fore coxae. Ventrites usually without plumose scales. Lamella usually parallel-sided, deeply emarginate, with sharp angles (Fig. 33) *G. austriacus* Otto.
- 14(13). Rostral dorsum weakly widening to base, usually not concealing ocular sulci dorsally. Apex of pronotum more or less deeply emarginate, base usually with well-defined median tubercle. Processus prosternalis protruding for about 1/4–1/2 of exposed part of fore coxae. Ventrites with sparse or no plumose scales. Lamella narrowing apically or parallel-sided, less deeply emarginate, occasionally with almost straight apex.
- 15(16). Apex of pronotum deeply emarginate in middle. Sides of pronotum with large, irregularly-shaped elongate foveae covered with light scales. Aedeagus weakly narrowing to, and scarcely emarginate at apex *G. kaufmanni* Reitter.
- 16(15). Apex of pronotum usually weakly emarginate in middle. Disc of pronotum usually with simple and uniform punctation, less frequently weakly rugose. Aedeagus distinctly emarginate at apex.
- 17(18). 1st segment of antennal funicle not, or rarely, slightly longer than 2nd. Transverse diameter of eye more than 2.6 times distance from eye to dorsal surface of head. Pronotum with, or without median sulcus. No plumose scales present on ventrites. Lamella subparallel-sided. Spiculum gastrale with, or without small prominence in basal part near bend *G. triguttatus* Fabricius.
- 18(17). 1st segment of antennal funicle not shorter than 2nd. Transverse diameter of eye usually less than 2.6 times distance from eye to dorsal surface of head. Pronotum with elongate fovea in middle. Ventrites with sparse plumose scales. Aedeagus narrowing apically almost from lamella. Spiculum gastrale without prominence in basal part near bend *G. circassicus* Solari.

Graptus austriacus (Otto, 1894)

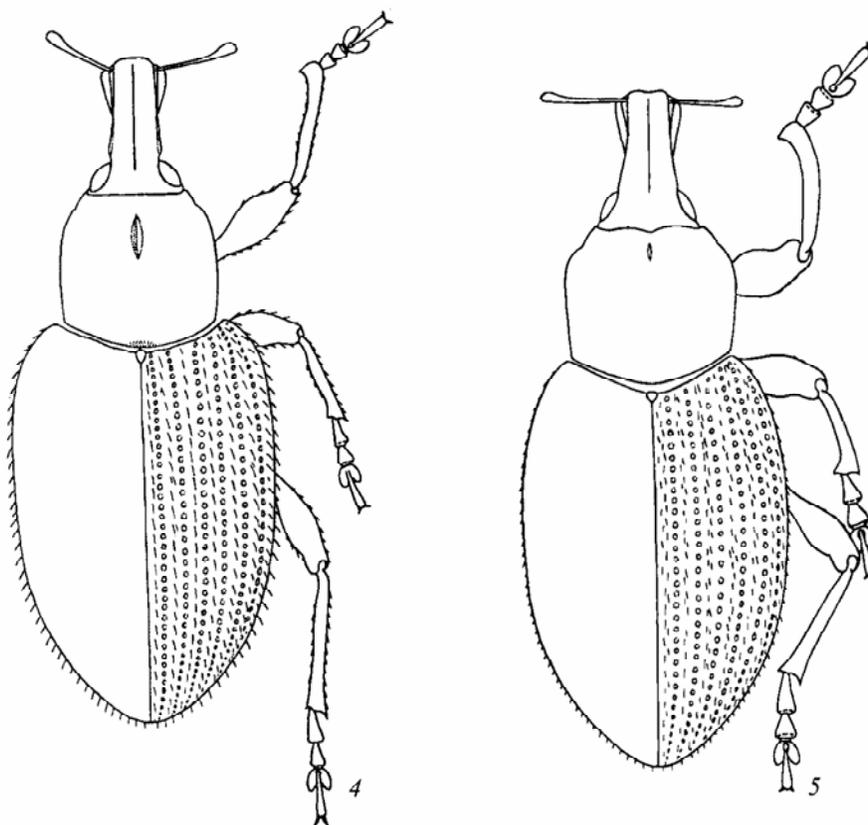
Figs. 33, 46

Otto, 1894 : 3–4; Reitter, 1901 : 214; Apfelbeck, 1927 : 76–77; Solari, 1945 : 24; Kippenberg, 1983 : 136.

Three specimens (2 males and 1 female) of this species from ZIN collection have been examined. One male labeled “Wechsel Gb. A. Otto,” *Alophus austriacus* Otto,” “k[olleksiya] A. Yakovleva” (A. Yakovlev’s collection) apparently belongs to the type series because both morphological characters and the label



Figs. 1–3. *Graptus* Schoenh., contour of male body: (1) *G. armeniacus* Hochh. (Aragats Mt.), (2) *G. steppensis* Davidian, Arzanov et Korotyayev, sp. n. (Nedvigovka Vill.), (3) *G. carpathicus* Rtt. (Chernogory).



Figs. 4, 5. *Graptus* Schoenh., contour of male body: (4) *G. giresunicus* sp. n., (5) *G. circassicus* Solari (Lagonaki Plateau).

data fit the original description. The rest specimens labeled "Stuhleck, St. Schuster" differ from the first specimen only in the deeper median sulcus on the rostral dorsum; their label data correspond to the type locality of *G. styriacus* Apfelbeck, 1927, synonymized with *G. austriacus* by Solari (1945).

Description. Rostral dorsum with deep, sharply outlined median sulcus; dorsum widened to base, ocular sulci not visible dorsally. First segment of antennal funicle as long as, or slightly longer than 2nd.

Pronotum transverse, widest distal to middle. Disc rugose; median sulcus deep in apical half, superficial or absent in basal part. Apical margin of pronotum straight or emarginate, basal margin with very small median tubercle, or without any. Processus prosternalis projecting for approximately 1/4 height of exposed part of fore coxae.

Elytra oblong-oval, with beveled humeral angles, almost parallel-sided in males, weakly rounded at sides in females. Sides usually more or less noticeably keeled at base; 3rd interval weakly swollen at base. Female tergite VII deeply emarginate apically, distinctly angular at sides.

Contiguous scaling on pronotum and elytra not concealing sculpture and elytral striae. Scales on pronotum elongate or, less frequently, round. Setae on intervals of elytra reclinate, their length noticeably less than width of elytral intervals. Setae on pronotum and femora recumbent or subrecumbent. Plumose scales sparse on coxae, absent on venter; anal ventrite and tarsi covered only with hair-like scales.

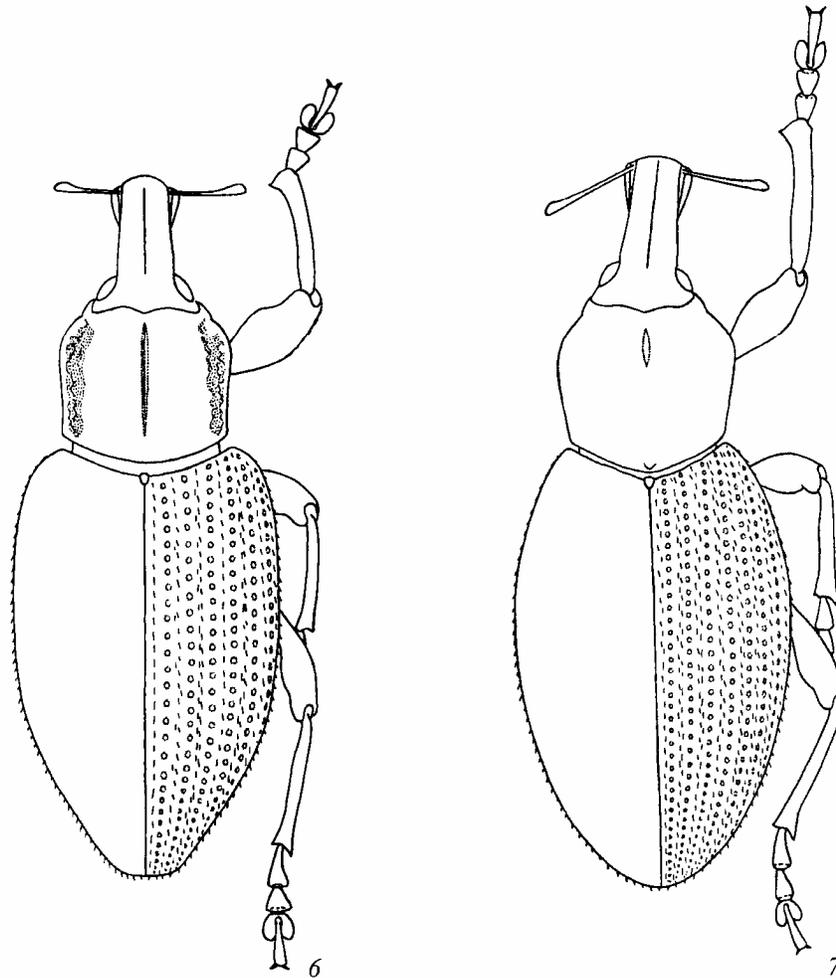
Lamella with deeply concave apex and sharp angles (Fig. 33). Spiculum gastrale without prominence near bend in basal part. Basal sclerotized structure of endophallus elongate (Fig. 46).

Body length 8.2–8.6 mm in males, 8.75 mm in female; width 3.45–3.5 mm and 3.85 mm, respectively.

***Graptus triguttatus* (Fabricius, 1775)**

(Figs. 7, 15, 28, 29, 47, 51)

Fabricius, 1775 : 148; Stierlin, 1888 : 65; Reitter, 1901 : 212; Apfelbeck, 1927 : 78; Solari, 1945 : 13–22; Ter-Minassian, 1946 : 115–116; Arnoldi *et al.*, 1965 : 557; Smreczyński, 1968 : 71; Ioannisianni, 1972 : 117–118; Bajtenov, 1974 : 161; Angelov, 1978 : 209; Kippenberg, 1983 : 137.



Figs. 6, 7. *Graptus* Schoenh., contour of male body: (6) *G. kaufmanni* Strl. (Gul'boka Vill.), (7) *G. triguttatus* F. (Rostov Prov.).

This widely distributed European species includes many geographical forms partly separated as distinct taxa. In the lack of adequate material from the western part of the range and having not examined the necessary types, we do not discuss here the taxonomy of this species in general. Examination of a considerable material from Russia makes it possible to attribute it to a single subspecies within this territory in spite of a wide individual variation.

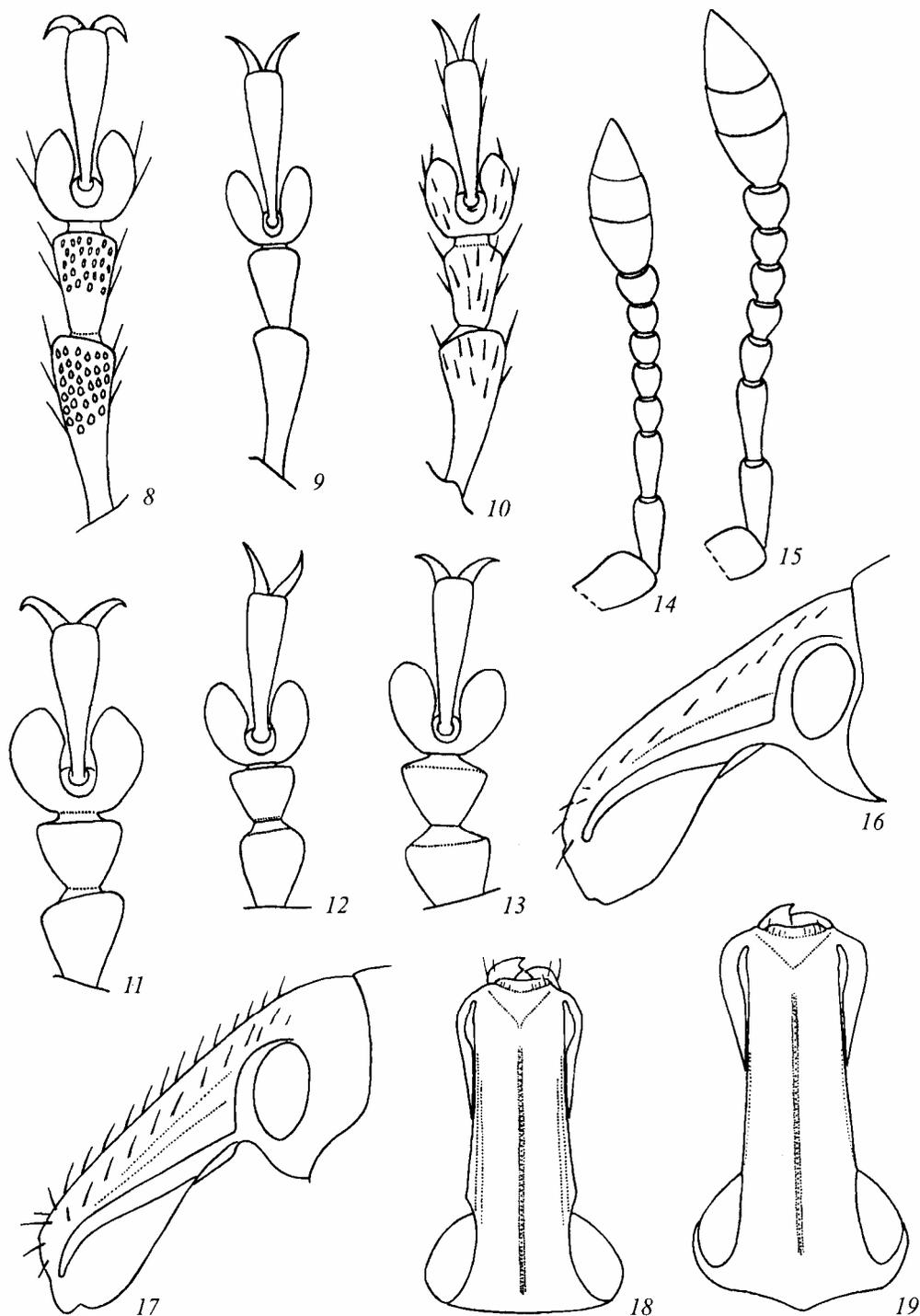
Description. Rostrum moderately widened; 2.10–2.63 times in males and 1.84–2.24 times in females as long as wide before eyes. Ocular sulci visible dorsally in the form of excavations; dorsum with distinct median sulcus, occasionally extending from frons to antennal insertion. First segment of antennal funicle usually as long as, or shorter than 2nd, rarely slightly longer than latter.

Pronotum transverse, usually widest distal to middle; sides somewhat converging basally, less fre-

quently parallel. Apex emarginate or, less frequently, almost straight; base usually with median tubercle occasionally extending anteriorly in the form of weak carina. Disc uniformly densely punctate, occasionally weakly rugose; usually with elongate median fovea in apical part. Processus prosternalis usually weakly projecting (for about 1/4–1/3 height of exposed part of fore coxae).

Elytra elongate-oval, widest at middle, 1.48–1.77 times as wide as pronotum. Base deeply concave; in males, elytra with beveled, in females usually with rounded humeri; sides near humeral angles usually widely and evenly convex, not keeled. Female tergite VII deeply emarginate apically, distinctly angular at sides. Claw-segment of hind tarsus 1.5–2.14 times as long as 3rd segment.

Aedeagus in apical half nearly parallel-sided, with sides weakly converging only at apex; lamella with moderately deeply and widely emarginate apex. Spicu-



Figs. 8–19. *Graptus* Schoenh., hind (8–10) and fore (11–13) tarsus of male, antennal funicle of male (14, 15), head of male dorsally and laterally (16–19); (8, 11) *G. agrestis* Boh. (Burshag Vill.); (9, 12, 17, 18) *G. steppensis* Davidian, Arzanov et Korotyayev, sp. n. [(9, 12) Rostov; (17, 18) Sober-Oashkh Mt.]; (10, 13, 14, 16, 19) *G. circassicus* Solari (Gagrskii Mt. Range); (15) *G. triguttatus* F. (Belgorod Prov.).

lum gastrale with, or without short prominence near bend in basal part. Structure of endophallus similar to that in *G. circassicus*.

Intervals of elytra with rows of reclinate setae length of which noticeably less than width of intervals. Vestiture contiguous, composed of round and oval

scales. Sides of ventrites covered with elongate, usually acuminate scales; median part of 1st–4th ventrites and all of anal ventrite usually covered with hair-like scales. Plumose scales present on coxae but absent on ventrites.

Body length 6.25–8.65 mm in males, 6.35–10.6 mm in females; width 2.50–3.55 mm and 2.85–4.9 mm, respectively.

G. triguttatus is closely related to *G. circassicus* and differs from it in the larger transverse diameter of eye, length ratio of the first two segments of antennal funicle, usually distinct median tubercle at pronotal base, and more slender tibiae. In addition, the aedeagus is almost parallel-sided in the apical half, and the spiculum gastrale occasionally forms a short prominence near the bend in the basal part.

Material. Italy: “Piemont,” 1 ♀. Switzerland: “Helvetia,” 1 ♀. Austria: 5 ♀. Czech Republic: Moravia, 2 ♀. Hungary: 4 ♀. Moldova: Kamenskii Distr., Razhkovo Vill., on *Carpinus*, 19.VI.1982 (A.G. Koval), 1 ♂. The Ukraine. Transcarpathians, 26.VI.1980 (Uzhgorod University), 1 ♀; Beregovskii Distr., Velikaya Bakta Vill., 16.VII.1979 (A.G. Koval), 1 ♂; Volyn’, 1875, 1 ♀; Khmel’nitskaya Prov., Kamenets-Podol’skii, 6.VII.1908, 1 ♀; 16.IV.1911, 2 ♀; 23.V.1911 (V. and I. Yakubovskii), 1 ♀; Kiev, 1905 (L. Sheluzhko), 1 ♀; Chernigov Prov., Novgorod-Severskii, 18.IV.1887, 2 ♀; Kharkov Prov., Zmiev: 9.IV.1917, 1 ♀; 31.V.1919 (K.V. Arnoldi), 1 ♀; Poltava, 11.V.1926, 1 ♀; 2.V.1927 (F.K. Lukjanovitsh), 1 ♂; Dnepropetrovsk Prov., Pavlograd Distr., VIII.1987 Izrailevich), 1 ♂, 1 ♀; Vyazovok Vill., VI.1986 (V.A. Dekina), 1 ♀; Dnepropetrovsk, 1 ♀; as above, airport, 27.V.1978, 1 ♀; Kherson Prov., Chernovo Vill., 13–14.V.1921 (D. Znoiko), 1 ♀. Russia. Moscow Prov.: Chashnikovo Agrobiological Station, 25.VI.1961, 1 ♀; 2.VIII.1972, 1 ♀; 18.VII.1961, 2 ♀; 9.VIII.1979, 1 ♀; 20.VII.1967, 1 ♀; 20.VI.1967, 2 ♀; 11.VI.1983, 1 ♂; 14.VIII.1971 (S.V. Murzin), 1 ♂; Prioksko-Terrasnyi Nature Reserve, buffer zone, meadow, 26.VI.1985 (M.Yu. Savitskii), 1 ♀; 20.VI.1986 (V.Yu. Savitskii), 1 ♀; 26.VI.1986 (M.Yu. Savitskii), 1 ♂; as above, 5.VII.1985 (Drabkin), 1 ♂, 1 ♀; Puschino-on-Oka, 28.V.1985, 2 ♀; 2.VI.1982, 1 ♀; 3.VI.1983, 1 ♀; 21.VI.1984, 1 ♀; Skhodnya railroad station, 20.VI.1904, 1 ♀; 10.VI.1907 (I. Schukin), 1 ♂; Zvenigorod (Biological Station of the Moscow State University), 10.VII.1985 (O. Konovalova), 1 ♀; Moscow, Kubinka Stn., 29.VI.1977 (A. Kravets), 1 ♀; Riazan, 1 ♂, 1 ♀; Noskovtsy (V. and I. Yaku-

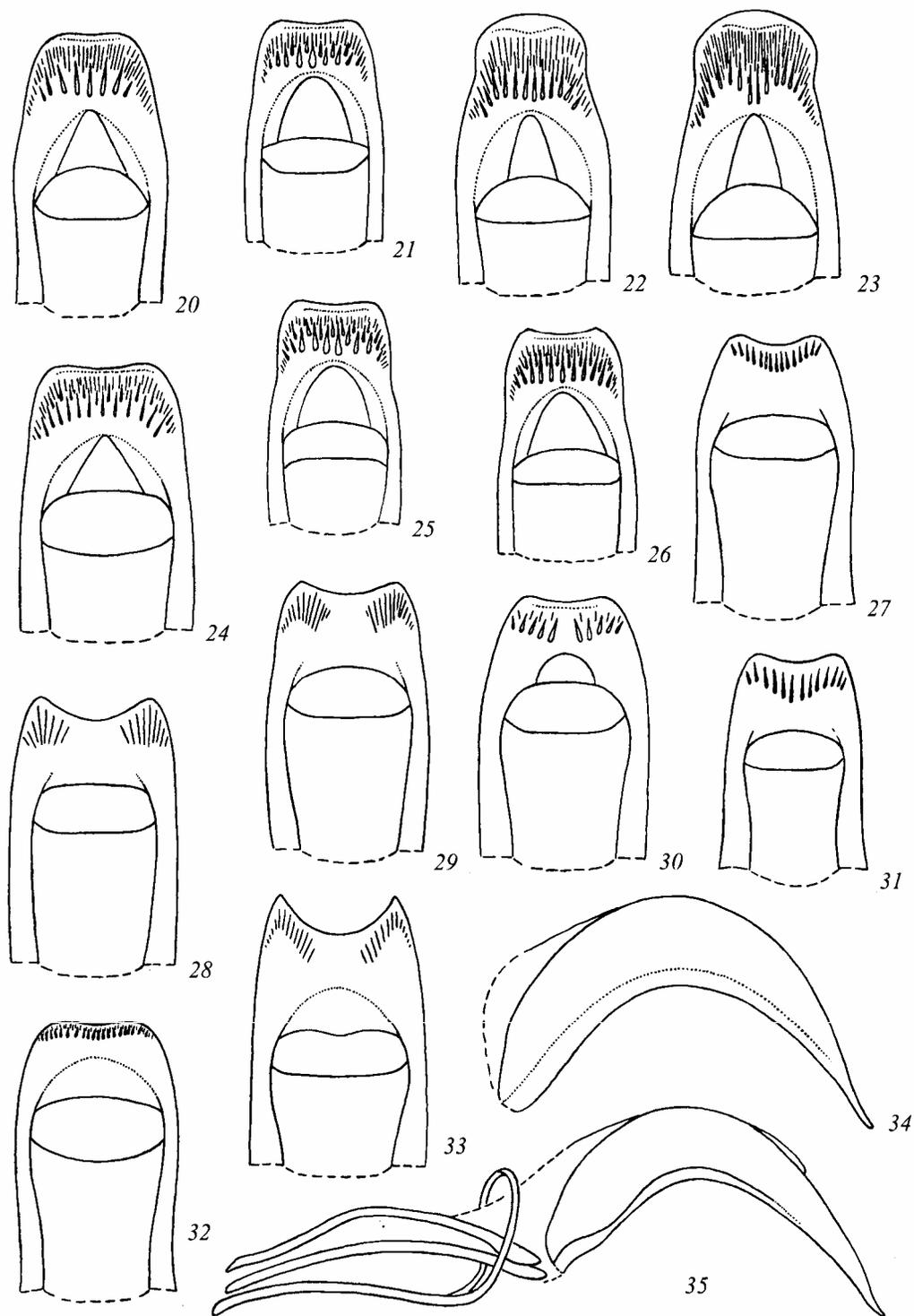
bovskii), 2 ♂; Tatarstan, Kazan’ (Ballion), 1 ♀; Chuvashia, Mar’in Posad City, 26.VI.1926, 2 ♀; Mor-dovia, Sabaev, 20.V.1967 (L. Lugovaya), 1 ♂, 1 ♀; Penza, 1 ♀; Syzran’, Zhiguli (Bostanzhoglo), 1 ♀; Kursk Prov., Tsentral’no-Chernozomyoni (= Central Black Soil Region) Biosphere Reserve, “Dedovskii Les”, 2.VI.1964 (K.V. Arnoldi), 1 ♀; Belgorod Prov., Borisovka Vill., VII.1977 (Avdeev), 1 ♂; as above, 18.VI.1989 (G.E. Davidian), 1 ♂, 1 ♀; Voronezh, Botanical Garden, 19.VI.1925 (V. Kizeritsky), 1 ♀; Voronezh Prov., Borisoglebsk Distr., 4.VII.1973 (L. Kievskaya), 1 ♀; Rostov Prov.: Salsk Distr.: Ivanovka Vill., 5.V.1985 (Yu.G. Arzanov), 1 ♀; Rogozhokino Vill., 19.VII.1989 (O.N. Demina), 1 ♀; Oblivskaya Vill., 24.IV.1985 (L. Cherezova), 1 ♂; Mityakinskaya Vill., 8.VI.1997 (Yu.G. Arzanov), 1 ♀; Rostov, 20.IV.1990 (E.A. Khachikov), 1 ♀; Kamenskii Distr., Abramovka Vill., 15.VII.1952 (K.V. Arnoldi), 1 ♀.

G. triguttatus is distributed in European Russia as far in the east as the Volga River. Bajtenov’s (1974) record of this species from Western Kazakhstan and a female in the ZIN collection labelled “Mountain Altai, middle course of the Maima River, 5 km NW of Kyzyl-Ozak Vill.” are of a special interest. The latter specimen differs from *G. triguttatus* only in the broad scales on the two the basal segments of hind tarsus.

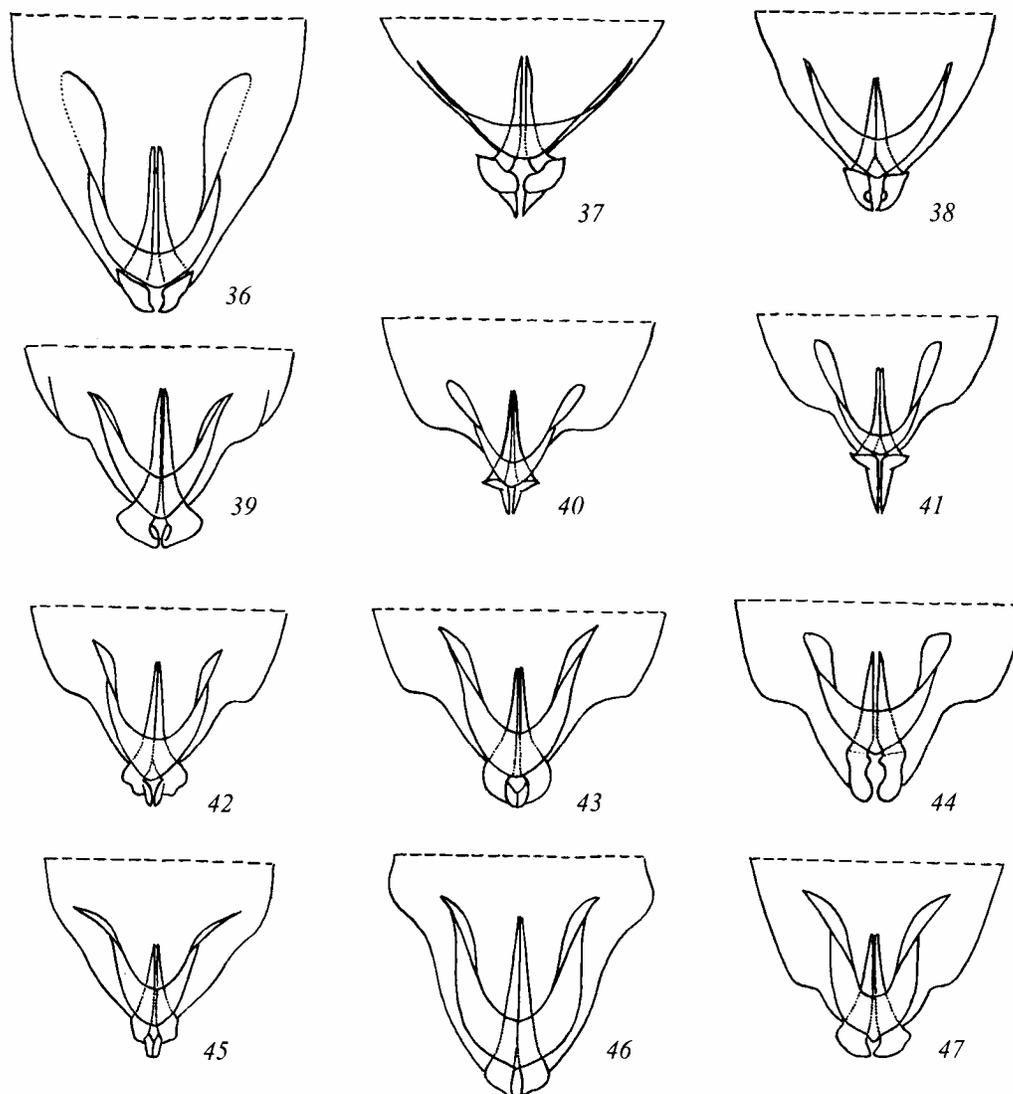
***Graptus carpathicus* (Reitter, 1901), stat. n.**
(Figs. 3, 31, 45)

Reitter, 1901 : 211 (*Alophus vau* Schrank, 1781 var.); Solari, 1945 : 13–22 (*A. triguttatus* var.); Arnoldi *et al.*, 1965 : 557; Smreczyński, 1968 : 71 (*A. triguttatus* subsp.); Kippenberg, 1983 : 137.

In our opinion, *G. carpathicus* is a distinct species close to *G. weberi*. We have examined three type specimens (2 males and 1 female) from E. Reitter’s collection in Budapest. The male labelled “Carpathen Reitter,” “Coll. Reitter,” “Paratypus *Alophus vau* v. *carpathicus* Reitter,” “*trimaculat.* v. *carpathicus* ♂ 1901” (Reitter’s handwriting), “*Alophus triguttatus* Reitt. ssp. *carpathicus* Smreczyński det., 1955” was misinterpreted by Smreczyński (1968) as the holotype, which should be considered a lectotype designation. The other male has labels “Ganglb. 95, Kerzer-Gb.,” “Coll. Reitter,” “Paratypus *Alophus vau* v. *carpathicus* Reitter,” “*Alophus triguttatus* Reitt. ssp. *carpathicus* Smreczyński det., 1955”. Both specimens belong to one species, whereas the female labelled “Schuler Gbg. Deubel” we identify as *G. weberi*.



Figs. 20–35. *Graptus* Schoenh., apex of aedeagus dorsally (20–33) and aedeagus laterally (34, 35); (20) *G. armeniacus* Hochh.; (21, 25, 26, 35) *G. steppensis* Davidian, Arzanov et Korotyayev, sp. n. (Rostov); (22, 23) *G. agrestis* Boh. [(22) Burshag Vill., (23) Shunudagh Mt.]; (24, 34) *G. giresunicus* sp. n.; (27, 30) *G. circassicus* Solari (Teberda); (28, 29) *G. triguttatus* F. [(28) Belgorod Prov., (29) Dnepropetrovsk]; (31), *G. carpathicus* Rtt. (Chernogory); (32), *G. kaufmanni* Strl. (Bendery); (33), *G. austriacus* Otto.



Figs. 36–47. *Graptus* Schoenh., basal part of endophallus dorsally: (36) *G. armeniacus* Hochh. (Musaelian Vill.); (37) *G. agrestis* Boh. (Bursdag Vill.); (38) *G. giresunicus* sp. n.; (39, 42, 43) *G. circassicus* Solari [(39) Aibga Mt. Range, (42) Gagrskii Mt. Range, (43) Andiiskii Mt. Range]; (40, 41), *G. steppensis* Davidian, Arzanov et Korotyayev, sp. n. [(40) Morskoi Chulek Vill., (41) Uspenskaya Vill.]; (44) *G. kaufmanni* Strl. (Bendery); (45) *G. carpathicus* Rtt. (Chernogory); (46) *G. austriacus* Otto; (47) *G. triguttatus* F. (Rostov).

Description. Rostral dorsum with long median sulcus and additional sulci at sides of basal part. Ocular sulcus usually very shallow; 1st segment of antennal funicle 1.36–1.45 times as long as 2nd.

Pronotum weakly transverse, with slightly concave or straight anterior margin and elongate median fovea in apical half; base without median tubercle. Scutellum small, occasionally not visible. Processus proster-nalis very weakly convex.

Elytra elongate-oval, without distinct humeri, noticeably narrowing basally. Striae composed of deep

and broad punctures diameter of which subequal to width of intervals.

Intervals of elytra with one row of short subrecumbent setae; pronotum and two basal ventrites of abdomen covered with round scales, 3rd–5th ventrites usually covered with small, more or less elongate, occasionally hair-like scales. Plumose scales on venter sparse and usually situated mainly at sides of 3rd and 4th ventrites.

Lamella noticeably narrowing to, and widely concave at apex. Spiculum gastrale without process at

bend in basal part. Basal structure of endophallus usually with projections similar to those in *G. steppensis* Davidian, Arzanov et Korotyaev, sp. n. and some specimens of *G. circassicus* from Gagry and Avadkhara.

Body length 5–6 mm in males, 5.65–6.40 mm in females; width 2.22–2.57 mm and 2.65–2.96 mm, respectively.

Material. The Ukraine: Carpathians, Chernogory, near Yasenia Vill., Lazeshina River, 800–1000 m, 4.VI–17.V.1958 (V.A. Zaslavskii), 3 ♂, 2 ♀. In addition, there are two unlabelled males and a female in the ZIN collection.

Graptus weberi (Penecke, 1901)

Penecke, 1901 : Solari, 1945 : 13–22; Smreczyński, 1957 : 22–26; Arnoldi *et al.*, 1965 : 557; Kippenberg, 1983 : 137.

We identified this species using the key to beetles of Central Europe (Kippenberg, 1983). The species was described from Styria (Austria). The specimens examined are clearly distinguished by the deeply emarginate medially anterior edge of the pronotum, well-visible scutellum, and narrow elytral striae with punctures considerably narrower than intervals. From *G. triguttatus*, these specimens differ in the usually smaller body, 1st segment of antennal funicle noticeably longer than 2nd one, and very weakly convex processus prosternalis.

Body length 5.30–5.75 mm in males, 6.0–6.2 mm in females; width 2.45–2.6 mm and 2.81–2.97 mm, respectively.

Material. The Ukraine: “Lwow” (Lvov), 1 ♀; Lvov Prov., Ciscarpathians, Skhom, 30.V.1988 (V.I. Gusarov), 1 ♂; Zakarpatskaia Prov., Rakhov Distr., Kvasy Vill., 9.VI.1973 (A. Kreslavskii), 1 ♂; Zan’ka Vill., 14.VIII.1987 (I. Melnik), 1 ♀. In addition, there are two males in the ZIN collection differing in a larger body, one labelled “Styria” and the other “Alpen, Reitter,” so that at least one of these specimens probably originates from the type locality of *G. weberi*.

Graptus kaufmanni Stierlin, 1887
(Figs. 6, 32, 44)

Stierlin, 1887 : 43; Reitter, 1901 : 213; Apfelbeck, 1927 : 74–75; Solari, 1945 : 8–13; Smreczyński, 1957 : 26; Arnoldi *et al.*, 1965 : 557; Angelov, 1978 : 209; Kippenberg, 1983 : 137

Description. Rostral dorsum with median sulcus, ocular sulcus well-visible dorsally, 1st segment of antennal funicle as long as 2nd.

Pronotum transverse, widest in apical half, wherefrom sides almost rectilinearly converging to base. Anterior margin deeply concave, disc with median sulcus and irregular-shaped longitudinal foveiform depressions at sides covered with pale scales; base with median tubercle. Processus prosternalis large, its protruding slightly less than for half of height of exposed part of fore coxae.

Sides of elytra usually weakly keeled at base; 3rd interval swollen at base.

Pronotum covered with oval or elongate scales forming no contiguous cover. Intervals of elytra with rows of short subrecumbent setae length of which 0.5–0.7 times width of intervals. Venter covered with elongate, occasionally pointed apically scales forming no contiguous cover, and with sparse plumose scales at sides; anal ventrite covered with hair-like, less frequently, with elongate-oval scales.

Aedeagus weakly narrowing to, and straightly truncate at apex (Fig. 32); spiculum gastrale without prominence at bend in basal part.

Body length 7.1–8.3 mm in males, 6.85 mm in female; width 3.2–3.7 mm and 3.1 mm, respectively.

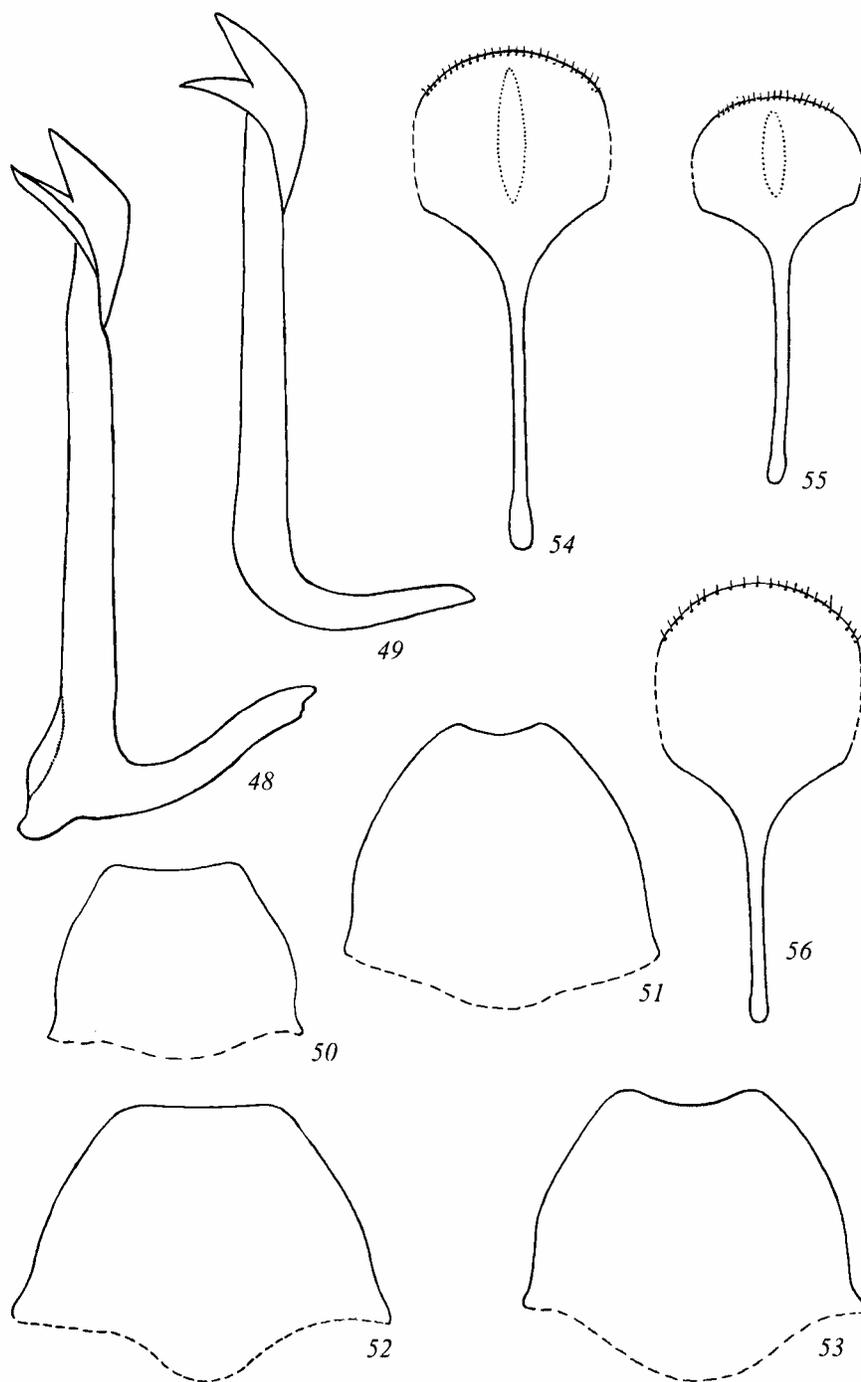
G. kaufmanni differs from other species known to us in the shape of the lamella and structure of the endophallus (Fig. 44). In addition, it differs from *G. triguttatus* in the sculpture of the pronotum; from *G. austriacus*, in the visible dorsally ocular sulci and less deep median sulcus on rostral dorsum; and from *G. carpathicus* and *G. weberi*, in the larger body and large processus prosternalis.

Material. Hungary. Moldova: NW of Bendery, 9.VI.1974 (D.R. Kasparyan), 1 ♂; Kriuliany Distr., Gul’boka Vill., 29.V–6.VI.1982 (A.G. Koval), 2 ♂, 1 ♀.

Graptus circassicus Solari, 1945, stat. n.
(Figs. 5, 10, 13, 14, 16, 19, 27–30, 39, 42, 43, 49)

Solari, 1945 : 11–13 (*Alophus kaufmanni* subsp.); Smreczyński, 1957 : 26.

This taxon was described from Abago Mt. in the Western Caucasus. It clearly differs from *G. kaufmanni* in the sculpture of the pronotal disc and structure of the endophallus; therefore, we consider it a distinct species.



Figs. 48–56. *Graptus* Schoenh., spiculum gastrale (48, 49), abdominal tergite VII of female (50–53), and spiculum ventrale (54–56); (48) *G. giresunicus* sp. n.; (49) *G. circassicus* Solari (Chechnya); (50, 55) *G. steppensis* Davidian, Arzanov et Korotyayev, sp. n. (Sober-Oashkh Mt.); (51) *G. triguttatus* F. (Moscow); (52, 54) *G. armeniacus* Hochh. [(52) Dilizhan, (54) Dzhavakhetskii Mt. Range]; (53) *G. circassicus* Solari (Kabardino-Balkaria); (56) *G. agrestis* Boh. (Nukatl' Mt. Range).

In spite of some differences, we consider here all geographical forms from the Caucasus as belonging to one species, without subdividing it into subspecies. The size and proportions of the body, structure of the

rostrum, legs, the vestiture, shape of the apex of the aedeagus, and details of the endophallus structure are subject to variation. The bulk of the material has been collected in the meadows in the middle and high alti-

tude zones, except for series from North Ossetia and a female from Kislovodsk collected at a height of 600 m.

An extensive material from North Ossetia contains at least two altitudinal forms. A high-mountain form is known from alpine meadows on the Skalistyi Range near Kariukhokh Mt., it has a thick rostrum, widened tibiae, and wide tarsi (2nd segment of hind tarsus is only slightly longer than wide and about as long as 3rd segment). A piedmont form occurs near Vladikavkaz, Alaghir, and Elkhotovo; it has a more slender body, narrow and long rostrum and tibiae, and elongate 2nd segment of hind tarsus which is 1.3 times as long as wide and longer than 3rd segment. It should be noted that in some specimens from the foothills, 1st segment of hind tarsus is covered with small rounded scales typical of the species close to *G. agrestis*.

Description. Length of rostrum in males 2.00–2.63, in females 1.85–2.05 times basal width of rostrum. Rostral dorsum with median sulcus of varying depth, obsolete in apical half in specimens from Central and Eastern Caucasus. Ocular sulci usually not visible dorsally; 1st segment of antennal funicle as long as, or longer than 2nd.

Pronotum widest in apical half, wherefrom weakly narrowing to base, or, occasionally, parallel-sided. Anterior margin of pronotum straight or emarginate. Disc densely and evenly punctate, occasionally rugulose, with oblong median fovea; base usually with tubercle prolonged anteriorly in the form of smoothed carina. Processus prosternalis well developed and projecting approximately for 1/3 of exposed part of fore coxae.

Elytra with, or without beveled humeri, usually weakly rounded at sides, widest near middle. Sides behind humeri usually evenly convex or weakly keeled. Tergite VII in female with deeply emarginate apex.

Pronotum and elytra covered with oval and hair-like scales forming no contiguous cover; plumose scales on ventrites sparse. Intervals of elytra with rows of straight semi-erect setae length of which noticeably less than width of intervals.

Aedeagus narrowing apically almost from prepucial area, with emarginate apex. Shape of aedeagal apex corresponding to figure of aedeagus of *G. pseudoelegans* Rtt., 1901 from Eastern Carpathians (Solari, 1945). Spiculum gastrale without process at bend in

basal part. Endophallus structure similar to that in *G. triguttatus*; basal structure of endophallus in some specimens from Abkhazia with processes at base.

Body length 6.2–8.5 mm in males, 6.7–9.3 mm in females; width 2.45–3.75 mm and 3.05–4.25 mm, respectively.

G. circassicus clearly differs from *G. triguttatus* in the shape of the lamella, structure of the spiculum gastrale, and size and situation of the eyes, their transverse diameter is usually less than 2.6 times the distance from an eye to the dorsal side of the head.

There is a specimen from the Crimea labelled “Toply” which we also identify as *G. circassicus*. The humeri of the elytra in this specimen are beveled, sides parallel in the basal half, intervals with rows of strongly raised setae, and shape of the apex of the aedeagus is typical of *G. circassicus*.

Material. The Ukraine, the Crimea: “Toply” [Staryi Krym, Topolevka], VII.1932, 1 ♂. Russia. Krasnodar Terr.: “Cauc. occid., Reg. alpestre (Starck)”, 1 ♀; Psebai Vill., 30.V.1911 (Volnukhin), 1 ♀; Mezmai Vill., 10.VII.1992 (E.A. Khachikov), 1 ♀; upper course of Psezuapse River, Autl’ Mt., 13–14.V.1995 (Davidian), 1 ♂, 1 ♀; Aibga Mt. Range, alpine meadows, 7.VIII.1991 (Davidian), 2 ♀. Adygea: Kisha River, 19.VII.1911 (Volnukhin), 1 ♀; Lagonaki Plateau, 24.VI.1990, 2 ♂, 5 ♀; 9.VIII.1992, 2 ♀; VII.1996 (Arzanov), 1 ♂; 16.VII.1992 (E.A. Khachikov), 1 ♂; Fisht Mt., Tsetsa River sources, 6.VI.1987 (I.A. Belousov), 3 ♂, 1 ♀; southeastern slopes of Bol’shoi Tkhach Mt., 1600–2000 m, 20.V.1990 (Davidian), 1 ♀; Kavkazskii Nature Reserve, spurs of Yatyrgvarta Mt. (Malyie Bambaki Massif), 15.VII–15.VIII.1992 (M.Yu. Savitskii), 2 ♂, 2 ♀; northern forestry, Knyazheskii Balagan locality, 20.VI–24.VIII.1986 (A.S. Zamotajlov), 1 ♀; Kutekheku Mt. Range, 14.VI.1986 (A.S. Zamotajlov), 1 ♀. Stavropol Terr.: Kislovodsk, 11.VI.1993 (Arzanov), 1 ♀. Karachaj-Cherkessia: Khadzhibei River, VI.1915 (N.N. Bogdanov-Kat’kov), 1 ♂; Mukhu locality, 23.VI.1995 (P.P. Ivliev), 5 ♂, 3 ♀. Kabardino-Balkaria: Verkhnyaya Balkaria Vill., Rtsyvashke River valley, 2000–2500 m (A.S. Zamotajlov), 3 ♂, 4 ♀. North Ossetia: Post Redant on the Terek River near Fatgus (Redant Vill., 9 km S of Vladikavkaz), 10.V.1886 (Ananov), 1 ♀; Vladikavkaz, 2–11.V.1899 (K.E. Demokidov), 12 ♂, 4 ♀; 29.IV.1899 (K.E. Demokidov), 3 ♀; 17.VII.1886 (Ananov), 2 ♂; “kh.[utor] Mel’nikova, Aleks. Uyezda” (= Melnikov’s Farm, Aleksandrovskii Distr.), 9.V.1899

(K.E. Demokidov), 1 ♂, 2 ♀; Uozokhokh Mt., Kezadon River sources, 2800 m, 16.VI.1985 (I.A. Belousov), 1 ♀; Balta, 23.V.1908 (I. Schukin), 2 ♂, 4 ♀; Khumaratkikh Mt., 3.VI–2.VII.1985 (S.K. Alekseev), 12 ♂, 3 ♀; as above, but 5.VII.1997 (Davidian), 3 ♂, 3 ♀; Ardon Mt., 28.V.1929 (Grigorieva), 1 ♀; Kariukhokh Mt., 3.VI–12.VII.1985 (S.K. Alekseev), 4 ♂; as above, but 2.IV.1986 (S.K. Alekseev), 1 ♂; as above, but 6.VII.1997 (Arzanov), 1 ♂, 1 ♀; El'khotovo, near Lake Bekan, 3.VI.1986 (S.K. Alekseev), 1 ♂; Alaghir, Pastbischnyi Mt. Range, 10.VI.1982 (S.K. Alekseev), 1 ♀; Tseiskii Mt. Range, 3000 m, 18.VII.1985 (S.K. Alekseev), 2 ♀. Chechnya: Tazbichi Gorge, 6 km S of Itum-Kale, 8.VI.1972 (V.A. Richter), 1 ♀; Dzherakh Depression, VII.1987 (G.M. Abdurakhmanov), 1 ♂. Daghestan: Skalistyi Mt. Range, 2500 m, 13.V.1984 (E.V. Komarov), 1 ♀; Andiiskii Mt. Range, Andi Vill., 31.V.1991 (Davidian), 2 ♂, 2 ♀; Andiiskiy Vorota Pass, 2400 m, 30.V.1991 (Davidian), 1 ♂; Untsukul' Distr., Kakhabroso Vill., 1700 m, 31.VI.1993 (E.V. Il'ina), 1 ♂, 1 ♀. Georgia. Abkhazia: Avadkhara Resort, 4.IX.1960 (Yu. Lyais-ter), 1 ♂, 1 ♀; Gagrskii Mt. Range, western spurs of Arabika Mt., 1900–2200 m, 9.VI.1991 (Davidian), 3 ♂, 3 ♀; Mamdzyshka Mt., 1600–2300 m, 3.VI.1985 (A.S. Zamotajlov), 1 ♀; Bzybskii Mt. Range, Napra Mt., 2400 m, 13.VI.1991 (Davidian), 1 ♂; Mingrelia: Askhi Plateau, 2000–2400 m, 12.VII.1990 (Davidian), 1 ♀.

Graptus elegans (Stierlin, 1888)

Stierlin, 1888 : 64–65; Reitter, 1894 : 309; Apfelbeck, 1927 : 75.

This species was briefly described in a key probably from a single Turkish specimen. We have examined a type specimen from G. Stierlin's collection, a male labelled "Turki," "Holotypus," "coll. Stierlin," *A. elegans* Stl., "coll. DEI Eberswalde," "*Alophus elegans* Strl.," and consider it the holotype. The original description gives the body length of the holotype 9.5 mm, width 3.5 mm; our measurements give 10.1 and 4.3 mm, respectively.

In addition to the type, we have examined two males from the same collection, one labelled "Brussa, Asia min., Dr. Jureček," "ex coll. Fremuth," and the other, "Anatolien, Bursa, Uludag, 1800 m, 24.VII.1988 (A. Riedel)," "ex coll. Riedel." Three females from the Zoological Museum, Helsinki, also have been examined, all labelled "Asia minor Bursa Uludag v.

Numbers," "Mus. Zool. Helsinki Loan N C—98 425". The females differ in the larger body: length 9.5–10.7 mm, width 4.5–5.3 mm. Specimens of this size we have seen only in *G. triguttatus*.

Description. Structure of rostrum similar to that in *G. kaufmanni* and *G. circassicus*. Median sulcus on dorsum of rostrum distinct between frons and antennal insertion; ocular sulci distinct and clearly visible dorsally; 1st segment of antennal funicle about as long as 2nd.

Pronotum from apical constriction to base subparallel-sided, with slightly emarginate apex. Disc densely punctate, rugosely foveate, with deep elongate median fovea in apical half, occasionally shortly produced toward basal tubercle. Processus prosternalis protruding for about half of exposed part of coxae.

Scutellum well-visible. Elytra with beveled humeri; almost parallel-sided in basal part or weakly widening posteriorly; sides depressed along lateral margin in apical third.

Legs relatively short, robust; tibiae strongly widening apically, weakly curved in males, almost straight in females.

Abdominal tergite VII in female moderately deeply emarginate apically. Aedeagus with short lamella, noticeably narrowing apically and shallowly concave at apex. Endophallus similar to that in *G. kaufmanni*. Wide apical part of spiculum ventrale only slightly shorter than its narrow basal part.

Spots of anterior band of elytra small, situated on 4th and 5th intervals; spots of posterior band extending from sutural toward 5th interval. Elytral vestiture mainly formed by oval, weakly elongate scales with rounded apical margin and short erect setae with length about equal to half-width of intervals. In females, light spots in bands formed by acuminate apically scales. Vestiture of venter discontinuous, mostly consisting of elongate, apically pointed scales less than half as long as neighboring hair-like setae. Plumose scales infrequently present only on 1st and 2nd ventrites. First segment of hind tarsus occasionally with a few small broad scales.

In the structure of the rostrum, sculpture of the pronotal disc, and type of the vestiture, *G. elegans* is similar to *G. kaufmanni*, *G. circassicus*, and *G. triguttatus*.

Graptus steppensis Davidian, Arzanov et Korotyaev,
sp. n.

(Figs. 2, 9, 12, 17, 18, 21, 25, 26, 35, 40, 41, 50)

Lukjanovitsh, 1926 : 21 (*Alophus agrestis* Boh.).

This species is not rare in nature and is often collected. Lukjanovitsh (1926) recorded it from Rostov Prov. as *Alophus agrestis*, believing that the species was introduced there from the Caucasus with plants. Examination of the type of *G. agrestis* gives grounds for describing here a new species.

Description. Rostrum slender and long, in males 2.3–2.69, in females 2–2.26 times as long as wide before eyes. Rostral dorsum weakly narrowing apically, almost parallel-sided, usually with median sulcus along entire length and often with short sulci and carinae along sides. Ocular sulci deep, clearly visible dorsally as marginations; angular prominence between antennal scrobe and ocular sulcus large; 1st segment of antennal funicle longer and somewhat wider than 2nd.

Pronotum transverse, rounded at sides, widest slightly behind middle; posterior angles gently rounded and usually indistinct. Disc with deep fovea distal to middle, densely punctate, with punctures mostly arranged in fine oblique striae. Anterior margin straight, base with small median tubercle occasionally in the form of short carina, without foveae alongside. Processus prosternalis highly protruding, usually for more than half of exposed part of coxae.

Elytra with strongly rounded sides converging to base, widest near middle; beveled humeri usually indistinct. Base of 3rd interval noticeably swollen, sides keeled behind humeral angles.

Tibiae slender, straight in females, weakly incurved in apical part in males; tarsi slender, with long claw-segment.

Abdominal tergite VII in female usually with noticeably emarginate apex. Spiculum gastrale with or without process near bend in basal part. Aedeagus weakly constricted in distal part of prepuccial area, with straight or slightly emarginate apex.

Dorsal surface with dense vestiture of rounded scales; intervals of elytra with rows of long erect setae length of which equal to width of intervals. Ventrites usually covered with similar or, less frequently, weakly elongate scales and long erect hair-like setae. First and (to a lesser extent) 2nd segments of hind tarsus covered with small broad light scales.

Body length 5.45–6.70 mm in males, 6.0–8.1 mm in females; width 2.5–3.0 and 3–4 mm, respectively; in holotype, 6.1 and 2.8 mm.

The new species is similar to *G. nictitans*, but can be easily distinguished by the absence of a tooth on ventral surface of the rostrum, vestiture of the ventrites, and shape of the apex of aedeagus. From *G. agrestis*, it clearly differs in the small body size, more slender and longer rostrum, elytra having no humeri and widely rounded at sides, strongly projecting processus prosternalis, long and strongly raised setae on elytra, and structure of the aedeagus and endophallus. From *G. armeniacus*, the new species differs in the absence of foveae along the mediobasal tubercle on the pronotum and in the long slender tarsi.

The species is distributed in the steppes of the lower Don Area, western Ciscaucasia, and northern Caucasus. The beetles usually occur under young leaf rosettes of various herbs with broad leaves, and are swept from the dry last-year herbaceous vegetation.

Material. Russia. Rostov Prov.: Lake Manych, 11.V.1952 (K.V. Arnoldi), 1 ♂, 1 ♀; Morskoi Chulek, 6.V.1994, 1 ♂; 20.IV.1996, 1 ♂, 1 ♀; 24–26.IV.1996, 2 ♂; 5.IV.1997, 1 ♀; 14.V.1998, 1 ♀; Novocherkassk, 12.III.1913 (V. Kizeritsky), 1 ♀; 28.IV.1996, 1 ♀; 16.V.1995, 1 ♀; 24.VII.1997 (D.G. Kasatkin), 1 ♂; 15.V.1988 (Yu.G. Arzanov), 1 ♀; Nedvigovka, 8.V.1991 (D.G. Kasatkin), 1 ♂; 1.V.1989 (O.N. Demina), 2 ♀; as above, Kamennaya Balka [shallow ravine with gentle slopes—Ed.], 28.III–9.V.1999, 29.IV.2000 (Yu.G. Arzanov, D.G. Kasatkin), 55 ♂, 53 ♀; Rostov, 26.IV.1996 (Yu.G. Arzanov), 1 ♀; as above, Lake Rostovskoye (= Rostovskoye More), V.1984 (E.A. Khachikov), 1 ♂; 12.V.1991, 2 ♀; 16.V.1991, 2 ♂, 2 ♀; 30.IV.1990, 1 ♀; 20.V.1990, 1 ♀; 7.IX.1989 (E.A. Khachikov), 1 ♂; Pchelovodnaya Vill., 15.IV.1990 (Yu.G. Arzanov), 1 ♂, 4 ♀; as above, 2.V.1993 (Yu.G. Arzanov, E.A. Khachikov), 3 ♂, 4 ♀; Uspenskaya Vill., 2.V.1996 (D.G. Kasatkin), 1 ♂; Persianovka Vill., 24.IV.1988 (Yu.G. Arzanov), 1 ♀; Rassvet Vill., Bol'shoi Log Balka, 27.IX.1979 (Yu.G. Arzanov), 1 ♀; Azov Distr., Aleksandrovskii Forestry, 7.IV.1979 (E.A. Khachikov), 1 ♀; Sidorovka Farm, 3.V.1998 (A.V. Kalerin), 1 ♀; Razdorskaya Vill., 23.IV–27.V.2001 (A. Ponomarev), 13 ♂, 16 ♀; Sal'sk, Khlebnaya Balka, 10–15.IV.1999 (Yu. Nechitailo), 26 ♂, 38 ♀. Krasnodar Terr.: Taman', 14.IV.1995 (S. Abramov), 1 ♀; Anapa, 1–2.V.1999 (I.V. Shokhin, D. Dubovikov), 1 ♀; Novorossiisk

(E. Koenig), 1 ♂; Gul'kevichi Vill., 18.X.1926 (V.K. Artynenko), 1 ♀; as above, 4.XI.1926 (V.K. Artynenko), 1 ♂; Kaluzhskaya Vill., 22.IV.1980 (Korotyaev), 1 ♂ (holotype); Ubinskaya Vill., Sober-Oashkh Mt., 19.VI.1987 (A.S. Zamotajlov), 7 ♂, 2 ♀; Goryachii Klyuch Vill., orchards, 11.IX–3.X.2000 (V.G. Knysh), 1 ♂, 1 ♀; Tul'skaya Vill., 27.V.1929, 1 ♀; Korenovskaya Vill., 1.V.1926 (E.M. Treugaft), 1 ♀; Ust'-Laba, 2.V.1921 (K.V. Arnoldi), 2 ♀. Adygea: Maikop, 6.V.1929, 1 ♀. Stavropol Distr.: Mashuk Mt., 1.V.1943, 1 ♀; 13.IV.1949, 1 ♀; 20.IV.1949, 3 ♂, 1 ♀; 24.IV.1949, 1 ♀; V.1949 (A.P. Runich), 1 ♀; Pyatigorsk, Dubrovka locality, 28.IV.1951 (A.P. Runich), 1 ♀; Novo-Pyatigorsk, orchard, 17.IV.1927 (Menyakov), 1 ♂; Zheleznovodsk, Razvalka Mt., 2.V.1983 (Yu.G. Arzanov), 2 ♂, 2 ♀; Beshtau Mt., 11.IX.1927 (S. Rysakov), 1 ♀; Novoaleksandrovsk Distr., Vinogradnyi Vill., steppe slope on right bank of the Rasshevatka River, 2.VI.1997 (B.A. Korotyaev), 1 ♀; 50 km E of Nevinnomyssk, Budennovskii Vill., 12–28.V.2001 (Kryukov), 3 ♂, 8 ♀.

There is a male from Northeastern Turkey in the ZIN collection, labelled "Ilgaz-dagl. 1800–2200 m 23.VII.1963 Anatolia bor. W. Heinz leg.," "*Alophus* spec.? Dieckmann det., 1974;" it is very similar to *G. steppensis* sp. n. but differs in the shorter two basal segments of the antennal funicle, weakly rounded apex of the pronotum, less steeply sloping to the base pronotal disc, and somewhat shorter setae on the elytra.

Three specimens from Bulgaria received from L. Behne belong to another species close to *G. steppensis* sp. n. and *G. nictitans*. They are labelled "SW Bulg., Pirin Geb., Bansko, 600 m, 14.VI.1988 leg. Zerche, Behne," 1 ♂, 1 ♀," and "SW Bulg., Umg. Simitli, 6.VI.1986 Behne leg.," 1 ♂. Unfortunately, we have not identified this species so far. The specimens are medium-sized; rostrum without tooth at base of ventral side; pronotum with truncate apex; sides of elytra behind humeri not keeled; processus prosternalis high, projecting for more than half of exposed part of fore coxae; all ventrites with discontinuous vestiture of rounded entire scales; hind tarsus covered with acuminate narrow scales only; aedeagus with short lamella, narrowing to, and emarginate at apex.

***Graptus agrestis* (Boheman, 1842)**
(Figs. 8, 11, 22, 23, 37, 56)

Boheman, 1842 : 206–207; Stierlin, 1888 : 64; Reitter, 1901 : 210; Apfelbeck, 1927 : 73–74; Solari,

1945 : 6–8; Ter-Minassian, 1946 : 112; Smreczyński, 1957 : 27–28; Arnoldi *et al.*, 1965 : 57; Angelov, 1978 : 208.

The species was described from material received from E. Ménétrié. B.A. Korotyaev has found a male in the ZIN collection apparently originating from the type series. It is supplied with a small red paper square and the wide bottom label "*agrestis* Caucasus" written by E. Ménétrié. This specimen fits the original description and is designated here as lectotype. The claw-segment of the left middle tarsus, the right middle tibia and tarsus, and the entire right hind leg are missing.

Most of the authors erroneously attributed the name *G. agrestis* to the species occurring in Armenia. This mistake was facilitated by closeness of the two taxa and lack of data on the type locality in the original description. We have examined nine specimens of *G. agrestis*, in addition to the lectotype, all collected in the highland Daghestan.

Description. Similar to *G. armeniacus*, but narrower. Rostrum in females more strongly curved; in males 2.0–2.19, in females 1.71–1.87 times as long as wide before eyes. Rostral dorsum usually with deep median sulcus and shallower sulci at sides. Angular prominence between antennal scrobe and ocular sulcus similar to that in *G. armeniacus*; 1st segment of antennal funicle somewhat longer and wider than 2nd.

Pronotum weakly transverse, with posterior angles distinct to varying degree, more pronounced in males. Anterior margin straight or slightly emarginate. Disc very densely punctate, sparsely and finely wrinkled, with deep elongate fovea in apical half; base mostly without median tubercle. Processus prosternalis moderately protruding (usually for less than half of exposed part of fore coxae).

Elytra parallel-sided in basal part, with beveled humeral angles: sides usually keeled behind humeri; base of 3rd interval usually not swollen. Apex of female tergite VII straight or weakly emarginate.

Lamella noticeably attenuate and rounded apically (Figs. 22, 23). Spiculum gastrale with distinct prominence near bend in basal part. Inner surface of basal part of endophallus with large numerous sclerites; sclerotized basal structure of endophallus with wings appressed to endophallus wall (Fig. 37).

Dorsal surface densely covered with round and wide-oval scales, intervals of elytra with rows of erect setae length of which less than interval width. Venter

covered with similar gray, weakly opalescent, narrowly separated scales. Two basal segments of hind tarsus with small light scales of varying width.

Body length 6.85–7.75 mm in males, 7.35–8.55 mm in females; width 3.02–3.50 mm and 3.3–3.9 mm, respectively; in lectotype, 6.85 mm and 3.05 mm.

The shape of the aedeagus is similar to that in *G. purkynei* Smreczyński, 1960, *G. macedonicus* Solari, 1945 and, probably, *G. malissorum* Apfelbeck, 1927 from the Balkans. Among these three species, we have only examined five specimens of *G. purkynei* from the Hungarian Natural History Museum, Budapest, all labelled “Macedonia, Kajmakçalan, 17.VII.1936 (Dr. Fodor).” This species differs from *G. agrestis* in the shape of the antennal club, irregularly and uniformly punctate pronotal disc with an ill-defined median fovea in apical half, vestiture of the ventrites, and absence of a prominence in the basal part of the spiculum gastrale near the bend.

Material. Russia. Daghestan: Petrovsk (= Makhachkala), 1882 (H. Christoph), 1 ♀; 18 km NW of Sovetskii, Dagbash Vill., 2500–3000 m, 10–14.VII.1982 (B.M. Kataev), 2 ♀; Agul’skii Distr., Burshag Vill., 2100 m, 7–11.VII.[?] (E.V. Il’ina), 1 ♂; Kulinskii Distr., western slopes of Shunudagh Mt., 23.V.1991 (Davidian), 1 ♂; northeastern spur of Nukat’ Mt. Range, right side of Betsor Gorge, 2200–2400 m, 25.VII.1997 (V.Yu. and M.Yu. Savitskii), 3 ♀. In addition, we have examined an unlabelled male of this species from the Dvorzhinskii collection in the G.K. Prave Regional Museum, Stavropol.

Graptus armeniacus (Hochhuth, 1847)

(Figs. 1, 20, 36, 52, 54)

Hochhuth, 1847 : 486–487; Stierlin, 1888 : 64; Reiter, 1901 : 210; Solari, 1945 : 6–8; Smreczyński, 1957 : 27–28; Arnoldi *et al.*, 1965 : 557.

Described from Armenia; common in collections. The name of this species was considered a synonym of *G. agrestis* Boh. (Solari, 1945; Smreczyński, 1957) which was followed in the “Key to insects of the European part of the USSR.” We have examined a type specimen from the G. Stierlin collection in the DEI (Eberswalde), a male labelled “Armenia,” “coll. Stierlin,” “Syntypus,” “*A. armeniacus* Hochh. Hochh.,” “coll. DEI Eberswalde.” We designate this specimen here as the lectotype. In our opinion, *G. armeniacus* is a distinct species close to *G. agrestis*.

The range of *G. armeniacus* includes a considerable part of the Lesser Caucasus and Northeastern Turkey. This species is a typical inhabitant of the mountain steppes, where most of the specimens have been collected from under stones.

Description. Rostrum thick, in males 1.94–2.21, in females 1.72–2.06 times as long as wide before eyes. Angular prominences between antennal scrobe and ocular sulcus distinct, but weaker than that in *G. stepensis* sp. n. Rostral dorsum noticeably narrowing apically, median sulcus broad and deep in basal half, usually superficial in apical half; in basal part of dorsum, accompanied by lateral sulci alongside. First segment of funicle usually longer than 2nd, less frequently as long as that; 7th segment weakly or, less frequently, strongly transverse.

Pronotum transverse, widest in apical half, then its sides rectilinearly converging to base; posterior angles distinct. Apex straight; base with median tubercle, limited laterally by small depressions. Disc evenly punctate, mostly without median sulcus or, occasionally, with small oblong fovea at apex. Processus prosternalis moderately developed, protruding usually for less than half of exposed part of coxae.

Elytra with beveled, usually distinct humeral angles, parallel-sided in basal part; sides behind humeri more or less keeled; basal part of 3rd interval usually not swollen.

Tibiae thick, distinctly incurved in apical third in males, almost straight in females. Abdominal tergite VII in female straight or, occasionally, shallowly emarginate apically. Anal ventrite in male widely depressed.

Aedeagus weakly narrowing apically from prepuccial area and truncate or weakly emarginate at apex. Spiculum gastrale with, or without well-developed process at bend in basal part. Sclerotized basal structure of endophallus with long lire-shaped wings (Fig. 36).

Dorsal surface densely covered with rounded scales; length of erect setae on intervals of elytra noticeably less than width of intervals. Venter covered predominantly with rounded or weakly elongate entire scales supplemented by numerous plumose scales at sutures and at sides of ventrites. Two basal segments of hind tarsus with small light scales of varying width.

Body length 6.60–8.25 mm in males, 6.50–8.95 mm in females; width 2.8–3.75 mm and 3.15–4.2 mm, respectively.

G. armeniacus differs from *G. agrestis* in the shallow median sulcus on the rostrum, presence of the median tubercle on the pronotal base limited by two depressions alongside, shorter erect setae on the elytra, and straight apical margin of the aedeagus.

Material. Azerbaijan: Shakhdaghsii (= Sevanskii) Mt. Range, Shakh-Dagh Mt., 26.VIII.1984 (Davidian), 1 ♂. Armenia: Idzhevan Distr., Dilizhan, Papakh-Kar Mt., 2500–3000 m, 28–29.VII.1986 (Davidian), 7 ♂, 6 ♀; Semenovka (Sevan), 18.V.[?], 1 ♂, 1 ♀; Kipchakh, northern slopes of Aragats (= Alagoez) Mt., 6.VI.1934 (M.E. Ter-Minassian), 1 ♂; Aragats Mt. from the side of Byurakan Vill., 15–16.VI.1997 (M.Yu. Savitskii), 7 ♂, 4 ♀; Gukasian Distr., Musaelian Vill., 2200 m, 22.IX.1984 (P. Kazarian), 1 ♀; 9.VI.1984 (P. Kazarian), 1 ♀; slopes of Dzhavakhtskii Mt. Range, near Karakhachskii Pass, 12.VII.1987 (Davidian), 8 ♂, 6 ♀. Georgia: Manglisi, 1882, 1 ♂; Tsalka Distr., Kyaryak Vill., 21.VIII.1985 (V.O. Kozminykh), 1 ♂; as above, but 1100 m, 31.VII.1986 (V.O. Kozminykh), 1 ♂; 11–12.VII.1989 (V.O. Kozminykh), 1 ♂; Chiftkilisa Vill., 1600 m, 6–19.VIII.1989 (V.O. Kozminykh), 1 ♀; Akhalkalaki, 29.VI.1915, 1 ♂. Turkey. Kars, Arpaçay, 32 km NE of Kars, 22.V.1990 (leg. P. Kanaar), 1 ♂; Erzurum vicinity, 2400 m, 1–8.V.1998 (S.I. Baidak), 1 ♀.

Graptus squamiventris (Reitter, 1901)

Reitter, 1901 : 209; Apfelbeck, 1927 : 73–74; Solari, 1945 : 6–8; Smreczyński, 1957 : 26–28.

We have examined two females of *G. squamiventris* from the type series in Budapest. One specimen is labelled “Veluchi,” “Coll. Reitter,” “Paratypus *Alophus squamiventris* Reitter, 1901,” “*Alophus agrestis* Boh. Smreczyński det., 1955,” and with unclear label in pencil. The second specimen has a similar set of labels except that the first label is “Attica Reitter” and there is no the last of the cited labels of the first specimen.

Solari (1945) considered *G. squamiventris* a distinct species, whereas Smreczyński (1957), following Apfelbeck (1927), treated it as a synonym of *G. agrestis*. In the Junk catalogue, this species is also recorded (with a reference to V. Apfelbeck), in addition to Greece, from Turkey.

Description. Median sulcus on rostrum deep and wide from frons almost to antennal insertion. First segment of antennal funicle wider and longer than 2nd, 3rd segment weakly elongated, 4–6th segments

spherical, 7th weakly transverse or as long as wide. Shape of antennal club similar to that in *G. armeniacus*.

Pronotum with straight apical margin, more than 1.2 times as wide as long; disc without median sulcus, base with well-defined median tubercle. Processus prosternalis protruding for slightly less than half of exposed part of coxae.

Elytral striae shallow, base of 3rd interval weakly swollen, almost 1.5 times as wide as base of 2nd interval. Abdominal tergite VII in female with deeply and widely emarginate apex.

Setae on rostral dorsum and femora weakly raised, length of setae on elytra noticeably less than width of intervals. Femora covered with small round scales separated by not less than their width. Ventriles covered only with entire scales, length of which at sides of ventrites 1.5–2.0 times their width.

The specimen with the label “Attica” differs from the one from Veluchi in the convex at base rostral dorsum and presence of broad scales on hind tarsus.

In the straight anterior margin of pronotum, lack of median sulcus on its disc, and presence of median tubercle at base, *G. squamiventris* is most similar to *G. armeniacus*. Closeness of these species is also testified by the structure of the aedeagus of a specimen of *G. squamiventris* from Parnassus Mt. (Solari, 1945) similar to that in *G. armeniacus*.

Both the type specimens differ from *G. giresunicus* sp. n., *G. armeniacus* and *G. agrestis* in the vestiture. From the latter species, they differ also in the absence of the median sulcus on the disc of pronotum, distinct median tubercle at its base, and shape of the aedeagus. From *G. armeniacus*, these specimens differ in the uniformly deep along entire length median sulcus on rostral dorsum, deeply emarginate apex of abdominal tergite VII in female, vestiture of ventrites, and small ramus of the spermatheca.

Graptus giresunicus Davidian et Arzanov, sp. n.

(Figs. 4, 24, 34, 38, 48)

There is a single specimen from Turkey in our possession collected in the alpine zone on Giresun Mt. Range. It is very similar to *G. agrestis*. Rostral dorsum with deep median sulcus extending from frons almost to antennal insertion. Rostrum 2.39 times as long as wide before eyes. First segment of antennal funicle somewhat longer than 2nd. Pronotum weakly trans-

verse, 1.1 times as wide as long; sides parallel almost from apical constriction to base, posterior angles ill-defined. Apical margin straight, base with obsolete median tubercle. Disc densely punctate, with deep oblong median fovea in apical half. Processus prosternalis protruding for more than half of exposed part of coxae.

Elytra with beveled humeral angles, in basal half subparallel-sided; sides behind humeri keeled, base of 3rd interval weakly swollen.

Dorsal scaling similar to that in *G. agrestis*; setae more or less blunted, on rostral dorsum and on femora strongly raised, on elytra almost erect. Scales on pronotal disc almost twice as large as those in *G. squamiventris*. Venter densely covered with large round and oval golden and, less numerous, black scales separated by narrow gaps, and strongly raised setae. Plumose scales on venter present only immediately behind coxae and along sutures between ventrites. Two basal segments of hind tarsus covered with small, weakly widened light scales.

Aedeagus very similar to that in *G. armeniacus* but somewhat shorter; spiculum gastrale with distinct process in basal part at bend. In the endophallus structure, the new species is closest to *G. agrestis*. *G. giresunicus* differs from *G. armeniacus* in the deep median sulcus on rostral dorsum, strongly deepened fovea on pronotal disc, and absence of median tubercle at base of pronotum.

Body length 7.75, width, 3.45 mm.

Material. Turkey: Giresun Mt. Range, Goenderiç Tepesi, alpine zone, 14.VI.1998 (Davidian leg.), 1 ♂, holotype.

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